STATE OF ALASKA

THE REGULATORY COMMISSION OF ALASKA

Before Commissioners: G. Nanette Thompson, Chair
Bernie Smith
Patricia M. DeMarco
Will Abbott
James S. Strandberg

In the Matter of the Correct Calculation and Use of Acceptable Input Data To Calculate the 1997, 1998, 1999, 2000, 2001, and 2002 Tariff Rates for the Intrastate Transportation of Petroleum over the Trans Alaska Pipeline System Filed by AMERADA HESS PIPELINE CORPORATION; ARCO TRANSPORTATION ALASKA, INC.; BP PIPELINES (ALASKA) INC.; EXXON PIPELINE COMPANY; MOBIL ALASKA PIPELINE COMPANY; EXXONMOBIL PIPELINE COMPANY; PHILLIPS ALASKA PIPELINE CORPORATION; UNOCAL PIPELINE COMPANY; PHILLIPS TRANSPORTATION ALASKA, INC.; and WILLIAMS ALASKA PIPELINE COMPANY, L.L.C., and the Protest by TESORO ALASKA PETROLEUM COMPANY of the 1997 and 1999 Tariff Rates	P-97-4 ORDER NO. 151
In the Matter of the Petition of TESORO ALASKA PETROLEUM COMPANY for an Investigation into the Amounts Collected by AMERADA HESS PIPELINE CORPORATION; ARCO TRANSPORTATION ALASKA, INC.; BP PIPELINES (ALASKA) INC.; EXXON PIPELINE COMPANY; MOBIL ALASKA PIPELINE COMPANY; PHILLIPS ALASKA PIPELINE CORPORATION; and UNOCAL PIPELINE COMPANY for Dismantling, Removal, and Restoration of the Trans Alaska Pipeline System	P-97-7 ORDER NO. 110

Changes made to this order are from P-97-4(151E) and P-97-4(151EE). Elaine

ORDER REJECTING 1997,1998,1999 AND 2000 FILED TAPS RATES; SETTING JUST AND REASONABLE RATES; REQUIRING REFUNDS AND FILINGS; AND OUTLINING PHASE II ISSUES

BY THE COMMISSION:

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ORDER REJECTING 1997,1998,1999 AND 2000 TAPS RATES; SETTING JUST AND REASONABLE RATES; REQUIRING REFUNDS AND FILINGS; AND OUTLINING PHASE II ISSUES

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I. DECISION SUMMARY

Two petroleum companies operating in Alaska, Tesoro[1] and Williams,[2] asserted that the 1997 rates for transporting North Slope oil to their Alaska refineries over the Trans Alaska Pipeline System (TAPS) exceed the reasonable costs of transportation. To investigate their allegations, we suspended all post-1997 intrastate TAPS rates[3] filed by the TAPS Carriers,[4] and held an evidentiary hearing.

The Alaska Pipeline Act requires that oil pipelines operate as common carriers and gives this Commission the responsibility of setting just and reasonable rates for intrastate transportation.[5] After careful review of the record we conclude in this order that the 1997-2000 filed intrastate TAPS rates do not satisfy the AS 42.06

[1]Tesoro Alaska Company.

[2]Williams Alaska Petroleum Company.

[3]*Re Amerada Hess Pipeline Corp.,* Order P-86-2(61)/P-92-2(30)/P-94-1(36)/P-95-1(16)/P-97-4(1)/P-97-5(1)/P-97-6(1)/P-97-7(1), dated June 27, 1997; *Re Exxon Valdez* Litigation *and Settlement Costs*, Order P-94-1(46)/P-95-1(26)/P-97-4(12)/P-97-6(11)/P-97-7(11)/P97-9(5), dated December 26, 1997; *Re Exxon Valdez Litigation and Settlement Costs*, Order P-94-1(54)/P-95-1(33)/P-97-4(35)/P-97-6(20)/P-97-7(21), dated December 28, 1988; *Re Exxon Valdez Litigation and Settlement Costs,* Order P-94-1(75)/P-97-4(64)/P-97-6(41)/P-97-7(46), dated December 20, 1999; *Re Amerada Hess Pipeline Corp.*, Order P-94-1(101)/P-97-4(105)/P-97-6(66)/P-97-7(72), dated December 29, 2000; *Re Amerada Hess Pipeline Corp.*, Order P-94-1(111)/P-97-4(144)/P-97-6(78)/P-97-7(103), dated December 20, 2001.

[4]The TAPS Carriers are Amerada Hess Pipeline Corporation, BP Pipelines (Alaska) Inc., ExxonMobil Pipeline Company, Phillips Transportation Alaska, Inc. and Unocal Pipeline Company (collectively the Indicated Taps Carriers). Williams Alaska Pipeline Company, L.L.C. acquired the pipeline interest of Mobil Alaska Pipeline Company in TAPS effective July 1, 2000. Although Williams Alaska Pipeline Company, L.L.C. is a TAPS Carrier closely aligned with the Indicated TAPS Carriers and has adopted the testimony and exhibits of the Indicated TAPS Carriers for the purposes of this proceeding, Williams Alaska Pipeline Company, L.L.C. has carefully maintained its individual party status throughout this proceeding. Therefore, we refer to all of the TAPS Carriers except Williams Alaska Pipeline Company, L.L.C. as the Indicated Carriers and to all of the TAPS Carriers as the Carriers. Each of the Carriers holds separate certificates of public convenience and necessity. As a result, each Carrier files separate rates for transportation on TAPS for each year. The Carriers are subsidiary corporations of most of the producers who ship oil on the TAPS.

[5]AS 42.06.140, AS 42.06.410(a).

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requirement that pipeline rates be just and reasonable, set new 1997-2000 rates and order filings so that we can set rates for 2001 and subsequent years.

The Trans Alaska Pipeline System carries oil from the largest oil field on the North American continent, Prudhoe Bay, on the North Slope of Alaska over 800 miles across tundra, mountains and rivers to the freshwater port of Valdez, Alaska. During Prudhoe Bay's peak production years, the pipeline carried two billion million barrels each day. Constructing TAPS was and remains the most ambitious pipeline construction project in United States history. Planning and construction began in 1968 and the first oil flowed through the pipeline in 1977.

Over ninety percent of the oil produced in Alaska is carried by tankers to markets on the west coast of the United States. The Federal Energy Regulatory Commission (FERC) is responsible for approving rates for interstate shipments. Throughout the pipeline's history, some oil has been removed from the pipeline in Alaska and processed for sale in local markets.[6] The Regulatory Commission of Alaska sets just and reasonable rates for intrastate transportation based on the costs reasonably incurred in transporting oil from the North Slope to destinations in Alaska. Just and reasonable intrastate transportation rates are important for insuring continuing

[6]Some oil is delivered to intermediate points along the pipeline route within Alaska: 1) to the Golden Valley interconnection outside of Fairbanks, Alaska for further transportation to the Williams and Petro Star refineries in North Pole and 2) to Petro Star refinery outside of Valdez. We have jurisdiction over the tariffed rates charged for intrastate shipments. AS 42.06. Therefore, rather than determining the rate for 1,151,000 barrels per day our decision affects the rate applied to only 87,000 barrels per day of the TAPS oil. RGV-14 Schedule 1.

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development of the state's oil resources and insuring that Alaskans have the opportunity to benefit from development of their natural resources.[7]

After prolonged litigation about the appropriate rates for shipments on the TAPS, the TAPS Carriers signed interstate and intrastate settlements with the State of Alaska. Our predecessor agency[8] accepted[9] the Intrastate Settlement[10] (the Settlement) because all affected parties supported it; the Commission did not decide that the Settlement produced just and reasonable rates. Since 1986, the TAPS Carriers calculated intrastate rates using the TAPS Settlement Methodology (TSM).[11] The Alaska Public Utilities Commission (APUC) deferred the issue of whether TSM produced just and reasonable rates until a shipper protested the rates. The 1997 Tesoro and Williams protests put that issue before us for the first time in this pipeline's twenty-year history. Under the Alaska Pipeline Act, the Carriers have the burden of proving that the rates calculated and filed using TSM are just and reasonable.

The Carriers did not support their rates with evidence showing that they reflect the costs of providing service. Instead, they assert that because the rates set by TSM are below a benchmark, the filed rates are just and reasonable. The Carriers do

[7]Alaska Const. art. VIII. The Carriers argue that a decrease in intrastate rates will result in an increase in interstate rates and the effect on the State of Alaska will be a net loss. We note that the TSM Settlement provision allowing Carriers to collect their revenue requirement from the combination of interstate and intrastate rates affords Carriers the *option* of raising interstate rates if intrastate rates decrease. The TSM Settlement agreement does not require Carriers to recover costs disallowed as unjust and unreasonable by state regulators from the federal jurisdiction.

[8]The Regulatory Commission of Alaska assumed the duties of the Alaska Public Utilities Commission on July 1, 1999. Ch. 25 SLA 1999.

[9]*Re* Amerada *Hess Pipeline Corp.,* 13 APUC 448 (1993).

[10]BWF-2, *Intrastate Settlement Agreement* (the Settlement). Endnote 1 describes record designations. A review of TAPS litigation history can be found at Endnote 2.

[11]*See* Endnote 3 for a detailed description of TSM.

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not ask us to adopt their benchmark ratemaking methodology to set rates. Instead, they contend that this method demonstrates what rates would have been absent the Settlement and as such provide a good measure of whether the filed rates calculated using TSM are just and reasonable.[12]

To calculate benchmark rates, the Carriers use a rate base that assumes straight-line depreciation from pipeline startup. They use rates of return that include a premium over the average oil pipeline company's cost of capital to compensate investors for substantial early period risks of the TAPS project. They assume that the life of TAPS is no longer than the life predicted at the time of the Settlement. Using these inputs, the Carriers calculate a year-end 1996 rate base to establish 1997-2000 benchmark rates. The Carriers assert because the filed rates are below benchmark rates, the filed rates are reasonable.

To verify the accuracy of the year-end 1996 benchmark rate base, the Carriers calculate the amount of their original investment that they believe they had recovered by the end of 1996. They apply annual revenues for 1977 to 1996 first to operating costs other than depreciation, then to return on rate base and taxes, and finally to depreciation. Their analysis concludes that unrecovered investment as of January 1997 significantly exceeds the year-end 1996 benchmark rate base. The Carriers assert that this verifies that the TSM filed rates are reasonable because it

[12]The Carriers assert that they were directed to file a comparison between TSM rates and those that would have been set by a regulator using traditional ratemaking methodologies. The Carriers misinterpret the language in *Re Amerada Hess Pipeline Corp.*, 13 APUC 448 (1993) and *Re Amerada Hess Pipeline Corp.*, Order P-97-4(79), dated April 10, 2000, to suggest that filed rates should be reviewed as if the past twenty years of rates have not been filed and collected. We disagree. The APUC stated "the filing is subject to the same *standards* and *procedures* to which it would have been subject if the Intrastate Settlement Agreement had not been accepted. *Id.,* at 456 (e*mphasis added*). We did not direct that the history of rates filed and collected should be ignored.

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demonstrates that the Carriers have recovered less of their original investment under the Settlement than they would have under the methodology that they assert would have been used had the Settlement not occurred.

The Carriers' urge us to permanently approve the filed 1997-2000 rates and to continue the Settlement's effect. The Carriers also contend that the filed rates calculated using TSM are just and reasonable over the life of the Settlement and that allowing rates to be set using TSM furthers important public policy goals.

The State of Alaska (the State) supports the Carriers' position. The State asserts that public policy concerns also support preserving the Settlement. The State describes its position as (1) ensuring that this case does not affect the validity or enforceability of the Settlement,[13] (2) protecting the State's ability to continue making oil pipeline settlements within the jurisdiction of the Regulatory Commission of Alaska, and (3) protecting its economic interests.

Tesoro disagrees with the Carriers and the State. Tesoro contends that the filed rates for 1997-2000 are not just and reasonable and that AS 42.06 requires us to set just and reasonable rates. Tesoro calculates a year-end 1996 rate base that is much lower than the Carriers'. Tesoro calculates its rate base using the depreciation amounts used to calculate TSM ceiling rates. Tesoro's rate base is lower than the TAPS Carriers' benchmark analysis rate base because Tesoro relies on the depreciation schedule used in TSM which is much more accelerated than the straight-line depreciation the Carriers adopt in their benchmark analysis.

Williams also asserts that the filed rates calculated under TSM are not just and reasonable and that the Carriers' year-end 1996 benchmark rate base is too high.

[13]The Settlement terms require the State to defend against any litigation affecting the validity and enforceability of the Settlement. BWF-2, Section I-3.

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Williams contends that TAPS is nearly fully depreciated but proposes that the basic framework of the Settlement should continue to be used to calculate rates. Williams asks, however, that we change certain elements of the TSM, including adding a management fee.[14] Williams proposes that we require the Carriers to use this adjusted methodology to calculate intrastate rates from 1997 forward.

The Public Advocacy Section (PAS)[15] supports Tesoro's and Williams' arguments. It asserts that the filed rates are not just and reasonable and that we should set new rates using the accelerated depreciation schedule employed in TSM rates, a longer TAPS life, and an adjustment for over collection for dismantling, removal and restoration (DR&R).

During most of the operational history of the TAPS, Carriers have charged the maximum rates allowed by TSM. Carriers filed the cost information used to calculate TAPS rates confidentially under the terms of TSM. Requiring shippers to pay rates based on cost data to which they do not have access is unusual. The policy concerns favoring settlements do not outweigh our statutory obligation to set just and reasonable rates or the policy favoring shipper and public access to the cost data used to calculate those rates.

Alaska statutes[16] require pipeline rates to be just and reasonable. Just and reasonable rates allow pipeline owners an opportunity to recover their investment, a

[14] *See* Endnote 4 for an analysis of Williams' proposed management fee.

[15] The Public Advocacy Section was established in 1999 by the Legislature to operate independently from the Commission and represent the public interest. Ch. 25 SLA 1999. The Commission assigns cases to the Public Advocacy Section when a public interest perspective would add to the full development of the record.

[16] AS 42.06, Pipeline Act.

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return on that investment and their reasonable operational costs.[17] As the Carriers note, the most important element of the cost of service for years 1997-2000 is the amount of the Carriers' investment which they have not yet had an opportunity to recover, their "rate base" at year-end 1996.[18] Because our regulatory predecessors did not decide whether TSM produced just and reasonable rates there is no approved rate base for year-end 1996. To determine the starting point, the year-end 1996 rate base, we must determine the amount of Carrier investment and the amount that they have previously had the opportunity to recover by year-end 1996.

This requires that we use cost information that is outside the 1997-2000 years. We rely on the voluminous historical record to determine an appropriate year-end 1996 rate base. We apply a depreciated original cost (DOC) methodology from the beginning of pipeline operations.[19] We adopt an appropriate capital structure of 49.5 debt/50.5 equity, adopt TSM depreciation charges and set overall annual rates of return ranging from 11 to 15 percent.[20] We generally accept the Carriers' inputs for all other elements of the rate calculation. We find the year-end 1996 rate base is $669 million.[21] We compare our year-end 1996 rate base to the Carriers'. The Carriers calculate a benchmark rate and argue that if filed rates are below the benchmark we should find them just and reasonable. We find that even if the Carriers' benchmark and supporting

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[17] *See* Federal *Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591, 603 (1944)*.

[18] "The critical issue in determining the reasonableness of the 1997-2000 rates is the appropriate rate base against which to measure the returns achieved." *Initial Post-hearing Brief of the Indicated TAPS Carriers*, dated July 16, 2001, at 40.

[19] *Cook Inlet Pipe Line Co. v. Alaska Pub. Util. Comm'n*, 836 P.2d 343, 350 (Alaska, 1992) (affirming rate base computed by taking original cost minus accumulated depreciation).

[20] Exhibit 2, Column g.

[21] *See* Part IV, infra.

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unrecovered investment analyses are logical and legally sufficient to prove that rates are just and reasonable, the Carriers' methodology and choice of inputs to the benchmark analysis and unrecovered investment analyses are unreasonable. As a result, in addition to being insufficient to support filed rates, the benchmark and unrecovered investment analyses fail.

To verify the reasonableness of the $669 million year-end 1996 rate base, we compare TSM revenue requirements for past years with the revenue requirements we calculate using our consistently applied DOC methodology. If TSM's cumulative revenue requirement provided an opportunity to earn less than would have been allowed under an appropriate consistently applied depreciated original cost methodology the Carriers may be entitled to an upward adjustment to the year-end 1996 rate base.[22] However, no adjustment is necessary because we find that by 1997 TSM provided the Carriers an opportunity to earn over $9.9 billion more than the cost of providing service.

We calculate just and reasonable rates for 1997-2000 starting from the $669 million rate base. To calculate the TAPS 1997-2000 revenue requirements, we determine the rate base in each year. We determine an appropriate capital structure, cost of debt, and return on equity for each protested year. The return on equity for this period includes a premium for the early period risk to TAPS. To determine the appropriate depreciation amounts for 1997-2000 rates, we use straight-line depreciation and the now-expected longer life of TAPS. Using these inputs, we calculate the appropriate return on rate base and associated income tax allowance for each year. We use the resulting revenue requirements and the $669 million year-end 1996 rate

[22] *Re* Kenai *Pipe Line Co.,* 12 APUC 425, 438-40, 472 nn.25-26,1992 WL 696192 (Alaska P.U.C., 1992).

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base to compute just and reasonable TAPS rates for 1997, 1998, 1999 and 2000. Those rates are shown below and discussed in Part VI Section F, *infra*.

	GVEA	Petro Star	Valdez
1997	$1.02	$1.55	$1.56
1998	$1.03	$1.62	$1.63
1999	$1.19	$1.88	N/A
2000	$1.25	$1.96	N/A

Finally, we compare these cost-based rates with the TSM filed rates. The Carriers' filed rates for 1997-2000 exceed these rates by an average of 57 percent.[23] Fifty-seven percent above costs is well outside the zone of reasonableness standard that reviewing courts apply. We, therefore, find that the 1997-2000 filed rates are not just and reasonable. We set the above rates[24] that we calculate as the permanent TAPS rates for 1997, 1998, 1999 and 2000. We order the Carriers to calculate and pay appropriate refunds.

II. LEGAL AND POLICY STANDARDS

The threshold issues in these dockets are the appropriate standard of review for filed rates and the method for determining what are "just and reasonable" rates under the Alaska Pipeline Act.

[23]In any given year, the Carriers' filed rates exceed the cost of providing service by 19 to 88 percent. *See* Exhibit 1. Cost based rates, determined in Part.VI Section F, are shown at Schedule 1. The Carriers' average yearly filed rates are shown at Schedule 2. The percentage by which each filed rate exceeds cost-based rates, and the average excess, is calculated at Schedule 3.

[24]AS 42.06.410(a) allows the Commission to fix rates when "after an investigation and hearing, [the commission], finds that a rate demanded, observed, charged, or collected by a pipeline carrier for a service . . . is unjust, unreasonable, unduly discriminatory, or preferential, ..."

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A. Standard of Review for Filed Rates

In 1997, 1998, 1999, and 2000 each Carrier revised its existing tariffs and filed new rates.[25] Under AS 42.06.400(d), "[o]ne who initiates a change in existing tariffs bears the burden of proving the reasonableness of the change." The APUC held that "[e]ach new rate filed by the TAPS Carriers under the Intrastate Settlement Agreement is considered to be a revised tariff filing under AS 42.06.400."[26] The Carriers therefore carry the burden of proving that the filed rates are just and reasonable.[27]

The Settlement does not shift the burden of proof. When the APUC accepted the Settlement, it found that if the Settlement was challenged, the Commission would evaluate the filed rates using the same standards and procedures as if the Settlement had never been accepted.[28] The Carriers therefore carry the burden of proving that the filed rates are just and reasonable.

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[25]Amerada Hess (1997) TL50-300, TL52-300 (changed only to Valdez and Petro Star, not North Pole), TL55-300; (1998) TL58-300; (1999) TL63-300, TL64-300. TL66-300, TL68-300; (2000) TL-70-300, TL71-300. ARCO (1997) TL56-301, TL59-301; (1998) TL61-301; (1999) TL 66-301, TL68-301; (2000) TL71-301. BP (1997) TL56-311, TL60-311; (1998) TL61-311; (1999) TL67-311, TL69-311; (2000) TL73-311, TL75-311. Exxon (1997) TL69-304, TL72-304; (1998) TL74-304; (1999) TL80-304, TL81-304; TL83-304; (2000) TL87-304. Unocal (1997) TL52-312, TL55-312; (1998) TL56-312; (1999) TL60-312; (2000) TL64-312. Mobil (1997) TL52-308, TL55-308; (1998) TL58-308; TL63-308; (1999) TL64-308, TL66-308; TL68-308; (2000) TL70-308. Phillips (1997) TL53-310, TL55-310, TL58-310, TL59-310; (1998) TL62-310; (1999) TL67-310, TL69-310, TL71-310, TL73-310; (2000) TL77-310, TL78-310, TL79-310.

[26]*Re Amerada* Hess *Pipeline Corp.*, 13 APUC 448, 456 (1993).

[27]*See* Endnote 5 for a more detailed discussion of burden of proof.

[28]*Re Amerada Hess Pipeline Corp.,* 13 APUC 448 (1993). The APUC stated in its October 29, 1993, order accepting the Settlement "Each new rate . . . is subject to the same standards and procedures to which it would have been subject if the Intrastate Settlement Agreement had not been accepted." *Id.,* at 456. This finding has been reiterated often during the history of this case. The APUC was quite clear at a May 5, 1995, prehearing conference when it stated "The Commission wishes to make it clear that the TAPS Carriers are the ones who need to justify their rates as though TSM had not been approved." Prehearing Conference Transcript at 66 (May 5, 1998).

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B. Just and Reasonable Rates

Whether the filed intrastate 1997-2002 TAPS rates are just and reasonable turns on the following five issues. First, how are just and reasonable rates determined? Second, what is a reasonable methodology for establishing just and reasonable rates? Third, what methodology is appropriate for establishing a year-end 1996 rate base for TAPS? Fourth, how does one determine the reasonable inputs for a DOC methodology? Fifth, does a change in ratemaking methodology in the middle of the operating life of a pipeline result in a return deficiency? We discuss each in turn.

1. What Are Just and Reasonable Rates?

Alaska Statute 42.06.370(a) states that "[a]ll rates demanded or received by a pipeline carrier, or by any two or more pipeline carriers jointly, for a service furnished or to be furnished shall be just and reasonable." Courts have developed various criteria for "just and reasonable" rates. Rate orders that fall within a "zone of reasonableness" are neither "less than compensatory" nor "excessive."[29] The "zone of reasonableness" is delineated by striking a fair balance between the financial interests of the regulated company and the relevant public interests, both existing and foreseeable.[30] The balance is struck by affording the owners of the pipeline a fair opportunity to earn a return commensurate with the risk of their capital investment[31] under tariffs that are fair and nondiscriminatory toward shippers and other members of the relevant public.

[29] *Farmers* Union *Cent. Exchange, Inc. v. F.E.R.C.*, 734 F.2d 1486, 1502 (D.C. Cir., 1984).

[30] *In re* Permian *Basin Area Rate Cases,* 390 U.S. 747, 792, (1968); *In re Trans Alaska Pipeline Rate Cases,* 436 U.S. 631, 653, 98 S.Ct. 2053, (U.S.Tex., 1978).

[31] *See, e.g.* Federal *Power Comm'n v. Hope Natural Gas Co,* 320 U.S. 591, 603, (1944) (*Hope*).

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We have some latitude in determining just and reasonable rates. In arriving at a just and reasonable rate "no single method need be followed."[32] "Under the statutory standard of 'just and reasonable' it is the result reached not the method employed which is controlling. . . . It is not theory but the impact of the rate order which counts."[33]

We have held that "[r]ates that are just and reasonable generate enough revenue to pay the costs actually and prudently incurred by the regulated entity in providing service (including depreciation and taxes) plus a reasonable return to the entity on the original cost of its property in service."[34] If non-cost based factors are to be considered they must be specifically supported.[35] The most useful and reliable starting point for rate regulation is an inquiry into costs.[36] We apply this standard to the filed 1997-2000 TAPS rates.

2. <u>What Is a Reasonable Methodology for Determining Rates?</u>

To determine rates, we assess the prudent cost of providing pipeline service.[37] A pipeline's costs include the cost of operation and maintenance and a

[32]*Wisconsin v. Fed. Power Comm'n,* 373 U.S. 294, 309, 48 P.U.R.3d 273, 83 S.Ct. 1266 (U.S.Dist.Col., 1963); *see also, Hope,* 320 U.S. at 602.

[33]*Hope,* 320 U.S. at 602.

[34]*Re Kenai Pipeline Co.,* 12 APUC 425, 433, 1992 WL 696192 (Alaska P.U.C., 1992).

[35]*Farmers Union Cent. Exchange, Inc. v. F.E.R.C.*, 734 F.2d 1486, 1502 (D.C. Cir., 1984). Non-cost factors may justify a departure from a rigid cost-based approach. *F.E.R.C. v. Pennzoil Producing Co.,* 439 U.S. 508, 517, 27 P.U.R.4th 473, 99 S.Ct. 765 (U.S.Tex., 1979).

[36]*Farmers Union Cent. Exchange, Inc. v. F.E.R.C.*, 734 F.2d 1486, 1502 (D.C. Cir., 1984); *see, e.g., Mobil Oil Corp. v. Federal Power Comm'n*, 417 U.S. 283, 305-06, 316, 5 P.U.R.4th 1, 94 S.Ct. 2328 (U.S.La., 1974); *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591, 602-03 (1944).

[37]*See* BONBRIGHT, JAMES C. ET AL., PRINCIPLES OF PUBLIC UTILITY RATES 237-38 (1988).

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reasonable return of and on capital. The term "rate base" is used to describe the balance of prudently incurred capital investment which the Carriers have not yet had an opportunity to recover in rates and on which Carriers may earn a return. Rate base is a regulatory concept; it is not property.[38]

A pipeline's rate base is increased over time by additional prudent carrier capital expenditures and is decreased by depreciation. Depreciation is included in rates to allow carriers an opportunity to recover their investment principle. As a pipeline recovers its capital investment over time, the rate base declines so that the entire capital investment is recovered by the end of the asset's useful life.

As the Carriers note, "The critical issue in determining the reasonableness of the 1997-2000 rates is the appropriate rate base against which to measure the returns achieved."[39] The Carriers assert that had the TSM not been approved, the rate base at year-end 1996 would be $3.26 billion.[40] The Carriers assert that we should not use the TSM rate base to evaluate filed rates because it reflects compromises made to achieve the Settlement. They further contend that the true value of unrecovered Carrier property is even greater.[41] Williams asserts that the year-end 1996 rate base is $855 million[42] and Tesoro asserts it is $394 million.[43] The PAS suggests that the Carriers' investment has been completely recovered and that the rate base is zero.

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[38]*Cook Inlet* Pipe *Line Co. v. Alaska Public Utilities Comm'n,* 836 P.2d 343, 350 (Alaska 1992).

[39]*Indicated TAPS* Carriers *Initial Post-Hearing Brief*, filed July 16, 2001, at 40.

[40]T-7 20.

[41]T-7 20.

[42]189A-BEW-T, Schedule 5, Line 16. This is the rate base sponsored by Williams as an alternative to the Carriers' benchmark analysis.

[43]JFB 1 Schedule B.

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Throughout the life of the TAPS, tariffs have been calculated using TSM. In accepting TSM, the APUC agreed to allow TAPS rates to be calculated using the methodology in the Settlement until such time as TAPS rates were challenged, but the APUC did not establish or approve a rate base.[44]

We set the year-end 1996 rate base in Part IV, *infra*. To do so we determine the original 1977 rate base and then account for all additions to and subtractions from rate base from 1977 through year-end 1996. In Part V, we verify that the year-end 1996 rate base so established does not deny Carriers a reasonable opportunity to recover their investment.

3. What Methodology Is Appropriate for Establishing Rate Base at Year-End 1996?

In *Cook Inlet,*[45] the Alaska Supreme Court approved a method for determining the appropriate rate base in the middle of a pipeline's operating life. The APUC found that a rate base may be established using a DOC methodology applied as if that methodology had been used from the beginning of pipeline operations.[46]

[44]*Re Amerada Hess Pipeline Corp.*, 13 APUC 448, 456 (1993).

[45]*Cook Inlet* Pipe *Line Co. v. Alaska Public Utilities Comm'n,* 836 P.2d 343 (Alaska 1992).

[46]*Re Cook Inlet Pipe Line Company,* 6 APUC 527 (1985); *see generally, Re Kenai Pipe Line* Company, 12 APUC 425, 1992 WL 696192 (Alaska P.U.C., 1992).

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The parties do not dispute that this approach is reasonable.[47] The Carriers use a DOC analysis from the beginning of pipeline operations to generate benchmark rates.[48] Tesoro and Williams also use DOC analyses to support their respective cases. We find that a DOC methodology applied from the beginning of pipeline operations should be used in this case to determine rates.

4. How Should Reasonable Inputs for a DOC Methodology Be Determined?

Disputes over appropriate inputs into a methodology are normal in ratemaking. This proceeding is different from a normal rate case because throughout TAPS' history, no agency or court has approved a depreciation schedule or rate of return that has been used to set just and reasonable rates. The parties disagree about

Alaska Petroleum, Inc.'s Initial Brief Initial

[47] *Initial Post-Hearing Brief of the Indicated TAPS Carriers,* filed July 16, 2001, at 40-41; *Initial Brief* of *Williams Alaska Pipeline Company LLC*, filed July 16, 2001, at 14; *Tesoro Alaska Company's Initial Posthearing Brief*, filed July 18, 2001, at 26; *Williams Alaska Petroleum Post-hearing* Brief at 18 (if a DOC comparison is to be used TSM's accelerated depreciation schedule should be employed); Public *Advocacy Section Initial Post-Hearing Brief*, filed July 16, 2001, at 11. The parties, however, dispute what the inputs into a DOC methodology should be. The Carriers suggest that a straight-line depreciation should be used. *Initial Post-Hearing Brief of the Indicated TAPS Carriers* at 11-12**;** *Initial Brief of Williams Alaska Pipeline Company* at 16. Tesoro, PAS and Williams contend a consistent DOC methodology from the beginning of pipeline operation should use the TSM depreciation schedule. *Tesoro Alaska Company's Initial Posthearing Brief*, at 28-29; Williams agrees but asserts that the TSM depreciation factors should be used. *Williams Alaska Petroleum Inc.'s Post-hearing Reply Brief*, filed August 1, 2001, at 5, 16-18; *Public Advocacy Section Initial Post-Hearing Brief*, at 9. They argue we should use the depreciation underlying historical filed rates. We agree with Williams, Tesoro and PAS. *See* Parts III, C.2, IV, C.2 and VI B.3.

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[48] We did not direct that benchmark rates be calculated. In *Re Amerada Hess Pipeline Corporation*, we instructed the Carriers that, although we believe the most useful and reliable point for rate regulation inquiry is costs, no single method need be followed. *Re Amerada Hess Pipeline Corp.,* Order P-97-4(79) at 8 (April 10, 2000). We reiterated the direction of the APUC in originally allowing TSM rates. The APUC clearly stated TSM rates "would be subject to the same *standards* and *procedures* to which [they] would have been subject if the Intrastate Settlement Agreement had not been accepted." *Re Amerada Hess Pipeline Corp.*, 13 APUC 448, 456 (1993) (*emphasis added)* and n.28. We explained that determining whether rates are just and reasonable begins with costs. *Re Amerada Hess Pipeline Corp.*, Order P-97-4(79) at 9, 11 (April 10, 2000). Non-cost factors may be considered if specifically justified. *Id.*, at 10.

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the appropriate accumulated depreciation and rates of return that should be used to calculate the TAPS year-end 1996 rate base.

a) A Depreciation Schedule for the TAPS Rate Base Has Never Been Approved

The amount of accumulated depreciation by year-end 1996 affects the rate base and resulting rates. Carriers urge that we calculate the amount of accumulated depreciation at year-end 1996 using a straight-line approach. By doing so, the Carriers conclude that accumulated depreciation is $4.982 billion by year-end 1996.[49]

Past rates for TAPS, however, have been calculated using the TSM accelerated depreciation schedule, not a straight-line depreciation schedule. TSM uses an accelerated depreciation schedule that allows expedited recovery of the Carriers' capital investment.[50] Thus, the depreciation amount charged annually in rates was much larger in the early years of TAPS operation than in later years.

To evaluate the 1997-2000 filed rates, Williams argues that accumulated depreciation through year-end 1996 should reflect the past depreciation *factors*[51] used to set tariffs and collect rates under TSM, and that doing so results in accumulated depreciation of $9.2 billion by year-end 1996.[52] Tesoro[53] and the PAS[54] urge that accumulated depreciation should reflect the actual TSM annual *charges* included in rates, and that the total is $8.1 billion by year-end 1996.

[49]143-RGV-C, Workpaper TAPS-RGV WP3.xls, Schedule 5, Line 9.

[50]BWF-4 at 31.

[51]TSM sets depreciation *factors* for each Carrier that are used to calculate annual depreciation charges.

[52]189A-BEW-T, Schedule 2, Line 2.

[53]JFB 1 Schedule B.

[54]RAF-4, Schedule 1, Column 3.

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Depreciation schedules are established for a variety of purposes. The Federal Energy Regulatory Commission (FERC) generally requires Carriers to use straight-line depreciation when filing FERC Form 6.[55] The Form 6 filings allow FERC to compare pipeline costs.[56] For tax purposes, entities often choose accelerated depreciation.

Regulatory bodies establish a depreciation schedule for ratemaking. The depreciation schedule determines the amount of annual depreciation allowed in the revenue requirement, thereby providing carriers an opportunity to recover their investment over time. In this case, because a depreciation schedule for TAPS has never been approved, we determine both the historical depreciation charges through year-end 1996 and the current depreciation charges for 1997-2000.

The Settlement sets a depreciation schedule. By accepting the Settlement for post-July 11, 1986 rates, the Commission did not find that the TSM depreciation schedule produced just and reasonable rates.[57] The parties contest whether the annual TSM depreciation schedule gave the Carriers adequate opportunity to recover their investment.

Carriers contend that if we adopt TSM depreciation[58] to calculate past recovery of investment they will be deprived of the opportunity to recover their investment.[59] To set cost-based rates we must use a depreciation schedule that provides Carriers with the opportunity to recover their investment from 1997 through

[55]Tr. 3147 (RGV); Tr. 4865 (KAW).

[56]*See* Tr. 2386-87 (LPS);Tr. 2411-12 (LPS).

[57]*Re Amerada Hess*, 13 APUC 448 (1993).

[58]*See* Part III,C.2. for an analysis of the Carriers' choice of straight-line depreciation.

[59]T-6 (WBT) 26.

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2000, yet does not require shippers to pay costs twice.[60] We determine the appropriate accumulated depreciation and the future annual deprecation schedule in Part IV Section C.2 and Part VI Section B.3, *infra*.

b) The Rate of Return Should Be Based on the Return Required by a Stand-alone Pipeline

The rate of return compensates investors for the use of their capital. As with depreciation, we determine not just rate of return for the years with disputed rates but also rate of return for previous years. The appropriate rate of return determines the size of allowance for funds used during construction (AFUDC), an important component of rate base. Regulators use AFUDC to compensate pipeline owners for construction costs. The capital costs incurred during construction are not includable in the rate base until those costs can be linked to an asset that is used and useful in providing service. Carriers account for construction costs and add the cost of financing the capital investment during construction. This total AFUDC is added to the rate base when the asset goes into service.

Because the financing costs are included in AFUDC, a larger rate of return results in a larger AFUDC balance and a smaller rate of return results in a smaller AFUDC balance. Carriers suggest that starting AFUDC balances in 1977 were $2.562 billion;[61] Williams suggests that starting AFUDC balances in 1977 were $2.006 billion;[62] Tesoro suggests that AFUDC in 1977 was $1.246 billion.[63]

[60] *Re Cook* Inlet *Pipe Line Co.*, 2001 WL 1850233 (RCA Oct. 29, 2001).

[61] 143-RGV-C. Workpaper TAPS RGV-WP3.xls, Schedule 4, ll. 6, 9.

[62] 189A-BEW-T Workpaper BEW_R_RGV WP DR 22RE.xls, Schedule 4 ll. 7, 11.

[63] 225-JFB-T, Workpaper 2 JFB-1 page 1 l. 4.

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In this case, determining the appropriate rate of return is complicated in two ways. First, it is highly unusual to determine an appropriate rate of return for years before rates are at issue. The rate of return is generally determined prospectively. The compensation that investors require for the risks to which they expose their capital is based on investors' prospective reading of those risks. In this case, the rate of return in distant *past* years must be determined from the vantage point of investors' prospective expectations at that time. The parties approach this task by using their analyses of 1997-2000 rates of return to backcast[64] the cost of capital in prior years.

Second, to determine rate of return we must consider the business and financial structure of the TAPS for ratemaking purposes. We must decide whether to treat the TAPS as a separate entity or as an amalgam of its owners. TAPS is still owned by seven individual pipeline companies; six are subsidiaries of North Slope producers. The TAPS does not exist as a separate entity in which investors actually can invest. Instead, each share of TAPS is generally owned by producer parent companies. The parent companies are generally large integrated petroleum companies. The risks faced by integrated petroleum companies do not reflect the risks for which a pipeline company would need to be compensated.

The parties agree that the rate of return allowed in rates should be based on the business risk of TAPS.[65] As one witness explained:

> [W]e're trying to determine what business risks are associated with that stand-alone enterprise so that we can compensate investors and ask rate payers to pay a rate of return which is commensurate with that risk and not other risks.[66]

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[64]The word "backcast" is the opposite of "forecast"; it is used to describe the method of extrapolating results from the current period to earlier periods.

[65]T-3 (WBT), p. 60; Tr. 2743 (WBT); FJH-T (E-2) at 18; WBT-59.

[66]Tr. 2937 (WBT).

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This is consistent with controlling legal authority on TAPS. In response to an appeal from Alaska Pipeline Commission's (APC) 1983 decision setting the first tariff for intrastate transportation of oil on the TAPS, the Alaska superior court reversed a contrary APC finding and described the TAPS as follows:

> TAPS is, in fact, a single pipeline and not eight individual pipelines of varying capacities. There is no basis for taking the capitalization of eight oil companies who are the owners or parent companies of the owners and imputing their individual capitalization to TAPS. The pipeline should have been considered to be an entity and capitalization, costs, rates of return on both debt and equity capital, and other financial information should have been imputed to it.[67]

Although the superior court's decision was vacated by the Alaska Supreme Court[68] because the parties settled their appeal, the Alaska superior court's description of the TAPS is still relevant. It suggests that we should view the TAPS as a single, stand-alone enterprise.

A "stand-alone" enterprise is one that can attract capital on its own. It provides a good lens for determining what investors would require for a return in light of TAPS' business risks. We prefer the stand-alone model because it is more likely to reflect the reasonable costs of capital. We do not use the actual cost of capital used to finance the TAPS construction because it is complicated by financial arrangements between parents and subsidiaries that make it difficult to determine the prudent cost of capital for a stand-alone TAPS. For example, if a carrier were to choose an unwise method of financing, its costs would be unreasonably high. As regulators we do not

[67] *State of* Alaska *v. Alaska Public Utilities Comm'n*, 3AN 80-7163 CI (Alaska Super.) Nov. 28, 1983.

[68] *Amerada Hess Pipeline Corp. v. Alaska Public Utilities Comm'n*, No. S-195, slip op. (Alaska Nov. 20, 1985).

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allow recovery of imprudent costs.[69] Accordingly, we determine rate of return based on the cost of capital of a "stand alone" TAPS.

The return demanded by a stand-alone TAPS consists of the weighted average of the cost of debt and the return on equity. The relative weights are determined by the relative amounts of capital used to finance debt and equity. The relative amounts of debt and equity are known as the capital structure.

To determine what portion of return compensates for the cost of debt and what portion provides for return on equity, we rely either on the regulated entity's actual capital structure or choose a hypothetical capital structure if the actual capital structure is inappropriate. Consistent with the need to determine rate of return based on a stand-alone model, we determine the capital structure for TAPS based on a stand-alone model.[70]

5. Does a Change in Ratemaking Methodology in the Middle of the Operating Life of the Pipeline Result in a Return Deficiency?

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Because we are applying a ratemaking methodology in the middle of the operating life of TAPS that is different than TSM, we must confirm that the year-end 1996 rate base so calculated is reasonable and will not deprive the Carriers of the opportunity to earn a reasonable return. The Carriers,[71] perform an unrecovered investment analysis to verify that their proposed rate bases are reasonable. Tesoro and Williams perform an unrecovered investment analysis to show that the Carriers' benchmark rate base is unreasonable and that investment has been mostly recovered.

[69] *Re Cook Inlet Pipe Line* Company, 2001 WL 1850233 (RCA Oct. 29, 2001).

[70] Using a stand-alone model is consistent with the Alaska Superior Court holding in *State of Alaska v.* Alaska *Public Utilities Comm'n*, 3AN 80-7163 CI, (the APC erred in setting rates based on a model that reflects the capitalization and capital costs of the multiple owners of TAPS).

[71] RGV-15.

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We analyze and reject the unrecovered investment analyses because they are unreliable. In some situations they may also violate the rule against retroactive ratemaking.[72]

Instead, we use the annual comparative revenue requirement analysis described in *Kenai*[73] to confirm that the year-end 1996 DOC rate base calculated in the middle of the operating life of the pipeline is reasonable. In *Kenai*, the APUC held that a new rate base established midstream may be adjusted if a regulatorily enforced return deficiency results from a switch in ratemaking methodology. The APUC explained

> The Commission does not believe that it is legally or constitutionally required to recognize such a return deficiency. However, if one were demonstrated, then the Commission would consider whether, in fairness, an adjustment ought to be made for it.[74]

Neither this Commission, nor our predecessor agencies, the APUC and the APC, have ordered a rate base adjustment for this reason. However, if the Carriers are denied an opportunity to recover and earn a reasonable return on their investment due to a switch in ratemaking methodology an adjustment may be appropriate.[75]

A regulatory agency must provide an opportunity to earn a return;[76] but, it does not guarantee a return. In this case, the Carriers negotiated a future opportunity to earn a return when they entered into the Settlement. They assumed the risk that at some time during the life of the Intrastate TAPS Settlement Agreement a shipper might

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[72] *See* Endnote 6 for a discussion of retroactive ratemaking.

[73] *Re Kenai Pipe Line Co.,* 12 APUC 425, 1992 WL 696192 (Alaska P.U.C., 1992) (*Kenai)*.

[74] *Id.*, at 439.

[75] *Id.,* at 438. Similarly, if through past rates carriers have enjoyed excessive opportunity to recover costs, a downward adjustment to rate base may be appropriate. *See* T-10 (WBT), 84:3-14; *Initial Post-hearing Brief of the Indicated TAPS Carriers*, dated July 16, 2001, at 18.

[76] *Re Cook Inlet Pipe Line Company*, 2001 WL 1850233 (RCA Oct. 29, 2001).

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protest and a commission would determine that rates filed pursuant to the Settlement are not just and reasonable. The Carriers were never guaranteed their *future* negotiated returns.[77]

The year-end 1996 rate base should provide an opportunity to earn a reasonable return but need not guarantee the future negotiated return allowed in the Settlement. We, therefore, compare TSM's annual revenue requirements with cost-based DOC revenue requirements to ensure that the Carriers will not be denied an opportunity to recover their costs. By doing so we verify that the rate base we calculate for year-end 1996 does not result in the Carriers losing their opportunity to earn a return.

III. THE CARRIERS FAIL TO SHOW THAT FILED RATES ARE JUST AND REASONABLE

In a typical rate case, the regulated entity proposes a rate base and we determine whether the proposed rate base is correct for ratemaking purposes. We also review the other elements of the proposed ratemaking methodology to determine whether they are reasonable.

The Carriers present an unconventional case. They compute two different rate bases, one in the benchmark analysis and one in their unrecovered investment analysis. They do not support either as the rate base that we should adopt for ratemaking purposes.[78] Further, they do not propose that the labeled components of

[77]When the APUC considered the Settlement in 1987, it indicated that when rates filed pursuant to the Settlement are challenged, the Commission will determine whether those rates are just and reasonable and if not, will calculate just and reasonable rates. *See Re Amerada Hess Pipeline Corp*., 8 APUC 168, 169 (1987). Therefore, the Carriers were on notice that the APUC acceptance of the Settlement did not guarantee the return contemplated in the Settlement.

[78]Tr.1726-27 (ABJ); Tr. 1846 (ABJ); Tr. 3324 (RGV).

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"rate base" in the TSM model be adopted as a DOC rate base for TAPS. They claim that they cannot file a typical rate case because the filed rates are not determined by a conventional rate base rate of return methodology. They assert that the building blocks of the TSM filed rates cannot be converted directly into standard ratemaking elements.[79]

Instead, the Carriers make three arguments in support of filed rates. In Section A below, we address the Carriers' argument that over the life of the line TSM rates are just and reasonable and therefore are just and reasonable for 1997 through 2000. In Section B we address the argument that the filed rates are just and reasonable based on public policy grounds.[80] In Section C we address the argument that if filed rates are below benchmark rates then filed rates are just and reasonable.

A. The Carriers Fail to Prove That TSM Rates Are Just and Reasonable Over the Life of the Line

The Carriers suggest we should determine whether the filed rates are just and reasonable by calculating an internal rate of return (IRR) on their investment in TAPS and comparing that IRR to the average required rate of return over the life of the line.[81] If the IRR does not exceed the required rate of return on capital at the time of settlement, the Carriers assert that the rates in all years must be just and reasonable.

In *Re Amerada Hess Pipeline Corporation*, Order P-97-4(79), dated April 10, 2000, we assumed for the purposes of argument that the Carriers had shown that TSM rates were just and reasonable over the life of the line. We found that, even if the Carriers proved that rates were just and reasonable over the life of the line, that proof is not sufficient under AS 42.06 to establish that rates in any particular year were just and

[79] *See* T-5 (ABJ) 24.

[80] The State also asserts that filed rates are just and reasonable based on public policy grounds. *State of Alaska's Prehearing Brief*, filed April 5, 2001, at 7; *State of Alaska's Initial Post-hearing Brief* at 2, filed July 16, 2001.

[81] T-1 (ABJ) 15.

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reasonable. We instructed the Carriers to submit proof that each of the filed rates at issue in this proceeding was just and reasonable for the year in which it was filed.[82] The Carriers subsequently submitted evidence relating to individual years, as instructed, but continue to assert that the filed rates are just and reasonable because the IRR they calculate under TSM is no higher than the rate of return required at the time of the Settlement.

The Carriers calculate IRRs for each of three different sets of data, performing two separate IRRs for each set of data.[83] The IRR on a project varies depending upon whether and to what extent the investor can utilize tax benefits generated by interest deductions associated with the investment. The Carriers calculate one IRR on each set of data assuming no tax benefit from interest deductions and another assuming full tax benefit.[84] All three sets of data yield IRRs that are in the low range or are lower than the required overall rates of return recommended by the Carriers' rate of return witness.[85]

The use of IRRs in a ratemaking context is novel. Businesses use IRRs to analyze current investments or investment opportunities. To calculate an IRR, a business must project expected future cash flows of the project being analyzed. An IRR requires speculative assumptions about future data. Large differences in the amount of future cash flows make little difference in an IRR because future cash flow amounts

[82] *Re Amerada Hess Pipeline Corp.*, Order P-97-4(79), dated April 10, 2000 (Order 79) at 11, 15.

[83] *See* ABJ-3. The three sets of data reflect different assumptions about TAPS throughput.

[84] T-1(ABJ) 19.

[85] T-1 (ABJ) 21.

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may be heavily discounted. Mathematically, the further into the future a difference in cash flow occurs, the less impact that difference has on the IRR.

We find the IRR analysis is an unreliable tool in this case for determining if rates are just and reasonable. The Carriers' IRR analysis is based on speculative assumptions about future throughput, operating expenses and capital costs. Even if an IRR analysis was appropriate, when we compare the overall rates of return found reasonable in this order[86] to the Carriers' IRRs, the Carriers' IRRs on all three sets of data are significantly in excess of appropriate rate of return during the settlement period.[87]

B. The Carriers' and the State's Public Policy Arguments Are Insufficient to Approve Filed Rates

The Carriers and the State make a public policy argument that the Settlement is in the best long-term interests of Alaska. They argue that TSM provides a declining tariff profile, rate stability and avoids expensive, repetitive rate litigation. Further, the State claims that TSM's net carryover provision reduces Carrier incentive to "game" the normal rate-setting process, i.e., it reduces carrier incentive to inflate test-year costs above those likely to prevail in future years. TSM also allows the State to annually review and audit tariffs before rates are filed. Finally, the State suggests that the Settlement encourages development on the State's oil-bearing lands, and positively

[86] *See* Exhibit 2 for summary of appropriate rates of return for 1977-1996; these findings are made in Part IV Section B.

[87] The Carriers' numerical case regarding appropriate rates of return for 1968-1998 did not change between their first and second prefiled cases. *See* T-3 (WBT) and T-6 (WBT).

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affects State revenues. The State concludes that these public policy benefits are so great that we should not invalidate or modify the Settlement.[88] The Carriers concur.[89]

The Settlement does not set rates.[90] Instead, the Settlement requires the Carriers to file rates at or below a ceiling. It also prevents the State from protesting any rate so filed.[91] The terms of the Settlement do not provide that the Settlement is voided if we set just and reasonable rates below the TSM maximum ceiling rates. The results in this case therefore do not invalidate or modify the Settlement.[92] AS 42.06 requires that we consider whether filed rates are just and reasonable The settling parties nonetheless may choose to modify the terms of the Settlement as the result of this order in this case, but our order regarding whether the 1997-2000 filed rates are just and reasonable does not require them to do so.

The State and the Carriers assert that if we find 1997-2000 filed rates do not satisfy AS 42.06 we will create a chilling effect on future settlements. We disagree. The parties to the Settlement have been on notice that the APUC conditioned its acceptance of the Settlement on allowing nonsettling parties to protest rates in the future. The APUC cautioned that rates set by TSM were "subject to the same standards and procedures to which [rates] would have been subject if the Intrastate Settlement Agreement had not been accepted."[93] We must decide whether filed rates are just and

[88] *State of Alaska's Prehearing Brief* at 7, filed April 5, 2001.

[89] *TAPS Carriers' Covering Brief*, October 8, 1998, at 2, 12, 13.

[90] *State of Alaska's Initial Post-hearing Brief* at 2, filed July 16, 2001.

[91] BWF-2, Sections I-3 and I-4(c); *State of Alaska's Initial Post-hearing Brief* at 3.

[92] Professor Jaffe testified that a commission ordered rate reduction based on a finding that TSM rates exceeded cost-based rates would not be inconsistent with the Settlement. Tr. 1643-1644 (ABJ).

[93] *Re Amerada Hess Pipeline Corp.*, 13 APUC 448, 456 (1993).

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reasonable when a third party challenges rates.[94] The Carriers and the State therefore cannot now and could not at the time of settlement reasonably expect that rates calculated under the Settlement will always be accepted without review.

We recognize that when parties enter into rate settlements they have hopes of future revenue opportunities and tariff limitations. However, the role of regulating agencies is not to guarantee any particular revenue opportunity or rate. In the regulatory arena, settlements are always at some risk because at any time they may be subject to a test of whether they satisfy AS 42.06. If we are unwilling to review rates when challenged, we abdicate our responsibility under the Alaska Pipeline Act to ensure that rates are just and reasonable.[95] In the context of rate regulation, settlements are always subject to future challenge by third parties. We therefore find that our review of rates in this case does not produce any special chilling effect.

The State and Carriers also assert that the Settlement provides a declining tariff profile, rate stability, and avoids expensive, repetitive rate litigation. We agree that tariffs should be appropriate and the cost of maintaining such rates

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[94] AS 42.06.

[95] Settlements regarding future regulated rates are different from settlements that involve past unregulated behavior. In the regulation arena, future intrastate rates are subject to AS 42.06. Therefore, settling parties in the regulatory arena are always at risk that settlement-produced rates can be challenged and found to violate AS 42.06.

Settlements, however, can be drafted to provide some certainty regarding future rates. For example, in approving the Cook Inlet Pipe Line Company settlement, we required as a condition of approval that the parties stipulate that the depreciation component of the settlement would be "used for ratemaking purposes for [Cook Inlet Pipe Line Company], so long as [it] continues to be regulated under a depreciated original cost methodology." Doing so "allows us to keep track of investment recovery and removes a number of potentially troublesome issues from a future rate case, in the unlikely event one should occur." *Re Cook Inlet Pipe Line Company*, 2001 WL 1850233 at 3 (RCA Oct. 29, 2001). This type of condition for approving a settlement may constrain the negotiable elements of a settlement, but it also provides certainty about the reliability of certain settlement elements in the event of a challenge that filed rates do not satisfy AS 42.06.

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should be

reasonable. Although settlement can accomplish these goals, the 1997-2000 intrastate rates produced by the Settlement do not. Rate case costs are a necessary part of regulation and are appropriate to confirm that rates are just and reasonable. This case resulted in extraordinary expenses because no regulatory agency has determined the appropriate methodology and inputs for calculating rates for this pipeline. The result of this order should be stable rates and lower litigation expenses in the future. We agree with Tesoro witness Williams who testified:

> In my view, when a regulatory agency, this Commission or any commission, clearly delineates what its standards are and what it's procedures are, and what its approach is for developing rates, once that occurs, the parties understand that's -- those are the criteria, those are the approach, that generally greatly reduces the amount of litigation. It's only uncertainty that encourages litigation.[96]

Finally, the State and Carriers allege that if we find filed intrastate rates not just and reasonable and order intrastate rates that differ from interstate rates, then state royalties, tax revenues, bidding, exploration, and development of State oil-bearing lands will be negatively affected.[97] We find that these contentions are not adequately supported.

The ultimate effect of intrastate TAPS tariffs on the State's revenue position is not as transparent as the State and the Carriers indicate. We agree with PAS witness Fineberg who testified:

> The fact that the State gave up any potential State revenue gains from reduced TAPS tariffs in intrastate commerce in the settlement that established TSM does not diminish or dismiss this Commission's responsibility to protect shippers within its jurisdiction by assuring just and reasonable intra-state tariffs.[98]

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[96]Tr. 4915 (KAW).

[97]*State of Alaska's Initial Post-hearing Brief,* July 16, 2001, at 4-6, 11; *State of Alaska's Post Hearing Reply* Brief, 22-25, 31-32; *TAPS Carriers' Covering Brief,* October 8, 1998 at 2, 12, 13.

[98]P-1 (RAF) 8.

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We must consider both the immediate and long-term consequences for setting intrastate rates that are based on costs and may differ from interstate rates.[99] We must strike a fair balance between the financial interests of the regulated company and the relevant public interests, both existing and foreseeable.[100]

The Interstate TAPS Settlement Agreement has a net crediting provision regarding intrastate TAPS revenues. If intrastate revenues decrease, then the TSM interstate revenue requirement *may* increase.[101] The Carriers may choose to take advantage of this crediting provision in setting interstate rates. Given the terms of the State's royalty agreements with producers, the value of North Slope oil and hence State royalty payments will decline with an increase in interstate TAPS tariffs.[102] The PAS suggests that revenues to the State from 1997 through 2000 would decrease by no more than $10 million per year.[103]

However, although the Carriers may apply revenue "shortfalls" from intrastate to interstate tariffs, nothing in the Interstate Settlement Agreement requires them to do so. If the Carriers take advantage of the Settlement's crediting provision, future interstate tariffs for the same transportation service will rise above the cost-based intrastate rates that we determine in this order to be just and reasonable. Although the

[99]In addition to the public policy arguments the Carriers assert that an interstate shipper could file an Interstate Commerce Act Section 13(4) claim with the Federal Energy Regulatory Commission if interstate rates to Valdez, Alaska are different than intrastate rates to the same destination. The Alaska Supreme Court has already rejected this contention. *Cook Inlet Pipe Line Co. v. Alaska Pub. Util. Comm'n,* 836 P.2d 343, 351-53 (Alaska, 1992) *citing Simpson v. Shepard*, 230 U.S. 352, 417, 33 S.Ct. 729, 748 (1913). For a more complete discussion s*ee* Endnote 7.

[100]*In re Permian Basin Area Rate Cases,* 390 U.S. 747, 797 (1968).

[101]Tr. 3855 (WDVD); *State of Alaska's Initial Post-hearing Brief* at 11, filed July 16, 2001; 258-RAF-S.

[102] S-1 (WDVD) 3-4.

[103]Tr. 5623 (RAF).

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Carriers certainly have incentive to raise rates, they also have an incentive to treat the State and intrastate shippers fairly.

From a long-term perspective, the effect on State revenues of setting cost-based intrastate rates is likely to be beneficial. First, in light of this order, an independent interstate shipper may protest interstate TAPS rates. If such a protest were successful, the State's royalty and severance tax position will improve. Second, even if a protest of interstate rates were not made or was not successful, lower intrastate tariffs provide increased incentives for exploration[104] and in-state downstream processing. Were this to occur the State's revenue and resource development position would improve.[105]

The State nonetheless asserts that establishing intrastate rates that are different from interstate rates will have a detrimental effect on bidding, exploration and development of State oil-bearing lands. That assertion is not supported by the record. As noted above, near-term royalties will be lost to the State only if Carriers take advantage of the crediting provision. If the Carriers do not take advantage of the crediting provision, the lower royalties to the State would then provide an exploration incentive and an economic incentive for bidding, exploration and development of oil-bearing lands. Therefore, the State's argument that our finding intrastate rates different from interstate rates is harmful to the State is not persuasive.

The United States Supreme Court has held that a regulatory commission is "obliged at each step of its regulating process to assess the requirements of broad public interests." [106] Non-cost factors may legitimize a departure from a rigid cost-based

[104]Tr. 3881 (WDVD).

[105]Tr. 5598 (RAF).

[106]*In re Permian Basin Area Rate Cases*. 390 U.S. 747, 790 (1968).

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approach.[107] The mere invocation of them however is not sufficient.[108] Each non-cost factor must be made to justify the resulting rate for the specific years in question.[109]

Further, the United States Supreme Court decision in *F.E.R.C. v. Pennzoil Producing Company*[110] held that rates must lie within a zone of reasonableness. That zone is found by striking a balance between the financial interests of the regulated company and the relevant interests both existing and foreseeable.[111] As shown in Exhibit 1, Schedule 3 the 1997-2000 filed rates exceed cost-based rates by an average of 57 percent, with the excess ranging from 19 to 88 percent. This range is in such excess of cost-based rates that the rates are driven outside the zone of reasonableness even when considering non-cost factors.

In *Farmers Union* the D.C. Circuit required a reasoned explanation of non-cost factors to justify the resulting rates.[112] As Tesoro has noted, in the past commissions have made only small adjustments to cost-based rates to accommodate non-cost based factors and never in petroleum or petroleum product pipelines.[113] Although the Carriers and State have provided some rationale for including non-cost factors, they have failed to provide sufficient justification for rates exceeding costs by 19 to 88 percent. These percentages are outside the zone of reasonable and fail the basic

F.E.R.C. v. Penzoil Producing Company,

[107] 439 U.S. 508, 517, 27 P.U.R.4th 473, 99 S.Ct. 765 (U.S.Tex., 1979); *Mobil Oil Corp. v. Federal Power Comm'n*, 417 U.S. 283, 305-06, 316, 5 P.U.R.4th 1, 94 S.Ct. 2328 (U.S.La., 1974).

[108] *Id.*

[109] *See Farmers Union Cent. Exchange, Inc. v. F.E.R.C.,* 734 F.2d 1486, 1502-03, 1530 (D.C. Cir., 1984).

[110] *F.E.R.C. v. Pennzoil Producing Co.,* 439 U.S. 508, 517, 27 P.U.R.4th 473, 99 S.Ct. 765 (U.S.Tex., 1979); *In re Permian Basin Area Rate Cases,* 390 U.S. at 797.

[111] *Re Permian Basin,* 390 U.S. at 797.

[112] *Farmers Union Cent. Exchange, Inc. v. F.E.R.C.,* 734 F.2d 1486, 1502 (D.C. Cir., 1984).

[113] *Tesoro Alaska Company's Initial Posthearing Brief* at 34-36.

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test of *Farmers Union*, which does not permit profits that are "too huge to be reconcilable with the legislative command" to produce just and reasonable rates.[114]

C. The Carriers' Benchmark Analysis Fails to Satisfy the Burden of Proof for Two Reasons

We turn to the Carriers' final argument that filed rates must be just and reasonable because they are lower then benchmark rates calculated using a DOC methodology consistently applied from the beginning of pipeline operations. That analysis fails to satisfy AS 42.06. The Carriers' benchmark analysis is neither reasonable nor legally sufficient, and even if it were, the factual inputs the Carriers choose for the benchmark rate base are untenable. Moreover, the unrecovered investment analysis presented as a check on the reasonableness of the benchmark rate base is unreliable.

1. A Benchmark Analysis Is Neither Reasonable Nor Legally Sufficient

The Carriers' benchmark analysis presumes that rates falling below a specified benchmark are necessarily just and reasonable. AS 42.06.370 requires that we find that rates are just and reasonable, not simply that they are below a just and reasonable threshold. The proposition that if filed rates are below a benchmark they are necessarily just and reasonable may not always be true. The goal of regulation is to balance the needs of both carrier and shipper. To do so requires that we establish, to the best of our ability, based on the record before us, rates that achieve that balance. If we endorse rates because they fall below a ceiling of reasonable rates, then carriers may not receive the return that they are due. Rates would then be confiscatory and not just and reasonable.

[114] *Farmer's Union*, 734 F.2d 1486, 1502-1503, quoting *Pub. Serv. Comm'n v. F.E.R.C.*, 589 F.2d 542, 550 (D.C. Cir., 1978).

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The D.C. Circuit Court of Appeals explained to the FERC quite clearly that approving rates that fall below a cap is not an acceptable way to set just and reasonable rates. The D.C. Court stated that setting a ceiling in that case only served as a cap on egregious price exploitation by regulated pipelines; it did not properly set just and reasonable rates.[115]

This same rationale applies to the Carriers' use of a benchmark to determine whether the filed rates in this case are just and reasonable. When faced with a protest, we are obligated under AS 42.06.370 to determine whether filed rates are just and reasonable, not just whether they fall below a benchmark.

2. The Carriers' Benchmark and Unrecovered Investment Analyses Are Unreasonable Because the Depreciation Schedule Used Is Unreasonable

The TAPS Carriers assert that we should use a benchmark to assess the justness and reasonableness of 1997-2000 rates. The Carriers calculate benchmark rates and the year-end 1996 rate base by applying a straight-line depreciation schedule from the beginning of TAPS operations.[116] They suggest that both economic reality[117] and Commission precedent[118] require adopting a straight-line schedule. Williams,[119] Tesoro,[120] and the PAS[121] assert instead that the TSM's depreciation schedule or TSM

[115] *Farmers Union Cent. Exchange, Inc. v. F.E.R.C.*, 734 F.2d 1486, 1502 (D.C. Cir., 1984).

[116] *Post-Hearing Reply Brief of the Indicated Taps Carriers* at 13.

[117] *See* T-9 (ABJ) 22; *Initial Post-hearing Brief of the Indicated TAPS Carriers*, at 4-5, 14, 40-41.

[118] *Initial Post-hearing Brief of the Indicated TAPS Carriers,* at 9.

[119] 189-A-BEW-T. *See also Williams Alaska Petroleum Inc.'s Post-Hearing Initial Brief* at 11.

[120] *Tesoro Alaska Company's Initial Posthearing Brief* at 28-29.

[121] *Public Advocacy Section Initial Post-hearing Brief* at 9

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depreciation factors should be used to establish the rate base for 1997-2000. They cite both economic arguments [122] and legal precedent[123] to support this position.

The correct depreciation schedule is critical for deciding whether 1997-2000 TAPS tariffs are just and reasonable. The Carriers' proposed straight-line schedule applied from 1977-1996 suggests that roughly 46 percent of the Carriers' initial investment in TAPS remains unrecovered.[124] The TSM depreciation schedule, applied from 1977-1996, suggests that roughly 3 percent of the Carriers' initial investment remains to be recovered.[125] These different depreciation schedules imply vast differences in remaining unrecovered investment, and thus in rate base. If the Carriers' choice of all other inputs into the benchmark DOC were appropriate for 1997-2000 but TSM depreciation charges are used, then filed rates fail the Carriers' benchmark test.[126] Conversely if protestants' choices of all other inputs into their respective benchmark DOCs were appropriate for 1997-2000, but straight-line depreciation charges are used, then the filed rates may pass the Carriers' benchmark

[122]BEW-T (W-3) 12; JFB-T, 45; *see Tesoro Alaska Company's Initial Posthearing Brief* at 19.

[123]Tr. 4910 (KAW).

[124]This figure assumes that the TAPS has an economic life of 34.5 years.

[125]Figure is derived from TSM depreciation factors contained in 29 ABJ-W. 29 ABJ-W Exhibit Alaska __(TOH-1) shows that the TSM depreciation schedule would result in over 90 percent recovery of the Carriers' initial TAPS investment by 1990.

[126]*See* Exhibit 3, Schedule 1.

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test.[127] Thus, the choice of depreciation schedule is critical to the evaluation of filed rates.[128]

We must use a depreciation schedule that when applied from 1977 through 1996 ~~both~~ provides the Carriers with an opportunity to recover their capital investment and ~~also~~ does not force shippers to pay for that investment twice.[129] We find that the depreciation schedule that has actually been used, i.e., the TSM depreciation schedule -- best meets these twin objectives.[130] Below, we address economic and then regulatory arguments about which depreciation schedule is appropriate for determining year-end 1996 rate base.

a) <u>The Carriers' Economic Arguments For Using Straight-line Depreciation Are Unpersuasive</u>

As the Carriers note, a depreciation schedule "can be viewed as 'neutral' in terms of [its] impact on rates overall. This is because [it] affect[s] the timing and not the ultimate value of the rates."[131] Nonetheless, the Carriers assert that using TSM

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[127]T-9 (ABJ) 16; T-10 (WBT) 6-7.

[128]The appropriate choice of depreciation schedule, however, is not necessarily determinative of whether filed rates are just and reasonable. A comparative revenue requirement analysis as directed by *Kenai* shows that even if we assume straight-line depreciation the Carriers have had ample opportunity to recover their investment. *Re Kenai Pipe Line Co.*, 12 APUC 425, 440, 1992 WL 696192 (Alaska P.U.C., 1992). *See* n.550 and Exhibit 4, Schedule 1, lines 9-10 for 1996.

[129]*Re Cook Inlet Pipe Line Company*, 2001 WL 1850233 (RCA Oct. 29, 2001). We are restricted to looking only at the opportunity that the Carriers have had to recover, not what they actually recovered. To look at what they actually recovered may violate the rule against retroactive ratemaking. *See* Endnote 6. We note, however, that in this case because of TSM's true-up mechanism the Carriers' have actually recovered what they had the opportunity to recover. *See* Endnote 3 for an explanation of TSM's true-up mechanism.

[130]We find that the 1997-2000 filed rates are not just and reasonable even when measured against benchmark rates calculated using all of the Carriers' inputs except straight-line depreciation. *See* Exhibit 3, Schedule 1.

[131]T-9 (ABJ) 32.

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depreciation to establish rate base would deny them an opportunity to recover their costs. The Carriers' argument turns on whether TSM's revenue requirement has historically been insufficient to cover TSM's stated amounts of "depreciation" while also giving the Carriers a fair opportunity to earn their contemporaneous required return.[132] If TSM generated inadequate allowed rates of return, then TSM's depreciation schedule should arguably not be used in isolation to determine year-end 1996 rate base. Doing so might deprive the Carriers of the opportunity to recover their investment. However, if the revenue requirement under TSM provided the Carriers with a fair opportunity to contemporaneously recover their investment according to the TSM depreciation schedule and earn an appropriate return, then it would be inappropriate to use anything other than the TSM's depreciation schedule to determine rate base for 1997-2000 rates. Doing otherwise could require shippers to pay for the same costs twice.

When the Settlement Agreement was approved, the Carriers represented that depreciation in TSM was investment recovery. In their 1987 brief to the APUC in support of the Settlement Agreement, the Carriers argued that:

> The so-called factored unit-of-throughput *depreciation* profile is an integral element of the overall settlement arrangement. This mechanism permits the TAPS Carriers to *recover* a major portion of their capital investment in the early years of the pipeline's life, when there is clearly sufficient throughput to support *recovery* of the *depreciation charges*.[133]

Other parties to the Settlement Agreement also suggested that the "depreciation" term within TSM was intended for investment recovery. The United States Department of Justice and the State, in support of the Settlement, explained that:

> Four of the eight elements of the Total Revenue Requirement are associated with the *recovery* of a TAPS Carrier's costs: Operating Expenses; the Dismantling, Removal, and Restoration (DR&R) Allowance; *Depreciation*; and the Income Tax Allowance. Two elements, After-Tax

[132] T-6 (WBT) 26.

[133] 7-ABJ-E *(emphasis added)*.

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> Margin and Recovery of Deferred Return, provide for a return on unrecovered capital . . . .[134]

As the PAS urged, "If the amount attributed to a tariff element in the TSM ceiling formula in any given year does not represent the amount for that specific tariff element that can be collected through TSM, what does that number represent and what is it doing in the TSM model?"[135] The plain language of the Settlement suggests that the depreciation schedule in TSM was intended to and has been used to recover investment. We also find based on our review of confidential documents produced during the hearing that the TAPS Carriers themselves viewed TSM depreciation as investment recovery.[136]

There is no reason for us to use the depreciation schedule that might have been adopted had TAPS rates been approved from 1977-1996, rather than the schedule that was used to recover investment. The Carriers must make a persuasive case that the TSM depreciation amounts do *not* represent their opportunity to recover their investment.

(i) The Carriers fail to support the contention that using TSM depreciation charges for calculating rate base is "cherry picking" and denies a reasonable return

The Carriers' use of straight-line depreciation hinges on their contention in this case that the depreciation term within TSM was not really intended to provide the Carriers with an opportunity to recover investment. The Carriers contend that the TSM can be considered only as a package, and that none of its elements has meaning

[134]BWF-4 at 27 (*emphasis added*); *see also* 29-ABJ-W at 16, 19, 21.

[135]P-1 (RAF) at 26-27.

[136]*See*, e.g., 110-RGV-E at RTSXPA 221761, RTSXPA 221768; 116-RGV-E, Bates number RTSXBP 325202 and 325203.

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outside the context of the Settlement.[137] They assert that TSM depreciation is not depreciation;[138] it is only one of the many components of TSM. Carriers contend that only the complete *package* of TSM elements, rather than any individual element, provides the Carriers with an opportunity to recover their investment.[139] The Carriers contend that using the TSM depreciation schedule to determine year-end 1996 rate base thus amounts to "cherry picking." We disagree.

"Cherry picking" is choosing what is desirable for a certain outcome and leaving the undesirable elements. Our role is to choose the most appropriate depreciation schedule based on the record before us.[140] There is no dispute in the record about the amount of depreciation that has been charged for the last twenty years under the rates calculated using TSM. Principles of equity and fairness require us to base our finding on the amount of depreciation that the shippers have been charged to date when we are determining the year-end 1996 rate base. In setting rates for 1997 through 2000, we must insure that shippers do not pay twice for the same Carrier investment. As the PAS suggested, "It is fundamental that historical depreciation taken

[137] *Initial Post-hearing Brief of the Indicated TAPS Carriers*, July 16, 2001, at 54; T-9 (ABJ) at 36.

[138] *See* T-5 (ABJ) 24-25.

[139] The Carriers admit that both "operating expenses" (Tr. (BWF) 2154) and "DR&R" (*see Initial Post-hearing Brief of the Indicated TAPS Carriers, dated July 16, 2001,* at 28-29) as used within TSM have their usual meaning. Accordingly, their claim is really that the remaining elements of the "TSM package" must cover return of investment, return on investment, and income taxes.

[140] Carriers' citation to *Lopez v. Public Employees*, 20 P.3d 568 (Alaska 2001), is not on point. It addresses the probative value of settlements. The court in *Lopez* held that it was not error for the Public Employees Retirement Board to exclude evidence of a settlement agreement from the record. The plaintiff sought to introduce it as evidence of an admission by the defendant and the Board properly excluded it as hearsay. There are no allegations in this case that the Intrastate Settlement Agreement is hearsay.

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by the Carriers to justify tariffs actually collected since the beginning of the pipeline be used in the rates for 1997-2000 no matter what methodology is used."[141]

The Carriers suggest not only that the Settlement must be allowed to continue through 2011 to receive the benefit of their bargain but also that the Settlement fails to fully compensate the Carriers for costs.[142] The Carriers assert that if the TSM depreciation schedule is used in a consistent DOC to set year-end 1996 rate base,[143] then they will be deprived of an opportunity to recover capital costs (which include both return on and of capital investment). The Carriers point out that through 1989, the Original Rate Base portion of TSM earned a 6.4 percent *real* return; New Rate Base continues to earn this 6.4 percent real return.[144] This figure, the Carriers suggest, is far too low given the risks associated with TAPS.[145] The Carriers contend that TSM was designed to "make up" for this underrecovery in the later years of operation through its Deferred Return and Allowance Per Barrel components.[146] Accordingly, the Carriers assert that the TSM must be allowed to run its course so that they can earn an adequate return on their investment.[147]

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[141]PAS Initial Post-hearing Brief at 9.

[142]T-9 (ABJ) 57.

[143]The Carriers acknowledge that a DOC may be "consistent" under virtually any depreciation schedule, (Tr. 1670-71 (ABJ), although they generally use the term "consistent DOC" to refer to their DOC methodology that employs straight-line depreciation.

[144]T-6 (WBT) 26. Dr. Haas, testifying for the State of Alaska, urged that due to details in its application the real return was actually only 5.5 percent overall. The Carriers' reliance on the TSM rates of return as a basis for indicating an actual rate of return is inconsistent with their contention that labels within TSM cannot be relied upon to reflect economic reality.

[145]T-6 (WBT) 26-28.

[146]T-5 (ABJ) 40; T-6 (WBT) 26.

[147]*See* T-1.(ABJ) 4; T-5 (ABJ) 41, 43.

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Tesoro, Williams and the PAS urge, however, that the rate of return provided by TSM is actually far greater than 6.4 percent.[148] The PAS argues, for example, that because the TSM presumes a 100 percent equity capital structure, while its true equity position has been considerably less, TSM actually generates a rate of return that is far greater than 6.4 percent.[149] Further, Williams, Tesoro, and the PAS all argue that the TSM's allowance per barrel (ABP) generates returns on Original Rate Base that are far in excess of what capital markets require.[150] These parties conclude that no "off book" deferred return is required to compensate the Carriers for "underrecovery" in the early years of operation.

~~As we note in Part IV Section C.4.f, a~~ A 6.4 percent real rate of return would often be inadequate to provide TAPS investors with appropriate compensation for the risk that they incur. However, as we discuss in Part IV Section B.1, a 100 percent equity capital structure is also not appropriate in a ratemaking context in which rates must reflect prudently incurred costs. Those conflicting elements, without further analysis, make the Carriers' actual returns indiscernible. The Carriers have failed to provide direct evidence of what they believe their past return to be.[151] Therefore, we

[148]BEW-44; RAF-3 (Revised); *see* JFB-9, line 12.

[149]The concerns about capital structure are two-fold. On the one hand, the actual fact of debt financing and the tax advantages conferred by debt mean that TSM provides an excessive income tax allowance relative to its putative 6.4 percent return. *See* BEW-44. On the other hand, the PAS contends that providing a deferred return to the inflation component of this return for debt-financed capital is inappropriate. *See* P-1 (RAF) 13-14; RAF-5 (Rev.) Schedule 2.

[150]P-1 (RAF) 14; RAF-3; RAF-4; JFB-2 Schedule F; *Williams Alaska Petroleum Inc.'s Post-hearing Initial Brief* at 27; BEW-34; BEW-44.

[151]Tr. 3493-94 (RGV).

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find the Carriers fail to provide sufficient evidence to support a finding that the TSM depreciation schedule has not allowed a sufficient opportunity for them to recover investment.

To verify that we do not deny the Carriers a fair opportunity to recover their investment, in Part V, *infra*, we compare the Carriers' costs of providing service, as measured by a DOC methodology using TSM depreciation charges, with the TSM's annual revenue requirement. We conclude that the Carriers have had an adequate opportunity to recover their investment and earn an appropriate return. Carriers have had the opportunity to earn $9.9 billion in excess of the reasonable and prudent costs of providing service.

(ii) The Carriers' unrecovered investment analysis fails

The Carriers do not provide evidence of the annual opportunity that TSM has provided for earning a rate of return from 1977-1996. Nor do the Carriers provide evidence of the annual achieved returns under the TSM for 1977-1996.[152] Neither do they suggest what returns will be in future years.[153] Instead, the Carriers present a method for determining their "actual" unrecovered investment to date.[154] They assert that this analysis shows that "actual" unrecovered investment is considerably greater

[152]The Carriers admit that they do not provide evidence on achieved returns under TSM. Tr. 3493-94 (RGV).

[153]The Carriers' assertion that achieved returns during 1977-1981 were too low appears inconsistent with their assertion that the internal rate of return generated by the TAPS is relatively insensitive to deviations in throughput from levels expected at the time of the Settlement (ABJ-3), even though from 1990 through 2000 these throughput differences provided Carriers with $760,487 million (nominal dollars) more than anticipated. *See* RAF-6 (Rev.). On its face, this suggests that revenue streams before 1990 are more important to providing the Carriers an adequate return than revenue streams in later years. This appears to conflict with the Carriers' current contention that future-year TSM rates are required to compensate for past inadequate returns.

[154]T-5 (ABJ) 26; RGV-15.

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than the rate base that would result from applying straight-line depreciation from 1977 through 1996.[155] Accordingly, Carriers assert that we should use straight-line depreciation to determine rate base for 1997-2000 to evaluation filed rates.[156]

The Carriers' unrecovered investment analysis, however, is unsuitable for checking the appropriateness of a straight-line DOC rate base. Although it attempts to depict actual investment recovery, actual investment recovery is irrelevant. We provide Carriers only with a reasonable *opportunity* to recover their investment. We do not look to their actual investment recovery. Determining rate base according to actual investment recovery can run afoul of the doctrine against retroactive ratemaking.[157]

Moreover, even if we were to look to "actual" investment recovery the Carriers' method of determining "actual" unrecovered investment is not reliable. The method measures unrecovered investment by subtracting the Carriers' operating expenses, return on remaining investment, and a tax allowance for that return from pipeline revenues. The remaining monies are finally applied to investment recovery. This approach is inadequate for the following three reasons: the Carriers' choice of conservative assumptions are not appropriate for determining actual investment recovery, the Carriers' unrecovered investment analysis produces an implausible result, and the Carriers choice of inputs is flawed.

(aa) The Carriers' conservative assumptions are inappropriate for setting cost-based rates

[155]T-6 (WBT) at 23; T-11 (RGV) 22.

[156]T-10 (WBT) 77. The Carriers seek to determine rate base only for purposes of establishing an appropriate comparative benchmark.

[157]The Carriers appear to agree. *Initial Post-hearing Brief of the Indicated TAPS Carriers,* dated July 16, 2001, at 6-21. The doctrine against retroactive ratemaking prohibits adjusting future rates to make up for past gains or losses. *See* Endnote 6.

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The Carriers assert that their measurement of unrecovered investment is conservative.[158] This "conservativeness" comes from two elements of their method. First, the Carriers state that as a matter of economic theory,[159] under-recovery of return *on* investment should be capitalized and added to rate base,[160] much like AFUDC. The Carriers, however, do not make these capitalizations despite their representation that return was inadequate from 1977 through 1981. Second, the Carriers point out that they include DR&R *revenues*, as provided by TSM, but do not include eventual DR&R *expenses*. The Carriers properly note that this also understates the amount of unrecovered investment.[161]

The Carriers assert that their analysis is intended to measure the "actual" level of unrecovered investment.[162] If so, it should not be a "conservative" measure, but rather an economically appropriate measure. One test of the Carriers' approach, from an economic perspective, is whether it produces credible results when "conservative" assumptions are removed and appropriate ones are employed.

We tested the Carriers' unrecovered investment analysis by removing the "conservative" assumptions.[163] Using the Carriers' suggestions for how inadequate return on investment might be capitalized,[164] and reducing pipeline revenues available

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[158]T-9 (ABJ) 26, 66-68.

[159]"From a theoretical perspective, the appropriate treatment of such an event would be to capitalize the cost-of-service shortfall, and add that amount to rate base, in order to allow the Carriers an opportunity to recover those costs in the future." T-11 (RGV) at 25.

[160]T-5 (ABJ) 20; T-11 (RGV) 29.

[161]T-9 (ABJ) 34, 66.

[162]T-5 (ABJ) 26; RGV-15.

[163]Williams sponsored exhibits during the hearing that attempted this analysis. *See, e.g.,* 139-RGV-W. During cross-examination, the weaknesses in Williams' attempts were revealed. *See, e.g.,* Tr. 3587-90 (RGV).

[164]141-RGV-T; Tr. 3612-16 (RGV).

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to pay for investment recovery by TSM's DR&R allowance, we calculate the resulting purported level of unrecovered investment. Exhibit 5 shows that, according to the Carrier's framework, there has been *no* recovery of investment by the end of 1996.[165] Using the Carriers' unrecovered investment analysis, capitalized under-recovery continues to grow and Carrier rate base at the end of 1996 is more than 60 percent greater than the rate base at the beginning of pipeline operations.[166] This result is implausible.

It is not plausible that the Carriers would agree to a settlement that would not allow investment recovery. The TAPS generated over $50 billion in revenue from 1977-1996; operating expenses for that period were roughly $10.7 billion.[167] We cannot accept that the Carriers have nevertheless managed to recover *none* of the original investment. Although the Carriers and the State represent that significant amounts of unrecovered investment represent a good deal for the State (and, by extension, shippers),[168] we do not believe that the Carriers' shareholders would tolerate such a settlement.

(bb) The Carriers' unrecovered investment analysis is conceptually flawed

The Carriers' methodology inconsistently mixes regulatory and non-regulatory concepts and approaches. The Carriers incorporate accumulated deferred income taxes (ADIT) in their analysis of actual unrecovered investment. Doing so

[165]Exhibit 5, Schedule 1, Line 15.

[166]Exhibit 5, Schedule 6, Line 13.

[167]11-ABJ-E.

[168]Tr. 3789-90 (JEH); *see* Tr. 2032-33 (ABJ).

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reduces the amount of unrecovered investment in 1996 by nearly $3 billion.[169] ADIT is a regulatory construct. It reflects money that Carriers may collect in rates to pay for taxes that are not yet owed. ADIT exists because of differences between regulatory and tax depreciation schedules.[170] Therefore, ADIT can exist only when a firm has a regulatorily approved depreciation schedule. The TAPS had none. Therefore, it did not generate such tax timing differences.[171] As an economic matter, ADIT cannot *actually* exist in the way that the Carriers have presumed because there have not been tax timing differences of the sort that they model. The Carriers' reliance on this regulatory concept is inconsistent with their failure to adopt the fundamental regulatory practice that return of investment is recovered before return on investment.

The Carriers' unrecovered investment analysis also creates contradictions. If the Carriers' unrecovered investment analysis[172] is meant to describe "actual" unrecovered investment, then the use of a rate of return that the Carriers believe they *should* have earned is inappropriate because as demonstrated in Exhibit 5 this leads to the result that not all investment is recovered. Investors would not tolerate that. On the other hand, if the Carriers' unrecovered investment analysis[173] is meant to describe the investment that *would* have been recovered had an appropriate regulatory regime been in place, then the methodology of taking return *on* investment (profit) before return *of* investment (depreciation) is inappropriate. Therefore, the Carriers'

[169]*See* BEW-T (W-3) 7-8; 143-RGV-C, RGV WP6.xls, Schedule 5 l. 15 wherein ADIT affects the return on investment that Carriers allege they should receive in any given year.

[170]BEW-T (W-3) 7.

[171]Firms that are not economically regulated generate no ADIT because no timing differences exist between regulatory and tax depreciation schedules.

[172]RGV-15.

[173]*Id.*

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unrecovered investment analysis fails. It should not be used to check the reasonableness of a DOC rate base.

(cc) The Carriers' inputs are flawed

We also find that the inputs that the Carriers use in their methodology are inappropriate. As explained in Part IV Section B.1 and B.3, (*infra*) respectively, the Carriers' choices for capital structure and rate of return are inappropriate. If appropriate inputs are chosen, then the Carriers' approach to measuring unrecovered investment, even when the Carriers' "conservative" assumptions are corrected, suggests that the Carriers had already completely recovered their investment by 1989[174] and by 1996 had earned an additional $8.4 billion in excess of costs.[175] Hence, the Carriers' unrecovered investment analysis fails to prove that using the TSM depreciation schedule to determine year-end 1996 rate base would deprive the Carriers of a reasonable opportunity to recover investment.

b) The Carriers' Additional Arguments for Using Straight-line Depreciation Are Unpersuasive

We now consider three additional Carrier arguments to support the use of straight-line depreciation for determining year-end 1996 rate base. The Carriers assert that straight-line depreciation is appropriate because: 1) the Uniform System of

[174] *See* Exhibit 6, Schedule 1, line 19.

[175] *See* Exhibit 6 Schedule 1, line 17. A comparison of Exhibit 6 with 143-RGV-C, RGV Workpaper 6, Schedule 10 reveals a failing in the Carriers' methodology and helps explain the widely differing results concerning unrecovered investment. By presuming that revenues go to return on investment before return of investment, the methodology effectively maximizes the tax payments purportedly made to Federal and State governments. Thus, the Commission's finding on appropriate capital structure and rate of return, when coupled with a Carrier-style unrecovered investment analysis, suggests a cumulative income tax allowance of something over $9 billion. *See* Exhibit 6 Schedule 1, Line 14. The Carriers' capital structure and rate of return, however, produces a cumulative tax allowance of over $17 billion. *See* RGV Workpaper 6 Schedule "Imputed Depr Rates," Line 9.

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Accounts requires using it; 2) the APUC used it in *Cook Inlet* and *Kenai,* and 3) the APUC accepted straight-line depreciation for TAPS when it accepted the 1982 depreciation stipulation. As further explained below, none of these rationales justifies using straight-line depreciation.

(i) The use of straight-line depreciation in FERC's Form 6 does not make straight-line depreciation appropriate for ratemaking on TAPS

The Carriers urge that benchmark rates should use straight-line depreciation because the FERC's Form 6 records straight-line depreciation. We disagree. The FERC requires all pipeline companies to file a FERC Form 6 so that FERC can compare the costs of different pipelines.[176] The FERC also requires pipeline companies filing FERC Form 6 to use the Uniform System of Accounts. The Uniform System of Accounts requires pipeline companies to use straight-line depreciation unless an alternative is approved.

Carrier witnesses admit that they do not use the straight-line depreciation shown in FERC Form 6 ratemaking purposes. Carrier witness Smith explained that "[t]he Form 6 was not intended as it was created to be a ratemaking document . . . ."[177] When asked whether the FERC would use FERC Form 6 to determine the components of a methodology, witness Smith responded, "No, the FERC Form 6 is—is an accounting and regulatory document. It is not a—a manual on how to develop a rate base."[178] When Carrier Witness Folmar was asked specifically if the numbers reported on the FERC Form 6 could be used for rate purposes, he responded, "With the

[176]Tr. 2411-12(LPS).

[177]Tr. 2370 (LPS).

[178]Tr. 2473 (LPS); *see also* Tr. 2371(LPS).

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approval—or with the acceptance of TSM agreements, no."[179] He stated that the numbers used in the Uniform System of Accounts were regulatorily reported numbers but were not used in setting rates.[180] Finally, Carrier witness Van Hoecke encouraged us to rely on ratemaking numbers and not on accounting requirements.[181]

Therefore, although the FERC Form 6 may provide helpful information to the FERC for indexing pipeline companies' costs and perhaps for measuring changes in pipeline rates, we find that it is not a compelling reason to choose straight-line depreciation as the appropriate depreciation schedule for ratemaking on TAPS.

(ii) *Cook Inlet* and *Kenai* do not require us to adopt straight-line depreciation

The Carriers assert that the APUC holdings in *Cook Inlet* and *Kenai* also support use of straight-line depreciation to compute a TAPS rate base against which to measure the rates under investigation. In both *Cook Inlet* and *Kenai* a rate base had to be established in the middle of the life of the line. In *Cook Inlet,* Cook Inlet Pipe Line Company's rates were calculated under the ICC valuation methodology. The ICC valuation methodology allowed companies to include depreciation charges as an element of rates. Depreciation charges were designed to recover the cost of the property over time and were calculated on a straight-line basis. Under the ICC valuation methodology, rate base was not calculated solely by deducting those same depreciation charges from the original cost of the property. Because straight-line depreciation is included in both ICC valuation and DOC rates, the amount of accumulated depreciation under both methodologies is the same.

[179]Tr. 2174 (BWF).

[180]Tr. 2301 (BWF).

[181]Tr. 3146 (RGV).

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When the APUC established a DOC rate base in the middle of the life of the Cook Inlet line, it used the actual straight-line depreciation charges included under the ICC valuation methodology to calculate the new DOC rate base.[182] Therefore, rather than providing precedent for use of straight-line depreciation when establishing a rate base in the middle of the life of the line, *Cook Inlet* more precisely stands for the proposition that the actual depreciation charges should be used for calculating future rates.

In *Kenai,* the APUC could not determine which methodology the Kenai Pipe Line Company (KPL) had used to calculate prior intrastate rates. The APUC presumed that prior intrastate rates were calculated under the ICC valuation methodology and under those facts, the APUC concluded that the same straight-line depreciation that was included or was includable in rates computed under the ICC valuation methodology should be used in calculating the new rates. The APUC stated:

> Under the valuation methodology depreciation was included in revenue requirement to the same extent it would have been under DOC. Thus, amounts that have been deducted from the DOC rate base through depreciation have actually been recovered by KPL.[183]

The APUC ordered the use of straight-line depreciation in *Kenai* and *Cook Inlet* because straight–line depreciation was the depreciation actually used to calculate prior rates. *Kenai* and *Cook Inlet*, therefore, stand for the proposition that when establishing a DOC rate base for an existing pipeline in the middle of the operating life we should apply the depreciation actually used to establish prior rates rather than the depreciation that would or should have been used. Therefore, the Carriers' citations to

[182] *Re Cook Inlet Pipe Line Company*, 6 APUC 527, 536 (1985).

[183] *Re Kenai Pipe Line Co.*, 12 APUC 425, 440, 1992 WL 696192 (Alaska P.U.C., 1992) *(footnote omitted)*.

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Cook Inlet and *Kenai* as precedent for using straight-line depreciation in this case to calculate a DOC rate base are not persuasive. Instead *Cook Inlet* and *Kenai* support using TSM depreciation charges to calculate a mid-stream rate base because that depreciation schedule was used to establish the past rates charged to shippers.

(iii) The APUC's acceptance of a depreciation stipulation for TAPS in an uncontested settlement is not binding once a subsequent settlement supersedes it and a non-stipulating shipper contests rates

The Carriers assert a third rationale for using straight-line depreciation to calculate a rate base against which to test filed rates: the FERC and the APUC accepted a 1982 Depreciation Stipulation that adopted a straight-line depreciation schedule for TAPS.[184] The straight-line depreciation schedule was approved subject to conditions by the FERC and the APUC as an uncontested stipulation;[185] it was not altered or withdrawn.[186]

The APUC accepted the depreciation stipulation in 1982 in the context of the then pending (original) TAPS litigation. The unresolved depreciation issue at that time was the life of the line, not the depreciation rate.[187] Although the APUC accepted the depreciation stipulation as in the public interest, it did not adjudicate rates and never approved the depreciation stipulation as producing just and reasonable TAPS rates under AS 42.06.370(a).[188]

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[184] *Initial Post-hearing Brief of the Indicated TAPS Carriers*, dated July 16, 2001, at 12-14.

[185] *Re Construction of the Trans Alaska Pipeline*, 4 APUC 338 (1982) at 339.

[186] BWF-2, Sec. III-5.

[187] *Re Construction of the Trans Alaska Pipeline*, 4 APUC 338 (1982) at 339.

[188] *Cook Inlet Pipe Line Co. v. Alaska Public Utilities Comm'n,* 836 P.2d 343, 353 (Alaska 1992).

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The 1982 Depreciation Stipulation might support the Carriers' position if this case were concerned with whether current shippers are "disadvantaged by the rate pattern established by TSM,"[189] or would have paid rates less favorable "than those they would have paid in the absence of TSM."[190] However, we are not engaged in a hypothetical exercise to determine what the rate base would have been if TSM had never been used to set rates.[191] Rather, we choose the depreciation schedule that -- when applied from 1977 through 1996 – actually provided the Carriers with an opportunity to recover their capital investment and yet will not force shippers to pay for that investment twice.[192]

The record reveals unequivocally that the Carriers have filed tariffs using the TSM depreciation schedule. When asked if Tesoro's rates have been calculated under TSM, Carrier witness Adam B. Jaffe responded, "That is my understanding, yes."[193] Similarly, when Carrier witness Billy W. Folmar was asked what depreciation schedule the Carriers used to set rates, he responded "TSM Depreciation."[194]

[189] *TAPS Carriers' Prehearing Brief*, April 5, 2001, at 3.

[190] *Initial Post-hearing Brief of the Indicated TAPS Carriers*, July 16, 2001, at 40.

[191] In *Re Amerada Hess Pipeline Corporation*, Order P-97-4(79) (Order 79), dated April 10, 2000, we reiterated the APUC's warning when it originally allowed TSM rates that TSM rates would be subject to the same standards and procedures as if the Settlement had not been accepted. *Id.*, at 4. In saying this we did not imply that the Carriers should support their filed rates as if actual history had not transpired. In the context of Order 79, our meaning was clear: No presumption should be made that filed rates were just and reasonable simply because the Settlement had been accepted. In Order 79, we made clear that we intended to review the TAPS filed rates using the same standards and procedures that we use to review any filed rate.

[192] *Re Cook Inlet Pipe Line Company*, 2001 WL 1850233 (RCA Oct. 29, 2001).

[193] Tr. 1717 (ABJ).

[194] Tr. 2302 (BWF).

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The filings that the Carriers have made confirm that they have used an accelerated depreciation schedule for calculating intrastate rates.[195] The Carriers and the State represented at the time of the Settlement that TSM depreciation was investment recovery. Internal company documents also strongly suggest that the Carriers have viewed TSM depreciation as investment recovery.[196]

The Carriers nonetheless assert that the rates charged under the Settlement are consistent with the 1982 Depreciation Stipulation because the accelerated depreciation schedule in the Settlement only calculates depreciation for TSM ceiling rates.[197] They reason that if we are looking at rates as "if the Intrastate Settlement Agreement had not been accepted" then the only depreciation schedule truly accepted by the APUC is the 1982 Depreciation Stipulation.

We find this argument unpersuasive. TSM has been used to establish rates for more than twenty years. Tesoro witness Williams testified that "I am not aware of any instance where any one has been able to go back and change depreciation that has already been collected in rates."[198] Williams went on to testify that he could not think of any circumstances where FERC would not consider the depreciation already included in rates to be recovered investment for the purposes of rate setting.[199] When Tesoro witness Brown was asked if he had ever seen "an instance in which the

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[195] *See* 30 BWF-E.

[196] *See*, e.g., 110-RGV-E at RTSXPA 221761, RTSXPA 221768; 116-RGV-E at RTSXBP 325202-03.

[197] However, the Settlement that incorporated TSM for use in setting maximum rates provides in Section II-5 that an earlier stipulation can continue to be used only if it is not inconsistent with TSM. *See* BWF-2 III-5. Williams witness Johnstone testified that the 1982 Depreciation Stipulation was inconsistent with TSM because it has a different depreciation schedule than was used to set rates on the TAPS and calculate refunds. Tr. 4207-08 (WBJ).

[198] Tr. 4910 (KAW).

[199] Tr. 4911 (KAW).

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accumulated depreciation was based on something other than the amounts actually collected in rates," he testified: "I began my career in the industry in ratemaking in 1957, and I have never seen anything like what is being proposed by the TAPS Carriers and I really feel that if it were proposed to the FERC the first thing they would do would be to disallow that proposal."[200] PAS witness Fineberg explained

> In the Carriers' hypothetical DOC tariff for 1997-2000, the replacement of the actual, hyper-accelerated collections under the TSM with hypothetical, Form 6 depreciation reduces the historical capital actually recovered, thereby artificially increasing the remaining rate base. This is an inappropriate substitution based on illusory data. TAPS Carriers in fact had already recouped the vast majority of the their original investment by 1997 through TSM's hyper-accelerated depreciation schedule. For this reason, the comparison [of the Carriers' filed rates to benchmark rates] proposed by the Carriers cannot be considered valid.[201]

The 1982 Depreciation Stipulation is therefore not relevant to establishing a year-end 1996 rate base. It was superceded and has never been used to calculate either ceiling or filed TAPS rates.

We note that the depreciation amounts that yield TSM maximum ceiling rates provided the Carriers with the opportunity to fully recover their investment.[202] If the Carriers have voluntarily chosen to file rates that are less than TSM ceiling rates and thereby curtail their opportunity, the Carriers nevertheless have had an opportunity to recover and we cannot require shippers to pay for that opportunity twice. Therefore, the only depreciation schedule that can be applied and meet the twin goals of providing Carriers the opportunity to recover their investment and also does not force shippers to

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[200] Tr. 5389 (JFB).

[201] P-1 (RAF) at 30.

[202] *See* n.550. We have also determined that the Carriers have had ample opportunity to both recover their investment and earn a reasonable contemporaneous return. *See* Part V Section B. and Exhibit 7.

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face paying for that investment twice is the depreciation schedule used in calculating past tariffs, *i.e*., the TSM depreciation schedule.

In addition to the legal and logical arguments discussed above, the Carriers use of straight-line depreciation to calculate their benchmark rates and to perform an unrecovered investment analysis is untenable. Doing so provides the Carriers with overrecovery of investment and potentially forces shippers to pay for that investment twice. We therefore find that the Carriers have failed to adequately support the filed rates as just and reasonable.

To confirm this finding, in the next section we apply a DOC methodology from the beginning of TAPS operation to year-end 1996 to establish a year-end 1996 rate base from which to calculate 1997-2000 rates as required by *Cook Inlet*[203]. In doing so, we confirm that the Carriers rates are 57 percent higher than just and reasonable rates.

IV. WE COMPUTE A $669 MILLION YEAR-END 1996 RATE BASE USING DOC METHODOLOGY CONSISTENTLY APPLIED FROM THE BEGINNING OF TAPS OPERATIONS

A DOC methodology applied from the beginning of the life of the line is the most reliable method for establishing a rate base in the middle of the operating life of a line.[204] No party in this proceeding disagrees. We review the record to determine the appropriate inputs for calculating the year-end 1996 intrastate TAPS rate base using a DOC methodology.

The DOC methodology formula is RR = [r (V-D)] + [OE + d + t] where

RR = revenue requirement

[203] *Re Cook Inlet Pipe Line Co.*, 6 APUC 527 (1985).

[204] *Re Cook Inlet Pipe Line Co.*, 6 APUC 527 (1985).

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r = after-tax return

V = sum of prudently incurred capital expenditures, allowance for funds used during construction (AFUDC), and working capital adjusted for Accumulated Deferred Income Tax (ADIT) and retirements

D = accumulated depreciation, adjusted for retirements

OE = operating and maintenance expenses

d = annual depreciation charges

t = taxes.

If an oil pipeline must be dismantled at the end of its useful life, a pipeline carrier is also entitled to recover the reasonable dismantling, restoration and removal (DR&R) costs.[205]

In the formula above, the rate base equals V-D. In the following sections, we establish the elements necessary to calculate rate base: A) The total amount of prudent investment (Carrier property balances) including capital and retirements, B) AFUDC amounts when the associated property is first brought into service; C) ADIT, and D) the depreciation schedule used to determine accumulated depreciation from 1977-1996.

A. Carrier Property Balances

Rate base consists of both depreciable and non-depreciable property in service. In this case non-depreciable property consists of Working Capital and Land.[206]

[205]TSM includes DR&R. For purpose of this analysis, DR&R is not considered because this analysis establishes rate base. DR&R, however, is relevant when discussing rates. *See* Part VI, Section E.

[206]*See, e.g.,* 143-RGV-C, RGV-14 WP 3, TAPS-RGV WP3.xls, Schedule 2; Line 13; 225-JFB-T, Workpaper 2, Line 13; 30-BWF-E ('77-'83) Lines 82 and 83; 31-BWF-E ('84-'00) Lines 82-83.

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Carrier property balances that may earn AFUDC[207] include both depreciable property and land. An allowance for AFUDC is a reasonable element to include in rates because it is appropriate to compensate for the capital costs incurred constructing the pipeline before it is placed into service.

We first determine initial Carrier property balance. The record presents four Carrier property issues: 1) what the actual level of capital expenditures in any given year should be; 2) whether a significant portion of Carrier expenditures during construction, $450 million, should be removed from rate base because of imprudence; 3) what the appropriate allowance for Working Capital should be, and 4) how to calculate property retirements. We address each in turn.

1. Capital Expenditure Amounts

The parties do not agree on the actual level of capital expenditures in any given year. Tesoro relies upon the capital expenditure data contained in the TSM spreadsheet filings for 1984-2000. For the years before 1984, Tesoro relies on data[208] contained in the TSM-6 illustrative model.[209] The Carriers and Williams use the

[207]AFUDC is Allowance for Funds Used During Construction. The amount of accumulated AFUDC for a particular item under construction is added to rate base at the same time the CWIP (Construction Work in Progress) balance attributable to that item is transferred to rate base, i.e., when the property is placed in service. BONBRIGHT, JAMES C., PRINCIPLES OF PUBLIC UTILITY RATES 246-253 (1988).

[208]Tr. 5129 (JFB).

[209]31-BWF-E; *see also* BWF-6 at 5-12; T-8 (BWF) 2. The TSM-6 model was attached to the *Explanatory Statement of the State of Alaska and the United States Department of Justice in Support of Settlement Offer* (BWF-4). TSM-6 shows the derivation of various rate base balances that were embodied within TSM as of 1984, by tracing various Carrier property balances back to 1968. The illustrative model for how TSM was intended to operate (BWF-3 at 56) agrees with TSM-6 for 1984 and 1985 (the years of overlap). BWF-3 at 34.

TSM-6 shows, among other things, the derivation of TSM's 1984 starting AFUDC balance (BWF-3 at 38), the annual depreciation taken during 1977-1983 to derive the Settlement's starting rate base in 1984 (BWF-3 at 19), and the amortization schedule of the $450 million in excluded costs (BWF-3 at 14).

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property balance data entered into the record in earlier TAPS proceedings for years before 1977, where no annual records were available.[210] The Carriers and Williams rely on the property balances that the Carriers filed in their annual reports with this Commission and the FERC for years after 1977.

The difference between the two sets of capital expenditure data in any given year is occasionally substantial. For example, in the first half of 1977, the Carrier-sponsored property additions data are $39.8 million more than the figure sponsored by Tesoro.[211] In 1978, the Carrier-sponsored property addition figure is $56.1 million less than the one sponsored by Tesoro. However, for twenty-three out of thirty-three years, the difference is less than $1 million.[212]

On a cumulative basis, the Carrier-sponsored property addition data exceed Tesoro's during 1973-1977, reaching a peak surplus level of $56.4 million mid-way through 1977. A sizeable cumulative deficit is then accrued from 1978-1982, reaching a peak cumulative deficit of $21.5 million in 1979. From 1983-1996 the cumulative difference between the two sponsored data sets remains below $1 million.[213] The total property balances are thus cumulatively essentially the same. The choice of one set of property additions over another primarily affects the size of the AFUDC balance. Because the Carrier property addition data is greater in the earliest years,

[210]T-7 (RGV):4. As indicated below, Williams follows TSM and makes a downward adjustment of $450 million to the Carrier property balances; the Carriers do not.

[211]212-FJH-T.

[212]*See* 212-FJH-T.

[213]212-FJH-T.

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using the Carriers' sponsored property addition data produces somewhat greater AFUDC balances than the data sponsored by Tesoro.[214]

The record provides no guidance for why the Carriers' representation of additions to Carrier property are less reliable than those sponsored by Tesoro. It is not clear how additions to Carrier property are determined within the context of TSM; however, the amounts reported in FERC Form 6 and the Carriers' annual reports must comply with the Uniform System of Accounts for oil pipelines. We, therefore, adopt the Carrier property balances because they are more reliably based on books and records that conform to the Uniform System of Accounts for oil pipelines.[215]

2. Alleged Imprudent Expenditures

The voluminous Phase II record of the original TAPS litigation which is not part of the record in this case addresses whether some of the capital expenditures on the TAPS were prudently incurred. The parties agreed in the Settlement to reduce the original Carrier rate base by $450 million.[216] The Settlement states that this "reduction in investment base is amortized based on petroleum delivered during the years 1978 through 1984."[217]

[214]For purposes of establishing just and reasonable rates under the Alaska Pipeline Act, we recognize that this may result in slightly higher rates than if we chose the capital expenditure inputs utilized by Tesoro.

[215]A schedule of these property balances can be found at Exhibit 8.

[216]The State asserts that if we fail to approve the TSM filed rates then we open the issue of whether all of the original capital expenditures on the TAPS were prudently incurred. To the extent this assertion may be accurate, no party offered evidence in these consolidated dockets to support a finding of imprudent original expenditures. Therefore, we do not address this issue.

[217]BWF-3 at 14.

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Williams and Tesoro, in sponsoring inputs for their respective DOC methodologies, both reduce the original Carrier capital expenditures by this $450 million.[218] The Carriers object.[219]

We find that the original capital expenditures should not be reduced by $450 million. To do so unfairly confers benefits of the Settlement outside the context of the Settlement. Neither Tesoro nor Williams have put forward a substantive case in this docket to show that $450 million in construction expenditures were imprudently incurred. The record is insufficient to support a finding on this issue. Therefore, we include all Carrier capital expenses in rate base.

3. Working Capital

Working capital is generally provided in rate making to allow the utility to pay its bills in advance of receiving revenues because the utility must "front" the money for its bills before it gets paid. This "fronting" has a cost, the time value of money. A working capital allowance is therefore included in rate base for purposes of determining the overall return. Working capital does not earn AFUDC, nor is it considered depreciable property.

The Carriers' working capital figures come from their FERC Form 6 filings. Carriers explain that, pursuant to a stipulation in the original TAPS rate case, no cash working capital component is included.[220] Instead, their working capital figures reflect "the sum of balances for Oil Inventory, Materials and Supplies, and Prepayments."[221]

[218]Tr. 4551 (BEW); ABJ-20.

[219]*See* 225-JFB-T; 189A-BEW-T.

[220]T-7 (RGV):11.

[221]T-7 (RGV):11.

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Williams adopts the Carriers' working capital figures.[222] Tesoro includes the TSM figures for working capital within their determination of the appropriate level of non-depreciable plant.[223]

No clear pattern exists showing one set of numbers being consistently higher or lower than the other. On a cumulative basis, Tesoro's working capital figures are $53.96 million more than the Carriers through 2000.[224] The record contains no rationale for why one set of working capital figures is more appropriate than another. Because no party protested the Carriers' inclusion of a working capital allowance in rate base, we permit its inclusion. Further, we adopt the Carriers' working capital figures, as no rationale for why the TSM figures might be more accurate was provided.

4. Property Retirements

When property is retired, or taken out of service before being fully depreciated, it is removed from rate base because it is no longer used and useful in providing service. The Carriers and Williams sponsor property retirements data based on the Carriers' FERC Form 6 annual filings.[225] Tesoro relies on retirements data from the TSM spreadsheet filings for 1984-2000. For years before 1984, Tesoro relies on data contained in the TSM-6 illustrative model.[226] Neither party contests the others' figures.

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[222] 189A-BEW-T Workpaper BEW_R_RGV WP1 DR 22RE.xls, Schedule 5, Line 14.

[223] 225-JFB-T, Workpaper 2, l. 13; 30-BWF-E ('77-'83) ll. 82-83; 31-BWF-E ('84-'00) ll. 82-83.

[224] A schedule of the parties' positions can be found at Exhibit 9.

[225] 143-RGV-C, Workpaper TAPS-RGV WP3.xls, Schedule 12 and 189A-BEW-T Workpaper BEW_R_RGV WP1 DR 22RE.xls, Schedule 12, respectively.

[226] 225-JFB-T.

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The TSM property retirements data shows only "net proceeds" from retired property.[227] The record fails to explain how these net proceeds were calculated or how they reconcile with the FERC Form 6 data. TSM treats property retirements in a non-standard manner.[228] Without understanding this approach, we cannot rely on it. We therefore use the FERC Form 6 property retirements data because it is better supported and more transparent.[229]

B. AFUDC

Determining unamortized AFUDC to be included in year-end 1996 rate base requires establishing an appropriate overall rate of return for each prior year of pipeline construction and planning. The overall rate of return is determined by the embedded (or weighted average) cost of debt and the then-current market required return on equity. To determine these elements, we establish the historical: 1) capital structure, 2) cost of debt, 3) return on equity, and 4) rate of return adjustments necessary to compensate for any special risks associated with TAPS. These historical factors are rarely determined in a rate case.[230] Nonetheless, because no rate base has been previously established for TAPS we must make these determinations based on the record in order to correctly set the necessary AFUDC and rate base to determine just and reasonable rates for the protest period.

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[227] 236-JFB-T, 697.

[228] 236-JFB-T, 698.

[229] These data are shown at line 5 of Exhibit 8. As explained in Part IV Section C.2, for 1986-2000 we relied on the Carriers' annual reports to obtain details on the vintage year of property retired. In doing so we found minor discrepancies between the Carriers' sponsored retirements data and those contained within their annual reports. We adopt the annual report data, noting that on a cumulative basis the differences with the Carriers' sponsored data are not material.

[230] As Tesoro's witness stated: "Yes, it is unusual and frankly I've never been in a backcasting mode before. But then again this is a very unusual proceeding." Tr. 5080 (FJH).

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1. Capital Structure

A regulated firm's capital structure affects overall rates. Investors pay income taxes for return on equity, but not for cost of debt. Shippers therefore pay a tax allowance as part of the tariff to "cover" return on equity so that equity investors are made whole after taxes are paid. As a witness for the TAPS Carriers explained during the Phase I litigation: "Under regulation an initial judgment would be made concerning the reasonableness of the capital structure. This judgment would be necessary because of tax advantages on debt capital."[231]

In general, the greater the proportion of equity, the greater the tax allowance that shippers pay. Because a regulated firm is allowed to recover its cost of service, it may have little incentive to choose a capital structure that minimizes costs. Accordingly, regulated entities, especially those not owned by the customers it serves, are not provided a free hand with which to determine capitalization for purposes of ratemaking. We determine the appropriate capital structure for ratemaking by applying a stand-alone model to TAPS.[232]

In the early years, TAPS was heavily financed with debt.[233] TAPS debt financing was guaranteed by parent companies.[234] The actual market response to the capital structure of the subsidiaries is thus not a good guide to how capital markets would view the risks associated with the TAPS as a stand-alone enterprise; indeed,

[231]WBT-56 (Olson) 3.

[232]*See supra* Part III Section B(4)(6).

[233]In the 1978 test year of the original Phase I litigation, the actual capital structure of the pipeline subsidiaries ranged from 74 percent to 96 percent debt. 67-WBT-E (Parcell) RTSTXX 75023.

[234]Tr. 4408 (JSG).

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markets would not have permitted a stand-alone pipeline to be financed with over 98 percent debt.[235]

In more recent years, the TAPS pipeline subsidiaries have been almost entirely financed with equity capital from their parents.[236] A 100 percent equity capital structure is also inappropriate for a regulated pipeline that is many years from the end of its life.[237] We find that the actual capital structures of the TAPS pipeline companies therefore should not be used to set rates.

The TAPS Carriers propose using instead the respective parent company capital structures.[238] On a composite basis, the parent capital structure ranges from 55

[235]In the original Phase I litigation this point was disputed. State witness Parcell urged that "[f]rom an economic standpoint, the Consent Decree and its effects do not create an incentive to finance predominantly with debt." *Quoted in* WBT-27 (Gary) at 25. Parcell then argued that therefore actual financing could be used as a guide to what financial markets would support. Carrier witness Gary, however asserted that the actual financing of the TAPS reflected the incentives that the ICC's Valuation Methodology and the Elkins Decree created. The Valuation Method provided very large returns to equity if the pipeline company was heavily leveraged. Gary went on to urge that capital markets would not support such quantities of debt in a stand-alone enterprise. WBT-27 (Gary) 24-26.

We agree with the APC's prior finding in *Re Exxon Pipeline Company,* 1 APUC 580, 1980 WL 100772 (Alaska P.U.C., 1980) that the actual financing of the pipeline was indeed a function of the Elkins consent decree and so should not be taken as a guide to how a prudently managed stand-alone pipeline w*ould* be financed, nor to what financial markets would support.

[236]Tr. 2765 (WBT).

[237]None of the parties sponsor a 100 percent equity capital structure for the later years of the pipeline's life. *See* FJH-T (E-2) 22; JSG-T (W-2) 9; WBT-38. Gary, however, suggests that a truly stand-alone TAPS without parent guarantees could only have been financed with 100 percent equity. WBT-26 (Gary) 19. We consider the arguments for this proposition, and found otherwise in Section IV, B.1.b and c.

[238]Exhibit 10 contains a summary of the Carriers' position relying on data from WBT-38.

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to 78 percent equity between 1968 and 2000;[239] the average capital structure over that period is 68 percent equity. The Carriers assert that the parent company capital structure should be adopted because it is consistent with past APUC[240] and FERC precedent;[241] it is more than fair to shippers because TAPS could not have been financed with anything other than 100 percent equity on a stand-alone basis;[242] it is within a zone of reasonableness; and adopting a different capital structure denies the Carriers needed managerial discretion.[243]

Williams also proposes using the parent company capital structure for 1968-1996. Williams explains that, for purposes of calculating AFUDC during 1968-1996, it is the only capital structure that was available during those years.[244] Nevertheless, Williams suggests that TAPS could have been financed on a stand-alone basis with something like a throughput guarantee.[245]

Tesoro asserts that the TAPS could have been financed on a stand-alone basis with considerably less than 100 percent equity if the owners of the pipeline secured long-term contracts with shippers.[246] Tesoro urges adopting a hypothetical

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[239]*Initial Post-hearing Brief of the Indicated TAPS Carriers,* dated July 16, 2001, at 43.

[240]*Initial Post-hearing Brief of the Indicated TAPS Carriers*, dated July 16, 2001, at 42-43.

[241]*Id*.

[242]67-WBT-E (Parcell) RTSTXX 75023

[243]*Initial Post-hearing Brief of the Indicated TAPS Carriers*, dated July 16, 2001, at 43.

[244]*See* Tr. 4385 (JSG) and JSG-T at 37.

[245]*See* Tr. 2833-35 (WBT). (Williams' counsel suggests in hypothetical questioning to Carrier witness Tye that the TAPS could have been financed on a stand-alone basis with something like a throughput guarantee.)

[246]Tr. 5045-5046 (FJH).

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capital structure that reflects a stand-alone pipeline and industry norms.[247] Tesoro proposes a capital structure of 50.5 percent equity based on the average capitalization of publicly traded oil and gas pipeline companies.[248] Tesoro provides evidence that this is consistent with a) historical data on how oil pipelines were financed from 1966-1975,[249] b) the capital structure adopted by the APC in *Re Exxon Pipeline Company*,[250] and c) the actual average capitalization of pipeline companies today.[251] Tesoro concludes that a stand-alone pipeline could have been financed with 49.5 percent debt and 50.5 percent equity.[252]

In determining capital structure for ratemaking, regulators should set a capital structure that reflects the riskiness of the project and allows the company to attract new investors. "The capital structure ratios employed should be consistent with the prospective level of business risk of the enterprise and with similar risk companies whose capital structure ratios have found acceptance in the marketplace."[253] Regulators most often approve a regulated pipeline's actual capital financing, because it generally reflects the market determination that investors have found the actual capital structure acceptable. However, in cases such as this one where the actual financing may be inappropriate, regulators approve a capital structure that produces a reasonable revenue requirement, consistent with the goal of allowing the regulated entity to

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[247] *Tesoro Alaska Company's Initial Posthearing Brief*, filed July 18, 2001, at 29.

[248] Tr. 5044 (FJH).

[249] 183-JSG-W.

[250] *Re Exxon Pipeline Co.*, 1 APUC 580 (1980); Tr. 5035-5036 (FJH).

[251] FJH-3 at 1. Williams also suggests that the TAPS could have been financed on a stand-alone basis with at least 50 percent debt (*see* Tr. 4423 (JSG)), as did the United States Department of Justice during the original TAPS litigation. 66-WBT-E (Roseman) 52.

[252] Tr. 5044-46 (FJH).

[253] FJH-T (E-2) at 3.

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continue to attract new funds.[254] The parties agree that the TAPS' actual capital structure is inappropriate and a hypothetical capital structure should be adopted.[255]

a) Parent Capital Structure Is Not the Appropriate Capital Structure for Regulating TAPS

The Carriers assert that APUC and FERC precedents direct us to adopt the parent company capitalization. The Carriers note that our predecessor agencies have historically used parent company capital structures for pipeline regulation, citing decisions in *Kenai*, *Cook Inlet* and *Re Exxon Pipeline Company*.[256] Further, the FERC's general practice is to adopt the parent company capital structure when that of the subsidiary is inappropriate. These precedents, however, are distinguishable and are not applicable to this case.

First, in *Kenai*, the APUC approved a parent company capital structure because all of the parties before it agreed that such a structure was appropriate. The record did not support any other finding. In this case, the parties do not agree that parent company capital structure is appropriate and the record supports a finding that the parent capital structure is not appropriate.

Second, the Carriers note that in *Cook Inlet* the APUC adopted a 75 percent equity position, a hypothetical capitalization that produces a result that is broadly consistent with the Carriers' recommendation. The APUC found that a 75

[254] *Re Cook Inlet Pipe Line Co.*, 6 APUC 527 (1985); *Re Enstar Natural Gas Co.*, 7 APUC 375 at 402 (1986); Tr. 5042 (FJH).

[255] The TAPS is owned by pipeline companies that are wholly owned by the TAPS parent companies. The only actual capitalization of the TAPS is the capitalization of these pipeline companies. All parties agree that that capitalization is inappropriate for ratemaking, and that a hypothetical capital structure should be adopted. The Carriers assert that the hypothetical structure should be the actual capitalization of the parent companies.

[256] *Re Kenai Pipe Line Co.,* 12 APUC 425, 1992 WL 696192 (Alaska P.U.C., 1992)*; Re Cook Inlet Pipe Line Co.,* 6 APUC 527 (1985)*; Re Exxon Pipeline Co.*, 1 APUC 580 (1980).

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percent hypothetical capital structure was appropriate in that case because the pipeline was nearing the end of its life. As a wasting asset, the APUC found that the Cook Inlet pipeline needed to revert to 100 percent equity by the end of its life.[257] The record in this case indicates that TAPS will continue to operate for at least another twenty-five years.[258] Therefore, the issue of reverting to 100 percent equity is not yet ripe.

Finally, when the issue was before the APC in 1980, the APC adopted parent company capital structure.[259] The APC noted that "[w]here the pipeline company is a wholly owned subsidiary. . . the parent company can create an artificial capital structure for the subsidiary to maximize the profits and benefits of the parent company's stockholders."[260] Accordingly, it rejected the use of the actual capitalization of the pipeline subsidiaries. The superior court reversed the APC. The superior court explained that "[t]here is no basis for taking the capitalization of eight oil companies who are the owners or parent companies of the owners and imputing their individual capitalization to TAPS."[261] We agree with the court's finding and adopt a hypothetical composite capital structure.

Our predecessor agencies have adopted hypothetical capital structures when parent capitalization is inappropriate. In *Alascom,*[262] the APUC constructed a

[257]Tr. 4258-59 (JSG).

[258]14-ABJ-W.

[259]*Re Exxon* Pipeline *Company*, 1 APUC 580 (1980). We note, however, that in adopting the parent company capital structure on a composite basis the APC approved a capital structure of 51.3 percent equity, very close to the capital structure of 50.5 percent equity, which we adopt, *infra*.

[260]*Id.,* at 596.

[261]*Alaska v. Alaska Pub. Util. Comm'n*, 3AN 80-7163 CI, (Alaska Super.) Nov. 28, 1983, vacated by *Amerada Hess Pipeline Corp. v. Alaska Pub. Util. Comm'n,* No. S-195, slip op. (Alaska Nov. 20, 1985) at parties' request due to settlement.

[262]*Re Alascom, Inc.*, 7 APUC 665, 708-09 (1986).

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hypothetical capital structure, rather than adopt that of the subsidiary or parent, precisely because it better approximated the industry norm. Without a reasonable matching of business activities between the parent and subsidiary, if the parent's capital structure is used in rate making it reflects the business costs of the parent, rather than those of a prudently managed and regulated pipeline company. Thus, *Alascom* suggests that an important test of whether the parent company capital structure is appropriate is whether the TAPS parent company capital structures reflect those of a stand-alone TAPS.

The Carriers also assert that the FERC typically applies the actual capital structure of a subsidiary unless the subsidiary issues none of its own debt or its debt is guaranteed by the parent company. In such instances, the FERC generally adopts the parent company capitalization.[263] The FERC, however, adopts the parent capital structure in part because the parent company's enterprise approximates that of the carrier.[264]

[263] *See* 169-JST at WIL 06196.

[264] In *Re Iroquois Gas Transmission System, L.P.*, the F.E.R.C. explained the rationale for using a particular capital structure:

> These proposals are contrary to the general Commission policy first set forth in *Arkansas Louisiana Gas Company*. There, the Commission held that, as a general matter, to establish an allowed rate of return it would use the actual capital structure of the entity that does the borrowing in the market place rather than a hypothetical capital structure. Because of the difficulty of selecting a representative capital structure for a company, the Commission decided to rely on the amount of debt and equity selected by the entity that actually does the financing *because it is likely to be more representative of what the market requires for a company of that particular risk*.

Iroquois Gas Transmission Sys., L.P., 53 F.E.R.C. ¶ 61,194 at 61,708 (1990) (emphasis added) (footnote omitted).

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In this case the spirit of FERC precedent suggests that adopting a hypothetical capital structure is appropriate.[265] The TAPS parent companies' primary businesses are outside of the pipeline arena. The parent companies of the TAPS Carriers are integrated petroleum firms. They typically have substantial business interests overseas and are engaged in chemical manufacturing, oil and gas exploration and development, and refining.[266] Their primary business activity is not transporting petroleum products via pipeline. Accordingly, the parent company capitalization is not a good indicator of how a prudently managed pipeline company should be capitalized.[267]

b) A Stand-alone Model With Less Than 100 Percent Equity Is Appropriate for TAPS

The Carriers offer three arguments to support their position in this case that we should use a stand-alone model at 100 percent equity to determine capital structure. The Carriers first assert that a contract that guarantees shipment will shift risk from the pipeline carrier to the shipper. A pipeline enjoying such a guarantee is thus not truly "stand-alone."[268] Although the Carriers acknowledge that a pipeline might be financed with less than 100 percent equity with throughput guarantees, the Carriers contend that the notion of guarantees conflicts with the requirement to evaluate possible capital structures on a stand-alone basis.

Although a throughput guarantee shifts risk from the investor to the shipper, such shifts are a normal business occurrence.[269] The willingness of pipeline

[265] In *Transcontinental Gas Pipe Line Corporation,* 60 F.E.R.C. ¶ 61,246, ¶¶ 61,823-24 (1992), the F.E.R.C. based a hypothetical capital structure on industry averages in order to achieve the goal of selecting the debt equity ratio that best represents what the market would require for a company of the type that it is regulating.

[266] 221-FJH-E, 222-FJH-E.

[267] Tr. 4385 (JSG); JSG-T, 28.

[268] Tr. 2995-96 (WBT); WBT-27 (Gary) 27.

[269] 66-WBT-E (Roseman) 50.

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investors to provide funds is only indirectly related to the shippers' risks.[270] Rather, a pipeline investor's concern is with the business risk to the pipeline. If a pipeline company secures throughput guarantees, then the costs associated with acquiring capital are reduced. Investors know that an enterprise with throughput guarantees is less risky.[271] The throughput guarantees thus reduce the costs associated with risk. They do not interfere with the enterprise's ability to attract capital on its own; rather they enhance it. The assertion that a stand-alone TAPS would need to be financed with 100 percent equity if it were truly stand-alone is thus not compelling.

The Carriers' second argument is that a pipeline that enjoys throughput guarantees would perform contract rather than common carriage.[272] Common carriers are required to pro-rate capacity if nominations exceed capacity. As a common carriage pipeline, TAPS cannot enter into contract carriage. The Carriers therefore assert that a stand-alone model based on anything less than 100 percent equity is not representative of how TAPS actually could have been financed because throughput guarantees are not actually allowed on the TAPS.[273]

Here too we disagree. The record contains no evidence of a contractual relationship between shippers and Carriers guaranteeing throughput. However, TAPS is the only way to move North Slope reserves to market.[274] The value of North Slope reserves assures that throughput will be adequate to generate revenues for the

[270]Shipper risk matters to the extent that there is a risk of shipper default.

[271]Tr. 2833-35 (WBT).

[272]WBT-27 (Gary) 29-30.

[273]WBT-27 (Gary) 29.

[274]The Carriers assert that other methods of transportation off the North Slope were contemplated as competitive to TAPS. The record suggests that those other methods were not contemplated as competitive to TAPS but rather as alternatives to TAPS. *See* 66-WBT-E (Roseman) 59.

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pipeline.[275] This assurance reduces investor risk. The regulatory environment for TAPS differs distinctly from the competitive environment of pipeline companies in the contiguous 48 states because shippers have no alternatives. TAPS' common carriage requirement does not preclude us from using a stand-alone model.

Finally, the Carriers' suggest that TAPS on a stand-alone basis would need to be financed at close to 100 percent equity because the risks for TAPS were so great that the assurance of throughput was not adequate for lenders to provide debt. The Carriers assert that, if TAPS were truly a stand-alone enterprise, then risks of throughput interruption, production curtailment, or non-completion were so large that lenders would be unwilling to invest in TAPS.[276] Tesoro and Williams dispute these assertions.[277]

For TAPS to attract debt financing on a stand-alone basis, lenders would have required assurance that they would be repaid. Because TAPS is a common carrier, such assurance could not come from contractual guarantees. Rather, assurance would come from investor expectations regarding the value of North Slope reserves. Sohio financed its participation in TAPS almost exclusively with debt. Had TAPS not been completed, Sohio would have been unable to meet its obligations. In effect, Sohio "bet the company" on the success of its North Slope venture.[278] To secure its debt Sohio pledged all of its assets to its creditors.[279] "Sohio's ability to finance its

[275]66-WBT-E (Roseman) 48. No party asserts that the value of the reserves is a throughput guarantee. Rather, the existence of oil otherwise trapped on the North Slope provides security that operates somewhat like a throughput guarantee. *See* WBT-26 (Gary) 55-56; WBT-27 (Gary) 34-36.

[276]WBT-27 (Gary) 31.

[277]Tr. 5045-46 (FJH); *see* Tr. 4408-09 (JSG).

[278]Tr. 4408-09 (JSG); WBT-26 (Gary) 55.

[279]66-WBT-E (Roseman) at 52.

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TAPS expenditures rested largely upon lenders' valuation of its reserves in the ground."[280]

Sohio's borrowing power thus depended upon expectations that TAPS would be completed.[281] Investors understood that the only way to move that oil to market was through the TAPS.[282] They therefore knew that Sohio could only realize the value of its reserves through the construction of the TAPS.

> Ultimately, then, it is the value of the reserves which stand as security to the creditors of the pipeline. That would be true whether or not there was an actual contractual obligation to that effect, so long as the pipeline tariff was designed to recover the costs of the pipeline plus at least a reasonable return.[283]

Without a functioning TAPS, Sohio's North Slope reserves would have no value. Thus, investors believed that the prospects for TAPS were as good as the prospects for success of the entire North Slope venture.[284] During the Phase I proceeding the United

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[280]WBT-27 (Gary) at 36.

> I agree that during the production phase these reserves are a source of cash flow which creates borrowing power for Sohio. But the reserves also provided borrowing power during the construction phase of TAPS.

WBT-27 (Gary) 34.

[281]A certain portion (the record does not indicate how much) of Sohio's debt was backed not just by Sohio parent guarantees, but also a substantial contribution to the financing by BP. 66 WBT-E (Roseman) 55; Tr. 4412-13 (JSG). Accordingly, Sohio's borrowing power depended also upon BP's financial position, and not only on prospects for the North Slope as a whole.

[282]66-WBT-E at 48.

[283]66-WBT-E (Roseman) 48. Carriers point out that the Northwest Alaskan Pipeline Company (formally Alcan) found that loan guarantees or protective tariff conditions were required to obtain debt financing for the Alaskan gas pipeline. WBT-56 (Olson) 11. The fact that guarantees were needed, however, may reflect the comparatively smaller prospective margins that were then required for gas compared with oil. It is the prospective value of reserves combined with lack of competition that act like a guarantee.

[284]We agree with the Carriers that consideration of TAPS must be done independent of other developments on the North Slope. ~~*Cite to Carrier Briefs*~~. However, it is unreasonable to think that investors would not consider the value of North Slope reserves when weighing whether to invest in TAPS.

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States Department of Justice's expert witness argued, on the basis of the Sohio experience, that a stand-alone TAPS could have been financed with a debt ratio of 40 to 60 percent.[285] This is comparable to the capital structures of average lower-48 pipelines at the time,[286] and with the composite capital structure approved for TAPS by the APC.[287]

Sohio's highly leveraged position made it akin to a "stand alone" company. Contrary to the Carriers' position that a stand-alone company would have required 100 percent equity capital structure, Sohio's actual financing experience suggests that investors in a stand-alone pipeline would have had sufficient confidence in the completion of TAPS to provide substantial amounts of debt.[288]

c) Determining the Appropriate Capital Structure

The record includes two proposals for the amount of debt that could have been raised. The Carriers' ~~position is~~ assert that we should adopt the parent company capital

[285] 66-WBT-E (Roseman) 48.

[286] WBT-34 (Stich) 250, 274, 282.

[287] *Re Exxon Pipeline Company*, 1 APUC 580 (1980).

[288] The Carriers raise two additional arguments to support their position that the capital structures of the parent companies should be used to calculate TAPS rates. The Carriers assert that the appropriate capital structure should lie "at the outer edge of the zone of reasonableness" to provide for managerial discretion in structuring capital. 169-JSG-T; WIL 06196. We disagree. Even if markets "support" richer equity positions, when attempting to establish reasonable cost-based rates, we adopt the least costly capital structure that financial markets will support and which would also provide owners of a stand-alone TAPS adequate ability to raise new capital. Tr. 4959-60 (FJH). To do otherwise is to impose an unnecessary burden on shippers.

The Carriers also assert that parent capital structure falls within a "zone of reasonableness" and therefore we should adopt it. *Initial Post-hearing Brief of the Indicated TAPS Carriers* at 43. The "zone of reasonableness" standard, however, is a judicial check on whether commission decisions are reasonable. *Farmers Union Cent. Exch., Inc. v. FERC,* 734 F.2d 1486, 1502 (D.C. Cir., 1984). It is not a justification for regulators to fail to make informed, reasoned choices in exercising their discretion when ratemaking. The results of agency discretion must lie *within* that zone of what is appropriate. The fact that one of the parties' positions may lie within that zone is not sufficient to allow us to adopt it.

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structure. We have rejected that proposal.[289] Tesoro's position is that we adopt a 50.5/49.5 percent equity-debt capitalization. We choose the capital structure that best represents the capital structure of a stand-alone TAPS.

Tesoro proposes a hypothetical capital structure of 50.5 percent equity and 49.5 percent debt[290] consistent with the standard regulatory benchmark of a 50-50 capital structure[291] and with the average historical capital structures of gas[292]and oil pipelines,[293] generally. Hypothetical capitalization for stand-alone pipelines should reflect what has been accepted in the marketplace for pipelines of roughly comparable risk.[294] Having reviewed the record and evaluated the relative risks of TAPS as compared with the average pipeline,[295] we find that a stand-alone TAPS could have been financed with a 50.5-49.5 equity/debt capital structure. To the extent that extraordinary risks existed for TAPS that exceeded an average pipeline's, those extraordinary risks should be accounted for in a risk premium and not the capital structure.[296]

We assume that capital structure is constant from 1977 through 1996 because this is consistent with the historical capitalization of average pipeline companies.[297] Further, the record suggests that capitalization would not have varied

[289]*See supra* Part IV Section B.1(a).

[290]FJH-T (E-2) 22.

[291]*See* WBT-34 (Stich) 283-84.

[292]WBT-34 (Stich) 282; FJH-3 at 1.

[293]WBT-34 (Stich) 244, 250; FJH-3 at 1.

[294]FJH-T (E-2) 3.

[295]*See* Part IV Section B.4 and Endnote 8.

[296]We consider risk premiums in Part IV Section B.4 and Endnote 8.

[297]WBT-34 (Stich) 244, 250, 282; FJH-3 at 1.

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enough to affect the cost of debt.[298] The record does not support a finer determination and holding capitalization constant is also administratively efficient.

During the early years of planning pipeline construction when risks to the pipeline's completion were highest, a stand-alone pipeline was much less likely to secure debt financing.[299] As Gaske explained, "[i]t seems quite appropriate to me that you'd have almost all equity in the very initial planning stages."[300] Accordingly, we find it is reasonable to assume full equity financing before May 1, 1974.[301] When construction began in May 1974, risks on TAPS reverted to those that are reasonably comparable to a stand-alone pipeline. We assume that expenditures after April 1974 were financed with something greater than[302] 49.5 percent debt so that by the beginning of pipeline operations, July 1, 1977, there was a composite 49.5 percent debt and 50.5 percent equity capital structure. Exhibit 11 depicts the capitalizations that we adopt from 1968 to June 30, 1977.

The record does not support finding separate capital structures for each of the pipeline companies. All the expert rate of return witnesses in this proceeding explained that risks to TAPS should be assessed irrespective of ownership.[303] If the

[298]Tr. 5043 (FJH).

[299]The rationale for this finding is explained in Part IV,B.4 and Endnote 8, *infra*, in the discussion of risk premiums to reflect special TAPS risks.

[300]Tr. 4262 (JSG).

[301]Tr. 4262 (JSG).

[302]The fractions of this "something greater" are determined as follows. We first take 49.5 percent of the cumulative balance of property spent prior to May 1, 1974. We then add fractions of this sum to the yearly debt balances for May-December, 1974, 1975, 1976, and January through June, 1977, according to the proportion of funds spent per period relative to the cumulative amount of funds spent during June, 1974 through June, 1977. This approach permits a "ramp up" in equity financing that seems more reasonable than a dramatic switch from one period to the next.

[303]T-10 (WBT) 8; WBT-61 at 2-3; FJH-T (E-2) 4.

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risk to the enterprise does not change based on ownership, there is no reason to adopt different capital structures for each of the TAPS owners.[304] When remanding *Re Exxon Pipeline Company,* 1 APUC 580 (1980), the Alaska Superior Court made a similar finding: "The pipeline should have been considered to be an entity . . . ."[305] We, therefore, find a 100 percent equity capital structure for 1968 to May 1, 1974, a gradual decrease to 49.5/50.5 debt equity capital structure for 1974 to 1977, and a 49.5/50.5 debt/equity capitalization for the TAPS Carriers for 1977 through 1996 appropriate.

2. Cost of Debt

In most cases, regulators set the cost of debt at the actual embedded cost of the debt of the regulated entity. In this case, however, the debt issued to build the TAPS was backed by parent company guarantees.[306] Thus, the Carriers' actual cost of debt does not reflect the true return on debt for a stand-alone pipeline that investors would require as compensation for providing capital.[307] Because the cost of borrowing

[304]Testimony makes clear that the individual ownership structure of TAPS is not something that should be reflected in rate of return. Tr. 2896 (WBT). However, the Carriers assert that the overall rate of return on capital is invariant to capitalization, and parent company capitalization and return on debt can be used to "back out" individual return on equity. They urge that this approach is consistent with traditional ratemaking. Tr. 2767 (WBT). Our goal as regulators is to set rates based on costs. The overall cost of capital is agreed by all parties to be invariant across ownership. T-10 (WBT) 8; WBT-61 at 2-3; FJH-T (E-2) 4*),* We find no reasoned basis nor does the record support a finding of different hypothetical capital structures for the different carriers.

[305]*State of Alaska v. Alaska Pub. Util. Comm'n*, 3AN 80-7163 CI, 2 (Alaska Super.) Nov. 28, 1983, vacated by *Amerada Hess Pipeline Corp. v. Alaska Pub. Util. Comm'n,* No. S-195, slip op. (Alaska Nov. 20, 1985) at parties' request due to settlement.

[306]Tr. 2852 (WBT).

[307]The record does not clearly indicate the embedded cost of debt of the subsidiaries. However, even if it did, the subsidiary debt costs would not be appropriate given the parent company guarantees of that debt.

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changes through time, we determine the appropriate cost of project debt for each year from 1974-1996.[308]

The parties disagree about how to properly establish the cost of debt.[309] Both the Carriers and Williams adopt annual parent company embedded cost of debt for 1968-1996.[310] They use cost of debt, however, for different purposes. Williams uses the parent cost of debt, combined with its independent estimate of the cost of equity capital, to construct an overall rate of return for the TAPS.[311] The Carriers start with an independent estimate of the overall rate of return for TAPS, and use the parent cost of debt and capital structure to "back out" the cost of equity for each year.[312]

Neither the Carriers nor Williams claims that the embedded cost of debt of the parent companies bears any relationship to the cost of debt of a stand-alone TAPS.[313] The Carriers support their use of the parent company cost of debt because it is consistent with their reading of standard regulatory practice.[314] Williams supports its use of parent company cost of debt because "this is all that was available to the pipeline companies."[315]

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[308]Finding that a stand-alone TAPS could only have attracted debt financing after April, 1974 means that a cost of debt need not be determined for years prior, even though capital expenditures were made as early as 1968.

[309]For a summary of the parties' positions on the cost of debt, *see* Exhibit 12.

[310]The Carriers adopt separate costs of debt for each of the parent companies to construct separate revenue requirement calculations for 1968-1996. RGV-14A through RGV-14G. Williams, however, adopts a composite cost of debt, based on the average of the parent companies' book cost of debt to construct a single revenue requirement for 1968-1996. JSG-T (W-2) 37.

[311]JSG-2 Schedule 10.

[312]Tr. 2972-73 (WBT); Tr. 2725-26 (WBT).

[313]Tr. 2592 (WBT); JSG-T 31.

[314]Tr. 2767 (WBT).

[315]Tr. 4385 (JSG).

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Neither reason is persuasive for establishing cost of debt for a stand-alone enterprise. As we have found above, the record provides no compelling reason to use the Carrier parent company cost of debt. The parent companies in this case are generally large integrated petroleum companies[316] that have significantly richer equity positions than pipeline companies.[317]

A hypothetical cost of debt for a stand-alone pipeline more closely reflects costs.[318] Therefore, we look at a proxy group to determine an appropriate hypothetical cost of debt. We assess the cost of debt for a proxy group of pipelines that share risks similar to the TAPS. We assess annual costs of capital for 1974-1996 to help establish

[316]Tr. 5097-5101 (FJH); 221-FJH-E; 222-FJH-E.

[317]In 1997, the average equity position of the operating subsidiaries of the publicly traded gas pipeline holding companies was 49.41 percent. The average equity position of the publicly traded oil pipeline companies was 50.25 percent. In contrast, the arithmetic average equity position of the TAPS Carriers' parents was 66.46 percent, while the weighted average equity position was 73.21 percent. FJH-3 at 1.

[318]*State of Alaska v. Alaska Pub. Util. Comm'n*, 3AN 80-7163 CI, 2 (Alaska Super.) Nov. 28, 1983, vacated by *Amerada Hess Pipeline Corp. v. Alaska Pub. Util. Comm'n,* No. S-195, slip op. (Alaska Nov. 20, 1985) at parties' request due to settlement.

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a rate base[319] for the TAPS as of year-end 1996.[320] The parties concur that after construction was started in 1974 the risks facing the TAPS are comparable to those of an average Lower 48 petroleum[321] or gas[322] pipeline. Therefore, we review the record to determine a cost of debt that reflects operations of a stand-alone pipeline company in the contiguous United States.

Tesoro advocates a hypothetical cost of debt based on three proxy groups of companies. The first two proxy groups consist of oil and gas pipelines that are publicly traded; the third proxy group consists of the TAPS parent companies. Tesoro uses data from the proxy groups, combined with expert judgment,[323] to arrive at an eight percent cost of debt for 1997.[324] Tesoro then assumes that the difference between the cost of debt for an appropriate pipeline company and the rate on long-term government

[319]Our findings on the cost of capital for 1968-1996 will also be used to analyze whether our determination of a rate base as of January 1, 1997, is reasonable in light of whether it constitutes a regulatorily enforced deficiency; *see* Section V.

[320]Even if we were to adopt the Carriers' recommended approach to setting an overall annual rate of return during 1968-1996, an appropriate cost of debt would nonetheless need to be established. Although the Carriers' sponsored approach does not, as a theoretical matter, affect the *overall* rate of return, (*see* Tr. 2972-76 (WBT), and 87-WBT-T), it nevertheless affects rate base. This is because ADIT, which affects rate base, is calculated with reference to the debt portion of AFUDC balance; *see, e.g.,* 143-RGV-C, TAPS-RGV WP3, Schedule 8, line 2 and Schedule 6 Column B). The debt portion of AFUDC is clearly affected by the choice of capital structure and the appropriate cost of debt.

In addition, the return to debt portion of a cost calculation does not receive an income tax allowance, while the return to equity portion does. Hence, the cost of debt affects the overall revenue requirement. Tr. 4964-66 (FJH). *See* Part IV,B.1. Therefore, determining the appropriate cost of debt is necessary for a fair determination of whether a regulatorily enforced deficiency, produced through a change in ratemaking methodologies, exists.

[321]T-10 (WBT) 10; JSG-T (W-2) 13.

[322]FJH-T (E-2) 4; T-6 (WBT) 37.

[323]Tr. 4978 (FJH).

[324]FJH-4 at 1.

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bonds will be constant.[325] Tesoro uses this assumed relationship to calculate the year-by-year cost of debt from 1996 back to 1968 by tracking changes in long-term Government bonds.[326] Tesoro's method for determining the cost of debt from 1968 to 1996 thus has two critical parts: a) the "anchor-year" cost of debt used for backcasting purpose; and b) the assumed constancy of the appropriate cost of debt for the TAPS and the annual return on United States Treasuries. Both of Tesoro's assumptions are problematic.

First, the 1997 anchor-year cost of debt is inappropriate. For 1997, Tesoro's gas pipeline proxy group had an average embedded cost of debt of 8.14 percent;[327] the average debt ratio was 52.39 percent.[328] Tesoro's sample oil pipeline companies had an average cost of debt of 8.81 percent in 1997;[329] the average debt ratio was 53.09 percent.[330]

Second, the spread between the cost of debt and United States Treasury bond yields that Tesoro relies on is not constant. Therefore, an analysis based on the spread for one year is not reliable.

In addition, Tesoro's approach fails to recognize that the cost of project debt does not change annually with capital markets.[331] It is not as volatile as Tesoro

[325]FJH-12 at 2. The "constancy" assumption is also made by the Carriers for the *overall* rate of return on capital and by Williams for the DCF analysis of the rate of return on equity to develop "backcast" costs of capital for 1968-1996. T-3 (WBT) 61-62; WBT-40; JSG-T (W-2) 32.

[326]*See* FJH-12 at 2.

[327]FJH-4 at 4. Tesoro bases its debt cost recommendation for 1997 on the proxy group debt costs for 1996.

[328]*See* FJH-3 at 4. The figure includes both short and long-term debt.

[329]FJH-4 at 3. Tesoro bases its debt cost recommendation for 1997 on the proxy group debt costs for 1996.

[330]FJH-3 at 3. The figure includes both short and long-term debt.

[331]Tr. 4953-54 (FJH).

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urges. The cost of debt for ratemaking purposes is generally the *embedded* cost of debt, *not* the current cost of debt.[332] As Williams witness Gaske explained:

> Now, with regard to debt holders and bond holders, as market conditions change, the yield changes, and the market value of the debt changes, *but the company's fixed obligations to pay the lenders does not change*, and so in a case like that, or when you're thinking in terms of the debt, you have to use the embedded cost of debt . . . .[333]

The cost of debt *issued* in any given year can match the cost of debt used to finance the TAPS only if the TAPS debt were fully refinanced each year. Such refinancing would produce unrealistic volatility in the debt return, be prohibitively expensive, and is contrary to prudent financial practice. The debt issued to originally construct the TAPS during 1974-1977 was less costly than debt issued during the late 1970s through the early 1990s because of the then existing market conditions. The bonds were often 20- to 30-year issues.[334] Therefore, Tesoro's proposal in effect would have the TAPS Carriers refinancing lower-cost debt with higher cost debt. This is unreasonable.

We modify Tesoro's approach to backcasting to determine the appropriate cost of debt capital. First, we designate a sample group from which to determine the appropriate cost of annual debt for a stand-alone TAPS. Second, we determine the appropriate cost of debt from which to backcast the annual cost of debt capital for the average pipeline in any given year. Finally, we determine the annual embedded cost of debt consistent with our findings on capital structure and annual debt costs. In developing rate of return recommendations, the Carriers and Tesoro rely on information

[332]The embedded cost of debt reflects the weighted average cost of debt for all bonds issued in prior years. The current cost of debt reflects what capital markets currently require.

[333]Tr. 4278 (JSG) (e*mphasis added)*.

[334]Tr. 4953 (FJH).

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from gas and oil pipelines. Our capital structure is based on both gas and oil pipeline proxy groups. Therefore, it is reasonable to base the appropriate cost of debt on the same two groups.[335]

Because the record contains multiple options for cost of debt data with no compelling grounds for weighting one data set more than another, the most reasonable approach is to average the different figures.[336] We average the cost of debt of the gas and oil pipeline groups to determine cost of debt to use in our backcast analysis.[337]

We next correct the problem of relying on a single "anchor year" for backcasting the annual cost of debt back to 1974. The record shows the annual spread between the cost of debt for an average pipeline and the yield on United States Treasuries for 1997, 1998, 1999 and 2000.[338] Therefore, we adopt the average pipeline sample's average premium during 1997-2000 above United States Treasuries.[339] The average premium is 1.86 percent.[340] We use this premium to derive reasonable figures for the cost of pipeline debt *issued* in prior years.

We make no adjustment in the cost of debt to accommodate risks particular to the TAPS. Before May 1974, risks faced by TAPS investors were especially high, but the record suggests little debt was issued.[341] We assumed 100 percent equity financing during this period.[342] From 1974 forward, as we discuss in

[335]Tr. 2949 (WBT). It requires a judgment. Tr. 4977 (FJH).

[336]Tr. 5027-5028 (FJH); Tr. 4959 (FJH).

[337]*See* Exhibit 13, line 3.

[338]JSG-2 Schedule 12; FJH-4.

[339]U.S. Treasury data are from JSG-2 Schedule 12.

[340]*See* Exhibit 13, line 6.

[341]*See* WBT-26 (Gary) 99.

[342]Part IV Section B.1.c.

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Part IV Section B.4, *infra*, the nature and extent of TAPS risks, although greater than those facing the average pipeline, confronted only equity and not debt investors. Therefore, we do not award a special TAPS risk premium on the cost of debt. Having made these modifications to Tesoro's analysis, we generate the *annual* cost of debt from 1974 to 1996 for debt *issued* at Exhibit 14.[343]

Next we calculate an appropriate *embedded* cost of debt to correct the flaw in Tesoro's analysis that low-cost debt is replaced with high-cost debt. The embedded cost of debt is the weighted average cost of debt for all outstanding debt balances. The hypothetical cost of debt needs to reflect the size and cost of the bonds issued, when the bonds were issued, and the length of time to bond maturity (because the rate of return on bonds stays constant).[344] The hypothetical embedded cost of debt in any given year also reflects assumptions about the rate at which payments are made into a sinking fund; the date of those payments; and the amount of "balloon payments" needed to compensate for sinking fund shortfalls at the date of maturity.

Carriers suggest that the typical bond issued to build the TAPS had a maturity of 20 to 30 years.[345] This evidence was not disputed by the other parties. Data contained in Carrier-sponsored exhibits show that major debt issuances by the TAPS Carriers' parents during November 1973 through October 1977 have a weighted average term to maturity of roughly 19 years.[346] We therefore adopt a 19-year term to maturity for all TAPS bonds to calculate the hypothetical embedded cost of debt.

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[343]We add the 1.86 percent premium to the cost of U.S. Treasuries in any given year to derive the cost of debt issued in that year.

[344]*See* Tr. 4952- 54 (FJH).

[345]Tr. 4953 (FJH).

[346]*See* WBT-26 (Gary) 99-100. The weighted average figure of nineteen years does not include Valdez terminal debentures, which appear to generally have thirty-year maturities. *See* Exhibit 15, Schedule 1.

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We make reasonable assumptions to set the remaining variables needed to construct a yearly hypothetical embedded cost of debt. Our findings reflect the constant hypothetical structure that we adopt; the term to maturity of the hypothetical bonds we impute; the need to finance TAPS' yearly capital additions; and the regulatory depreciation schedule. *See* Exhibit 15, Schedule 2. Although these assumptions may not conform to the actual bonds used to finance the TAPS, they are reasonable and consistent.[347] We adopt the hypothetical embedded cost of debt for each year 1974 through 1996 calculated in Exhibit 15, Schedule 3.[348]

3. Return on Equity

Regulators determine the cost of equity by assessing the return that equity investors require given their perceptions of prospective project risks.[349] The parties assert that ongoing operational risks of TAPS are roughly equivalent to those faced by average pipeline companies.[350] We therefore assess the cost of equity based on what an average stand-alone pipeline would require. That cost is the baseline cost of TAPS equity from 1968-1996. To account for any special TAPS risks, we adjust the baseline after analyzing TAPS project risks in Part IV Section B.4, *infra*.

[347]The constant capital structure adopted for 1977-1996 plays a particularly important role in our derivation of the embedded cost of debt. Capital additions in any given year must be financed at a 49.5/50.5 percent ratio, and bond retirements must therefore track regulatory depreciation. Accordingly, the goal of relative transparency and simplicity provides relatively little room to make assumptions other than those adopted.

[348]The embedded cost of debt that we derive and award is a reasonable estimate based upon the record in this case. We note that it may be an overly generous award. The average embedded cost of debt for crude oil pipelines during 1974 and 1975, according to a Carrier witness during the original Phase I proceeding, is roughly 250 basis points less than the embedded cost of debt that we award for TAPS. *Cf.* WBT-34 (Stich) 276 *with* Exhibit 15, Schedule 3.

[349]FJH-T (E-2) 7.

[350]T-3 (WBT) 39; FJH-T (E-2) 65; Tr. 4944-45 (FJH); JSG-T (W-2) 39.

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In most rate cases, the cost of equity is determined for a single, or at most a few, years. In this case, however, the appropriate cost of equity capital must be determined on an annual basis for 1968-1996.[351] General economic conditions changed from 1968 to 1996. The cost of equity, therefore, also changed.[352] The parties evaluated investor expectations and what compensation they would require for each year over a nearly 30-year period. Exhibit 16 summarizes the parties' positions on the return on equity.

The parties combined the recent data on current costs of equity with past trends in equity markets to "backcast" or "project" the rate of return that investors required for past years. Tesoro's rate of return witness Hanley explained that "the backcasting approach is what I would call a vehicle of convenience in this proceeding."[353] Williams witness Gaske echoed the practical need to backcast given the many years at issue.[354] Based on the record, we decide the most appropriate "backcast" approach.

The Carriers' backcast return on equity for 1968-1996 is based on their expert witness's recommendation regarding the overall rate of return for TAPS for 1997-

[351]Tesoro's witness Hanley reiterated the need for determining the rate of return on equity for every year, from 1968-1996, to establish a rate base: "But in terms of backcasting the reason for it seems clear, is because there needs to be some determination of rate base. The rate of return is a portion of it." Tr. 5080 (FJH). The return on equity affects AFUDC balances, which in turn affect the size of rate base. Furthermore, to check the appropriateness of the rate base, comparative revenue requirement analyses require a rate of return determination so that a total annual revenue requirement can be calculated. *See also* T-10 (WBT) 53-54, where the need for obtaining earlier-year costs of equity to perform the parties' unrecovered investment analyses is explained.

[352]Tr. 4278-79 (JSG); FJH-T (E-2) 65.

[353]Tr. 5080 (FJH).

[354]Tr. 4382 (JSG).

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1998.[355] This approach relies on the theory that investors demand a constant premium for overall returns above the return on long-term government debt.[356] The Carriers use the difference between this recommendation for an overall rate of return and the "riskless" investment of 1997 U.S. Government bonds, combined with historical data on United States Government bonds, to "backcast" overall rates of return for each year in question.[357] The Carriers then determine the backcast rates of return on *equity* through application of the Modigliani-Miller theory. The Modigliani-Miller theory states that the overall rate of return is invariant to how an enterprise is financed. Thus, given recommendations on the annual capital structure and rate of return on debt, Modigliani-Miller allows one to "back out," or solve for, the rate of return on equity.[358]

Tesoro's expert witness also bases its backcast results on its determination of an appropriate return for 1997.[359] However, Tesoro's approach differs from the Carriers'. First, Tesoro backcasts the return on equity separately from the overall rate of return.[360] Tesoro thus avoids using the Modigliani-Miller hypothesis to derive backcast equity returns. Second, Tesoro disputes that the difference between the return on equity and the return on long-term government bonds is constant.[361] Tesoro's analysis is, instead, based on the theory that equity risk premiums change inversely with interest rate changes.[362] Tesoro relies on empirical findings for the

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[355]Tye has a single recommended rate of return for this two-year period; T-3 (WBT) 59, Table 3.

[356]T-3 (WBT) 62.

[357]WBT-40; WBT-5.

[358]*See* Tr. 2972-76 (WBT) and 87-WBT-T for detailed explanation.

[359]*See* FJH-12 at 2.

[360]*See* FJH-12 at 1.

[361]FJH-T (E-2) 67-68.

[362]FJH-T (E-2) 67.

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electric utility industry[363] that, Tesoro asserts, show that when interest rates *increase* by 100 basis points, the equity risk premium will *decrease* by 37 basis points. Similarly, when interest rates *decrease* by 100 basis points, the equity risk premium above those riskless investments will *increase* by 37 basis points.[364]

Like Tesoro, Williams backcasts only equity rates of return. Williams thus also avoids relying on the Modigliani-Miller hypothesis. Williams' backcast analysis, however, differs from both the Carriers' and Tesoro's. Williams relies on data for rates of return for comparable pipelines beyond the 1997-1998 time frame. Williams uses three different methods to backcast equity returns and then uses the average of the results produced by the three different methods. Williams multiplies the average of the three methods by 1.05 to reflect a five percent common equity flotation.[365] We discuss Williams' three methods separately.

The first method starts by using publicly available data for the pipelines in the petroleum pipeline proxy group to perform a traditional discounted cash flow (DCF) analysis of required investor returns. In a DCF analysis, the most critical parameter is the expected rate of growth in stock dividends. Williams relies upon Institutional Brokers Estimate System (I/B/E/S) data for the expected growth rate.[366] Because the I/B/E/S data on which Williams relies is generally only available for the proxy sample companies as far back as 1990,[367] yearly DCF estimates of equity returns can be determined only for some of the many years at issue. To determine DCF-based returns

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[363] *See* WBT-52, Panel C. All of the parameter estimates in that paper are statistically significant. *Id.,* at 6.

[364] FJH-T (E-2) 67.

[365] *See* JSG-2 Schedule 8.

[366] JSG-T (W-2) 32. I/B/E/S publishes a survey of financial analysts' predictions for future performance.

[367] *Id*.

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for earlier years, Williams estimates the *average* risk premium over the long-term U.S. Treasury bond yields for the five earliest years for which I/B/E/S data are available.[368] Williams then adds this average risk premium to the actual yield on Long-Term U.S. Treasury bonds for each of the earlier years for which data were unavailable to produce a backcast estimate for the annual return on equity for each company.[369] The annual median return of the group is then adopted as the petroleum pipeline proxy equity return.[370]

Williams' second method is similar to the first, with the difference being that Williams calculates DCF returns for each of the TAPS Carrier parent companies. Williams uses historical data to calculate DCF required equity returns. Where I/B/E/S growth rate forecasts are available for a given company, Williams uses them.[371] For a number of years before 1981, Williams uses Value Line data to calculate a retention growth rate.[372] The moving three year average growth rate of retained earnings is then used as an estimate of future rates of growth within a DCF framework. When retention growth rate data are not available, Williams backcasts equity rates of return in similar fashion to the approach used for the petroleum pipeline proxy companies.[373] Where results of this analysis fail to yield results of return on equity that are reasonable in light

[368] *Id*.

[369] JSG-2 Schedule 11 at 2-7.

[370] JSG-2 Schedule 11 at 1. Gaske explained that his use of the median of the data, rather than the mean, was informed by recent FERC practice and the fact that the mean is more likely to be skewed by outliers in the data. Tr. 4386 (JSG).

[371] JSG-2 Schedule 12. Gaske reports that I/B/E/S data were available for most TAPS parent companies as far back as 1981. JSG-T (W-2) 33.

[372] JSG-T (W-2) 33.

[373] JSG-T (W-2) 33-34.

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of the prevailing costs of debt, Williams "pragmatically" adjusts results[374] and uses the median of the different estimates to determine annual return on equity.

Williams' third method relies on past Alaskan pipeline cases to determine the appropriate return on equity. From 1981-1984, Williams relies on a FERC pipeline decision[375] that established required returns to equity for the Kuparuk pipeline, an oil pipeline carrying crude oil from the Kuparuk field on the North Slope to the beginning point of the TAPS.[376] For 1985-1992, Williams uses the APUC decisions[377] for return on equity for the Kenai pipeline.[378] For years before 1981, Williams backcasts by assuming that the risk premium difference between a corporate bond yield in 1981 and the FERC's equity return finding remains constant, at 4.89 percent.[379] For years after 1992, Williams also assumes that the premium difference between a corporate bond yield and the APUC's equity return finding remains constant, at 5.95 percent. Williams contends that the disparity in the "constant" premium differences was due to changes in capital markets. Williams agrees with Tesoro's general contention that the size of the premium above a riskless investment varies inversely with interest rates.[380]

[374]JSG-T (W-2) 33.

[375]*Kuparuk Transportation Co.*, 55 F.E.R.C. ¶ 61,122, 61,379 (1991).

[376]JSG-T (W-2) 35.

[377]*Re Kenai Pipe Line Co.*, 12 APUC 425 1992 WL 696192 (Alaska P.U.C., 1992); *Re Kenai Pipe Line Co.*, 13 APUC 29 (1993).

[378]JSG-T (W-2) 34.

[379]*See* JSG-2 Revised Schedule 6. In his written testimony Gaske says that he backcasts the *Kuparuk* decision data by using average yields on long-term United States Treasury bonds. JSG-T (W-2) 36. A comparison of figures in JSG-2 Revised Schedule 6 with the Treasury bond data contained in JSG-2 Schedule 11 reveals that the JSG-2 Revised Schedule 6 data are not Treasury bond data. We infer, therefore, that they are properly labeled and represent some sort of corporate bond data.

[380]Tr. 4374 (JSG).

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None of the backcast methods offer the same degree of rigor as normally seen for rate of return recommendations. As Williams stresses, backcasting results are "not as reliable as a detailed analysis of every company for each year."[381] We decide the annual equity rate of return based on the evidence on this record.

We find the Carriers' backcast method too speculative. Their recommendations presume a capital structure and cost of debt that are inconsistent with our findings on the appropriate capital structure and cost of debt for TAPS. Further, while the Carrier's approach might be applied to our findings on appropriate capital structure and cost of debt, doing so requires complete reliance upon the validity of the Modigliani-Miller hypothesis. The record suggests that as a theoretical construct, and as a contribution to financial theory, the Modigliani-Miller theorem is of considerable importance.[382] However, the record also demonstrates considerable controversy over the extent to which the Modigliani-Miller theorem should be applied to public utility finance and regulation.[383] Because there are reasonable alternative approaches that do not rely on the theorem, we pick an alternative approach.

The Carriers' approach is unreliable for additional reasons. The Carriers assert that "[o]ver longer time periods, the better approach is to hold constant the differences between equity return and bond yields."[384] However, they do not provide

[381]JSG-T (W-2) 32-33.

[382]Tr. 2751-52 (WBT).

[383]The Modigliani-Miller theorem's applicability is affected by taxes, the threat of bankruptcy, and the cost of enforcing complex debt contracts. Tr. 2755 (WBT). *See also* 75-WBT-W, and Tr. 2757 (WBT). The degree to which the theorem importantly deviates from real-world conditions was subject to considerable dispute at hearing. *See, e.g.,* Tr. 4984 (FJH) and Tr. 2758 (WBT).

[384]T-10 (WBT) 61. Tye urges that his view reflects "overall consensus;" he does not, however, offer evidence. Tye advocates adopting the constant risk premium hypothesis in the absence of strong evidence to the contrary. Tr. 2601 (WBT).

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empirical or theoretical support for that assertion. The Carriers' approach to calculating return on equity hinges on the assumption that a constant risk premium adequately approximates reality. Both Williams[385] and Tesoro[386] challenge this proposition. The record suggests that, rather than holding constant, there is an inverse relationship between an equity risk premium and a riskless investment broadly throughout the economy.[387] We, therefore, do not assume a constant risk premium.

Finally, even if over longer time periods the difference between equity return and bond yields were relatively stable, there is significant annual variation. For example, the Carriers' recommendation for what equity investors in an average pipeline require is 13.3 percent for both 1997 and 1998, and 16.0 percent for 1999;[388] the long term United States Treasury bond yield was 6.60 percent, 5.66 percent and 6.11 percent for 1997, 1998, and 1999, respectively.[389] The difference between bond yields and recommended return on equity therefore ranges from 6.70 percent in 1997 to 9.89 percent in 1999. A swing of 319 basis points over three years raises the issue of whether the choice of the "anchor year" (in this case, 1997) is appropriate for backcasting purposes.[390] The Carriers assert that using 1997 is conservative. To achieve just and reasonable rates we must use a reasonable rather than "conservative" approach. Relying on a single year, in light of the very significant annual variation, is

[385]Tr. 4374 (JSG).

[386]Tr. 5056 (FJH); FJH-T (E-2) 67-68.

[387]223-FJH-C Workpaper 3. The record indicates that this inverse relationship also appears to hold for electric utilities. 223-FJH-C Workpaper 2.

[388]T-10 (WBT) 13.

[389]JSG-2 Schedule 12 at 10.

[390]As noted in Part IV Section B.2, we had similar concerns with Tesoro's approach to backcasting the cost of debt.

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not reasonable. Therefore, we reject the Carriers' approach to determining return on equity.

Tesoro's approach is also inappropriate. Although Tesoro's method does not require use of the Modigliani-Miller hypothesis, like the Carriers, Tesoro relies on a single year for backcasting annual rates of return to 1968 and a theory about how petroleum pipeline equity interest rates move with United States Treasury bond. Above, we discussed the problem of relying on only a single year from which to backcast all subsequent equity returns: if the single year is unrepresentative, then reliable return on equity calculations are undermined.

We also find Tesoro's *method* of backcasting rates of return on equity too speculative. Tesoro relies on parameter estimates from the electric utility industry that the Carriers point out are not clearly applicable to petroleum pipelines.[391] Tesoro misapplies the Maddox, Pippert and Harris results in its return on equity calculations. Although Tesoro's misapplication of the Maddox *et al*. results can be partially corrected,[392] corrections create significant out-of-sample projection problems.[393] These errors make Tesoro's proposed rate of return on equity calculations unreasonable.

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[391]T-10 (WBT) 60.

[392]WBT-52, Panel B.

[393]While Maddox *et al*. detect an inverse relationship between the equity risk premium and the interest rate on risk-free securities, this analysis assumes and finds statistically significant a number of constant terms that capture the average difference between equity costs and government bond yields during different time periods. Tesoro ignores these constant terms. They are, however, integral to the overall projection of equity rates based on bond yields. T-10 (WBT) 60. Data for the Maddox *et al.* paper come from 1980 through 1993. WBT-52 Panel C at 3. Separate dummy variables, crucial to the prediction of risk premium given bond yield, are calculated for the following periods: 1984-1993, 1987-1993, 1991-1993, 1992-1993. *Id.,* at 4. Thus, these variables change substantially from period to period, and new variables are introduced every few years. Considering that Maddox *et al*. relied on four dummy variables for a ten-year period, using the study results for periods 15 years earlier and 5 years later is problematic. It is unlikely that the reliability of the Tesoro results would hold for such extrapolations.

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Williams' approach to backcasting the return on equity has several strengths. First Williams relies, whenever feasible, on available data from comparable companies. Williams constructs conventional DCF estimates of investor-required returns for the petroleum pipeline sample when possible. Second, when forced to backcast results from the petroleum pipeline sample, Williams adopts the most-recent 5-year average of the difference between the DCF equity results and riskless United States Treasury yields. Use of the 5-year average smoothes out some of the volatility that plagues the Carriers' and Tesoro's analyses. Third, Williams calibrates its recommendation by ensuring conformity to past regulatory decisions concerning appropriate equity return for Alaska oil pipelines.[394] Fourth, the calibration seems to reflect an inverse relationship between risk premiums and interest rates over broad periods, a relationship that the record supports.[395] Finally, Williams' approach of combining several methods for backcasting minimizes some of the effects of projection errors.[396]

Although the other parties do not directly criticize Williams' approach,[397] we note several faults. Williams' backcast and forecast of the Alaska oil pipeline results

[394]The Alaska pipeline decisions were based on much richer equity positions than the capital structure adopted here. Accordingly, one could argue that the applicable rate of return should be adjusted to reflect this richer capitalization. *See, e.g.,* Tr. 2948-49 (WBT). However, the Kuparuk pipeline decision adopted a return on equity based on "average petroleum pipeline" risk, without reference to the capital structure and return to debt that they adopted (which reflected parent company financials). Thus, the FERC's findings were expressly inconsistent with Modigliani-Miller. We find mechanical reliance on Modigliani-Miller both speculative and unnecessary.

[395]223-FJH-C Workpapers 2 and 3; Tr. 4374.

[396]Tr. 4382 (JSG).

[397]The Carriers argue that Gaske should have provided an increased risk premium in his backcast results. T-10 (WBT) 54. In this section of the order, however, we establish rates of return for an "average" petroleum pipeline before considering special TAPS risks. Special TAPS risks are considered in Part IV,B.4 and Endnote 8.

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is somewhat problematic. First, Williams uses a single "anchor year" to backcast and forecast these results.[398] Second, Williams' use of corporate bond yields for forecasting and backcasting purposes is inconsistent with its use of United States Treasuries to backcast DCF results. A theory regarding the risk premium between "risk free" United States Treasuries and equity returns was articulated but no corresponding theory was presented for a similar relationship between corporate bonds and equity returns.[399] To produce more reasonable results, we modify Williams' recommendation to rely on the most recent five-year average of the risk premium between United States Treasuries and the Alaska Pipeline decisions.

Finally, when determining appropriate return on equity based on Alaska oil pipeline decisions, Williams reported but did not use return on equity numbers for 1985-1988 from the *Kuparuk* decision.[400] The 1985-1988 years, however, overlap with the APUC's *Kenai* pipeline decisions (which spanned 1985-1992). By ignoring the overlap and relying only on *Kuparuk*, Williams consistently chose the higher return on equity number for those three years. When given multiple choices, but no theoretical grounds for choosing, the more reasonable approach is to average the overlapping numbers.[401] We thus modify Williams' Alaska oil pipeline decision analysis.

The result of modifying Williams' Alaska oil pipeline decision analysis is an increase to the backcast risk premium for years before 1981 from 4.89 percent to 4.98

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[398]Gaske argued for using the "most recent" year for backcasts by saying that he relied on the number that was as close to the projected or backcast period as possible. Tr. 4373 (JSG).

[399]Again, Gaske's prefiled testimony refers to United States Treasury yields, while his JSG-2 Revised Schedule 6 appears to use some unspecified grade of corporate bond yields.

[400]*See* JSG-2 Revised Schedule 6; JSG-T (W-2) 35; *Kuparuk Transp. Co.*, 55 F.E.R.C. ¶ 61,122, 61,379 (1991).

[401]Tr. 5027-~~78~~ (FJH).

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percent, and the "forecast" risk premium for years after 1992 from 5.95 percent to 6.21 percent. We apply these back- and forecast risk premiums to U.S. Treasury Yields rather than to corporate bond yields. The results of these modifications to Williams' approach for determining return on equity are found in Exhibit 17.

Finally, we modify Williams' backcast rate of return because the required rates of return on equity of the TAPS parent companies bear no clear and systematic relationship to the required rates of returns on equity of petroleum pipeline companies. Accordingly, Williams' reliance on the TAPS Carrier parent company DCF results to derive its recommended 1968-1996 equity rates of return is not reasonable. We instead average across the proxy pipeline DCF and the modified Alaska oil pipeline decision results.[402] These adjustments to Williams' analysis are shown on Exhibit 18 and yield annual cost of equity for 1968-1996, not including any special TAPS risk premium. We adopt the annual rates of return on equity contained in Exhibit 18 for years 1968-1996.[403]

Re Nikiski Alaska Pipeline Co., 1 APUC 526, 531
1978 WL 24907 (Alaska P.U.C. Jan. 30, 1978.)

[402]Gaske urged that averaging across methods would help to smooth out "random glitches" in the data. Tr. 4382 (JSG). Averaging is a reasonable approach given acceptable and complementary methods.

[403]The resulting annual rates of return on equity are comparable to the rates awarded in other Alaska oil pipeline decisions. The APC allowed a 13.00 percent return on equity for the Nikiski pipeline in 1976; the backcast return calculated above for the average petroleum pipeline company in 1976 is 13.06 percent. In *Re Exxon Pipeline Company* the APC provided for a 15 percent return; however, this appears to reflect a one percent risk premium to account for special TAPS risks. *See* 66-WBT-E at 91-92 and 1 APUC 580, 601 (1980). Removing the 1 percent risk premium is appropriate because we are reviewing the appropriate rate of return on equity for TAPS, to which a risk premium may be later added. The backcast calculated above for 1978 is 14.67 percent. The APUC allowed a 17.00 percent return on equity for the Cook Inlet pipeline in 1980; the backcast calculated above for 1980 is 17.50 percent. *See* 68-WBT-E for Alaska oil pipeline decision benchmark data.

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4. Risk Premium to Reflect Special Risks of TAPS

If the business risks of TAPS are greater than those of an average pipeline project, then TAPS investors require a premium above the rate of return granted to the average pipeline. The parties agree that risks for ongoing TAPS operations are roughly comparable to the average risk faced by other pipelines.[404] The parties also agree that during its early planning and construction phase, TAPS faced greater risks than those faced by an average pipeline.[405] To determine an appropriate risk premium for 1968-1996, we resolve three questions. First, how much compensation is necessary to compensate for unusual risks? Second, should the risk premium be applied to debt, equity, or both? Finally, how long should investors collect this risk premium?

The Carriers urge that a risk premium of two to five percent[406] be applied to the entire TAPS investment. They assert that a risk premium should be applied to the entire cost of capital, rather than just equity capital because the entire pipeline asset

[404]T-3 (WBT) 39; FJH-T (E-2) 65; Tr. 4944-45 (FJH); JSG-T (W-2) 39. There is agreement that current risks on TAPS are either slightly more, slightly less, or equal to those of the average pipeline. None of the parties proposed making an adjustment to the rate of return compared with the comparative pipeline sample groups to compensate for extraordinary on-going risks.

[405]T-3 (WBT) 48; FJH-T (E-2) 55; JSG-T (W-2) 39.

[406]T-3 (WBT) 48.

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was at risk.[407] The Carriers also argue that this risk premium should be applied throughout the stipulated 34.5-year economic life of the line.[408]

Williams advocates that a risk premium of 0.50 percent[409] be applied to equity investment in TAPS.[410] During the hearing, Williams's expert witness testified that only equity investment, rather than the entire pipeline, was put at risk. Thus only equity capital was deserving of a risk premium.[411] The Williams analysis allows for a risk premium on initial project capital expenditures until such capital is recovered.[412]

Tesoro urges that a risk premium ranging from 0.33 to 0.87 percent,[413] and averaging 0.48 percent,[414] should be applied to the entire TAPS investment.[415] While Tesoro agrees that the risk premium should be applied to the entire cost of

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[407]T-3 (WBT) 51-52. Although Carriers attribute a risk premium to the entire rate base, in calculating AFUDC and annual revenue requirements they apply the entire weight of this risk premium only to the return on equity. This considerably boosts the equity risk premium; *see* JSG-T (W-2) 45. For example, given their recommended capital structure, during 1997-2000 the Carriers' 3.5 percent midpoint risk premium on all capital converts to a 4.5 to 4.7 percent equity risk premium. 71-WBT-W.

[408]T-3 (WBT) 42.

[409]JSG-T (W-2) 44.

[410]Williams witness Gaske's recommended overall return does not include a risk premium on debt; *see* JSG-2 Schedule 10.

[411]Although the Carriers urged that Dr. Gaske had admitted in prefiled testimony that during the construction era the entire pipeline was at risk and thus deserving of a risk premium (*see* T-10 (WBT) 39), during oral testimony Dr. Gaske reiterated his opinion that only equity investment, and not the entire pipeline, was put at risk. *See* Tr. 4376-77 (JSG). Thus, his use of the phrase "entire investment" in his prefiled testimony presumably refers only to "equity investment." *See* JSG-T (W-2) 42.

[412]JSG-T (W-2) 44. It is not clear the duration for which Williams believes a risk premium is appropriate, but oral testimony at the hearing suggests that Williams advocates the risk premium applying through 2030 on construction era investment (*see* Tr. 4376 (JSG)), given its view that TAPS will last through 2030. *See* BEW-T (W-3) 23.

[413]FJH-12 at 1-2.

[414]T-10 (WBT) 37.

[415]FJH-12.

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capital, it does so only through 1981.[416] Tesoro asserts earlier-period risks have passed, and investors require compensation only for prospective risks.[417]

The parties' positions on the appropriate risk premium vary because of differences in their assessment of a) the magnitude of the special TAPS risks; b) the type of capital exposed to extraordinary risks; and c) the proper method for translating the assessed risk into a rate of return premium that investors in a stand-alone TAPS would have required. The parties' introduced record from Phase I of the original TAPS litigation to evaluate the magnitude of special TAPS risks and the amount of capital exposed to those risks.[418] The discussion of early-period TAPS risks in the Phase I exhibits is much more extensive than the direct discussion by the parties' expert witnesses in these dockets. We therefore consider those portions of the Phase I record that were introduced in the record in these consolidated dockets along with the testimony of current expert witnesses.

Considering a risk premium on a "backwards" looking basis is extremely unusual. It is challenging because we are removed from the events that informed investor perceptions of TAPS risks. Nonetheless, based on the record, we review and carefully evaluate special TAPS risks as they would have been perceived from the perspective of a rational, well-informed, prudent investor at the time of investment.[419]

[416]FJH-12 at 1-2.

[417]FJH-T (E-2) 55-56.

[418]*See* Endnote 1 at 2-3.

[419]We must be particularly careful not to diminish the rates of return that construction era investors would have demanded, particularly now that we are looking at TAPS after more than twenty years of successful operation.

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Relevant investor risk in TAPS can be divided into three time periods: 1) before May 1974, 2) between May 1974 and June 1977, and 3) after June 1977.[420] The first was the pipeline planning phase ending with State and Federal issuance of right-of-way permits. The second period was pipeline construction. The third period is pipeline operation.

Investors faced various types of risks: non-completion, economic, litigation, and regulatory. Non-completion risk is the risk that technological, regulatory, or other factors could stop the project before completion. For an investor, project non-completion would be catastrophic because much of the money invested would not be recovered and no return earned.[421] Economic risk is the risk that cash flow will be insufficient to provide adequate return on or of capital. Litigation risk consists of the risk that shippers could challenge as imprudent costs that Carriers attempt to recover in rates. Regulatory risk is that risk that regulators would regulate TAPS in an unusual manner that would deny investors an adequate return. We analyze each of these risks in detail in Endnote 8 subparts (a) through (d). Based on that analysis, we find that there was significant risk to investor capital before May 1, 1974 and some risk thereafter. Below we summarize our analysis of the risks facing investors.

[420]Carrier witness Tye also suggests that risks should be considered in terms of three periods. His demarcation of relevant periods, planning and construction (1968-1977), post-construction cost recovery (1977-1985), and ongoing operation-phase risks, differs from ours. The difference in relevant temporal periods is due to our findings regarding relevant risks.

[421]Non-completion need not entail total loss of all investment to date, given the possibility of positive salvage value as well as possible tax benefits.

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a. Risk of Non-completion	Non-completion risk premium awarded due to legal and regulatory uncertainty prior to May 1, 1974, but none awarded post-May 1, 1974
b. Economic Risk	
i. Risk of inadequate physical supply	Less risk than the average pipeline
ii. Risk of inadequate throughput due to competition	Less risk than the average pipeline
iii. Risk of throughput interruption	No significant additional risk compared to average pipeline
iv. Risk that shipping oil is uneconomic for producers	Risk premium added for risk that post-1974 costs might be greater than those associated with an average pipeline
c. Post-construction regulatory risks	Policy reasons dictate no risk premium for post-construction regulatory risk
d. Post-construction litigation risks	Policy reasons dictate no risk premium for post-construction litigation risk

The specific factors listed above and analyzed in Endnote 8, suggest that investors in a stand-alone TAPS would have faced greater risk than investors in an average pipeline. Accordingly, we award a risk premium. We determine an appropriate risk premium by translating risks that investors faced into a premium to the cost of capital that investors would have required.

Tesoro asserts that differences between construction risk for TAPS and TAPS' operation risk can be captured by differences in utility bonds ratings of Baa (for TAPS during 1968-1981) and A (for TAPS at present).[422] However, as the Carriers note, Tesoro fails to fully explain the basis for this conclusion.[423] Specifically, Tesoro fails to clearly explain why the difference between Baa and A bond ratings is analogous

[422]FJH-T (E-2) 56.

[423]T-10 (WBT) 32.

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to the risk differentials between TAPS and an average pipeline. Accordingly, we find that the Tesoro analysis is too speculative to rely upon for awarding a risk premium.

Williams calculates a special TAPS risk premium by postulating an additional 10 percent probability of losing the entire equity investment, above and beyond those faced during construction by average pipelines prior to operation.[424] Williams' urges that this would be a very high additional probability, and is probably unrealistic.[425] Nevertheless, based on this assumed probability, Williams considers the added rate of return that would be needed to make investors "whole." Williams notes that the required return on common equity for sample pipelines was roughly 14.5 percent. Williams then assumes a hypothetical dividend yield ($4.50), a hypothetical share value ($100), and a hypothetical expected growth rate (10 percent) that under a DCF analysis produces the 14.5 percent rate of return.[426] Williams reasons that an additional risk of losing 10 percent of the entire investment would reduce share value to $90, so that within a DCF framework the resulting return on equity would be 15 percent. Accordingly, Williams proposes a risk premium of 50 basis points.[427]

This analysis is not reliable for two reasons. First, based on a thorough reading of the evidence in the record, we do not agree with the assessment that rational equity investors perceived a risk of as much as 10 percent of losing their entire investment. Second, as Williams witness Gaske readily admits, the entire calculation -- the stock price, the dividend rate, and the growth rate -- is hypothetical.[428] If one

[424]JSG-T (W-2) 42.

[425]JSG-T (W-2) 42.

[426]JSG-T (W-2) 43-44.

[427]JSG-T (W-2) 43-44.

[428]Tr. 4378 (JSG). The hypothetical nature of all the terms in Dr. Gaske's calculation further underscores the tenuous nature of the assumption that an additional 10 percent probability of losing the entire equity investment existed.

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chooses parameters other than those chosen but consistent with the 14.5 percent average equity rate, then an entirely different risk premium emerges. Given the lack of actual data on stock price, dividend rate, and growth rate of a stock compared to TAPS, we find Williams' method too speculative.

The Carriers present two complimentary approaches to deriving an appropriate TAPS risk premium. First, the Carriers appeal to market data which reveal that investors demand greater returns for risky projects. The market data are intended to indicate a lower bound on the level of acceptable risk premiums.[429] Second, the Carriers then present a specific method for translating extraordinary TAPS risks into required return premiums. We review the Carriers' approaches below.

Carriers present three types of market evidence to indicate what they regard as minimum risk premiums for TAPS. First, the Carriers point to an academic study that shows that third-party guarantees reduce the costs of project finance loans by an average of nearly 43 basis points.[430] The Carriers assert that, because TAPS was substantially larger than the projects sampled in the study, the risk premium demanded by TAPS investors will be "well in excess" of this amount.[431]

Second, the Carriers cite academic authority that indicates that investors in BB-rated rated bonds demanded an average rate of return premium of 2.1 percent over AA-rated bonds.[432] The Carriers then point to the cumulative default rate on the lower grade bonds (6.64 percent) and the ultimate average recovery of original investment (36 percent) once default has occurred.[433] They reason that, because the

[429]T-10 (WBT) 50.
[430]T-10 (WBT) 46.
[431]T-10 (WBT) 46.
[432]T-10 (WBT) 49.
[433]T-10 (WBT) 50.

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TAPS early-period risks of losing the entire investment were greater than the risks faced by holders of BB-rated bonds, the required risk premium for TAPS should be at least 2 percent.[434]

Finally, the Carriers cite an academic study that shows that "large engineering projects," projects with an average value of $1 billion, often turn out to be bad investments.[435] A significant portion of the projects fail.[436] TAPS was an especially large project. The Carriers conclude, therefore, that the assumption of a 10 percent risk of losing the entire investment should be considered a lower bound of the early-period risks faced by TAPS.[437]

The academic studies of market data to which the Carriers appeal show that investors demand compensation for investing in riskier projects. They also show that large projects can generate large risks. However, the Carriers fail to provide good evidence that the studies cited are relevant to the comparative risks between TAPS and the average pipeline.

For example, the Carriers do not explain why the TAPS was akin to the sample of projects considered in the first study that they cite. The Carriers assert that because TAPS was a bigger project than those studied its parent company loan guarantees would "surely" require a greater risk premium. However, the record is silent on the nature of the businesses and thus on baseline risks of projects considered by the study. Without knowing this baseline, how TAPS risks compare to this baseline, and how the value of third party guarantees change as baseline risk changes, we cannot

[434]T-10 (WBT) 50.

[435]T-10 (WBT) 47-48.

[436]T-10 (WBT) 47-48.

[437]T-10 (WBT) 48-49.

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meaningfully draw conclusions about the risk premium that TAPS investors would demand. Similarly, with reference to the second study, the Carriers fail to adequately explain why the risk of TAPS compared to an average pipeline company is analogous to the risk of projects financed with BB compared to projects financed with AA grade bonds. Finally, although it is clear that TAPS was a large engineering project, the Carriers do not adequately explain why investing in TAPS was "certainly" more risky than investing in tunnels, subways, airports, toll roads and power plants[438] (large projects that sometimes fail). The record does not provide information on the risks that these other projects confront. In conclusion, we find that the studies cited by the Carriers do not provide convincing evidence of a lower bound on the risk premium that TAPS investors would demand.

The Carriers present a method for specifically quantifying a rate of return premium to reflect special TAPS risks. The method is based on an assessment of an investor's perceived probability of losing their entire investment. The Carriers' approach is designed to determine how much of an extra return is required to allow an investment with extra risks of losing the entire investment to yield the same expected value of future returns as an investment without these additional risks.[439] The method requires assessing the probability of capital loss, estimating the cost of capital without the risk premium, and making an assumption about the economic life of the line that investors perceived when they made their investment.[440] Different assessments of these three variables will generate different required risk premiums. Such flexibility and transparency is certainly a virtue.

[438]T-10 (WBT) 48.

[439]T-3 (WBT) 48-49.

[440]*See* WBT-49, Panels B-E.

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This method, however, also implicitly assumes that a risk premium needs to be recovered into the future, even when the risks for which compensation is awarded have passed.[441] The parties present divergent views on whether we should award a risk premium prospectively. Accordingly, if the Carriers' method is to be used to assess the required risk premium demanded by TAPS investors, we must resolve the question of whether a risk premium can properly be included in rates after the risk has passed.

The Carriers assert that special risks during development, construction, and post-construction can only be compensated through higher expected earnings during project operation.[442] Therefore, a risk premium must necessarily be awarded after risks have passed. The Carriers assert that unless investors can reasonably expect this compensation, projects will not be able to attract capital.[443] The higher expected earnings are achieved by awarding a risk premium into the future. The Carriers cite the pharmaceutical industry, wildcat oil wells, and telecommunications satellites as examples of efforts where the occasional success must "pay for" the many failures.[444]

Although these examples are not from industries with similar business risks as ~~to~~ TAPS, in each case the compensation for the risk of project failure is recovered after the risk is resolved.[445] In the first two cases the risk of the endeavor is usually covered by a business undertaking many such endeavors and "self insuring." In

[441]This point is clear from an examination of the underlying calculations in WBT-49.

[442]T-3 (WBT) 42; T-10 (WBT) 34.

[443]T-10 (WBT) 34.

[444]T-3 (WBT) 44-45.

[445]T-3 (WBT) 45.

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the latter case insurance premiums to cover the risk of failed satellite launches are directly included in the costs consumers pay.[446]

Tesoro asserts that there should be no risk premium in current rates for any extraordinary past risks associated with TAPS.[447] Tesoro reasons that because ratemaking is prospective, compensating TAPS investors for past risks would be retroactive ratemaking.[448] While some risk premium was necessary in the past, investors would or should have received acknowledgment of them through appropriate rates of return in the past. Tesoro reasons that the rates for 1997-2000 should therefore not include a risk premium.[449]

Williams asserts that we need not provide an additional return premium to maintain the value of existing capital or to attract additional capital prospectively.[450] Williams reasons that the rate of return used to establish rates must reflect current risks; if it does so the company will be able to attract future capital.[451] Williams explains that the value of capital already committed will be maintained so long as there is a reasonable expectation that the allowed return will be achieved.[452] Nevertheless, Williams asserts that "it would be reasonable to provide a premium in the current TAPS rate of return to recognize" the early-year special TAPS risks.[453]

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[446]T-3 (WBT) 45.

[447]FJH-T (E-2) 64.

[448]FJH-T (E-2) 64. *See also* Endnote 6.

[449]Tr. 4935 (FJH).

[450]JSG-T (W-2) 39.

[451]JSG-T (W-2) 38-39.

[452]JSG-T (W-2) 39.

[453]JSG-T (W-2) 39.

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We find that it is appropriate to award a risk premium after the relevant risks have passed. Considering TAPS on a stand-alone basis suggests recognizing that TAPS was a unique all-or-nothing gamble. If investors need to be compensated for an all-or-nothing gamble for only a short period, then the risk premium during that time will be larger. It is more equitable to have later-year ratepayers shoulder some of these extraordinary capital costs because they receive benefits from the pipeline's construction.

Moreover, we are persuaded by the Carriers' arguments that markets sometimes continue to reward risk taking investors after the risks have passed. Bonds continue to pay a return premium if extraordinary risks were present at bond issuance.[454] Further, if the Carriers could have obtained insurance for construction-era risks, the cost of that insurance would have been included in rates and recovered long after the risks passed.[455] Finally, in competitive markets, the value of a stock once a risk is favorably resolved is greater than when the risk is still present. If initial investors are confident that regulators will mimic this dynamic and allow them this greater value then the enterprise will have an easier time attracting capital at reasonable rates.[456]

Having resolved protestants' objections, we find that the Carriers' method[457] of translating risk into a rate of return premium is reasonable.[458] We disagree, however, with the Carriers' assessment of the relevant inputs. We do not

[454]T-10 (WBT) 49.

[455]Tr. 2950-51 (WBT).

[456]*See* Tr. 2951-52 (WBT).

[457]*See* WBT-49.

[458]We also recognize that it is imperfect. The Carriers' method fails to address the sum of risks to partial, rather than complete, capital loss. To capture risk of partial loss, we adjust upward the risk of "total loss" used in our calculation of the appropriate risk premium.

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accept the Carriers' estimate of the risk of principal loss, nor their base line, non risk-adjusted rate of return to which the risk premium is applied, nor their assessment of the period over which the risk premium is recovered. Instead, our findings regarding relevant inputs and their application to the Carriers' method are discussed below.

Based on the record and our analysis at Endnote 8, we find that, before May 1, 1974, investors may have perceived a roughly 50 percent likelihood that the project would not be completed. Accordingly, investors in a stand-alone pipeline before this date faced a significant chance of failing to receive, not only an adequate return on, but also the return of their principal investment. The return on capital expended before May 1, 1974, should therefore be adjusted to reflect this extraordinary risk. This adjustment should only be applied to equity capital because we have found that a stand-alone pipeline would have been financed with only equity during this period.[459]

Investors provided $514 million towards TAPS construction before May 1, 1974.[460] However, not all of this money was at risk. During Phase I of the original TAPS litigation, State witness Parcell pointed out that a significant portion could have been recouped. "[A]t the beginning of 1974 only about $451 million had been committed to the TAPS project. When allowances for salvage values and tax savings effects are taken into consideration, the net commitment falls to $137 million."[461] The first $514 million (rather than the $451 million to which Parcell refers) was exposed to significant non-completion risk. Parcell's ratio of capital at risk to total capital expended

[459]Our earlier finding that the pipeline would have been capitalized with 100 percent equity until May 1, 1974, was also based upon the considerable risks of non-completion that investors in a stand-alone pipeline would have faced.

[460]143-RGV-C, Workpaper TAPS-RGV WP3.xls, Schedule 3.

[461]~~WBT-67-E~~ (Parcell) 44.
67-WBT-E

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is roughly 30.38 percent.[462] It is reasonable to expect that a similar ratio applied to the incremental $63 million in expenditures made from January through April of 1974. Accordingly, we find that $156.138 million[463] of original investor capital was subject to extraordinary risk associated with legal and other institutional hurdles.[464] When compared to total equity expenditures of roughly $3.909 billion during the construction phase (based on our finding of a 50.5 percent equity structure), this amounts to four percent of total equity capital. Our finding that there was a 50 percent chance of total capital loss before construction began thus translates to a two percent chance (50 percent of 4 percent) of total project equity capital loss.[465]

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[462]Parcell suggested that true capital exposure was $137 million, while total capital expenditures were $451 million. The ratio of capital exposure to total expenditure is thus 137/451, or 30.38 percent.

[463]$156.138 million results from multiplying $514 million by 30.38 percent.

[464]In the Phase I litigation, Carrier witness Patton suggested that the planning and pre-construction era risk needs to be applied to all subsequent construction capital. He explains:

> [A]t least by the late Fall of 1973, the Owners were for all intents and purposes obligated, as a matter of political reality and economic fact, to undertaking the Project, notwithstanding the risks and unresolved uncertainties that still existed regarding negotiation of the PLA, securing design criteria approvals and the like.

WBT-16 (Patton) 95.

We find Patton's assessment incorrect. Taken literally, it suggests that the Carriers would have been willingly derelict in their duties to shareholders and would have refused to stop construction if doing so was appropriate.

Patton's view is contradicted by his claim that he had advised the TAPS owners that Alyeska was considering a complete shutdown if progress was not made with the Teamsters Local by the first week of April, 1974. WBT-16 (Patton) 8. The stated willingness to stop capital expenditures on the project illustrates the willingness of the Carriers to act rationally in the face of future threats and demonstrates that a risk of total construction capital loss did exist. Although the Carriers make theoretical arguments as to how investors' funds can become irreversibly committed even in the face of foreseeable loss, the record does not suggest that investors were indeed in such a position after April, 1974. WBT-29 (Arrow) 27-29; Tr. 2641-42 (WBT).

[465]*See* T-3 (WBT) 48-49 for a similar style of calculation, although with different inputs.

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In addition to the extraordinary risks during the planning phase, we find that during the entire construction period equity investors faced some additional risk of capital recovery, both on and of investment, from economic risks. Roseman's testimony that TAPS could be expected to generate funds sufficient to cover debt service under almost any scenario is persuasive.[466] However, equity investors did face additional risks, "because stockholders' claims are subordinated to those of lenders when the firm issues debt, the risks faced by stockholders are magnified."[467] Although equity investors' total exposure was comparatively modest, we find that it was nevertheless present. After a complete review and analysis of the record, we find that construction-era equity investors faced an additional five-percent probability[468] on top of risks borne by the average pipeline of losing half of their investment. To use the Carriers' method for calculating a risk premium, this five-percent probability is translated into a 2.5 percent probability of losing the entire equity investment.[469] We add this risk premium to all equity investment made until the pipeline became operational. The Carriers[470] and Williams[471] adopt an operational date for TAPS of July 1, 1977; Tesoro does not sponsor a date for when the pipeline began operations. Because the date of initial operations are uncontested, we use July 1, 1977 as the start of operations.

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[466] *See* 66-WBT-E (Roseman) 68-75.

[467] WBT-60 at 2.

[468] The early construction period generated risks somewhat greater than this for equity investors, while the later construction periods generated somewhat lower risks. Given that these risks cannot be measured with precision (T-3 (WBT) 50), we find determining an average risk premium over the entire pre-operational period reasonable.

[469] *See* T-3 (WBT) 48-49 for example of translating a risk of partial loss to a smaller risk of total loss.

[470] *See* 143-RGV-C, RGV-14 WP 3, TAPS-RGV WP3.xls, Schedule 3, l. 106.

[471] *See* 189A-BEW-T Workpaper BEW_R_RGV WP1 DR 22RE.xls, Schedule 3, l. 106.

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Having determined the extraordinary risk to which planning and construction era equity capital were exposed, we must determine the baseline, non-risk adjusted return required for such capital investments. Given our findings from Part IV Section B.3, from 1968 through 1974, the non risk-adjusted cost of equity capital averaged 12.31 percent.[472] Similarly, our findings from Part IV Section B.3 indicate that the non risk-adjusted cost of equity capital from 1968 through 1977 averaged 12.63 percent.[473]

Finally, we must decide to what capital and for what length of time the risk premium should be applied. Although the Carriers posit a horizon of 34.5 years, investors were aware at the time of investment that TAPS rates were initially set using a 25-year depreciation schedule.[474] We therefore adopt a 25-year time over which to apply risk factor to equity capital.

We use the Carriers' methodology with adjusted inputs to determine a risk premium. That risk premium is 33 basis points for the original TAPS investors who provided capital from 1968 through May 1, 1974.[475] It is applied to *all* equity capital for the 25-year period 1977 through the middle of 2002. We add an *additional* 42 basis

[472]Based on the arithmetic average of our findings for appropriate return on equity for 1968-1974; *see* Exhibit 19, Schedule 1.

[473]Based on the arithmetic average of our findings for appropriate return on equity for 1968-1977; *see* Exhibit 19, Schedule 2.

[474]*See* 106-RGV-E. We attempt to provide a premium that makes equity investors whole with regard to risks experienced during the planning and construction eras. Accordingly, it is appropriate to adopt the time horizon that these initial equity investors expected because that is the time period over which they might have hoped to recover such a premium. Neither Tesoro nor Williams proposed time horizons that met this requirement. *See* n.412 and n.416, *supra.*

[475]Exhibit 19, Schedule 1. The 33 basis points is adjusted from 36 basis points to recognize that roughly 90 percent of the equity capital expended to date comes from the original construction period. T-3 (WBT) 50. The rationale for such leveling was detailed during cross-examination. Tr. 2935-36 (WBT).

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point risk premium to correspond to the risk faced by original TAPS investors who provided equity capital from 1968 through July 1, 1977.[476] This risk premium is also applied to all equity capital for the 25-year period 1977 through the middle of 2002. Thus, the total risk premium to be added to return on equity is 75 basis points.[477] The full, appropriate return on equity that combines the special TAPS risk premium with the non risk-adjusted equity rate of return is calculated at Exhibit 20. The overall weighted rate of return on rate base is calculated at Exhibit 2.

5. Allowance for Funds Used During Construction

Allowance for Funds Used During Construction (AFUDC) is allowed in modern ratemaking to compensate investors for funds expended to construct pipeline facilities before the facilities are used to deliver services.[478] To calculate AFUDC for the

[476]Exhibit 19, Schedule 2. Again, the 42 basis points reflects adjustment from 46 basis points in recognition that on a leveled basis roughly 90 percent of the equity capital expended to date comes from the original construction period. T-3 (WBT) 50.

[477]Without adjusting for a leveled rate base that also contains new, less risky capital, these calculations suggest an overall risk premium on original capital expenditures of 82 basis points. This conforms closely to the equity risk premium of one percent, provided by the APC. *See Re Exxon Pipeline Co.*, 1 APUC 580, 601 (1980). The Alaska superior court, in its remand of *Re Exxon Pipeline Company* asserted that risks associated with construction cost overruns were fully subsumed within the rate base. *State of Alaska v. Alaska Pub. Util. Comm'n,* 3AN 80-7163 CI (Alaska Super.) Nov. 28, 1983, vacated by *Amerada Hess Pipeline Corp. v. Alaska Pub. Util. Comm'n,* No. S-195, slip op. (Alaska Nov. 20, 1985) at parties' request due to settlement. The Alaska Superior court may not have recognized that cost-overruns were only part of the risks facing TAPS. Moreover, while actual cost overruns were included in rate base, the threat of cost over-runs served to create some small but non-zero uncertainty for equity investors as to whether the economics of the pipeline might prevent full equity capital recovery.

[478]AFUDC allows for recovery of interest on both debt and equity funds used during construction. In *Re Exxon Pipeline Company,* the APC awarded the TAPS Carriers actual booked original cost including Interest During Construction (IDC). 1 APUC 580, 591 (1980). IDC allows only for recovery of interest on debt costs. In doing so, the APC followed the old Interstate Commerce Commission approach that provided only IDC for oil pipelines. The use of AFUDC instead of IDC is now well settled and we calculate it for the TAPS.

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TAPS, we determine the AFUDC balances to be used and the schedule for compounding.[479] The parties present different methodologies for determining AFUDC.

Tesoro uses end-of-year Construction Work in Progress balances against which AFUDC is calculated, as well as annual compounding, but provides little reasoning for doing so.[480] The Carriers calculate AFUDC against year-average Construction Work in Progress balances, and compound AFUDC balances semi-annually. They assert that this is consistent with FPC Order 561.[481] Williams agrees with the Carriers.

The APUC directed in *Cook Inlet* that "AFUDC should be calculated in accordance with the formula set out in FPC Order No. 561."[482] The FPC approach permits AFUDC to be calculated against average year Construction Work in Progress balances. FPC Order 561 also directs that compounding should be done no more frequently than semi-annually.[483] By directing that AFUDC should be calculated pursuant to Order 561, the APUC in *Cook Inlet* allowed for semi-annual compounding. We see no reason to deviate from that precedent. We adopt the average year balance

[479]The size of AFUDC balances will be larger the more frequently it is compounded.

[480]Tesoro adopts the TSM's AFUDC amounts at the beginning of pipeline operations. *See* 225-JFB-T. That balance was calculated using end of year Construction Work in Progress balances. *See* 31-BWF-E. Tesoro also suggests that we should use ADIT as an offset when we calculate AFUDC. While this approach may be theoretically more accurate than the one we adopt, we lack a record sufficient to allow us to make that calculation.

[481]Tr. 3609 (RGV).

[482]*Re Cook Inlet Pipe Line Co.,* 6 APUC 527, 543 (1985).

[483]226-JFB-T.

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and semi-annual compounding previously adopted by the APUC. We adopt the resulting amounts for AFUDC as calculated at Exhibit 21.[484]

C. Depreciation

We found that the Carriers' use of straight-line depreciation was inappropriate in Part III, *supra*. Our goal is to set cost-based rates. We found in Part III Section C that the TSM depreciation schedule provides the Carriers with an opportunity to recover their capital investment and safeguards shippers from paying twice for the Carriers' investment. In this section, we refine our finding on the use of TSM depreciation to determine the remaining rate base at year-end 1996, and calculate the depreciation charges that result for each year. We then describe how we calculate retirements from accumulated depreciation. Finally, we explain how the AFUDC balances are amortized.

1. TSM Depreciation Charges Should Be Adopted

There are several issues that are addressed in this subsection. First, we determine whether TSM depreciation charges or factors should be used. Second, we explain the use of TSM-6 depreciation for the years 1977-1984. Third, we explain how we included TSM's amortization of excluded costs to calculate investment recovery.

[484]Tesoro urges that we incorporate accumulated deferred income taxes (ADIT) as a source of cost-free capital in our calculation of AFUDC. JFB-T (E-3) 48; *Tesoro Alaska Company's Posthearing Reply Brief* at 31-32. We do not do so for two reasons. First, most of the AFUDC is accumulated before the pipeline went into operation and there is no ADIT during that period. Tr. 5355-56 (JFB). Second, including ADIT in the AFUDC calculations from 1977-1996 only makes a difference to shippers to the extent that AFUDC is booked by compounding semi-annually, because using ADIT to fund AFUDC reduces the AFUDC balance but increases the return on rate base. Witnesses agreed that the size of AFUDC had a *de minimus* impact on the revenue requirements and rates during the protested years. JFB-T (E-3) 50. Administrative simplicity does not support Tesoro's approach.

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Tesoro suggested that the rate base against which we test 1997-2000 filed rates should be calculated with reference to historical TSM depreciation *charges*.[485] Williams urged that the rate base be determined with reference to TSM depreciation *factors*.[486] The depreciation charges that Williams derives from these factors differ from the TSM depreciation charges. Thus, protestants raise the issue of which "TSM based" depreciation figures should be used.

The TSM charges are more appropriate to use as a measure of the opportunity that Carriers have historically enjoyed to recover their investment. The depreciation factors upon which Williams relies have never been used to set rates, were not used to reconcile the TSM starting rate base, and were never presented to any regulatory body. The TSM depreciation charges, however, meet all these criteria and were recognized by the settling parties as a vehicle for investment recovery. We find TSM depreciation charges more reasonable.

The Carriers have urged that using TSM depreciation charges to set rate base for 1997-2000 is inappropriate, because TSM itself contained no depreciation charges for 1977-1983.[487] Instead, the Settlement Agreement set a starting rate base for 1983 year-end,[488] and determined depreciation charges for 1984 through the present.[489] The depreciation charges upon which Tesoro relies are contained in an illustrative exhibit, known as TSM-6.[490]

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[485] *See* 225-JFB-T.

[486] *See* 189A-BEW-T.

[487] *See* Tr. 4518-21 (BEW).

[488] *See* BWF-2 at 14; BWF-3 at 59.

[489] *See* BWF-3 at 55. The Settlement specifies depreciation *factors* through 2011.

[490] 31-BWF-E.

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We acknowledge that the TSM-6 depreciation charges were not directly used to set tariffed rates for 1977-1983. Rather, until the Settlement was brokered, rates were still being charged according to the originally filed and suspended rates from 1977.[491] However, the question concerning TSM-6 depreciation charges is not whether they were used as a means of revenue collection, but whether they provided the Carriers with a reasonable opportunity to recover their investment.

The TSM-6 depreciation charges are the same as those presented by ARCO witness Baden to the APUC in support of the Settlement.[492] In explaining his schedule, which reconciles FERC Form 6 data to the 1984 starting values in the TSM, Mr. Baden explained that "the TSM numbers do have real numbers behind them,"[493] and that his purpose was "to show the trail from the Form 6 data or the TAPS record to the TSM stipulated number."[494] The State of Alaska and the U.S. Department of Justice represented that refunds under the Settlement were determined according to the TSM-6 revenue requirements for 1977-1984.[495] Thus, the record shows that the Carriers and the APUC relied on the TSM-6 depreciation charges to arrive at and accept the Settlement's starting rate base.

Because the Carriers and the APUC relied on the TSM-6 depreciation charges, they fairly represent the Carriers' opportunity for investment recovery. When the APUC approved the Settlement Agreement, they made 1977-1985 rates

[491] *See* Tr. 4518-19 (BEW).

[492] *See* 235-JFB-T; 31-BWF-E.

[493] *See* 236-JFB-T at 699.

[494] *See* 236-JFB-T at 699.

[495] *See* BWF-4 at 70.

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permanent.[496] Although they did not assert that those rates were just and reasonable, in making those rates permanent and in relying upon the reconciliation of FERC Form 6 to TSM-6 data to do so, the APUC closed the book on considering any other depreciation charges for those years. As a witness for Williams noted, the depreciation contained in TSM-6 was "analogous to setting a rate based on a suspension rate. In other words, the Carriers had made a tentative filing under one rate methodology, and the actual depreciation rates to be used were not established until later."[497] To accept straight-line depreciation for 1977-1983 instead of the TSM-6 depreciation charges may run afoul of the doctrine of retroactive ratemaking.[498]

We turn now to the issue of TSM's amortization of excluded costs. The Settlement excluded $450 million of Carrier property from TSM's rate base. However, the Settlement Agreement amortized these excluded costs from 1978 through 1984.[499] The TSM disks show that more than $72 million was amortized in 1984.[500] The full amortization schedule is included in TSM-6.[501] Thus, the Settlement Agreement allowed no return *on* the $450 million, but did permit a return *of* the $450 million.[502]

To set depreciation charges for 1977-1996, we determine the opportunity that the Carriers have enjoyed to recover their investment. We found that the TSM and TSM-6 depreciation amounts better represent this opportunity than the Carriers' FERC Form 6 books and records. To be consistent, we add the $450 million rate base

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[496] *Re Amerada Hess Pipeline Corp.,* 8 APUC 168, 170 (Alaska P.U.C. May 30, 1987).

[497] Tr. 4519 (BEW).

[498] *Tesoro Alaska Company's Initial Posthearing Brief* at 30-31.

[499] BWF-3 at 14.

[500] 31-BWF-E.

[501] 31-BWF-E.

[502] 29-ABJ-W at 10.

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exclusion to the TSM and TSM-6 depreciation charges for 1978-1984.[503] The yearly amounts that we adopt for depreciation and accumulated depreciation used to determine the year-end 1996 rate base are set forth in Exhibit 22.

2. Retirements From Accumulated Depreciation

When property is retired from service, generally the accumulated depreciation associated with that property to date is removed from the total accumulated depreciation account.[504] The Carriers' data for retirements from accumulated depreciation reflect FERC Form 6 depreciation.[505] It thus reflects straight-line depreciation for plant of different vintages and with different expected lives. Williams assumes that accumulated depreciation amounts are unaffected by retirements[506] and makes no deductions from accumulated depreciation, even though they take retirements from gross depreciable property. Tesoro adopts the TSM approach and reports only net retirements.[507]

We find the various data presented on retirements from accumulated depreciation to be inconsistent with our finding that TSM depreciation should be used to calculate the 1996 rate base. The Carriers' data reflect straight-line depreciation,[508] while the TSM depreciation amounts imply a more accelerated depreciation schedule. With an accelerated depreciation schedule, accumulated depreciation balances should

[503] In Part IV Section A(1), we found that the Settlement's $450 million should not be disallowed from rate base. By adding add the $450 million rate base exclusion to the TSM and TSM-6 depreciation charges for 1978-1984, we provide for both the return on and of this investment.

[504] Tr. 5137 (JFB).

[505] *See* 143-RGV-C. Workpaper TAPS RGV-WP3.xls, Schedule 12, l. 12.

[506] 189A-BEW-T Workpaper BEW_R_RGV WP1 DR 22RE.xls, Schedule 12.

[507] *See* 225-JFB-T.

[508] 143-RGV-C, RGV-14 WP 3, TAPS-RGV WP3.xls, Schedule 2, l. 19.

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be reduced more than suggested by the Carriers' data. Williams' approach is not appropriate because accumulated depreciation should reflect retirements of Carrier property. Tesoro's data cannot be used, given our finding that the FERC Form 6 retirements data are more appropriate.[509]

The more rapid depreciation schedule that we adopt needs to be imposed on property that has a shorter life than 34.5 years (the stipulated life of the TAPS). Because the record does not provide adequate information on the vintage of the retired property, we referred to individual Carriers' annual reports filed with us. Supplemental pages to the FERC Form 6, added after the Settlement, contain information on retirements by vintage year, as well as charges to accumulated depreciation that reflect those retirements.[510]

For 1977 through 1996, for each retirement from vintage year, we determine the expected life of property retired by dividing the number of years of service by the ratio of FERC Form 6 charges to accumulated depreciation to retirements. For retirements prior to 1986 there are no supplemental pages. Having no information regarding vintage year, we treat retirements from accumulated depreciation in the aggregate. For all retirements from all years, we then use TSM depreciation charges to impose the implied depreciation profile on shorter-lived assets. This allows us to derive retirements from accumulated depreciation that are adjusted for the more rapid depreciation schedule that we adopt.[511]

[509]Part IV Section A.4.

[510]Although the Carriers are not always consistent in their numbering of the Supplemental pages, in general the vintage year data on retirements are contained on Supplemental page 9. Aggregate retirements data are contained on Supplemental pages 1-3.

[511]Exhibit 23.

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3. Amortization of AFUDC

AFUDC balances are traditionally amortized consistently with the depreciation schedule because both depreciation and amortization of AFUDC are methods for recovery of capital. Williams[512] and Tesoro[513] amortize AFUDC using the TSM depreciation factors. The Carriers amortize AFUDC based on the relationship between depreciation expense and net carrier depreciable property.[514]

The rate at which AFUDC is amortized should match the rate at which Carrier property is depreciated. Accordingly, we follow the Carriers' approach, and derive amortization factors for AFUDC based on the relationship between the appropriate depreciation expense and net carrier property. The amortization factors were used to calculate the amortization of AFUDC, both debt and equity portions.[515] Exhibit 24 shows the derivation of the amortization factors, and Exhibit 25 illustrates the amortization of AFUDC.

D. Accumulated Deferred Income Taxes

ADIT is used by regulators to adjust rates for the difference in timing of depreciation for ratemaking and tax purposes. We use TSM depreciation charges for ratemaking, see Part IV, *supra.* For tax depreciation, we follow the approach taken by the parties[516] and assume the most accelerated methods of tax depreciation allowed,

[512]189A-BEW-T Workpaper BEW_R_RGV WP1 DR 22RE.xls.

[513]225-JFB-T.

[514]T-4 (RGV) 10.

[515]The Carriers (143-RGV-C, RGV-14 WP 3, TAPS-RGV WP3.xls), Williams (189A-BEW-T Workpaper BEW_R_RGV WP1 DR 22RE.xls), and Tesoro (compare 225-JFB-T and 31-BWF-E) amortize additions to AFUDC balances on a beginning-of-year basis; that is, the amortization factors are applied additions to AFUDC in the year in which additions are made. We follow this approach.

[516]*See*, e.g., T-7 (RGV) 12; 189A-BEW-T Workpaper BEW_R_RGV WP1 DR 22RE.xls, Schedules 6-7; 225-JFB-T, Workpaper 2.

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i.e., that maximum depreciation charges allowed by state and federal tax law are taken.[517] Consistent with a stand-alone income tax calculation, we follow the parties and assume that income is sufficient to be taxed at the highest statutory rate,[518] recognizing relevant changes in income tax rates[519] and laws.[520] Finally, we follow the approach used by all of the parties and do not reduce outstanding ADIT balance to reflect changes in deferred taxes associated with property retirements.[521] We calculate an ADIT balance for 1977-1996 at Exhibit 28.

E. Having Established All Necessary Inputs, We Calculate Reasonable Annual Rate Bases for 1977-1996

We can now calculate a reasonable rate base for year-end 1996. The value of original carrier property in service at commencement of service (July 1, 1977) is determined in Part IV Section A (Exhibit 8). That balance includes both depreciable and non-depreciable property. To provide AFUDC rather than just interest during construction (IDC), IDC is subtracted from FERC Form 6 figures for gross Carrier property.[522] The working capital balance (Exhibit 9) is added to obtain the value of

[517]Exhibit 26, Schedules 1 and 2 show the State and Federal tax depreciation, respectively, used to calculate ADIT balances.

[518]*See*, e.g., T-7 (RGV) 11.

[519]*See*, *e.g.*, T-7 (RGV) 12.

[520]Exhibit 27 shows the calculation of an adjustment to tax depreciation caused by the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA, Pub.L. 97-248, Sept. 3, 1982, 96 Stat. 324). The TAPS Carriers and Williams recognize a TEFRA Adjustment to tax depreciation (*see* 143-RGV-C, RGV-14 WP 3, TAPS-RGV WP3.xls and 189A-BEW-T Workpaper BEW_R_RGV WP1 DR 22RE.xls, respectively), while Tesoro does not (*see* 225-JFB-T). The parties did not explain why a TEFRA adjustment should or should not be made. We include the TEFRA adjustment as it better conforms to Federal statute.

[521]*See, e.g.,* T-7 (RGV) 12. Carriers note that this tends to result in the highest ADIT balance possible, and thus the largest reduction in rate base.

[522]We follow the Carriers' and Williams' (e.g. 189A-BEW-T) approach in this regard. *See, e.g.,* T-7 (RGV) 11; 189A-BEW-T Workpaper BEW_R_RGV WP1 DR 22RE.xls

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original carrier property in service. The AFUDC as of commencement of service is determined in Part IV Section B (Exhibit 21). To compute a rate base for year-end 1977, the 1977 additions to Carrier property are added and the 1977 retirements of Carrier property (Exhibit 8) are subtracted. The amount of depreciation charged for 1977 is subtracted from the value of Carrier property and AFUDC. AFUDC is amortized (Exhibit 25) according to an annual depreciation factor (Exhibit 24) that is based on the relationship between depreciation expenses and net Carrier property. Finally, in accordance with standard ratemaking practice, we deduct the ADIT balance for 1977 as determined in Part IV Section D (Exhibit 28). The rate base for year-end 1977 is $9.533 billion, shown at Exhibit 29, line 18.

Rate base at year-end for each of the years following is calculated by beginning with the balances at the end of the previous year, adding additions to Carrier property, subtracting retirements of Carrier property, annual TSM depreciation charges, and ADIT. The calculation of rate base at each year-end is depicted in Exhibit 29.[523] We find that the year-end 1996 rate base is $669 million, shown at Exhibit 29, line 18.

V. WE USE A COMPARATIVE REVENUE REQUIREMENT ANALYSIS TO CONFIRM THAT THE $669 MILLION YEAR-END 1996 RATE BASE DOES NOT CONFISCATE CARRIER PROPERTY

In *Kenai*, the APUC found that if a switch in ratemaking methodologies imposed a regulatorily enforced return deficiency[524] then an upward adjustment to rate

[523]Normally, the Commission requires the use of a 13-month average rate base. However, the record does not contain precise monthly rate base information. Because the effort costs required to calculate monthly rate base balances for TAPS would be much greater than the benefits conferred, we calculate both year-end and average-year rate bases, where the "average-year" rate base is calculated as the average of the rate base as of the beginning and the end of a given year. *See*, *e.g.*, T-7 (RGV) 12.

[524]*Re Kenai Pipe Line Co.*, 12 APUC 425, 438, 1992 WL 696192 (Alaska P.U.C., 1992).

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base might be made.[525] Such an adjustment is known as a "transition rate base." Transition rate bases ensure that no regulatory taking occurs and that carriers are provided an opportunity to recover their investment.[526]

The APUC explained in *Kenai*[527] how to determine the amount, if any, of a regulatorily enforced return deficiency.

> If, cumulatively, KPL had been entitled to earn less under the valuation methodology than it would have been allowed under DOC, it could argue for a transition rate base in excess of original cost.

[525]Equity suggests that if a switch in methodologies granted an excessive return opportunity to recover investment, then a downward adjustment to rate base might be made to ensure that shippers do not face the same opportunity for carriers to recover costs twice. *See* T-10 (WBT) 84.

[526]Such adjustments do not run afoul of the rule against retroactive ratemaking. They are not made on the basis of past rates but on the basis of allowable revenue requirements.

[527]*Re Kenai Pipe Line Co*., 12 APUC 425, 439-40, 1992 WL 696192 (Alaska P.U.C., 1992).

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Under this approach, we compare the revenue requirements used to set the filed rates generated by TSM[528] with the revenue requirements produced by a DOC analysis applied with reasonable inputs consistently from the beginning of pipeline operation. A transition rate base might be awarded if, cumulatively, the two methodologies yield significantly different revenue requirements.

[528]The Settlement did not specify a revenue requirement for the years 1977-1984. Rather, it set rates. Specifically, the Settlement made the originally-filed 1977 rates permanent for 1977-1981; refunds were made for rates from 1982-1985. Nevertheless, in explaining the Settlement to regulatory bodies when seeking its approval, the Carriers relied upon the TSM-6 spreadsheet model, which illustrated TSM contained annual revenue requirements for those years. *See* 236-JFB-T at 697; 30-BWF-E. Those revenue requirements reflect property balances that were reconciled to FERC Form 6 books and records. *See* 235-JFB-T and 236 JFB-T. Close questioning by Commissioners suggests that the APUC at the time relied upon that reconciliation, at least in part, in allowing filed rates for 1977-1984 to go into effect on a permanent basis. Moreover, refunds were made on the basis of the TSM-6 model. BWF-4 at 67. Accordingly, because the TSM-6 revenue requirements appear to have been relied upon in the acceptance of the Settlement, refunds, and making filed rates permanent, they are the appropriate benchmark against which to assess our appropriate DOC revenue requirements for any return deficiency. We note that the Carriers themselves evaluate the revenue requirements produced by their benchmark DOC against TSM and TSM-6 revenues. *See* ABJ-19.

Assessing cumulative DOC revenue requirements against the TSM-6 revenue requirements rather than actual revenues, as do the Carriers, modestly sways the analysis in the Carriers' favor. Actual revenues generated by originally filed rates for 1977-1981 were cumulatively $169 million more than the TSM-6 revenue requirements, while revenues for 1982-1984 were cumulatively $137 million more. *Compare* 143-RGV-C, RGV-14 WP 3, TAPS-RGV WP3.xls *with* 31-BWF-E. Accordingly, DOC revenue requirements are more likely to cumulatively exceed TSM-6 revenue requirements in this period than cumulative historical revenues. Thus, we use the TSM-6 revenue requirement to insure that a regulatory taking does not occur when we adopt a $669 million rate base for year-end 1996. Reliance on TSM-6 revenue requirements protects Carriers against the possibility of regulatory taking better than looking to actual revenues.

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> Returns in excess of allowed DOC returns in some years offset return deficiencies in other years. In order to be able to argue for a rate base adjustment a net deficiency over the entire period during which the previous methodology was in effect must be demonstrated.

Kenai.[529] We perform a comparative yearly revenue requirement analysis to determine whether the $669 million rate base established for year-end 1996 is reasonable or needs adjustment.

A. We Calculate Past Annual Revenue Requirements Using a DOC Methodology

An annual comparative revenue requirement analysis requires determining the appropriate past annual revenue requirements. The revenue requirement is expressed as: RR= [r(V-D)] +[OE +d+ t] where

RR = revenue requirement

r = after-tax return

V = sum of prudently incurred capital expenditures, allowance for funds used during construction (AFUDC), and working capital

D = accumulated depreciation

OE = operating and maintenance expenses

d = annual depreciation charges

t = taxes.

[529] *Kenai Pipe Line Co.*, 12 APUC 425, 472 at n.26, 1992 WL 696192 (Alaska P.U.C., 1992). In *Kenai* the APUC was careful to explain that actual revenues under the previous methodology were not an appropriate benchmark; rather, the benchmark was maximum revenues that might be achieved under the prevailing rate setting mechanism. The reasoning was that "if higher rates were permitted under the prevailing methodology but the company chose not to raise its rates at that time for whatever reason[,] [t]he company should not now be permitted to add its voluntary return deficiency (as distinguished from a regulatorily enforced return deficiency) to rate base for recovery in present rates." *Id.*

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In Part IV we found all the necessary elements for calculating a DOC methodology revenue requirement except annual operating expenses (OE), return on rate base, and a tax allowance.

1. Operating Expenses

The parties dispute the actual allowable past operating expenses.[530] The Carriers' adopt as operating expenses those expenses described in the Carriers' books and records, including FERC Form 6.[531] Tesoro, however, relies on the operating expenses filed with the TSM[532] which have been used to set rates from 1984-2000.[533] On a cumulative basis from 1977 through 1996, the FERC Form 6 operating expenses exceed the TSM operating expenses by $149.209 million.

There is no evidence in this record to reconcile the TSM and FERC Form 6 operating expenses. Carrier witness Folmar agreed that TSM operating expenses represent "real operating expenses" and differ from the FERC Form 6 data (exclusive of capitalized interest and DR&R) only in terms of an IRS imputed management fee, and "one small stipulated amount by one of the Carriers." [534] The IRS management fee adjustment came to $385,000 in 1997,[535] the record does not indicate the size of the adjustment in other years. The other "small stipulated amount" appears to refer to a

[530] *See* Exhibit 30 for a summary of the parties' positions on operating expenses.

[531] *See* T-7 (RGV) 14. Williams adopts the same operating expenses as the Carriers.

[532] For 1977 to 1983, Tesoro relies on operating expense data from TSM-6. BWF-6 at 5-12.

[533] *See* 30-BWF-E and BWF-6 at 5-12 which provide operating expenses from 1977-1983 (*see* 31-BWF-E).

[534] Tr. 2154 (BWF).

[535] *See* 99-RGV-E at 1-3.

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management fee associated with ARCO Transportation Alaska.[536] In 1997 this amount was $1.518 million.[537] The record does not indicate the size of this adjustment to FERC Form 6 operating expenses in other years.

Tesoro's cross-examination of the Carriers' expert witness suggests two additional differences between the operating expense data sets. The FERC Form 6 data in 1994 may include the costs of two separate settlements related to the Exxon Valdez oil spill litigation: one with the State and Federal governments for $31.7 million, the other with a class of private plaintiffs for $98 million.[538] It is also unclear whether the FERC Form 6 operating expense data reflects the post-employment benefits other than pensions (PBOP) settlement with the State and the public relations expenses challenged in Docket P-94-1.[539]

We analyze these five differences in operating expenses. The record does not indicate whether the IRS imputed management fee or the ARCO Transportation Alaska adjustment are costs that were imprudently incurred or are not properly included in rates. The record also does not suggest that these costs are not properly ascribed to the operating expense category. Accordingly, we cannot conclude that the Carriers erred by including these costs. We find that for purposes of our comparative revenue requirement analysis these costs are properly included in operating expenses.

With respect to the $31.7 million that reflects the settlement with State and Federal governments concerning the Exxon Valdez oil spill, the Carriers' 1994 operating

[536]Tr. 3248-49 (RGV); *see* 99-RGV-E at 1-2.

[537]99-RGV-E at 1.

[538]Tr. 3257 (RGV).

[539]*Id.*

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expense data probably should be adjusted. Under the terms of that settlement, the $31.7 million payment could not be included in TAPS rates.[540] However, the record is ambiguous as to whether the FERC Form 6 data include this payment.[541] Accordingly, we do not adjust the Carriers' operating expenses as being improper.

It is also unclear whether the Carriers' operating expenses for 1994 should be adjusted to reflect the $98 million settlement with private plaintiffs. Tesoro asserts that the FERC and ultimately the District of Columbia Circuit Court of Appeals ruled that the $98 million was not includable in rates under the terms of the Settlement. However, this decision had to do with the construction of the Settlement and not ratemaking.[542] Tesoro has not presented evidence of imprudence regarding the private Exxon Valdez settlement costs. We, therefore, do not exclude these costs from 1994 operating expenses.

Finally, it is unclear whether the Carriers should have adjusted their FERC Form 6 operating expense data to reflect the settlement agreement between the State and the TAPS Carriers concerning PBOP.[543] The protestants provided no substantive rationale to explain why this settlement agreement should be binding on the Carriers for the purpose of calculating operating expenses. In fact, in Order 52 the Commission held: "The Settlement Agreement should be and is, by this Order, accepted by the Commission, subject to the express condition that no issue shall be considered to have been finally determined or adjudicated by virtue of Commission acceptance of the

[540]*See* P-94-1 (9), p. 3.

[541]*See* Tr. 3257 (RGV).

[542]*Re Amerada Hess Pipeline Corp.*, 117 F.3d 596 (1997).

[543]Tr. 3248, 3254 (RGV).

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agreement."[544] Accordingly, the FERC Form 6 data need not be adjusted to reflect adjustments due to PBOP.

For these reasons, despite these five issues we find that the Carriers' sponsored operating expenses are reliable for determining appropriate operating expenses for 1977-1996.

2. Return on Rate Base

Return on rate base is the product of rate of return (r) and rate base (V-D). We establish return on rate base using our findings from Part IV. Exhibit 31 shows the appropriate annual return using these inputs.

3. Tax Obligations

To determine income tax obligations, we follow the approach of the parties and assume that the Carriers pay maximum statutory federal and state tax rates.[545] Exhibit 32 shows our finding of the appropriate annual income tax allowance.

Having made all the necessary findings for the required inputs to calculate the annual revenue requirements for the TAPS using a DOC methodology consistently from the beginning of pipeline operations. We calculate the annual revenue requirement for 1977-1996 at Exhibit 33.[546]

[544] *Re Exxon Valdez Litigation and Settlement Costs* 1998 WL 1035074 *2 (Alaska P.U.C. Nov. 17, 1998).

[545] This was the approach adopted by all parties. *See*, *e.g.*, T-7 (RGV) 13; 189A-BEW-T Workpaper BEW_R_RGV6RE.xls, Schedule Income Tax Expense; 225-JFB-T, Workpaper 1.

[546] We make no finding about the appropriate amount that should have been collected in rates for DR&R. However, we find that the Carriers have collected the DR&R amounts specified in the Settlement. *Initial Post-hearing Brief of the Indicated TAPS Carriers* at 28. So that we can make a valid comparison between the appropriate annual cost of service under a DOC methodology and the TSM, we do not include any DR&R amount in the DOC revenue requirement and remove TSM's DR&R allowance from the TSM revenue requirement.

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B. Comparing From the Beginning of Pipeline Operation, the Annual Past Revenue Requirements of a DOC Methodology With the Annual Past Revenue Requirements of TSM, Demonstrates That the Year-end 1996 Rate Base of $669 Million Is Reasonable

We now compare the past annual DOC revenue requirements shown at Exhibit 33 with the past annual TSM revenue requirements. Exhibit 7, Schedule 2 reveals that TSM has, on a cumulative basis,[547] provided the Carriers with an opportunity to recover $9.9 billion more than their costs as determined by the DOC revenue requirements.[548] In 1997 dollars, the net present value[549] of the cumulative stream of revenue requirement differences is $13.5 billion, far in excess of the $669 million year-end 1996 DOC rate base.

Because the revenue requirements determined under TSM have been higher than costs as determined under a DOC methodology applied consistently from the beginning of pipeline operations, we find that the Carriers have had ample opportunity to recover costs and no taking of Carrier property occurs if we adopt a $669

[547]Our finding regarding the appropriateness of TSM depreciation and the year-end 1996 rate base is properly tested with reference to the Carriers' *cumulative* historical opportunity to recover their full costs of service. In *Re Amerada Hess Pipeline Corporation*, Order P-97-4(79), April 10, 2000, we directed the Carriers to show that 1997-2000 rates reflect costs. We found that evidence that rates are just and reasonable over the life of the line is not sufficient to prove that the rates for specific years are just and reasonable. *Id.,* at 11. The Carriers' "life of the line" argument requires, among other things, a projection of costs of service into the future. Moreover, it fails to address whether 1997-2000 costs are reflected in 1997-2000 filed rates. We evaluate *historical* costs; we do so to determine whether 1997-2000 rates reflect the costs of providing service for the years in question.

[548]Exhibit 7, Schedule 2, Line 1.

[549]Exhibit 7, Schedule 2, Line 2. The net present value calculation uses interest rates equal to the Commission's overall weighted rate of return in each year. *See* Exhibit 7, Schedule 1, Line 6. We note that the present value comparative revenue requirement analysis indexes 1997 dollars, because those are the dollars with which the remaining rate base is measured.

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million year-end 1996 rate base.[550] Therefore, we find that the $669 million year-end 1996 rate base calculated consistent with *Cook Inlet* and confirmed using the comparative revenue requirement analysis suggested by *Kenai* is just and reasonable. In the following part we calculate 1997-2000 rates using the $669 million rate base.

VI. WE COMPUTE 1997-2000 INTRASTATE TAPS RATES USING THE $669 MILLION YEAR-END 1996 RATE BASE

We establish a TAPS revenue requirement for each year 1997-2000, using the formula RR = [r (V-D)] + [OE + d + t]. From the revenue requirement, we calculate a rate to each delivery point on TAPS.

[550]The logic of *Kenai* suggests an alternative approach for determining rate base in the middle of a pipeline's life. *Kenai* discusses the possibility of a pipeline company advocating an upwards adjustment to rate base if the cumulative opportunity for investment recovery were insufficient. A symmetric reading suggests that a downward adjustment to rate base might be advocated if the cumulative opportunity for investment recovery was excessive. Extending *Kenai*'s logic thus suggests that rate base might be established by determining the cumulative net opportunity for investment recovery that the Carriers have enjoyed. The Carriers appear to endorse such a view. *See Initial Post-hearing Brief of the Indicated TAPS Carriers* at 14; T-10 (WBT) 84.

As Exhibit 7 shows, opportunities for investment recovery were much greater than remaining investment as of year-end 1996. This holds true *even if a straight-line depreciation schedule were adopted*. Exhibit 4 shows a comparative revenue requirement analysis using the Carriers' FERC Form 6 straight-line depreciation charges and the other Commission-adjudicated inputs of Part IV and Part V Section A. It demonstrates that the Carriers' opportunity to recover their investment as of year-end 1996 was $7.4 billion greater than the costs of providing service even under this alternative set of assumptions. In 1997 dollars, the net present value (calculated as per Exhibit 7) of these over-collections is $12.6 billion. The result shows that the Carriers' exhibit ABJ-19 is incorrect, largely because the capital structure and rate of return inputs chosen for the DOC methodology are inappropriate.

Exhibits 7 and 4 show that, under the logic of *Kenai,* rate base could be set to reflect only the new investment that Carriers have made during 1997-2000. We decline to apply this rationale to set rate base. None of the protestants sponsored such an analysis. Moreover, the *Cook Inlet* approach has ~~b~~been upheld by the Alaska Supreme Court. *Cook Inlet Pipe Line Co. v. Alaska Pub. Util. Comm'n*, 836 P.2d 343 (Alaska, 1992)

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To establish the revenue requirements for 1997-2000, we determine each individual element. We adopt historical test years for 1997-1999 and a mixed historical/projected test year for 2000 consistent with the information that was available to the parties at the hearing. Below, we establish in Section A the appropriate rate of return (r), and in Section B the rate base (V-D). Because we must set rates for four years, in the discussion of rate base we also determine yearly depreciation charges (d). In Section C, we then determine the appropriate return on rate base, and associated income tax allowance. In Section D we establish appropriate operating expenses. In Section E we calculate the resulting total annual revenue requirement. Having determined the total revenue requirement, we finally determine rates.

A. Rate of Return

We establish an overall rate of return for each of the years from 1997 to 2000. The overall rate of return is determined by the embedded cost of debt and the market return on equity. To determine these elements, we establish: (1) capital structure, (2) cost of debt, (3) return on equity and (4) rate of return adjustment necessary to compensate for any special risks associated with TAPS.

1. The Appropriate Capital Structure for 1997-2000

In Part IV Section B.1, *supra*, we discussed appropriate capital structure for the TAPS Carriers. Our general practice is to use the actual capital structure of a regulated entity unless there is a good reason to believe that the actual capital structure does not properly reflect the risks of the enterprise. For the reasons discussed in Part IV Section B.1, we found that the actual capital structure of the TAPS Carriers in the years 1977-1996 should not be used.[551] Instead, we used a hypothetical capital

[551]We previously determined that all Carriers face the same risks in owning TAPS. Based on the principle that capital structure should thus be the same for each Carrier, we do not use the actual capital structure of each TAPS Carrier.

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structure based upon the capital structure that we determined could be supported by a stand-alone TAPS. A hypothetical capital structure is also appropriate for 1997-2000 for the same reasons that it was appropriate for 1977-1996.

Normally, a single capital structure is proposed to support a filed rate. The TAPS Carriers, however, rely on one set of capital structures to generate an overall rate of return recommendation. Once this overall rate of return is established, the Carriers then rely on the Miller-Modigliani theorem, and sponsor a different capital structure to allocate that rate of return into debt and equity components.[552]

To derive an overall rate of return recommendation, the Carriers' consider both petroleum and gas pipeline proxy samples.[553] The Carriers measure capital structure using the equity stock's market, rather than book value.[554] They argue that market value yields a more appropriate measure of capital structure because the required return on equity is a market-determined value that depends on market perception of financial risk.[555] Although the Carriers recognize that the petroleum pipeline companies in their sample issue preferred stock, for purposes of deriving an overall rate of return the Carriers assume that the cost of preferred stock is the same as the cost of debt.[556] In effect, then, the Carriers consider only debt and common equity in the capitalization of pipelines in their proxy samples.

Having calculated an overall rate of return, the Carriers then use the TAPS parent company capital structure and return on debt to "back out" the required return on

[552]*See* Tr. 2972-76 (WBT) and 87-WBT-T for a detailed explanation.

[553]T-3 (WBT) 55.

[554]T-3 (WBT) A-9.

[555]*Id.,* T-10 (WBT) Appendix A at 8.

[556]T-3 (WBT), A-10.

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equity.[557] Exhibit 34 shows the actual capital structures of the parent company of each TAPS Carrier for each of the years 1997 through 1999.[558] The Carriers' arguments for using the parent company capital structures for 1997-2000 are the same as those offered for 1968-1996. Their proposed debt/equity structures range from 60.68/39.42 to 10.3/89.7.[559]

For 1997-2000, Williams advocates a capital structure based on the average of the petroleum pipelines in its proxy sample. Williams explained that lower-48 petroleum pipeline operations are substantially similar to TAPS; therefore, the petroleum pipeline proxy group provided a good reference for the appropriate capitalization of a stand-alone TAPS. Williams argued that the book value of proxy group debt and equity, rather than market value, should be used to measure capital structure. Williams' recommended capital structure is the average capital structure of the pipelines in its sample.[560] It reflects the average contribution of preferred stock,[561] as well as common stock and debt. For 1997-2000, Williams recommends the following debt percentages: 53.10 percent, 51.28 percent, 52.55 percent, and 51.28 percent.

Like the Carriers, Tesoro recommends a capital structure that is based upon analysis of both petroleum and gas pipeline proxy samples. Tesoro relies upon the subsidiary company data from the gas pipeline group, rather than the holding

[557]T-3 (WBT) 59-60.

[558]Data for 2000 was not available during the hearing.

[559]*See* Exhibit 34.

[560]*See* JSG-T (W-2) 28.

[561]Williams' recommended contribution of preferred stock to the overall capital structure for 1997-2000 is 0.3 percent, 0.43 percent, .34 percent, and .35 percent, respectively. JSG-T (W-2) 29.

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company gas pipeline data (upon which the Carriers rely).[562] Tesoro's expert witness urges that the holding company data is not representative for how pipeline companies should be financed. They are over-leveraged as a result of acquisitions and mergers in recent years accomplished largely through the use of debt capital.[563] Tesoro urges, as does Williams, that the book value of its proxy sample pipelines should be used as a guide to capital structure, rather than market value.[564] After calculating the average capital structure of the pipelines in its samples, Tesoro makes a minor adjustment to account for bond ratings in arriving at its recommendation of 49.5 percent debt for all four years in question.[565] Tesoro does not include preferred stock within its derivation of an appropriate hypothetical capital structure.

For the same reasons as articulated in Part IV Section B.1, *supra*, we reject the use of Carrier parent company capital structures. It largely reflects the risk and business decisions of integrated petroleum companies, rather than pipeline companies.[566] We, therefore, do not use the capital structure of each parent company for its subsidiary TAPS Carrier. Using the weighted average capital structure of the TAPS parent companies[567] makes no more sense than using the individual parent

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[562]FJH-T (E-2) 16.

[563]*Id.*

[564]FJH-T (E-2) 19.

[565]FJH-T (E-2) 21-22; Tr. 5037-38 (FJH).

[566]The Carriers' expert witness acknowledged that the TAPS parent company capital structure was not particularly appropriate for a stand-alone TAPS. *See* T-3 (WBT) 58. Although he suggested that parent company capital structures have a greater percentage of debt than a stand-alone company would support -- a position we rejected in Part IV.B.1 -- he maintained that his approach was consistent with a traditional regulatory practice. *See* Tr. 2791, 2797 (WBT).

[567]That weighted average for the years 1997, 1998, and 1999 is shown in Exhibit 10.

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capital structures. In consequence, we find no compelling reason to use the Carriers' circuitous approach of first finding the appropriate overall rate of return and then "backing out" the return on equity through the use of some other hypothetical capital structure. The traditional approach of constructing the overall rate of return from the ground up has stood the test of time[568] and does not rely upon the Miller-Modigliani theorem. We adopt it here.

We determine the appropriate capital structure for a stand-alone TAPS with reference to the capitalization of a pipeline sample. The record presents three issues. First, whether appropriate capitalization should be determined in reference to both oil and gas pipelines, or to oil pipelines only. Second, whether to adopt book or market values in determining capital structure. Third, whether to include preferred stock in the capitalization of a hypothetical stand-alone TAPS.

We rely on the gas and oil pipeline sample data, rather than oil pipeline data alone. As the Carriers' expert witness notes, the number of publicly traded petroleum pipeline companies is quite small.[569] Gas pipelines share many of the same business risks as oil pipelines,[570] and can therefore provide a useful reference point.[571] We find that it is reasonable to expect that investors would look to other publicly traded companies, engaged in similar affairs, for guidance.

Second, we use book value to determine benchmark capitalization of the proxy pipeline companies. We acknowledge that academic theory provides some

[568]On cross examination, the Carriers' expert witness could not provide any clear examples where his suggested approach had been applied. *See* Tr. 2563-64 (WBT).

[569]T-3 (WBT) A-10.

[570]We acknowledge that the business risks of the two types of pipelines are distinct, but there appear also to be many similarities. *See* Tr. 4384 (JSG).

[571]T-3 (WBT) A-10.

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support for the Carriers' approach of using market values,[572] however, it is standard regulatory practice to rely on book value.[573] Book value measures the capital that has been actually provided to support utility operations.[574] This is the necessary information for regulators.[575] Moreover, book values are relied upon by analysts, bond rating agencies, and financial publication firms.[576] Standards & Poor's target financial ratios for utilities are based on book values.[577] SEC Form 10-K's also rely on book values.[578] All of these sources are readily available, and thus likely to affect investor-decisions.[579] We find that book values are more likely to be the data upon which investors rely.

Finally, we do not ascribe a contribution of preferred stock in our finding regarding a hypothetical capital structure for a stand-alone TAPS. As a practical matter, preferred stock represents an extremely small portion of the average capitalization of the proxy group pipelines.[580] Therefore, it will have little effect on the overall rate of return. The record provides little rationale for why we should adopt a contribution of preferred stock to the overall hypothetical capitalization of a stand-alone TAPS. Consistency with our hypothetical capitalization for 1968-1996 suggests that we avoid imputing a contribution of preferred stock.

[572] *See* T-10 (WBT) Appendix A at 8.

[573] JSG-T (W-2) 28.

[574] *Id.*

[575] Tr. 4382-83 (JSG).

[576] FJH-T (E-2) 19.

[577] FJH-T (E-2) 60.

[578] *See, e.g.,* FJH-T (E-2) 60.

[579] FJH-T (E-2) 61.

[580] FJH-3 at 1; JSG-2 Schedule 9 at 1. *See* n.561, *supra*.

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Based on these findings we adopt Tesoro's recommended capital structure of 49.5 percent debt. Further, we adopt a single capital structure for the four years in question because nothing in the record suggests that it varied significantly enough to affect the cost of debt.[581] This capitalization is very close to that recommended by Williams. Moreover, it is consistent with our approach to back-casting the hypothetical TAPS capital structure for 1977-1996.

2. Appropriate Cost of Debt

We generally use a regulated entity's actual embedded cost of debt to calculate revenue requirement. In this case, no party suggested using the Carriers' cost of debt. What little debt is carried by the TAPS Carriers is guaranteed by their parent companies. Thus, we do not use that cost of debt.

Williams advocated using the Carriers' parent companies' embedded cost of debt.[582] The Carriers also advocated using the parent company embedded cost of debt in constructing a revenue requirement, but they do so only after determining an overall rate of return of proxy companies, and then adding a TAPS specific risk premium.[583] In arriving at the overall return required by the sample pipelines, the Carriers used a current market cost of debt, BBB-rated electric utility bonds, rather than the embedded cost of debt of the sample pipelines.[584]

The record provides no clear economic rationale for adopting the parent company cost of debt when the parent company's activities fail to approximate those of

[581]Tr. 5043 (FJH).

[582]JSG-T (W-2) 31.

[583]T-3 (WBT) A-13 - A-14.

[584]*See* WBT-12.

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a pipeline subsidiary. Moreover, the parent company cost of debt is not appropriate given that we do not adopt the parent company capital structure.

Instead of a current cost of debt, we look to the actual embedded proxy company cost of debt. The hypothetical cost of debt should not be the current market cost of debt because we strive to set rates that reimburse the Carriers' costs. The book rate, rather than the market rate, reflects these costs.

In the context of its recommended 49.5 percent debt capital structure, Tesoro advocated hypothetical debt costs of 8.00 percent for 1997, 7.75 percent for 1998, 7.50 percent for 1999, and 7.40 percent for 2000. Tesoro's rate of return witness bases his recommendations on the weighted average cost of debt of three separate proxy groups. On a composite basis, the TAPS Carriers' parent companies have costs of debt of 7.75 percent, 7.44 percent, 6.78 percent, and 6.99 percent for 1997-2000, respectively; the parent companies have lower debt/equity ratios than the capital structure we have adopted. The proxy group of oil pipeline companies have an embedded cost of debt of 8.81 percent, 8.18 percent, 7.24 percent, 7.17 percent for 1997-2000, respectively. The operating subsidiaries of proxy gas pipeline holding companies have an average embedded cost of debt of 8.14 percent, 7.83 percent, 7.72 percent, and 7.59 percent for 1997-2000, respectively; their debt equity ratios are greater than the capital structure we have adopted.

We use the arithmetic average of the average embedded cost of debt of Tesoro's proxy oil pipeline companies and the average embedded cost of debt of Tesoro's proxy gas pipeline companies for each of the years 1997-2000. We cannot determine the actual numbers with greater precision. Using an average takes into account the range of different rates.

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1997	8.475%
1998	8.005%
1999	7.48%
2000	7.38%
Average	~~7.805%~~ 7.84%

We adopt the average of the four yearly averages as the hypothetical cost of debt used to calculate revenue requirements for 1997-2000. Because the actual embedded pipeline cost of debt changes slowly, if at all, from year to year, we adopt the same hypothetical cost of debt for all four years to more closely track our preferred cost of debt.[585]

3. Appropriate Return on Equity

The appropriate return on equity should reflect the compensation that investors require based on their perceptions of prospective project risks.[586] All parties agree that current period TAPS risks are essentially comparable to those of the average pipeline.[587] Thus, the parties' methods are designed to determine equity investor requirements given average pipeline risk. After mechanical application of their favored methods, the parties' expert witnesses apply their judgment to select between estimates. Some then add a risk premium to accommodate special TAPS risks.

The Carriers base their return on equity recommendation on DCF analyses of publicly traded petroleum and gas pipeline companies.[588] They present

[585]We note a substantial drop in our findings regarding the back-cast cost of debt in 1996 (9.24 percent) to 1997 (7.84 percent). We assume that a stand-alone TAPS would have taken advantage of the lower interest rates of recent years and refinanced its long-term debt.

[586]FJH-T (E-2) 7.

[587]*See* n.404, *supra*.

[588]The Carriers select their recommended return on equity from the petroleum pipeline estimates, but use the gas pipeline sample as a reference. T-6 (WBT) 38.

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both simple[589] and two-stage[590] DCF analyses calculated for two periods, 1997-98 and 1999-2000. On a composite basis the Carriers add equity risk premiums of 4.53 percent, 4.63 percent, 4.65 percent, and 4.65 percent for 1997-2000,[591] respectively, to reflect extraordinary TAPS-specific risks.

Williams bases its return on equity recommendation on DCF analyses of publicly traded petroleum pipeline companies and of the TAPS parent companies. It presents both simple[592] and two-stage[593] DCF analyses for 1997-2000. In addition, Williams projects forward the return on equity established by the APUC in *Kenai*, in the same manner in which it had back-cast those results.[594] Williams adds a construction-period risk premium of 50 basis points to its proxy-based recommendations. Finally, as

[589]The Carriers project dividend growth rates using the I/B/E/S 5-year earnings forecasts. WBT-37 at 2.

[590]The Carriers' two-stage DCF analysis estimates future dividend growth as a weighted average of company growth forecasts (2/3) and gross domestic product (GDP) growth forecasts. For 1997-1998, future GDP growth is estimated using the ten-year consensus forecast of nominal GDP growth (2000-2009) provided by Blue Chip Economic Indicators for long-term GDP growth forecasts. T-3 (WBT) A-6. For 1999-2000, future GDP growth is taken as the average of estimates made by the Energy Information Administration and Social Security Administration (WBT-37 at 3) -- as is consistent with FERC's. *See, e.g., Trunkline Gas Co.*, 90 F.E.R.C. ¶ 61,017, 61,116-17 (2000); *Williston Basin Interstate Pipeline Co*., 91 F.E.R.C. ¶ 63,005, 65,085 (2000).

[591]The equity premiums result from applying a constant 3.5 percent premium to the entire cost of capital, but placing the entire weight of this premium to only the return on equity. The equity premiums are not reported by the Carriers, but were derived from the composite Carrier capital structure, cost of debt, and overall rate of return data as contained in 143-RGV-C, RGV-14 WP 3, TAPS-RGV WP3.xls; *see* Input ll. 6, 5, and 4, respectively.

[592]Williams projects dividend growth rates, as do the Carriers, using I/B/E/S estimates. JSG-T (W-2) 15.

[593]Williams estimates future dividend growth as a weighted average of I/B/E/S growth rate projections (weighted 2/3) and historical retention growth rates (weighted 1/3). JSG-T (W-2) 16, 19.

[594]JSG-T (W-2) 22.

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an adjustment to reflect the costs of issuing common stock, Williams multiplies its preliminary recommendation by 1.05.

Tesoro bases its return on equity recommendation on multiple methods applied to publicly traded petroleum and gas pipeline companies, as well as the TAPS parent companies.[595] It presents simple[596] and two-stage[597] DCF analyses, traditional and empirical capital asset pricing models (CAPM and ECAPM),[598] a comparable earnings model (CEM), and a risk premium model (RPM). Tesoro's expert witness applied his judgment to choose among the various estimates. The result is generally within 10 basis points of the mean of results across all methods and both proxy groups. Tesoro makes separate recommendations for each of the four years at issue and asserts that no risk premium need be awarded.

The returns on equity recommended by each party, exclusive of any special TAPS risk premium are:

[595]Tesoro's expert witness relies principally upon the two proxy groups of five oil and four gas pipeline companies. *See* FJH-T (E-2) 52. He does not consider the TAPS Carriers' parent companies to be indicative of how a pipeline company should be financed. FJH-T (E-2) 16.

[596]Tesoro estimates future dividend growth as the average of the I/B/E/S and Value Line projections of growth rates in earnings per share for each company in each group. FJH-T (E-2) 31.

[597]Tesoro provides two, two-stage DCF analyses. Like the Carriers and Williams, it performs a FERC-style two-stage DCF, with an estimate of future dividend growth as the weighted average of I/B/E/S growth rate projections (weighted 2/3) and GDP growth forecasts (weighted 1/3). Future GDP growth is taken as the average of estimates made by the Energy Information Administration and Social Security Administration. FJH-T (E-2) 34. Tesoro also presents a two-stage compound growth analysis. Its two-stage recommendation is the average of both two-stage results.

[598]Tesoro's CAPM recommendation is the average of the results produced by its traditional CAPM and ECAPM analyses. FJH-T (E-2) 47.

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	Carriers	Williams	Tesoro
1997	13.30 percent	14.17 percent	12.50 percent
1998	13.30 percent	12.82 percent	12.25 percent
1999	16.00 percent	14.75 percent	13.25 percent
2000	16.00 percent	14.75 percent	14.00 percent

The parties largely failed to successfully rebut each other's various approaches to determining return on equity.[599] For the most part, the record fails to provide a theoretical or empirical basis for deciding whether any particular method is more appropriate than another.[600] The record also fails to suggest that any of the expert witnesses have applied their chosen methods inappropriately, or have chosen inappropriate data or parameters.

We find Tesoro's expert witness to be the most credible. We base our rate of return findings primarily upon Tesoro's witnesses' recommendation. Tesoro sponsors multiple methods because it believes investors rely on the widest possible

[599]The Carriers urge that Tesoro's expert witness used non-DCF approaches to "water down" the higher returns generated by the DCF method. The Carriers also suggest that we adopt the DCF approach because this is the method generally preferred by the FERC for oil pipelines. *See* T-10 (WBT) 15. However, no empirical or theoretical evidence was offered in this case to support the contention that the DCF method is a superior guide to investor perceptions and expectations. Thus, Carriers' charges that Tesoro "watered down" its results carry no more weight than the contrary position that the Carriers artificially boosted their own results. Further, no reasons were provided for why FERC practice is either particularly accurate or appropriate for use by this commission. Indeed, the record only suggests theoretical reasons for *not* adopting the FERC approach. *See* n.600.

[600]Tesoro's expert witness urges that the FERC's two-stage DCF methodology is inappropriate because it is inconsistent with the theory underlying the DCF approach. FJH-T (E-2) 33. Nevertheless he presents and relies upon the FERC's approach to the two-stage DCF because he lacks any empirical evidence to suggest that investors do not rely upon it. Tr. 5028 (FJH).

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information available.[601] We agree with Tesoro that investors are aware of all the various traditional cost of common equity models discussed in financial literature. Absent good reason for believing that investors weight the results of one method more heavily than another in their assessment of an appropriate rate of return, it is reasonable to hold that investors ascribe weight to them all. We note that the APUC has relied on a variety of methods when those methods were reliable given the specific facts at hand.[602]

In addition, we find Tesoro's DCF analysis the most reliable. Tesoro relies on I/B/E/S and Value Line estimates of future dividend growth, rather than just the I/B/E/S data. In the absence of a good rationale for why investors would be more likely to rely on one data source than another, we find Tesoro's agnostic approach preferable. In a similar vein, Tesoro relies equally upon the single and two-stage results, rather than choosing a result based on "expert judgment". Absent good motivation for why an investor would make the same judgments as did the competing expert witnesses,[603] we

[601]FJH-T (E-2) 14-15.

[602]The APUC has relied on comparable earnings and risk premium methods as benchmarks in their determination of return on equity, although they gave primary weight in that case to the DCF method. *Re Alascom, Inc.*, 7 APUC 665 (1986); *Re Enstar Natural Gas Co.*, 7 APUC 375 (1986). In the current proceeding the expert witnesses' methods were largely unrebutted.

[603]The Carriers' witness, "after taking into consideration" the results from the natural gas pipeline sample, relies on the FERC DCF result for his 1999-2000 recommendation, while taking the average of the two approaches for his 1997-1998 recommendation. T-6 (WBT) 38. No theoretical reason is given for why such consideration should emulate the process that investors go through.

Williams' witness essentially selects the single stage petroleum pipeline DCF results in 1997 and 1999, eschews the DCF results altogether for 1998, and then adopts an average across his results for 2000. Tr. 4381 (JSG). He provides no reason for his primary reliance upon the single stage DCF. Tr. 4380 (JSG). While he explains that his choices for 1998 and 2000 based on "smoothing variability" (Tr. 4380-81 (JSG)), there are numerous ways to smooth such variability. Indeed, the substantial variability to which he points is arguably a product of his substantial reliance on the single-stage results.

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find such equal weighting reasonable. Tesoro's DCF recommendation is also favored because, unlike Williams' DCF recommendation, it is integrally based on the same proxy companies as were used to determine appropriate capital structure and cost of debt. Finally, Tesoro sponsors separate return on equity figures for each of the years in question, rather than using a single figure for two years, as do the Carriers.

Although we primarily rely upon Tesoro's recommendation, we are concerned, however, about Tesoro's CAPM analysis. Tesoro averaged the results it obtained from CAPM and ECAPM while at the same time providing empirical testimony[604] that the ECAPM results are more accurate then traditional CAPM results. The reasonable investor would be aware of these empirical results. Therefore, we adjust Tesoro's recommendation to reflect only the ECAPM result.

We adopt returns on equity for each of the years 1997-2000, based on Tesoro's DCF, ECAPM, CEM and RPM results for each of the companies (both petroleum and gas pipelines) in its sample groups. We find that those returns, which do not include any risk premium, are:

1997	12.71 percent
1998	12.26 percent
1999	13.61 percent
2000	14.00 percent

Williams contended that we should add flotation costs to ensure that the return is sufficient to attract new common equity capital on reasonable terms without diluting the value of existing investment. The Carriers, however, are wholly owned subsidiaries that do not offer stock to the public; no dilution of shareholder value could therefore occur. Further, the APUC has consistently rejected the addition of flotation

[604]FJH-T (E-2) 43.

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costs when the regulated entity did not contemplate issuance of stock.[605] The parties have not presented any sound reason to deviate from that precedent in this case. Therefore, we do not award a flotation cost adjustment.

4. Rate of Return Adjustment to Compensate for Any Special Risks Associated With TAPS Between 1997 and 2000

The parties agree that during the period 1997-2000 TAPS was no more risky than the average petroleum pipeline.[606] Therefore, we add no risk premium to our adopted returns on equity to account for present risk.

In Part IV Section B.4., *supra*, however, we determined that a risk premium of 75 basis points should be added to return on equity through the middle of 2002, in consideration of early period risk. The returns on equity we use to calculate rates for 1997-2000 consist of the adopted returns on equity and this early period risk premium. We find that those returns are:

1997	13.46 percent
1998	13.01 percent
1999	14.36 percent
2000	14.75 percent

5. Overall Rate of Return

The overall rate of return is calculated as the weighted average of the cost of debt and equity. Given the foregoing findings on capital structure, cost of debt, and return on equity, we find that the resulting returns on rate base are:

1997	10.68%
1998	10.45%
1999	11.13%
2000	11.33%

[605] *Re Enstar Natural Gas Co.*, 7 APUC 375, 400 (1986); *Re Kenai Pipe Line Co.*, 12 APUC 425, 1992 WL 696192 (Alaska P.U.C., 1992).

[606] T-3 (WBT) 39; T-10 (WBT) 9-10; FJH-T (E-2) 6; JSG (W-2) 39:10-11.

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B. Rate Base

In Part IV Section E, we established that the year-end rate base for 1996 was $669 million, as shown at Exhibit 29, line 18. The rate base for 1997, 1998, 1999, and 2000 is affected by subsequent additions to gross Carrier property, changes in working capital, and additions due to AFUDC. Rate base is also a function of subtractions that come from yearly depreciation charges, property retirements, and the amortization of AFUDC. Finally, we adjust rate base to reflect ADIT, the "cost free" capital provided by shippers that results from differences between depreciation schedules used for tax and rate making purposes.

1. Carrier Property Balances and Working Capital

Although the TAPS pipeline was constructed from 1968 to 1977, property additions are still being made. We must determine capital additions and retirements for 1997-2000. We generally adopt the Carrier-sponsored data, rather than Tesoro's data, for the same reasons as articulated in Part IV Section A.1.[607] Similarly, we adopt the Carriers' sponsored Working Capital allowances, rather than Tesoro's, for the same reasons as articulated in Part IV Section A.3.These amounts are shown, below.

[607]For the same reasons articulated at n.229, we use the FERC Form 6 data on retirements filed with the Commission, rather than the Carrier-sponsored retirements data. The differences are not material.

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Line No.	Account	1997	1998	1999	2000
1	Land - New Construction Exp.	$0	$0	$0	$0
2	Grand Total - New Construction Exp.	$61	$30	$95	$45
3	Grand Total - Acquired Property	$0	$0	$0	$0
4	Grand Total - Credits for Retirements	($3)	($6)	($47)	($1)
5	Grand Total - Other Adjustments	($0)	($0)	($0)	$0
6	Land - EOY Balance	$19	$19	$19	$19
7	CWIP – EOY Balance	$30	$39	$43	$30
8	Grand Total - EOY Balance	$10,214	$10,238	$10,286	$10,330
9	Capitalized Interest - EOY Balance	$1,205	$1,205	$1,205	$1,205
10	Working Capital	$44	$43	$47	$24

2. AFUDC

For the reasons given and in the manner articulated in Part IV Section B.5, we permit AFUDC for capital expenditures made during 1997-2000. We adopt the AFUDC additions depicted at Exhibit 35.

3. Appropriate Depreciation

We must determine the appropriate depreciation charges to include in the 1997-2000 revenue requirements. To determine those amounts we must decide the remaining economic life of TAPS, as well as the depreciation profile appropriate for ratemaking purposes.

a) Life of the Line

TSM assumes a 34-1/2-year life of TAPS, ending in 2011. TSM's stipulated life of the line is the same as that contained in an earlier stipulation, signed by

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all parties, as a part of Phase II of the original litigation.[608] Neither the APUC, the FERC, nor this Commission have found that 2011 is the appropriate end date for TAPS operations.

In this proceeding, Williams contends that TAPS will operate beyond 2011. This contention is not seriously challenged. Williams prefiled confidential testimony and exhibits, and submitted confidential evidence at the hearing to support its contention that TSM will operate beyond 2011.[609]

Further, public information supports a substantial extension of the life of TAPS for ratemaking purposes. We recently accepted a settlement of Alpine Pipeline rates.[610] The Alpine Pipeline connects to TAPS through the Kuparuk Pipeline. The parties to the settlement of Alpine Pipeline rates[611] agreed to an economic life for the Alpine Pipeline extending through 2026. Alpine Pipeline has no reason to operate if TAPS is not in operation. Accordingly, the parties to the Alpine Pipeline Settlement represented that TAPS will operate at least through the year 2026. In accepting the settlement, we accepted that projection.

Based on the Alpine settlement and the confidential testimony and exhibits in this docket, we find that the appropriate life of TAPS for ratemaking purposes extends through the year 2026, fifteen years beyond the current assumed 2011 end of TAPS life. Accordingly, for ratemaking purposes we find that the remaining economic life of TAPS as of January 1, 1997 extends for 30 years to December 31, 2026.

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[608] *Re Construction of the Trans Alaska Pipeline*, 4 APUC 338, 341 (1982).

[609] 14-ABJ-W.

[610] *Re Alpine Transp. Co.*, Order P-00-15(11), dated December 5, 2001.

[611] The parties to the Alpine Settlement are the State and Alpine Transportation Company, which is largely owned by Phillips Petroleum Company, a major producer of North Slope oil and a TAPS parent company.

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b) Depreciation Profile

The depreciation profile determines the rate at which the Carriers may recover their remaining investment. In their benchmark DOC methodology the Carriers use straight-line depreciation but assume a life ending in 2011.[612] Williams[613] and Tesoro[614] advocate using TSM depreciation. We use TSM depreciation charges to calculate our year-end 1996 rate base. To calculate depreciate depreciation for 1997-2000 we must choose either TSM's accelerated depreciation schedule or a straight-line depreciation schedule.

TSM depreciation assumes a useful life ending in 2011. We do not use TSM depreciation because we have determined that TAPS' useful life extends to 2026. Use of TSM depreciation would unfairly burden shippers who transport oil in the first 15 years of the 30-year remaining life of TAPS. We thus use straight-line depreciation to calculate 1997-2000 rates.[615]

We do not have continuing property records or comparable information in the record that allows us to determine depreciation in the usual way, i.e., based on classes of depreciable property with differing useful lives.[616] Instead, we establish depreciation in a way similar to TSM. We assume all depreciable property has a useful

[612]T-7 (RGV) 10.

[613]189A-BEW-T Workpaper BEW_R_RGV WP1 DR 22RE.xls.

[614]225-JFB-T.

[615]As the APUC stated, in pipelines with declining throughput, unit of throughput depreciation may be desirable. *Re Kenai Pipe Line Co.,* 12 APUC 425, 437, 1992 WL 696192 (Alaska P.U.C., 1992). Unit of throughput depreciation attempts to apportion an equal amount of capital costs to each barrel transported on the pipeline. We do not have a record upon which to determine an appropriate unit of throughput depreciation schedule. No party has yet argued for unit of throughput depreciation on TAPS.

[616]Typically, a carrier provides evidence showing the various classes of depreciable property. In this case the Carriers did not.

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life equal to the life we have determined for TAPS. We include in the 1997 revenue requirement 1/30th of the sum of the year-end 1996 net depreciable property and the 1997 depreciable property additions.[617] We determine depreciation charges for 1998, 1999, and 2000 similarly, using composite depreciation factors of 1/29, 1/28, and 1/27, respectively. We find annual amounts for depreciation are:[618]

1997	$ 23,732,829
1998	$ 24,350,726
1999	$ 27,370,118
2000	$ 27,674,341.

c) Amortization of AFUDC

We amortize AFUDC according to the same depreciation factors we adopt above. This approach to AFUDC amortization is different than that adopted for rate base development purposes in Part IV Section C.3, because in that analysis we had historical data to use.[619] It is, nevertheless, consistent in the principle applied: the rate at which AFUDC is amortized should match the rate at which Carrier property is depreciated. We find annual amounts for amortization of AFUDC are:[620]

BWF-E

[617]Williams' uses depreciation factors to calculate yearly depreciation charges and depreciation additions to property in service on an end-of-year basis. 189A-BEW-T Workpaper BEW_R_RGV WP1 DR 22RE.xls, Schedule 2 line 30. The TSM determines yearly depreciation charges in a similar manner. 31-~~BEW-T~~, line 14. However, we depreciate additions to depreciable property in service on a beginning-of-year basis to mirror our treatment of AFUDC amortization. *See* Exhibit 37. We are guided by the principle that AFUDC amortization should proceed at the same rate as depreciation of Carrier property. *See* Part IV Section C.3, *infra*.

[618]*See* Exhibit 36 for calculations.

[619]For 1977-1996, we adopted AFUDC amortization factors that reflect net depreciation factors. The derivation of net depreciation factors begins with depreciation charges, and is influenced by retirements from accumulated depreciation. Here we start with depreciation factors, and derive depreciation charges. Thus, retirements from accumulated depreciation do not affect AFUDC retirements. As before, depreciation proceeds at the same rate as AFUDC amortization.

[620]*See* Exhibit 37 for calculation.

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1997	$ 3,673,787
1998	$ 3,788,596
1999	$ 4,009,653
2000	$ 4,281,328.

d) Retirements from Accumulated Depreciation

We explain how adopting TSM depreciation charges affect the appropriate calculation of retirements from accumulated depreciation in Part IV Section C.2. We impose the shape of depreciation profile implicit in the appropriate depreciation charges on charges to accumulated depreciation due to retirements. However, for property placed in service after 1996 and retired during 1997-2000, we make adjustments because a straight-line depreciation profile is adopted for 1997-2000. Exhibit 38 shows the adjustments to accumulated depreciation to reflect property retirements.

4. Accumulated Deferred Income Taxes

ADIT is a function of the difference in timing of depreciation for ratemaking and tax purposes. For ratemaking for 1997-2000, we use the depreciation charges shown in Exhibit 36.[621] For tax depreciation, we follow the approach taken by all parties and assume the most accelerated methods of tax depreciation allowed,[622] i.e., that maximum depreciation charges allowed by state and federal tax law are taken.[623] Consistent with a stand-alone income tax calculation, we follow the parties and assume that income is sufficient to be taxed at the highest statutory rate,[624] recognizing relevant

[621] *See infra* Part VI Section B.3.b.

[622] *See*, e.g., T-7 (RGV) 12; 189A-BEW-T Workpaper BEW_R_RGV WP1 DR 22RE.xls, Schedules 6-7; 225-JFB-T, Workpaper 2.

[623] Exhibit 39, Schedules 1 and 2 show the State and Federal tax depreciation, respectively, used to calculate ADIT balances.

[624] *See*, e.g., T-7 (RGV) 11; 189A-BEW-T Workpaper BEW_R_RGV6RE.xls, Schedule Income Tax Expense; 225-JFB-T, Workpaper 1.

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changes in income tax rates[625] and laws.[626] Finally, we follow the approach used by the parties and do not reduce outstanding ADIT balance to reflect changes in deferred taxes associated with property retirements.[627] We find that ADIT balances for 1997-2000 are:[628]

1997	$ 98,112,934
1998	$ 108,152,461
1999	$ 117,233,293
2000	$ 127,327,563.

5. Appropriate Rate Base for Year End 1997, 1998, and 1999.

Having calculated the necessary elements for V -- the sum of prudently incurred capital expenditures, allowance for funds used during construction, and working capital, adjusted for accumulated deferred income tax and retirements -- we now calculate (V-D) of the DOC formula. We add 1997 additions to property and working capital to year-end 1996 rate base calculated at the end of Part ~~V.~~ IV, subtract retirements, and subtract the depreciation amount described in Part VI Section ~~C~~ B.3.6, *supra*, and the amount of ADIT calculated above in Part VI, Section ~~D~~ B.4, *supra*. We use this year-end 1997 rate base to calculate the 1998 revenue requirement. Rate base for year-end 1998 and year-end 1999, calculated in the same way, are used to determine the rate bases for 1999 and 2000, respectively. The calculation of average year rate

[625] *See*, e.g., T-7 (RGV) 12.

[626] Exhibit 40 shows the calculation of an adjustment to tax depreciation caused by TEFRA. Pub.L. 97-248, Sept. 3, 1982, 96 Stat. 324. As in Part IV Section D, we include the TEFRA adjustment as it better conforms to Federal statute.

[627] *See* T-7 (RGV) 12; 189A-BEW-T Workpaper BEW_R_RGV WP1 DR 22RE.xls, Schedules 6-7; 225-JFB-T, Workpaper 2. Carriers note that this tends to result in the highest ADIT balance possible, and thus the largest reduction in rate base.

[628] *See* Exhibit 41 for calculation.

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base for 1997, 1998, 1999 and 2000 is shown in Exhibit 42. We find the resulting rate bases are:

year-end 1997	$714,306,826
year-end 1998	$752,575,116
year-end 1999	$752,555,251
year-end 2000	$740, 267,853

C. Appropriate Return and Income Tax Allowance

1. Appropriate Return on Rate Base

Using the overall rate of return, that we find at Part VI Section A.5, we calculate return on rate base to be included in revenue requirements for 1997, 1998, 1999, and 2000. Return is calculated against 1997, 1998, 1999 and 2000 average-year rate bases. The average-year rate base is determined as the average of the beginning of year and end of year rate base figures.[629] We find the resulting returns on rate base are:[630]

1997	$ 76,287,969
1998	$ 78,644,100
1999	$ 83,759,399
2000	$ 83,872,343

2. Income Tax Allowance

We calculate the income tax allowance in the standard way based on our calculated return on equity amounts and assuming maximum statutory federal and state

[629] *See* n.523.

[630] *See* Exhibit 43 for calculation.

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income tax rates.[631] Doing so, we find the income tax allowances included in the 1997-2000 revenue requirements are:[632]

1997	$ 35,032,772
1998	$ 35,691,153
1999	$ 39,361,114
2000	$ 39,895,903

D. Appropriate Operating Expenses.

As discussed in Part IV, *supra*, there are two sets of operating expense data in the record, TSM (sponsored by Tesoro) and FERC Form 6 (sponsored by the Carriers and Williams). For the same reasons articulated in Part V Section A, we adopt the FERC Form 6 data for the purpose of calculating 1997-2000 rates. The record does not contain complete FERC Form 6 data for 2000. We accept the Carrier-sponsored operating costs for 2000, which are based on a mix of Carrier actual and projected operating expenses. Tesoro also urges that we disallow "those costs associated with the unique ownership structure the TAPS Carriers have put in place . . . ."[633] Tesoro asserts that because TAPS' joint undivided interest ownership allows each Carrier to file separate tariffs, costs are higher than they would be under more conventional ownership. Tesoro argues that such costs are necessarily inefficient, and therefore imprudently incurred.[634] Tesoro urges removing roughly $27 million[635] from the General and Administrative overhead account.[636]

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[631]This was the approach adopted by the parties. *See*, *e.g.*, T-7 (RGV) 13; 189A-BEW-T Workpaper BEW_R_RGV6RE.xls, Schedule Income Tax Expense; 225-JFB-T, Workpaper 1.

[632]*See* Exhibit 44 for calculation.

[633]JFB-T (E-3) 33.

[634]Tr. 5216 (JFB).

[635]Tr. 5226 (JFB).

[636]Tr. 5223 (JFB).

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Tesoro's claims of imprudence are unsupported by the record. Tesoro fails to detail which operating expenses result from "duplicative ownership." Accordingly, we do not reduce the FERC Form 6 data by the amounts that Tesoro suggests.

We find that the Carriers reasonable operating expenses for each year are:[637]

1997	$ 603,775,000
1998	$ 565,598,000
1999	$ 567,658,000
2000	$ 553,280,000

E. Other Rate Elements

In *Re Amerada Hess Pipeline Corporation*, Order P-97-4(118)/P-97-7(78), we ruled that if 1997-2000 TAPS rates were found to be unjust and unreasonable, then "the Commission will need to hear evidence on additional issues, including the appropriate amount and management of DR&R".[638] Based on this record, we find that the Carriers have collected $1,552,743,000 from 1977-1996 to cover their costs of eventual DR&R.[639] To determine the appropriate amounts for DR&R for 1997-2000 and for subsequent years we must consider the issues of the earnings on funds already collected, the cost of ultimate DR&R obligations and whether the DR&R funds should be maintained in a separate account. Because many years remain in the life of TAPS during which we can adjust the amounts to be collected for DR&R, because DR&R

[637] 143-RGV-C, Workpaper TAPS-RGV WP3.xls, Schedule 13.

[638] *Re Amerada Hess Pipeline Corp.,* Order P-97-4(118)/P-97-7(78) at 11 (February 16, 2001).

[639] *See* Exhibit 7, Schedule 1, line 3; *Initial Post-hearing Brief of the Indicated TAPS Carriers* at 28. Although this figure contains DR&R amounts from TSM-6, we adopt those amounts as having been collected for the same reasons that we found TSM-6 depreciation amounts to be appropriate. *See* Part IV Section C.1.

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issues are complex and costly, and because we do not have a sufficient record to rule on appropriate DR&R charges for 1997-2000 we do not award DR&R in this order.[640]

In Phase II of this docket we will investigate these issues and determine if any additional funds should be paid by 1997-2000 shippers for DR&R or whether there should be a negative allowance in future rates to refund overcollections. Determining the Carriers' ultimate obligation will be a challenge at this stage of the pipeline's operation. In Phase II of this case we intend to determine the size of the existing fund, the rate at which it will continue to grow and clarify if there will be a process for refunds or additional collections at the end of the pipeline's life.

1. Total Revenue Requirement for 1997, 1998, 1999, 2000

Having determined all the inputs for the DOC revenue requirement formula for the period 1997-2000, we now calculate the 1997-2000 revenue requirements exclusive of DR&R. We find that the annual revenue requirements are:[641]

[640]The PAS has consistently maintained that the TAPS Carriers have not accounted for earnings on accumulated DR&R collection. P-1 (RAF) 15, 22-24. The Carriers failed to provide DR&R evidence. They did not include a DR&R allowance in their benchmark rates. They also disavowed TSM's DR&R allowance as representing the appropriate amounts that should be collected in rates to cover eventual DR&R costs. We have no record upon which to award DR&R amounts for 1997-2000 rates.

In *Re Amerada Hess Pipeline Corporation*, dated February 16, 2001, we tried to draw a distinction between the DR&R amount includable in 1997-2000 rates from the overall amount of the DR&R obligation and the current size of the DR&R internal fund established by the Settlement. We consolidated Docket P 97-7 and Docket P-97-4 with hopes of being able to award, if appropriate, a DR&R allowance. *Re Amerada Hess Pipeline Corp.,* Order P-97-4(118)/P-97-7(78) at 12 (February 16, 2001). To reasonably determine the includable amount of DR&R obligation in 1997-2000 rates, however, we must determine the appropriate amount of the overall DR&R obligation as well as the size of the current DR&R internal fund. This record does not provide sufficient information to make these findings.

[641]*See* Exhibit 45 for calculation.

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1997	$742,502,356
1998	$708,072,574
1999	$722,158,284
2000	$709,003,915

F. Just and Reasonable Rates for 1997, 1998, 1999, and 2000

The Carriers' tariffs provide for three different rates for the transportation of oil on the TAPS, reflecting the three different distances of the off-take points along the pipeline from Pump Station #1. These off-take points are at the Golden Valley Electrical Authority (GVEA) interconnection facility (469.06 miles), the Petro Star interconnection facility (796 miles), and the Valdez marine terminal (800.32 miles).[642]

The parties adopt a rolled-in barrel mile methodology for calculating intrastate rates to these three destinations, given a revenue requirement.[643] Most costs are deemed to be "distance related"; these are apportioned according to a destination's barrel-mile share of total (both intrastate and interstate) barrel-mile deliveries. Total non-distance related costs are apportioned on a per-barrel (both intrastate and interstate) basis. This rate design follows APC's decision in *Re Amerada Hess Pipeline Corporation* as modified by the Quality Bank Agreement accepted by the APUC.[644] The connection costs specific to the GVEA connection facility are apportioned to the GVEA tariff. The parties do not dispute the magnitude of GVEA connection costs, nor of non-distance related costs, nor of deliveries to any given destination.

[642]T-2 (BWF) 13.

[643]*See* RGV-14 Schedule 1; 225-JFB-T, Workpaper 5; BEW-T (W-3) 48.

[644]*Re Amerada Hess,* 1 APUC 606, 611 (1980); 6 APUC 401, 405 (1984).

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We therefore adopt the Carriers' undisputed approach to rate design. Accordingly, we make the necessary calculations and find that the following rates are just and reasonable:

	GVEA	Petro Star	Valdez
1997	$1.02	$1.55	$1.56
1998	$1.03	$1.62	$1.63
1999	$1.19	$1.88	$ N/A[645]
2000	$1.25	$1.96	$ N/A.

On average the Carriers' filed rates for 1997-2000 exceed cost-based rates by 57 percent. *See* Exhibit 1 Schedule 3. Fifty-seven percent above cost-based rates is well outside the zone of reasonableness. This further confirms our finding that the 1997-2000 filed rates are unjust and unreasonable.

We adopt the above rates as satisfying the requirements of AS 42.06.410 (b) for the years 1997-2000. These rates are single rates for all Carriers for each year.[646] Consistent with this order, we allow each Carrier to file individual rates supported by individual actual, historical Carrier costs that justify individual revenue requirements if the sum of the individual annual revenue requirements does not exceed the composite revenue requirement found in this order. If the Carriers do not elect to file separate rates, we will be able to bring our investigation of the capacity settlement

[645] *See* Exhibit 46 for calculation. The tariffs to the Valdez Marine Terminal, for 1999 and 2000, are not calculated because during those years no intrastate shipments were made to Valdez.

[646] Endnote 9 discusses the appropriateness of a single rate for the TAPS.

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agreement and whether there is competition on this pipeline to a close.[647] TSM was structured based on the assumption that there would be competition amongst the TAPS carriers. Until recent years, the tariffs have been uniform.[648] If the Carriers elect to file separate rates, they must do so by January 27, 2003.

These rates are different than the Carriers' filed rates. The Carriers shall refund the difference between their filed rates and our calculated rates by January 13, 2003.[649] If adjustments are necessary because the Carriers file and we approve individual Carrier rates, those will be made within thirty days of our final order approving individual rates.

Carriers have had the use of shippers' money since it was paid, and an award of interest is appropriate. We do not have a record sufficient to determine the interest due, and require the parties to address that issue in Phase II.

[647]Docket P-97-6 is titled *In the Matter of the Cancellation of Allocation of Capacity Rules by AMERADA HESS PIPELINE CORPORATION; ARCO TRANSPORTATION ALASKA, INC.; BP PIPELINES (ALASKA) INC.; EXXON PIPELINE COMPANY; MOBIL ALASKA PIPELINE COMPANY; PHILLIPS ALASKA PIPELINE CORPORATION; and UNOCAL PIPELINE COMPANY and the Matter of the Complaint of the STATE OF ALASKA Concerning Allocation of Trans Alaska Pipeline System Capacity and the Petition of TESORO ALASKA PETROLEUM COMPANY for an Investigation into Capacity Allocation and the Discontinuance of Use of Certain Pump Stations on the Trans Alaska Pipeline System*.

[648]Amerada Hess sold its interest in the pipeline after concluding that existing agreements amongst the carriers made it uneconomic for any carrier who was not also a producer to retain an interest in the TAPS. 33 BWF-E, 51 HIGHLY CONFIDENTIAL Absent separate rates for the Carriers, we will have no cause to investigate these issues further.

[649]*See* Endnote 10.

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G. Post-2000 Intrastate TAPS Rates

Post-2000 intrastate TAPS rates will be determined based on the Carriers' tariff filings and supporting documentation. To determine rates for 2001 and subsequent years we require the Carriers to file tariff revisions including the information required by AS 42.06.350(a) and 3 AAC 48.275(a).[650] We will review those filings for consistency with the depreciated original cost methodology described in Part IV of this order. We require the Carriers to make supporting documentation available for review by Commission staff. Because these filings are likely to be suspended at the end of the 45-day review period, we set a prehearing conference in this order.

H. Rate Case Expense

Tesoro protested allocation of rate case expenses and we ordered the Carriers to file quarterly reports of the costs they have incurred litigating this case. The most recently filed reports show that the Carriers have incurred $14.83 million in legal costs.[651]

Rate case expense is ordinarily a fairly uncontroversial component of revenue requirement. The actual or estimated cost of the rate case is supplied by the regulated entity. The Commission then looks at the entity's rate case history and applies its own judgment to decide how many years it will be before a new rate case. Typically, rate case expense would be amortized over a three to five-year period. Because we are setting rates for a four-year period it would be reasonable, if this were

[650] AS 42.06.440.

[651] *Indicated TAPS Carriers' Eighteenth Litigation Cost Report*, filed August 29, 2002; *Seventh Cost Report of Williams Alaska Pipeline Company, L.L.C*, filed August 30, 2002.

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an ordinary case, to simply take the total rate case expense, divide it by four, and include that amount in the revenue requirement for each of the years 1997-2000.

This case is not an ordinary case. Rate case expense is extremely high. If we assume intrastate shipments over the four-year period of 146,000,000 (100,000 barrels per day) and rate case expense of $15,000,000, each intrastate barrel would pay approximately ten cents in rate case expense.

The very high expenditure in this case may be partially justified by the issues, which reach far beyond those in the usual rate case and include issues of first impression before the Commission. To decide this case we considered evidence that spanned a twenty-five year period. The decision in this case will affect future TAPS rates. We, therefore, may treat the rate case expenses incurred in this case differently.

The Alaska Pipeline Act requires us to exclude all direct and indirect costs of any unreasonable practices from tariffed rates.[652] We have found that TSM did not produce just and reasonable rates for 1997-2000. Carriers' costs incurred in defending TSM are arguably costs associated with an unreasonable practice. However, we have no record to determine what portion of the Carriers' litigation expenses is reasonable. We also lack a record on whether the reported legal expenses have already been collected in rates. If any party still believes that we should open a proceeding to examine the reasonableness of the Carriers' rate case expenses and determine an appropriate schedule for recovery of those expenses, it may file a request within forty-five days of this order and we will address that issue in Phase II of this case.[653]

[652]"Following such a determination, the commission shall take appropriate action to ensure that neither the direct nor indirect costs of any unreasonable practices or imprudent expenditures are included in any tariff or rate of a pipeline carrier or are borne by the public of the state." AS 42.06.450.

[653]AS 42.06.410(b).

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VII. FURTHER PROCEEDINGS

Tesoro raises two additional issues. Tesoro request that we 1) audit TSM inputs for 1997-2000[654] and 2) determine whether duplicative management of TAPS exists making rates excessive.[655] Tesoro also requested, in the initial filing that began this docket, an opportunity to raise additional issues after it had access to the data supporting TSM rates.

We did not use TSM inputs to set rates for 1997-2000. Therefore, there is no need to audit them. Tesoro may still believe that the operating costs used to set rates are imprudent.[656] The record, however, does not contain sufficient evidence of 1997-2000 operating cost imprudence. Therefore, we do not order an audit.

The Carriers responded to the allegation that their ownership structure produces duplicative management costs by asserting that their ownership structure is common in the pipeline industry and that they have valid business reasons for maintaining such an ownership structure.[657]

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[654]Tr. 5251 (JFB).

[655]JFB-T (E-3) 16-17.

[656]The issue of the reasonableness of TSM inputs and the correct calculation of rates under TSM for 1986-1996 is not resolved by this decision and remains open in Docket P-86-2. *Re Amerada Hess Pipeline Corp*., 13 APUC 448, 456 (1993); *Re Amerada Hess Pipeline Corp.*, Order P-86-2(56)/P-90-1(26)/P-92-2(23)/P-94-1(28)/P-95-1(7), dated November 30, 1995; *Re Amerada Hess Pipeline Corp.*, Order P-86-2(55)/P-90-1(25)/P-92-2(22)/P-94-1(27)/P-95-1(6), dated June 30, 1996; *Re Amerada Hess Pipeline Corp.*, Order P-86-2(58)/P-90-1(29)/P-92-2(25)/P-94-1(30)/P-95-1(9), dated March 29, 1996; *Re Amerada Hess Pipeline Corp.*, Order P-86-2(57)/P-90-1(27)/P-92-2(24)/P-94-1(29)/P-95-1(8)7, dated January 31, 1996; *Re Amerada Hess Pipeline Corp.*, Order P-86-2(60)/P-90-1(30)/P-92-2(28)/P-94-1(32)/P-95-1(11), dated June 28, 1996; *Re Amerada Hess Pipeline Corp*., Order P-86-2(62)/P-92-2(31)/P-94-1(37)/P-95-1(17)/P-97-4(2)/P-97-5(2)/P-97-6(2)/P-97-7(2), dated June 30, 1997. Further the issue of public relations expenditures in the 1994 rates remains open in Docket P-94-1. Order P-94-1(1) (Exxon Valdez litigation and settlement costs and post-employment benefits other than pension have been settled. *See Re Exxon Valdez Litigation and Settlement Costs* 1998 WL 1035074 (Alaska P.U.C. Nov. 17, 1998).

[657]T-12 (BWF) 6-10.

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We do not have a record that would enable us to evaluate expenses associated with TAPS ownership structure. This kind of issue is usually addressed by ordering a management audit. The testimony submitted by Tesoro is not sufficient to justify ordering such an audit for 1997-2000. However, the costs of the TAPS management structure will be at issue when we set rates for 2001 and subsequent years. If any party can demonstrate that a further investigation of this issue for 1997-2000 is justified based on evidence gleaned during this phase of the case they may request a further investigation within 60 days of the date of this order.

VIII. ORDER

THE COMMISSION FURTHER ORDERS:

1. The following filed rates for 1997-2000 calculated pursuant to the Intrastate Settlement Agreement are not just and reasonable:

a. Amerada Hess (1997) TL50-300, TL52-300 (changed only to Valdez and Petro Star, not North Pole), TL55-300; (1998) TL58-300; (1999) TL63-300, TL64-300, TL66-300, TL68-300; (2000) TL-70-300, TL71-300.

b. ARCO (1997) TL56-301, TL59-301; (1998) TL61-301; (1999) TL 66-301, TL68-301; (2000) TL71-301.

c. BP (1997) TL56-311, TL60-311; (1998) TL61-311; (1999) TL67-311, TL69-311; (2000) TL73-311, TL75-311.

d. Exxon (1997) TL69-304, TL72-304; (1998) TL74-304; (1999) TL80-304, TL81-304, TL83-304; (2000) TL87-304.

e. Unocal (1997) TL52-312, TL55-312; (1998) TL56-312; (1999) TL60-312; (2000) TL64-312.

f. Mobil (1997) TL52-308, TL55-308; (1998) TL58-308, TL63-308; (1999) TL64-308, TL66-308, TL68-308; (2000) TL70-308.

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g. Phillips (1997) TL53-310, TL55-310, TL58-310, TL59-310; (1998) TL62-310; (1999) TL67-310, TL69-310, TL71-310, TL73-310; (2000) TL77-310, TL78-310, TL79-310.

2. The rates for calendar years 1997, 1998, 1999, and 2000 shown on Exhibit 1, Schedule 3 to this order are the Phase I rates for those years, replacing the 1997, 1998, 1999, and 2000 filed rates found by this order to be unjust and unreasonable.

3. The issue of whether filed 1997-2000 rates are correctly calculated under TSM is moot.

4. The rates calculated above are in all cases different than the Carriers' maximum filed rates; *see* Exhibit 1, Schedule 3. By 4:00 p.m., January 13, 2003, the Carriers shall refund the difference between their filed rates and our calculated rates.

5. Consistent with this order, each Carrier may file individual rates supported by individual Carrier actual, historical costs that justify individual revenue requirements if the sum of the individual revenue requirements does not exceed the composite annual revenue requirements found in this order. If the Carriers elect to file separate rates, they must do so by 4:00 p.m., January 27, 2003.

6. If the Carriers file and we approve individual Carrier rates, we will order appropriate adjustments to the refund amounts within thirty days of our final order approving individual rates.

7. The request made by Tesoro Alaska Company for a Commission audit of 1997-2000 operating expenses is denied.

8. The request made by Tesoro Alaska Company to investigate duplicative management costs incurred in 1997-2000 is denied without prejudice.

9. By 4:00 p.m., January 13, 2003, Tesoro Alaska Company or any other party may request an investigation into duplicative management costs and must provide

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sufficient evidence that those management costs were imprudent to justify an investigation.

10. By 4:00 p.m., January 13, 2003, any ~~part~~ party may request investigation into rate case expense.

11. A prehearing conference to set the schedule Phase II of this docket shall convene at 10 a.m. March 4, 2003, in the East Hearing Room of the Regulatory Commission of Alaska, 710 West Eighth Avenue, Suite 300, Anchorage, Alaska. The parties should be prepared to submit a proposed procedural schedule at the prehearing conference.[658] The parties should be prepared to discuss a schedule for resolving the issues identified in Ordering Paragraph Nos. 9 and 10 above and the issue of interest owing on Carriers' refunds.

12. A prehearing conference to set the schedule for the 2001 rate case shall convene immediately following the prehearing conference scheduled in Ordering Paragraph No. 11, in the East Hearing Room of the Regulatory Commission of Alaska, 710 West Eighth Avenue, Suite 300, Anchorage, Alaska. The parties should be prepared to submit a proposed procedural schedule at the prehearing conference.[659]

13. Using the depreciated original cost methodology of Part IV of this order to set rates for 1997, 1998, 1999, and 2000 and the information required by AS 42.06.350(a) and 3 AAC 48.275(a) the Carriers shall either together or individually calculate revenue requirements and rates for 2001 and subsequent years. By 4:00 p.m., January 13, 2003, the Carriers shall either together or individually file tariff

[658] If you are a person with a disability who may need a special accommodation, auxiliary aid, or service or alternative communication format in order to participate in this prehearing conference, please contact Jennifer Guigley at 1-907-276-6222 or TTY 1-907-276-4533 to make the necessary arrangements.

[659] *See* n.658.

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revisions including the information required by AS 42.06.350(a) and 3 AAC 48.275(a). The 2001 test year will be used to set rates for 2001 and subsequent years.

DATED AND EFFECTIVE at Anchorage, Alaska, this 27th day of November, 2002.

BY DIRECTION OF THE COMMISSION
(Commissioners Bernie Smith and
Will Abbott, not participating)

(S E A L)

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X. ENDNOTES

ENDNOTE 1 CITATIONS TO THE RECORD AND ORDER EXHIBITS

Prefiled testimony for the Carriers, the State, and the Public Advocacy Section (PAS) are designated with a one-letter prefix, T for Carriers (TAPS Carriers), S for State, and P for PAS, followed by a hyphen and then a number indicating the position of the testimony in that party's list of prefiled testimony. Those official designations of testimony are followed in this Order by a parenthesis containing the initials of the witness to whose testimony we refer. For example, T-1 is the official designation of the prefiled testimony of Carriers' witness Adam B. Jaffe. We cite to that testimony as T-1 (ABJ).

Prefiled testimony for Tesoro and Williams are designated with a three-letter prefix followed by a hyphen and then the letter T. The three letters are the initials of the witness testifying. The letter T in this context means testimony, not TAPS Carriers. The initials and letter T are followed by a parenthesis which contains the single letter designation of the party sponsoring the testimony, E for Tesoro and W for Williams, followed by a number indicating the position of the testimony in that party's list of prefiled testimony. For example, KAW-T (E-1) is the prefiled testimony of Tesoro witness Kenneth A. Williams. These are the official record designations for Tesoro and Williams prefiled testimony and also the way we cite them in this order.

Prefiled exhibits for all parties begin with a three-letter prefix followed by a number. The three letters are the initials of the witness sponsoring the exhibit. For example, ABJ-1 is the first prefiled exhibit of the witness Adam B. Jaffe. These are the official record designations of the exhibits and the ones we use in this order. It is unnecessary to add a designation of the party sponsoring the exhibit because prefiled exhibits are sponsored by the party for whom the sponsoring witness is testifying.

Hearing exhibits are numbered sequentially 1 through 259, followed by a hyphen and the initials of the witness during whose testimony the exhibit was marked, then followed by another hyphen and the one-letter designation of the party who asked that the exhibit be marked. For example, 1-ABJ-E is a hearing exhibit marked by Tesoro during its examination of Adam B. Jaffe. A hearing exhibit containing the party designation R was marked by Williams Alaska Pipeline Company, L.L.C. Hearing exhibits requested by the Commission at the hearing contain the designation C following the number and initials of the witness testifying at the time.

Both prefiled exhibits and hearing exhibits are cited by their exhibit designation only. The word Exhibit does not appear in front of the exhibit designation. The word Exhibit followed by a number in this order refers to exhibits appended to this order, rather than to exhibits in the underlying record.

The transcript is cited first by the designation Tr. and the page or pages of the transcript being cited. (Transcript volume numbers are not included in the citation and line numbers on a page are not cited.) The transcript cite is followed by a parenthesis containing the initials of the witness testifying. For example, a portion of the examination of Adam B. Jaffe at the hearing would be cited as Tr. 1605 (ABJ). The hearing transcript in this case begins at Tr. 1524 and ends at Tr. 5673.

The letter designation of each witness and the party sponsoring that witness are listed below in alphabetical order of their initials.

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ABJ	Adam B. Jaffe	Carriers
BEW	Bruce E. Warner	Williams
BWF	Billy W. Folmar	Carriers
FJH	Frank J. Hanley	Tesoro
JEH	Jerome E. Haas	State
JFB	John F. Brown	Tesoro
JSG	J. Stephen Gaske	Williams
KAW	Kenneth A. Williams	Tesoro
KBJ	Kenneth B. Johnston	Williams
LPS	Leon P. Smith	Carriers
RAF	Richard A. Fineberg	PAS
RGV	Robert G. Van Hoecke	Carriers
WBT	William B. Tye	Carriers
WDVD	William Van Dyke	State

The record also contains testimony and exhibits of certain witnesses in Phase I of the original TAPS litigation. The Phase I testimony and exhibits which were entered into our record were written and filed in the late 1970s. The witnesses who compiled the testimony and exhibits were cross-examined at the Phase I hearing in 1978-79, but that hearing testimony has not been entered into our record. The Carriers' witness Tye attached the prefiled testimony and exhibits of certain Phase I witnesses for the Carriers to his testimony in this proceeding. During Tye's cross-examination Tesoro and Williams introduced the prefiled testimony and exhibits of other parties from Phase I.

When an exhibit containing Phase I prefiled testimony is cited, the exhibit designation will be followed by a parenthesis containing the last name of the Phase I witness. The full names of each Phase I witness whose testimony is contained in this record, alphabetized by last name; the Phase I party for whom the witness testified; and the exhibit in which that witness's testimony appears in this record are:

WITNESS	PHASE I PARTY	P-97-4 EXHIBIT
Arrow, Kenneth J.	Exxon Pipeline	WBT-29
Carter, Jared	BP Pipelines	WBT-18
Cooper, Joe L.	Mobil Alaska Pipeline	WBT-20
Donaldson, Richard M .	Standard Oil etc.	WBT-17
Dunn, John C.	State of Alaska	83-WBT-W
Foster, J. Rhodes	ARCO Pipeline	WBT-31
Gary, Raymond B.	Exxon Pipeline etc.	WBT-26, WBT-27
Hall, William J.	Mobil Alaska Pipeline	WBT-21
Moolin, Frank P., Jr.	Mobil Alaska Pipeline	WBT-19
Nathan, Robert R.	BP Pipelines	WBT-28
Olson, Charles E.	Amerada Hess Pipeline	WBT-56
Parcell, David	State of Alaska	67-WBT-E
Patton, Edward L.	Mobil Alaska	WBT-15, WBT-16
Price, Harold C.	Mobil Alaska Pipeline	WBT-22
Roseman, Herman G.	U.S. Dept. of Justice	66-WBT-E
Ryan, John	Exxon Pipeline	WBT-32
Solomon, Ezra	Exxon Pipeline	WBT-33
Spahr, Charles E.	Standard Oil	WBT-23
Stich, Robert S.	Union Alaska Pipeline	WBT-34

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Whitehouse, Alton W., Jr.	Standard Oil	WBT-24
Wilson, John W.	Arctic Slope Regional Corp.	65-WBT-E
Woody, L. Dale	Exxon Pipeline	WBT-25

The Exhibits prepared by this Commission and appended to the order fall into several groupings. They are summarized below.

- Exhibit 1 summarizes and compares just and reasonable rates to the Carriers' filed rates. Exhibits 3 and 4 use other tests to find the Carriers' filed rates unjust and unreasonable.
- Exhibits 4 and 7 confirm that the rate base that we adopt in Part IV Section E is reasonable.
- Exhibit 5 and 6 show that the Carriers' unrecovered investment analysis fails to support their benchmark rates.
- Exhibits 9, 10, 12, and 16 summarize positions by the parties on various inputs necessary to determine a reasonable 1996 year-end rate base.
- Exhibits 2, 8, 11, 13-15, and 17-28 consist of findings that allow us to determine a reasonable year-end 1996 rate base, which we do at Exhibit 29.
- Exhibit 30 summarizes the parties' positions on operating expenses for 1977-1996.
- Exhibit 31 and 32 consist of findings that allow us to determine reasonable revenue requirements for 1977-1996, which we do at Exhibit 33. This allows us to confirm in Exhibit 7 the rate base that we adopt.
- Exhibit 34 shows the Carriers' position on capital structure for 1997-1999.
- Exhibits 35-45 consist of findings that allow us to calculate just and reasonable rates, which we do following the practice of the parties at Exhibit 46.

Exhibits concerned with establishing and testing the year-end 1996 rate base are displayed to the nearest million. However, exhibits make use of the exact figures submitted electronically.

ENDNOTE 2 BRIEF DESCRIPTION OF TAPS RATE LITIGATION

Following is a brief description of the TAPS litigation history in general and the litigation history of these consolidated dockets.

A. TAPS Litigation History

Rates for transportation of oil on TAPS have been the subject of litigation almost without interruption since 1977, when the Carriers filed their initial rates.[660] However, the issues we address here have never been decided. Rates filed under TSM have never been reviewed to determine if they are just and reasonable.

[660]In past litigation the parties have spent millions of dollars and ten years trying to resolve what the appropriate rates should be for shipping oil on TAPS. In this docket alone litigation costs for the Indicated TAPS Carriers have exceeded $14.83 million. *Indicated TAPS Carriers Eighteenth Cost Report,* filed August 29, 2002; *Williams Alaska Pipeline Company, L.L.C.'s Seventh Cost Report,* filed August 30, 2002.

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The original TAPS rate litigation occurred in two phases. Phase I, conducted in 1978 and 1979, examined rate base/rate of return methodology, including treatment of taxes. Phase II, conducted from 1982 through 1985, was divided into two portions: cost of construction and all other costs. The cost of construction portion involved the prudence of certain TAPS construction expenditures. The non-cost of construction portion addressed depreciation charges, AFUDC, DR&R costs, and all other issues not decided in Phase I.[661]

Federal and state regulators conducted the two phases concurrently. The federal agencies were the Interstate Commerce Commission and later the FERC. The state agencies were our predecessor agencies: first, the APC, and later, the APUC.

Administrative Law Judge Max L. Kane, who presided over the Phase I hearings for the FERC, issued his initial decision in February 1980.[662] Parties took exception to that decision and it remained before the FERC until 1982, when the FERC, without opinion, remanded the case for further evidence to determine whether a FERC decision establishing a ratemaking methodology for oil pipelines generally, should be applied to TAPS.[663] The agencies compiled a record in the Phase I remand but the parties settled the federal rate proceeding before the FERC decided the matter.

The APC, however, issued its Phase I decision on September 17, 1980. The decision consisted of two orders, Order 25~~oth~~[664] and Order 26.[665] In Order 25, the APC established a ratemaking methodology for TAPS. In Order 26 the APC used the Order 25 methodology to set rates to the GVEA connection for four of the Carriers. The parties appealed Orders 25 and 26 to the Alaska superior and Supreme courts.

While Orders 25 and 26 were on appeal, from 1982 through 1984, the parties continued Phase II proceedings before the FERC and the APUC. In 1982, as a part of Phase II, the parties stipulated to the life of the line for depreciation purposes as well as to a straight-line depreciation schedule.

In July 1984, MAPCO Alaska Petroleum Inc. (the predecessor of Williams Alaska Petroleum Inc. (Williams)), an intrastate shipper, settled the Order 26 issues with the Carriers. As part of the settlement, the parties moved to dismiss the appeal of Order 26. In November 1985, the Supreme Court dismissed the appeal of Order 26. The

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[661]The record in Phases I and II is massive. Eighty-two witnesses testified in Phase I. Nine hundred and fifty exhibits were introduced. The Phase I transcript, including pre-filed testimony and cross-examination, is 24,000 pages long. One hundred and thirty six witnesses testified in the cost of construction portion of Phase II. The transcript, which includes cross-examination only, is 26,000 pages long. More than 8,000 Phase II cost of construction exhibits, including the pre-filed testimonies of the witnesses, exist. The Phase II non-cost of construction record includes the testimony of 45 witnesses. There are 5,300 pages of cross-examination transcript and 1125 exhibits, including the pre-filed testimonies of the witnesses.

[662]*Trans-Alaska Pipeline Sys.,* 10 F.E.R.C. ¶ 63,026.

[663]*Trans Alaska Pipeline Sys.*, 21 F.E.R.C. ¶ 61,092.

[664]*Re Exxon Pipeline Co.,* 1 APUC 580 (1980).

[665]*Re Amerada Hess Pipeline Corp.,* 1 APUC 606 (1980).

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Supreme Court also dismissed Order 25 because it no longer contained rates requiring review.

Meanwhile, in June 1985, the State and five of the eight TAPS Carriers agreed to settle the federal TAPS rate litigation. A sixth Carrier later joined the settlement. In October 1985, the FERC accepted the Interstate Settlement Agreement. The Interstate Settlement relied on TSM as the method for calculating interstate maximum ceiling rates for those six carriers. The remaining two carriers joined the settlement in February 1986, and the FERC accepted the final settlement in June 1986.[666]

The State and all eight TAPS Carriers reached a similar settlement of intrastate rates in April 1986.[667] The Settlement purported to resolve all issues then pending including the pre-1985 contested rates. The Settlement agreed to TSM as the method for calculating a maximum intrastate ceiling rate for future years.[668]

On May 30, 1986, the APUC opened Docket P-86-2 to consider the Intrastate TAPS Settlement concerning past and future intrastate TAPS rates. One year later on May 30, 1987, the Commission issued Order P-86-2(14) accepting settlement rates for periods before July 11, 1986, ordering refunds to intrastate shippers based on those accepted rates, and terminating the Commission's investigation into rates for shipments before July 11, 1986.[669] The APUC required as a condition of accepting the Settlement that the Carriers in the future file intrastate rates no higher than those calculated under TSM.[670] The Commission accepted the Settlement because all economically impacted parties had expressly or presumedly consented to the imposition of the settlement rates for the period before July 17, 1986.[671]

However, on July 10, 1986, Petro Star Inc. (Petro Star), an economically impacted party, challenged the filed rates. Because of Petro Star's protest, the APUC found that it must determine whether rates for periods after July 10, 1986, were just and reasonable under the Alaska Pipeline Act, not just whether the Settlement was in the public interest.[672]

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[666] *Trans Alaska Pipeline Sys.,* 33 F.E.R.C. ¶61,064 (1985); *Trans-Alaska Pipeline Sys.,*35 F.E.R.C. ¶61,425 (1986). Arctic Slope Regional Corporation appealed the approval of the Interstate TAPS Settlement Agreement but in October 1987, the United States Court of Appeals for the District of Columbia Circuit affirmed FERC's approval. The United States Supreme Court denied *certiorari* in October 1988. *Arctic Slope Reg'l Corp. v. F.E.R.C.*, 832 F.2d 158 (D.C. Cir., 1987), *cert. denied*, 488 U.S. 868 (1988). The federal portion of the TAPS rate litigation lasted eleven years from beginning to end.

[667] BWF-2.

[668] For a brief explanation of TSM, *see* Endnote 3, *infra*.

[669] *Re Amerada Hess Pipeline Corp.*, 8 APUC 168, 169 (1987).

[670] *Re Amerada Hess Pipeline Corp.,* 8 APUC 168, 171 (1987).

[671] *See Re Amerada Hess Pipeline Corp.,* 8 APUC 168, 169 (1987).

[672] *Re Amerada Hess Pipeline Corp.,* 8 APUC 168, 169 (1987).

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Petro Star later settled with the Carriers.[673] In October 1993, the APUC accepted the Settlement for the calculation of rates after July 11, 1986, but did not vacate the suspension of those rates. The APUC specifically did not find that the 1986 filed rates were just and reasonable. Instead, with two dissenting Commissioners,[674] the APUC accepted the Settlement as in the public interest because no economically interested party protested.[675] The APUC stated that any future challenge to the rates would be evaluated as if the APUC had not accepted the Settlement, i.e., without giving any weight to the finding that the Settlement was in the public interest when it was

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[673]*Re Amerada Hess Pipeline Corp.*, 13 APUC 448, 452 (1993).

[674]In dissenting, Commissioner Foster explained,

> Among the most egregious departures is the violation of the basic principle that rates should be based on actual costs and that the carrier is entitled to earn a reasonable return on its investment. The 35cent/barrel (in 1983 dollars) "incentive" provision which took affect in 1990 has no basis in cost and clearly goes beyond a reasonable return on actual investment. . . . This Settlement provides a windfall return to carriers with its so-called "incentive " return component. Shippers are in essence being asked to pay more than once for an investment. This is not a fair balance of the interests of shippers and carriers.

Re Amerada Hess Pipeline Corp., 13 APUC 448, 462-63 (1993). Commissioner Knowles concurred with Commissioner Foster regarding the allowance per barrel. Both Commissioners also found the approach to DR&R inappropriate. Commissioner Knowles explained,

> Two other objectionable features to TSM concern DR&R. The DR&R amounts to be collected each year are fixed and cannot be changed under TSM. There is no mechanism to adjust collections for DR&R to reflect known and measurable changes which may occur during the remaining life of the pipeline. The result may be overcollection or undercollection, both of which are undesirable. . . I cannot endorse a method which permits the TAPS Carriers knowingly to under collect or over collect their cost of service. The other unacceptable feature of the DR&R provisions of TSM is the fact that there is no mechanism by which excess DR&R funds can be refunded to ratepayers in the event that some or all of the currently anticipated DR&R work is ultimately unnecessary for whatever reason. The pipeline is not scheduled to be shut down for another 18 years. Circumstances could change significantly in that time period. The TAPS Carriers should not be allowed to retain monies collected for DR&R which are not used for that purpose. Those monies belong to the ratepayers.

Re Amerada Hess Pipeline Corp., 13 APUC 448, 460 (1993), Commissioner Foster agreed, "the Settlement proposes a DR&R fund that is not consistent with Commission policy and creates a windfall for carriers at the expense of shippers." *Id.* at 464.

[675]*Re Amerada Hess Pipeline Corp.*, 13 APUC 448, 456 (1993).

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uncontested.[676] The APUC made the entire prior record from Phases I and II available for any future rate challenges.[677]

After accepting the Settlement, the APUC continued to suspend annual rates, pending review of whether the rates were correctly calculated under TSM and contained acceptable input data.[678] The APUC never ruled on the post-1986 rates. Therefore, the correct calculation of TAPS rates using TSM and acceptable input data are issues still before us.[679]

B. History of P-97-4

The Carriers continued to file TAPS rates under Order 41 and the ongoing review described above. The Commission continued to accept those rates until December 23, 1996. On that date Tesoro protested the 1997 filed rates. MAPCO Alaska Petroleum Inc. intervened and the APUC designated Staff (whose successor is Public Advocacy Section of the Regulatory Commission of Alaska (PAS)) as a party. Therefore, the correct calculation under TSM and the acceptability of input data are issues for all intrastate rates filed after the 1985 Settlement and are being investigated in Docket P-86-02. We opened Docket P-97-4 to review post-1996 rates to determine if they are just and reasonable under AS 42.06.370. We opened Docket P-97-7 to address issues of appropriate DR&R collection and allowances.

On January 12, 1998, the Carriers moved to terminate the investigation in Dockets P-97-4 and P-97-7, observing that Tesoro's protest was a direct assault on TSM, DR&R and the Allowance Per Barrel return elements of TSM. They asserted that these issues could not be re-examined without reopening the full array of TAPS rate

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[676] *Id*.

[677] *Re Amerada Hess Pipeline Corp.*, 8 APUC 168, 171 (1987). The parties in Docket P-97-4 have in fact introduced extensive portions of the Phase I record into evidence in this proceeding. Although the entire record for the Phase I and Phase II of the joint federal/state proceedings was available for use in this docket, the record for this docket now consists only of those matters that were specifically introduced into this docket's record during the proceedings held for this docket.

[678] *Re Amerada Hess Pipeline Corp.*, 13 APUC 448, 456 (1993).

[679] In this proceeding, we combined the issue of the correct calculation and use of acceptable input date for the 1997-2000 rates with determining whether the 1997-2000 rates are just and reasonable. *Re Amerada Hess Pipeline Corp.,* Order P-86-2(61)/P-92-2(30)/P-94-1(36)/P-95-1(16)/P-97-4(1)/P-97-5(1)/ P-97-6(1)/P-97-7(1), dated June 27, 1997; *Re Exxon Valdez* Litigation *and Settlement Costs*, Order P-94-1(46)/P-95-1(26)/P-97-4(12)/P-97-6(11)/P-97-7(11)/P97-9(5), dated December 26, 1997; *Re Exxon Valdez Litigation and Settlement Costs*, Order P-94-1(54)/P-95-1(33)/P-97-4(35)/P-97-6(20)/P-97-7(21) dated December 28, 1988; *Re Exxon Valdez Litigation and Settlement Costs* Order P-94-1(75)/P-97-4(64)/P-97-6(41)/P-97-7(46), dated December 20, 1999. We have not determined whether the input data for 1986-1996 is reasonable, although we opened Docket P-86-2 when a protest was filed. We have not closed that docket because until this case was resolved, the significance of adjustments to those years was unknown. The issue is now ripe and we encourage the parties to include an appropriate resolution of those issues in any settlement discussions they may have.

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issues that the Settlement resolved.[680] The Carriers asked the Commission to use its discretion to decline to reopen TAPS rate issues because these burdens outweighed any Tesoro interest in rates. They also asserted that if intrastate rates were lowered, there would be an immediate, off setting increase in interstate rates, resulting in detriment to interstate shippers and State revenues.[681] They further asserted that a disparity between intrastate rates and interstate rates could lead to a FERC proceeding under Section 13(4) of the Interstate Commerce Act wherein FERC could invalidate RCA rates and set its own intrastate rates.[682]

In response, the APUC explained that "where no economically impacted party contests the rates, the public interest may tilt toward allowing unproven rates to be charged in lieu of conducting costly proceedings . . . ."[683] However, when a rate payer challenges unproven rates that it is paying, the Commission should not refuse to investigate those rates unless the party challenging rates is somehow precluded from challenging them.[684] Although the Settlement precludes the State from challenging rates filed in accordance with the Settlement, Tesoro is not similarly restricted.[685] The APUC concluded that to terminate the investigation and require an economically impacted party to pay, over its objection, rates that have not been fully justified as required by AS 42.06 would constitute de facto deregulation of TAPS.[686] The APUC, therefore, denied the Carriers' motion to terminate.[687] This history explains why this is the first time that the rates filed pursuant to TSM have been reviewed to determine if they are just and reasonable.

The Carriers filed their case-in-chief with the APUC on October 8, 1998, stating that "the principal question presented is whether the TAPS Settlement Methodology will continue to govern the TAPS Carriers' maximum intrastate rates."[688] On March 15,

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[680] *TAPS Carriers' Motion to Terminate Investigation* at 22.

[681] *Id.* at 20.

[682] *Id.,* at 20-21; *TAPS Carriers' Reply in Support of Motion to Terminate Investigation* at 24. We disagree. *See* Endnote 7 for a discussion of the Carrier assertion that Section13(4) of the Interstate Commerce Act gives the FERC the authority to order an increase in intrastate rates to avoid an undue burden on interstate shippers.

[683] *Re Amerada Hess Pipeline Corp.*, P-97-4(21)/P-97-7(16) at 14 (May 5, 1998).

[684] *Id.* at 14-17.

[685] *Id.* at 14. The Settlement does not limit the rights of future shippers to protest future rates. However, it limits the State of Alaska's protest right to only those tariffs which are inconsistent with the terms of the Settlement. BWF-2. Therefore, the State of Alaska is precluded from challenging the rates at issue in this docket. The Intrastate TAPS Settlement Agreement is only binding upon signatory parties and not upon third parties. *Id.* at 17, 19.

[686] *Id.* at 15.

[687] Further, failing to investigate rates places a chilling effect on non-Carrier shippers desire to ship. It also arguably reduces the incentive for non-pipeline owners to explore for additional oil on the North Slope.

[688] *TAPS Carriers' Covering Brief* at 2.

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1999, Tesoro moved for summary disposition because it contended that the Carriers failed to prove that the filed rates were just and reasonable.

The Carriers' described their initial filing as showing that:

> (a) TSM must be evaluated as an integrated whole and from the perspective of the 1985-86 time period in which the TAPS Settlement Agreement came into being;
>
> (b) from that perspective, TSM was expected to produce reasonable rates and returns and has performed as the parties intended;
>
> (c) TSM is a reasonable, cost-based ratemaking methodology that was designed to serve, and has served, important public policy goals benefiting the State of Alaska ("State") and TAPS shippers;
>
> (d) if TSM had not been adopted, rates derived under more traditional ratemaking methodologies would have been significantly higher during 1997 and 1998 than the TSM derived rates actually being charged; and
>
> (e) the public interest benefits that strongly supported the Commission's approval ~~*(sic acceptance)*~~ of TSM have been realized and continue to justify its retention.[689] [sic]

After reviewing extensive briefing, we granted Tesoro's motion, finding that

> despite the inordinate amount of briefing and expert testimony on TSM, the Commission is not determining whether TSM is a just and reasonable methodology over the life of the pipeline. Rather, the Commission must address whether the resulting rates in 1997 and 1998 are just and reasonable.[690]

Further, we found that to the extent that non-cost based factors of TSM were included in the filed rates, the Carriers failed to provide a reasoned explanation. We instructed that once rates are challenged, at issue is whether the filed rates are just and reasonable under AS 42.06, not whether a settlement methodology will continue to be used to set the maximum rate level. We reiterated the direction of the APUC in originally allowing TSM rates. The APUC clearly stated TSM rates "would be subject to the same *standards* and *procedures* to which [they] would have been subject if the

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[689] *Id.,* at 2.

[690] *Re Amerada Hess Pipeline Corp*., P-97-4(79) at 8-9 (April 10, 2000). We also suspended and address in these dockets whether the 1999 and 2000 rates are just and reasonable. Even if the reasonableness of a methodology over the life of the line could be a sole test for meeting the requirements of AS 42.06, our analysis in Section V demonstrates that in this case the filed rates produced by TSM over the life of the line produce an excessive opportunity to recover costs. *See* Part V, B. *supra*.

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Intrastate Settlement Agreement had not been accepted."[691] We explained that determining whether rates are just and reasonable begins with costs.[692] Non-cost factors may be considered if specifically justified.[693]

Although we granted Tesoro's motion for summary judgment, we did not decide whether the filed rates were just and reasonable. Instead, we provided the Carriers a second opportunity either to file a case supporting their 1997-2000 filed rates as just and reasonable under the AS 42.06 or to file different rates with support showing that the new rates were just and reasonable. We established a procedural schedule allowing the Carriers to file a new case-in-chief, the protestants to file answering testimony and the Carriers to file rebuttal testimony. We also scheduled a hearing and ordered pre- and post-hearing briefing.[694]

On January 26, 2001, the Carriers moved to strike portions of the protestants' testimony that addressed the issue of DR&R. They asserted that they were unaware that DR&R issues were a part of Docket P-97-4 and had presumed DR&R issues would be addressed only in Docket P-97-7.[695]

In 1985, as a part of the Settlement, the parties stipulated to the size of the ultimate DR&R obligation, the method for calculating the funds necessary to meet those obligations, and the role that DR&R obligations play in the overall settlement methodology established to calculate TAPS rates.[696] Once Tesoro challenged the 1997 rates, however, the Carriers were on notice that they would need to support the DR&R element of their rate calculation along with all other elements involved in a rate calculation.[697]

We therefore denied the Carrier motion to strike, consolidated the two dockets, and granted the Carriers an extension of time to file rebuttal testimony in the consolidated P-97-4 and P-97-7 proceeding.[698] We explained,

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[691] *Re Amerada Hess Pipeline Corp.,* 13 APUC 448, 456 (1993) *(emphasis added)* and n.28,*supra*.

[692] *Re Amerada Hess Pipeline Corp.*, Order P-97-4(79) at 9, 11 (April 10, 2000.

[693] *Id.*, at 10.

[694] *Re Amerada Hess Pipeline Corp*., P-97-4(79) at 15 (April 10, 2000).

[695] *Indicated TAPS Carriers' Motion to Strike Testimony Relating to Dismantling, Removal and Restoration, or, In the Alternative, For an Extension of Time to File Rebuttal Testimony*, filed January 26, 2001.

[696] 29-ABJ-W at 11-13.

[697] The Carriers were on notice as early as February 28, 1998. *Tesoro's Opposition to Motion to Terminate* at 30 n.5.

[698] *Re Amerada Hess Pipeline Corp.*, Order P-97-4(118)/P-97-7(78), dated February 16, 2001.

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issues of whether the appropriate amount and management of DR&R can be separated from the issues of whether, as part of a filed rate, DR&R amounts collected in 1997-2000 produce just and reasonable rates.[699]

We further explained that we would rule on whether the 1997 filed TAPS rates are just and reasonable after the April 2001 hearing if we could.[700]

Based on the record before us, we can determine whether the 1997 filed rates are just and reasonable but without reference to DR&R costs and revenue. We determine rates and refunds for 1997-2000 and address the DR&R issues in Phase II of this proceeding, after a full opportunity for discovery, pre-filed testimony and hearing. In that proceeding we will decide whether additional DR&R funds need to be collected or refunds issued post-1996.

After we consolidated P-97-4 and P-97-7, the parties filed cross motions for summary disposition, which we denied.[701] Based on the extensive record in these consolidated dockets, we determine whether the 1997-2000 filed rates absent consideration of DR&R expenses and revenues are just and reasonable under the Alaska Pipeline Act.

ENDNOTE 3 THE TAPS SETTLEMENT METHODOLOGY

Re Amerada *Hess Corporation*[702] contains a brief description of the TAPS Settlement Methodology (TSM).

> TSM is a formula for calculating tariffs of the seven TAPS Carriers beginning in the year 1977 and continuing through the year 2011. Although development of rates under TSM is complicated by several elements such as net carryover, calculation of rates for different types of petroleum (Sadlerochit, Kuparuk, etc.), calculation of rates to the intermediate points, and separation of rate base into 'original' and 'new' for purposes of providing a different basis for calculating rate of return after 1990, the underlying methodology itself is relatively straightforward.
>
> The methodology embodied in TSM is basically a trended original cost methodology (TOC or TOC methodology). TOC differs from the depreciated original cost methodology (DOC or DOC methodology), the method normally used by the Commission, in the manner in which investors are compensated for inflation. Under DOC, investors receive a nominal rate of return on the original cost of plant net of accrued depreciation. The nominal rate of return includes a premium to compensate investors for expected inflation. Under TOC, investors are compensated for inflation through rate base write-ups equal to expected inflation.

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[699] *Id.,* at 12.

[700] *Id.*

[701] Order P-97-4(130)/P-97-7(89), dated April 3, 2002.

[702] *Re Amerada Hess Pipeline Corp.,* 13 APUC 448, 458-59 (1993).

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Under TSM a real return on total rate base of 6.4 percent is included in the revenue requirement each year (until 1990), and the rate base (except for land and working capital) is written up each year for inflation as measured by the Consumer Price Index for All Urban Consumers. That writeup is included in an account called Deferred Return which is added to carrier property to arrive at total rate base which is then used to compute returns in succeeding years.

Although application of a TOC methodology usually results in fairly level rates over time, TSM results in declining rates over time because of its depreciation profile. Under TSM, property is depreciated and Deferred Return is recovered under a schedule which is more accelerated than straight-line and which apparently has no particular rationale other than that the parties agreed to it. Rate base declines very rapidly under this depreciation schedule as does return on rate base.

In order to give the TAPS Carriers an incentive to continue to operate the line, TSM provides for a profit element of 35 cents per barrel (adjusted for inflation since 1983) to be collected in lieu of a return on rate base after 1990 (35-cent provision). In order to give the TAPS Carriers an incentive to make appropriate investments after 1990, the rate base is divided into 'original' and 'new' portions. In addition to the 35 cents per barrel adjusted for inflation, the TAPS Carriers continue to earn the 6.4 percent return on 'new' rate base in 1990 and thereafter.

Under the provisions of the settlement each Carrier calculates its own tariff but that tariff is based on a common revenue requirement for the entire TAPS operation. The revenue requirement consists of the sum of the following elements: operating expenses; dismantling, removal, and restoration (DR&R) allowance; depreciation; recovery of deferred return; after-tax margin (6.4 percent return on total rate base prior to 1990 and 35 cents per barrel plus 6.4 percent return on new rate base in 1990 and thereafter); and income tax allowance. Any nontransportation revenues collected by the Carriers are subtracted from the revenue requirement.

Under TSM, the TAPS Carriers collect a fixed dollar amount for DR&R each year. These amounts do not change based on any change in either the obligation to perform DR&R or the cost of performing it. If the Carriers are not required to perform DR&R or it costs them less to perform it than the amount collected under TSM, the Carriers presumably retain the leftover DR&R amounts. Conversely, if DR&R is more expensive than originally contemplated, the Carriers and their parent companies are responsible for making up the difference and performing the DR&R.

Income tax allowance is calculated under the assumption that the entire amounts of those TSM elements entitled Recovery of Deferred Return and After- Tax Margin are fully taxable. Thus, the tax allowance is calculated as though the TAPS Carriers had a 100 percent equity capital structure. The difference between book and tax depreciation is calculated under TSM and results in an amount of deferred taxes. Deferred taxes are deducted from the rate base under TSM.

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> An allowance for funds used during construction (AFUDC) is included in TSM based on the yearly balance of construction work in progress (CWIP). When a portion of CWIP is transferred to carrier property, the AFUDC attributable to that portion of CWIP is transferred to the Deferred Return account and recovered on the same accelerated basis as the other element of Deferred Return, the annual rate base writeup. Consistent with the rest of TSM, AFUDC is assumed to be composed of all equity funds.
>
> Rates under TSM are calculated based on estimates of the various components of revenue requirement. If those estimates are incorrect and more or less than the actual revenue needed is collected during the year, that over or under collection is carried over to the next year and reduces or increases the following year's rates. This mechanism assures both shippers and carriers that the carriers collect neither more nor less than the exact amount needed to operate TAPS and to provide the TAPS Carriers with the return specified in TSM.

(Footnotes omitted.)

ENDNOTE 4 WILLIAMS' PROPOSED MANAGEMENT FEE

Williams' testimony is confusing. On the one hand, Williams asserts that the appropriate rate base for determining rates is the TSM rate base,[703] which consists of "original" rate base plus "new" rate base, including deferred return.[704] The TSM rate base on which TSM return may be earned was $284 million at year-end 1996. In 1997 that rate base consists of over $284 million.[705] Williams provides little rationale beyond that of the Carriers for why TSM produces just and reasonable rates and should therefore be retained.

On the other hand, Williams also asserts that by 2000 the original rate base is 99 percent depreciated and that we should therefore award a management fee.[706] Williams urges that as much of TSM's framework as possible should be retained but that a management fee should be substituted for the current TSM allowance per barrel provision.[707] Williams' proposal is based on a series of FERC decisions regarding project financed gas pipelines.[708]

The purpose behind a management fee according to Williams is to compensate pipeline owners after their original investment is fully depreciated.[709] Based on the FERC line of cases cited above, Williams urges that a management fee of 10 percent of

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[703] *Williams Alaska Petroleum Inc.'s Post-hearing Initial Brief* at 43-44.

[704] *See* T-2 (BWF) A-3 to A-6.

[705] 31-BWF-E.

[706] KBJ-T (W-1) 28-29.

[707] Tr. 4159-60 (KBJ); KBJ-T (W-1) 30; Tr. 4091-92 (KBJ).

[708] KBJ-T (W-1) 30; Tr. 4091 (KBJ).

[709] Tr. 4092 (KBJ).

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the average pre-tax return, i.e. operating income of the pipeline over its proceeding life, should be awarded for TAPS beginning 1997.[710]

In response to Williams' argument, we note first that the analysis concluded in Part IV demonstrates that the TAPS is far from being fully depreciated; the year-end 1996 rate base on which return may be earned consists of $669 million.[711] Furthermore, new rate base is continually being added to TAPS.[712]

Even if rate base were fully depreciated, a parallel line of FERC cases calls into question the logic of providing a management fee once rate base is fully depreciated. In *High Island Offshore System,* the FERC explained, "although the Commission has accepted proposals to impose a management fee, HIOS's proposal results in a substantial rate of return level that must be explored at the hearing to determine appropriateness."[713] Further, Commissioner Langdon dissented, stating

> I would vote to reject HIOS' management fee proposal as being contrary to established Commission policy. When a pipeline is fully depreciated, it has been paid for, and there is no logical reason for a company to receive "in lieu" payments for its fully recovered return on equity. Shareholders who provided the equity for the pipeline have been fully repaid for their investment. Period.
>
> Adoption of a management fee would require the Commission to depart significantly from its historic view of depreciation. While, on the surface, the fee is derived from a formula based on the cost of the pipeline, down deep, its adoption is a recognition that we have to pay companies to stay in business. Until the Commission formally eliminates its cost-based form of regulation over monopoly pipelines, I view such hybrids as the management fee proposed here to be unjust and unreasonable.[714]

AS 42.06 requires that Alaska's intrastate rates be just and reasonable. To be just and reasonable, rates should be cost based and, if not, a specific public policy rational should be provided. Commissioner Langdon's dissent raises serious question as to whether the management fee as proposed by Williams would be cost based and, if it is not, whether a policy rationale could exist that would support it.

In *Stingray*, the FERC explained that although it had provided Stingray the opportunity to argue for the inclusion of a management fee, the burden of proving the need for a management fee was upon Stingray.[715] Further, the FERC explained,

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[710]Tr. 4092-93 (KBJ).

[711]Exhibit 29.

[712]*See* Part IV, B.1, *supra.*

[713]*High Island Offshore Sys*., 57 F.E.R.C. ¶ 61,420, 62,372 (1991).

[714]*Id.* at 62, 374.

[715]*Stingray Pipeline Co.,* 98 F.E.R.C. ¶ 63,004, 65,023 (2002).

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> . . . in order to demonstrate a need for the management fee over and above the substantial allotments for depreciation, return and associated taxes, a company (especially one not fully depreciated) would need to show significant detrimental financial circumstances, through no fault of its own, inhibiting the company's ability to manage its operations.[716]

Williams has made no such showing. Further, the rate base for TAPS is not fully depreciated and new rate base is being added.[717] Therefore, we do not adopt Williams' proposed management fee for TAPS.

ENDNOTE 5 BURDEN OF PROOF

The Carriers have repeatedly suggested that they do not carry the burden of proof.[718] We have therefore repeatedly instructed the Carriers that they carry the burden of proving that 1997-2000 rates are just and reasonable.[719] In *Cook Inlet Pipe Line*, the Alaska Supreme Court held that an uncontested settlement does not establish the rates are reasonable.[720] The Alaska Supreme Court relied on the United States Court of Appeals for the District of Columbia decision that involved TAPS[721] and a FERC decision involving TAPS,[722] noting that the "justness of rates cannot be implied from an approved settlement" because the settlement rates were never adjudicated to be just and reasonable.[723] In Order 50 in this docket, the APUC carefully acknowledged the Carrier position regarding the standard for determining if rates just and reasonable and rejected it.

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> The TAPS Carriers stated that the Commission has determined that in the absence of a protest by an interested party, rates calculated consistently with TSM should be accepted and allowed to become final rates, citing 3 AAC 48.090(d), Order P-86-2(41) at pp. 20-21, Order P-86-2(14) at pp. 3-4. The provisions of 3 AAC 48.090(d) addresses the withdrawal of applications/petitions, the termination of Commission proceedings prior to full

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[716] *Id.*

[717] Exhibit 42, line 2.

[718] *Initial Post-hearing Brief of the Indicated TAPS Carriers* at 54; and *see Indicated TAPS Carriers Notice of Pertinent Additional Authority*.

[719] *Re* Amerada *Hess Pipeline Corp*., Order P-97-4(79) at 3-4 (April 10, 2000); Prehearing Conference Transcript at 66 (May 5, 1998).

[720] *Cook Inlet Pipe Line Co. v. Alaska Pub. Util. Comm'n*, 836 P.2d 343, 353 (Alaska, 1992).

[721] *Arctic* Slope *Reg'l Corp. v. F.E.R.C.*, 832 F.2d 158, 164 n.12 (D.C. Cir., 1987), *cert. denied*, 488 U.S. 868 (1988).

[722] *Trans*-Alaska *Pipeline Sys.,* 35 F.E.R.C. P 61,425, 61,983 n.17 (1986).

[723] *Cook Inlet Pipe Line Co. v. Alaska Pub. Util. Comm'n*, 836 P.2d 343, 353 (Alaska, 1992).

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adjudication, and the amendment of pleadings in the event of changed circumstances. That regulation does not provide any justification for the TAPS Carriers' assertion that TSM should be assumed to produce just and reasonable rates in the absence of a protest.[724]

The APUC further explained,

> As previously noted, Order P-86-2(14) addressed the TAPS Settlement and the protest filed by an intrastate TAPS shipper (Petro Star) on July 11, 1986. The Commission was required to determine just and reasonable rates for periods after the date of Petro Star's protest. *See* P-86-2(14) at pp.4-5, *Amerada Hess,* 8 APUC at 169. In that Order the Commission stated:
>
> > The Commission will first complete its investigation of the acceptability of using TSM to derive present and future rates. . . . If the Commission determines that TSM does not produce just and reasonable results or is otherwise an appropriate methodology to be used in calculation of intrastate TAPS rates, the Commission will proceed to fully adjudicate rates from July 11, 1986, forward. With respect to that adjudication, the Commission is free to set just and reasonable rates according to whatever methodology the Commission finds to be appropriate for the regulation of TAPS.
>
> Order P-86-2(14), p. 5. That proceeding was subsequently terminated prior to adjudication as to whether TSM produced just and reasonable rates by Petro Star's withdrawal of its protest pursuant to a settlement with the TAPS Carriers (Petro Star Settlement).
>
> Order P-86-2(41) accepted the Petro Star and TAPS Settlement and terminated the rate proceeding. Contrary to the TAPS Carriers' assertion, that Order did not state that rates calculated in accordance with TSM would be accepted as final rates in the absence of a protest. Instead the Commission reserved the right to review TSM rates for justness and reasonableness, stating:
>
> > Each new rate filed by the TAPS Carriers under the [TAPS Settlement] is considered to be a revised tariff filing under AS 42.06.400. The filing is subject to the same standards and procedures to which it would have been subject if the [TAPS Settlement] had not been accepted. However, in the absence of a protest, the TAPS Carriers need not file the supporting material required by 3 AAC 48.275(a). Instead, the TAPS Carriers should file the TSM computer disk used in calculating the rate filed and a hard-copy printout of the rate calculation.

[724] *Re Exxon Valdez Litigation and Settlement Costs*, Order P-94-1(63)/P-95-1(43)/P-97-4(50)/P-97-6(29)/P-97-7(30) at 18 (May 27, 1999).

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Order P-86-2(41), p. 21.

> The TAPS Carriers' misconception regarding the Commission's ability to investigate TAPS rates may be based on the statement that the TAPS Carriers would not have to file supporting documentation typically required for rate revisions in the absence of a protest. The waiver of a revenue requirement filing indicates the Commission's willingness to waive the burdensome requirement of an annual showing of just and reasonable rates, but is not indicative of Commission intent to render itself unable to investigate TAPS rates in the absence of a protest. Such an interpretation of the Commission's language in Order P-86-2(41) is irrational and would require the Commission to abdicate its statutory mandate to ensure that rates charged by the TAPS Carriers are just and reasonable.
>
> Tesoro and MAPCO contended that AS 42.06.400(a) authorizes the Commission to investigate the 1999 TAPS rates under its own motion. The pertinent provision of AS 42.06.400 states "[w]hen a tariff filing is made containing an initial or revised rate . . . the commission may, either upon written complaint or upon its own motion, after reasonable notice, conduct a hearing to determine the reasonableness and propriety of the filing." The Commission believes that statute clearly establishes its authority to institute an investigation into the TAPS rates regardless of whether a protest has been filed. The Commission concludes it can and should, under the authority provided by AS 42.06.400, institute an investigation into the 1999 TAPS rates to determine if TSM produces just and reasonable rates.

P-94-1(63)/P-95-1(43)/P-97-4(50)/P-97-6(29)/P-97-7(30), dated May 27, 1999, at 18-21. (*Footnotes omitted.*)

The record in this docket clearly reflects that the 1997-2000 rates were suspended before they came into effect. The APUC suspended the 1997 and 1999 rates based on Tesoro's protest and suspended the 1998 and 2000 rates on its own motion.[725] Because the 1997-2000 rates are suspended and have never been final rates, the burden lies with the Carriers to prove that each annual rate is just and reasonable.

ENDNOTE 6 THE RULE AGAINST RETROACTIVE RATEMAKING

The general statement of the rule against retroactive ratemaking is "that when determining each of the terms of the revenue requirement formula, when calculating the amount of the revenue to be collected under proposed rates, or when allocating rates between or within a class, the commission cannot adjust for past losses or gains to

[725] *Re Amerada Hess Pipeline Corp.,* Order P-86-2(61)/P-92-2(30)/P-94-1(36)/P-95-1(16)/P-97-4(1)/P-97-5(1)/ P-97-6(1)/P-97-7(1), dated June 27, 1997; *Re Exxon Valdez* Litigation *and Settlement Costs*, Order P-94-1(46)/P-95-1(26)/P-97-4(12)/P-97-6(11)/P-97-7(11)/P97-9(5), dated December 26, 1997; *Re Exxon Valdez Litigation and Settlement Costs*, Order P-94-1(54)/P-95-1(33)/P-97-4(35)/P-97-6(20)/P-97-7(21) dated December 28, 1988; *Re Exxon Valdez Litigation and Settlement Costs* Order P-94-1(75)/P-97-4(64)/P-97-6(41)/P-97-7(46), dated December 20, 1999.

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either the utility, consumers, or particular classes of consumers."[726] The rule against retroactive ratemaking thus precludes adjusting future rates based on commission review of past recovery.

Because of this doctrine we do not conduct an unrecovered investment analysis which requires looking at past collections to judge current rates. Instead, we follow the instructions of *Kenai*[727] and look to the past *opportunity* of the Carriers to collect. Doing so does not violate the rule against retroactive ratemaking because we rely on past opportunity to recover. We do not run afoul of the doctrine of retroactive rate making because the rates that we set in this order do not reflect past gains or losses.

Looking backward at past opportunity to recover is not prohibited. The rule against retroactive ratemaking was not intended to prevent commissions from looking backward. The use of a historical test year by its very nature requires examination of the past experience of the company. Even the use of a future test year generally involves consideration of historical data adjusted for a future period. Accordingly, the rule against retroactive ratemaking does not bar examination of the past experience of a company.

The rule against retroactive ratemaking is often not strictly applied.[728] It can also be overcome by notice to the parties that approved rates are subject to retroactive alteration. The U.S. Supreme Court has upheld such a notice procedure.[729] The APUC gave notice to the Carriers when it accepted the Intrastate Settlement Agreement subject to the caveat that the rights of future shippers would not be infringed and that any determination of just and reasonable rates in the future would be subject to the same standards and procedures as if TSM had not been accepted.[730] In light of this

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[726]Stefan H. Kreiger, *The Ghost of Regulation Past: Current Application of the Rule Against* Retroactive *Ratemaking in Public Utility Proceedings,* 4 ILL. L.REV. 983, 997 (1991) cited by the Alaska Supreme Court in *Matanuska Electric Association, Inc. v. Chugach Electric Association*, Inc., S-9839, No. 5611, August 23, 2002.

[727]*Re Kenai* Pipe *Line Co.,* 12 APUC 425, 1992 WL 696192 (Alaska P.U.C., 1992).

[728]*See* Kreiger, *supra* note 718, at 999-1002, 1030-31. For example, the Florida Public Service Commission approved an equipment depreciation increase for a utility that adversely affected the amount of refunds. *Citizens of the State v. Florida Pub. Serv. Comm'n*, 415 So.2d 1268 (Fla. 1982) On appeal, the Public Counsel argued that the depreciation represcription was not merely a bookkeeping entry but a retroactive change in rate base. The court rejected the argument, holding that the commission "was not (engaged in) rate-making but, rather considering depreciation represcription. We acknowledge, as did the commission, that new depreciation allowance does have an effect on the stipulation and refund." The commission determined, however, that a depreciation represcription was a factor that all parties should have known would affect the refund.

[729]*See Great N. Ry. v. Sunburst Oil & Ref. Co.,* 287 U.S. 358, 361-63 (1932). The state supreme court in a previous decision had held that shipper could challenge previously approved rates and recover retroactively excess charges because a notice of the possibility of recalculation was in the tariff.

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notice, the Carriers do not now have a legitimate reliance on Settlement rates. A reliance rationale is relevant only when the party invoking it has rational and legitimate expectations that the past rates will remain in effect for purposes of determining future rates.[731] The APUC decision accepting TSM subject to the possibility of future challenges[732] combined with our suspension of 1997-2000 rates[733] clearly precludes the Carriers from such a reliance.

Therefore, although a strict interpretation of the rule against retroactive ratemaking might preclude adjusting future rates based on past revenues, the facts of this case, i.e., prior notice, rate suspension, and use of recovery opportunity rather than post collections to determine whether filed rates are just and reasonable insure that our findings do not violate the rule against retroactive ratemaking.

ENDNOTE 7 CARRIER ALLEGATION THAT AN INTERSTATE SHIPPER MAY FILE AN INTERSTATE COMMERCE ACT SECTION 13(4) CLAIM WITH THE FEDERAL ENERGY REGULATORY COMMISSION

Carriers' assert that "if Tesoro were successful in the short run in lowering intrastate rates, the net result [under TSM] would be immediate, offsetting increase in interstate rates."[734] This is based on the provision of the TAPS Settlement that provides "if the Intrastate revenues are reduced, the interstate rates will be based on a larger Total Revenue Requirement and will therefore be higher than they otherwise would be."[735]

(. . . continued)

[730]*Re Amerada Hess Pipeline Corp.,* 13 APUC 448 (1993). The APUC stated in its October 29, 1993, order accepting the Settlement "Each new rate . . . is subject to the same standards and procedures to which it would have been subject if the Intrastate Settlement Agreement had not been accepted." *Id.,* at 456. This finding has been reiterated often during the history of this case. The APUC was quite clear at a May 5, 1995, prehearing conference when it stated "The Commission wishes to make it clear that the TAPS Carriers are the ones who need to justify their rates as though TSM had not been approved." Prehearing Conference Transcript at 66 (May 5, 1998)].

[731]Kreiger, *supra* note 718, at 1041.

[732]*Re Amerada Hess Pipeline Corp.*, 13 APUC 448, 456 (1993).

[733]724A *Re Amerada Hess Pipeline Corp.,* Order P-86-2(61)/P-92-2(30)/P-94-1(36)/P-95-1(16)/P-97-4(1)/P-97-5(1)/P-97-6(1)/P-97-7(1), dated June 27, 1997; *Re Exxon Valdez* Litigation *and Settlement Costs*, Order P-94-1(46)/P-95-1(26)/P-97-4(12)/P-97-6(11)/P-97-7(11)/P97-9(5), dated December 26, 1997; *Re Exxon Valdez Litigation and Settlement Costs*, Order P-94-1(54)/P-95-1(33)/P-97-4(35)/P-97-6(20)/P-97-7(21) dated December 28, 1988; *Re Exxon Valdez Litigation and Settlement Costs* Order P-94-1(75)/P-97-4(64)/P-97-6(41)/P-97-7(46), dated December 20, 1999; *Re Amerada Hess Pipeline Corp.*, Order P-94-1(101)/P-97-4(105)/P-97-6(66)/P-97-7(72), dated December 29, 2000; *Re Amerada Hess Pipeline Corp.*, Order P-94-1(111)/P-97-4(144)/P-97-6(78)/P-97-7(103), dated December 20, 2001.

[734]*TAPS Carriers' Motion to Terminate Investigation* at 20.

[735]*Id.* at 5 n.8.

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We note first that the cited provision is to an uncontested settlement agreement that sets maximum interstate rates. The Carriers are free to set interstate rates anywhere below that maximum.[736] Therefore, it is a voluntary choice of the Carriers whether interstate rates will increase as a result of our ruling.

Second, the Carriers assert that the higher interstate rates (allowed pursuant to the TAPS Interstate Settlement Agreement and voluntary adoption of higher rates) will result in "detriment to the interstate shippers . . . . In such a case it is virtually certain that the interstate shippers would respond with a challenge under Section 13(4) of the ICA, which provides for remedies when intrastate rates impose an undue burden on interstate commerce"[737]

The Alaska Supreme Court has already rejected this contention.[738] The Court held that federal law does not preempt the state's authority over intrastate rates citing *Simpson v. Shepard*, 230 U.S. 352, 33 S.Ct. 729 (U.S.Minn., 1913). The Alaska Supreme Court also rejected the contention that the commerce clause or the Intrastate Commerce Act prohibits a differential between inter- and intrastate rates.

Before the FERC "can nullify a state rate, justification for the 'exercise of the federal power must clearly appear.'"[739] Congress granted the ICC power to fix intrastate rates "after a full hearing" which demonstrates that the intrastate rates result in "unjust discrimination against, or undue burden on, interstate or foreign commerce."[740] As the U.S. Supreme Court explained

> [U]nder section 13(4) the Interstate Commerce Commission is given plenary power to remove the discrimination created by intrastate rates against interstate commerce, by raising intrastate rates so that intrastate traffic may produce its fair share of the *revenue required to meet maintenance and operating costs and to yield a fair return on the value of property devoted to the transportation service*.[741]

The FERC thus must determine the revenue required to meet maintenance and operating costs and to yield a fair return on the property devoted to the transportation service provided by TAPS before it can determine whether intrastate traffic is producing its fair share of revenues. In *Cook Inlet, supra*, the Alaska Supreme Court explained

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[736]See Tr. 4845-46 (KAW).

[737]*TAPS Carriers' Motion to Terminate Investigation* at 20.

[738]*Cook Inlet Pipe Line Co. v. Alaska Pub. Util. Comm'n,* 836 P.2d 343, 353 (Alaska, 1992).

[739]*State of North Carolina v. United States,* 325 U.S. 507, 511 (1945) *citing* Florida v. United States, 282 U.S. 194, 211-212 (1931).

[740]Pub.L. 95-473, 92 Stat. 1466 and 1470 (1978); 49 U.S.C. App. 13(4) (1988); *cf.* 49 U.S.C. 13(4) (1996).

[741]*Illinois Commerce Comm'n v. United States*, 292 U.S. 474, 479 (1934)(e*mphasis added); see State of North Carolina v. United States*, 325 U.S. 507, 520 (1945).

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that in *North Carolina v. United States*[742] the United States Supreme Court emphasized "that the ICC was powerless to interfere with a state-prescribed rate 'unless there are clear findings, supported by evidence, of each element essential to the exercise of that power by the Commission.'"[743]

The Carriers' argument that we should abandon our statutory obligation under AS 42.06.370(a) to determine just and reasonable rates because an interstate shipper might file a Section 13(4) claim with the FERC thus rests on the unproven assumption that the interstate rates are reasonable. Like the TAPS Intrastate Settlement, the TAPS Interstate Settlement was approved without a reasonableness determination in an uncontested settlement. An uncontested settlement of interstate rates does not establish that rates are reasonable.[744] Thus, we agree with Tesoro's logic as quoted by the Alaska Supreme Court in *Cook Inlet, supra*.

> It simply cannot be that *intrastate* tariff rates may be set by an *uncontested* settlement of *unreviewed interstate* tariff rates *before the FERC*. If the uncontested settlement of interstate tariff rates controls similar intrastate tariff rates, then procedurally the FERC could mandate *intrastate* tariff rates in every state without even a review as to the reasonableness of either the interstate or the intrastate tariff rates.[745]

We agree. We therefore see no reason to abandon our statutory obligation to determine just and reasonable intrastate rates based on the Carriers' assertion that an interstate shipper might file a Section 13(4) claim particularly when interstate state rates are based on an uncontested settlement and the FERC has not yet determined that TAPS interstate rates are just and reasonable.[746]

ENDNOTE 8 ASSESSMENT OF EXTRAORDINARY TAPS RISKS

Investors in the TAPS faced various types of risks: non-completion, economic, regulatory and litigation. We discuss each in turn.

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[742]*State of North Carolina v. United States,* 325 U.S. 507, 510-511 (1945).

[743]*Cook Inlet Pipe Line Co. v. Alaska Pub. Util. Comm'n,* 836 P.2d 343, 352 (Alaska, 1992).

[744]*Arctic Slope Reg'l Corp. v. F.E.R.C.*, 832 F.2d 158, 164 n.12 (D.C. Cir., 1987) *cert. denied* 488 U.S. 868(1988)(holding that a FERC approved settlement need not assume just and reasonable rates); *see also Trans-Alaska Pipeline Sys.,* 35 F.E.R.C. ¶ 61,425, 61,983 n.17(1986)(noting that justness of rates cannot be implied from an approved settlement "since the settlement rates were never adjudicated to be just and reasonable."); *Cook Inlet Pipe Line Co. v. Alaska Pub. Util. Comm'n,* 836 P.2d 343, 353 (Alaska, 1992).

[745]*Cook Inlet Pipe Line Co. v. Alaska Pub. Util. Comm'n,* 836 P.2d 343, 353 (Alaska, 1992).

[746]Tr. 4845 (KAW)*; see also Re Kenai Pipe Line Co.*, 12 APUC 425, 437, 1992 WL 696192 (Alaska P.U.C., 1992).

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A. Risk of Non-completion

If the TAPS project was abandoned before completion, investors would lose the opportunity to recover their investment. Both legal and institutional factors created risks that the project would not be completed.[747] Before construction began, TAPS investors could not be certain that the project would be awarded all necessary permits. Such non-completion challenges were generally greater than those faced by the average pipeline. After Carriers secured the Federal and State Rights of Way Agreements, however, completion risk no longer threatened the project.

The TAPS owners filed a formal application to begin construction in June 1969.[748] The application immediately faced a set of unanticipated hurdles. On January 1, 1970, the National Environmental Policy Act (NEPA) became effective. By March environmental groups filed a complaint for declaratory and injunctive relief to prevent the Secretary of the Interior from issuing right-of-way and special use permits; they alleged that doing so would violate NEPA and the Mineral Leasing Act of 1920.[749] An injunction was granted a month later. A second injunction was granted to a group of Alaskan Natives that prevented the Secretary from issuing a right-of-way through land claimed by them without first obtaining approval from tribal officials.[750]

The Carriers characterized prognosis for pipeline construction by August 1970, as "grim, at best."[751] There were two injunctions restraining the Secretary from issuing the necessary right-of-way permits; the Department of the Interior (DOI) was beginning to prepare an environmental impact statement pursuant to a new law; and DOI had not yet developed technical stipulations. It was not clear when, in what form, or even whether the rights-of-way and other permits would be issued.[752]

Two years later prospects for the pipeline improved. After years of study and public hearings, a Final Environmental Impact Statement (EIS) was issued in March 1972.[753] In May, the Secretary of the Interior announced that he would issue permits for the pipeline. In August, the preliminary injunction concerning NEPA and the Mineral Leasing Act compliance was dissolved. In October, the injunction concerning Alaska Natives was dissolved as a result of the Alaska Native Claims Settlement Act on December 18, 1971.

Another barrier emerged in February 1973, when the Court of Appeals for the District of Columbia ruled that the proposed action of the Secretary of the Interior would violate the width limitations of the Mineral Leasing Act.[754] It declined to rule on the

[747]In subsection B of this endnote, we analyze the risks associated with whether the supply of and demand for North Slope crude oil was adequate to permit the investor to recover costs and generate a return on investment.

[748]WBT-15 (Patton) 5-6.

[749]WBT-15 (Patton) 13-14.

[750]WBT-15 (Patton) 14.

[751]WBT-15 (Patton) 15-16.

[752]WBT-15 (Patton) 16.

[753]WBT-15 (Patton) 24.

[754]WBT-15 (Patton) 28.

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question of whether the Secretary of the Interior had complied with NEPA. This meant that inadequacies, if any, in the EIS could not be proactively remedied while Congress was amending the Mineral Leasing Act.[755]

As it had done with the Alaska Native Claims Settlement Act, Congress stepped in to advance project approval. The Trans-Alaskan Pipeline Authorization Act was eventually passed by a slim margin.[756] The Act declared that NEPA had been previously satisfied; granted and directed issuance of all necessary rights-of-way; and restricted judicial review of authorization issued by any Federal agency with respect to construction.[757] The Act was signed into law on November 16, 1973. On March 8, 1974, the DC District Court rejected a challenge to the Act's constitutionality. Nearly five years after the original application was filed, the last major legal hurdle to pipeline construction was removed.

By May 1974 the significant institutional and legal barriers to the completion of the pipeline system had been removed.[758]

- The Alaska Native Claims Settlement Act, which resolved outstanding Alaskan Native claims to land traversed by the proposed pipeline right-of-way, was passed by Congress in December 1971;[759]
- The Trans-Alaskan Pipeline Authorization Act, which declared that NEPA was satisfied by previous actions of the Secretary of the Interior, was passed by Congress and signed into law on November 16, 1973;[760]
- The Secretary of the Interior executed the Agreement and Grant of Right of Way for the Trans-Alaska Pipeline on January 23, 1974;[761]
- The District Court for the District of Columbia held that section 203(d) of the Trans Alaska Pipeline Authorization Act, which waived the requirements of NEPA, was constitutional on March 8, 1974;[762]
- The Carriers obtained a Project Labor Agreement in late April 1974 which significantly reduced the threat of a work stoppage;[763]
- Construction of the Haul Road began April 29, 1974;[764];
- The State Right of Way lease was issued on May 3, 1974.[765]

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[755]*Id.*.

[756]A tie-breaking vote was needed from the Vice President to secure passage in the Senate. WBT-15 (Patton) 32.

[757]Trans-Alaska Pipeline Authorization Act, Pub.L. 93-153, 87 Stat. 576 (1973).

[758]*Re Exxon Pipeline Co.,* 1 APUC 580, 598 (1980).

[759]Alaska Native Claims Settlement Act, Pub.L. 92-203, 85 Stat. 688 (1971).

[760]Trans-Alaska Pipeline Authorization Act, Pub.L. 93-153, 87 Stat. 576 (1973).

[761]WBT-15 (Patton) 45.

[762]*See* WBT-15 (Patton) 39 (referring to *Bud Brown Enterprises v Morton)*.

[763]WBT-16 (Patton) 78.

[764]WBT-15 (Patton) 46.

[765]WBT-15 (Patton) 45.

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The Carriers assert that the TAPS continued to face enormous physical and technical challenges. The TAPS is subject to harsh climate, permafrost, and earthquakes. The temperature extremes under which the pipeline was constructed and operated were extraordinary.[766] Witnesses asserted that they were twice as great as any previously encountered in pipeline construction.[767] New designs and construction techniques to accommodate the temperature extremes increased project costs. Significant technological problems were associated with putting a hot oil pipeline through discontinuous permafrost, multiple streams, rivers, many steep slopes, and earthquake zones. The engineering problems were formidable.[768] None of these engineering challenges were sufficient, however, to put the completion of the pipeline at risk.

By April 1974, the TAPS owners had no serious doubts that the pipeline could be built according to specifications ~~requirement~~ required by governmental bodies.[769] The considerable technical challenges did not, by themselves, threaten the project.[770] At issue is whether the cost of meeting those challenges, especially in the face of considerable government oversight and scrutiny,[771] would have been prohibitive. We find that reasonable investors would not have seen these costs as so large as to affect the viability of the project.[772]

Two items directly affect the viability of a pipeline: first, whether sufficient reserves are available to support the pipeline, and second, whether the value of those reserves is sufficient to support the cost of the pipeline system. The Carriers urge that the cost of various economic and/or legal factors[773] could have seriously threatened the project by reducing the value of North Slope reserves. Economic risks include the possibility of rapidly escalating construction and operating costs, lower than expected world oil prices, and rate competition among the TAPS Carriers.[774]

We agree that there were economic risks to investor capital, and that legal or permitting risks[775] continued to exist after May 1974. However, none of these remaining risks threatened project completion. We concur with the APC that the risk of non-

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[766]T-3 (WBT) 19.

[767]WBT-16 (Patton) 67-68.

[768]*See* WBT-16 (Patton) for a general description of these challenges.

[769]*Re Exxon Pipeline Co.*, 1 APUC 580, 599 (1980); 66-WBT-E (Roseman) 63.

[770]*Re Exxon Pipeline Co*., 1 APUC 580, 598 (1980).

[771]*See, e.g.,* WBT-16 (Patton) 46.

[772]The APC after reviewing a similar record came to the same conclusion. *Re Exxon Pipeline Co.*, 1 APUC 580, 599 (1980) (remanded for other reasons by *State of Alaska v. Alaska Pub. Util. Comm'n*, 3AN 80-7163 CI (Alaska Super.) Nov. 28, 1983).

[773]T-10 (WBT) 32-33.

[774]T-10 (WBT) 33.

[775]Carrier witness Tye suggests that investors would have perceived that cost overruns could have risked the viability of the pipeline. T-3 (WBT) 17.

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completion decreased over time because the cost of TAPS was overshadowed by the then high price of oil, the large amount of North Slope reserves, and demand.[776]

The TAPS project had significantly greater risks from legal barriers at the pre-construction stage compared to the average pipeline. Investors could not be certain that required permits would be obtained. Therefore, very early investors in the TAPS were uncertain whether they would receive either a recovery of or return on their investment. This pre-construction risk was significant and an appropriate risk premium should be awarded.

However, once construction began investors would have perceived TAPS as feasible.[777] The owners expressed confidence in the successful completion of the project both publicly and privately.[778] Therefore, rational investors would not then have perceived a risk of non-completion as higher than that of an average pipeline. We therefore award no risk premium for non-completion after May 1, 1974.

B. Economic Risks

Whether the supply of and demand for North Slope crude oil was adequate to permit the investor to recover costs and generate a return on investment determines whether the economic risk of the TAPS project was greater or less than the economic risk of an average pipeline. To assign an appropriate risk premium for this risk, we determine whether TAPS investors would be more or less likely than investors in an average pipeline to recover their investment and return on that investment.

TAPS is capital intensive and throughput dependent. Fixed costs are a large portion of its costs and TAPS can only generate income with throughput. For a pipeline investor, risk stems from the threat that carriage will be insufficient to generate adequate cash flow to provide a return of and on investment. That risk turns on whether: (i) physical supplies are adequate; (ii) competition for carriage does not threaten or overly reduce carriage; (iii) natural disaster or sabotage do not interrupt oil deliveries; or (iv) the cost of shipping is so high as to make the price of North Slope oil noncompetitive.

(1) Risk of Inadequate Physical Supply

Carrier witness Nathan contended that "projections of proven reserves, . . . have often proved to fall far short in actual production."[779] The implication is that investors would perceive a risk that throughput would turn out to be inadequate.[780]

In contrast, State witness Parcell urged that no risk of inadequate supply existed. He states:

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[776] *Re Exxon Pipeline Co*., 1 APUC 580, 599-600 (1980).

[777] *See id.* at 598.

[778] *Id.* 599.

[779] WBT-28 (Nathan) 24.

[780] WBT-20 (Cooper) 25.

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> [T]he proven reserves at Prudhoe Bay were estimated at 9.6 billion barrels in 1970, according to Dr. Netschert.[781]

Parcell concludes that "the supply risk in early 1974 was small and was recognized by the owners as such."[782] Department of Justice witness Roseman testified that even with a one-third reduction in throughput, the pipeline would be able to meet *all* of its capital costs (including adequate return on and of equity).[783] It would take a 50 percent reduction in North Slope production (relative to estimated reserves) to pose a significant risk to equity investors in the pipeline; debt investors would be kept whole.[784] Given this understanding of the field's size, risk of inadequate throughput was small.

We agree with the APC, which found that when the maximum investments were irrevocably committed, the ultimate oil recovery of the North Slope was more than sufficient to insure that construction of the pipeline would be completed.[785] There is no persuasive evidence that investors believed that throughput would be insufficient. Indeed, the decision during the planning stages to double pipeline capacity indicates the opposite.[786] We therefore find less additional risk to the TAPS for risk of inadequate supply than compared to an average pipeline.

(2) Risk of Inadequate Throughput Due to Competition

Although investors would have understood that the physical pool of oil on the North Slope was more than adequate, competition might have reduced the throughput needed to generate cash flow. Investors might have perceived two forms of competitive risk.

First, the Carriers contend that an alternative transportation system might have competed with TAPS. By 1974, however, the owners' substantial commitment of resources to TAPS construction suggests that other possible forms of transportation

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[781] 67-WBT-E (Parcell) 49.

[782] 67-WBT-E (Parcell) 49.

[783] 66-WBT-E (Roseman) 66.

[784] 66-WBT-E (Roseman) 65. Carriers' witness Arrow disputed this calculation, on the grounds that the margin between revenues and costs posited by protestant witness Roseman was "(1) almost surely too large, and (2) is itself subject to considerable uncertainty which will only be resolved by future events." WBT-29 (Arrow) 32-33. However, Arrow does not supply his own estimate of an appropriate margin, nor does he conduct any similar quantitative assessment. Further, the uncertainty regarding the appropriate size of the margin could be resolved both upward as well as downward. We find Roseman's testimony credible.

[785] *Re Exxon Pipeline Co.,* 1 APUC 580, 599 (1980).

[786] *See* WBT-15 (Patton) 4; WBT-16 (Patton) 13.

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had been considered and rejected.[787] There is no compelling evidence in the record that alternative modes of transportation were being seriously considered.[788]

Second, the Carriers contend that the different owners -- each with their own space on TAPS -- could engage in a price war when TAPS capacity is less than full.[789] The threat of within-TAPS competition depends on the existence of excess capacity.[790] However, at the time of investment, TAPS effectively faced no competition.[791] The Carriers' own witness suggested that the pipeline would run at full capacity for the first eight to nine years.[792] In 1980, the APC found that no excess capacity would exist for ten to twelve years.[793] Investors appeared to have significant assurance that any threat from within-TAPS competition was a long way off, with the day of reckoning further delayed by the reasonable presumption that additional fields would be discovered.[794]

Moreover, the record suggests that capacity on the pipeline was substantially under the pipeline owners' control. In 1969, TAPS was designed to be a 48-inch hot oil pipeline, with a capacity of 500,000 barrels per day.[795] In 1973, a somewhat redesigned project that used the same pipe was expected to have a capacity of 1.2 million barrels per day, with provisions made for subsequent expansions.[796] The use of drag reducing agents further increased the capacity of the line.[797]

Oil pipelines in the lower 48 can face intermodal competition and competition from other pipelines. In contrast, as the single source of transportation from the North Slope, TAPS investors faced much less risk of competition from alternative pipelines. We thus find that investors in the TAPS enjoyed significantly reduced threat of competition compared with the average pipeline.

(3) Risk of Throughput Interruption

Sources of throughput interruption risk include sabotage, technical failure, earthquakes,[798] or more ordinary accidents. The Carriers acknowledge these risks as "ongoing operation-phase risks" for which no additional TAPS risk premium need be

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[787]The APC came to a similar conclusion; *see Re Exxon Pipeline Co.,* 1 APUC 580, 600 (1980).

[788]66-WBT-E (Roseman) 59.

[789]WBT-26 (Gary) 32.

[790]T-3 (WBT) 37-38.

[791]*Re Exxon Pipeline Co.,* 1 APUC 580, 600 (1980).

[792]WBT-26 (Gary) 31.

[793]*Re Exxon Pipeline Co.,* 1 APUC 580, 599-600 (1980).

[794]66-WBT-E (Roseman) 60.

[795]WBT-15 (Patton) 4.

[796]WBT-26 (Gary) 8.

[797]33-BWF-E at 51.

[798]*See* WBT-21 (Hall).

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awarded.[799] The probability of these types of events is uniform through time, but the *risk* associated with these probabilities declines over time because the costs to Carriers of an outage continues to fall as rate base declines.[800]

Roseman testified that while explosions or temporary outages were indeed risks, they were unlikely to pose much of a risk to debt service so long as the Carriers maintained a reasonable operating reserve. Roseman suggests that, although the risk of short-term outages is real, these are risks against which the pipeline could effectively self-insure with a cash reserve. For every $100 million of cash reserves, the pipeline could meet operating expenses and interest obligations for 45 days.[801] Roseman argued that the TAPS would have to be out of operation for more than 250 days per year and not have access to cash reserves or short-term loans before the risk of a short-term outage would affect the ability to meet interest obligations. Therefore, we find that the risk of throughput interruption on TAPS is not significantly greater than that of the average pipeline and we do not award a risk premium for it.

(4) Risk That Cost of Shipping Oil Makes North Slope Oil Noncompetitive

Transportation costs for moving oil from the North Slope to market are significant. Pipeline investors faced the possibility that producers would find shipping oil at fully compensatory rates uneconomic. If producers found themselves in this situation, throughput on the pipeline would be curtailed or pipeline owners would be forced to reduce tariffs below fully compensatory levels.

Pipeline investors in a stand-alone TAPS would have seen risks to their investment as greater than for an average pipeline if they believed that producer margins for North Slope oil were more at risk than in the average field served by the average pipeline. The cost of transportation affects margins as do wellhead production costs and delivery prices. A full assessment of investor perceptions of comparative risk between TAPS and average pipelines in the United States would require evidence of comparative margins. The parties failed to provide this evidence.

We find based on the existing record that from the perspective of an investor at that time, this risk was modest. It stemmed primarily from the threat of construction cost escalation. It, however, was a credible threat to equity investors and we award a risk premium for it.

The Carriers note that investors were concerned about oil price volatility.[802] The Carriers note further that "world oil prices had quadrupled to $11.65 per barrel in the year prior to the start of the construction phase,"[803] but that "many experts at the time expected the price to fall to the $8 range."[804] Had the price fallen sufficiently far, it is possible that producers would not find it worthwhile to bring their oil to market. This

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[799] *See* T-3 (WBT) 33-37.

[800] 66-WBT-E (Roseman) 60-61.

[801] 66-WBT-E (Roseman) 76.

[802] T-3 (WBT) 31.

[803] *Id*.

[804] *Id.*

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would result in the TAPS failing to receive throughput adequate to generate revenues required by pipeline investors.

We find that in the years during construction and early operation, though they could not be *certain* that world oil prices would be high, investors faced a significantly better climate in terms of world oil prices than ever before. Roseman points out that:

> not long after this evaluation was made, the world price of oil quadrupled, and this made the evaluation of the viability of the TAPS completely obsolete. Second, it was not until after the quadrupling of the world price of oil that TAPS received final approval of construction and actually began construction. Thus, the overwhelming bulk--about 95 percent--of the capital actually invested in TAPS was not put at risk until after this change in the price of oil had substantially removed the previously perceived threats to the financial viability of the pipeline.[805]

Mobil's investment decisions in the TAPS bear out Roseman's account. In late 1973, Mobil's economic analysis demonstrated that rising costs had made the line uneconomic at its initial capacity of 600 Tb/d, and that even at 1.2 Mb/d its viability was uncertain.[806] However, "the most important reason" behind Mobil's decision not to withdraw from the project was the sudden, drastic rise in world oil prices following the oil embargo of 1973.[807] Mobil's decision suggests that it believed that it was considerably more likely than not that oil prices would remain more than adequate. Roseman reported that Netschert testified that it was more likely that the world price of oil would rise than decline.[808]

While world petroleum prices remained volatile, this volatility was not a greater risk than an average pipeline's once TAPS began operation. By then the total cost of construction was known; margins between lifting costs and delivered refinery prices were sufficiently large that investors knew that a threat of price drops was less likely to affect pipeline revenue. Thus, rising and historically high prices during construction should have offered investors assurances that throughput would offer a return on their investment. Therefore, the uncertainty of oil prices decreased over time and reduced the risk associated with investing in TAPS. In this, we concur with the APC, which found that the price increases in late 1973 and 1974, caused by OPEC and a world oil shortage, increased investor confidence in the economic viability of TAPS.[809]

In addition to the world market oil price, Carriers also assert that there was and to some extent continues to be a risk that market demand for North Slope oil on the West Coast may be insufficient.[810] The concern for an investor is that West Coast demand for North Slope crude would be "soft", with the result that crude oil would need to be shipped by tanker and additional pipelines to points further East at additional

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[805] 66-WBT-E (Roseman) 99.

[806] WBT-20 (Cooper) 29.

[807] *Id*.

[808] 66-WBT-E (Roseman) 60.

[809] *Re Exxon Pipeline Co.,* 1 APUC 580, 599 (1980).

[810] T-3 (WBT) 32-33.

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transportation expense.[811] Such incremental expense, made necessary by otherwise low West Coast prices, might increase the possibility that producers would face inadequate margins to keep the TAPS adequately full.[812]

In contrast, Roseman argued that this risk by itself does not represent a major threat to the economic viability of the pipeline. He urged that these additional transportation costs are simply not great enough to make a critical difference to the pipeline's economics.[813] We agree, and find no compelling evidence in the record to support the contention that investors believed that the risks of soft prices on the West Coast threatened the viability of TAPS.

Investors also evaluate whether the risk that the cost of transportation on TAPS would eliminate the opportunity to receive the same return as the average pipeline. Multiple factors may increase ultimate pipeline costs above originally forecasted levels. Higher costs (if prudently incurred) would be included in tariffs. Cost overruns thus might make the pipeline tariff so high that it would be uneconomic to transport oil. This risk changed over time as TAPS was permitted, constructed and put into operation. We analyze below the risk of various excessive costs over time.

The risk of unknown labor costs is an important element of economic risk. Investors knew that once construction began, a labor strike could have seriously increased the cost of construction. Given the narrow window in which construction could occur, even a relatively short strike might delay the construction for a full season at enormous cost.[814] To reduce this risk, the Carriers sought a project labor agreement ("PLA") with the relevant unions. The PLA was executed in late April 1974.[815] After this agreement was signed, the risk of a strike became nominal. No risk premium should be awarded for capital invested after late April 1974. However, a labor risk before late April 1974 existed and the cost of capital invested before late April 1974 should be adjusted.

Above we discussed the considerable technical challenges facing construction of the TAPS. The design challenges faced during TAPS construction threatened to increase costs. Exxon Pipeline viewed the TAPS construction cost estimate as having at least a one-third chance of a cost overrun of 10 percent.[816] Investors would have considered risks of unproven technology.[817] We also recognize these risks in estimating the required return on equity and we award a risk premium for them.

The TAPS project needed numerous permits, requiring resolution of legal and technical issues. Hence, even after the right-of-way stipulations were granted, the

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[811] 66-WBT-E (Roseman) 79; WBT-26 (Gary) 32-34.

[812] 66-WBT-E (Roseman) 79.

[813] 66-WBT-E (Roseman) 79-81.

[814] WBT-16 (Patton) 77.

[815] WBT-16 (Patton) 78.

[816] WBT-25 (Woody) 11.

[817] *See* WBT-16 (Patton) 5.

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project faced risk of cost over-runs[818] because of permitting delays. The likelihood of such delays, the Carriers argue, was greater on TAPS because as a large project it attracted the attention of many special interests.[819] Further, under the Right of Way Agreement, the Secretary of the Interior retained authority during the construction period to make changes in the Agreement or any Stipulation.[820] The owner companies began the project knowing that the permit terms could be changed in ways that could dramatically increase costs midstream.[821] In fact, construction began with design of the vertical support members still not approved by the Federal Alaska Pipeline Office (APO).[822]

> [T]here was always a risk that government authorities might demand technical solutions that would be impossible to implement. . . . At one point in 1974, for example, the State of Alaska threatened to require a welding procedure that would have been virtually impossible to implement. . . . If the State had persisted in that requirement, the pipeline could not have been built.[823]

Roseman, however, suggests that it was politically impossible for the APO not to approve a critical design component.[824] Witness Roseman characterizes the risk of these regulatory barriers to completion as quite small by the fall of 1974. He cites Federal statutory authorization of the project in 1973, and the political climate in the wake of the oil embargo[825] as powerful indicators that the real legal hurdles had been overcome.[826] We agree. Nevertheless, reasonable investors would have known that compliance costs due to such regulatory scrutiny could have put producer margins for shipping oil on the TAPS at somewhat greater risk than those of an average pipeline. We therefore add an appropriate risk premium.

Other factors, besides government scrutiny, created significant risk of cost overruns. The sheer size of TAPS made the threat of cost overruns significant because there were so many more things that could have gone wrong. Carrier witness Nathan explained that high inflation and design changes led to regularly increasing cost estimates between 1968 and 1974. During the preconstruction phase cost estimates climbed from $.9 billion (based on 500,000 bpd) to $6 billion by October 1974

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[818]Some of the threat of cost over-runs stemmed from the threat of government imposed design criteria during construction that would have inflated project costs. *See* WBT-16 (Patton) 42-44.

[819]T-3 (WBT) 17.

[820]WBT-25 (Woody) 7-8; *See* WBT-16 (Patton) 5.

[821]WBT-16 (Patton) 12; WBT-25 (Woody) 7-8.

[822]WBT-16 (Patton) 12.

[823]WBT-16 (Patton) 5-6.

[824]Roseman contended that the national priority placed on making the project happen substantially reduced this sort of risk. 66-WBT-E (Roseman) 63.

[825]66-WBT-E (Roseman) 62-63.

[826]66-WBT-E (Roseman) 62.

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(1,200,000 bpd).[827] Investors, therefore, would have reason to believe that cost estimates might continue to climb.[828]

Roseman asserted that TAPS would need to cost $20 billion before the project would have been nonviable.[829] Arrow, however, questioned this estimate, asserting that "the margin suggested by Mr. Roseman is (1) almost surely too large, and (2) is itself subject to considerable uncertainty which will only be resolved by future events."[830] Arrow does not supply his own estimate of the risks. Indeed, he does not conduct any numerical assessment.

On balance, we find that the risk presented by the possibility of cost-overruns were greater than that of an average pipeline but modest. We add a premium for the risk that cost overruns could threaten producer margins and, thus, pipeline throughput. We already awarded a premium pre-1974 for the risk that during that time frame investors perceived that TAPS might not be completed. We now also award a risk premium for risk of excessive costs post-1974 being greater than those associated with the average pipeline.

C. Post-construction Regulatory Risk

We next turn to post-construction regulatory risk. The post-construction regulatory risk results from uncertainty about the method to be used to calculate pipeline tariffs. Carrier witness Gary suggests that such a risk is particularly important:

> While all of the above-mentioned risks are substantial, one of the greatest risks associated with TAPS, in the opinion of institutional investors with whom I have discussed the project, was and continues to be the risk of Government regulation and political pressure. Many investors feared that the Federal and State Governments would not allow the oil companies and their pipeline subsidiaries to earn the returns on their investments in TAPS and the Prudhoe Bay field which were necessary to service the large amount of debt borrowed for the North Slope Project.[831]

He cites the "regulatory risk" of the possibility that the ICC valuation methodology would be abandoned.[832] Gary states:

> [w]hen investors, whether they are energy company equity participants or institutional lenders, are confronted with perceived regulatory risks of this magnitude, the result is that a higher rate of return is required and, if such

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[827]WBT-28 (Nathan) 28.

[828]The final construction cost aggregated to roughly $7.7 billion, not including AFUDC. *See* 143-RGV-C, RGV-14 WP 3, TAPS-RGV WP3.xls, Schedule 3.

[829]66-WBT-E (Roseman) 71-72.

[830]WBT-29 (Arrow) 32-33.

[831]WBT-26 (Gary) 36. Gary's own reporting of the ICC's initial suspension of the TAPS tariffs shows that the ICC did not reduce the return to a level that was insufficient to cover debt service. *See* WBT-26 (Gary) 39, Table 2.

[832]WBT-26 (Gary) 38-39.

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higher returns are not allowed, there will be a reduction in investment in crucial energy-related projects.[833]

We disagree with this logic. There was regulatory uncertainty regarding the appropriate methodology that might be applied to TAPS. However, the long-established examples of pipeline regulation determines that regulation affords the owners of the pipeline a fair opportunity to earn a return commensurate with the risk of their capital investment under tariffs that are fair and nondiscriminatory toward shippers and other members of the public.[834] Regulators strive to ensure that the rate of return on investor capital is sufficient to attract investment.[835] Methodological uncertainty may reduce investor confidence in the precision of the investors' predictions as to the particular measures that regulators will take, but the record provides no convincing evidence that this regulatory uncertainty poses a threat to investor principle, nor that investors perceived such a threat. Moreover, the record contains no compelling evidence that methodological uncertainty for TAPS was significantly greater than the uncertainty that applies to the average pipeline. Thus, regulatory uncertainty is not a basis for awarding a risk premium and we do not award one.

D. Post-construction Litigation Risk

Litigation risk is likewise not the basis for a risk premium. With respect to the risk of a challenge to prudent expenditures, Carrier witness Tye notes that witnesses for the TAPS Carriers' opponents, in the 1986 Phase II litigation, "set out to demonstrate that alleged mismanagement in the planning and construction of TAPS caused at least $1.6 billion? about 18 percent of the original rate base? in imprudent construction costs."[836] The Phase II litigation thus posed a regulatory risk of roughly $1.6 billion.

The risk of disallowance, however, is a normal part of utility business. Prudence is within control of the utility and imprudence can always be alleged. Furthermore, such a risk is uniform between TAPS and the average pipeline.

To the extent that the litigation over prudence is caused by lax management, then good policy reasons exist for *not* awarding a risk premium. A risk premium that fully protects investors from alleged imprudence fails to encourage prudent expenditures. If a risk premium for the risk of litigation over imprudent expenditures is awarded, then shippers nonetheless pay for the imprudent expenditures but in the form of a risk premium rather than in rate base. We therefore do not award a premium for post-construction litigation risk.

[833]WBT-26 (Gary) 40.

[834]*See Federal Power Comm'n v. Hope Natural Gas Co.,* 320 U.S. 591, 603 (1944).

[835]*Id.* at 603; *Bluefield Water Works and Improvement Co. v. Pub. Serv. Comm'n,* 262 U.S. 679, 693 (1923).

[836]T-3 (WBT) 29.

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ENDNOTE 9: SINGLE RATE

We asked the parties to brief what legal authority, precedent, or rationale exists for establishing a single intrastate rate for TAPS.[837] The Carriers and the State maintain that requiring a single intrastate rate for TAPS would violate each Carrier's right to be regulated as an independent entity.[838] PAS asserts that the record is not sufficient "to define or support" a single rate system.[839] Tesoro and Williams disagree.[840]

The Carriers and the State present multiple reasons why a single intrastate rate for TAPS is not proper. First, the Carriers and the State assert that because each Carrier holds its own certificate of public convenience and necessity it is entitled to a separate rate. We disagree. AS 42.06.630(17) defines "tariff" to mean a "rate" for a "pipeline facility" for services "furnished by the facility" and not a "rate" for each owner of the pipeline facility. Just and reasonable rates are measured against cost for services. Costs must be prudent, and prudence is measured from a standard of the reasonableness of the cost of running a facility. We certainly do not grant an inefficient or unreasonable owner the right to recover all of its costs in rates. Finally, AS 42.06.370(a) states, "All rates demanded or received by a pipeline carrier, or by any two or more pipeline carriers jointly . . . shall be just and reasonable." The legislature clearly intended for the possibility of joint ownership with a single rate for service.

Second, the Carriers and the State assert that to change from a multiple to single interstate rate this late in the history of TAPS would violate the Carriers' due process rights.[841] In support of this proposition they cite *Atchison, Topeka & Santa Fe Railway Company v. Wichita Board of Trade*, 412 U.S. 800, 808, 93 S.Ct. 2367 (1973). We have not precluded the Carriers from filing multiple rates for 1997-2000; we allow them to file multiple rates so long as they satisfy the common annual revenue requirement established in Part V, Section I. To the extent that any due process right to multiple rates might exist, it is therefore protected.

Third, the Carriers assert that requiring a single rate would put them "in a difficult position from an antitrust perspective."[842] However, if we, as opposed to the Carriers,

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[837] *Re Amerada Hess Pipeline Corp.*, Order P-97-4(136)/P-97-7(95), dated June 1, 2001. Although this issue is to some degree intertwined with Tesoro's allegation that the multiple ownership structure of TAPS results in duplicative costs that shippers should not have to pay, we address only the issue of whether a single rate is permissible for 1997-2000. The broader question of whether the multiple ownership structure results in impermissible duplicative costs is addressed in Part VI, Section D, *supra*.

[838] *Initial Post-hearing Brief of the Indicated TAPS Carriers* at 36; *State of Alaska's Initial Post-hearing Brief* at 38-39.

[839] Public Advocacy Section's *Supplemental Brief* at 5.

[840] *Tesoro Alaska Company's Initial Posthearing Brief* at 50-51; *Williams Alaska Petroleum Inc.'s Post-hearing Initial Brief* at 57.

[841] *Initial Post-hearing Brief of the Indicated TAPS Carriers* at 36-37.

[842] *Id.* at 37.

establish a single rate no antitrust violation occurs because an antitrust violation requires collusion between parties setting rates.

Fourth, the Carriers and the State assert that by setting a single rate the benefits of rate competition between Carriers are forfeited.[843] The assertion that rate competition on TAPS exists and should be protected is a theme that runs through the Carriers' and the State's case. The record in this docket, however, is not sufficient to rule on whether rate competition exists on TAPS. However, by setting rates for the years 1997-2000, we do not affect past competition. The amounts shipped intrastate on the various interests in TAPS have already occurred; competitive decisions, if any, have already been made. Thus, our ruling in this docket preserves past competition, if any existed.[844] Whether intrastate rate competition exists on TAPS may be fully addressed in our 2001 rate case if the Carriers chose to file individual rates for the 2001 test year.

Fifth, the Carriers assert that establishing a single rate results in the shippers losing the benefit of TSM's Net Carryover provision.[845] They assert that the Net Carryover provision of TSM may be advantageous to shippers because actual costs and the projected revenue requirement may not accurately match in any given year. It allows shippers to ship on rates that are lower than costs and Carriers to recover costs later. If we as regulators were to design such a mechanism it would be deemed retroactive ratemaking. Our goal is to ensure that rates are just and reasonable. That requires finding that rates reflect costs, not over and under projections of costs. Because 1997-2000 costs and revenue requirement can now be exactly matched we can insure that each shipper will pay rates that match the costs for the year in question.

Sixth, the State asserts that the principle of cost responsibility supports that a single tariff cannot be imposed on TAPS absent a change in ownership structure.[846] We disagree. The ownership structure, whether reasonable or efficient, is not necessarily relevant to just and reasonable rates. We determine whether filed rates are based on just and reasonable costs, not actual costs. The Carriers may continue in the ownership structure of their choice; rates, however, must meet the AS 42.06 requirement of being just and reasonable.

Seventh, the Carriers and the State also assert that the regulatory simplicity that might be gained by single intrastate rates is far outweighed by the benefit of the multiple TSM inter- and intrastate rates set by the Carriers. The Carriers and the State failed to support this allegation. They allude to the resulting administrative burden of having to set multiple interstate rates separate from a single intrastate rate. However, with respect to 1997-2000 rates, no extra burden exists because we, not the Carriers, have set the 1997-2000 intrastate rates. What the Carriers chose to do with respect to interstate rates is voluntary.

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[843] *Id.*; *State of Alaska's Initial Post-hearing Brief* at 39.

[844] The issue of intrastate rate competition on TAPS may be before us should the Carriers decide to file individual 2001 test year cases.

[845] *Initial Post-hearing Brief of the Indicated TAPS Carriers* at 38. The loss of the benefits of TSM's Net Carryover provision is not relevant to whether a single rate is proper.

[846] *State of Alaska's Initial Post-hearing Brief* at 39.

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Further, Alaska case law suggests that a single rate is appropriate. Although *State of Alaska v.* Alaska *Public Utilities Commission*, No. 3AN 80-7163 (Nov. 28, 1983) has little precedential value because it was ordered vacated by the Alaska Supreme Court at the request of the settling parties,[847] it squarely addresses the issue of single rate and finds that a single rate is appropriate for intrastate shipment on TAPS. The Alaska Superior Court found on appeal from the APC that there was "no substantial evidence . . . to treat each owner of TAPS independently for the setting of a tariff" because TAPS was "in fact, a single pipeline and not eight individual pipelines of varying capacities."[848]

The record in this docket thus supports establishing a single rate. AS 42.06.410(a) authorizes us to set rates when filed rates are found unjust and unreasonable; it does not preclude us from setting a single rate. For example, Carrier witness Tye calculated overall rather than individual rates of return because the Carriers are all in the same line of business, facing the same business risks, and the risks are attached to the asset, not who owns it.[849] This is the same logic adopted by the Alaska superior court in *State of Alaska v. Alaska Public Utilities Commission*, No. 3AN 80-7163 (Nov. 28, 1983).

In these consolidated dockets, despite the PAS assertion that the record is insufficient, we have been able to calculate a single annual intrastate TAPS rate based on the appropriate and allowable costs contained in the record. If individual Carriers have different rates for intrastate shipment on TAPS, each Carrier must demonstrate that it has incurred different yet prudent costs. We have already ruled that for TAPS, capital structure, cost of debt and equity are invariant to ownership.[850] Therefore, if costs differ, they do so because of differences in operating expenses and property balances. For this reason, we allow the Carriers the opportunity to supplement the record[851] and file individual Carrier rates so long as the sum of the individual annual revenue requirements do not exceed the composite annual revenue requirements we calculated in Part VI, Section ~~F~~ E. Should individual Carriers not be able to demonstrate differing individual prudent costs, then a single annual rate for intrastate shipment is appropriate.

Therefore, no case law prevents setting a single rate, persuasive authority exists for doing so, and the record supports it. AS 42.06.410(a) authorizes us to set rates when we find that filed rates are unjust and unreasonable; it does not preclude setting a single rate despite multiple ownership. Therefore, we order a single rate for 1997-2000. We allow multiple annual rates should the Carriers chose to file them so long as the

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[847] *Amerada Hess Pipeline Corp. v. Alaska Pub. Util. Comm'n,* No. S-195, slip op. (Alaska Nov. 20, 1985).

[848] *State of Alaska v. Alaska Pub. Util. Comm'n,* 3AN 80-7163 CI (Alaska Super.) Nov. 28, 1983.

[849] Tr. 2742-43 (WBT).

[850] Part IV Section B.

[851] The record suggests that the operating costs and property balances should be proportional to ownership interests in TAPS. With respect to operating costs, this is particularly true because one entity, Alyeska Pipeline operates TAPS for all Carriers.

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multiple annual rates cumulatively satisfy the annual revenue requirements established in Part VI Section E and properly reflect prudent individual Carrier costs of service.

ENDNOTE 10 CARRIER CONTENTION THAT REFUNDS SHOULD BE LIMITED

The Carriers contend that refunds should be limited. The APUC, however, addressed that contention in *Re Exxon Valdez Litigation and Settlement Costs*, Order P-94-1(63)/P-95-1(43)/P-97-4(50)/P-97-6(29)/P-97-7(30) at 18 (May 27, 1999).

> To support their contention that 1997, 1998, and 1999 TAPS rates are refundable only to the extent that they do not comply with TSM, the TAPS Carriers cite *Sea Robin Pipeline Co. v. FERC*, 795 F.2d 182 (D.C. Cir., 1986); *Far North Sanitation, Inc. v. Alaska Public Utilities Commission*, 825 P.2d 867 (Alaska, 1992); and AS 42.06.410(a).
>
> In the *Sea Robin* case the Federal Energy Regulatory Commission (FERC) required a pipeline company (Sea Robin) to change its method of calculating transportation rates for Gulf Oil Company. The pivotal issue in that case was whether the pipeline company had the burden of proving just and reasonable rates or FERC had the burden of proving unjust and unreasonable rates. The *Sea Robin* court interpreted the Natural Gas Act (Gas Act)[852] to ascertain whether § 4 or § 5 of the Gas Act applied. The *Sea Robin* court focused on whether the change in rates was proposed by the pipeline company (governed by § 4 with the burden of proof on the pipeline company) or the regulatory agency (governed by § 5 with the burden of proof on the agency). Since FERC imposed the new rate methodology on Sea Robin, the *Sea Robin* court concluded that FERC had the burden of proving unjust and unreasonable rates and failed to satisfy that burden.
>
> The TAPS Carriers argued that the TSM methodology can only be changed prospectively and that full rate refund obligations only apply subsequent to the change in rate methodology, citing a footnote in *Sea Robin* to support that proposition. (Reconsideration Petition, p. 10.) That footnote provides:
>
> > The first order also exceeds the Commission's authority under section 5 because it mandates retroactive relief. FERC ordered Sea Robin to refund to its customers ... any fees paid since June 1, 1980 in excess of the fees they would have paid under the new, Commission-directed methodology. . . Sea Robin had a right to rely on the legality of a filed rate once the Commission allowed it to become effective. FERC may not order a retroactive refund based on a post hoc determination of the illegality of a filed rate's prescription.
>
> The above language reveals that the TAPS Carrier's analysis ignores an important difference between the *Sea Robin* case and this proceeding - the rates in *Sea Robin* were allowed to become legally effective by FERC,

[852] 15 U.S.C. § 717 *et seq.*

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while this Commission suspended the 1997, 1998, and 1999 TAPS rates for investigation. The *Sea Robin* court's short discussion of the refundability issue focused on whether the rates subject to refund were allowed to become legally effective - since the rates were already effective, any refund of those previously effective rates would be retroactive. In this proceeding the Commission suspended permanent operation of the 1997, 1998, and 1999 TAPS rates pursuant to AS 42.06.400(a) and set temporary rates subject to refund. Since the refund obligation only accrues from the date on which the Commission suspended permanent operation of the rate, any refund of temporary rates is prospective in nature.[853]

The TAPS Carriers cite the *Far North* case to support their contention that TSM cannot be replaced by another methodology until after a hearing and investigation, and accordingly refunds are limited to noncompliance with the TSM methodology because rates determined by some other methodology can only be implemented prospectively. The *Far North* case involved the issue of the permanent rates of a previously unregulated exempt utility being made interim and refundable when that utility became regulated by the Commission. The Commission revoked the utility's regulation exemption, required a revenue requirement filing, and declared the utility's existing rates interim and refundable. The Court found that the Commission's decision to designate existing rates interim and refundable represented a change of rate proposed by the Commission (governed by AS

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[853]In reaching its decision, the *Sea Robin* court stated:

> Thus, the Commission's action in this case is an exercise of its authority under section 5 and can be upheld only if its is consistent with the constraints imposed by that section. The Commission staff must bear the burden of proving both that the existing provision is unjust or unreasonable and that the proposed replacement is just and reasonable. In addition, FERC may order only prospective relief if it finds *a previously accepted provision* unlawful. Because the Commission has not satisfied these section 5 requirements, we reverse its decision.

Sea Robin, 795 F.2d at 187.

This quotation highlights an important distinction between the *Sea Robin* case and this proceeding: in this proceeding TSM has not previously been accepted by this Commission as producing just and reasonable rates. Instead the Commission accepted a settlement which allowed the implementation of TSM as a method of determining ceiling TAPS rates and provided that each TSM filing would be treated as a new rate filing. (Order P-86-2(41), p. 21.) Consequently the annual TAPS rates calculated under TSM are not considered accepted and permanently effective until they are approved by this Commission. Since suspended TAPS rates are neither permanently effective nor accepted rates, any refund resulting from the suspension of a TAPS rate (such as the 1997, 1998, and 1999 TAPS rate filings) is prospective under the *Sea Robin* analysis because no refund of previously accepted rates is required.

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42.05.431(a)) and a hearing was required under AS 42.05.371[854] before the adoption of the interim, refundable rate. *Far North, 825 P.2d* at 873.[855]

This proceeding is distinguishable from the *Far North* and *Sea Robin* cases: in *Far* North and *Sea Robin*, the utility's rates were permanent and effective prior to the Commission's suspension and investigation of those rates. The 1997, 1998, and 1999 rates at issue in this proceeding were proposed by the TAPS Carriers and were not permanent effective rates at the time their permanent operation was suspended for investigation.

AS 42.05.431 and § 5 of the Natural Gas Act are analogous to AS 42.06.410(a). Each statute addresses a regulatory agency's authority to change existing permanent rates, and each statute has companion legislation which addresses rate changes proposed by the utility/pipeline. (*See* AS 42.05.421, AS 42.06.400, and § 4 of the Natural Gas Act.)

The TAPS Carriers' argument regarding limited refund obligations indicates an assumption that a challenge to TSM represents a Commission-proposed change to existing TAPS rates. That assumption, as evidenced by the TAPS Carriers repeated description of TSM as the "accepted and required" TAPS rate methodology, ignores previous Orders in this proceeding, statutory provisions regarding temporary rates, and the fact that the TAPS Carriers' own filings initiated the investigation in this proceeding under AS 42.06.400.

The Commission allowed the implementation of the TSM methodology with the proviso that each TAPS rate filing would be treated as a new rate filing - thus reflecting a rate proposed by the TAPS Carriers - subject to the same standards and procedures which would apply if the TAPS Settlement was never accepted. (Order P-86-2(41), p. 21); *see also* Discussion, Section II.B., pp. 19-20.) Such language was clear notice to the TAPS Carriers that each TAPS rate filing would be viewed as a rate change proposed by the TAPS Carriers and could be suspended (and refundable to the extent interim rates exceeded permanent rates) to determine if TSM produced just and reasonable rates. The Commission has allowed the implementation of the TSM methodology as a means of determining ceiling TAPS rates while reserving the right to review TSM rates for justness and reasonableness. Once a protest of the TSM rate methodology was filed, the Commission exercised its authority under AS 42.06.400 to suspend 1997, 1998, and 1999 TAPS rates for an investigation to determine whether TSM produces just and reasonable rates.

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[854]The pertinent provisions of AS 42.05.371 provide that "a legally filed and effective tariff rate . . . may not be changed except in the manner provided in this chapter."

[855]The *Far North* court also found that the Commission has the authority to declare a rate interim and refundable so long as the Commission provides protection for the interests of both the utility and the public. *Far North*, 825 P.2d at 874.

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. . . .

Based on the history in this proceeding, the Commission believes that the 1997, 1998, and 1999 TAPS rates are rate changes proposed by the TAPS Carriers and consequently governed by AS 42.06.400. Accordingly, TAPS rates for those years are refundable to the extent the filed and suspended rate exceeds the permanent rate approved by this Commission. The Commission further finds that the 1997, 1998, and 1999 TAPS rates are not and have never been permanently effective rates. Those rates have been suspended for investigation, and the rates proposed by the TAPS Carriers for those years have been set as temporary rates. Accordingly, the Commission concludes that the 1997, 1998, and 1999 TAPS rates are temporary in nature and that any refund attributable to those temporary rates is prospective in nature. In conclusion, the Commission specifically rejects the argument that any refund in this case is limited to noncompliance with TSM.[856]

[856] *Re Exxon Valdez Litigation and Settlement Costs, Order P-94-1(63)/P-95-1(43)/P-97-4(50)/P-97-6(29)/P-97-7(30)* at 23-29 (May 27, 1999) (*footnotes omitted).*

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1997-2000 Just and Reasonable Intrastate TAPS Rates, by Destination and Year

	GVEA Tariff ($/BBL)	Valdez Marine Terminal Intrastate Tariff ($/BBL)	Petro Star Tariff ($/BBL)
1997	$1.02	$1.56	$1.55
1998	$1.03	$1.63	$1.62
1999	$1.19	N/A	$1.88
2000	$1.25	N/A	$1.96

Source: Exhibit 46, lines 24-26; see Part VI.F

The lack of a tariff to Valdez reflects the absence of intrastate shipments to that location during 1999 and 2000. It should not misunderstood as an indication that the intrastate cost of service to Valdez would have been zero had shipments occurred.

Illustrative Average Yearly Tariffs, By Carrier and Destination

		1997				1998				1999			
	Certificate	North Pole	VMT	Petro Star	TL #	North Pole	VMT	Petro Star	TL #	North Pole	VMT	Petro Star	TL #
Amerada Hess	300	1.75	2.74	2.73	55	1.66	2.69	2.68	58	1.42	2.34	2.33	63, 64, 66, 68
ARCO	301	1.67	2.61	2.60	59	1.68	2.73	2.72	61	1.52	2.46	2.44	68
BP	311	1.76	2.76	2.74	60	1.73	2.80	2.79	61	1.62	2.85	2.83	67, 69
Exxon	304	1.66	2.64	2.62	72	1.71	2.77	2.76	74	1.49	2.66	2.65	80, 81, 83, 85
Unocal	312	1.69	2.65	2.64	55	1.67	2.72	2.7	56	1.56	2.55	2.53	60
Mobil	308	1.87	2.94	2.92	55	1.79	2.84	2.82	58, 63	1.56	2.56	2.42	64, 66, 68
Phillips	310	1.75	2.75	2.73	58, 59	1.72	2.79	2.78	62	1.49	2.47	2.46	68, 69, 71, 73

* For multiple tariffs filed in a given year, tariff is a weighted average, with weights determined by the number of months that the tariff was in effect.
* Gravity differential rates effective in the first half of 1997 not included.
* Incentive rate tariffs not included.

Illustrative Average Yearly Tariffs, By Carrier and Destination

		2000			
	Certificate	North Pole	VMT	Petro Star	TL #
Amerada Hess	300	1.52	2.56	2.54	70, 71
ARCO	301	1.97	3.20	3.18	61
BP	311	1.61	2.61	2.59	73, 75
Exxon	304	1.98	3.22	3.20	74
Unocal	312	1.84	2.98	2.97	64
Mobil	308	1.86	3.02	3.01	70
Phillips	310	1.67	2.69	2.68	77, 78, 79

Relative excess of filed tariffs above just and reasonable rates, 1997-2000
(percentage)

	1997			1998			1999			2000		
	North Pole	VMT	Petro Star	North Pole	VMT	Petro Star	North Pole	VMT	Petro Star	North Pole	VMT	Petro Star
Amerada Hess	70.79%	75.63%	75.84%	60.93%	64.79%	64.97%	19.43%	N/A	23.84%	22.26%	N/A	29.25%
ARCO	62.98%	67.30%	67.47%	62.86%	67.24%	67.43%	27.62%	N/A	29.92%	58.11%	N/A	62.03%
BP	71.77%	76.92%	76.49%	67.71%	71.53%	71.74%	35.73%	N/A	50.69%	28.82%	N/A	31.97%
Exxon	62.01%	69.22%	68.76%	65.77%	69.69%	69.89%	24.75%	N/A	41.10%	58.92%	N/A	63.05%
Unocal	64.93%	69.86%	70.05%	61.89%	66.63%	66.20%	30.98%	N/A	34.71%	47.68%	N/A	51.33%
Mobil	82.50%	88.45%	88.08%	73.20%	73.98%	73.59%	30.84%	N/A	28.95%	49.29%	N/A	53.37%
Phillips	70.63%	76.06%	75.74%	66.74%	70.92%	71.13%	25.03%	N/A	30.90%	33.90%	N/A	36.39%
Average	69.37%	74.78%	74.63%	65.59%	69.25%	69.28%	27.77%	N/A	34.30%	42.71%	N/A	46.77%

Average of Averages 57.45%

* Percentages calculated as [Schedule 2 - Schedule 1]/Schedule 1

Appropriate Total Annual Rate of Return for TAPS, 1968-1996
(Percentage Rates)

	Cost of Debt	Percentage of Debt	Weighted Cost of Debt	Return on Equity	Percentage of Equity	Weighted Return on Equity	Rate of Return
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Exhibit 15, Schedule 3, col i	Exhibit 11, col d	a * b	Exhibit 20, col b	1 - b	d * e	c + f
1968	0.00	0.00%	0.00%	12.28	100.00%	12.28%	12.28%
1969	0.00	0.00%	0.00%	13.14	100.00%	13.14%	13.14%
1970	0.00	0.00%	0.00%	13.60	100.00%	13.60%	13.60%
1971	0.00	0.00%	0.00%	12.72	100.00%	12.72%	12.72%
1972	0.00	0.00%	0.00%	12.56	100.00%	12.56%	12.56%
1973	0.00	0.00%	0.00%	13.23	100.00%	13.23%	13.23%
1974.1	0.00	0.00%	0.00%	13.90	100.00%	13.90%	13.90%
1974.2	8.74	32.96%	2.88%	13.90	67.04%	9.32%	12.20%
1975	8.80	46.63%	4.10%	13.98	53.37%	7.46%	11.56%
1976	8.74	49.07%	4.29%	13.81	50.93%	7.03%	11.32%
1977.1	8.82	49.50%	4.37%	14.55	50.50%	7.35%	11.72%
1977.2	8.86	49.50%	4.39%	14.55	50.50%	7.35%	11.74%
1978	8.88	49.50%	4.40%	15.42	50.50%	7.79%	12.19%
1979	8.90	49.50%	4.41%	16.28	50.50%	8.22%	12.63%
1980	8.98	49.50%	4.45%	18.25	50.50%	9.22%	13.67%
1981	9.01	49.50%	4.46%	21.16	50.50%	10.69%	15.15%
1982	9.03	49.50%	4.47%	20.81	50.50%	10.51%	14.98%
1983	9.08	49.50%	4.49%	17.46	50.50%	8.82%	13.31%
1984	9.13	49.50%	4.52%	18.66	50.50%	9.42%	13.94%
1985	9.16	49.50%	4.53%	17.35	50.50%	8.76%	13.29%
1986	9.17	49.50%	4.54%	16.04	50.50%	8.10%	12.64%
1987	9.19	49.50%	4.55%	16.00	50.50%	8.08%	12.63%
1988	9.20	49.50%	4.55%	16.42	50.50%	8.29%	12.84%
1989	9.23	49.50%	4.57%	16.18	50.50%	8.17%	12.74%
1990	9.35	49.50%	4.63%	16.35	50.50%	8.25%	12.88%
1991	9.37	49.50%	4.64%	16.06	50.50%	8.11%	12.75%
1992	9.37	49.50%	4.64%	15.61	50.50%	7.88%	12.52%
1993	9.30	49.50%	4.60%	14.02	50.50%	7.08%	11.68%
1994	9.41	49.50%	4.66%	14.67	50.50%	7.41%	12.07%
1995	9.38	49.50%	4.64%	14.74	50.50%	7.44%	12.08%
1996	9.24	49.50%	4.57%	14.28	50.50%	7.21%	11.78%

1974.1 = January through April 1974
1974.2 = May through December 1974
1977.1 = January through June 1977
1977.2 = July through December 1977

Explanatory Note to Exhibit 3

The rates shown on Schedule 2 are calculated using the rate design used by all of the parties, and discussed at Part VI.F. Rates reflect a revenue requirement, shown on Schedule 3, that includes TSM's allowances for DR&R -- as do the 1997-2000 filed rates. This permits an "apples to apples" assessment of filed rates. The depreciation amounts are derived from Schedule 6, and assume TSM depreciation as sponsored by Tesoro.[1] Accumulated depreciation reflects adjustments that account for property retirements. These adjustments are shown in Schedule 7, and are calculated in Exhibit 23; the rationale for making these adjustments is provided at Part IV Section C.2. AFUDC is calculated in Schedule 8, as per the discussion in Part IV Section B.5, and is amortized according to Schedule 9, as per the discussion in Part IV Section C.3. Return on rate base is calculated in Schedule 4, where the rate base is developed in Schedule 14. Rate base reflects adjustments for ADIT, calculated in Schedule 12 as per the discussion in Part IV Section D. Income taxes are calculated (see Schedule 54) according to maximum statutory rates; see Part V Section A.3 for discussion.

[1] Exhibit 225-JFB-T, Workpaper 1, Line 4.

Filed Tariff Excess Compared with Illustrative DOC Rates
(percentages)

All Carrier Inputs Except Depreciation

	1997			1998			1999			2000		
	North Pole	VMT	Petro Star	North Pole	VMT	Petro Star	North Pole	VMT	Petro Star	North Pole	VMT	Petro Star
Amerada Hess	45.70%	47.22%	47.41%	42.89%	45.06%	45.22%	5.96%	N/A	8.94%	22.86%	N/A	29.93%
ARCO	39.04%	40.23%	40.39%	44.62%	47.21%	47.39%	13.23%	N/A	14.29%	58.89%	N/A	62.89%
BP	46.53%	48.29%	47.95%	48.92%	50.99%	51.18%	20.43%	N/A	32.56%	29.45%	N/A	32.67%
Exxon	38.20%	41.85%	41.47%	47.20%	49.37%	49.56%	10.68%	N/A	24.12%	59.70%	N/A	63.91%
Unocal	40.70%	42.38%	42.55%	43.75%	46.67%	46.31%	16.21%	N/A	18.50%	48.40%	N/A	52.13%
Mobil	55.69%	57.97%	57.67%	53.80%	53.14%	52.81%	16.08%	N/A	13.43%	50.02%	N/A	54.18%
Phillips	45.56%	47.58%	47.32%	48.06%	50.45%	50.64%	10.93%	N/A	15.15%	34.56%	N/A	37.11%
Average	44.49%	46.50%	46.39%	47.03%	48.98%	49.02%	13.36%	N/A	18.14%	43.41%	N/A	47.55%

Average of Averages 40.49%

* Percentages calculated as [Exhibit 1, Schedule 2 - Schedule 2]/Schedule 2

Illustrative DOC Tariffs All Carrier Inputs Except Depreciation

Line No.	Description	Source	1997	1998	1999	2000
1	GVEA Deliveries (millions bbl)	Exhibit RGV-6, Schedule 1	17.53	18.54	21.98	22.73
2	Petro Star Valdez Deliveries (millions bbl)	Exhibit RGV-6, Schedule 1	3.41	3.58	3.73	3.78
3	Valdez Marine Terminal Intrastate Deliveries (millions bbl)	Exhibit RGV-6, Schedule 1	16.06	15.68	0.00	0.00
4	Valdez Marine Terminal Interstate Deliveries (millions bbl)	Exhibit RGV-6, Schedule 1	444.98	402.82	365.10	341.41
5	Total Barrels (millions)	Lns (1 + 2 + 3 + 4)	481.97	440.61	390.80	367.92
6	GVEA Distance	Exhibit RGV-6, Schedule 1	469.06	469.06	469.06	469.06
7	Petro Star Valdez Distance	Exhibit RGV-6, Schedule 1	796.00	796.00	796.00	796.00
8	Valdez Marine Terminal Distance	Exhibit RGV-6, Schedule 1	800.32	800.32	800.32	800.32
9	GVEA Barrel Miles	Line (1 * 6)	8,221	8,694	10,309	10,662
10	Petro Star Valdez Barrel Miles	Line (2 * 7)	2,717	2,850	2,967	3,005
11	Valdez Marine Terminal Intrastate Barrel Miles	Line (3 * 8)	12,851	12,547	0	0
12	Valdez Marine Terminal Interstate Barrel Miles	Line (4 * 8)	356,124	322,382	292,194	273,239
13	Total Barrel Miles	Lns (9 + 10 + 11 + 12)	379,912	346,472	305,470	286,905
14	GVEA Connection Costs (millions $)	Exhibit RGV-6, Schedule 1	$0.77	$0.00	$0.00	$0.00
15	GVEA Connection Costs Per GVEA Barrel	Line (14 / 1)	$0.04	$0.00	$0.00	$0.00
16	Non-Distance Related Costs (millions $)	Exhibit RGV-6, Schedule 1	$77.49	$79.64	$80.29	$80.13
17	Non-Distance Related Costs Per Barrel	Lns (16 / 5)	$0.16	$0.18	$0.21	$0.22
18	Total DOC Cost of Service (millions $)	Schedule 2, Ln. 7	$885.43	$804.22	$820.75	$705.29
19	Remaining Cost of Service (millions $)	Line (18 - 14 - 16)	$807.17	$724.58	$740.46	$625.16
20	GVEA Portion of Cost of Service (millions)	Lns (((15 + 17) * 1) + (19 * (9 / 13)))	$21.05	$21.53	$29.50	$28.18
21	Petro Star Valdez Portion of Cost of Service (millions $)	Lns ((17 * 2) + (19 * (10 / 13)))	$6.32	$6.61	$7.96	$7.37
22	Valdez Marine Terminal Intrastate Portion of Cost of Service	Lns ((17 * 3) + (19 * (11 / 13)))	$29.88	$29.07	$0.00	$0.00
23	Valdez Marine Terminal Interstate Portion of Cost of Service	Lns ((17 * 4) + (19 * (12 / 13)))	$828.18	$747.01	$783.29	$669.74
24	GVEA Tariff ($/BBL)	Lns (20 / 1)	$1.20	$1.16	$1.34	$1.24
25	Petro Star Valdez Tariff ($/BBL)	Lns (21 / 2)	$1.85	$1.85	$2.13	$1.95
26	Valdez Marine Terminal Intrastate Tariff ($/BBL)	Lns (22 / 3)	$1.86	$1.85	$0.00	$0.00

Illustrative DOC Revenue Requirement
(millions $)

All Carrier Inputs Except Depreciation

Line No.	Description	Source	1997	1998	1999	2000
1	Operating Expenses	Schedule 16, Ln. 12	$604	$566	$568	$444
2	Depreciation Expense	Schedule 6 Ln. 3	$82	$50	$49	$56
3	Amortization of AFUDC	Schedule 9, Ln. 14	$17	$10	$10	$11
4	Return on Rate Base	Schedule 4 Ln 3	$104	$105	$115	$113
5	Income Tax Allowance	Schedule 5 Ln. 14	$71	$70	$76	$77
6	DR&R Expense	30-BEW-T	$8	$4	$4	$4
7	Total Cost of Service	Sum Lines 1 to 6	$885	$804	$821	$705

Illustrative DOC Return on Rate Base
(millions $)

All Carrier Inputs, Except Depreciation

Line No.	Description	Source	1997	1998	1999	2000
1	Weighted Rate of Return	Exhibit WBT-40	14.40%	14.40%	16.00%	16.00%
2	Average Rate Base	Schedule 14, Ln 19	$724	$732	$716	$709
3	Total Return on Rate Base	Ln.1 * Ln.2	$104	$105	$115	$113
4	Debt Capital Structure	Exhibit WBT-38	22.67%	24.39%	24.68%	24.68%
5	Cost of Debt	Exhibit WBT-39	7.85%	6.63%	6.38%	6.38%
6	Debt Portion of Weighted Rate of Return	Ln.4 * Ln.5	1.78%	1.62%	1.57%	1.57%
7	Interest Expense	Ln.2 * Ln.6	$13	$12	$11	$11
8	Equity Portion of Weighted Rate of Return	Ln.1 - Ln.6	12.62%	12.78%	14.43%	14.43%
9	Return on Equity	Ln.2 * Ln.8	$91	$94	$103	$102
10	Equity Capital Structure	100% - Line 4	77.33%	75.61%	75.32%	75.32%
11	Cost of Equity (Return on Equity)	Ln. 23/Ln.27	16.32%	16.91%	19.15%	19.15%

Illustrative DOC Income Tax Allowance
(millions $)

All Carrier Inputs, Except Depreciation

Line No.	Description	Source	1997	1998	1999	2000
1	Total Return on Rate Base	Schedule 4 Ln. 3	$104	$105	$115	$113
2	Interest Expense	Schedule 4 Ln. 7	$13	$12	$11	$11
3	Equity Portion of Return on Rate Base	Ln. 1 - Ln. 2	$91	$94	$103	$102
	Permanent Differences - Federal Income Tax:					
4	Amortization of Equity AFUDC	Schedule 9 Ln. 4	$14	$8	$8	$9
5	Amortization of TEFRA Adjustment	Schedule 13 Ln. 6	$0.07	$0.04	$0.04	$0
6	Amortization of Deferred Tax Adjustments	Schedule 12 Ln. 18	$2	$1	$1	$1
7	Subtotal for Federal Income Tax Allowance	Lns (3 + 4 + 5 - 6)	$104	$101	$111	$111
8	Net-to-Tax Multiplier - Federal Income Tax	IRC	53.85%	53.85%	53.85%	53.85%
9	Federal Income Tax Allowance	Ln. 7 * Ln. 8 - Ln. 6	$54	$54	$59	$59
	Permanent Differences - State Income Tax:					
10	Amortization of Equity AFUDC	Schedule 9 Ln. 4	$14	$8	$8	$9
11	Subtotal for State Income Tax Allowance	Lns (3 + 9 + 10)	$160	$156	$170	$171
12	Net-to-Tax Multiplier - State Income Tax	AK Stat.	10.38%	10.38%	10.38%	10.38%
13	State Income Tax Allowance	Ln. 11 * Ln. 12	$17	$16	$18	$18
14	Total Income Tax Allowance	Ln. 9 + Ln. 13	$71	$70	$76	$77

Illustrative DOC Depreciation
(millions $)

All Carrier Inputs, Except Depreciation

Line No.	Description	Source	1977	1978	1979	1980	1981	1982
1	TSM-6/Baden Depreciation 77-83; TSM Depreciation 84-00	(30-BWF-E, 235-JFB-T); (31-BWF-E)	108.493	453.437	549.208	626.832	602.059	611.310
2	Amortization of Excluded Costs	31-BWF-E, Ln. 119	0	47.407	55.891	66.134	65.989	70.407
3	Appropriate Annual Depreciation - TSM & TSM-6	Line 1 + Line 2	108.493	500.844	605.099	692.966	668.048	681.717
4	Adjustments to Accumulated Depreciation	FERC Form 6, from 143-RGV-C	0.00	0.000	0.557	0.071	1.010	0.000
5	Adjusted Retirements from Accumulated Depreciation	Schedule 7, Ln. 9	0.00	(6.98)	(10.93)	(51.83)	(2.50)	(13.61)
6	Accumulated Depreciation	Lns (3 + 4 + 5) + Prior Ln. 6	108.493	602.352	1,197.077	1,838.285	2,504.847	3,172.958

Illustrative DOC Depreciation
(millions $)

All Carrier Inputs, Except Depreciation

Line No.	Description	Source	1983	1984	1985	1986	1987	1988
1	TSM-6/Baden Depreciation 77-83; TSM Depreciation 84-00	(30-BWF-E, 235-JFB-T); (31-BWF-E)	589.012	569.053	542.938	514.506	503.605	458.916
2	Amortization of Excluded Costs	31-BWF-E, Ln. 119	71.471	72.701	0.000	0.000	0.000	0.000
3	Appropriate Annual Depreciation - TSM & TSM-6	Line 1 + Line 2	660.483	641.754	542.938	514.506	503.605	458.916
4	Adjustments to Accumulated Depreciation	FERC Form 6, from 143-RGV-C	0.000	0.075	0.000	0.000	0.000	0.000
5	Adjusted Retirements from Accumulated Depreciation	Schedule 7, Ln. 9	(22.44)	(11.51)	(13.78)	(2.97)	(16.65)	(12.97)
6	Accumulated Depreciation	Lns (3 + 4 + 5) + Prior Ln. 6	3,810.997	4,441.318	4,970.473	5,482.011	5,968.970	6,414.913

Illustrative DOC Depreciation
(millions $)

All Carrier Inputs, Except Depreciation

Line No.	Description	Source	1989	1990	1991	1992	1993	1994
1	TSM-6/Baden Depreciation 77-83; TSM Depreciation 84-00	(30-BWF-E, 235-JFB-T); (31-BWF-E)	395.419	335.514	295.711	285.871	237.084	195.984
2	Amortization of Excluded Costs	31-BWF-E, Ln. 119	0.000	0.000	0.000	0.000	0.000	0.000
3	Appropriate Annual Depreciation - TSM & TSM-6	Line 1 + Line 2	395.419	335.514	295.711	285.871	237.084	195.984
4	Adjustments to Accumulated Depreciation	FERC Form 6, from 143-RGV-C	0.000	(0.004)	0.000	0.000	0.000	0.000
5	Adjusted Retirements from Accumulated Depreciation	Schedule 7, Ln. 9	(4.72)	(3.52)	(57.92)	(15.52)	(10.77)	(10.10)
6	Accumulated Depreciation	Lns (3 + 4 + 5) + Prior Ln. 6	6,805.609	7,137.602	7,375.393	7,645.744	7,872.061	8,057.945

Illustrative DOC Retirements from Accumulated Depreciation
(millions $)

All Carrier Inputs, Except Depreciation

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983
1	Depreciation Account - Adjusted Retirements	Exhibit 23, Ln. 8; Exhibit 38, Ln. 3	0.00	(6.98462)	(10.93161)	(51.82893)	(2.49600)	(13.60600)	(22.44405)

Illustrative DOC Retirements from Accumulated Depreciation
(millions $)

All Carrier Inputs, Except Depreciation

Line No.	Description	Source	1984	1985	1986	1987	1988	1989	1990
1	Depreciation Account - Adjusted Retirements	Exhibit 23, Ln. 8; Exhibit 38, Ln. 3	(11.50783)	(13.78235)	(2.96887)	(16.64551)	(12.97325)	(4.72305)	(3.51721)

Illustrative DOC Retirements from Accumulated Depreciation
(millions $)

All Carrier Inputs, Except Depreciation

Line No.	Description	Source	1991	1992	1993	1994	1995	1996	1997
1	Depreciation Account - Adjusted Retirements	Exhibit 23, Ln. 8; Exhibit 38, Ln. 3	(57.91923)	(15.52027)	(10.76684)	(10.10028)	(2.64213)	(114.10734)	(3.11460)

Illustrative DOC Retirements from Accumulated Depreciation
(millions $)

All Carrier Inputs, Except Depreciation

Line No.	Description	Source	1998	1999	2000
1	Depreciation Account - Adjusted Retirements	Exhibit 23, Ln. 8; Exhibit 38, Ln. 3	(6.44456)	(2.63010)	(6.55073)

Illustrative DOC AFUDC
(millions $)

All Carrier Inputs, Except Depreciation

Ln. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers o Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	Sep-68	$0.978	$0	$1	0.0%	$0	75.5%	$1	$0	$0	15.64%	$0	$0	$0	$0	24.5%	$0	$0	$0	5.66%	$0	$0	$0
2	Oct-68	$0.000	$0	$1	0.0%	$0	75.5%	$0	$0	$1	15.64%	$0	$0	$0	$0	24.5%	$0	$0	$0	5.66%	$0	$0	$0
3	Nov-68	$0.000	$0	$1	0.0%	$0	75.5%	$0	$0	$1	15.64%	$0	$0	$0	$0	24.5%	$0	$0	$0	5.66%	$0	$0	$0
4	Dec-68	$0.000	$0	$1	0.0%	$0	75.5%	$0	$0	$1	15.64%	$0	$0	$0	$0	24.5%	$0	$0	$0	5.66%	$0	$0	$0
5	Jan-69	$0.244	$0	$1	0.0%	$0	78.1%	$0	$0	$1	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$0	5.61%	$0	$0	$0
6	Feb-69	$0.000	$0	$1	0.0%	$0	78.1%	$0	$0	$1	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$0	5.61%	$0	$0	$0
7	Mar-69	$0.000	$0	$1	0.0%	$0	78.1%	$0	$0	$1	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$0	5.61%	$0	$0	$0
8	Apr-69	$0.242	$0	$1	0.0%	$0	78.1%	$0	$0	$1	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$0	5.61%	$0	$0	$0
9	May-69	$0.854	$0	$2	0.0%	$0	78.1%	$1	$0	$1	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$0	5.61%	$0	$0	$0
10	Jun-69	$1.234	$0	$4	0.0%	$0	78.1%	$1	$0	$2	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$1	5.61%	$0	$0	$0
11	Jul-69	$0.712	$0	$4	0.0%	$0	78.1%	$1	$0	$3	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$1	5.61%	$0	$0	$0
12	Aug-69	$1.124	$0	$5	0.0%	$0	78.1%	$1	$0	$3	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$1	5.61%	$0	$0	$0
13	Sep-69	$2.164	$0	$8	0.0%	$0	78.1%	$2	$0	$4	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$1	5.61%	$0	$0	$0
14	Oct-69	$5.192	$0	$13	0.0%	$0	78.1%	$4	$0	$6	16.36%	$0	$0	$0	$0	21.9%	$1	$0	$2	5.61%	$0	$0	$0
15	Nov-69	$6.530	$0	$19	0.0%	$0	78.1%	$5	$0	$10	16.36%	$0	$0	$0	$0	21.9%	$1	$0	$3	5.61%	$0	$0	$0
16	Dec-69	$17.161	$0	$36	0.0%	$0	78.1%	$13	$0	$15	16.36%	$0	$0	$1	$0	21.9%	$4	$0	$4	5.61%	$0	$0	$0
17	Jan-70	($0.886)	$0	$36	0.0%	$1	72.9%	($1)	$0	$29	17.56%	$0	$0	$1	$0	27.2%	($0)	$0	$8	6.28%	$0	$0	$0
18	Feb-70	$8.996	$0	$45	0.0%	$0	72.9%	$7	$0	$28	17.56%	$0	$0	$2	$0	27.2%	$2	$0	$8	6.28%	$0	$0	$0
19	Mar-70	$11.607	$0	$56	0.0%	$0	72.9%	$8	$0	$35	17.56%	$1	$0	$2	$0	27.2%	$3	$0	$10	6.28%	$0	$0	$0
20	Apr-70	$18.351	$0	$75	0.0%	$0	72.9%	$13	$0	$43	17.56%	$1	$0	$3	$0	27.2%	$5	$0	$13	6.28%	$0	$0	$0
21	May-70	$16.501	$0	$91	0.0%	$0	72.9%	$12	$0	$57	17.56%	$1	$0	$4	$0	27.2%	$4	$0	$18	6.28%	$0	$0	$0
22	Jun-70	$19.677	$0	$111	0.0%	$0	72.9%	$14	$0	$69	17.56%	$1	$0	$5	$0	27.2%	$5	$0	$23	6.28%	$0	$0	$0
23	Jul-70	$28.292	$0	$139	0.0%	$4	72.9%	$21	$0	$87	17.56%	$1	$0	$6	$0	27.2%	$8	$0	$29	6.28%	$0	$0	$1
24	Aug-70	$17.456	$0	$156	0.0%	$0	72.9%	$13	$0	$108	17.56%	$2	$0	$7	$0	27.2%	$5	$0	$36	6.28%	$0	$0	$1
25	Sep-70	$24.416	$0	$181	0.0%	$0	72.9%	$18	$0	$120	17.56%	$2	$0	$9	$0	27.2%	$7	$0	$41	6.28%	$0	$0	$1
26	Oct-70	$15.631	$0	$196	0.0%	$0	72.9%	$11	$0	$138	17.56%	$2	$0	$11	$0	27.2%	$4	$0	$48	6.28%	$0	$0	$1
27	Nov-70	$8.254	$0	$205	0.0%	$0	72.9%	$6	$0	$150	17.56%	$2	$0	$13	$0	27.2%	$2	$0	$52	6.28%	$0	$0	$2
28	Dec-70	$13.301	$0	$218	0.0%	$0	72.9%	$10	$0	$156	17.56%	$2	$0	$16	$0	27.2%	$4	$0	$54	6.28%	$0	$0	$2
29	Jan-71	$0.630	$0	$219	0.0%	$11	73.3%	$0	$0	$176	16.26%	$2	$0	$18	$1	26.8%	$0	$0	$59	6.31%	$0	$0	$2
30	Feb-71	$3.625	$0	$222	0.0%	$0	73.3%	$3	$0	$177	16.26%	$2	$0	$20	$0	26.8%	$1	$0	$59	6.31%	$0	$0	$2
31	Mar-71	$4.975	$0	$227	0.0%	$0	73.3%	$4	$0	$179	16.26%	$2	$0	$23	$0	26.8%	$1	$0	$60	6.31%	$0	$0	$3
32	Apr-71	$4.708	$0	$232	0.0%	$0	73.3%	$3	$0	$183	16.26%	$2	$0	$25	$0	26.8%	$1	$0	$62	6.31%	$0	$0	$3
33	May-71	$6.100	$0	$238	0.0%	$0	73.3%	$4	$0	$187	16.26%	$3	$0	$28	$0	26.8%	$2	$0	$63	6.31%	$0	$0	$3
34	Jun-71	$6.142	$0	$244	0.0%	$0	73.3%	$4	$0	$191	16.26%	$3	$0	$30	$0	26.8%	$2	$0	$65	6.31%	$0	$0	$4
35	Jul-71	$9.385	$0	$254	0.0%	$15	73.3%	$7	$0	$210	16.26%	$3	$0	$33	$2	26.8%	$3	$0	$68	6.31%	$0	$0	$4
36	Aug-71	$14.829	$0	$268	0.0%	$0	73.3%	$11	$0	$217	16.26%	$3	$0	$36	$0	26.8%	$4	$0	$71	6.31%	$0	$0	$5
37	Sep-71	$10.408	$0	$279	0.0%	$0	73.3%	$8	$0	$228	16.26%	$3	$0	$39	$0	26.8%	$3	$0	$75	6.31%	$0	$0	$5
38	Oct-71	$12.104	$0	$291	0.0%	$0	73.3%	$9	$0	$236	16.26%	$3	$0	$42	$0	26.8%	$3	$0	$77	6.31%	$0	$0	$5
39	Nov-71	$16.481	$0	$307	0.0%	$0	73.3%	$12	$0	$245	16.26%	$3	$0	$46	$0	26.8%	$4	$0	$81	6.31%	$0	$0	$6
40	Dec-71	$18.967	$0	$326	0.0%	$0	73.3%	$14	$0	$257	16.26%	$3	$0	$49	$0	26.8%	$5	$0	$85	6.31%	$0	$0	$6
41	Jan-72	($1.212)	$0	$325	0.0%	$19	75.7%	($1)	$0	$289	15.64%	$4	$0	$53	$2	24.3%	($0)	$0	$92	6.44%	$0	$0	$7
42	Feb-72	$4.997	$0	$330	0.0%	$0	75.7%	$4	$0	$288	15.64%	$4	$0	$57	$0	24.3%	$1	$0	$92	6.44%	$0	$0	$7
43	Mar-72	$4.452	$0	$335	0.0%	$0	75.7%	$3	$0	$292	15.64%	$4	$0	$61	$0	24.3%	$1	$0	$93	6.44%	$1	$0	$8
44	Apr-72	$4.215	$0	$339	0.0%	$0	75.7%	$3	$0	$296	15.64%	$4	$0	$64	$0	24.3%	$1	$0	$94	6.44%	$1	$0	$8
45	May-72	$5.853	$0	$345	0.0%	$0	75.7%	$4	$0	$299	15.64%	$4	$0	$68	$0	24.3%	$1	$0	$96	6.44%	$1	$0	$9
46	Jun-72	$7.497	$0	$352	0.0%	$0	75.7%	$6	$0	$303	15.64%	$4	$0	$72	$0	24.3%	$2	$0	$97	6.44%	$1	$0	$9
47	Jul-72	$4.158	$0	$356	0.0%	$23	75.7%	$3	$0	$332	15.64%	$4	$0	$77	$3	24.3%	$1	$0	$102	6.44%	$1	$0	$10
48	Aug-72	$3.660	$0	$360	0.0%	$0	75.7%	$3	$0	$335	15.64%	$4	$0	$81	$0	24.3%	$1	$0	$103	6.44%	$1	$0	$10
49	Sep-72	$2.846	$0	$363	0.0%	$0	75.7%	$2	$0	$338	15.64%	$4	$0	$85	$0	24.3%	$1	$0	$104	6.44%	$1	$0	$11
50	Oct-72	$3.711	$0	$367	0.0%	$0	75.7%	$3	$0	$340	15.64%	$4	$0	$90	$0	24.3%	$1	$0	$104	6.44%	$1	$0	$11
51	Nov-72	$3.201	$0	$370	0.0%	$0	75.7%	$2	$0	$343	15.64%	$4	$0	$94	$0	24.3%	$1	$0	$105	6.44%	$1	$0	$12
52	Dec-72	$6.653	$0	$376	0.0%	$0	75.7%	$5	$0	$345	15.64%	$4	$0	$99	$0	24.3%	$2	$0	$106	6.44%	$1	$0	$13
53	Jan-73	($1.040)	$0	$375	0.0%	$26	75.9%	($1)	$0	$377	16.35%	$5	$0	$104	$3	24.1%	($0)	$0	$111	7.02%	$1	$0	$13
54	Feb-73	$2.485	$0	$378	0.0%	$0	75.9%	$2	$0	$376	16.35%	$5	$0	$109	$0	24.1%	$1	$0	$111	7.02%	$1	$0	$14
55	Mar-73	$3.837	$0	$382	0.0%	$0	75.9%	$3	$0	$378	16.35%	$5	$0	$114	$0	24.1%	$1	$0	$111	7.02%	$1	$0	$15
56	Apr-73	$3.288	$0	$385	0.0%	$0	75.9%	$2	$0	$381	16.35%	$5	$0	$119	$0	24.1%	$1	$0	$112	7.02%	$1	$0	$15
57	May-73	$3.686	$0	$389	0.0%	$0	75.9%	$3	$0	$383	16.35%	$5	$0	$125	$0	24.1%	$1	$0	$113	7.02%	$1	$0	$16

Illustrative DOC AFUDC
(millions $)

All Carrier Inputs, Except Depreciation

Ln. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
58	Jun-73	$3.982	$0	$393	0.0%	$0	75.9%	$3	$0	$386	16.35%	$5	$0	$130	$0	24.1%	$1	$0	$114	7.02%	$1	$0	$17
59	Jul-73	$5.164	$0	$398	0.0%	$31	75.9%	$4	$0	$420	16.35%	$6	$0	$136	$4	24.1%	$1	$0	$119	7.02%	$1	$0	$17
60	Aug-73	$4.630	$0	$402	0.0%	$0	75.9%	$4	$0	$424	16.35%	$6	$0	$141	$0	24.1%	$1	$0	$120	7.02%	$1	$0	$18
61	Sep-73	$5.206	$0	$408	0.0%	$0	75.9%	$4	$0	$428	16.35%	$6	$0	$147	$0	24.1%	$1	$0	$121	7.02%	$1	$0	$19
62	Oct-73	$7.992	$0	$416	0.0%	$0	75.9%	$6	$0	$432	16.35%	$6	$0	$153	$0	24.1%	$2	$0	$122	7.02%	$1	$0	$19
63	Nov-73	$4.485	$0	$420	0.0%	$0	75.9%	$3	$0	$438	16.35%	$6	$0	$159	$0	24.1%	$1	$0	$124	7.02%	$1	$0	$20
64	Dec-73	$6.412	$0	$427	0.0%	$0	75.9%	$5	$0	$441	16.35%	$6	$0	$165	$0	24.1%	$2	$0	$125	7.02%	$1	$0	$21
65	Jan-74	$21.430	$0	$448	0.0%	$35	72.3%	$15	$0	$481	17.33%	$7	$0	$172	$4	27.7%	$6	$0	$131	8.19%	$1	$0	$22
66	Feb-74	$19.355	$0	$467	0.0%	$0	72.3%	$14	$0	$497	17.33%	$7	$0	$179	$0	27.7%	$5	$0	$137	8.19%	$1	$0	$23
67	Mar-74	$21.796	$0	$489	0.0%	$0	72.3%	$16	$0	$511	17.33%	$7	$0	$187	$0	27.7%	$6	$0	$143	8.19%	$1	$0	$24
68	Apr-74	$25.349	$0	$514	0.0%	$0	72.3%	$18	$0	$526	17.33%	$8	$0	$194	$0	27.7%	$7	$0	$149	8.19%	$1	$0	$25
69	May-74	$25.309	$0	$540	0.0%	$0	72.3%	$18	$0	$545	17.33%	$8	$0	$202	$0	27.7%	$7	$0	$156	8.19%	$1	$0	$26
70	Jun-74	$33.131	$0	$573	0.0%	$0	72.3%	$24	$0	$563	17.33%	$8	$0	$210	$0	27.7%	$9	$0	$163	8.19%	$1	$0	$27
71	Jul-74	$69.084	$0	$642	0.0%	$45	72.3%	$50	$0	$632	17.33%	$9	$0	$219	$6	27.7%	$19	$0	$178	8.19%	$1	$0	$28
72	Aug-74	$95.964	$0	$738	0.0%	$0	72.3%	$69	$0	$682	17.33%	$10	$0	$229	$0	27.7%	$27	$0	$197	8.19%	$1	$0	$29
73	Sep-74	$88.045	$0	$826	0.0%	$0	72.3%	$64	$0	$751	17.33%	$11	$0	$240	$0	27.7%	$24	$0	$224	8.19%	$2	$0	$31
74	Oct-74	$160.956	$0	$987	0.0%	$0	72.3%	$116	$0	$815	17.33%	$12	$0	$252	$0	27.7%	$45	$0	$248	8.19%	$2	$0	$33
75	Nov-74	$106.622	$0	$1,094	0.0%	$0	72.3%	$77	$0	$931	17.33%	$13	$0	$265	$0	27.7%	$30	$0	$293	8.19%	$2	$0	$35
76	Dec-74	$265.876	$0	$1,359	0.0%	$0	72.3%	$192	$0	$1,008	17.33%	$15	$0	$280	$0	27.7%	$74	$0	$322	8.19%	$2	$0	$37
77	Jan-75	$40.513	$0	$1,400	0.0%	$70	64.1%	$26	$0	$1,270	18.79%	$20	$0	$300	$10	35.9%	$15	$0	$406	7.97%	$3	$0	$39
78	Feb-75	$131.521	$0	$1,531	0.0%	$0	64.1%	$84	$0	$1,296	18.79%	$20	$0	$320	$0	35.9%	$47	$0	$420	7.97%	$3	$0	$42
79	Mar-75	$256.892	$0	$1,788	0.0%	$0	64.1%	$165	$0	$1,381	18.79%	$22	$0	$342	$0	35.9%	$92	$0	$468	7.97%	$3	$0	$45
80	Apr-75	$107.239	$0	$1,896	0.0%	$0	64.1%	$69	$0	$1,545	18.79%	$24	$0	$366	$0	35.9%	$39	$0	$560	7.97%	$4	$0	$49
81	May-75	$262.621	$0	$2,158	0.0%	$0	64.1%	$168	$0	$1,614	18.79%	$25	$0	$391	$0	35.9%	$94	$0	$598	7.97%	$4	$0	$53
82	Jun-75	$581.761	$0	$2,740	0.0%	$0	64.1%	$373	$0	$1,782	18.79%	$28	$0	$419	$0	35.9%	$209	$0	$693	7.97%	$5	$0	$58
83	Jul-75	($58.262)	$0	$2,682	0.0%	$139	64.1%	($37)	$0	$2,294	18.79%	$36	$0	$455	$21	35.9%	($21)	$0	$922	7.97%	$6	$0	$64
84	Aug-75	$281.674	$0	$2,963	0.0%	$0	64.1%	$180	$0	$2,257	18.79%	$35	$0	$490	$0	35.9%	$101	$0	$902	7.97%	$6	$0	$70
85	Sep-75	$648.093	$0	$3,612	0.0%	$0	64.1%	$415	$0	$2,437	18.79%	$38	$0	$528	$0	35.9%	$233	$0	$1,003	7.97%	$7	$0	$76
86	Oct-75	$204.497	$0	$3,816	0.0%	$0	64.1%	$131	$0	$2,853	18.79%	$45	$0	$573	$0	35.9%	$73	$0	$1,236	7.97%	$8	$0	$85
87	Nov-75	$271.352	$0	$4,087	0.0%	$0	64.1%	$174	$0	$2,984	18.79%	$47	$0	$620	$0	35.9%	$97	$0	$1,309	7.97%	$9	$0	$93
88	Dec-75	$180.187	$0	$4,268	0.0%	$0	64.1%	$115	$0	$3,157	18.79%	$49	$0	$669	$0	35.9%	$65	$0	$1,406	7.97%	$9	$0	$103
89	Jan-76	$229.571	$0	$4,497	0.0%	$250	58.0%	$133	$0	$3,523	19.31%	$57	$0	$726	$45	42.0%	$96	$0	$1,516	8.33%	$11	$0	$113
90	Feb-76	$202.281	$0	$4,699	0.0%	$0	58.0%	$117	$0	$3,656	19.31%	$59	$0	$785	$0	42.0%	$85	$0	$1,613	8.33%	$11	$0	$124
91	Mar-76	$177.661	$0	$4,877	0.0%	$0	58.0%	$103	$0	$3,774	19.31%	$61	$0	$845	$0	42.0%	$75	$0	$1,698	8.33%	$12	$0	$136
92	Apr-76	$261.510	$0	$5,139	0.0%	$0	58.0%	$152	$0	$3,877	19.31%	$62	$0	$908	$0	42.0%	$110	$0	$1,772	8.33%	$12	$0	$148
93	May-76	$275.789	$0	$5,414	0.0%	$0	58.0%	$160	$0	$4,028	19.31%	$65	$0	$973	$0	42.0%	$116	$0	$1,882	8.33%	$13	$0	$162
94	Jun-76	$219.714	$0	$5,634	0.0%	$0	58.0%	$127	$0	$4,188	19.31%	$67	$0	$1,040	$0	42.0%	$92	$0	$1,998	8.33%	$14	$0	$175
95	Jul-76	$297.548	$0	$5,932	0.0%	$371	58.0%	$173	$0	$4,687	19.31%	$75	$0	$1,115	$73	42.0%	$125	$0	$2,163	8.33%	$15	$0	$190
96	Aug-76	$236.383	$0	$6,168	0.0%	$0	58.0%	$137	$0	$4,859	19.31%	$78	$0	$1,194	$0	42.0%	$99	$0	$2,288	8.33%	$16	$0	$206
97	Sep-76	$231.738	$0	$6,400	0.0%	$0	58.0%	$134	$0	$4,996	19.31%	$80	$0	$1,274	$0	42.0%	$97	$0	$2,387	8.33%	$17	$0	$223
98	Oct-76	$135.767	$0	$6,536	0.0%	$0	58.0%	$79	$0	$5,131	19.31%	$83	$0	$1,357	$0	42.0%	$57	$0	$2,484	8.33%	$17	$0	$240
99	Nov-76	$159.200	$0	$6,695	0.0%	$0	58.0%	$92	$0	$5,210	19.31%	$84	$0	$1,440	$0	42.0%	$67	$0	$2,541	8.33%	$18	$0	$258
100	Dec-76	$207.590	$0	$6,902	0.0%	$0	58.0%	$120	$0	$5,302	19.31%	$85	$0	$1,526	$0	42.0%	$87	$0	$2,608	8.33%	$18	$0	$276
101	Jan-77	$49.871	$0	$6,952	0.0%	$486	56.1%	$28	$0	$5,908	20.97%	$103	$0	$1,629	$100	43.9%	$22	$0	$2,796	8.28%	$19	$0	$295
102	Feb-77	$108.028	$0	$7,060	0.0%	$0	56.1%	$61	$0	$5,936	20.97%	$104	$0	$1,733	$0	43.9%	$47	$0	$2,818	8.28%	$19	$0	$315
103	Mar-77	$355.530	$0	$7,416	0.0%	$0	56.1%	$200	$0	$5,997	20.97%	$105	$0	$1,837	$0	43.9%	$156	$0	$2,865	8.28%	$20	$0	$334
104	Apr-77	$45.571	$0	$7,461	0.0%	$0	56.1%	$26	$0	$6,196	20.97%	$108	$0	$1,946	$0	43.9%	$20	$0	$3,021	8.28%	$21	$0	$355
105	May-77	$131.126	$0	$7,592	0.0%	$0	56.1%	$74	$0	$6,222	20.97%	$109	$0	$2,054	$0	43.9%	$58	$0	$3,041	8.28%	$21	$0	$376
106	Jun-77	$148.646	$7,741	$0	100.0%	$0	56.1%	$83	$6,379	$6,295	20.97%	$110	$2,165	$0	$0	43.9%	$65	$3,164	$3,099	8.28%	$21	$398	$0
107	Jul-77	$521.361	$0	$521	0.0%	$0	56.1%	$293	$0	$0	20.97%	$0	$0	$0	$0	43.9%	$229	$0	$0	8.28%	$0	$0	$0
108	Aug-77	$0.000	$334	$187	64.1%	$0	56.1%	$0	$188	$293	20.97%	$5	$0	$5	$0	43.9%	$0	$147	$229	8.28%	$2	$0	$2
109	Sep-77	$0.000	$55	$132	29.5%	$0	56.1%	$0	$31	$105	20.97%	$2	$2	$5	$0	43.9%	$0	$24	$82	8.28%	$1	$0	$2
110	Oct-77	$0.000	$1	$131	0.5%	$0	56.1%	$0	$0	$74	20.97%	$1	$0	$7	$0	43.9%	$0	$0	$58	8.28%	$0	$0	$2
111	Nov-77	$0.000	$1	$130	0.5%	$0	56.1%	$0	$0	$74	20.97%	$1	$0	$8	$0	43.9%	$0	$0	$58	8.28%	$0	$0	$2
112	Dec-77	$1.466	$3	$129	2.1%	$0	56.1%	$1	$2	$73	20.97%	$1	$0	$9	$0	43.9%	$1	$1	$57	8.28%	$0	$0	$3
113	Jan-78	$0.000	$2	$127	1.3%	$0	55.0%	$0	$1	$72	22.73%	$1	$0	$10	$0	45.0%	$0	$1	$57	8.44%	$0	$0	$3
114	Feb-78	$0.000	$73	$54	57.6%	$0	55.0%	$0	$41	$71	22.73%	$1	$6	$6	$0	45.0%	$0	$32	$56	8.44%	$0	$2	$2

Illustrative DOC AFUDC
(millions $)

All Carrier Inputs, Except Depreciation

Ln. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers o Propert	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
115	Mar-78	$0.000	$39	$15	72.7%	$0	55.0%	$0	$22	$30	22.73%	$1	$4	$2	$0	45.0%	$0	$17	$24	8.44%	$0	$1	$1
116	Apr-78	$78.797	$42	$52	44.6%	$0	55.0%	$43	$23	$8	22.73%	$0	$1	$1	$0	45.0%	$35	$19	$6	8.44%	$0	$0	$0
117	May-78	($15.413)	$0	$36	0.5%	$0	55.0%	($8)	$0	$29	22.73%	$1	$0	$2	$0	45.0%	($7)	$0	$23	8.44%	$0	$0	$1
118	Jun-78	($11.412)	$0	$24	1.7%	$0	55.0%	($6)	$0	$20	22.73%	$0	$0	$2	$0	45.0%	($5)	$0	$16	8.44%	$0	$0	$1
119	Jul-78	$0.184	$0	$24	1.3%	$0	55.0%	$0	$0	$14	22.73%	$0	$0	$2	$0	45.0%	$0	$0	$11	8.44%	$0	$0	$1
120	Aug-78	$14.907	$1	$38	2.6%	$0	55.0%	$8	$1	$13	22.73%	$0	$0	$3	$0	45.0%	$7	$0	$11	8.44%	$0	$0	$1
121	Sep-78	$64.862	$3	$100	2.9%	$0	55.0%	$36	$2	$21	22.73%	$0	$0	$3	$0	45.0%	$29	$1	$17	8.44%	$0	$0	$1
122	Oct-78	($86.230)	$1	$13	5.4%	$0	55.0%	($47)	$0	$55	22.73%	$1	$0	$4	$0	45.0%	($39)	$0	$45	8.44%	$0	$0	$1
123	Nov-78	$8.134	$1	$20	3.6%	$0	55.0%	$4	$0	$7	22.73%	$0	$0	$4	$0	45.0%	$4	$0	$6	8.44%	$0	$0	$1
124	Dec-78	$73.421	$10	$84	10.1%	$0	55.0%	$40	$5	$11	22.73%	$0	$0	$4	$0	45.0%	$33	$4	$9	8.44%	$0	$0	$1
125	Jan-79	($7.144)	$1	$77	0.7%	$0	62.6%	($4)	$0	$46	22.40%	$1	$0	$5	$0	37.4%	($3)	$0	$38	8.50%	$0	$0	$1
126	Feb-79	$1.699	$0	$78	0.0%	$0	62.6%	$1	$0	$42	22.40%	$1	$0	$5	$0	37.4%	$1	$0	$35	8.50%	$0	$0	$2
127	Mar-79	$0.725	$0	$79	0.2%	$0	62.6%	$0	$0	$43	22.40%	$1	$0	$6	$0	37.4%	$0	$0	$36	8.50%	$0	$0	$2
128	Apr-79	$3.515	$0	$82	0.3%	$0	62.6%	$2	$0	$43	22.40%	$1	$0	$7	$0	37.4%	$1	$0	$36	8.50%	$0	$0	$2
129	May-79	$3.451	$0	$85	0.5%	$0	62.6%	$2	$0	$45	22.40%	$1	$0	$8	$0	37.4%	$1	$0	$37	8.50%	$0	$0	$2
130	Jun-79	$9.331	$0	$94	0.1%	$0	62.6%	$6	$0	$47	22.40%	$1	$0	$9	$0	37.4%	$3	$0	$38	8.50%	$0	$0	$3
131	Jul-79	$5.606	$1	$99	0.8%	$0	62.6%	$4	$0	$53	22.40%	$1	$0	$9	$0	37.4%	$2	$0	$42	8.50%	$0	$0	$3
132	Aug-79	$8.536	$0	$108	0.1%	$0	62.6%	$5	$0	$56	22.40%	$1	$0	$10	$0	37.4%	$3	$0	$43	8.50%	$0	$0	$3
133	Sep-79	$10.836	$1	$117	1.1%	$0	62.6%	$7	$1	$61	22.40%	$1	$0	$12	$0	37.4%	$4	$1	$46	8.50%	$0	$0	$3
134	Oct-79	$25.480	$54	$89	37.9%	$0	62.6%	$16	$31	$67	22.40%	$1	$4	$8	$0	37.4%	$10	$22	$50	8.50%	$0	$1	$3
135	Nov-79	$7.506	$0	$96	0.0%	$0	62.6%	$5	$0	$52	22.40%	$1	$0	$9	$0	37.4%	$3	$0	$37	8.50%	$0	$0	$3
136	Dec-79	$12.338	$17	$91	16.0%	$0	62.6%	$8	$10	$56	22.40%	$1	$1	$9	$0	37.4%	$5	$7	$40	8.50%	$0	$0	$3
137	Jan-80	$24.800	$2	$113	2.1%	$0	67.9%	$17	$2	$54	23.92%	$1	$0	$10	$0	32.2%	$8	$1	$37	8.93%	$0	$0	$3
138	Feb-80	$7.678	$1	$120	0.5%	$0	67.9%	$5	$0	$69	23.92%	$1	$0	$11	$0	32.2%	$2	$0	$44	8.93%	$0	$0	$3
139	Mar-80	$7.840	$0	$128	0.2%	$0	67.9%	$5	$0	$74	23.92%	$1	$0	$13	$0	32.2%	$3	$0	$46	8.93%	$0	$0	$3
140	Apr-80	$13.319	$1	$141	0.5%	$0	67.9%	$9	$0	$79	23.92%	$2	$0	$14	$0	32.2%	$4	$0	$49	8.93%	$0	$0	$4
141	May-80	$9.317	$0	$150	0.3%	$0	67.9%	$6	$0	$88	23.92%	$2	$0	$16	$0	32.2%	$3	$0	$53	8.93%	$0	$0	$4
142	Jun-80	$11.464	$1	$160	0.4%	$0	67.9%	$8	$0	$94	23.92%	$2	$0	$18	$0	32.2%	$4	$0	$56	8.93%	$0	$0	$5
143	Jul-80	$14.285	$1	$174	0.3%	$0	67.9%	$10	$0	$101	23.92%	$2	$0	$20	$0	32.2%	$5	$0	$59	8.93%	$0	$0	$5
144	Aug-80	$12.716	$1	$185	0.7%	$0	67.9%	$9	$1	$110	23.92%	$2	$0	$22	$0	32.2%	$4	$0	$64	8.93%	$0	$0	$5
145	Sep-80	$12.692	$30	$168	15.2%	$0	67.9%	$9	$19	$118	23.92%	$2	$3	$21	$0	32.2%	$4	$11	$67	8.93%	$0	$1	$5
146	Oct-80	$14.194	($0)	$182	-0.1%	$0	67.9%	$10	($0)	$108	23.92%	$2	($0)	$23	$0	32.2%	$5	($0)	$60	8.93%	$0	($0)	$6
147	Nov-80	$7.321	$1	$189	0.5%	$0	67.9%	$5	$1	$117	23.92%	$2	$0	$25	$0	32.2%	$2	$0	$65	8.93%	$0	$0	$6
148	Dec-80	($1.313)	$71	$117	37.9%	$0	67.9%	($1)	$46	$122	23.92%	$2	$10	$18	$0	32.2%	($0)	$25	$67	8.93%	$0	$2	$4
149	Jan-81	($8.296)	$20	$88	18.5%	$0	69.3%	($6)	$13	$75	26.46%	$2	$3	$16	$0	30.7%	($3)	$7	$41	9.31%	$0	$1	$4
150	Feb-81	$1.749	$1	$89	1.0%	$0	69.3%	$1	$1	$57	26.46%	$1	$0	$17	$0	30.7%	$1	$0	$32	9.31%	$0	$0	$4
151	Mar-81	$4.919	$2	$92	2.3%	$0	69.3%	$3	$1	$57	26.46%	$1	$0	$18	$0	30.7%	$2	$1	$32	9.31%	$0	$0	$4
152	Apr-81	($10.878)	$0	$81	0.2%	$0	69.3%	($8)	$0	$59	26.46%	$1	$0	$20	$0	30.7%	($3)	$0	$33	9.31%	$0	$0	$4
153	May-81	$3.726	$1	$84	1.2%	$0	69.3%	$3	$1	$52	26.46%	$1	$0	$20	$0	30.7%	$1	$0	$29	9.31%	$0	$0	$5
154	Jun-81	$7.222	$2	$88	2.7%	$0	69.3%	$5	$2	$54	26.46%	$1	$1	$21	$0	30.7%	$2	$1	$30	9.31%	$0	$0	$5
155	Jul-81	$21.536	$2	$108	1.9%	$0	69.3%	$15	$1	$57	26.46%	$1	$0	$22	$0	30.7%	$7	$1	$31	9.31%	$0	$0	$5
156	Aug-81	$9.854	$2	$116	1.5%	$0	69.3%	$7	$1	$71	26.46%	$2	$0	$23	$0	30.7%	$3	$1	$37	9.31%	$0	$0	$5
157	Sep-81	$13.808	$1	$128	1.1%	$0	69.3%	$10	$1	$76	26.46%	$2	$0	$25	$0	30.7%	$4	$0	$40	9.31%	$0	$0	$5
158	Oct-81	$9.272	$3	$135	2.2%	$0	69.3%	$6	$2	$85	26.46%	$2	$1	$26	$0	30.7%	$3	$1	$43	9.31%	$0	$0	$6
159	Nov-81	$1.654	$0	$136	0.3%	$0	69.3%	$1	$0	$89	26.46%	$2	$0	$28	$0	30.7%	$1	$0	$45	9.31%	$0	$0	$6
160	Dec-81	($18.815)	$45	$72	38.1%	$0	69.3%	($13)	$29	$90	26.46%	$2	$11	$19	$0	30.7%	($6)	$15	$46	9.31%	$0	$2	$4
161	Jan-82	($39.518)	$6	$27	16.9%	$0	69.8%	($28)	$3	$48	25.25%	$1	$3	$17	$0	30.2%	($12)	$2	$25	9.54%	$0	$1	$4
162	Feb-82	$3.121	$1	$29	3.6%	$0	69.8%	$2	$1	$17	25.25%	$0	$1	$17	$0	30.2%	$1	$0	$11	9.54%	$0	$0	$3
163	Mar-82	$1.723	$1	$30	3.4%	$0	69.8%	$1	$1	$18	25.25%	$0	$1	$17	$0	30.2%	$1	$0	$11	9.54%	$0	$0	$3
164	Apr-82	$3.745	$2	$31	6.8%	$0	69.8%	$3	$1	$19	25.25%	$0	$1	$16	$0	30.2%	$1	$1	$11	9.54%	$0	$0	$3
165	May-82	$5.213	$1	$36	2.7%	$0	69.8%	$4	$1	$20	25.25%	$0	$0	$16	$0	30.2%	$2	$0	$12	9.54%	$0	$0	$3
166	Jun-82	$10.069	$1	$45	1.8%	$0	69.8%	$7	$1	$23	25.25%	$0	$0	$16	$0	30.2%	$3	$0	$13	9.54%	$0	$0	$3
167	Jul-82	$5.197	$1	$49	1.6%	$0	69.8%	$4	$1	$29	25.25%	$1	$0	$16	$0	30.2%	$2	$0	$16	9.54%	$0	$0	$3
168	Aug-82	$12.156	$18	$44	28.9%	$0	69.8%	$8	$12	$33	25.25%	$1	$5	$12	$0	30.2%	$4	$6	$17	9.54%	$0	$1	$3
169	Sep-82	$9.022	$10	$43	19.3%	$0	69.8%	$6	$7	$29	25.25%	$1	$2	$11	$0	30.2%	$3	$3	$15	9.54%	$0	$0	$2
170	Oct-82	$6.323	$9	$39	19.4%	$0	69.8%	$4	$6	$29	25.25%	$1	$2	$9	$0	30.2%	$2	$3	$14	9.54%	$0	$0	$2
171	Nov-82	$0.543	$4	$36	10.4%	$0	69.8%	$0	$3	$27	25.25%	$1	$1	$9	$0	30.2%	$0	$1	$13	9.54%	$0	$0	$2

Illustrative DOC AFUDC
(millions $)

All Carrier Inputs, Except Depreciation

Ln. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers o Propert	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
172	Dec-82	$0.440	$3	$33	7.9%	$0	69.8%	$0	$2	$24	25.25%	$1	$1	$9	$0	30.2%	$0	$1	$12	9.54%	$0	$0	$2
173	Jan-83	$1.446	$1	$34	1.9%	$0	72.0%	$1	$0	$23	22.83%	$0	$0	$9	$0	28.0%	$0	$0	$11	9.52%	$0	$0	$2
174	Feb-83	$2.967	$0	$37	0.6%	$0	72.0%	$2	$0	$23	22.83%	$0	$0	$9	$0	28.0%	$1	$0	$11	9.52%	$0	$0	$2
175	Mar-83	$12.156	$13	$36	26.9%	$0	72.0%	$9	$9	$25	22.83%	$0	$2	$7	$0	28.0%	$3	$4	$12	9.52%	$0	$0	$1
176	Apr-83	$11.964	$9	$39	18.5%	$0	72.0%	$9	$6	$25	22.83%	$0	$1	$6	$0	28.0%	$3	$3	$11	9.52%	$0	$0	$1
177	May-83	$5.997	$1	$44	2.1%	$0	72.0%	$4	$1	$27	22.83%	$1	$0	$7	$0	28.0%	$2	$0	$12	9.52%	$0	$0	$1
178	Jun-83	$6.524	$0	$50	0.9%	$0	72.0%	$5	$0	$31	22.83%	$1	$0	$7	$0	28.0%	$2	$0	$13	9.52%	$0	$0	$1
179	Jul-83	$3.630	$0	$53	0.4%	$0	72.0%	$3	$0	$35	22.83%	$1	$0	$8	$0	28.0%	$1	$0	$15	9.52%	$0	$0	$2
180	Aug-83	($1.387)	$1	$51	1.7%	$0	72.0%	($1)	$1	$38	22.83%	$1	$0	$8	$0	28.0%	($0)	$0	$16	9.52%	$0	$0	$2
181	Sep-83	$5.401	$42	$14	74.5%	$0	72.0%	$4	$30	$36	22.83%	$1	$6	$3	$0	28.0%	$2	$12	$15	9.52%	$0	$1	$1
182	Oct-83	$3.740	$2	$16	11.4%	$0	72.0%	$3	$1	$10	22.83%	$0	$0	$3	$0	28.0%	$1	$1	$4	9.52%	$0	$0	$1
183	Nov-83	$3.091	$4	$15	20.5%	$0	72.0%	$2	$3	$11	22.83%	$0	$1	$2	$0	28.0%	$1	$1	$5	9.52%	$0	$0	$0
184	Dec-83	$5.933	$3	$18	14.7%	$0	72.0%	$4	$2	$11	22.83%	$0	$0	$2	$0	28.0%	$2	$1	$4	9.52%	$0	$0	$0
185	Jan-84	$2.443	$1	$20	3.9%	$0	71.8%	$2	$1	$13	24.54%	$0	$0	$2	$0	28.2%	$1	$0	$5	9.49%	$0	$0	$0
186	Feb-84	$2.919	$0	$22	2.1%	$0	71.8%	$2	$0	$14	24.54%	$0	$0	$3	$0	28.2%	$1	$0	$6	9.49%	$0	$0	$0
187	Mar-84	$5.833	$5	$23	19.6%	$0	71.8%	$4	$4	$16	24.54%	$0	$1	$2	$0	28.2%	$2	$2	$6	9.49%	$0	$0	$0
188	Apr-84	$3.978	$2	$24	8.9%	$0	71.8%	$3	$2	$16	24.54%	$0	$0	$3	$0	28.2%	$1	$1	$6	9.49%	$0	$0	$0
189	May-84	$4.588	$3	$26	11.2%	$0	71.8%	$3	$2	$17	24.54%	$0	$0	$3	$0	28.2%	$1	$1	$7	9.49%	$0	$0	$0
190	Jun-84	$2.182	$1	$27	4.0%	$0	71.8%	$2	$1	$18	24.54%	$0	$0	$3	$0	28.2%	$1	$0	$7	9.49%	$0	$0	$0
191	Jul-84	$2.806	$1	$28	3.9%	$0	71.8%	$2	$1	$19	24.54%	$0	$0	$3	$0	28.2%	$1	$0	$8	9.49%	$0	$0	$1
192	Aug-84	$1.364	$0	$29	0.9%	$0	71.8%	$1	$0	$20	24.54%	$0	$0	$4	$0	28.2%	$0	$0	$8	9.49%	$0	$0	$1
193	Sep-84	$1.420	$0	$30	1.5%	$0	71.8%	$1	$0	$21	24.54%	$0	$0	$4	$0	28.2%	$0	$0	$8	9.49%	$0	$0	$1
194	Oct-84	$1.504	$6	$26	17.8%	$0	71.8%	$1	$4	$22	24.54%	$0	$1	$4	$0	28.2%	$0	$2	$9	9.49%	$0	$0	$1
195	Nov-84	$2.224	$2	$26	6.7%	$0	71.8%	$2	$1	$19	24.54%	$0	$0	$4	$0	28.2%	$1	$1	$7	9.49%	$0	$0	$1
196	Dec-84	$15.530	$42	$0	100.0%	$0	71.8%	$11	$30	$19	24.54%	$0	$4	$0	$0	28.2%	$4	$12	$8	9.49%	$0	$1	$0
197	Jan-85	$8.145	$0	$8	1.7%	$0	65.9%	$5	$0	($0)	21.72%	($0)	$0	($0)	$0	34.1%	$3	$0	$0	9.06%	$0	$0	$0
198	Feb-85	$4.541	$0	$13	0.4%	$0	65.9%	$3	$0	$5	21.72%	$0	($0)	$0	$0	34.1%	$2	$0	$3	9.06%	$0	$0	$0
199	Mar-85	$5.035	$0	$17	1.2%	$0	65.9%	$3	$0	$8	21.72%	$0	$0	$0	$0	34.1%	$2	$0	$4	9.06%	$0	$0	$0
200	Apr-85	$5.114	$1	$21	5.8%	$0	65.9%	$3	$1	$11	21.72%	$0	$0	$0	$0	34.1%	$2	$0	$6	9.06%	$0	$0	$0
201	May-85	$3.059	$1	$24	2.7%	$0	65.9%	$2	$0	$14	21.72%	$0	$0	$1	$0	34.1%	$1	$0	$7	9.06%	$0	$0	$0
202	Jun-85	$1.075	$25	$0	100.0%	$0	65.9%	$1	$16	$16	21.72%	$0	$1	$0	$0	34.1%	$0	$8	$8	9.06%	$0	$0	$0
203	Jul-85	$3.104	$3	$0	87.7%	$0	65.9%	$2	$2	($0)	21.72%	($0)	$0	($0)	$0	34.1%	$1	$1	$0	9.06%	$0	$0	$0
204	Aug-85	$1.274	$1	$1	43.8%	$0	65.9%	$1	$0	$0	21.72%	$0	($0)	$0	$0	34.1%	$0	$0	$0	9.06%	$0	$0	$0
205	Sep-85	$1.171	$0	$2	12.6%	$0	65.9%	$1	$0	$1	21.72%	$0	$0	$0	$0	34.1%	$0	$0	$0	9.06%	$0	$0	$0
206	Oct-85	$1.278	$1	$2	37.5%	$0	65.9%	$1	$1	$1	21.72%	$0	$0	$0	$0	34.1%	$0	$0	$1	9.06%	$0	$0	$0
207	Nov-85	$0.414	$0	$2	17.2%	$0	65.9%	$0	$0	$1	21.72%	$0	$0	$0	$0	34.1%	$0	$0	$1	9.06%	$0	$0	$0
208	Dec-85	($1.097)	$0	$1	0.0%	$0	65.9%	($1)	$0	$1	21.72%	$0	$0	$0	$0	34.1%	($0)	$0	$1	9.06%	$0	$0	$0
209	Jan-86	$1.426	$1	$2	24.9%	$0	65.7%	$1	$0	$1	22.05%	$0	$0	$0	$0	34.3%	$0	$0	$0	8.50%	$0	$0	$0
210	Feb-86	$0.855	$0	$2	16.9%	$0	65.7%	$1	$0	$1	22.05%	$0	$0	$0	$0	34.3%	$0	$0	$1	8.50%	$0	$0	$0
211	Mar-86	$0.403	$0	$2	1.7%	$0	65.7%	$0	$0	$1	22.05%	$0	$0	$0	$0	34.3%	$0	$0	$1	8.50%	$0	$0	$0
212	Apr-86	$0.785	$0	$3	5.4%	$0	65.7%	$1	$0	$2	22.05%	$0	$0	$0	$0	34.3%	$0	$0	$1	8.50%	$0	$0	$0
213	May-86	$1.529	$2	$3	36.4%	$0	65.7%	$1	$1	$2	22.05%	$0	$0	$0	$0	34.3%	$1	$1	$1	8.50%	$0	$0	$0
214	Jun-86	$3.016	$1	$5	13.7%	$0	65.7%	$2	$1	$2	22.05%	$0	$0	$0	$0	34.3%	$1	$0	$1	8.50%	$0	$0	$0
215	Jul-86	$2.768	$1	$7	7.1%	$0	65.7%	$2	$0	$3	22.05%	$0	$0	$0	$0	34.3%	$1	$0	$2	8.50%	$0	$0	$0
216	Aug-86	$4.096	$0	$11	1.8%	$0	65.7%	$3	$0	$5	22.05%	$0	$0	$0	$0	34.3%	$1	$0	$3	8.50%	$0	$0	$0
217	Sep-86	$2.030	$0	$13	0.9%	$0	65.7%	$1	$0	$7	22.05%	$0	$0	$0	$0	34.3%	$1	$0	$4	8.50%	$0	$0	$0
218	Oct-86	$16.698	$26	$4	88.0%	$0	65.7%	$11	$17	$9	22.05%	$0	$0	$0	$0	34.3%	$6	$9	$5	8.50%	$0	$0	$0
219	Nov-86	$0.835	$0	$4	9.5%	$0	65.7%	$1	$0	$2	22.05%	$0	$0	$0	$0	34.3%	$0	$0	$1	8.50%	$0	$0	$0
220	Dec-86	$2.066	$4	$2	62.9%	$0	65.7%	$1	$3	$3	22.05%	$0	$0	$0	$0	34.3%	$1	$1	$1	8.50%	$0	$0	$0
221	Jan-87	$0.941	$2	$2	48.3%	$0	68.8%	$1	$1	$1	20.06%	$0	$0	$0	$0	31.2%	$0	$1	$1	8.96%	$0	$0	$0
222	Feb-87	$0.252	$0	$2	2.7%	$0	68.8%	$0	$0	$1	20.06%	$0	$0	$0	$0	31.2%	$0	$0	$1	8.96%	$0	$0	$0
223	Mar-87	$1.163	$1	$2	31.8%	$0	68.8%	$1	$1	$1	20.06%	$0	$0	$0	$0	31.2%	$0	$0	$1	8.96%	$0	$0	$0
224	Apr-87	$1.739	$0	$3	11.7%	$0	68.8%	$1	$0	$1	20.06%	$0	$0	$0	$0	31.2%	$1	$0	$1	8.96%	$0	$0	$0
225	May-87	$4.131	$1	$7	9.0%	$0	68.8%	$3	$0	$2	20.06%	$0	$0	$0	$0	31.2%	$1	$0	$1	8.96%	$0	$0	$0
226	Jun-87	$6.657	$1	$12	10.2%	$0	68.8%	$5	$1	$5	20.06%	$0	$0	$0	$0	31.2%	$2	$0	$2	8.96%	$0	$0	$0
227	Jul-87	$7.798	$7	$13	33.0%	$0	68.8%	$5	$5	$8	20.06%	$0	$0	$0	$0	31.2%	$2	$2	$4	8.96%	$0	$0	$0
228	Aug-87	$3.655	$1	$16	5.4%	$0	68.8%	$3	$1	$9	20.06%	$0	$0	$0	$0	31.2%	$1	$0	$4	8.96%	$0	$0	$0

Illustrative DOC AFUDC
(millions $)

All Carrier Inputs, Except Depreciation

Ln. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers o Propert	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
229	Sep-87	$7.007	$16	$7	71.1%	$0	68.8%	$5	$11	$11	20.06%	$0	$0	$0	$0	31.2%	$2	$5	$5	8.96%	$0	$0	$0
230	Oct-87	$1.272	$1	$7	7.3%	$0	68.8%	$1	$0	$5	20.06%	$0	$0	$0	$0	31.2%	$0	$0	$2	8.96%	$0	$0	$0
231	Nov-87	$2.743	$1	$9	11.4%	$0	68.8%	$2	$1	$5	20.06%	$0	$0	$0	$0	31.2%	$1	$0	$2	8.96%	$0	$0	$0
232	Dec-87	$6.586	$14	$1	90.7%	$0	68.8%	$5	$10	$6	20.06%	$0	$0	$0	$0	31.2%	$2	$4	$3	8.96%	$0	$0	$0
233	Jan-88	$0.316	$0	$2	5.6%	$0	67.8%	$0	$0	$1	20.68%	$0	$0	$0	$0	32.2%	$0	$0	$0	8.94%	$0	$0	$0
234	Feb-88	$1.650	$1	$2	42.1%	$0	67.8%	$1	$1	$1	20.68%	$0	$0	$0	$0	32.2%	$1	$0	$1	8.94%	$0	$0	$0
235	Mar-88	$1.437	$1	$2	43.5%	$0	67.8%	$1	$1	$1	20.68%	$0	$0	$0	$0	32.2%	$0	$0	$1	8.94%	$0	$0	$0
236	Apr-88	$0.910	$0	$2	16.2%	$0	67.8%	$1	$0	$1	20.68%	$0	$0	$0	$0	32.2%	$0	$0	$1	8.94%	$0	$0	$0
237	May-88	$1.372	$1	$3	24.9%	$0	67.8%	$1	$1	$2	20.68%	$0	$0	$0	$0	32.2%	$0	$0	$1	8.94%	$0	$0	$0
238	Jun-88	$0.439	$0	$3	13.7%	$0	67.8%	$0	$0	$2	20.68%	$0	$0	$0	$0	32.2%	$0	$0	$1	8.94%	$0	$0	$0
239	Jul-88	$1.693	$0	$4	5.7%	$0	67.8%	$1	$0	$2	20.68%	$0	$0	$0	$0	32.2%	$1	$0	$1	8.94%	$0	$0	$0
240	Aug-88	$1.841	$0	$6	7.2%	$0	67.8%	$1	$0	$3	20.68%	$0	$0	$0	$0	32.2%	$1	$0	$1	8.94%	$0	$0	$0
241	Sep-88	$3.728	$2	$7	22.3%	$0	67.8%	$3	$1	$4	20.68%	$0	$0	$0	$0	32.2%	$1	$1	$2	8.94%	$0	$0	$0
242	Oct-88	$2.898	$1	$10	5.5%	$0	67.8%	$2	$0	$5	20.68%	$0	$0	$0	$0	32.2%	$1	$0	$2	8.94%	$0	$0	$0
243	Nov-88	$1.784	$3	$8	28.0%	$0	67.8%	$1	$2	$7	20.68%	$0	$0	$0	$0	32.2%	$1	$1	$3	8.94%	$0	$0	$0
244	Dec-88	$1.292	$1	$9	9.9%	$0	67.8%	$1	$1	$6	20.68%	$0	$0	$0	$0	32.2%	$0	$0	$3	8.94%	$0	$0	$0
245	Jan-89	$1.191	$1	$9	6.5%	$0	63.7%	$1	$0	$6	21.13%	$0	$0	$0	$0	36.3%	$0	$0	$3	8.39%	$0	$0	$0
246	Feb-89	$0.705	$1	$9	7.6%	$0	63.7%	$0	$1	$6	21.13%	$0	$0	$1	$0	36.3%	$0	$0	$3	8.39%	$0	$0	$0
247	Mar-89	$1.805	$1	$10	6.1%	$0	63.7%	$1	$0	$6	21.13%	$0	$0	$1	$0	36.3%	$1	$0	$3	8.39%	$0	$0	$0
248	Apr-89	$3.021	$2	$11	16.5%	$0	63.7%	$2	$1	$7	21.13%	$0	$0	$1	$0	36.3%	$1	$1	$3	8.39%	$0	$0	$0
249	May-89	$6.348	$8	$9	47.0%	$0	63.7%	$4	$5	$7	21.13%	$0	$0	$0	$0	36.3%	$2	$3	$4	8.39%	$0	$0	$0
250	Jun-89	$4.545	$3	$11	18.5%	$0	63.7%	$3	$2	$6	21.13%	$0	$0	$0	$0	36.3%	$2	$1	$3	8.39%	$0	$0	$0
251	Jul-89	$3.932	$2	$14	10.9%	$0	63.7%	$3	$1	$7	21.13%	$0	$0	$1	$0	36.3%	$1	$1	$4	8.39%	$0	$0	$0
252	Aug-89	$6.670	$5	$15	26.8%	$0	63.7%	$4	$3	$9	21.13%	$0	$0	$1	$0	36.3%	$2	$2	$5	8.39%	$0	$0	$0
253	Sep-89	$7.190	$1	$21	5.3%	$0	63.7%	$5	$1	$9	21.13%	$0	$0	$1	$0	36.3%	$3	$0	$5	8.39%	$0	$0	$0
254	Oct-89	$8.172	$5	$24	16.4%	$0	63.7%	$5	$3	$13	21.13%	$0	$0	$1	$0	36.3%	$3	$2	$7	8.39%	$0	$0	$0
255	Nov-89	$4.093	$1	$27	3.0%	$0	63.7%	$3	$1	$15	21.13%	$0	$0	$1	$0	36.3%	$1	$0	$9	8.39%	$0	$0	$0
256	Dec-89	$6.945	$15	$20	43.1%	$0	63.7%	$4	$9	$18	21.13%	$0	$0	$1	$0	36.3%	$3	$5	$10	8.39%	$0	$0	$0
257	Jan-90	$4.851	$3	$21	13.8%	$0	66.3%	$3	$2	$12	20.84%	$0	$0	$1	$0	33.7%	$2	$1	$7	8.26%	$0	$0	$0
258	Feb-90	$5.225	$2	$25	5.9%	$0	66.3%	$3	$1	$14	20.84%	$0	$0	$1	$0	33.7%	$2	$1	$8	8.26%	$0	$0	$0
259	Mar-90	$5.339	$1	$29	3.8%	$0	66.3%	$4	$1	$16	20.84%	$0	$0	$1	$0	33.7%	$2	$0	$9	8.26%	$0	$0	$0
260	Apr-90	$6.405	$1	$34	3.2%	$0	66.3%	$4	$1	$19	20.84%	$0	$0	$2	$0	33.7%	$2	$0	$10	8.26%	$0	$0	$0
261	May-90	$9.574	$4	$40	8.4%	$0	66.3%	$6	$2	$22	20.84%	$0	$0	$2	$0	33.7%	$3	$1	$12	8.26%	$0	$0	$0
262	Jun-90	$14.758	$5	$50	8.6%	$0	66.3%	$10	$3	$26	20.84%	$0	$0	$2	$0	33.7%	$5	$2	$14	8.26%	$0	$0	$0
263	Jul-90	$9.246	$7	$53	11.1%	$0	66.3%	$6	$4	$33	20.84%	$1	$0	$3	$0	33.7%	$3	$2	$17	8.26%	$0	$0	$1
264	Aug-90	$13.457	$4	$62	5.8%	$0	66.3%	$9	$3	$35	20.84%	$1	$0	$3	$0	33.7%	$5	$1	$18	8.26%	$0	$0	$1
265	Sep-90	$26.482	$18	$71	19.8%	$0	66.3%	$18	$12	$41	20.84%	$1	$1	$3	$0	33.7%	$9	$6	$21	8.26%	$0	$0	$1
266	Oct-90	$24.058	$3	$92	3.4%	$0	66.3%	$16	$2	$47	20.84%	$1	$0	$4	$0	33.7%	$8	$1	$24	8.26%	$0	$0	$1
267	Nov-90	$20.327	$20	$92	17.8%	$0	66.3%	$13	$13	$61	20.84%	$1	$1	$4	$0	33.7%	$7	$7	$31	8.26%	$0	$0	$1
268	Dec-90	$26.576	$25	$94	21.2%	$0	66.3%	$18	$17	$61	20.84%	$1	$1	$4	$0	33.7%	$9	$9	$31	8.26%	$0	$0	$1
269	Jan-91	$6.718	$9	$92	8.6%	$0	62.8%	$4	$6	$62	20.52%	$1	$0	$5	$0	37.2%	$2	$3	$32	8.35%	$0	$0	$1
270	Feb-91	$14.897	$3	$104	2.9%	$0	62.8%	$9	$2	$61	20.52%	$1	$0	$6	$0	37.2%	$6	$1	$31	8.35%	$0	$0	$1
271	Mar-91	$23.354	$42	$85	33.3%	$0	62.8%	$15	$27	$68	20.52%	$1	$2	$5	$0	37.2%	$9	$15	$36	8.35%	$0	$0	$1
272	Apr-91	$14.557	$2	$98	1.7%	$0	62.8%	$9	$1	$55	20.52%	$1	$0	$6	$0	37.2%	$5	$1	$30	8.35%	$0	$0	$1
273	May-91	$13.831	$3	$108	2.8%	$0	62.8%	$9	$2	$63	20.52%	$1	$0	$7	$0	37.2%	$5	$1	$34	8.35%	$0	$0	$1
274	Jun-91	$13.658	$2	$120	1.6%	$0	62.8%	$9	$1	$70	20.52%	$1	$0	$8	$0	37.2%	$5	$1	$39	8.35%	$0	$0	$2
275	Jul-91	$15.370	$11	$124	8.3%	$0	62.8%	$10	$7	$77	20.52%	$1	$1	$9	$0	37.2%	$6	$4	$43	8.35%	$0	$0	$2
276	Aug-91	($1.860)	$10	$112	8.3%	$0	62.8%	($1)	$6	$80	20.52%	$1	$1	$9	$0	37.2%	($1)	$4	$45	8.35%	$0	$0	$2
277	Sep-91	($67.475)	$3	$42	6.0%	$0	62.8%	($42)	$2	$72	20.52%	$1	$1	$10	$0	37.2%	($25)	$1	$40	8.35%	$0	$0	$2
278	Oct-91	$8.532	$5	$45	10.7%	$0	62.8%	$5	$4	$28	20.52%	$0	$1	$9	$0	37.2%	$3	$2	$14	8.35%	$0	$0	$2
279	Nov-91	$12.701	$2	$55	4.3%	$0	62.8%	$8	$2	$30	20.52%	$1	$0	$9	$0	37.2%	$5	$1	$16	8.35%	$0	$0	$2
280	Dec-91	$0.728	$25	$32	43.7%	$0	62.8%	$0	$16	$36	20.52%	$1	$4	$6	$0	37.2%	$0	$9	$19	8.35%	$0	$1	$1
281	Jan-92	$4.970	$8	$28	23.1%	$0	59.5%	$3	$5	$21	20.37%	$0	$1	$5	$0	40.5%	$2	$3	$11	8.10%	$0	$0	$1
282	Feb-92	$5.584	$5	$29	14.0%	$0	59.5%	$3	$3	$18	20.37%	$0	$1	$5	$0	40.5%	$2	$2	$10	8.10%	$0	$0	$1
283	Mar-92	$3.136	$7	$25	21.0%	$0	59.5%	$2	$4	$18	20.37%	$0	$1	$4	$0	40.5%	$1	$2	$11	8.10%	$0	$0	$1
284	Apr-92	$7.719	$5	$28	13.9%	$0	59.5%	$5	$3	$16	20.37%	$0	$1	$4	$0	40.5%	$3	$2	$9	8.10%	$0	$0	$1
285	May-92	$4.323	$2	$31	6.2%	$0	59.5%	$3	$1	$18	20.37%	$0	$0	$4	$0	40.5%	$2	$1	$11	8.10%	$0	$0	$1

Illustrative DOC AFUDC
(millions $)

All Carrier Inputs, Except Depreciation

Ln. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers o Propert	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
286	Jun-92	$6.763	$1	$36	3.6%	$0	59.5%	$4	$1	$19	20.37%	$0	$0	$4	$0	40.5%	$3	$1	$12	8.10%	$0	$0	$1
287	Jul-92	$5.601	$6	$35	15.1%	$0	59.5%	$3	$4	$22	20.37%	$0	$1	$4	$0	40.5%	$2	$2	$14	8.10%	$0	$0	$1
288	Aug-92	$3.490	$3	$36	8.6%	$0	59.5%	$2	$2	$22	20.37%	$0	$0	$4	$0	40.5%	$1	$1	$14	8.10%	$0	$0	$1
289	Sep-92	$12.752	$5	$44	9.6%	$0	59.5%	$8	$3	$22	20.37%	$0	$0	$4	$0	40.5%	$5	$2	$14	8.10%	$0	$0	$1
290	Oct-92	$6.620	$7	$43	14.6%	$0	59.5%	$4	$4	$27	20.37%	$0	$1	$4	$0	40.5%	$3	$3	$17	8.10%	$0	$0	$1
291	Nov-92	$6.430	$4	$45	8.5%	$0	59.5%	$4	$3	$26	20.37%	$0	$0	$4	$0	40.5%	$3	$2	$17	8.10%	$0	$0	$1
292	Dec-92	$2.983	$15	$33	30.6%	$0	59.5%	$2	$9	$27	20.37%	$0	$1	$3	$0	40.5%	$1	$6	$18	8.10%	$0	$0	$1
293	Jan-93	$1.672	$6	$29	18.0%	$0	59.4%	$1	$4	$20	18.56%	$0	$1	$3	$0	40.6%	$1	$3	$13	8.06%	$0	$0	$1
294	Feb-93	$2.740	$2	$29	6.8%	$0	59.4%	$2	$1	$17	18.56%	$0	$0	$3	$0	40.6%	$1	$1	$11	8.06%	$0	$0	$1
295	Mar-93	$5.125	$4	$31	10.5%	$0	59.4%	$3	$2	$18	18.56%	$0	$0	$3	$0	40.6%	$2	$1	$12	8.06%	$0	$0	$1
296	Apr-93	$5.219	$5	$32	12.5%	$0	59.4%	$3	$3	$19	18.56%	$0	$0	$3	$0	40.6%	$2	$2	$12	8.06%	$0	$0	$1
297	May-93	$2.181	$2	$31	6.8%	$0	59.4%	$1	$1	$19	18.56%	$0	$0	$3	$0	40.6%	$1	$1	$13	8.06%	$0	$0	$1
298	Jun-93	$4.215	$6	$29	17.4%	$0	59.4%	$3	$4	$19	18.56%	$0	$1	$3	$0	40.6%	$2	$2	$13	8.06%	$0	$0	$1
299	Jul-93	$0.821	$8	$22	25.8%	$0	59.4%	$0	$5	$18	18.56%	$0	$1	$2	$0	40.6%	$0	$3	$12	8.06%	$0	$0	$1
300	Aug-93	$2.036	$1	$24	2.9%	$0	59.4%	$1	$0	$13	18.56%	$0	$0	$2	$0	40.6%	$1	$0	$9	8.06%	$0	$0	$1
301	Sep-93	$1.253	$3	$22	13.5%	$0	59.4%	$1	$2	$14	18.56%	$0	$0	$2	$0	40.6%	$1	$1	$10	8.06%	$0	$0	$1
302	Oct-93	$2.629	$2	$22	8.6%	$0	59.4%	$2	$1	$13	18.56%	$0	$0	$2	$0	40.6%	$1	$1	$9	8.06%	$0	$0	$1
303	Nov-93	$3.788	$2	$24	8.6%	$0	59.4%	$2	$1	$13	18.56%	$0	$0	$2	$0	40.6%	$2	$1	$9	8.06%	$0	$0	$1
304	Dec-93	$6.619	$6	$24	21.3%	$0	59.4%	$4	$4	$14	18.56%	$0	$0	$2	$0	40.6%	$3	$3	$10	8.06%	$0	$0	$1
305	Jan-94	$2.594	$2	$25	6.3%	$0	63.7%	$2	$1	$14	19.41%	$0	$0	$2	$0	36.4%	$1	$1	$10	8.10%	$0	$0	$1
306	Feb-94	$1.793	$1	$26	4.1%	$0	63.7%	$1	$1	$15	19.41%	$0	$0	$2	$0	36.4%	$1	$0	$10	8.10%	$0	$0	$1
307	Mar-94	$4.643	$1	$30	2.2%	$0	63.7%	$3	$0	$15	19.41%	$0	$0	$3	$0	36.4%	$2	$0	$10	8.10%	$0	$0	$1
308	Apr-94	$3.777	$2	$31	6.8%	$0	63.7%	$2	$1	$18	19.41%	$0	$0	$3	$0	36.4%	$1	$1	$12	8.10%	$0	$0	$1
309	May-94	$5.348	$3	$34	6.9%	$0	63.7%	$3	$2	$19	19.41%	$0	$0	$3	$0	36.4%	$2	$1	$12	8.10%	$0	$0	$1
310	Jun-94	$4.342	$3	$35	8.2%	$0	63.7%	$3	$2	$21	19.41%	$0	$0	$3	$0	36.4%	$2	$1	$13	8.10%	$0	$0	$1
311	Jul-94	$4.658	$1	$38	3.4%	$0	63.7%	$3	$1	$22	19.41%	$0	$0	$3	$0	36.4%	$2	$1	$13	8.10%	$0	$0	$1
312	Aug-94	$4.686	$1	$42	1.4%	$0	63.7%	$3	$0	$24	19.41%	$0	$0	$3	$0	36.4%	$2	$0	$15	8.10%	$0	$0	$1
313	Sep-94	$5.679	$1	$47	2.8%	$0	63.7%	$4	$1	$26	19.41%	$0	$0	$4	$0	36.4%	$2	$1	$16	8.10%	$0	$0	$1
314	Oct-94	$9.200	$1	$55	2.1%	$0	63.7%	$6	$1	$29	19.41%	$0	$0	$4	$0	36.4%	$3	$0	$18	8.10%	$0	$0	$1
315	Nov-94	$1.400	$0	$56	0.5%	$0	63.7%	$1	$0	$34	19.41%	$1	$0	$5	$0	36.4%	$1	$0	$21	8.10%	$0	$0	$1
316	Dec-94	$5.489	$31	$31	49.9%	$0	63.7%	$3	$19	$35	19.41%	$1	$2	$3	$0	36.4%	$2	$11	$21	8.10%	$0	$1	$1
317	Jan-95	$3.277	$7	$27	20.6%	$0	68.1%	$2	$4	$19	18.02%	$0	$1	$3	$0	31.9%	$1	$3	$11	7.93%	$0	$0	$1
318	Feb-95	$5.161	$1	$31	2.8%	$0	68.1%	$4	$1	$17	18.02%	$0	$0	$3	$0	31.9%	$2	$0	$10	7.93%	$0	$0	$1
319	Mar-95	$3.819	$0	$35	0.2%	$0	68.1%	$3	$0	$20	18.02%	$0	$0	$3	$0	31.9%	$1	$0	$11	7.93%	$0	$0	$1
320	Apr-95	$5.248	$0	$40	0.6%	$0	68.1%	$4	$0	$23	18.02%	$0	$0	$3	$0	31.9%	$2	$0	$12	7.93%	$0	$0	$1
321	May-95	$2.680	$0	$43	0.1%	$0	68.1%	$2	$0	$26	18.02%	$0	$0	$4	$0	31.9%	$1	$0	$14	7.93%	$0	$0	$1
322	Jun-95	$3.501	$5	$41	10.3%	$0	68.1%	$2	$3	$28	18.02%	$0	$0	$4	$0	31.9%	$1	$2	$15	7.93%	$0	$0	$1
323	Jul-95	$4.151	$0	$45	0.8%	$0	68.1%	$3	$0	$27	18.02%	$0	$0	$4	$0	31.9%	$1	$0	$14	7.93%	$0	$0	$1
324	Aug-95	$5.192	$1	$50	1.3%	$0	68.1%	$4	$0	$30	18.02%	$0	$0	$5	$0	31.9%	$2	$0	$16	7.93%	$0	$0	$1
325	Sep-95	$4.286	$0	$54	0.2%	$0	68.1%	$3	$0	$33	18.02%	$0	$0	$5	$0	31.9%	$1	$0	$17	7.93%	$0	$0	$1
326	Oct-95	$5.294	$3	$57	4.5%	$0	68.1%	$4	$2	$36	18.02%	$1	$0	$5	$0	31.9%	$2	$1	$18	7.93%	$0	$0	$1
327	Nov-95	$3.944	$1	$59	2.4%	$0	68.1%	$3	$1	$37	18.02%	$1	$0	$6	$0	31.9%	$1	$0	$19	7.93%	$0	$0	$1
328	Dec-95	$12.330	$21	$51	28.9%	$0	68.1%	$8	$14	$39	18.02%	$1	$2	$5	$0	31.9%	$4	$7	$20	7.93%	$0	$0	$1
329	Jan-96	$5.440	$10	$46	17.8%	$0	73.2%	$4	$7	$34	17.05%	$0	$1	$4	$0	26.8%	$1	$3	$17	7.91%	$0	$0	$1
330	Feb-96	$3.309	$0	$49	0.7%	$0	73.2%	$2	$0	$31	17.05%	$0	$0	$5	$0	26.8%	$1	$0	$15	7.91%	$0	$0	$1
331	Mar-96	$4.470	$0	$53	0.4%	$0	73.2%	$3	$0	$33	17.05%	$0	$0	$5	$0	26.8%	$1	$0	$16	7.91%	$0	$0	$1
332	Apr-96	$3.284	$1	$56	1.3%	$0	73.2%	$2	$0	$36	17.05%	$1	$0	$6	$0	26.8%	$1	$0	$17	7.91%	$0	$0	$1
333	May-96	$3.996	$2	$57	4.1%	$0	73.2%	$3	$2	$38	17.05%	$1	$0	$6	$0	26.8%	$1	$1	$18	7.91%	$0	$0	$1
334	Jun-96	$7.992	$3	$62	4.6%	$0	73.2%	$6	$2	$40	17.05%	$1	$0	$6	$0	26.8%	$2	$1	$18	7.91%	$0	$0	$1
335	Jul-96	($2.752)	$0	$60	0.1%	$0	73.2%	($2)	$0	$43	17.05%	$1	$0	$7	$0	26.8%	($1)	$0	$19	7.91%	$0	$0	$2
336	Aug-96	$5.579	$0	$65	0.3%	$0	73.2%	$4	$0	$41	17.05%	$1	$0	$7	$0	26.8%	$1	$0	$18	7.91%	$0	$0	$2
337	Sep-96	$7.101	$1	$71	1.7%	$0	73.2%	$5	$1	$45	17.05%	$1	$0	$8	$0	26.8%	$2	$0	$20	7.91%	$0	$0	$2
338	Oct-96	$4.709	$0	$75	0.6%	$0	73.2%	$3	$0	$50	17.05%	$1	$0	$9	$0	26.8%	$1	$0	$21	7.91%	$0	$0	$2
339	Nov-96	$4.724	$0	$80	0.0%	$0	73.2%	$3	$0	$53	17.05%	$1	$0	$9	$0	26.8%	$1	$0	$23	7.91%	$0	$0	$2
340	Dec-96	$5.164	$11	$74	13.0%	$0	73.2%	$4	$8	$56	17.05%	$1	$1	$9	$0	26.8%	$1	$3	$24	7.91%	$0	$0	$2
341	Jan-97	$2.899	$0	$77	0.3%	$0	77.3%	$2	$0	$52	16.32%	$1	$0	$10	$0	22.7%	$1	$0	$22	7.85%	$0	$0	$2
342	Feb-97	$3.829	$0	$80	0.4%	$0	77.3%	$3	$0	$54	16.32%	$1	$0	$10	$0	22.7%	$1	$0	$22	7.85%	$0	$0	$2

Illustrative DOC AFUDC
(millions $)

All Carrier Inputs, Except Depreciation

Ln. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers o Propert	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
343	Mar-97	$5.578	$0	$86	0.2%	$0	77.3%	$4	$0	$57	16.32%	$1	$0	$11	$0	22.7%	$1	$0	$23	7.85%	$0	$0	$2
344	Apr-97	$4.941	$0	$90	0.2%	$0	77.3%	$4	$0	$61	16.32%	$1	$0	$12	$0	22.7%	$1	$0	$24	7.85%	$0	$0	$3
345	May-97	$7.117	$0	$97	0.3%	$0	77.3%	$6	$0	$65	16.32%	$1	$0	$13	$0	22.7%	$2	$0	$26	7.85%	$0	$0	$3
346	Jun-97	$7.181	$0	$104	0.3%	$0	77.3%	$6	$0	$70	16.32%	$1	$0	$14	$0	22.7%	$2	$0	$27	7.85%	$0	$0	$3
347	Jul-97	$7.792	$0	$112	0.1%	$0	77.3%	$6	$0	$75	16.32%	$1	$0	$15	$0	22.7%	$2	$0	$29	7.85%	$0	$0	$3
348	Aug-97	$4.096	$0	$116	0.0%	$0	77.3%	$3	$0	$81	16.32%	$1	$0	$16	$0	22.7%	$1	$0	$30	7.85%	$0	$0	$3
349	Sep-97	$6.537	$2	$120	1.9%	$0	77.3%	$5	$2	$85	16.32%	$1	$0	$17	$0	22.7%	$1	$1	$31	7.85%	$0	$0	$3
350	Oct-97	$4.305	$0	$124	0.2%	$0	77.3%	$3	$0	$88	16.32%	$1	$0	$18	$0	22.7%	$1	$0	$32	7.85%	$0	$0	$4
351	Nov-97	$4.919	$2	$127	1.2%	$0	77.3%	$4	$1	$91	16.32%	$1	$0	$19	$0	22.7%	$1	$0	$33	7.85%	$0	$0	$4
352	Dec-97	$2.834	$101	$30	77.2%	$0	77.3%	$2	$74	$94	16.32%	$1	$15	$6	$0	22.7%	$1	$27	$34	7.85%	$0	$3	$1
353	Jan-98	$1.174	$0	$31	0.0%	$0	75.6%	$1	$0	$22	16.91%	$0	$0	$6	$0	24.4%	$0	$0	$8	6.63%	$0	$0	$1
354	Feb-98	$1.079	$0	$32	0.0%	$0	75.6%	$1	$0	$23	16.91%	$0	$0	$6	$0	24.4%	$0	$0	$8	6.63%	$0	$0	$1
355	Mar-98	$2.028	$0	$34	0.0%	$0	75.6%	$2	$0	$24	16.91%	$0	$0	$7	$0	24.4%	$0	$0	$8	6.63%	$0	$0	$1
356	Apr-98	$0.439	($1)	$35	-3.0%	$0	75.6%	$0	($1)	$25	16.91%	$0	($0)	$7	$0	24.4%	$0	($0)	$9	6.63%	$0	($0)	$1
357	May-98	$0.324	$0	$36	0.1%	$0	75.6%	$0	$0	$26	16.91%	$0	$0	$7	$0	24.4%	$0	$0	$9	6.63%	$0	$0	$1
358	Jun-98	$2.865	$0	$38	0.8%	$0	75.6%	$2	$0	$26	16.91%	$0	$0	$8	$0	24.4%	$1	$0	$9	6.63%	$0	$0	$1
359	Jul-98	$4.354	$0	$43	0.0%	$0	75.6%	$3	$0	$28	16.91%	$0	$0	$8	$0	24.4%	$1	$0	$10	6.63%	$0	$0	$1
360	Aug-98	$1.127	$0	$44	0.0%	$0	75.6%	$1	$0	$32	16.91%	$0	$0	$9	$0	24.4%	$0	$0	$11	6.63%	$0	$0	$2
361	Sep-98	$3.594	$0	$47	0.0%	$0	75.6%	$3	$0	$32	16.91%	$0	$0	$9	$0	24.4%	$1	$0	$11	6.63%	$0	$0	$2
362	Oct-98	$2.710	$2	$48	3.2%	$0	75.6%	$2	$1	$35	16.91%	$0	$0	$9	$0	24.4%	$1	$0	$12	6.63%	$0	$0	$2
363	Nov-98	$2.711	$1	$50	1.8%	$0	75.6%	$2	$1	$36	16.91%	$1	$0	$10	$0	24.4%	$1	$0	$12	6.63%	$0	$0	$2
364	Dec-98	$10.150	$21	$39	35.6%	$0	75.6%	$8	$16	$37	16.91%	$1	$3	$7	$0	24.4%	$2	$5	$13	6.63%	$0	$1	$1
365	Jan-99	$0.809	$0	$40	0.0%	$0	75.3%	$1	$0	$29	19.15%	$0	$0	$7	$0	24.7%	$0	$0	$10	6.38%	$0	$0	$1
366	Feb-99	$2.137	$0	$42	0.1%	$0	75.3%	$2	$0	$30	19.15%	$0	$0	$8	$0	24.7%	$1	$0	$10	6.38%	$0	$0	$1
367	Mar-99	$2.015	$1	$43	1.2%	$0	75.3%	$2	$0	$31	19.15%	$0	$0	$8	$0	24.7%	$0	$0	$11	6.38%	$0	$0	$1
368	Apr-99	$1.339	$0	$45	0.0%	$0	75.3%	$1	$0	$32	19.15%	$1	$0	$9	$0	24.7%	$0	$0	$11	6.38%	$0	$0	$1
369	May-99	$2.003	$0	$47	0.0%	$0	75.3%	$2	$0	$33	19.15%	$1	$0	$9	$0	24.7%	$0	$0	$11	6.38%	$0	$0	$1
370	Jun-99	$4.354	$0	$51	0.0%	$0	75.3%	$3	$0	$35	19.15%	$1	$0	$10	$0	24.7%	$1	$0	$12	6.38%	$0	$0	$1
371	Jul-99	$4.428	$0	$55	0.1%	$0	75.3%	$3	$0	$38	19.15%	$1	$0	$10	$0	24.7%	$1	$0	$13	6.38%	$0	$0	$2
372	Aug-99	$2.790	$2	$56	3.4%	$0	75.3%	$2	$2	$41	19.15%	$1	$0	$11	$0	24.7%	$1	$1	$14	6.38%	$0	$0	$2
373	Sep-99	$4.507	$4	$56	7.3%	$0	75.3%	$3	$3	$42	19.15%	$1	$1	$10	$0	24.7%	$1	$1	$14	6.38%	$0	$0	$1
374	Oct-99	$8.377	$0	$65	0.0%	$0	75.3%	$6	$0	$42	19.15%	$1	$0	$11	$0	24.7%	$2	$0	$14	6.38%	$0	$0	$2
375	Nov-99	$5.693	$5	$65	7.3%	$0	75.3%	$4	$4	$48	19.15%	$1	$1	$11	$0	24.7%	$1	$1	$16	6.38%	$0	$0	$2
376	Dec-99	$18.981	$41	$43	48.4%	$0	75.3%	$14	$31	$49	19.15%	$1	$5	$6	$0	24.7%	$5	$10	$16	6.38%	$0	$1	$1
377	Jan-00	$1.736	$0	$45	0.0%	$0	75.3%	$1	$0	$33	19.15%	$1	$0	$7	$0	24.7%	$0	$0	$11	6.38%	$0	$0	$1
378	Feb-00	$1.969	$0	$47	0.0%	$0	75.3%	$1	$0	$34	19.15%	$1	$0	$8	$0	24.7%	$0	$0	$11	6.38%	$0	$0	$1
379	Mar-00	$2.199	$6	$43	12.7%	$0	75.3%	$2	$5	$35	19.15%	$1	$1	$7	$0	24.7%	$1	$2	$12	6.38%	$0	$0	$1
380	Apr-00	$1.922	$0	$45	0.0%	$0	75.3%	$1	$0	$32	19.15%	$1	$0	$8	$0	24.7%	$0	$0	$11	6.38%	$0	$0	$1
381	May-00	$4.074	$0	$49	0.0%	$0	75.3%	$3	$0	$34	19.15%	$1	$0	$8	$0	24.7%	$1	$0	$11	6.38%	$0	$0	$1
382	Jun-00	$4.715	$0	$54	0.0%	$0	75.3%	$4	$0	$37	19.15%	$1	$0	$9	$0	24.7%	$1	$0	$12	6.38%	$0	$0	$1
383	Jul-00	$4.715	$0	$58	0.0%	$0	75.3%	$4	$0	$40	19.15%	$1	$0	$9	$0	24.7%	$1	$0	$13	6.38%	$0	$0	$1
384	Aug-00	$4.715	$0	$63	0.0%	$0	75.3%	$4	$0	$44	19.15%	$1	$0	$10	$0	24.7%	$1	$0	$15	6.38%	$0	$0	$1
385	Sep-00	$4.715	$0	$68	0.0%	$0	75.3%	$4	$0	$47	19.15%	$1	$0	$11	$0	24.7%	$1	$0	$16	6.38%	$0	$0	$1
386	Oct-00	$4.715	$0	$73	0.0%	$0	75.3%	$4	$0	$51	19.15%	$1	$0	$12	$0	24.7%	$1	$0	$17	6.38%	$0	$0	$1
387	Nov-00	$4.715	$0	$77	0.0%	$0	75.3%	$4	$0	$55	19.15%	$1	$0	$13	$0	24.7%	$1	$0	$18	6.38%	$0	$0	$2
388	Dec-00	$8.734	$56	$30	64.7%	$0	75.3%	$7	$42	$58	19.15%	$1	$8	$5	$0	24.7%	$2	$14	$19	6.38%	$0	$1	$1

Illustrative DOC AFUDC
(millions $)

All Carrier Inputs, Except Depreciation

Ln. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers o Propert	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

SOURCE:

Column 1	Time in months
Column 2	Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 3	Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 4	Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 5	Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 6	Sum (prior six months Col 12) - sumproduct(prior six months Col 12 * prior six months Col 5) [A]
Column 7	Exhibit WBT-38
Column 8	Col 2 * Col 7
Column 9	(cum Col 8 - cum prior Col 9 + cum Col 6) * Col 5
Column 10	prior (Col 8 - Col 9 + Col 10) + Col 6
Column 11	[(Exhibit WBT 40) - Col 16*Col 20]/Col 7
Column 12	(Col 10 * Col 11)/12
Column 13	prior Col 14 * Col 5 + [B]
Column 14	prior Col 14 + Col 12 - Col 13
Column 15	Sum (prior six months Col 21) - sumproduct(prior six months Col 21 * prior six months Col 5) [A]
Column 16	1.0 - Col 7
Column 17	Col 2 * Col 16
Column 18	(cum Col 17 - cum prior Col 18 + cum Col 15) * Col 5
Column 19	prior (Col 17 - Col 18 + Col 19) + Col 15
Column 20	Exhibit WBT-39
Column 21	(Col 19 * Col 20) / 12
Column 22	prior Col 23 * Col 5 +[C]
Column 23	prior Col 23 + Col 21 - Col 22

[A] for the months January and July prior to June of 1977, otherwise equal to 0
[B] if Col 5 = 100%, +Col 12, otherwise 0
[C] if Col 5 = 100%, +Col 19, otherwise 0

Illustrative DOC Amortization of AFUDC
(millions $)

All Carrier Inputs, Except Depreciation

Line No.	Description	Source	Starting Balances	1977	1978	1979	1980	1981	1982	1983	1984
1	Amortization Factor - Net Basis	Sch. 15 Ln. 8		1.38%	6.31%	8.05%	9.79%	10.38%	11.72%	12.66%	13.95%
2	Net Equity AFUDC - BOY	Prior Ln. 5		$2,165	$2,136	$2,013	$1,857	$1,687	$1,527	$1,363	$1,201
3	Equity AFUDC Additions	Sch. 8, Col. 13	$2,165	$2	$12	$6	$14	$17	$17	$12	$7
4	Current Period Equity AFUDC Amortization	(Ln.2 + Ln.3) * Ln.1		$30	$136	$162	$183	$177	$181	$174	$169
5	Net Equity AFUDC - EOY	Lns.(2+3-4)	$2,165	$2,136	$2,013	$1,857	$1,687	$1,527	$1,363	$1,201	$1,039
6	Accumulated Equity AFUDC Additions	Ln. 3 + Prior Ln. 6	$2,165	$2,166	$2,178	$2,185	$2,198	$2,215	$2,232	$2,244	$2,251
7	Accumulated Equity AFUDC Amortization	Ln. 4 + Prior Ln. 7		$30	$166	$328	$511	$688	$869	$1,043	$1,212
8	Net Debt AFUDC - BOY	Prior Ln. 11		$398	$393	$371	$343	$312	$283	$253	$223
9	Debt AFUDC Additions	Sch. 8 Col 22	$398	$1	$4	$2	$3	$4	$4	$2	$1
10	Current Period Debt AFUDC Amortization	(Ln. 8 + Ln. 9) * Ln.1		$5	$25	$30	$34	$33	$34	$32	$31
11	Net Debt AFUDC - EOY	Lns. (8 + 9 - 10)	$398	$393	$371	$343	$312	$283	$253	$223	$193
12	Accumulated Debt AFUDC Additions	Ln. 9 + Prior Ln. 12	$398	$398	$402	$404	$407	$411	$414	$417	$418
13	Accumulated Debt AFUDC Amortization	Ln. 10 + Prior Ln. 13		$5	$31	$61	$94	$127	$161	$193	$225
14	Annual AFUDC	Ln. 4 + Ln. 10		$35	$161	$192	$217	$210	$215	$207	$200

Illustrative DOC Amortization of AFUDC
(millions $)

All Carrier Inputs, Except Depreciation

Line No.	Description	Source	1985	1986	1987	1988	1989	1990	1991	1992	1993
1	Amortization Factor - Net Basis	Sch. 15 Ln. 8	13.62%	14.85%	16.89%	18.44%	19.15%	19.18%	18.23%	20.49%	20.52%
2	Net Equity AFUDC - BOY	Prior Ln. 5	$1,039	$898	$765	$637	$520	$421	$343	$289	$236
3	Equity AFUDC Additions	Sch. 8, Col. 13	$1	$1	$1	$0	$1	$3	$10	$7	$4
4	Current Period Equity AFUDC Amortization	(Ln.2 + Ln.3) * Ln.1	$142	$134	$129	$118	$100	$81	$64	$61	$49
5	Net Equity AFUDC - EOY	Lns.(2+3-4)	$898	$765	$637	$520	$421	$343	$289	$236	$191
6	Accumulated Equity AFUDC Additions	Ln. 3 + Prior Ln. 6	$2,252	$2,252	$2,253	$2,254	$2,255	$2,258	$2,269	$2,276	$2,280
7	Accumulated Equity AFUDC Amortization	Ln. 4 + Prior Ln. 7	$1,353	$1,487	$1,616	$1,734	$1,834	$1,915	$1,980	$2,040	$2,090
8	Net Debt AFUDC - BOY	Prior Ln. 11	$193	$167	$142	$118	$97	$78	$64	$54	$44
9	Debt AFUDC Additions	Sch. 8 Col 22	$0	$0	$0	$0	$0	$1	$2	$2	$1
10	Current Period Debt AFUDC Amortization	(Ln. 8 + Ln. 9) * Ln.1	$26	$25	$24	$22	$19	$15	$12	$11	$9
11	Net Debt AFUDC - EOY	Lns. (8 + 9 - 10)	$167	$142	$118	$97	$78	$64	$54	$44	$36
12	Accumulated Debt AFUDC Additions	Ln. 9 + Prior Ln. 12	$418	$418	$418	$418	$419	$419	$421	$423	$424
13	Accumulated Debt AFUDC Amortization	Ln. 10 + Prior Ln. 13	$251	$276	$300	$322	$340	$355	$367	$379	$388
14	Annual AFUDC	Ln. 4 + Ln. 10	$168	$158	$154	$139	$118	$97	$77	$72	$59

Illustrative DOC Amortization of AFUDC
(millions $)

All Carrier Inputs, Except Depreciation

Line No.	Description	Source	1994	1995	1996	1997	1998	1999	2000
1	Amortization Factor - Net Basis	Sch. 15 Ln. 8	20.39%	20.65%	17.29%	11.45%	7.60%	7.50%	8.51%
2	Net Equity AFUDC - BOY	Prior Ln. 5	$191	$154	$125	$106	$107	$103	$102
3	Equity AFUDC Additions	Sch. 8, Col. 13	$4	$3	$3	$15	$4	$7	$9
4	Current Period Equity AFUDC Amortization	(Ln.2 + Ln.3) * Ln.1	$40	$33	$22	$14	$8	$8	$9
5	Net Equity AFUDC - EOY	Lns.(2+3-4)	$154	$125	$106	$107	$103	$102	$101
6	Accumulated Equity AFUDC Additions	Ln. 3 + Prior Ln. 6	$2,284	$2,287	$2,290	$2,305	$2,309	$2,316	$2,325
7	Accumulated Equity AFUDC Amortization	Ln. 4 + Prior Ln. 7	$2,129	$2,162	$2,184	$2,198	$2,206	$2,214	$2,224
8	Net Debt AFUDC - BOY	Prior Ln. 11	$36	$29	$24	$20	$21	$20	$19
9	Debt AFUDC Additions	Sch. 8 Col 22	$1	$1	$1	$3	$1	$1	$1
10	Current Period Debt AFUDC Amortization	(Ln. 8 + Ln. 9) * Ln.1	$8	$6	$4	$2.687	$1.627	$1.561	$1.735
11	Net Debt AFUDC - EOY	Lns. (8 + 9 - 10)	$29	$24	$20	$21	$20	$19	$19
12	Accumulated Debt AFUDC Additions	Ln. 9 + Prior Ln. 12	$425	$426	$427	$430	$430	$431	$432
13	Accumulated Debt AFUDC Amortization	Ln. 10 + Prior Ln. 13	$396	$402	$406	$409	$410	$412	$414
14	Annual AFUDC	Ln. 4 + Ln. 10	$47	$39	$26	$17	$10	$10	$11

Illustrative State Tax Depreciation,
1977-2000; Carriers' Inputs,
Except for Depreciation (millions $)

	Year	1 1977	2 1978	3 1979	4 1980	5 1981	6 1982	7 1983	8 1984	9 1985	10 1986	11 1987	12 1988	13 1989	14 1990	15 1991
Depreciation Factors - (1977)		5.71%	4.00%	4.00%	4.00%	4.00%	10.22%	9.61%	9.00%	8.38%	7.77%	7.15%	6.54%	5.93%	5.31%	4.70%
Depreciation Factors - (1978)		2.00%	4.00%	4.00%	4.00%	10.75%	10.14%	9.52%	8.91%	8.29%	7.68%	7.06%	6.45%	5.84%	5.22%	2.46%
Depreciation Factors - (1979)		2.00%	4.00%	4.00%	10.84%	10.23%	9.61%	9.00%	8.39%	7.77%	7.16%	6.54%	5.93%	5.32%	3.07%	2.46%
Depreciation Factors - (1980)		2.00%	4.00%	10.87%	10.26%	9.65%	9.03%	8.42%	7.80%	7.19%	6.58%	5.96%	5.35%	3.68%	3.07%	2.46%
Depreciation Factors - (1981)		2.00%	11.15%	10.20%	9.58%	8.97%	8.35%	7.74%	7.13%	6.51%	5.90%	5.28%	4.30%	3.68%	3.07%	2.46%
Depreciation Factors - (1982-present)		5.71%	10.78%	9.82%	9.21%	8.60%	7.98%	7.37%	6.75%	6.14%	5.53%	4.91%	4.30%	3.68%	3.07%	2.46%
Year		Property Additions (a) Sch 15, Lns. 3 - Sch 8, col 22 (1+2)[1]	AFUDC Additions (b)	Tax Basis for Depreciation (d) = (a) + (b)												
1977	1	$7,889	$398	$8,287	$474	$331	$331	$331	$331	$847	$796	$745	$695	$644	$593	$542	$491	$440	$389
1978	2	$112	$4	$116	$0	$2	$5	$5	$5	$12	$12	$11	$10	$10	$9	$8	$7	$7	$6
1979	3	$97	$2	$98	$0	$0	$2	$4	$4	$11	$10	$9	$9	$8	$8	$7	$6	$6	$5
1980	4	$123	$3	$127	$0	$0	$0	$3	$5	$14	$13	$12	$11	$11	$10	$9	$8	$8	$7
1981	5	$49	$4	$53	$0	$0	$0	$0	$1	$6	$5	$5	$5	$4	$4	$4	$3	$3	$3
1982	6	$60	$4	$64	$0	$0	$0	$0	$0	$4	$7	$6	$6	$5	$5	$5	$4	$4	$4
1983	7	$84	$2	$86	$0	$0	$0	$0	$0	$0	$5	$9	$8	$8	$7	$7	$6	$6	$5
1984	8	$51	$1	$52	$0	$0	$0	$0	$0	$0	$0	$3	$6	$5	$5	$4	$4	$4	$4
1985	9	$29	$0	$29	$0	$0	$0	$0	$0	$0	$0	$0	$2	$3	$3	$3	$3	$2	$2
1986	10	$20	$0	$20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1	$2	$2	$2	$2	$2
1987	11	$33	$0	$33	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2	$4	$3	$3	$3	$3
1988	12	$10	$0	$10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1	$1	$1	$1	$1
1989	13	$37	$0	$37	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2	$4	$4	$4
1990	14	$81	$1	$82	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$5	$9	$9
1991	15	$203	$2	$205	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$12	$12
1992	16	$69	$2	$71	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1993	17	$46	$1	$47	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1994	18	$43	$1	$44	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1995	19	$36	$1	$37	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1996	20	$29	$1	$29	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1997	21	$105	$3	$109	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1998	22	$21	$1	$22	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1999	23	$46	$1	$47	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2000	24	$58	$1	$59	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total State Tax Depreciation					$474	$334	$338	$343	$346	$894	$848	$802	$752	$699	$648	$595	$542	$494	$454

[1] For 1977, Sch. 16, Lns 3 - (1+2+10)

Illustrative State Tax Depreciation,
1977-2000; Carriers' Inputs,
Except for Depreciation (millions $)

	Year	**16** 1992	**17** 1993	**18** 1994	**19** 1995	**20** 1996	**21** 1997	**22** 1998	**23** 1999	**24** 2000
Depreciation Factors - (1977)		1.84%	1.23%	0.61%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1978)		1.84%	1.23%	0.61%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1979)		1.84%	1.23%	0.61%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1980)		1.84%	1.23%	0.61%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1981)		1.84%	1.23%	0.61%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1982-present)		1.84%	1.23%	0.61%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Year		Property Additions (a) Sch 15, Lns. 3 - Sch 8, col 22 (1+2)[1]	AFUDC Additions (b)	Tax Basis for Depreciation (d) = (a) + (b)								
1977	1	$7,889	$398	$8,287	$153	$102	$51	$0	$0	$0	$0	$0	$0
1978	2	$112	$4	$116	$3	$2	$1	$1	$0	$0	$0	$0	$0
1979	3	$97	$2	$98	$3	$2	$2	$1	$1	$0	$0	$0	$0
1980	4	$123	$3	$127	$5	$4	$3	$2	$2	$1	$0	$0	$0
1981	5	$49	$4	$53	$2	$2	$2	$1	$1	$1	$0	$0	$0
1982	6	$60	$4	$64	$3	$3	$2	$2	$2	$1	$1	$0	$0
1983	7	$84	$2	$86	$5	$4	$4	$3	$3	$2	$2	$1	$1
1984	8	$51	$1	$52	$3	$3	$3	$2	$2	$2	$1	$1	$1
1985	9	$29	$0	$29	$2	$2	$2	$1	$1	$1	$1	$1	$1
1986	10	$20	$0	$20	$1	$1	$1	$1	$1	$1	$1	$1	$0
1987	11	$33	$0	$33	$3	$2	$2	$2	$2	$2	$1	$1	$1
1988	12	$10	$0	$10	$1	$1	$1	$1	$1	$1	$0	$0	$0
1989	13	$37	$0	$37	$3	$3	$3	$3	$2	$2	$2	$2	$2
1990	14	$81	$1	$82	$8	$8	$7	$7	$6	$6	$5	$5	$4
1991	15	$203	$2	$205	$22	$20	$19	$18	$16	$15	$14	$13	$11
1992	16	$69	$2	$71	$4	$8	$7	$7	$6	$6	$5	$5	$4
1993	17	$46	$1	$47	$0	$3	$5	$5	$4	$4	$4	$3	$3
1994	18	$43	$1	$44	$0	$0	$3	$5	$4	$4	$4	$4	$3
1995	19	$36	$1	$37	$0	$0	$0	$2	$4	$4	$3	$3	$3
1996	20	$29	$1	$29	$0	$0	$0	$0	$2	$3	$3	$3	$3
1997	21	$105	$3	$109	$0	$0	$0	$0	$0	$6	$12	$11	$10
1998	22	$21	$1	$22	$0	$0	$0	$0	$0	$0	$1	$2	$2
1999	23	$46	$1	$47	$0	$0	$0	$0	$0	$0	$0	$3	$5
2000	24	$58	$1	$59	$0	$0	$0	$0	$0	$0	$0	$0	$3
Total State Tax Depreciation					$221	$170	$117	$63	$59	$60	$60	$58	$57

[1] For 1977, Sch. 16, Lns 3 - (1·

Illustrative Federal Tax Depreciation,
1977-2000; Carriers' Inputs,
Except for Depreciation (millions $)

						Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
							1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Depreciation Factors - (1977-1980)							5.71%	10.78%	9.82%	9.21%	8.60%	7.98%	7.37%	6.75%	6.14%	5.53%	4.91%	4.30%	3.68%	3.07%	2.46%
Depreciation Factors - (1981-1986)							15.00%	22.00%	21.00%	21.00%	21.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1987-Present)							5.00%	9.50%	8.55%	7.70%	6.93%	6.23%	5.90%	5.90%	5.90%	5.90%	5.90%	5.90%	5.90%	5.90%	5.90%
Year		Property Addition (a) Sch 15, Lns. 3 - Sch 8, col 22 (1+2)1	AFUDC Addition (b)	TEFRA Adjustment (c) Sch. 13, Ln. 3	Tax Basis for Depreciation (d) = (a) + (b) - (c)																
1977	1	$7,889	$398	$0	$8,287		$474	$893	$814	$763	$712	$662	$611	$560	$509	$458	$407	$356	$305	$254	$204
1978	2	$112	$4	$0	$116		$0	$7	$12	$11	$11	$10	$9	$9	$8	$7	$6	$6	$5	$4	$4
1979	3	$97	$2	$0	$98		$0	$0	$6	$11	$10	$9	$8	$8	$7	$7	$6	$5	$5	$4	$4
1980	4	$123	$3	$0	$127		$0	$0	$0	$7	$14	$12	$12	$11	$10	$9	$9	$8	$7	$6	$5
1981	5	$49	$4	$0	$53		$0	$0	$0	$0	$8	$12	$11	$11	$11	$0	$0	$0	$0	$0	$0
1982	6	$60	$4	$0	$64		$0	$0	$0	$0	$0	$10	$14	$13	$13	$13	$0	$0	$0	$0	$0
1983	7	$84	$2	$4	$82		$0	$0	$0	$0	$0	$0	$12	$18	$17	$17	$17	$0	$0	$0	$0
1984	8	$51	$1	$3	$49		$0	$0	$0	$0	$0	$0	$0	$7	$11	$10	$10	$10	$0	$0	$0
1985	9	$29	$0	$1	$28		$0	$0	$0	$0	$0	$0	$0	$0	$4	$6	$6	$6	$6	$0	$0
1986	10	$20	$0	$0	$20		$0	$0	$0	$0	$0	$0	$0	$0	$0	$3	$4	$4	$4	$4	$0
1987	11	$33	$0	$0	$33		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2	$3	$3	$3	$2
1988	12	$10	$0	$0	$10		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1	$1	$1	$1
1989	13	$37	$0	$0	$37		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2	$4	$3
1990	14	$81	$1	$0	$82		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4	$8
1991	15	$203	$2	$0	$205		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10
1992	16	$69	$2	$0	$71		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1993	17	$46	$1	$0	$47		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1994	18	$43	$1	$0	$44		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1995	19	$36	$1	$0	$37		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1996	20	$29	$1	$0	$29		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1997	21	$105	$3	$0	$109		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1998	22	$21	$1	$0	$22		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1999	23	$46	$1	$0	$47		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2000	24	$58	$1	$0	$59		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Federal Tax Depreciation							$474	$900	$832	$793	$754	$714	$677	$637	$591	$531	$468	$399	$338	$284	$240

1 For 1977, Sch. 16, Lns 3 - (1+2+10)

Illustrative Federal Tax Depreciation,
1977-2000; Carriers' Inputs,
Except for Depreciation (millions $)

						Year	16 1992	17 1993	18 1994	19 1995	20 1996	21 1997	22 1998	23 1999	24 2000
Depreciation Factors - (1977-1980)							1.84%	1.23%	0.61%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1981-1986)							0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1987-Present)							2.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Year		Property Addition (a) Sch 15, Lns. 3 - (1+2)1	AFUDC Addition (b) Sch 8, col 22	TEFRA Adjustment (c) Sch. 13, Ln. 3	Tax Basis for Depreciation (d) = (a) + (b) - (c)										
1977	1	$7,889	$398	$0	$8,287		$153	$102	$51	$0	$0	$0	$0	$0	$0
1978	2	$112	$4	$0	$116		$3	$2	$1	$1	$0	$0	$0	$0	$0
1979	3	$97	$2	$0	$98		$3	$2	$2	$1	$1	$0	$0	$0	$0
1980	4	$123	$3	$0	$127		$5	$4	$3	$2	$2	$1	$0	$0	$0
1981	5	$49	$4	$0	$53		$0	$0	$0	$0	$0	$0	$0	$0	$0
1982	6	$60	$4	$0	$64		$0	$0	$0	$0	$0	$0	$0	$0	$0
1983	7	$84	$2	$4	$82		$0	$0	$0	$0	$0	$0	$0	$0	$0
1984	8	$51	$1	$3	$49		$0	$0	$0	$0	$0	$0	$0	$0	$0
1985	9	$29	$0	$1	$28		$0	$0	$0	$0	$0	$0	$0	$0	$0
1986	10	$20	$0	$0	$20		$0	$0	$0	$0	$0	$0	$0	$0	$0
1987	11	$33	$0	$0	$33		$2	$2	$2	$2	$2	$2	$2	$2	$2
1988	12	$10	$0	$0	$10		$1	$1	$1	$1	$1	$1	$1	$1	$1
1989	13	$37	$0	$0	$37		$3	$3	$2	$2	$2	$2	$2	$2	$2
1990	14	$81	$1	$0	$82		$7	$6	$6	$5	$5	$5	$5	$5	$5
1991	15	$203	$2	$0	$205		$19	$18	$16	$14	$13	$12	$12	$12	$12
1992	16	$69	$2	$0	$71		$4	$7	$6	$5	$5	$4	$4	$4	$4
1993	17	$46	$1	$0	$47		$0	$2	$4	$4	$4	$3	$3	$3	$3
1994	18	$43	$1	$0	$44		$0	$0	$2	$4	$4	$3	$3	$3	$3
1995	19	$36	$1	$0	$37		$0	$0	$0	$2	$3	$3	$3	$3	$2
1996	20	$29	$1	$0	$29		$0	$0	$0	$0	$1	$3	$2	$2	$2
1997	21	$105	$3	$0	$109		$0	$0	$0	$0	$0	$5	$10	$9	$8
1998	22	$21	$1	$0	$22		$0	$0	$0	$0	$0	$0	$1	$2	$2
1999	23	$46	$1	$0	$47		$0	$0	$0	$0	$0	$0	$0	$2	$5
2000	24	$58	$1	$0	$59		$0	$0	$0	$0	$0	$0	$0	$0	$3
Total Federal Tax Depreciation							$199	$148	$96	$44	$42	$45	$49	$50	$53

1 For 1977, Sch. 16, Lns 3 - (1+2+10)

Illustrative ADIT Balances,
1977-2000: Carrier Inputs,
Except for Depreciation (millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
1	Book Depreciation Including Debt AFUDC Amortization	Sch 6 Ln. 3 + Sch 9 Ln. 10	$114	$526	$635	$727	$701	$715	$693	$673	$569	$539	$528	$481	$414
2	State Tax Depreciation	Sch. 10	$474	$334	$338	$343	$346	$894	$848	$802	$752	$699	$648	$595	$542
3	State Tax Timing Differences	Ln. 2 - Ln. 1	$360	($192)	($297)	($384)	($355)	$178	$155	$129	$182	$160	$120	$114	$128
4	State Income Tax Rate	AK Stat.	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%
5	State Tax Effect	Ln. 3 * Ln. 4	$34	($18)	($28)	($36)	($33)	$17	$15	$12	$17	$15	$11	$11	$12
6	State ADIT Balance	Ln. 5 + Prior Ln. 6	$34	$16	($12)	($48)	($82)	($65)	($50)	($38)	($21)	($6)	$5	$16	$28
7	Book Depreciation Including Debt AFUDC Amortization	Ln.1	$114	$526	$635	$727	$701	$715	$693	$673	$569	$539	$528	$481	$414
8	Depreciation of TEFRA Adjustment	Sch.13 Ln. 6	$0	$0	$0	$0	$0	$0	$1	$1	$1	$1	$1	$1	$1
9	Book Depreciation after TEFRA Adjustment	Ln. 7 - Ln. 8	$114	$526	$635	$727	$701	$715	$692	$672	$568	$538	$527	$480	$413
10	Federal Tax Depreciation	Sch. 11	$474	$900	$832	$793	$754	$714	$677	$637	$591	$531	$468	$399	$338
11	Tax Effect of State Timing Differences	Ln. 5	$34	($18)	($28)	($36)	($33)	$17	$15	$12	$17	$15	$11	$11	$12
12	Total Federal Tax Deductions	Ln. 10 - Ln.11	$440	$918	$860	$829	$788	$697	$663	$625	$574	$516	$456	$388	$326
13	Federal Tax Timing Differences	Ln.12 - Ln. 9	$326	$392	$225	$102	$87	($18)	($29)	($47)	$5	($22)	($70)	($92)	($88)
14	Federal Income Tax Rate	IRC	48.00%	48.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	39.95%	34.00%	34.00%
15	Federal Tax Effect	Ln. 13 * Ln. 14	$156	$188	$104	$47	$40	($8)	($14)	($22)	$2	($10)	($28)	($31)	($30)
16	FASB 96/109 Adjustment	Cum. Ln 13 * Change in Ln 14	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$62	$56	$0
17	Amortization Basis for FASB 96/109 Adjustment	Lns(Prior 17 + 16 - Prior 18)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$62	$108	$88
18	Amortization of FASB 96/109 Adjustment	Ln.17*(Sch 14, Ln.8)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10	$20	$17
19	Federal ADIT Balance	Prior Ln.19 + Ln.15 - Ln.18	$156	$344	$448	$495	$535	$526	$513	$491	$494	$483	$445	$394	$347
20	Total State And Federal ADIT Balances	Ln. 6 + Ln. 19	$190	$360	$436	$446	$453	$462	$463	$453	$473	$477	$450	$410	$375

Illustrative ADIT Balances,
1977-2000: Carrier Inputs,
Except for Depreciation (millions $)

Line No.	Description	Source	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
1	Book Depreciation Including Debt AFUDC Amortization	Sch 6 Ln. 3 + Sch 9 Ln. 10	$351	$308	$297	$246	$204	$172	$131	$84	$51	$50	$58
2	State Tax Depreciation	Sch. 10	$494	$454	$221	$170	$117	$63	$59	$60	$60	$58	$57
3	State Tax Timing Differences	Ln. 2 - Ln. 1	$143	$146	($76)	($77)	($87)	($109)	($72)	($24)	$9	$7	($1)
4	State Income Tax Rate	AK Stat.	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%
5	State Tax Effect	Ln. 3 * Ln. 4	$13	$14	($7)	($7)	($8)	($10)	($7)	($2)	$1	$1	($0)
6	State ADIT Balance	Ln. 5 + Prior Ln. 6	$42	$55	$48	$41	$33	$23	$16	$13	$14	$15	$15
7	Book Depreciation Including Debt AFUDC Amortization	Ln.1	$351	$308	$297	$246	$204	$172	$131	$84	$51	$50	$58
8	Depreciation of TEFRA Adjustment	Sch.13 Ln. 6	$1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Book Depreciation after TEFRA Adjustment	Ln. 7 - Ln. 8	$350	$307	$297	$246	$203	$171	$131	$84	$51	$50	$58
10	Federal Tax Depreciation	Sch. 11	$284	$240	$199	$148	$96	$44	$42	$45	$49	$50	$53
11	Tax Effect of State Timing Differences	Ln. 5	$13	$14	($7)	($7)	($8)	($10)	($7)	($2)	$1	$1	($0)
12	Total Federal Tax Deductions	Ln. 10 - Ln.11	$271	$227	$206	$155	$104	$54	$48	$47	$48	$49	$53
13	Federal Tax Timing Differences	Ln.12 - Ln. 9	($79)	($81)	($91)	($91)	($99)	($117)	($82)	($37)	($3)	($1)	($5)
14	Federal Income Tax Rate	IRC	34.00%	34.00%	34.00%	35.00%	35.00%	35.00%	35.00%	35.00%	35.00%	35.00%	35.00%
15	Federal Tax Effect	Ln. 13 * Ln. 14	($27)	($27)	($31)	($32)	($35)	($41)	($29)	($13)	($1)	($0)	($2)
16	FASB 96/109 Adjustment	Cum. Ln 13 * Change in Ln 14	$0	$0	$0	($5)	$0	$0	$0	$0	$0	$0	$0
17	Amortization Basis for FASB 96/109 Adjustment	Lns(Prior 17 + 16 - Prior 18)	$71	$57	$47	$32	$26	$20	$16	$13	$12	$11	$10
18	Amortization of FASB 96/109 Adjustment	Ln.17*(Sch 14, Ln.8)	$14	$10	$10	$7	$5	$4	$3	$2	$1	$1	$1
19	Federal ADIT Balance	Prior Ln.19 + Ln.15 - Ln.18	$307	$269	$228	$190	$150	$105	$73	$59	$56	$55	$53
20	Total State And Federal ADIT Balances	Ln. 6 + Ln. 19	$348	$324	$276	$231	$183	$127	$89	$72	$71	$70	$68

Illustrative TEFRA Adjustment to ADIT
1977-2000: Carrier Inputs,
Except for Depreciation (millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
1	Tax Depreciation Basis before TEFRA Adjustment	Sch 10	$8,287	$116	$98	$127	$53	$64	$86	$52	$29	$20	$33	$10	$37
2	Tax Depreciation Basis Reduction	IRC	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	5.00%	5.00%	0.00%	0.00%	0.00%	0.00%
3	TEFRA Adjustment	Ln. 1 * Ln. 2	$0	$0	$0	$0	$0	$0	$4	$3	$1	$0	$0	$0	$0
4	TEFRA Adjustment Balance (BOY)	Ln. 3 + Prior Ln. 7	$0	$0	$0	$0	$0	$0	$4	$6	$7	$6	$5	$4	$3
5	Depreciation Factor	Sch 15 Ln.8	1.38%	6.31%	8.05%	9.79%	10.38%	11.72%	12.66%	13.95%	13.62%	14.85%	16.89%	18.44%	19.15%
6	Depreciation of TEFRA Adjustment	Ln. 4 * Ln. 5	$0	$0	$0	$0	$0	$0	$1	$1	$1	$1	$1	$1	$1
7	TEFRA Adjustment Balance (EOY)	Ln. 4 - Ln. 6	$0	$0	$0	$0	$0	$0	$4	$5	$6	$5	$4	$3	$3

Illustrative TEFRA Adjustment to ADIT
1977-2000: Carrier Inputs,
Except for Depreciation (millions $)

Line No.	Description	Source	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
1	Tax Depreciation Basis before TEFRA Adjustment	Sch 10	$82	$205	$71	$47	$44	$37	$29	$109	$22	$47	$59
2	Tax Depreciation Basis Reduction	IRC	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3	TEFRA Adjustment	Ln. 1 * Ln. 2	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	TEFRA Adjustment Balance (BOY)	Ln. 3 + Prior Ln. 7	$3	$2	$2	$1	$1	$1	$1	$1	$1	$0	$0
5	Depreciation Factor	Sch 15 Ln.8	19.18%	18.23%	20.49%	20.52%	20.39%	20.65%	17.29%	11.45%	7.60%	7.50%	8.51%
6	Depreciation of TEFRA Adjustment	Ln. 4 * Ln. 5	$1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	TEFRA Adjustment Balance (EOY)	Ln. 4 - Ln. 6	$2	$2	$1	$1	$1	$1	$1	$1	$0	$0	$0

Illustrative DOC Rate Base, 1977-2000
(millions $)

All Carrier Inputs Except Depreciation

Line No.	Description	Source	Starting Balances	1977	1978	1979	1980	1981	1982
1	Gross Carrier Property - BOY	Prior Ln. 8	$7,741	$10,303	$10,482	$10,654	$10,746	$10,875	$10,942
2	Gross Property Additions, New Construction E	Sch 16, Ln. 3		$1,422	$98	$100	$106	$49	$65
3	Less Additions to Capitalized Interest	Sch 16, [Ln. 10 - Prior Ln. 10]		$1,216	$0	$0	$0	($0)	$0
4	Gross Property Additions, Net IDC	Ln. 2 - Ln. 3		$206	$98	$100	$106	$50	$65
5	Acquisitions of Carrier Property in Service	Sch 16, Ln. 4		$0	$0	$0	$170	$0	$0
6	Retirements of CPIS	Sch 16, Ln. 5		($29)	($7)	($12)	($165)	($2)	($12)
7	Adjustments to CPIS	Sch 16, Ln. 6		($0)	$65	($4)	$1	($1)	($13)
8	Equity AFUDC Additions	Sch 9, Ln. 3	$2,165	$2	$12	$6	$14	$17	$17
9	Debt AFUDC Additions	Sch 9, Ln. 9	$398	$1	$4	$2	$3	$4	$4
10	Gross Carrier Property - EOY	Lns (1+4+5+6+7+8+9)	$10,303	$10,482	$10,654	$10,746	$10,875	$10,942	$11,003
11	Accumulated Depreciation	Sch 6, Ln. 6		$108	$602	$1,197	$1,838	$2,505	$3,173
12	Accumulated Equity AFUDC Amortization	Sch 9 Ln. 7		$30	$166	$328	$511	$688	$869
13	Accumulated Debt AFUDC Amortization	Sch 9 Ln. 13		$5	$31	$61	$94	$127	$161
14	CWIP Balance - EOY	Sch 16, Ln. 8		$42	$24	$28	$29	$29	$33
15	Net Carrier Property	Lns (10 -11-12-13-14)	$10,303	$10,296	$9,832	$9,132	$8,402	$7,592	$6,767
16	Working Capital	Schedule 16, Ln. 11		$57	$29	$36	$34	$39	$39
17	ADIT	Sch 12 Ln. 20		$190	$360	$436	$446	$453	$462
18	Rate Base	Lns (15+16-17)	$10,303	$10,164	$9,501	$8,732	$7,990	$7,179	$6,344
19	Average Rate Base	(Ln.18+Prior Ln.18)/2.0		$10,233	$9,832	$9,117	$8,361	$7,584	$6,761

Illustrative DOC Rate Base, 1977-2000
(millions $)

All Carrier Inputs Except Depreciation

Line No.	Description	Source	1983	1984	1985	1986	1987	1988	1989
1	Gross Carrier Property - BOY	Prior Ln. 8	$11,003	$11,059	$11,088	$11,102	$11,121	$11,137	$11,142
2	Gross Property Additions, New Construction E	Sch 16, Ln. 3	$70	$38	$26	$21	$32	$17	$48
3	Less Additions to Capitalized Interest	Sch 16, [Ln. 10 - Prior Ln. 10]	$0	($1)	($0)	($0)	($0)	($0)	($0)
4	Gross Property Additions, Net IDC	Ln. 2 - Ln. 3	$70	$39	$26	$21	$32	$17	$48
5	Acquisitions of Carrier Property in Service	Sch 16, Ln. 4	$0	$0	$0	$0	$0	$0	$0
6	Retirements of CPIS	Sch 16, Ln. 5	($24)	($13)	($14)	($3)	($17)	($13)	($5)
7	Adjustments to CPIS	Sch 16, Ln. 6	($4)	($4)	$0	$0	$0	$0	($0)
8	Equity AFUDC Additions	Sch 9, Ln. 3	$12	$7	$1	$1	$1	$0	$1
9	Debt AFUDC Additions	Sch 9, Ln. 9	$2	$1	$0	$0	$0	$0	$0
10	Gross Carrier Property - EOY	Lns (1+4+5+6+7+8+9)	$11,059	$11,088	$11,102	$11,121	$11,137	$11,142	$11,186
11	Accumulated Depreciation	Sch 6, Ln. 6	$3,811	$4,441	$4,970	$5,482	$5,969	$6,415	$6,806
12	Accumulated Equity AFUDC Amortization	Sch 9 Ln. 7	$1,043	$1,212	$1,353	$1,487	$1,616	$1,734	$1,834
13	Accumulated Debt AFUDC Amortization	Sch 9 Ln. 13	$193	$225	$251	$276	$300	$322	$340
14	CWIP Balance - EOY	Sch 16, Ln. 8	$15	$4	$1	$2	$2	$9	$20
15	Net Carrier Property	Lns (10 -11-12-13-14)	$5,996	$5,207	$4,526	$3,874	$3,251	$2,663	$2,187
16	Working Capital	Schedule 16, Ln. 11	$29	$33	$34	$29	$33	$36	$36
17	ADIT	Sch 12 Ln. 20	$463	$453	$473	$477	$450	$410	$375
18	Rate Base	Lns (15+16-17)	$5,562	$4,786	$4,087	$3,425	$2,834	$2,289	$1,848
19	Average Rate Base	(Ln.18+Prior Ln.18)/2.0	$5,953	$5,174	$4,437	$3,756	$3,130	$2,562	$2,068

Illustrative DOC Rate Base, 1977-2000
(millions $)

All Carrier Inputs Except Depreciation

Line No.	Description	Source	1990	1991	1992	1993	1994	1995
1	Gross Carrier Property - BOY	Prior Ln. 8	$11,186	$11,341	$11,442	$11,506	$11,536	$11,581
2	Gross Property Additions, New Construction E	Sch 16, Ln. 3	$156	$141	$71	$36	$51	$56
3	Less Additions to Capitalized Interest	Sch 16, [Ln. 10 - Prior Ln. 10]	($0)	($0)	($0)	($0)	($0)	($0)
4	Gross Property Additions, Net IDC	Ln. 2 - Ln. 3	$156	$141	$71	$36	$51	$56
5	Acquisitions of Carrier Property in Service	Sch 16, Ln. 4	$0	$0	$0	$0	$0	$0
6	Retirements of CPIS	Sch 16, Ln. 5	($4)	($53)	($16)	($11)	($10)	($4)
7	Adjustments to CPIS	Sch 16, Ln. 6	$0	($0)	$0	($0)	$0	$0
8	Equity AFUDC Additions	Sch 9, Ln. 3	$3	$10	$7	$4	$4	$3
9	Debt AFUDC Additions	Sch 9, Ln. 9	$1	$2	$2	$1	$1	$1
10	Gross Carrier Property - EOY	Lns (1+4+5+6+7+8+9)	$11,341	$11,442	$11,506	$11,536	$11,581	$11,638
11	Accumulated Depreciation	Sch 6, Ln. 6	$7,138	$7,375	$7,646	$7,872	$8,058	$8,220
12	Accumulated Equity AFUDC Amortization	Sch 9 Ln. 7	$1,915	$1,980	$2,040	$2,090	$2,129	$2,162
13	Accumulated Debt AFUDC Amortization	Sch 9 Ln. 13	$355	$367	$379	$388	$396	$402
14	CWIP Balance - EOY	Sch 16, Ln. 8	$94	$32	$34	$24	$31	$51
15	Net Carrier Property	Lns (10 -11-12-13-14)	$1,839	$1,687	$1,407	$1,162	$968	$803
16	Working Capital	Schedule 16, Ln. 11	$39	$59	$54	$44	$43	$34
17	ADIT	Sch 12 Ln. 20	$348	$324	$276	$231	$183	$127
18	Rate Base	Lns (15+16-17)	$1,530	$1,422	$1,185	$976	$828	$710
19	Average Rate Base	(Ln.18+Prior Ln.18)/2.0	$1,689	$1,476	$1,304	$1,081	$902	$769

Illustrative DOC Rate Base, 1977-2000
(millions $)

All Carrier Inputs Except Depreciation

Line No.	Description	Source	1996	1997	1998	1999	2000
1	Gross Carrier Property - BOY	Prior Ln. 8	$11,638	$11,668	$11,744	$11,772	$11,829
2	Gross Property Additions, New Construction E	Sch 16, Ln. 3	$52	$61	$30	$95	$45
3	Less Additions to Capitalized Interest	Sch 16, [Ln. 10 - Prior Ln. 10]	($9)	($0)	($0)	($0)	$0
4	Gross Property Additions, Net IDC	Ln. 2 - Ln. 3	$61	$61	$30	$95	$45
5	Acquisitions of Carrier Property in Service	Sch 16, Ln. 4	$81	$0	$0	$0	$0
6	Retirements of CPIS	Sch 16, Ln. 5	($116)	($3)	($6)	($47)	($1)
7	Adjustments to CPIS	Sch 16, Ln. 6	$0	($0)	($0)	($0)	$0
8	Equity AFUDC Additions	Sch 9, Ln. 3	$3	$15	$4	$7	$9
9	Debt AFUDC Additions	Sch 9, Ln. 9	$1	$3	$1	$1	$1
10	Gross Carrier Property - EOY	Lns (1+4+5+6+7+8+9)	$11,668	$11,744	$11,772	$11,829	$11,883
11	Accumulated Depreciation	Sch 6, Ln. 6	$8,252	$8,331	$8,374	$8,420	$8,469
12	Accumulated Equity AFUDC Amortization	Sch 9 Ln. 7	$2,184	$2,198	$2,206	$2,214	$2,224
13	Accumulated Debt AFUDC Amortization	Sch 9 Ln. 13	$406	$409	$410	$412	$414
14	CWIP Balance - EOY	Sch 16, Ln. 8	$74	$30	$39	$43	$30
15	Net Carrier Property	Lns (10 -11-12-13-14)	$752	$777	$743	$739	$746
16	Working Capital	Schedule 16, Ln. 11	$36	$44	$43	$47	$24
17	ADIT	Sch 12 Ln. 20	$89	$72	$71	$70	$68
18	Rate Base	Lns (15+16-17)	$699	$749	$715	$717	$702
19	Average Rate Base	(Ln.18+Prior Ln.18)/2.0	$705	$724	$732	$716	$709

Illustrative Amortization Rates, 1977-2000
(percentages)

All Carrier Inputs Except Depreciation

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
1	Grand Total, Carrier Property - EOY	Sch 16 Ln. 9	$9,133	$9,289	$9,373	$9,486	$9,531	$9,572	$9,613	$9,634	$9,646	$9,665	$9,680
2	Land - EOY	Sch 16 Ln. 7	$17	$17	$17	$17	$17	$17	$17	$17	$17	$17	$17
3	CWIP - EOY	Sch 16 Ln. 8	$42	$24	$28	$29	$29	$33	$15	$4	$1	$2	$2
4	Capitalized Interest - EOY	Sch 16 Ln. 10	$1,216	$1,216	$1,216	$1,216	$1,215	$1,215	$1,215	$1,214	$1,214	$1,214	$1,214
5	Gross Depreciable Property, Less Capitalized Interest, EOY	Ln 1 - Lns(2 + 3 + 4)	$7,859	$8,033	$8,113	$8,224	$8,270	$8,306	$8,366	$8,399	$8,414	$8,431	$8,447
6	Appropriate Depreciation Expense	Sch 6 Ln. 3	$108	$501	$605	$693	$668	$682	$660	$642	$543	$515	$504
7	Appropriate Accumulated Depreciation	Sch 6 Ln. 6	$108	$602	$1,197	$1,838	$2,505	$3,173	$3,811	$4,441	$4,970	$5,482	$5,969
8	Amortization Rate - Net Basis	Ln. 6/Lns. (5 + 6 - 7)	1.38%	6.31%	8.05%	9.79%	10.38%	11.72%	12.66%	13.95%	13.62%	14.85%	16.89%

Illustrative Amortization Rates, 1977-2000
(percentages)

All Carrier Inputs Except Depreciation

Line No.	Description	Source	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
1	Grand Total, Carrier Property - EOY	Sch 16 Ln. 9	$9,684	$9,726	$9,878	$9,965	$10,020	$10,045	$10,086	$10,139	$10,156	$10,214	$10,238
2	Land - EOY	Sch 16 Ln. 7	$17	$17	$18	$18	$18	$18	$19	$19	$19	$19	$19
3	CWIP - EOY	Sch 16 Ln. 8	$9	$20	$94	$32	$34	$24	$31	$51	$74	$30	$39
4	Capitalized Interest - EOY	Sch 16 Ln. 10	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,205	$1,205	$1,205
5	Gross Depreciable Property, Less Capitalized Interest, EOY	Ln 1 - Lns(2 + 3 + 4)	$8,444	$8,475	$8,552	$8,701	$8,755	$8,790	$8,823	$8,856	$8,859	$8,961	$8,976
6	Appropriate Depreciation Expense	Sch 6 Ln. 3	$459	$395	$336	$296	$286	$237	$196	$165	$127	$82	$50
7	Appropriate Accumulated Depreciation	Sch 6 Ln. 6	$6,415	$6,806	$7,138	$7,375	$7,646	$7,872	$8,058	$8,220	$8,252	$8,331	$8,374
8	Amortization Rate - Net Basis	Ln. 6/Lns. (5 + 6 - 7)	18.44%	19.15%	19.18%	18.23%	20.49%	20.52%	20.39%	20.65%	17.29%	11.45%	7.60%

Illustrative Amortization Rates, 1977-2000
(percentages)

All Carrier Inputs Except Depreciation

Line No.	Description	Source	1999	2000
1	Grand Total, Carrier Property - EOY	Sch 16 Ln. 9	$10,286	$10,330
2	Land - EOY	Sch 16 Ln. 7	$19	$19
3	CWIP - EOY	Sch 16 Ln. 8	$43	$30
4	Capitalized Interest - EOY	Sch 16 Ln. 10	$1,205	$1,205
5	Gross Depreciable Property, Less Capitalized Interest, EOY	Ln 1 - Lns(2 + 3 + 4)	$9,019	$9,076
6	Appropriate Depreciation Expense	Sch 6 Ln. 3	$49	$56
7	Appropriate Accumulated Depreciation	Sch 6 Ln. 6	$8,420	$8,469
8	Amortization Rate - Net Basis	Ln. 6/Lns. (5 + 6 - 7)	7.50%	8.51%

Illustrative Carrier Property Balances, 1977-2000
(millions $)

All Carrier Inputs Except Depreciation

Line No.	Description[1]	Starting Balance	1977	1978	1979	1980	1981	1982	1983	1984
1	Land - New Construction Exp.		$17	$0	$0	$0	$0	$0	$0	$0
2	CWIP - New Construction Exp.		$42	($14)	$3	($17)	($0)	$5	($14)	($13)
3	Grand Total - New Construction E:	$7,741	$1,422	$98	$100	$106	$49	$65	$70	$38
4	Grand Total - Acquired Property		$0	$0	$0	$170	$0	$0	$0	$0
5	Grand Total - Credits for Retirements		($29)	($7)	($12)	($165)	($2)	($12)	($24)	($13)
6	Grand Total - Other Adjustments		($0)	$65	($4)	$1	($1)	($13)	($4)	($4)
7	Land - EOY Balance		$17	$17	$17	$17	$17	$17	$17	$17
8	CWIP - EOY Balance		$42	$24	$28	$29	$29	$33	$15	$4
9	Grand Total - EOY Balance		$9,133	$9,289	$9,373	$9,486	$9,531	$9,572	$9,613	$9,634
10	Capitalized Interest - EOY Balance	$1,216	$1,216	$1,216	$1,216	$1,216	$1,215	$1,215	$1,215	$1,214
11	Workign Capital		$57.24	$29.20	$36.01	$34.18	$39.23	$38.95	$28.69	$32.58
12	Operting Expenses		$242	$450	$396	$456	$466	$468	$456	$441

[1]All inputs from 143-RGV-C,
TAPS-RGV WP3, Schedules 12 & 13

Illustrative Carrier Property Balances, 1977-2000
(millions $)

All Carrier Inputs Except Depreciation

Line No.	Description[1]	1985	1986	1987	1988	1989	1990	1991	1992	1993
1	Land - New Construction Exp.	$0	$0	$0	$0	$0	$1	$0	$0	$0
2	CWIP - New Construction Exp.	($3)	$1	($1)	$7	$11	$74	($62)	$1	($10)
3	Grand Total - New Construction E:	$26	$21	$32	$17	$48	$156	$141	$71	$36
4	Grand Total - Acquired Property	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Grand Total - Credits for Retiremer	($14)	($3)	($17)	($13)	($5)	($4)	($53)	($16)	($11)
6	Grand Total - Other Adjustments	$0	$0	$0	$0	($0)	$0	($0)	$0	($0)
7	Land - EOY Balance	$17	$17	$17	$17	$17	$18	$18	$18	$18
8	CWIP - EOY Balance	$1	$2	$2	$9	$20	$94	$32	$34	$24
9	Grand Total - EOY Balance	$9,646	$9,665	$9,680	$9,684	$9,726	$9,878	$9,965	$10,020	$10,045
10	Capitalized Interest - EOY Balance	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214
11	Workign Capital	$33.68	$28.58	$33.33	$36.15	$36.24	$39.01	$58.84	$54.30	$44.19
12	Operting Expenses	$462	$438	$411	$449	$582	$710	$658	$717	$753

[1]All inputs from 143-RGV-C,
TAPS-RGV WP3, Schedules 12 & 13

Illustrative Carrier Property Balances, 1977-2000
(millions $)

All Carrier Inputs Except Depreciation

Line No.	Description[1]	1994	1995	1996	1997	1998	1999	2000
1	Land - New Construction Exp.	$1	$0	$0	$0	$0	$0	$0
2	CWIP - New Construction Exp.	$7	$20	$23	($44)	$9	$49	($13)
3	Grand Total - New Construction E:	$51	$56	$52	$61	$30	$95	$45
4	Grand Total - Acquired Property	$0	$0	$81	$0	$0	$0	$0
5	Grand Total - Credits for Retiremer	($10)	($4)	($116)	($3)	($6)	($47)	($1)
6	Grand Total - Other Adjustments	$0	$0	$0	($0)	($0)	($0)	$0
7	Land - EOY Balance	$19	$19	$19	$19	$19	$19	$19
8	CWIP - EOY Balance	$31	$51	$74	$30	$39	$43	$30
9	Grand Total - EOY Balance	$10,086	$10,139	$10,156	$10,214	$10,238	$10,286	$10,330
10	Capitalized Interest - EOY Balance	$1,214	$1,214	$1,205	$1,205	$1,205	$1,205	$1,205
11	Workign Capital	$43.05	$34.49	$36.42	$43.96	$43.06	$47.45	$23.80
12	Operting Expenses	$889	$668	$601	$604	$566	$568	$444

[1]All inputs from 143-RGV-C,
TAPS-RGV WP3, Schedules 12 & 13

Explanatory Note to Exhibit 4

The rationale for a comparative revenue requirement analysis is developed in Part V.

Lines 9 and 10 on Schedule 1 show that, even when measured against a straight-line DOC (but with appropriate capital structure and rate of return), the Carriers have had the opportunity to recover more than $9 and $20 billion (measured in nominal and 1997 dollars, respectively) in excess of the costs of providing service. The critical element to this calculation -- the straight-line DOC revenue requirement -- is reported at Line 1 of Schedule 1. TSM's revenue requirement is reduced by the amount of TSM DR&R to permit an "apples to apples" assessment of filed rates. We evaluate the comparative revenue requirements in 1997 present value dollars, rather than 1977 dollars, because the Carriers' opportunity at investment recovery is at issue, and such investment will be recovered in current rather than historical dollars.

The straight-line DOC revenue requirement is calculated at Schedule 2. The depreciation amounts are taken from Schedule 5, and reflect the Carriers' sponsored depreciation figures.[1] AFUDC is calculated in Schedule 6, as per the discussion in Part IV.B.5, and is amortized according to Schedule 7, consistent with the net depreciation factors being modeled. Return on rate base is calculated in Schedule 3, where the rate base is developed in Schedule 8. Rate base reflects adjustments for ADIT, calculated in Schedule 11 as per the discussion in Part IV.D. Income taxes are calculated (see Schedule 4) according to maximum statutory rates; see Part V.A.3 for discussion.

143-RGV-C, RGV-14 WP 3, TAPS-RGV WP3.xls, Schedule 2.

[1] Exhibit ~~134-RGV-C, TAPS-RGV WP3.xls, Schedule 2.~~

Illustrative Annual and Cumulative Regulatorily Enforced Return Deficiency
(millions $)

Appropriate ROR and Capital Structure, Carriers' Inputs Otherwise

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983
1	Straight-Line DOC Revenue Requirement	Schedule 2, Ln. 6	$2,355	$2,860	$2,718	$2,847	$2,976	$2,683	$2,324
2	TSM RR	31-BWF-E; 30-BWF-E: Line 125[1]	$860	$2,480	$2,654	$3,081	$3,354	$3,548	$3,524
3	TSM DR&R Charges	29-ABJ-W: Horst Testimony	$24	$96	$113	$127	$120	$121	$116
4	TSM Revenue Requirement, Less DR&R	Lns. 2 - 3	$836	$2,384	$2,541	$2,954	$3,234	$3,427	$3,408
5	Regulatorily Enforced Return Deficiency	Ln. 4 - Ln. 1	($1,519)	($476)	($177)	$107	$258	$743	$1,084
6	Weighted Rate of Return plus Unity	1 + (Schedule 3 Ln. 1)	1.1174	1.1219	1.1263	1.1367	1.1515	1.1498	1.1331
7	Present Value (1997) Factor	Product(Line 6, this year to 1996)	11.2640	10.0806	8.9853	7.9777	7.0183	6.0949	5.3008
8	Regulatory Deficiency (Present Value 1997$)	Ln. 5 * Ln. 7	($17,105)	($4,803)	($1,587)	$852	$1,812	$4,530	$5,746
9	Cumulative Sum, Return Deficiency	Sum(Ln. 5, 1977 to this year)	($1,519)	($1,995)	($2,172)	($2,065)	($1,807)	($1,063)	$21
10	Cumulative Sum, Return Deficiency, 1997 $	Sum(Ln. 8, 1977 to this year)	($17,105)	($21,908)	($23,495)	($22,643)	($20,830)	($16,300)	($10,554)

Illustrative Annual and Cumulative Regulatorily Enforced Return Deficiency
(millions $)

Appropriate ROR and Capital Structure, Carriers' Inputs Otherwise

Line No.	Description	Source	1984	1985	1986	1987	1988	1989	1990
1	Straight-Line DOC Revenue Requirement	Schedule 2, Ln. 6	$2,287	$2,124	$1,918	$1,700	$1,599	$1,675	$1,769
2	TSM RR	31-BWF-E; 30-BWF-E: Line 125[1]	$3,388	$3,245	$3,101	$2,739	$2,413	$2,312	$2,354
3	TSM DR&R Charges	29-ABJ-W: Horst Testimony	$110	$104	$98	$95	$85	$73	$61
4	TSM Revenue Requirement, Less DR&R	Lns. 2 - 3	$3,277	$3,141	$3,003	$2,644	$2,328	$2,239	$2,293
5	Regulatorily Enforced Return Deficiency	Ln. 4 - Ln. 1	$991	$1,018	$1,085	$944	$729	$564	$524
6	Weighted Rate of Return plus Unity	1 + (Schedule 3 Ln. 1)	1.1394	1.1329	1.1264	1.1263	1.1284	1.1274	1.1288
7	Present Value (1997) Factor	Product(Line 6, this year to 1996)	4.6782	4.1058	3.6242	3.2175	2.8567	2.5316	2.2455
8	Regulatory Deficiency (Present Value 1997$)	Ln. 5 * Ln. 7	$4,634	$4,178	$3,931	$3,037	$2,084	$1,428	$1,177
9	Cumulative Sum, Return Deficiency	Sum(Ln. 5, 1977 to this year)	$1,011	$2,029	$3,113	$4,057	$4,787	$5,351	$5,875
10	Cumulative Sum, Return Deficiency, 1997 $	Sum(Ln. 8, 1977 to this year)	($5,920)	($1,742)	$2,189	$5,225	$7,309	$8,737	$9,915

Illustrative Annual and Cumulative Regulatorily Enforced Return Deficiency
(millions $)

Appropriate ROR and Capital Structure, Carriers' Inputs Otherwise

Line No.	Description	Source	1991	1992	1993	1994	1995	1996
1	Straight-Line DOC Revenue Requirement	Schedule 2, Ln. 6	$1,694	$1,728	$1,692	$1,808	$1,556	$1,439
2	TSM RR	31-BWF-E; 30-BWF-E: Line 125[1]	$2,220	$2,151	$2,046	$2,057	$1,722	$1,514
3	TSM DR&R Charges	29-ABJ-W: Horst Testimony	$50	$40	$31	$24	$19	$14
4	TSM Revenue Requirement, Less DR&R	Lns. 2 - 3	$2,169	$2,111	$2,015	$2,033	$1,703	$1,501
5	Regulatorily Enforced Return Deficiency	Ln. 4 - Ln. 1	$475	$383	$323	$225	$147	$61
6	Weighted Rate of Return plus Unity	1 + (Schedule 3 Ln. 1)	1.1275	1.1252	1.1168	1.1207	1.1208	1.1178
7	Present Value (1997) Factor	Product(Line 6, this year to 1996)	1.9893	1.7644	1.5680	1.4040	1.2528	1.1178
8	Regulatory Deficiency (Present Value 1997$)	Ln. 5 * Ln. 7	$945	$676	$506	$316	$184	$69
9	Cumulative Sum, Return Deficiency	Sum(Ln. 5, 1977 to this year)	$6,350	$6,733	$7,056	$7,281	$7,427	$7,489
10	Cumulative Sum, Return Deficiency, 1997 $	Sum(Ln. 8, 1977 to this year)	$10,859	$11,535	$12,041	$12,357	$12,541	$12,609

Illustrative Annual Cost of Service, 1977-1996
(millions $)

Appropriate RR and Capital Structure, Carriers' Inputs Otherwise

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984
1	Operating Expenses Excluding Depreciation and DR&R	Schedule 14, Ln. 12	$242	$450	$396	$456	$466	$468	$456	$441
2	Depreciation Expense	Schedule 5 Ln. 18	$134	$324	$327	$331	$333	$238	$242	$243
3	Amortization of AFUDC	Schedule 7, Lns. 14	$33	$78	$78	$78	$79	$56	$57	$57
4	Return on Rate Base	Schedule 3 Ln 3	$1,126	$1,129	$1,104	$1,126	$1,171	$1,083	$900	$879
5	Income Tax Allowance	Schedule 4 Ln. 16	$820	$878	$814	$856	$927	$839	$669	$667
6	Total Cost of Service	Sum Lines 1 to 5	$2,355	$2,860	$2,718	$2,847	$2,976	$2,683	$2,324	$2,287

Illustrative Annual Cost of Service, 1977-1996
(millions $)

Appropriate RR and Capital Structure, Carriers' Inputs Otherwise

Line No.	Description	Source	1985	1986	1987	1988	1989	1990	1991	1992
1	Operating Expenses Excluding Depreciation and DR&R	Schedule 14, Ln. 12	$462	$438	$411	$449	$582	$710	$658	$717
2	Depreciation Expense	Schedule 5 Ln. 18	$245	$238	$241	$238	$245	$249	$261	$273
3	Amortization of AFUDC	Schedule 7, Lns. 14	$58	$56	$56	$56	$57	$57	$58	$60
4	Return on Rate Base	Schedule 3 Ln 3	$778	$684	$633	$600	$555	$528	$505	$479
5	Income Tax Allowance	Schedule 4 Ln. 16	$582	$503	$359	$256	$236	$224	$212	$199
6	Total Cost of Service	Sum Lines 1 to 5	$2,124	$1,918	$1,700	$1,599	$1,675	$1,769	$1,694	$1,728

Illustrative Annual Cost of Service, 1977-1996
(millions $)

Appropriate RR and
Capital Structure,
Carriers' Inputs Otherwise

Line No.	Description	Source	1993	1994	1995	1996
1	Operating Expenses Excluding Depreciation and DR&R	Schedule 14, Ln. 12	$753	$889	$668	$601
2	Depreciation Expense	Schedule 5 Ln. 18	$278	$273	$274	$267
3	Amortization of AFUDC	Schedule 7, Lns. 14	$61	$59	$59	$57
4	Return on Rate Base	Schedule 3 Ln 3	$421	$410	$387	$359
5	Income Tax Allowance	Schedule 4 Ln. 16	$179	$177	$168	$155
6	Total Cost of Service	Sum Lines 1 to 5	$1,692	$1,808	$1,556	$1,439

Illustrative Return on Rate Base, 1977-1996
(millions)

Appropriate ROR and
Capital Structure,
Carrier Inputs Otherwise

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
1	Weighted Rate of Return	Exhibit 2	11.74%	12.19%	12.63%	13.67%	15.15%	14.98%	13.31%	13.94%	13.29%	12.64%	12.63%	12.84%
2	Average Rate Base	Sch. 8 Ln. 19	$9,590	$9,261	$8,740	$8,236	$7,732	$7,228	$6,762	$6,306	$5,852	$5,410	$5,015	$4,669
3	Total Return on Rate Base	Ln.1 * Ln.2	$1,126	$1,129	$1,104	$1,126	$1,171	$1,083	$900	$879	$778	$684	$633	$600
4	Debt Capital Structure	Exhibit 11, col e	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%
5	Cost of Debt	Exhibit 15, Sch. 3, col l	8.86%	8.88%	8.90%	8.98%	9.01%	9.03%	9.08%	9.13%	9.16%	9.17%	9.19%	9.20%
6	Debt Portion of Weighted Rate of Return	Ln.4 * Ln.5	4.39%	4.40%	4.41%	4.45%	4.46%	4.47%	4.49%	4.52%	4.53%	4.54%	4.55%	4.55%
7	Interest Expense	Ln.2 * Ln.6	$421	$407	$385	$366	$345	$323	$304	$285	$265	$246	$228	$213
8	Equity Portion of Weighted Rate of Return	Ln.1 - Ln.6	7.35%	7.79%	8.22%	9.22%	10.69%	10.51%	8.82%	9.42%	8.76%	8.10%	8.08%	8.29%
9	Return on Equity	Ln.2 * Ln.8	$705	$722	$719	$760	$827	$760	$596	$594	$512	$438	$405	$387

Illustrative Return on Rate Base, 1977-1996
(millions)

Appropriate ROR and
Capital Structure,
Carrier Inputs Otherwise

Line No.	Description	Source	1989	1990	1991	1992	1993	1994	1995	1996
1	Weighted Rate of Return	Exhibit 2	12.74%	12.88%	12.75%	12.52%	11.68%	12.07%	12.08%	11.78%
2	Average Rate Base	Sch. 8 Ln. 19	$4,357	$4,101	$3,958	$3,823	$3,606	$3,396	$3,206	$3,047
3	Total Return on Rate Base	Ln.1 * Ln.2	$555	$528	$505	$479	$421	$410	$387	$359
4	Debt Capital Structure	Exhibit 11, col e	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%
5	Cost of Debt	Exhibit 15, Sch. 3, col l	9.23%	9.35%	9.37%	9.37%	9.30%	9.41%	9.38%	9.24%
6	Debt Portion of Weighted Rate of Return	Ln.4 * Ln.5	4.57%	4.63%	4.64%	4.64%	4.60%	4.66%	4.64%	4.57%
7	Interest Expense	Ln.2 * Ln.6	$199	$190	$184	$177	$166	$158	$149	$139
8	Equity Portion of Weighted Rate of Return	Ln.1 - Ln.6	8.17%	8.25%	8.11%	7.88%	7.08%	7.41%	7.44%	7.21%
9	Return on Equity	Ln.2 * Ln.8	$356	$338	$321	$301	$255	$252	$238	$220

Illustrative Income Tax Allowance, 1977-1996
(millions $)

Appropriate ROR and
Capital Structure,
Carrier Inputs Otherwise

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983
1	Total Return on Rate Base	Schedule 3, Ln. 3	$1,126	$1,129	$1,104	$1,126	$1,171	$1,083	$900
2	Interest Expense	Schedule 3, Ln. 7	$421	$407	$385	$366	$345	$323	$304
3	Equity Portion of Return on Rate Base	Ln. 1 - Ln. 2	$705	$722	$719	$760	$827	$760	$596
	Permanent Differences - Federal Income Tax:								
4	Amortization of Equity AFUDC	Schedule 7, Ln. 4	$25	$61	$60	$61	$61	$44	$44
5	Amortization of TEFRA Adjustment	Schedule 12, Ln. 6	$0	$0	$0	$0	$0	$0	$0
6	Amortization of Deferred Tax Adjustments	Schedule 11 Ln. 18	$0	$0	$0	$0	$0	$0	$0
7	Subtotal for Federal Income Tax Allowance	Lns (3 + 4 + 5 - 6)	$731	$782	$779	$820	$888	$803	$641
8	Federal Income Tax Rate	RGV-143-C	48.00%	48.00%	46.00%	46.00%	46.00%	46.00%	46.00%
9	Net-to-Tax Multiplier - Federal Income Tax	IRC	92.31%	92.31%	85.19%	85.19%	85.19%	85.19%	85.19%
10	Federal Income Tax Allowance	Ln. 7 * Ln. 9 - Ln. 6	$674	$722	$664	$699	$756	$684	$546
	Permanent Differences - State Income Tax:								
11	Amortization of Equity AFUDC	Schedule 7, Ln. 4	$25	$61	$60	$61	$61	$44	$44
12	Subtotal for State Income Tax Allowance	Lns (3 + 10 + 11)	$1,405	$1,505	$1,443	$1,519	$1,644	$1,488	$1,186
13	Federal Income Tax Rate	RGV-143-C	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%
14	Net-to-Tax Multiplier - State Income Tax	AK Stat.	10.38%	10.38%	10.38%	10.38%	10.38%	10.38%	10.38%
15	State Income Tax Allowance	Ln. 12 * Ln. 14	$146	$156	$150	$158	$171	$154	$123
16	Total Income Tax Allowance	Ln. 10 + Ln. 15	$820	$878	$814	$856	$927	$839	$669

Illustrative Income Tax Allowance, 1977-1996
(millions $)

Appropriate ROR and
Capital Structure,
Carrier Inputs Otherwise

Line No.	Description	Source	1984	1985	1986	1987	1988	1989	1990
1	Total Return on Rate Base	Schedule 3, Ln. 3	$879	$778	$684	$633	$600	$555	$528
2	Interest Expense	Schedule 3, Ln. 7	$285	$265	$246	$228	$213	$199	$190
3	Equity Portion of Return on Rate Base	Ln. 1 - Ln. 2	$594	$512	$438	$405	$387	$356	$338
	Permanent Differences - Federal Income Tax:								
4	Amortization of Equity AFUDC	Schedule 7, Ln. 4	$44	$44	$43	$43	$43	$44	$44
5	Amortization of TEFRA Adjustment	Schedule 12, Ln. 6	$0	$0	$0	$0	$0	$0	$0
6	Amortization of Deferred Tax Adjustments	Schedule 11 Ln. 18	$0	$0	$0	$10	$20	$20	$20
7	Subtotal for Federal Income Tax Allowance	Lns (3 + 4 + 5 - 6)	$639	$557	$482	$439	$410	$380	$363
8	Federal Income Tax Rate	RGV-143-C	46.00%	46.00%	46.00%	39.95%	34.00%	34.00%	34.00%
9	Net-to-Tax Multiplier - Federal Income Tax	IRC	85.19%	85.19%	85.19%	66.53%	51.52%	51.52%	51.52%
10	Federal Income Tax Allowance	Ln. 7 * Ln. 9 - Ln. 6	$544	$475	$410	$283	$192	$176	$167
	Permanent Differences - State Income Tax:								
11	Amortization of Equity AFUDC	Schedule 7, Ln. 4	$44	$44	$43	$43	$43	$44	$44
12	Subtotal for State Income Tax Allowance	Lns (3 + 10 + 11)	$1,182	$1,031	$891	$731	$622	$576	$549
13	Federal Income Tax Rate	RGV-143-C	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%
14	Net-to-Tax Multiplier - State Income Tax	AK Stat.	10.38%	10.38%	10.38%	10.38%	10.38%	10.38%	10.38%
15	State Income Tax Allowance	Ln. 12 * Ln. 14	$123	$107	$92	$76	$64	$60	$57
16	Total Income Tax Allowance	Ln. 10 + Ln. 15	$667	$582	$503	$359	$256	$236	$224

Illustrative Income Tax Allowance, 1977-1996
(millions $)

Appropriate ROR and
Capital Structure,
Carrier Inputs Otherwise

Line No.	Description	Source	1991	1992	1993	1994	1995	1996
1	Total Return on Rate Base	Schedule 3, Ln. 3	$505	$479	$421	$410	$387	$359
2	Interest Expense	Schedule 3, Ln. 7	$184	$177	$166	$158	$149	$139
3	Equity Portion of Return on Rate Base	Ln. 1 - Ln. 2	$321	$301	$255	$252	$238	$220
	Permanent Differences - Federal Income Tax:							
4	Amortization of Equity AFUDC	Schedule 7, Ln. 4	$44	$46	$47	$46	$46	$44
5	Amortization of TEFRA Adjustment	Schedule 12, Ln. 6	$0	$0	$0	$0	$0	$0
6	Amortization of Deferred Tax Adjustments	Schedule 11 Ln. 18	$20	$21	$19	$18	$18	$17
7	Subtotal for Federal Income Tax Allowance	Lns (3 + 4 + 5 - 6)	$346	$327	$284	$280	$266	$246
8	Federal Income Tax Rate	RGV-143-C	34.00%	34.00%	35.00%	35.00%	35.00%	35.00%
9	Net-to-Tax Multiplier - Federal Income Tax	IRC	51.52%	51.52%	53.85%	53.85%	53.85%	53.85%
10	Federal Income Tax Allowance	Ln. 7 * Ln. 9 - Ln. 6	$158	$148	$134	$132	$125	$115
	Permanent Differences - State Income Tax:							
11	Amortization of Equity AFUDC	Schedule 7, Ln. 4	$44	$46	$47	$46	$46	$44
12	Subtotal for State Income Tax Allowance	Lns (3 + 10 + 11)	$524	$495	$436	$430	$409	$379
13	Federal Income Tax Rate	RGV-143-C	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%
14	Net-to-Tax Multiplier - State Income Tax	AK Stat.	10.38%	10.38%	10.38%	10.38%	10.38%	10.38%
15	State Income Tax Allowance	Ln. 12 * Ln. 14	$54	$51	$45	$45	$42	$39
16	Total Income Tax Allowance	Ln. 10 + Ln. 15	$212	$199	$179	$177	$168	$155

Illustrative Annual and Accumulated Depreciation, 1977-1996
(millions $)

Appropriate ROR and
Capital Structure,
Carriers' Inputs Otherwise

Line No	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984	1985
1	Depreciation, Net Capitalized Interest	RGV-143-C, TAPS-RGV WP3, Sch. 2, Ln. 17	$134	$324	$327	$331	$333	$238	$242	$243	$245
2	Retirements of Accumulated Depreciation	FERC Form 6, from 143-RGV-C, TAPS-RGV WP3	$0	($5)	($5)	($17)	($2)	($14)	($11)	($5)	($13)
3	Adjustments to Accumulated Depreciation	FERC Form 6, from 143-RGV-C, TAPS-RGV WP3	$0	$0	$1	$0	$1	$0	$0	$0	$0
4	Accumulated Depreciation	Lns(1+2+3+Prior 4)	$134	$453	$775	$1,089	$1,421	$1,645	$1,876	$2,114	$2,345

Illustrative Annual and Accumulated Depreciation, 1977-1996
(millions $)

Appropriate ROR and
Capital Structure,
Carriers' Inputs Otherwise

Line No	Description	Source	1986	1987	1988	1989	1990	1991	1992	1993	1994
1	Depreciation, Net Capitalized Interest	RGV-143-C, TAPS-RGV WP3, Sch. 2, Ln. 17	$238	$241	$238	$245	$249	$261	$273	$278	$273
2	Retirements of Accumulated Depreciation	FERC Form 6, from 143-RGV-C, TAPS-RGV WP3	($3)	($17)	($13)	($4)	($3)	($57)	($14)	($9)	($8)
3	Adjustments to Accumulated Depreciation	FERC Form 6, from 143-RGV-C, TAPS-RGV WP3	$0	$0	$0	$0	($0)	$0	$0	$0	$0
4	Accumulated Depreciation	Lns(1+2+3+Prior 4)	$2,580	$2,804	$3,029	$3,270	$3,516	$3,720	$3,979	$4,248	$4,513

Illustrative Annual and Accumulated Depreciation, 1977-1996
(millions $)

Appropriate ROR and
Capital Structure,
Carriers' Inputs Otherwise

Line No	Description	Source	1995	1996
1	Depreciation, Net Capitalized Interest	RGV-143-C, TAPS-RGV WP3, Sch. 2, Ln. 17	$274	$267
2	Retirements of Accumulated Depreciation	FERC Form 6, from 143-RGV-C, TAPS-RGV WP3	($3)	($89)
3	Adjustments to Accumulated Depreciation	FERC Form 6, from 143-RGV-C, TAPS-RGV WP3	($0)	$19
4	Accumulated Depreciation	Lns(1+2+3+Prior 4)	$4,784	$4,982

Illustrative AFUDC, 1977-1996
(millions $)

Appropriate ROR and
Capital Structure,
Carriers' Inputs Otherwise

Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	Sep-68	$1	$0	$1	0.0%	$0	100.0%	$1	$0	$0	12.28%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
2	Oct-68	$0	$0	$1	0.0%	$0	100.0%	$0	$0	$1	12.28%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
3	Nov-68	$0	$0	$1	0.0%	$0	100.0%	$0	$0	$1	12.28%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
4	Dec-68	$0	$0	$1	0.0%	$0	100.0%	$0	$0	$1	12.28%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
5	Jan-69	$0	$0	$1	0.0%	$0	100.0%	$0	$0	$1	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
6	Feb-69	$0	$0	$1	0.0%	$0	100.0%	$0	$0	$1	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
7	Mar-69	$0	$0	$1	0.0%	$0	100.0%	$0	$0	$1	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
8	Apr-69	$0	$0	$1	0.0%	$0	100.0%	$0	$0	$1	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
9	May-69	$1	$0	$2	0.0%	$0	100.0%	$1	$0	$1	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
10	Jun-69	$1	$0	$4	0.0%	$0	100.0%	$1	$0	$2	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
11	Jul-69	$1	$0	$4	0.0%	$0	100.0%	$1	$0	$4	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
12	Aug-69	$1	$0	$5	0.0%	$0	100.0%	$1	$0	$4	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
13	Sep-69	$2	$0	$8	0.0%	$0	100.0%	$2	$0	$6	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
14	Oct-69	$5	$0	$13	0.0%	$0	100.0%	$5	$0	$8	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
15	Nov-69	$7	$0	$19	0.0%	$0	100.0%	$7	$0	$13	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
16	Dec-69	$17	$0	$36	0.0%	$0	100.0%	$17	$0	$19	13.14%	$0	$0	$1	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
17	Jan-70	($1)	$0	$36	0.0%	$1	100.0%	($1)	$0	$37	13.60%	$0	$0	$1	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
18	Feb-70	$9	$0	$45	0.0%	$0	100.0%	$9	$0	$36	13.60%	$0	$0	$2	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
19	Mar-70	$12	$0	$56	0.0%	$0	100.0%	$12	$0	$45	13.60%	$1	$0	$2	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
20	Apr-70	$18	$0	$75	0.0%	$0	100.0%	$18	$0	$57	13.60%	$1	$0	$3	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
21	May-70	$17	$0	$91	0.0%	$0	100.0%	$17	$0	$75	13.60%	$1	$0	$4	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
22	Jun-70	$20	$0	$111	0.0%	$0	100.0%	$20	$0	$92	13.60%	$1	$0	$5	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
23	Jul-70	$28	$0	$139	0.0%	$4	100.0%	$28	$0	$115	13.60%	$1	$0	$6	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
24	Aug-70	$17	$0	$156	0.0%	$0	100.0%	$17	$0	$144	13.60%	$2	$0	$8	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
25	Sep-70	$24	$0	$181	0.0%	$0	100.0%	$24	$0	$161	13.60%	$2	$0	$9	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
26	Oct-70	$16	$0	$196	0.0%	$0	100.0%	$16	$0	$185	13.60%	$2	$0	$11	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
27	Nov-70	$8	$0	$205	0.0%	$0	100.0%	$8	$0	$201	13.60%	$2	$0	$14	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
28	Dec-70	$13	$0	$218	0.0%	$0	100.0%	$13	$0	$209	13.60%	$2	$0	$16	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
29	Jan-71	$1	$0	$219	0.0%	$12	100.0%	$1	$0	$234	12.72%	$2	$0	$19	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
30	Feb-71	$4	$0	$222	0.0%	$0	100.0%	$4	$0	$235	12.72%	$2	$0	$21	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
31	Mar-71	$5	$0	$227	0.0%	$0	100.0%	$5	$0	$238	12.72%	$3	$0	$24	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
32	Apr-71	$5	$0	$232	0.0%	$0	100.0%	$5	$0	$243	12.72%	$3	$0	$26	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
33	May-71	$6	$0	$238	0.0%	$0	100.0%	$6	$0	$248	12.72%	$3	$0	$29	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
34	Jun-71	$6	$0	$244	0.0%	$0	100.0%	$6	$0	$254	12.72%	$3	$0	$32	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
35	Jul-71	$9	$0	$254	0.0%	$15	100.0%	$9	$0	$276	12.72%	$3	$0	$34	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
36	Aug-71	$15	$0	$268	0.0%	$0	100.0%	$15	$0	$285	12.72%	$3	$0	$37	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
37	Sep-71	$10	$0	$279	0.0%	$0	100.0%	$10	$0	$300	12.72%	$3	$0	$41	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
38	Oct-71	$12	$0	$291	0.0%	$0	100.0%	$12	$0	$310	12.72%	$3	$0	$44	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
39	Nov-71	$16	$0	$307	0.0%	$0	100.0%	$16	$0	$322	12.72%	$3	$0	$47	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
40	Dec-71	$19	$0	$326	0.0%	$0	100.0%	$19	$0	$339	12.72%	$4	$0	$51	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
41	Jan-72	($1)	$0	$325	0.0%	$19	100.0%	($1)	$0	$377	12.56%	$4	$0	$55	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
42	Feb-72	$5	$0	$330	0.0%	$0	100.0%	$5	$0	$376	12.56%	$4	$0	$59	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
43	Mar-72	$4	$0	$335	0.0%	$0	100.0%	$4	$0	$381	12.56%	$4	$0	$63	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
44	Apr-72	$4	$0	$339	0.0%	$0	100.0%	$4	$0	$386	12.56%	$4	$0	$67	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
45	May-72	$6	$0	$345	0.0%	$0	100.0%	$6	$0	$390	12.56%	$4	$0	$71	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
46	Jun-72	$7	$0	$352	0.0%	$0	100.0%	$7	$0	$396	12.56%	$4	$0	$75	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
47	Jul-72	$4	$0	$356	0.0%	$24	100.0%	$4	$0	$427	12.56%	$4	$0	$80	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0

Illustrative AFUDC, 1977-1996
(millions $)

Appropriate ROR and
Capital Structure,
Carriers' Inputs Otherwise

Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
48	Aug-72	$4	$0	$360	0.0%	$0	100.0%	$4	$0	$431	12.56%	$5	$0	$84	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
49	Sep-72	$3	$0	$363	0.0%	$0	100.0%	$3	$0	$435	12.56%	$5	$0	$89	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
50	Oct-72	$4	$0	$367	0.0%	$0	100.0%	$4	$0	$438	12.56%	$5	$0	$93	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
51	Nov-72	$3	$0	$370	0.0%	$0	100.0%	$3	$0	$442	12.56%	$5	$0	$98	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
52	Dec-72	$7	$0	$376	0.0%	$0	100.0%	$7	$0	$445	12.56%	$5	$0	$102	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
53	Jan-73	($1)	$0	$375	0.0%	$27	100.0%	($1)	$0	$479	13.23%	$5	$0	$108	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
54	Feb-73	$2	$0	$378	0.0%	$0	100.0%	$2	$0	$478	13.23%	$5	$0	$113	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
55	Mar-73	$4	$0	$382	0.0%	$0	100.0%	$4	$0	$480	13.23%	$5	$0	$118	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
56	Apr-73	$3	$0	$385	0.0%	$0	100.0%	$3	$0	$484	13.23%	$5	$0	$124	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
57	May-73	$4	$0	$389	0.0%	$0	100.0%	$4	$0	$487	13.23%	$5	$0	$129	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
58	Jun-73	$4	$0	$393	0.0%	$0	100.0%	$4	$0	$491	13.23%	$5	$0	$134	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
59	Jul-73	$5	$0	$398	0.0%	$32	100.0%	$5	$0	$527	13.23%	$6	$0	$140	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
60	Aug-73	$5	$0	$402	0.0%	$0	100.0%	$5	$0	$532	13.23%	$6	$0	$146	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
61	Sep-73	$5	$0	$408	0.0%	$0	100.0%	$5	$0	$537	13.23%	$6	$0	$152	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
62	Oct-73	$8	$0	$416	0.0%	$0	100.0%	$8	$0	$542	13.23%	$6	$0	$158	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
63	Nov-73	$4	$0	$420	0.0%	$0	100.0%	$4	$0	$550	13.23%	$6	$0	$164	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
64	Dec-73	$6	$0	$427	0.0%	$0	100.0%	$6	$0	$555	13.23%	$6	$0	$170	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
65	Jan-74	$21	$0	$448	0.0%	$36	100.0%	$21	$0	$597	13.90%	$7	$0	$177	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
66	Feb-74	$19	$0	$467	0.0%	$0	100.0%	$19	$0	$618	13.90%	$7	$0	$184	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
67	Mar-74	$22	$0	$489	0.0%	$0	100.0%	$22	$0	$638	13.90%	$7	$0	$192	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
68	Apr-74	$25	$0	$514	0.0%	$0	100.0%	$25	$0	$659	13.90%	$8	$0	$199	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
69	May-74	$25	$0	$540	0.0%	$0	67.0%	$17	$0	$685	13.90%	$8	$0	$207	$0	33.0%	$8	$0	$0	8.74%	$0	$0	$0
70	Jun-74	$33	$0	$573	0.0%	$0	67.0%	$22	$0	$702	13.90%	$8	$0	$215	$0	33.0%	$11	$0	$8	8.74%	$0	$0	$0
71	Jul-74	$69	$0	$642	0.0%	$45	67.0%	$46	$0	$769	13.90%	$9	$0	$224	$0	33.0%	$23	$0	$19	8.74%	$0	$0	$0
72	Aug-74	$96	$0	$738	0.0%	$0	67.0%	$64	$0	$815	13.90%	$9	$0	$234	$0	33.0%	$32	$0	$42	8.74%	$0	$0	$1
73	Sep-74	$88	$0	$826	0.0%	$0	67.0%	$59	$0	$880	13.90%	$10	$0	$244	$0	33.0%	$29	$0	$74	8.74%	$1	$0	$1
74	Oct-74	$161	$0	$987	0.0%	$0	67.0%	$108	$0	$939	13.90%	$11	$0	$255	$0	33.0%	$53	$0	$103	8.74%	$1	$0	$2
75	Nov-74	$107	$0	$1,094	0.0%	$0	67.0%	$71	$0	$1,047	13.90%	$12	$0	$267	$0	33.0%	$35	$0	$156	8.74%	$1	$0	$3
76	Dec-74	$266	$0	$1,359	0.0%	$0	67.0%	$178	$0	$1,118	13.90%	$13	$0	$280	$0	33.0%	$88	$0	$191	8.74%	$1	$0	$4
77	Jan-75	$41	$0	$1,400	0.0%	$64	53.4%	$22	$0	$1,361	13.98%	$16	$0	$296	$4	46.6%	$19	$0	$283	8.80%	$2	$0	$6
78	Feb-75	$132	$0	$1,531	0.0%	$0	53.4%	$70	$0	$1,382	13.98%	$16	$0	$312	$0	46.6%	$61	$0	$302	8.80%	$2	$0	$9
79	Mar-75	$257	$0	$1,788	0.0%	$0	53.4%	$137	$0	$1,453	13.98%	$17	$0	$329	$0	46.6%	$120	$0	$363	8.80%	$3	$0	$11
80	Apr-75	$107	$0	$1,896	0.0%	$0	53.4%	$57	$0	$1,590	13.98%	$19	$0	$347	$0	46.6%	$50	$0	$483	8.80%	$4	$0	$15
81	May-75	$263	$0	$2,158	0.0%	$0	53.4%	$140	$0	$1,647	13.98%	$19	$0	$366	$0	46.6%	$122	$0	$533	8.80%	$4	$0	$19
82	Jun-75	$582	$0	$2,740	0.0%	$0	53.4%	$310	$0	$1,787	13.98%	$21	$0	$387	$0	46.6%	$271	$0	$655	8.80%	$5	$0	$24
83	Jul-75	($58)	$0	$2,682	0.0%	$107	53.4%	($31)	$0	$2,205	13.98%	$26	$0	$413	$19	46.6%	($27)	$0	$946	8.80%	$7	$0	$30
84	Aug-75	$282	$0	$2,963	0.0%	$0	53.4%	$150	$0	$2,174	13.98%	$25	$0	$438	$0	46.6%	$131	$0	$919	8.80%	$7	$0	$37
85	Sep-75	$648	$0	$3,612	0.0%	$0	53.4%	$346	$0	$2,324	13.98%	$27	$0	$465	$0	46.6%	$302	$0	#####	8.80%	$8	$0	$45
86	Oct-75	$204	$0	$3,816	0.0%	$0	53.4%	$109	$0	$2,670	13.98%	$31	$0	$496	$0	46.6%	$95	$0	#####	8.80%	$10	$0	$55
87	Nov-75	$271	$0	$4,087	0.0%	$0	53.4%	$145	$0	$2,779	13.98%	$32	$0	$529	$0	46.6%	$127	$0	#####	8.80%	$11	$0	$65
88	Dec-75	$180	$0	$4,268	0.0%	$0	53.4%	$96	$0	$2,924	13.98%	$34	$0	$563	$0	46.6%	$84	$0	#####	8.80%	$12	$0	$77
89	Jan-76	$230	$0	$4,497	0.0%	$176	50.9%	$117	$0	$3,196	13.81%	$37	$0	$600	$53	49.1%	$113	$0	#####	8.74%	$12	$0	$89
90	Feb-76	$202	$0	$4,699	0.0%	$0	50.9%	$103	$0	$3,313	13.81%	$38	$0	$638	$0	49.1%	$99	$0	#####	8.74%	$13	$0	$103
91	Mar-76	$178	$0	$4,877	0.0%	$0	50.9%	$90	$0	$3,416	13.81%	$39	$0	$677	$0	49.1%	$87	$0	#####	8.74%	$14	$0	$117
92	Apr-76	$262	$0	$5,139	0.0%	$0	50.9%	$133	$0	$3,506	13.81%	$40	$0	$717	$0	49.1%	$128	$0	#####	8.74%	$15	$0	$131
93	May-76	$276	$0	$5,414	0.0%	$0	50.9%	$140	$0	$3,639	13.81%	$42	$0	$759	$0	49.1%	$135	$0	#####	8.74%	$16	$0	$147
94	Jun-76	$220	$0	$5,634	0.0%	$0	50.9%	$112	$0	$3,780	13.81%	$44	$0	$803	$0	49.1%	$108	$0	#####	8.74%	$17	$0	$164

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Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
95	Jul-76	$298	$0	$5,932	0.0%	$240	50.9%	$152	$0	$4,132	13.81%	$48	$0	$850	$87	49.1%	$146	$0	#####	8.74%	$18	$0	$181
96	Aug-76	$236	$0	$6,168	0.0%	$0	50.9%	$120	$0	$4,283	13.81%	$49	$0	$900	$0	49.1%	$116	$0	#####	8.74%	$19	$0	$201
97	Sep-76	$232	$0	$6,400	0.0%	$0	50.9%	$118	$0	$4,404	13.81%	$51	$0	$950	$0	49.1%	$114	$0	#####	8.74%	$20	$0	$220
98	Oct-76	$136	$0	$6,536	0.0%	$0	50.9%	$69	$0	$4,522	13.81%	$52	$0	$1,002	$0	49.1%	$67	$0	#####	8.74%	$21	$0	$241
99	Nov-76	$159	$0	$6,695	0.0%	$0	50.9%	$81	$0	$4,591	13.81%	$53	$0	$1,055	$0	49.1%	$78	$0	#####	8.74%	$21	$0	$262
100	Dec-76	$208	$0	$6,902	0.0%	$0	50.9%	$106	$0	$4,672	13.81%	$54	$0	$1,109	$0	49.1%	$102	$0	#####	8.74%	$22	$0	$284
101	Jan-77	$50	$0	$6,952	0.0%	$306	50.5%	$25	$0	$5,084	14.55%	$62	$0	$1,171	$121	49.5%	$25	$0	#####	8.82%	$24	$0	$308
102	Feb-77	$108	$0	$7,060	0.0%	$0	50.5%	$55	$0	$5,109	14.55%	$62	$0	$1,233	$0	49.5%	$53	$0	#####	8.82%	$24	$0	$332
103	Mar-77	$356	$0	$7,416	0.0%	$0	50.5%	$180	$0	$5,164	14.55%	$63	$0	$1,295	$0	49.5%	$176	$0	#####	8.82%	$24	$0	$356
104	Apr-77	$46	$0	$7,461	0.0%	$0	50.5%	$23	$0	$5,343	14.55%	$65	$0	$1,360	$0	49.5%	$23	$0	#####	8.82%	$25	$0	$381
105	May-77	$131	$0	$7,592	0.0%	$0	50.5%	$66	$0	$5,366	14.55%	$65	$0	$1,425	$0	49.5%	$65	$0	#####	8.82%	$26	$0	$407
106	Jun-77	$149	$7,741	$0	100.0%	$0	50.5%	$75	$5,507	$5,432	14.55%	$66	$1,491	$0	$0	49.5%	$74	$3,627	#####	8.82%	$26	$433	$0
107	Jul-77	$521	$0	$521	0.0%	$0	50.5%	$263	$0	$0	14.55%	$0	$0	$0	$0	49.5%	$258	$0	$0	8.86%	$0	$0	$0
108	Aug-77	$0	$334	$187	64.1%	$0	50.5%	$0	$169	$263	14.55%	$3	$0	$3	$0	49.5%	$0	$165	$258	8.86%	$2	$0	$2
109	Sep-77	$0	$55	$132	29.5%	$0	50.5%	$0	$28	$94	14.55%	$1	$1	$3	$0	49.5%	$0	$27	$93	8.86%	$1	$1	$2
110	Oct-77	$0	$1	$131	0.5%	$0	50.5%	$0	$0	$67	14.55%	$1	$0	$4	$0	49.5%	$0	$0	$65	8.86%	$0	$0	$2
111	Nov-77	$0	$1	$130	0.5%	$0	50.5%	$0	$0	$66	14.55%	$1	$0	$5	$0	49.5%	$0	$0	$65	8.86%	$0	$0	$3
112	Dec-77	$1	$3	$129	2.1%	$0	50.5%	$1	$1	$66	14.55%	$1	$0	$6	$0	49.5%	$1	$1	$65	8.86%	$0	$0	$3
113	Jan-78	$0	$2	$127	1.3%	$0	50.5%	$0	$1	$65	15.42%	$1	$0	$6	$0	49.5%	$0	$1	$64	8.88%	$0	$0	$4
114	Feb-78	$0	$73	$54	57.6%	$0	50.5%	$0	$37	$64	15.42%	$1	$4	$4	$0	49.5%	$0	$36	$63	8.88%	$0	$2	$2
115	Mar-78	$0	$39	$15	72.7%	$0	50.5%	$0	$20	$27	15.42%	$0	$3	$1	$0	49.5%	$0	$19	$27	8.88%	$0	$2	$1
116	Apr-78	$79	$42	$52	44.6%	$0	50.5%	$40	$21	$7	15.42%	$0	$1	$1	$0	49.5%	$39	$21	$7	8.88%	$0	$0	$0
117	May-78	($15)	$0	$36	0.5%	$0	50.5%	($8)	$0	$26	15.42%	$0	$0	$1	$0	49.5%	($8)	$0	$26	8.88%	$0	$0	$1
118	Jun-78	($11)	$0	$24	1.7%	$0	50.5%	($6)	$0	$18	15.42%	$0	$0	$1	$0	49.5%	($6)	$0	$18	8.88%	$0	$0	$1
119	Jul-78	$0	$0	$24	1.3%	$0	50.5%	$0	$0	$12	15.42%	$0	$0	$2	$0	49.5%	$0	$0	$12	8.88%	$0	$0	$1
120	Aug-78	$15	$1	$38	2.6%	$0	50.5%	$8	$1	$12	15.42%	$0	$0	$2	$0	49.5%	$7	$0	$12	8.88%	$0	$0	$1
121	Sep-78	$65	$3	$100	2.9%	$0	50.5%	$33	$2	$19	15.42%	$0	$0	$2	$0	49.5%	$32	$1	$19	8.88%	$0	$0	$1
122	Oct-78	($86)	$1	$13	5.4%	$0	50.5%	($44)	$0	$51	15.42%	$1	$0	$2	$0	49.5%	($43)	$0	$50	8.88%	$0	$0	$1
123	Nov-78	$8	$1	$20	3.6%	$0	50.5%	$4	$0	$7	15.42%	$0	$0	$2	$0	49.5%	$4	$0	$6	8.88%	$0	$0	$1
124	Dec-78	$73	$10	$84	10.1%	$0	50.5%	$37	$5	$10	15.42%	$0	$0	$2	$0	49.5%	$36	$5	$10	8.88%	$0	$0	$1
125	Jan-79	($7)	$1	$77	0.7%	$0	50.5%	($4)	$0	$43	16.28%	$1	$0	$3	$0	49.5%	($4)	$0	$42	8.90%	$0	$0	$2
126	Feb-79	$2	$0	$78	0.0%	$0	50.5%	$1	$0	$39	16.28%	$1	$0	$3	$0	49.5%	$1	$0	$38	8.90%	$0	$0	$2
127	Mar-79	$1	$0	$79	0.2%	$0	50.5%	$0	$0	$40	16.28%	$1	$0	$4	$0	49.5%	$0	$0	$39	8.90%	$0	$0	$2
128	Apr-79	$4	$0	$82	0.3%	$0	50.5%	$2	$0	$40	16.28%	$1	$0	$4	$0	49.5%	$2	$0	$39	8.90%	$0	$0	$2
129	May-79	$3	$0	$85	0.5%	$0	50.5%	$2	$0	$41	16.28%	$1	$0	$5	$0	49.5%	$2	$0	$41	8.90%	$0	$0	$3
130	Jun-79	$9	$0	$94	0.1%	$0	50.5%	$5	$0	$43	16.28%	$1	$0	$6	$0	49.5%	$5	$0	$42	8.90%	$0	$0	$3
131	Jul-79	$6	$1	$99	0.8%	$0	50.5%	$3	$0	$48	16.28%	$1	$0	$6	$0	49.5%	$3	$0	$47	8.90%	$0	$0	$3
132	Aug-79	$9	$0	$108	0.1%	$0	50.5%	$4	$0	$50	16.28%	$1	$0	$7	$0	49.5%	$4	$0	$49	8.90%	$0	$0	$4
133	Sep-79	$11	$1	$117	1.1%	$0	50.5%	$5	$1	$54	16.28%	$1	$0	$7	$0	49.5%	$5	$1	$53	8.90%	$0	$0	$4
134	Oct-79	$25	$54	$89	37.9%	$0	50.5%	$13	$27	$59	16.28%	$1	$3	$5	$0	49.5%	$13	$27	$58	8.90%	$0	$2	$3
135	Nov-79	$8	$0	$96	0.0%	$0	50.5%	$4	$0	$45	16.28%	$1	$0	$6	$0	49.5%	$4	$0	$44	8.90%	$0	$0	$3
136	Dec-79	$12	$17	$91	16.0%	$0	50.5%	$6	$9	$49	16.28%	$1	$1	$6	$0	49.5%	$6	$9	$48	8.90%	$0	$1	$3
137	Jan-80	$25	$2	$113	2.1%	$0	50.5%	$13	$1	$46	18.25%	$1	$0	$6	$0	49.5%	$12	$1	$45	8.98%	$0	$0	$3
138	Feb-80	$8	$1	$120	0.5%	$0	50.5%	$4	$0	$57	18.25%	$1	$0	$7	$0	49.5%	$4	$0	$56	8.98%	$0	$0	$4
139	Mar-80	$8	$0	$128	0.2%	$0	50.5%	$4	$0	$61	18.25%	$1	$0	$8	$0	49.5%	$4	$0	$60	8.98%	$0	$0	$4
140	Apr-80	$13	$1	$141	0.5%	$0	50.5%	$7	$0	$65	18.25%	$1	$0	$9	$0	49.5%	$7	$0	$63	8.98%	$0	$0	$5
141	May-80	$9	$0	$150	0.3%	$0	50.5%	$5	$0	$71	18.25%	$1	$0	$10	$0	49.5%	$5	$0	$70	8.98%	$1	$0	$5

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Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
142	Jun-80	$11	$1	$160	0.4%	$0	50.5%	$6	$0	$75	18.25%	$1	$0	$11	$0	49.5%	$6	$0	$74	8.98%	$1	$0	$6
143	Jul-80	$14	$1	$174	0.3%	$0	50.5%	$7	$0	$81	18.25%	$1	$0	$12	$0	49.5%	$7	$0	$79	8.98%	$1	$0	$6
144	Aug-80	$13	$1	$185	0.7%	$0	50.5%	$6	$1	$88	18.25%	$1	$0	$14	$0	49.5%	$6	$1	$86	8.98%	$1	$0	$7
145	Sep-80	$13	$30	$168	15.2%	$0	50.5%	$6	$15	$94	18.25%	$1	$2	$13	$0	49.5%	$6	$15	$92	8.98%	$1	$1	$7
146	Oct-80	$14	($0)	$182	-0.1%	$0	50.5%	$7	($0)	$85	18.25%	$1	($0)	$14	$0	49.5%	$7	($0)	$83	8.98%	$1	($0)	$7
147	Nov-80	$7	$1	$189	0.5%	$0	50.5%	$4	$0	$92	18.25%	$1	$0	$16	$0	49.5%	$4	$0	$90	8.98%	$1	$0	$8
148	Dec-80	($1)	$71	$117	37.9%	$0	50.5%	($1)	$36	$95	18.25%	$1	$6	$11	$0	49.5%	($1)	$35	$93	8.98%	$1	$3	$6
149	Jan-81	($8)	$20	$88	18.5%	$0	50.5%	($4)	$10	$59	21.16%	$1	$2	$10	$0	49.5%	($4)	$10	$58	9.01%	$0	$1	$5
150	Feb-81	$2	$1	$89	1.0%	$0	50.5%	$1	$0	$45	21.16%	$1	$0	$11	$0	49.5%	$1	$0	$44	9.01%	$0	$0	$5
151	Mar-81	$5	$2	$92	2.3%	$0	50.5%	$2	$1	$45	21.16%	$1	$0	$11	$0	49.5%	$2	$1	$44	9.01%	$0	$0	$5
152	Apr-81	($11)	$0	$81	0.2%	$0	50.5%	($5)	$0	$46	21.16%	$1	$0	$12	$0	49.5%	($5)	$0	$45	9.01%	$0	$0	$6
153	May-81	$4	$1	$84	1.2%	$0	50.5%	$2	$0	$41	21.16%	$1	$0	$13	$0	49.5%	$2	$0	$40	9.01%	$0	$0	$6
154	Jun-81	$7	$2	$88	2.7%	$0	50.5%	$4	$1	$42	21.16%	$1	$0	$13	$0	49.5%	$4	$1	$41	9.01%	$0	$0	$6
155	Jul-81	$22	$2	$108	1.9%	$0	50.5%	$11	$1	$45	21.16%	$1	$0	$14	$0	49.5%	$11	$1	$44	9.01%	$0	$0	$6
156	Aug-81	$10	$2	$116	1.5%	$0	50.5%	$5	$1	$54	21.16%	$1	$0	$14	$0	49.5%	$5	$1	$53	9.01%	$0	$0	$7
157	Sep-81	$14	$1	$128	1.1%	$0	50.5%	$7	$1	$59	21.16%	$1	$0	$15	$0	49.5%	$7	$1	$57	9.01%	$0	$0	$7
158	Oct-81	$9	$3	$135	2.2%	$0	50.5%	$5	$2	$65	21.16%	$1	$0	$16	$0	49.5%	$5	$1	$64	9.01%	$0	$0	$7
159	Nov-81	$2	$0	$136	0.3%	$0	50.5%	$1	$0	$68	21.16%	$1	$0	$17	$0	49.5%	$1	$0	$67	9.01%	$1	$0	$8
160	Dec-81	($19)	$45	$72	38.1%	$0	50.5%	($10)	$23	$69	21.16%	$1	$7	$12	$0	49.5%	($9)	$22	$67	9.01%	$1	$3	$5
161	Jan-82	($40)	$6	$27	16.9%	$0	50.5%	($20)	$3	$37	20.81%	$1	$2	$11	$0	49.5%	($20)	$3	$36	9.03%	$0	$1	$5
162	Feb-82	$3	$1	$29	3.6%	$0	50.5%	$2	$1	$14	20.81%	$0	$0	$10	$0	49.5%	$2	$1	$14	9.03%	$0	$0	$5
163	Mar-82	$2	$1	$30	3.4%	$0	50.5%	$1	$1	$15	20.81%	$0	$0	$10	$0	49.5%	$1	$1	$15	9.03%	$0	$0	$5
164	Apr-82	$4	$2	$31	6.8%	$0	50.5%	$2	$1	$15	20.81%	$0	$1	$10	$0	49.5%	$2	$1	$15	9.03%	$0	$0	$4
165	May-82	$5	$1	$36	2.7%	$0	50.5%	$3	$1	$16	20.81%	$0	$0	$10	$0	49.5%	$3	$0	$16	9.03%	$0	$0	$4
166	Jun-82	$10	$1	$45	1.8%	$0	50.5%	$5	$0	$18	20.81%	$0	$0	$10	$0	49.5%	$5	$0	$18	9.03%	$0	$0	$4
167	Jul-82	$5	$1	$49	1.6%	$0	50.5%	$3	$0	$23	20.81%	$0	$0	$10	$0	49.5%	$3	$0	$22	9.03%	$0	$0	$5
168	Aug-82	$12	$18	$44	28.9%	$0	50.5%	$6	$9	$25	20.81%	$0	$3	$8	$0	49.5%	$6	$9	$24	9.03%	$0	$1	$3
169	Sep-82	$9	$10	$43	19.3%	$0	50.5%	$5	$5	$22	20.81%	$0	$1	$7	$0	49.5%	$4	$5	$22	9.03%	$0	$1	$3
170	Oct-82	$6	$9	$39	19.4%	$0	50.5%	$3	$5	$21	20.81%	$0	$1	$6	$0	49.5%	$3	$5	$21	9.03%	$0	$1	$3
171	Nov-82	$1	$4	$36	10.4%	$0	50.5%	$0	$2	$20	20.81%	$0	$1	$5	$0	49.5%	$0	$2	$20	9.03%	$0	$0	$2
172	Dec-82	$0	$3	$33	7.9%	$0	50.5%	$0	$1	$18	20.81%	$0	$0	$5	$0	49.5%	$0	$1	$18	9.03%	$0	$0	$2
173	Jan-83	$1	$1	$34	1.9%	$0	50.5%	$1	$0	$17	17.46%	$0	$0	$5	$0	49.5%	$1	$0	$17	9.08%	$0	$0	$2
174	Feb-83	$3	$0	$37	0.6%	$0	50.5%	$1	$0	$17	17.46%	$0	$0	$6	$0	49.5%	$1	$0	$17	9.08%	$0	$0	$3
175	Mar-83	$12	$13	$36	26.9%	$0	50.5%	$6	$7	$19	17.46%	$0	$2	$4	$0	49.5%	$6	$7	$18	9.08%	$0	$1	$2
176	Apr-83	$12	$9	$39	18.5%	$0	50.5%	$6	$4	$18	17.46%	$0	$1	$4	$0	49.5%	$6	$4	$18	9.08%	$0	$0	$2
177	May-83	$6	$1	$44	2.1%	$0	50.5%	$3	$0	$20	17.46%	$0	$0	$4	$0	49.5%	$3	$0	$19	9.08%	$0	$0	$2
178	Jun-83	$7	$0	$50	0.9%	$0	50.5%	$3	$0	$22	17.46%	$0	$0	$4	$0	49.5%	$3	$0	$22	9.08%	$0	$0	$2
179	Jul-83	$4	$0	$53	0.4%	$0	50.5%	$2	$0	$25	17.46%	$0	$0	$5	$0	49.5%	$2	$0	$25	9.08%	$0	$0	$2
180	Aug-83	($1)	$1	$51	1.7%	$0	50.5%	($1)	$0	$27	17.46%	$0	$0	$5	$0	49.5%	($1)	$0	$26	9.08%	$0	$0	$2
181	Sep-83	$5	$42	$14	74.5%	$0	50.5%	$3	$21	$26	17.46%	$0	$4	$2	$0	49.5%	$3	$21	$25	9.08%	$0	$2	$1
182	Oct-83	$4	$2	$16	11.4%	$0	50.5%	$2	$1	$7	17.46%	$0	$0	$2	$0	49.5%	$2	$1	$7	9.08%	$0	$0	$1
183	Nov-83	$3	$4	$15	20.5%	$0	50.5%	$2	$2	$8	17.46%	$0	$0	$1	$0	49.5%	$2	$2	$8	9.08%	$0	$0	$1
184	Dec-83	$6	$3	$18	14.7%	$0	50.5%	$3	$2	$8	17.46%	$0	$0	$1	$0	49.5%	$3	$2	$8	9.08%	$0	$0	$1
185	Jan-84	$2	$1	$20	3.9%	$0	50.5%	$1	$0	$9	18.66%	$0	$0	$1	$0	49.5%	$1	$0	$9	9.13%	$0	$0	$1
186	Feb-84	$3	$0	$22	2.1%	$0	50.5%	$1	$0	$10	18.66%	$0	$0	$1	$0	49.5%	$1	$0	$10	9.13%	$0	$0	$1
187	Mar-84	$6	$5	$23	19.6%	$0	50.5%	$3	$3	$11	18.66%	$0	$0	$1	$0	49.5%	$3	$3	$11	9.13%	$0	$0	$1
188	Apr-84	$4	$2	$24	8.9%	$0	50.5%	$2	$1	$11	18.66%	$0	$0	$1	$0	49.5%	$2	$1	$11	9.13%	$0	$0	$1

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Appropriate ROR and
Capital Structure,
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Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
189	May-84	$5	$3	$26	11.2%	$0	50.5%	$2	$2	$12	18.66%	$0	$0	$1	$0	49.5%	$2	$2	$12	9.13%	$0	$0	$1
190	Jun-84	$2	$1	$27	4.0%	$0	50.5%	$1	$1	$13	18.66%	$0	$0	$2	$0	49.5%	$1	$1	$13	9.13%	$0	$0	$1
191	Jul-84	$3	$1	$28	3.9%	$0	50.5%	$1	$1	$13	18.66%	$0	$0	$2	$0	49.5%	$1	$1	$13	9.13%	$0	$0	$1
192	Aug-84	$1	$0	$29	0.9%	$0	50.5%	$1	$0	$14	18.66%	$0	$0	$2	$0	49.5%	$1	$0	$14	9.13%	$0	$0	$1
193	Sep-84	$1	$0	$30	1.5%	$0	50.5%	$1	$0	$15	18.66%	$0	$0	$2	$0	49.5%	$1	$0	$15	9.13%	$0	$0	$1
194	Oct-84	$2	$6	$26	17.8%	$0	50.5%	$1	$3	$15	18.66%	$0	$0	$2	$0	49.5%	$1	$3	$15	9.13%	$0	$0	$1
195	Nov-84	$2	$2	$26	6.7%	$0	50.5%	$1	$1	$13	18.66%	$0	$0	$2	$0	49.5%	$1	$1	$13	9.13%	$0	$0	$1
196	Dec-84	$16	$42	$0	100.0%	$0	50.5%	$8	$21	$13	18.66%	$0	$2	$0	$0	49.5%	$8	$21	$13	9.13%	$0	$1	$0
197	Jan-85	$8	$0	$8	1.7%	$0	50.5%	$4	$0	$0	17.35%	$0	$0	$0	$0	49.5%	$4	$0	($0)	9.16%	($0)	$0	($0)
198	Feb-85	$5	$0	$13	0.4%	$0	50.5%	$2	$0	$4	17.35%	$0	$0	$0	$0	49.5%	$2	$0	$4	9.16%	$0	($0)	$0
199	Mar-85	$5	$0	$17	1.2%	$0	50.5%	$3	$0	$6	17.35%	$0	$0	$0	$0	49.5%	$2	$0	$6	9.16%	$0	$0	$0
200	Apr-85	$5	$1	$21	5.8%	$0	50.5%	$3	$1	$9	17.35%	$0	$0	$0	$0	49.5%	$3	$1	$9	9.16%	$0	$0	$0
201	May-85	$3	$1	$24	2.7%	$0	50.5%	$2	$0	$11	17.35%	$0	$0	$0	$0	49.5%	$2	$0	$10	9.16%	$0	$0	$0
202	Jun-85	$1	$25	$0	100.0%	$0	50.5%	$1	$12	$12	17.35%	$0	$1	$0	$0	49.5%	$1	$12	$12	9.16%	$0	$0	$0
203	Jul-85	$3	$3	$0	87.7%	$0	50.5%	$2	$1	$0	17.35%	$0	$0	$0	$0	49.5%	$2	$1	($0)	9.16%	($0)	$0	($0)
204	Aug-85	$1	$1	$1	43.8%	$0	50.5%	$1	$0	$0	17.35%	$0	$0	$0	$0	49.5%	$1	$0	$0	9.16%	$0	($0)	$0
205	Sep-85	$1	$0	$2	12.6%	$0	50.5%	$1	$0	$0	17.35%	$0	$0	$0	$0	49.5%	$1	$0	$0	9.16%	$0	$0	$0
206	Oct-85	$1	$1	$2	37.5%	$0	50.5%	$1	$1	$1	17.35%	$0	$0	$0	$0	49.5%	$1	$1	$1	9.16%	$0	$0	$0
207	Nov-85	$0	$0	$2	17.2%	$0	50.5%	$0	$0	$1	17.35%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.16%	$0	$0	$0
208	Dec-85	($1)	$0	$1	0.0%	$0	50.5%	($1)	$0	$1	17.35%	$0	$0	$0	$0	49.5%	($1)	$0	$1	9.16%	$0	$0	$0
209	Jan-86	$1	$1	$2	24.9%	$0	50.5%	$1	$0	$0	16.04%	$0	$0	$0	$0	49.5%	$1	$0	$0	9.17%	$0	$0	$0
210	Feb-86	$1	$0	$2	16.9%	$0	50.5%	$0	$0	$1	16.04%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.17%	$0	$0	$0
211	Mar-86	$0	$0	$2	1.7%	$0	50.5%	$0	$0	$1	16.04%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.17%	$0	$0	$0
212	Apr-86	$1	$0	$3	5.4%	$0	50.5%	$0	$0	$1	16.04%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.17%	$0	$0	$0
213	May-86	$2	$2	$3	36.4%	$0	50.5%	$1	$1	$2	16.04%	$0	$0	$0	$0	49.5%	$1	$1	$2	9.17%	$0	$0	$0
214	Jun-86	$3	$1	$5	13.7%	$0	50.5%	$2	$0	$1	16.04%	$0	$0	$0	$0	49.5%	$1	$0	$1	9.17%	$0	$0	$0
215	Jul-86	$3	$1	$7	7.1%	$0	50.5%	$1	$0	$3	16.04%	$0	$0	$0	$0	49.5%	$1	$0	$3	9.17%	$0	$0	$0
216	Aug-86	$4	$0	$11	1.8%	$0	50.5%	$2	$0	$4	16.04%	$0	$0	$0	$0	49.5%	$2	$0	$4	9.17%	$0	$0	$0
217	Sep-86	$2	$0	$13	0.9%	$0	50.5%	$1	$0	$6	16.04%	$0	$0	$0	$0	49.5%	$1	$0	$6	9.17%	$0	$0	$0
218	Oct-86	$17	$26	$4	88.0%	$0	50.5%	$8	$13	$7	16.04%	$0	$0	$0	$0	49.5%	$8	$13	$7	9.17%	$0	$0	$0
219	Nov-86	$1	$0	$4	9.5%	$0	50.5%	$0	$0	$2	16.04%	$0	$0	$0	$0	49.5%	$0	$0	$2	9.17%	$0	$0	$0
220	Dec-86	$2	$4	$2	62.9%	$0	50.5%	$1	$2	$2	16.04%	$0	$0	$0	$0	49.5%	$1	$2	$2	9.17%	$0	$0	$0
221	Jan-87	$1	$2	$2	48.3%	$0	50.5%	$0	$1	$1	16.00%	$0	$0	$0	$0	49.5%	$0	$1	$1	9.19%	$0	$0	$0
222	Feb-87	$0	$0	$2	2.7%	$0	50.5%	$0	$0	$1	16.00%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.19%	$0	$0	$0
223	Mar-87	$1	$1	$2	31.8%	$0	50.5%	$1	$0	$1	16.00%	$0	$0	$0	$0	49.5%	$1	$0	$1	9.19%	$0	$0	$0
224	Apr-87	$2	$0	$3	11.7%	$0	50.5%	$1	$0	$1	16.00%	$0	$0	$0	$0	49.5%	$1	$0	$1	9.19%	$0	$0	$0
225	May-87	$4	$1	$7	9.0%	$0	50.5%	$2	$0	$2	16.00%	$0	$0	$0	$0	49.5%	$2	$0	$2	9.19%	$0	$0	$0
226	Jun-87	$7	$1	$12	10.2%	$0	50.5%	$3	$1	$3	16.00%	$0	$0	$0	$0	49.5%	$3	$1	$3	9.19%	$0	$0	$0
227	Jul-87	$8	$7	$13	33.0%	$0	50.5%	$4	$3	$6	16.00%	$0	$0	$0	$0	49.5%	$4	$3	$6	9.19%	$0	$0	$0
228	Aug-87	$4	$1	$16	5.4%	$0	50.5%	$2	$0	$7	16.00%	$0	$0	$0	$0	49.5%	$2	$0	$7	9.19%	$0	$0	$0
229	Sep-87	$7	$16	$7	71.1%	$0	50.5%	$4	$8	$8	16.00%	$0	$0	$0	$0	49.5%	$3	$8	$8	9.19%	$0	$0	$0
230	Oct-87	$1	$1	$7	7.3%	$0	50.5%	$1	$0	$3	16.00%	$0	$0	$0	$0	49.5%	$1	$0	$3	9.19%	$0	$0	$0
231	Nov-87	$3	$1	$9	11.4%	$0	50.5%	$1	$1	$4	16.00%	$0	$0	$0	$0	49.5%	$1	$1	$4	9.19%	$0	$0	$0
232	Dec-87	$7	$14	$1	90.7%	$0	50.5%	$3	$7	$5	16.00%	$0	$0	$0	$0	49.5%	$3	$7	$4	9.19%	$0	$0	$0
233	Jan-88	$0	$0	$2	5.6%	$0	50.5%	$0	$0	$1	16.42%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.20%	$0	$0	$0
234	Feb-88	$2	$1	$2	42.1%	$0	50.5%	$1	$1	$1	16.42%	$0	$0	$0	$0	49.5%	$1	$1	$1	9.20%	$0	$0	$0
235	Mar-88	$1	$1	$2	43.5%	$0	50.5%	$1	$1	$1	16.42%	$0	$0	$0	$0	49.5%	$1	$1	$1	9.20%	$0	$0	$0

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Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
236	Apr-88	$1	$0	$2	16.2%	$0	50.5%	$0	$0	$1	16.42%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.20%	$0	$0	$0
237	May-88	$1	$1	$3	24.9%	$0	50.5%	$1	$0	$1	16.42%	$0	$0	$0	$0	49.5%	$1	$0	$1	9.20%	$0	$0	$0
238	Jun-88	$0	$0	$3	13.7%	$0	50.5%	$0	$0	$1	16.42%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.20%	$0	$0	$0
239	Jul-88	$2	$0	$4	5.7%	$0	50.5%	$1	$0	$1	16.42%	$0	$0	$0	$0	49.5%	$1	$0	$1	9.20%	$0	$0	$0
240	Aug-88	$2	$0	$6	7.2%	$0	50.5%	$1	$0	$2	16.42%	$0	$0	$0	$0	49.5%	$1	$0	$2	9.20%	$0	$0	$0
241	Sep-88	$4	$2	$7	22.3%	$0	50.5%	$2	$1	$3	16.42%	$0	$0	$0	$0	49.5%	$2	$1	$3	9.20%	$0	$0	$0
242	Oct-88	$3	$1	$10	5.5%	$0	50.5%	$1	$0	$4	16.42%	$0	$0	$0	$0	49.5%	$1	$0	$4	9.20%	$0	$0	$0
243	Nov-88	$2	$3	$8	28.0%	$0	50.5%	$1	$2	$5	16.42%	$0	$0	$0	$0	49.5%	$1	$2	$5	9.20%	$0	$0	$0
244	Dec-88	$1	$1	$9	9.9%	$0	50.5%	$1	$0	$4	16.42%	$0	$0	$0	$0	49.5%	$1	$0	$4	9.20%	$0	$0	$0
245	Jan-89	$1	$1	$9	6.5%	$0	50.5%	$1	$0	$4	16.18%	$0	$0	$0	$0	49.5%	$1	$0	$4	9.23%	$0	$0	$0
246	Feb-89	$1	$1	$9	7.6%	$0	50.5%	$0	$0	$5	16.18%	$0	$0	$0	$0	49.5%	$0	$0	$5	9.23%	$0	$0	$0
247	Mar-89	$2	$1	$10	6.1%	$0	50.5%	$1	$0	$5	16.18%	$0	$0	$0	$0	49.5%	$1	$0	$4	9.23%	$0	$0	$0
248	Apr-89	$3	$2	$11	16.5%	$0	50.5%	$2	$1	$5	16.18%	$0	$0	$0	$0	49.5%	$1	$1	$5	9.23%	$0	$0	$0
249	May-89	$6	$8	$9	47.0%	$0	50.5%	$3	$4	$6	16.18%	$0	$0	$0	$0	49.5%	$3	$4	$5	9.23%	$0	$0	$0
250	Jun-89	$5	$3	$11	18.5%	$0	50.5%	$2	$1	$5	16.18%	$0	$0	$0	$0	49.5%	$2	$1	$5	9.23%	$0	$0	$0
251	Jul-89	$4	$2	$14	10.9%	$0	50.5%	$2	$1	$6	16.18%	$0	$0	$0	$0	49.5%	$2	$1	$6	9.23%	$0	$0	$0
252	Aug-89	$7	$5	$15	26.8%	$0	50.5%	$3	$3	$7	16.18%	$0	$0	$0	$0	49.5%	$3	$3	$7	9.23%	$0	$0	$0
253	Sep-89	$7	$1	$21	5.3%	$0	50.5%	$4	$1	$7	16.18%	$0	$0	$0	$0	49.5%	$4	$1	$7	9.23%	$0	$0	$0
254	Oct-89	$8	$5	$24	16.4%	$0	50.5%	$4	$2	$10	16.18%	$0	$0	$0	$0	49.5%	$4	$2	$10	9.23%	$0	$0	$0
255	Nov-89	$4	$1	$27	3.0%	$0	50.5%	$2	$0	$12	16.18%	$0	$0	$1	$0	49.5%	$2	$0	$12	9.23%	$0	$0	$0
256	Dec-89	$7	$15	$20	43.1%	$0	50.5%	$4	$7	$14	16.18%	$0	$0	$1	$0	49.5%	$3	$7	$14	9.23%	$0	$0	$0
257	Jan-90	$5	$3	$21	13.8%	$0	50.5%	$2	$2	$10	16.35%	$0	$0	$1	$0	49.5%	$2	$2	$10	9.35%	$0	$0	$0
258	Feb-90	$5	$2	$25	5.9%	$0	50.5%	$3	$1	$11	16.35%	$0	$0	$1	$0	49.5%	$3	$1	$10	9.35%	$0	$0	$0
259	Mar-90	$5	$1	$29	3.8%	$0	50.5%	$3	$1	$12	16.35%	$0	$0	$1	$0	49.5%	$3	$1	$12	9.35%	$0	$0	$0
260	Apr-90	$6	$1	$34	3.2%	$0	50.5%	$3	$1	$15	16.35%	$0	$0	$1	$0	49.5%	$3	$1	$14	9.35%	$0	$0	$1
261	May-90	$10	$4	$40	8.4%	$0	50.5%	$5	$2	$17	16.35%	$0	$0	$1	$0	49.5%	$5	$2	$17	9.35%	$0	$0	$1
262	Jun-90	$15	$5	$50	8.6%	$0	50.5%	$7	$2	$20	16.35%	$0	$0	$1	$0	49.5%	$7	$2	$20	9.35%	$0	$0	$1
263	Jul-90	$9	$7	$53	11.1%	$0	50.5%	$5	$3	$25	16.35%	$0	$0	$2	$0	49.5%	$5	$3	$25	9.35%	$0	$0	$1
264	Aug-90	$13	$4	$62	5.8%	$0	50.5%	$7	$2	$27	16.35%	$0	$0	$2	$0	49.5%	$7	$2	$26	9.35%	$0	$0	$1
265	Sep-90	$26	$18	$71	19.8%	$0	50.5%	$13	$9	$32	16.35%	$0	$0	$2	$0	49.5%	$13	$9	$31	9.35%	$0	$0	$1
266	Oct-90	$24	$3	$92	3.4%	$0	50.5%	$12	$2	$36	16.35%	$0	$0	$2	$0	49.5%	$12	$2	$35	9.35%	$0	$0	$1
267	Nov-90	$20	$20	$92	17.8%	$0	50.5%	$10	$10	$47	16.35%	$1	$0	$3	$0	49.5%	$10	$10	$46	9.35%	$0	$0	$1
268	Dec-90	$27	$25	$94	21.2%	$0	50.5%	$13	$13	$47	16.35%	$1	$1	$3	$0	49.5%	$13	$13	$46	9.35%	$0	$0	$1
269	Jan-91	$7	$9	$92	8.6%	$0	50.5%	$3	$4	$47	16.06%	$1	$0	$3	$0	49.5%	$3	$4	$46	9.37%	$0	$0	$2
270	Feb-91	$15	$3	$104	2.9%	$0	50.5%	$8	$2	$46	16.06%	$1	$0	$4	$0	49.5%	$7	$2	$45	9.37%	$0	$0	$2
271	Mar-91	$23	$42	$85	33.3%	$0	50.5%	$12	$21	$52	16.06%	$1	$1	$3	$0	49.5%	$12	$21	$51	9.37%	$0	$1	$2
272	Apr-91	$15	$2	$98	1.7%	$0	50.5%	$7	$1	$43	16.06%	$1	$0	$4	$0	49.5%	$7	$1	$42	9.37%	$0	$0	$2
273	May-91	$14	$3	$108	2.8%	$0	50.5%	$7	$2	$49	16.06%	$1	$0	$4	$0	49.5%	$7	$2	$48	9.37%	$0	$0	$2
274	Jun-91	$14	$2	$120	1.6%	$0	50.5%	$7	$1	$55	16.06%	$1	$0	$5	$0	49.5%	$7	$1	$54	9.37%	$0	$0	$3
275	Jul-91	$15	$11	$124	8.3%	$0	50.5%	$8	$6	$61	16.06%	$1	$0	$5	$0	49.5%	$8	$6	$59	9.37%	$0	$0	$3
276	Aug-91	($2)	$10	$112	8.3%	$0	50.5%	($1)	$5	$63	16.06%	$1	$0	$6	$0	49.5%	($1)	$5	$61	9.37%	$0	$0	$3
277	Sep-91	($67)	$3	$42	6.0%	$0	50.5%	($34)	$1	$57	16.06%	$1	$0	$6	$0	49.5%	($33)	$1	$56	9.37%	$0	$0	$3
278	Oct-91	$9	$5	$45	10.7%	$0	50.5%	$4	$3	$21	16.06%	$0	$1	$6	$0	49.5%	$4	$3	$21	9.37%	$0	$0	$3
279	Nov-91	$13	$2	$55	4.3%	$0	50.5%	$6	$1	$23	16.06%	$0	$0	$6	$0	49.5%	$6	$1	$22	9.37%	$0	$0	$3
280	Dec-91	$1	$25	$32	43.7%	$0	50.5%	$0	$12	$28	16.06%	$0	$3	$4	$0	49.5%	$0	$12	$27	9.37%	$0	$1	$2
281	Jan-92	$5	$8	$28	23.1%	$0	50.5%	$3	$4	$16	15.61%	$0	$1	$3	$0	49.5%	$2	$4	$16	9.37%	$0	$0	$2
282	Feb-92	$6	$5	$29	14.0%	$0	50.5%	$3	$2	$14	15.61%	$0	$0	$3	$0	49.5%	$3	$2	$14	9.37%	$0	$0	$2

Illustrative AFUDC, 1977-1996
(millions $)

Appropriate ROR and
Capital Structure,
Carriers' Inputs Otherwise

Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
283	Mar-92	$3	$7	$25	21.0%	$0	50.5%	$2	$3	$15	15.61%	$0	$1	$2	$0	49.5%	$2	$3	$14	9.37%	$0	$0	$1
284	Apr-92	$8	$5	$28	13.9%	$0	50.5%	$4	$2	$13	15.61%	$0	$0	$2	$0	49.5%	$4	$2	$13	9.37%	$0	$0	$1
285	May-92	$4	$2	$31	6.2%	$0	50.5%	$2	$1	$14	15.61%	$0	$0	$2	$0	49.5%	$2	$1	$14	9.37%	$0	$0	$1
286	Jun-92	$7	$1	$36	3.6%	$0	50.5%	$3	$1	$16	15.61%	$0	$0	$2	$0	49.5%	$3	$1	$15	9.37%	$0	$0	$1
287	Jul-92	$6	$6	$35	15.1%	$0	50.5%	$3	$3	$18	15.61%	$0	$0	$2	$0	49.5%	$3	$3	$18	9.37%	$0	$0	$1
288	Aug-92	$3	$3	$36	8.6%	$0	50.5%	$2	$2	$18	15.61%	$0	$0	$2	$0	49.5%	$2	$2	$18	9.37%	$0	$0	$1
289	Sep-92	$13	$5	$44	9.6%	$0	50.5%	$6	$2	$18	15.61%	$0	$0	$2	$0	49.5%	$6	$2	$18	9.37%	$0	$0	$1
290	Oct-92	$7	$7	$43	14.6%	$0	50.5%	$3	$4	$22	15.61%	$0	$0	$2	$0	49.5%	$3	$4	$22	9.37%	$0	$0	$1
291	Nov-92	$6	$4	$45	8.5%	$0	50.5%	$3	$2	$22	15.61%	$0	$0	$2	$0	49.5%	$3	$2	$21	9.37%	$0	$0	$1
292	Dec-92	$3	$15	$33	30.6%	$0	50.5%	$2	$7	$23	15.61%	$0	$1	$2	$0	49.5%	$1	$7	$22	9.37%	$0	$0	$1
293	Jan-93	$2	$6	$29	18.0%	$0	50.5%	$1	$3	$17	14.02%	$0	$0	$2	$0	49.5%	$1	$3	$17	9.29%	$0	$0	$1
294	Feb-93	$3	$2	$29	6.8%	$0	50.5%	$1	$1	$15	14.02%	$0	$0	$2	$0	49.5%	$1	$1	$14	9.29%	$0	$0	$1
295	Mar-93	$5	$4	$31	10.5%	$0	50.5%	$3	$2	$15	14.02%	$0	$0	$2	$0	49.5%	$3	$2	$15	9.29%	$0	$0	$1
296	Apr-93	$5	$5	$32	12.5%	$0	50.5%	$3	$2	$16	14.02%	$0	$0	$2	$0	49.5%	$3	$2	$15	9.29%	$0	$0	$1
297	May-93	$2	$2	$31	6.8%	$0	50.5%	$1	$1	$16	14.02%	$0	$0	$2	$0	49.5%	$1	$1	$16	9.29%	$0	$0	$1
298	Jun-93	$4	$6	$29	17.4%	$0	50.5%	$2	$3	$16	14.02%	$0	$0	$2	$0	49.5%	$2	$3	$16	9.29%	$0	$0	$1
299	Jul-93	$1	$8	$22	25.8%	$0	50.5%	$0	$4	$15	14.02%	$0	$0	$1	$0	49.5%	$0	$4	$15	9.29%	$0	$0	$1
300	Aug-93	$2	$1	$24	2.9%	$0	50.5%	$1	$0	$11	14.02%	$0	$0	$2	$0	49.5%	$1	$0	$11	9.29%	$0	$0	$1
301	Sep-93	$1	$3	$22	13.5%	$0	50.5%	$1	$2	$12	14.02%	$0	$0	$1	$0	49.5%	$1	$2	$12	9.29%	$0	$0	$1
302	Oct-93	$3	$2	$22	8.6%	$0	50.5%	$1	$1	$11	14.02%	$0	$0	$1	$0	49.5%	$1	$1	$11	9.29%	$0	$0	$1
303	Nov-93	$4	$2	$24	8.6%	$0	50.5%	$2	$1	$11	14.02%	$0	$0	$1	$0	49.5%	$2	$1	$11	9.29%	$0	$0	$1
304	Dec-93	$7	$6	$24	21.3%	$0	50.5%	$3	$3	$12	14.02%	$0	$0	$1	$0	49.5%	$3	$3	$12	9.29%	$0	$0	$1
305	Jan-94	$3	$2	$25	6.3%	$0	50.5%	$1	$1	$12	14.67%	$0	$0	$1	$0	49.5%	$1	$1	$12	9.39%	$0	$0	$1
306	Feb-94	$2	$1	$26	4.1%	$0	50.5%	$1	$1	$13	14.67%	$0	$0	$1	$0	49.5%	$1	$1	$12	9.39%	$0	$0	$1
307	Mar-94	$5	$1	$30	2.2%	$0	50.5%	$2	$0	$13	14.67%	$0	$0	$2	$0	49.5%	$2	$0	$13	9.39%	$0	$0	$1
308	Apr-94	$4	$2	$31	6.8%	$0	50.5%	$2	$1	$15	14.67%	$0	$0	$2	$0	49.5%	$2	$1	$15	9.39%	$0	$0	$1
309	May-94	$5	$3	$34	6.9%	$0	50.5%	$3	$1	$16	14.67%	$0	$0	$2	$0	49.5%	$3	$1	$15	9.39%	$0	$0	$1
310	Jun-94	$4	$3	$35	8.2%	$0	50.5%	$2	$2	$17	14.67%	$0	$0	$2	$0	49.5%	$2	$2	$17	9.39%	$0	$0	$1
311	Jul-94	$5	$1	$38	3.4%	$0	50.5%	$2	$1	$18	14.67%	$0	$0	$2	$0	49.5%	$2	$1	$17	9.39%	$0	$0	$1
312	Aug-94	$5	$1	$42	1.4%	$0	50.5%	$2	$0	$19	14.67%	$0	$0	$2	$0	49.5%	$2	$0	$19	9.39%	$0	$0	$1
313	Sep-94	$6	$1	$47	2.8%	$0	50.5%	$3	$1	$21	14.67%	$0	$0	$2	$0	49.5%	$3	$1	$21	9.39%	$0	$0	$1
314	Oct-94	$9	$1	$55	2.1%	$0	50.5%	$5	$1	$24	14.67%	$0	$0	$3	$0	49.5%	$5	$1	$23	9.39%	$0	$0	$2
315	Nov-94	$1	$0	$56	0.5%	$0	50.5%	$1	$0	$28	14.67%	$0	$0	$3	$0	49.5%	$1	$0	$27	9.39%	$0	$0	$2
316	Dec-94	$5	$31	$31	49.9%	$0	50.5%	$3	$15	$28	14.67%	$0	$1	$2	$0	49.5%	$3	$15	$28	9.39%	$0	$1	$1
317	Jan-95	$3	$7	$27	20.6%	$0	50.5%	$2	$4	$16	14.74%	$0	$0	$2	$0	49.5%	$2	$3	$15	9.35%	$0	$0	$1
318	Feb-95	$5	$1	$31	2.8%	$0	50.5%	$3	$0	$14	14.74%	$0	$0	$2	$0	49.5%	$3	$0	$13	9.35%	$0	$0	$1
319	Mar-95	$4	$0	$35	0.2%	$0	50.5%	$2	$0	$16	14.74%	$0	$0	$2	$0	49.5%	$2	$0	$15	9.35%	$0	$0	$1
320	Apr-95	$5	$0	$40	0.6%	$0	50.5%	$3	$0	$18	14.74%	$0	$0	$2	$0	49.5%	$3	$0	$17	9.35%	$0	$0	$1
321	May-95	$3	$0	$43	0.1%	$0	50.5%	$1	$0	$20	14.74%	$0	$0	$2	$0	49.5%	$1	$0	$20	9.35%	$0	$0	$1
322	Jun-95	$4	$5	$41	10.3%	$0	50.5%	$2	$2	$22	14.74%	$0	$0	$2	$0	49.5%	$2	$2	$21	9.35%	$0	$0	$2
323	Jul-95	$4	$0	$45	0.8%	$0	50.5%	$2	$0	$21	14.74%	$0	$0	$3	$0	49.5%	$2	$0	$20	9.35%	$0	$0	$2
324	Aug-95	$5	$1	$50	1.3%	$0	50.5%	$3	$0	$23	14.74%	$0	$0	$3	$0	49.5%	$3	$0	$22	9.35%	$0	$0	$2
325	Sep-95	$4	$0	$54	0.2%	$0	50.5%	$2	$0	$25	14.74%	$0	$0	$3	$0	49.5%	$2	$0	$25	9.35%	$0	$0	$2
326	Oct-95	$5	$3	$57	4.5%	$0	50.5%	$3	$1	$27	14.74%	$0	$0	$3	$0	49.5%	$3	$1	$27	9.35%	$0	$0	$2
327	Nov-95	$4	$1	$59	2.4%	$0	50.5%	$2	$1	$29	14.74%	$0	$0	$4	$0	49.5%	$2	$1	$28	9.35%	$0	$0	$2
328	Dec-95	$12	$21	$51	28.9%	$0	50.5%	$6	$10	$30	14.74%	$0	$1	$3	$0	49.5%	$6	$10	$29	9.35%	$0	$1	$2
329	Jan-96	$5	$10	$46	17.8%	$0	50.5%	$3	$5	$26	14.28%	$0	$1	$3	$0	49.5%	$3	$5	$25	9.19%	$0	$0	$2

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Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
330	Feb-96	$3	$0	$49	0.7%	$0	50.5%	$2	$0	$23	14.28%	$0	$0	$3	$0	49.5%	$2	$0	$23	9.19%	$0	$0	$2
331	Mar-96	$4	$0	$53	0.4%	$0	50.5%	$2	$0	$25	14.28%	$0	$0	$3	$0	49.5%	$2	$0	$24	9.19%	$0	$0	$2
332	Apr-96	$3	$1	$56	1.3%	$0	50.5%	$2	$0	$27	14.28%	$0	$0	$4	$0	49.5%	$2	$0	$26	9.19%	$0	$0	$2
333	May-96	$4	$2	$57	4.1%	$0	50.5%	$2	$1	$28	14.28%	$0	$0	$4	$0	49.5%	$2	$1	$28	9.19%	$0	$0	$2
334	Jun-96	$8	$3	$62	4.6%	$0	50.5%	$4	$2	$29	14.28%	$0	$0	$4	$0	49.5%	$4	$1	$28	9.19%	$0	$0	$2
335	Jul-96	($3)	$0	$60	0.1%	$0	50.5%	($1)	$0	$32	14.28%	$0	$0	$4	$0	49.5%	($1)	$0	$31	9.19%	$0	$0	$3
336	Aug-96	$6	$0	$65	0.3%	$0	50.5%	$3	$0	$30	14.28%	$0	$0	$5	$0	49.5%	$3	$0	$30	9.19%	$0	$0	$3
337	Sep-96	$7	$1	$71	1.7%	$0	50.5%	$4	$1	$33	14.28%	$0	$0	$5	$0	49.5%	$4	$1	$32	9.19%	$0	$0	$3
338	Oct-96	$5	$0	$75	0.6%	$0	50.5%	$2	$0	$36	14.28%	$0	$0	$5	$0	49.5%	$2	$0	$35	9.19%	$0	$0	$3
339	Nov-96	$5	$0	$80	0.0%	$0	50.5%	$2	$0	$38	14.28%	$0	$0	$6	$0	49.5%	$2	$0	$37	9.19%	$0	$0	$4
340	Dec-96	$5	$11	$74	13.0%	$0	50.5%	$3	$6	$40	14.28%	$0	$1	$6	$0	49.5%	$3	$5	$40	9.19%	$0	$0	$3

SOURCE:

Column 1	Time in months
Column 2	Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 3	Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 4	Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 5	Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 6	Sum (prior six months Col 12) - sumproduct(prior six months Col 12 * prior six months Col 5) [A]
Column 7	Exhibit 11
Column 8	Col 2 * Col 7
Column 9	(cum Col 8 - cum prior Col 9 + cum Col 6) * Col 5
Column 10	prior (Col 8 - Col 9 + Col 10) + Col 6
Column 11	Exhibit 20
Column 12	(Col 10 * Col 11)/12
Column 13	prior Col 14 * Col 5 + [B]
Column 14	prior Col 14 + Col 12 - Col 13
Column 15	Sum (prior six months Col 21) - sumproduct(prior six months Col 21 * prior six months Col 5) [A]
Column 16	1.0 - Col 7
Column 17	Col 2 * Col 16
Column 18	(cum Col 17 - cum prior Col 18 + cum Col 15) * Col 5
Column 19	prior (Col 17 - Col 18 + Col 19) + Col 15
Column 20	Exhibit 15, Schedule 3
Column 21	(Col 19 * Col 20) / 12
Column 22	prior Col 23 * Col 5 +[C]
Column 23	prior Col 23 + Col 21 - Col 22

[A] for the months January and July prior to June of 1977, otherwise equal to 0
[B] if Col 5 = 100%, +Col 12, otherwise 0
[C] if Col 5 = 100%, +Col 19, otherwise 0

Illustrative Annual Amortization of AFUDC, 1977-1996
(millions $)

Appropriate ROR and
Capital Structure,
Carriers' Inputs Otherwise

Line No.	Description	Source	Starting Balances	1977	1978	1979	1980	1981	1982	1983
1	Amortization Factor - Net Basis	Schedule 13, Ln. 6		1.70%	4.10%	4.26%	4.44%	4.64%	3.44%	3.60%
2	Net Equity AFUDC - BOY	Prior Ln. 5		$1,491	$1,467	$1,414	$1,357	$1,305	$1,255	$1,222
3	Equity AFUDC Additions	Schedule 6, col 13	$1,491	$1	$7	$4	$8	$10	$11	$7
4	Current Period Equity AFUDC Amortization	(Ln.2 + Ln.3) * Ln.1		$25	$61	$60	$61	$61	$44	$44
5	Net Equity AFUDC - EOY	Lns.(2+3-4)	$1,491	$1,467	$1,414	$1,357	$1,305	$1,255	$1,222	$1,185
6	Accumulated Equity AFUDC Additions	Ln. 3 + Prior Ln. 6	$1,491	$1,492	$1,499	$1,503	$1,512	$1,522	$1,533	$1,540
7	Accumulated Equity AFUDC Amortization	Ln. 4 + Prior Ln. 7		$25	$86	$146	$207	$268	$311	$356
8	Net Debt AFUDC - BOY	Prior Ln. 11		$433	$426	$413	$397	$384	$371	$363
9	Debt AFUDC Additions	Schedule 6, col 22	$433	$1	$4	$2	$4	$5	$5	$3
10	Current Period Debt AFUDC Amortization	(Ln. 8 + Ln. 9) * Ln.1		$7	$18	$18	$18	$18	$13	$13
11	Net Debt AFUDC - EOY	Lns. (8 + 9 - 10)	$433	$426	$413	$397	$384	$371	$363	$353
12	Accumulated Debt AFUDC Additions	Ln. 9 + Prior Ln. 12	$433	$434	$438	$440	$444	$449	$454	$457
13	Accumulated Debt AFUDC Amortization	Ln. 10 + Prior Ln. 13		$7	$25	$43	$61	$79	$92	$105
14	Total Current Period AFUDC Amortization	Ln. 4 + Ln. 10		$32.7	$78.2	$78.1	$78.4	$79.1	$56.5	$57.4

Illustrative Annual Amortization of AFUDC, 1977-1996
(millions $)

Appropriate ROR and
Capital Structure,
Carriers' Inputs Otherwise

Line No.	Description	Source	1984	1985	1986	1987	1988	1989	1990	1991
1	Amortization Factor - Net Basis	Schedule 13, Ln. 6	3.72%	3.88%	3.91%	4.09%	4.21%	4.49%	4.72%	4.98%
2	Net Equity AFUDC - BOY	Prior Ln. 5	$1,185	$1,144	$1,100	$1,058	$1,015	$972	$930	$888
3	Equity AFUDC Additions	Schedule 6, col 13	$4	$1	$0	$1	$0	$1	$2	$6
4	Current Period Equity AFUDC Amortization	(Ln.2 + Ln.3) * Ln.1	$44	$44	$43	$43	$43	$44	$44	$44
5	Net Equity AFUDC - EOY	Lns.(2+3-4)	$1,144	$1,100	$1,058	$1,015	$972	$930	$888	$849
6	Accumulated Equity AFUDC Additions	Ln. 3 + Prior Ln. 6	$1,544	$1,545	$1,545	$1,545	$1,546	$1,547	$1,548	$1,555
7	Accumulated Equity AFUDC Amortization	Ln. 4 + Prior Ln. 7	$400	$444	$487	$531	$573	$617	$661	$705
8	Net Debt AFUDC - BOY	Prior Ln. 11	$353	$341	$328	$316	$303	$290	$278	$266
9	Debt AFUDC Additions	Schedule 6, col 22	$2	$0	$0	$0	$0	$0	$1	$4
10	Current Period Debt AFUDC Amortization	(Ln. 8 + Ln. 9) * Ln.1	$13	$13	$13	$13	$13	$13	$13	$13
11	Net Debt AFUDC - EOY	Lns. (8 + 9 - 10)	$341	$328	$316	$303	$290	$278	$266	$256
12	Accumulated Debt AFUDC Additions	Ln. 9 + Prior Ln. 12	$459	$459	$460	$460	$460	$461	$462	$465
13	Accumulated Debt AFUDC Amortization	Ln. 10 + Prior Ln. 13	$118	$131	$144	$157	$170	$183	$196	$209
14	Total Current Period AFUDC Amortization	Ln. 4 + Ln. 10	$57.4	$57.6	$55.8	$56.2	$55.5	$56.8	$57.1	$57.9

Illustrative Annual Amortization of AFUDC, 1977-1996
(millions $)

Appropriate ROR and
Capital Structure,
Carriers' Inputs Otherwise

Line No.	Description	Source	1992	1993	1994	1995	1996
1	Amortization Factor - Net Basis	Schedule 13, Ln. 6	5.41%	5.77%	5.95%	6.30%	6.45%
2	Net Equity AFUDC - BOY	Prior Ln. 5	$849	$808	$763	$720	$677
3	Equity AFUDC Additions	Schedule 6, col 13	$4	$3	$2	$2	$2
4	Current Period Equity AFUDC Amortization	(Ln.2 + Ln.3) * Ln.1	$46	$47	$46	$46	$44
5	Net Equity AFUDC - EOY	Lns.(2+3-4)	$808	$763	$720	$677	$635
6	Accumulated Equity AFUDC Additions	Ln. 3 + Prior Ln. 6	$1,559	$1,562	$1,564	$1,566	$1,568
7	Accumulated Equity AFUDC Amortization	Ln. 4 + Prior Ln. 7	$752	$798	$844	$889	$933
8	Net Debt AFUDC - BOY	Prior Ln. 11	$256	$245	$232	$219	$207
9	Debt AFUDC Additions	Schedule 6, col 22	$3	$2	$1	$1	$1
10	Current Period Debt AFUDC Amortization	(Ln. 8 + Ln. 9) * Ln.1	$14	$14	$14	$14	$13
11	Net Debt AFUDC - EOY	Lns. (8 + 9 - 10)	$245	$232	$219	$207	$194
12	Accumulated Debt AFUDC Additions	Ln. 9 + Prior Ln. 12	$468	$469	$471	$472	$473
13	Accumulated Debt AFUDC Amortization	Ln. 10 + Prior Ln. 13	$223	$237	$251	$265	$279
14	Total Current Period AFUDC Amortization	Ln. 4 + Ln. 10	$60.2	$61.0	$59.4	$59.4	$57.2

Illustrative Rate Base, 1977-1996
(millions $)

Appropriate ROR and
Capital Structure,
Carrier Inputs Otherwise

Line No.	Description	Source	Starting Balances	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
1	Gross Carrier Property - BOY 1/	Prior Ln. 10	$7,741	$9,665	$9,843	$10,011	$10,101	$10,226	$10,288	$10,344	$10,396	$10,423	$10,436
2	Gross Carrier Property Additions	Schedule 14, Ln. 3		$1,422	$98	$100	$106	$49	$65	$70	$38	$26	$21
3	Less Additions to Capitalized Interest	Sch. 14, Ln. 10 - Prior Ln. 10		$1,216	$0	$0	$0	($0)	$0	$0	($1)	($0)	($0)
4	Gross Carrier Property Additions, Net IDC	Ln. 2 - Ln. 3		$206	$98	$100	$106	$50	$65	$70	$39	$26	$21
5	Acquisitions of Carrier Property in Service	Schedule 14, Ln. 4		$0	$0	$0	$170	$0	$0	$0	$0	$0	$0
6	Retirements of CPIS	Schedule 14, Ln. 5		($29)	($7)	($12)	($165)	($2)	($12)	($24)	($13)	($14)	($3)
7	Adjustments to CPIS	Schedule 14, Ln. 6		($0)	$65	($4)	$1	($1)	($13)	($4)	($4)	$0	$0
8	Equity AFUDC Additions	Schedule 6, col 13	$1,491	$1	$7	$4	$8	$10	$11	$7	$4	$1	$0
9	Debt AFUDC Additions	Schedule 6, col 22	$433	$1	$4	$2	$4	$5	$5	$3	$2	$0	$0
10	Gross Carrier Property - EOY	Lns (1+4+5+6+7+8+9)	$9,665	$9,843	$10,011	$10,101	$10,226	$10,288	$10,344	$10,396	$10,423	$10,436	$10,455
11	Accumulated Depreciation	Schedule 5, Ln. 4		$134	$453	$775	$1,089	$1,421	$1,645	$1,876	$2,114	$2,345	$2,580
12	Accumulated Equity AFUDC Amortization	Schedule 7, Ln. 7		$25	$86	$146	$207	$268	$311	$356	$400	$444	$487
13	Accumulated Debt AFUDC Amortization	Schedule 7, Ln. 13		$7	$25	$43	$61	$79	$92	$105	$118	$131	$144
14	CWIP Balance - EOY	Schedule 14, Ln. 8		$42	$24	$28	$29	$29	$33	$15	$4	$1	$2
15	Net Carrier Property	Lns (10 -11-12-13-14)	$9,665	$9,635	$9,424	$9,110	$8,841	$8,491	$8,263	$8,044	$7,788	$7,515	$7,242
16	Working Capital	Schedule 14, Ln. 11		$57	$29	$36	$34	$39	$39	$29	$33	$34	$29
17	ADIT	Schedule 11, Ln. 20		$177	$446	$672	$877	$1,064	$1,312	$1,538	$1,743	$1,923	$2,076
18	Rate Base	Lns (15+16-17)	$9,665	$9,516	$9,007	$8,474	$7,998	$7,467	$6,990	$6,535	$6,078	$5,626	$5,194
19	Average Rate Base	(Ln.18+Prior Ln.18)/2		$9,590	$9,261	$8,740	$8,236	$7,732	$7,228	$6,762	$6,306	$5,852	$5,410

1/ Starting Balance is from Sch. 6 Sum Records (1 to 106)

Illustrative Rate Base, 1977-1996
(millions $)

Appropriate ROR and
Capital Structure,
Carrier Inputs Otherwise

Line No.	Description	Source	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
1	Gross Carrier Property - BOY 1/	Prior Ln. 10	$10,455	$10,471	$10,476	$10,520	$10,674	$10,772	$10,834	$10,863	$10,908	$10,963
2	Gross Carrier Property Additions	Schedule 14, Ln. 3	$32	$17	$48	$156	$141	$71	$36	$51	$56	$52
3	Less Additions to Capitalized Interest	Sch. 14, Ln. 10 - Prior Ln. 1(	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($9)
4	Gross Carrier Property Additions, Net IDC	Ln. 2 - Ln. 3	$32	$17	$48	$156	$141	$71	$36	$51	$56	$61
5	Acquisitions of Carrier Property in Service	Schedule 14, Ln. 4	$0	$0	$0	$0	$0	$0	$0	$0	$0	$81
6	Retirements of CPIS	Schedule 14, Ln. 5	($17)	($13)	($5)	($4)	($53)	($16)	($11)	($10)	($4)	($116)
7	Adjustments to CPIS	Schedule 14, Ln. 6	$0	$0	($0)	$0	($0)	$0	($0)	$0	$0	$0
8	Equity AFUDC Additions	Schedule 6, col 13	$1	$0	$1	$2	$6	$4	$3	$2	$2	$2
9	Debt AFUDC Additions	Schedule 6, col 22	$0	$0	$0	$1	$4	$3	$2	$1	$1	$1
10	Gross Carrier Property - EOY	Lns (1+4+5+6+7+8+9)	$10,471	$10,476	$10,520	$10,674	$10,772	$10,834	$10,863	$10,908	$10,963	$10,992
11	Accumulated Depreciation	Schedule 5, Ln. 4	$2,804	$3,029	$3,270	$3,516	$3,720	$3,979	$4,248	$4,513	$4,784	$4,982
12	Accumulated Equity AFUDC Amortization	Schedule 7, Ln. 7	$531	$573	$617	$661	$705	$752	$798	$844	$889	$933
13	Accumulated Debt AFUDC Amortization	Schedule 7, Ln. 13	$157	$170	$183	$196	$209	$223	$237	$251	$265	$279
14	CWIP Balance - EOY	Schedule 14, Ln. 8	$2	$9	$20	$94	$32	$34	$24	$31	$51	$74
15	Net Carrier Property	Lns (10 -11-12-13-14)	$6,978	$6,695	$6,430	$6,207	$6,105	$5,846	$5,555	$5,268	$4,973	$4,725
16	Working Capital	Schedule 14, Ln. 11	$33	$36	$36	$39	$59	$54	$44	$43	$34	$36
17	ADIT	Schedule 11, Ln. 20	$2,175	$2,229	$2,254	$2,257	$2,237	$2,182	$2,106	$2,012	$1,895	$1,780
18	Rate Base	Lns (15+16-17)	$4,836	$4,503	$4,212	$3,989	$3,927	$3,718	$3,493	$3,299	$3,113	$2,981
19	Average Rate Base	(Ln.18+Prior Ln.18)/2	$5,015	$4,669	$4,357	$4,101	$3,958	$3,823	$3,606	$3,396	$3,206	$3,047

Illustrative State Tax Depreciaiton, 1977-1996: Exhibit 4
Appropriate ROR and Capital Structure, Schedule 9
Carriers' Inputs Otherwise (millions $) Page 1 of 2

	Year	1 1977	2 1978	3 1979	4 1980	5 1981	6 1982	7 1983	8 1984	9 1985	10 1986	11 1987	12 1988
Depreciation Factors - (1977)		5.71%	4.00%	4.00%	4.00%	4.00%	10.22%	9.61%	9.00%	8.38%	7.77%	7.15%	6.54%
Depreciation Factors - (1978)		2.00%	4.00%	4.00%	4.00%	10.75%	10.14%	9.52%	8.91%	8.29%	7.68%	7.06%	6.45%
Depreciation Factors - (1979)		2.00%	4.00%	4.00%	10.84%	10.23%	9.61%	9.00%	8.39%	7.77%	7.16%	6.54%	5.93%
Depreciation Factors - (1980)		2.00%	4.00%	10.87%	10.26%	9.65%	9.03%	8.42%	7.80%	7.19%	6.58%	5.96%	5.35%
Depreciation Factors - (1981)		2.00%	11.15%	10.20%	9.58%	8.97%	8.35%	7.74%	7.13%	6.51%	5.90%	5.28%	4.30%
Depreciation Factors - (1982-present)		5.71%	10.78%	9.82%	9.21%	8.60%	7.98%	7.37%	6.75%	6.14%	5.53%	4.91%	4.30%
Year		Property Additions [a] Exhibit 1, Lns. 3 - (1+2)[1]	AFUDC Additions [b] Sch. 6, Col 22	Tax Basis for Depreciation [d] = [a] + [b]									
1977	1	$7,889	$434	$8,322	$476	$333	$333	$333	$333	$851	$800	$749	$698	$646	$595	$544
1978	2	$112	$4	$117	$0	$2	$5	$5	$5	$13	$12	$11	$10	$10	$9	$8
1979	3	$97	$2	$99	$0	$0	$2	$4	$4	$11	$10	$9	$9	$8	$8	$7
1980	4	$123	$4	$128	$0	$0	$0	$3	$5	$14	$13	$12	$12	$11	$10	$9
1981	5	$49	$5	$54	$0	$0	$0	$0	$1	$6	$6	$5	$5	$5	$4	$4
1982	6	$60	$5	$65	$0	$0	$0	$0	$0	$4	$7	$6	$6	$6	$5	$5
1983	7	$84	$3	$87	$0	$0	$0	$0	$0	$0	$5	$9	$9	$8	$8	$7
1984	8	$51	$2	$53	$0	$0	$0	$0	$0	$0	$0	$3	$6	$5	$5	$5
1985	9	$29	$0	$29	$0	$0	$0	$0	$0	$0	$0	$0	$2	$3	$3	$3
1986	10	$20	$0	$20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1	$2	$2
1987	11	$33	$0	$33	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2	$4
1988	12	$10	$0	$10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1
1989	13	$37	$0	$37	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1990	14	$81	$1	$82	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1991	15	$203	$4	$206	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1992	16	$69	$3	$72	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1993	17	$46	$2	$47	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1994	18	$43	$1	$45	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1995	19	$36	$1	$37	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1996	20	$29	$1	$30	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total State Tax Depreciation					$476	$335	$340	$344	$348	$898	$852	$806	$755	$703	$651	$598

[1] For 1977, Exh. 1, Lns 3 - (1+2+10)

Illustrative State Tax Depreciaiton, 1977-1996: Exhibit 4
Appropriate ROR and Capital Structure, Schedule 9
Carriers' Inputs Otherwise (millions $) Page 2 of 2

				Year	**13** 1989	**14** 1990	**15** 1991	**16** 1992	**17** 1993	**18** 1994	**19** 1995	**20** 1996
Depreciation Factors - (1977)					5.93%	5.31%	4.70%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1978)					5.84%	5.22%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1979)					5.32%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1980)					3.68%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1981)					3.68%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1982-present)					3.68%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Year		Property Additions [a] Exhibit 1, Lns. 3 - (1+2)[1]	AFUDC Additions [b] Sch. 6, Col 22	Tax Basis for Depreciation [d] = [a] + [b]								
1977	1	$7,889	$434	$8,322	$493	$442	$391	$153	$102	$51	$0	$0
1978	2	$112	$4	$117	$8	$7	$6	$3	$2	$1	$1	$0
1979	3	$97	$2	$99	$6	$6	$5	$3	$2	$2	$1	$1
1980	4	$123	$4	$128	$8	$8	$7	$5	$4	$3	$2	$2
1981	5	$49	$5	$54	$4	$3	$3	$2	$2	$2	$1	$1
1982	6	$60	$5	$65	$4	$4	$4	$3	$3	$2	$2	$2
1983	7	$84	$3	$87	$6	$6	$5	$5	$4	$4	$3	$3
1984	8	$51	$2	$53	$4	$4	$4	$3	$3	$3	$2	$2
1985	9	$29	$0	$29	$3	$2	$2	$2	$2	$2	$1	$1
1986	10	$20	$0	$20	$2	$2	$2	$1	$1	$1	$1	$1
1987	11	$33	$0	$33	$3	$3	$3	$3	$2	$2	$2	$2
1988	12	$10	$0	$10	$1	$1	$1	$1	$1	$1	$1	$1
1989	13	$37	$0	$37	$2	$4	$4	$3	$3	$3	$3	$3
1990	14	$81	$1	$82	$0	$5	$9	$8	$8	$7	$7	$6
1991	15	$203	$4	$206	$0	$0	$12	$22	$20	$19	$18	$16
1992	16	$69	$3	$72	$0	$0	$0	$4	$8	$7	$7	$6
1993	17	$46	$2	$47	$0	$0	$0	$0	$3	$5	$5	$4
1994	18	$43	$1	$45	$0	$0	$0	$0	$0	$3	$5	$4
1995	19	$36	$1	$37	$0	$0	$0	$0	$0	$0	$2	$4
1996	20	$29	$1	$30	$0	$0	$0	$0	$0	$0	$0	$2
Total State Tax Depreciation					$545	$496	$456	$222	$171	$117	$64	$60

[1] For 1977, Exh. 1, Lns 3 - (1+2+10)

Illustrative Federal Tax Depreciaiton, 1977-1996: Exhibit 4
Appropriate ROR and Capital Structure, Schedule 10
Carriers' Inputs Otherwise (millions $) Page 1 of 2

						Year	1	2	3	4	5	6	7	8	9	10	11	12
							1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Depreciation Factors - (1977-1980)							5.71%	10.78%	9.82%	9.21%	8.60%	7.98%	7.37%	6.75%	6.14%	5.53%	4.91%	4.30%
Depreciation Factors - (1981-1986)							15.00%	22.00%	21.00%	21.00%	21.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1987-Present)							5.00%	9.50%	8.55%	7.70%	6.93%	6.23%	5.90%	5.90%	5.90%	5.90%	5.90%	5.90%
Year		Property Addition [a] Lns. 3 - (1+2)1	AFUDC Addition [b] Sch. 6, Col 22	TEFRA Adjustment [c] Sch. 12, Ln. 3	Tax Basis for Depreciation [d] = [a] + [b] - [c]													
1977	1	$7,889	$434	$0	$8,322		$476	$897	$818	$767	$715	$664	$613	$562	$511	$460	$409	$358
1978	2	$112	$4	$0	$117		$0	$7	$13	$11	$11	$10	$9	$9	$8	$7	$6	$6
1979	3	$97	$2	$0	$99		$0	$0	$6	$11	$10	$9	$8	$8	$7	$7	$6	$5
1980	4	$123	$4	$0	$128		$0	$0	$0	$7	$14	$13	$12	$11	$10	$9	$9	$8
1981	5	$49	$5	$0	$54		$0	$0	$0	$0	$8	$12	$11	$11	$11	$0	$0	$0
1982	6	$60	$5	$0	$65		$0	$0	$0	$0	$0	$10	$14	$14	$14	$14	$0	$0
1983	7	$84	$3	$4	$83		$0	$0	$0	$0	$0	$0	$12	$18	$17	$17	$17	$0
1984	8	$51	$2	$3	$50		$0	$0	$0	$0	$0	$0	$0	$7	$11	$10	$10	$10
1985	9	$29	$0	$1	$28		$0	$0	$0	$0	$0	$0	$0	$0	$4	$6	$6	$6
1986	10	$20	$0	$0	$20		$0	$0	$0	$0	$0	$0	$0	$0	$0	$3	$4	$4
1987	11	$33	$0	$0	$33		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2	$3
1988	12	$10	$0	$0	$10		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1
1989	13	$37	$0	$0	$37		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1990	14	$81	$1	$0	$82		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1991	15	$203	$4	$0	$206		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1992	16	$69	$3	$0	$72		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1993	17	$46	$2	$0	$47		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1994	18	$43	$1	$0	$45		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1995	19	$36	$1	$0	$37		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1996	20	$29	$1	$0	$30		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Federal Tax Depreciation							$476	$903	$836	$796	$758	$718	$681	$640	$594	$534	$470	$401

[1] For 1977, Exh. 1, Lns 3 - (1+2+10)

Illustrative Federal Tax Depreciaiton, 1977-1996: Exhibit 4
Appropriate ROR and Capital Structure, Schedule 10
Carriers' Inputs Otherwise (millions $) Page 2 of 2

					Year	**13** 1989	**14** 1990	**15** 1991	**16** 1992	**17** 1993	**18** 1994	**19** 1995	**20** 1996
Depreciation Factors - (1977-1980)						3.68%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1981-1986)						0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1987-Present)						5.90%	5.90%	5.90%	2.95%	0.00%	0.00%	0.00%	0.00%
Year		Property Addition [a] Lns. 3 - (1+2)1	AFUDC Addition [b] Sch. 6, Col 22	TEFRA Adjustment [c] Sch. 12, Ln. 3	Tax Basis for Depreciation [d] = [a] + [b] - [c]								
1977	1	$7,889	$434	$0	$8,322	$307	$256	$204	$153	$102	$51	$0	$0
1978	2	$112	$4	$0	$117	$5	$4	$4	$3	$2	$1	$1	$0
1979	3	$97	$2	$0	$99	$5	$4	$4	$3	$2	$2	$1	$1
1980	4	$123	$4	$0	$128	$7	$6	$5	$5	$4	$3	$2	$2
1981	5	$49	$5	$0	$54	$0	$0	$0	$0	$0	$0	$0	$0
1982	6	$60	$5	$0	$65	$0	$0	$0	$0	$0	$0	$0	$0
1983	7	$84	$3	$4	$83	$0	$0	$0	$0	$0	$0	$0	$0
1984	8	$51	$2	$3	$50	$0	$0	$0	$0	$0	$0	$0	$0
1985	9	$29	$0	$1	$28	$6	$0	$0	$0	$0	$0	$0	$0
1986	10	$20	$0	$0	$20	$4	$4	$0	$0	$0	$0	$0	$0
1987	11	$33	$0	$0	$33	$3	$3	$2	$2	$2	$2	$2	$2
1988	12	$10	$0	$0	$10	$1	$1	$1	$1	$1	$1	$1	$1
1989	13	$37	$0	$0	$37	$2	$4	$3	$3	$3	$2	$2	$2
1990	14	$81	$1	$0	$82	$0	$4	$8	$7	$6	$6	$5	$5
1991	15	$203	$4	$0	$206	$0	$0	$10	$20	$18	$16	$14	$13
1992	16	$69	$3	$0	$72	$0	$0	$0	$4	$7	$6	$6	$5
1993	17	$46	$2	$0	$47	$0	$0	$0	$0	$2	$4	$4	$4
1994	18	$43	$1	$0	$45	$0	$0	$0	$0	$0	$2	$4	$4
1995	19	$36	$1	$0	$37	$0	$0	$0	$0	$0	$0	$2	$4
1996	20	$29	$1	$0	$30	$0	$0	$0	$0	$0	$0	$0	$1
Total Federal Tax Depreciation						$339	$286	$241	$200	$149	$97	$44	$42

[1] For 1977, Exh. 1, Lns 3 - (1+2+10)

Illustrative ADIT Balances, 1977-1996: Appropriate ROR and Capital Structure, Carriers' Inputs Otherwise (millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
1	Book Depreciation Including Debt AFUDC Amortization	(Sch5 Ln.1+Sch7 Ln.13)	$141	$342	$344	$349	$351	$250	$255	$256	$258	$251	$254	$251
2	State Tax Depreciation	Schedule 9	$476	$335	$340	$344	$348	$898	$852	$806	$755	$703	$651	$598
3	State Tax Timing Differences	Ln. 2 - Ln. 1	$335	($7)	($5)	($5)	($4)	$647	$597	$550	$497	$452	$397	$347
4	State Income Tax Rate	AK Stat.	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%
5	State Tax Effect	Ln. 3 * Ln. 4	$31	($1)	($0)	($0)	($0)	$61	$56	$52	$47	$43	$37	$33
6	State ADIT Balance	Ln. 5 + Prior Ln. 6	$31	$31	$30	$30	$30	$90	$146	$198	$245	$287	$325	$357
7	Book Depreciation Including Debt AFUDC Amortizatio	Ln.1	$141	$342	$344	$349	$351	$250	$255	$256	$258	$251	$254	$251
8	Depreciation of TEFRA Adjustment	Schedule 12 Ln. 6	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Book Depreciation after TEFRA Adjustment	Ln. 7 - Ln. 8	$141	$342	$344	$349	$351	$250	$255	$256	$258	$250	$253	$250
10	Federal Tax Depreciation	Schedule 10	$476	$903	$836	$796	$758	$718	$681	$640	$594	$534	$470	$401
11	Tax Effect of State Timing Differences	Ln. 5	$31	($1)	($0)	($0)	($0)	$61	$56	$52	$47	$43	$37	$33
12	Total Federal Tax Deductions	Ln. 10 - Ln.11	$444	$904	$836	$796	$758	$657	$625	$589	$547	$491	$432	$368
13	Federal Tax Timing Differences	Ln.12 - Ln. 9	$303	$562	$492	$447	$407	$406	$369	$333	$290	$241	$179	$118
14	Federal Income Tax Rate	IRC	48.00%	48.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	39.95%	34.00%
15	Federal Tax Effect	Ln. 13 * Ln. 14	$146	$270	$226	$206	$187	$187	$170	$153	$133	$111	$72	$40
16	FASB 96/109 Adjustment	Cum. Ln 13 * Change in Ln 1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$233	$240
17	Amortization Basis for FASB 96/109 Adjustment	Lns(Prior 17 + 16 - Prior 18)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$233	$463
18	Amortization of FASB 96/109 Adjustment	Ln.17* Sch. 13 Ln.6	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10	$20
19	Federal ADIT Balance	Prior Ln.19 + Ln.15 - Ln.18	$146	$415	$642	$847	$1,035	$1,221	$1,391	$1,545	$1,678	$1,789	$1,851	$1,871
20	Total State And Federal ADIT Balances	Ln. 6 + Ln. 19	$177	$446	$672	$877	$1,064	$1,312	$1,538	$1,743	$1,923	$2,076	$2,175	$2,229

Illustrative ADIT Balances, 1977-1996: Appropriate ROR and Capital Structure, Carriers' Inputs Otherwise (millions $)

Line No.	Description	Source	1989	1990	1991	1992	1993	1994	1995	1996
1	Book Depreciation Including Debt AFUDC Amortization	(Sch5 Ln.1+Sch7 Ln.13)	$258	$262	$274	$287	$293	$287	$288	$281
2	State Tax Depreciation	Schedule 9	$545	$496	$456	$222	$171	$117	$64	$60
3	State Tax Timing Differences	Ln. 2 - Ln. 1	$287	$234	$182	($65)	($122)	($169)	($224)	($221)
4	State Income Tax Rate	AK Stat.	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%
5	State Tax Effect	Ln. 3 * Ln. 4	$27	$22	$17	($6)	($11)	($16)	($21)	($21)
6	State ADIT Balance	Ln. 5 + Prior Ln. 6	$384	$406	$423	$417	$406	$390	$369	$348
7	Book Depreciation Including Debt AFUDC Amortizatio	Ln.1	$258	$262	$274	$287	$293	$287	$288	$281
8	Depreciation of TEFRA Adjustment	Schedule 12 Ln. 6	$0	$0	$0	$0	$0	$0	$0	$0
9	Book Depreciation after TEFRA Adjustment	Ln. 7 - Ln. 8	$258	$262	$274	$287	$292	$286	$287	$280
10	Federal Tax Depreciation	Schedule 10	$339	$286	$241	$200	$149	$97	$44	$42
11	Tax Effect of State Timing Differences	Ln. 5	$27	$22	$17	($6)	($11)	($16)	($21)	($21)
12	Total Federal Tax Deductions	Ln. 10 - Ln.11	$312	$264	$224	$206	$160	$113	$65	$63
13	Federal Tax Timing Differences	Ln.12 - Ln. 9	$55	$1	($50)	($81)	($132)	($174)	($222)	($218)
14	Federal Income Tax Rate	IRC	34.00%	34.00%	34.00%	34.00%	35.00%	35.00%	35.00%	35.00%
15	Federal Tax Effect	Ln. 13 * Ln. 14	$19	$1	($17)	($28)	($46)	($61)	($78)	($76)
16	FASB 96/109 Adjustment	Cum. Ln 13 * Change in Ln 1	$0	$0	$0	$0	($41)	$0	$0	$0
17	Amortization Basis for FASB 96/109 Adjustment	Lns(Prior 17 + 16 - Prior 18)	$444	$424	$404	$384	$322	$304	$286	$268
18	Amortization of FASB 96/109 Adjustment	Ln.17* Sch. 13 Ln.6	$20	$20	$20	$21	$19	$18	$18	$17
19	Federal ADIT Balance	Prior Ln.19 + Ln.15 - Ln.18	$1,870	$1,851	$1,813	$1,765	$1,700	$1,622	$1,526	$1,432
20	Total State And Federal ADIT Balances	Ln. 6 + Ln. 19	$2,254	$2,257	$2,237	$2,182	$2,106	$2,012	$1,895	$1,780

Illustrative TEFRA Adjustment to ADIT, 1977-1996: Appropriate ROR and Capital Structure, Carriers' Inputs Otherwise (millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
1	Tax Depreciation Basis before TEFRA Adjustment	Schedule 9, col [d]	$8,322	$117	$99	$128	$54	$65	$87	$53	$29	$20	$33	$10
2	Tax Depreciation Basis Reduction	IRC	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	5.00%	5.00%	0.00%	0.00%	0.00%
3	TEFRA Adjustment	Ln. 1 * Ln. 2	$0	$0	$0	$0	$0	$0	$4	$3	$1	$0	$0	$0
4	TEFRA Adjustment Balance (BOY)	Ln. 3 + Prior Ln. 7	$0	$0	$0	$0	$0	$0	$4	$7	$8	$8	$7	$7
5	Depreciation Factor	Schedule 13 Ln. 6	1.70%	4.10%	4.26%	4.44%	4.64%	3.44%	3.60%	3.72%	3.88%	3.91%	4.09%	4.21%
6	Depreciation of TEFRA Adjustment	Ln. 4 * Ln. 5	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	TEFRA Adjustment Balance (EOY)	Ln. 4 - Ln. 6	$0	$0	$0	$0	$0	$0	$4	$7	$8	$7	$7	$7

Illustrative TEFRA Adjustment to ADIT, 1977-1996: Appropriate ROR and Capital Structure, Carriers' Inputs Otherwise (millions $)

Line No.	Description	Source	1989	1990	1991	1992	1993	1994	1995	1996
1	Tax Depreciation Basis before TEFRA Adjustment	Schedule 9, col [d]	$37	$82	$206	$72	$47	$45	$37	$30
2	Tax Depreciation Basis Reduction	IRC	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3	TEFRA Adjustment	Ln. 1 * Ln. 2	$0	$0	$0	$0	$0	$0	$0	$0
4	TEFRA Adjustment Balance (BOY)	Ln. 3 + Prior Ln. 7	$7	$7	$6	$6	$6	$5	$5	$5
5	Depreciation Factor	Schedule 13 Ln. 6	4.49%	4.72%	4.98%	5.41%	5.77%	5.95%	6.30%	6.45%
6	Depreciation of TEFRA Adjustment	Ln. 4 * Ln. 5	$0	$0	$0	$0	$0	$0	$0	$0
7	TEFRA Adjustment Balance (EOY)	Ln. 4 - Ln. 6	$7	$6	$6	$6	$5	$5	$5	$4

Illustrative Amortization Rates, 1977-1996
(percentages)

Appropriate ROR and
Capital Structure,
Carrier Inputs Otherwise

Line No.	Description	Source	1977	1978	1979	1980	1981	1982
1	Form 6 Accumulated Depreciation	RGV-143-C, TAPS-RGV WP3, Sch. 12	$154	$522	$893	$1,256	$1,637	$1,895
2	Form 6 Depreciation Expense	RGV-143-C, TAPS-RGV WP3, Sch. 12	$154	$374	$375	$380	$382	$272
3	Form 6 Depreciable Property	RGV-143-C, TAPS-RGV WP3, Sch. 12	$9,075	$9,249	$9,328	$9,440	$9,485	$9,521
4	Form 6 Composite Depreciation Rates - Net Basis	Ln. 2 / Ln. (3 - 1 + 2)	1.70%	4.10%	4.26%	4.44%	4.64%	3.44%
5	Form 6 Composite Depreciation Rates - Gross Basis	Ln (2 / 3)	1.70%	4.04%	4.02%	4.02%	4.03%	2.86%
6	Composite Depreciation Rates Used - Net Form 6	Ln 4	1.70%	4.10%	4.26%	4.44%	4.64%	3.44%

Illustrative Amortization Rates, 1977-1996
(percentages)

Appropriate ROR and
Capital Structure,
Carrier Inputs Otherwise

Line No.	Description	Source	1983	1984	1985	1986	1987	1988
1	Form 6 Accumulated Depreciation	RGV-143-C, TAPS-RGV WP3, Sch. 12	$2,161	$2,433	$2,699	$2,968	$3,225	$3,484
2	Form 6 Depreciation Expense	RGV-143-C, TAPS-RGV WP3, Sch. 12	$277	$277	$279	$271	$274	$271
3	Form 6 Depreciable Property	RGV-143-C, TAPS-RGV WP3, Sch. 12	$9,581	$9,613	$9,628	$9,645	$9,661	$9,658
4	Form 6 Composite Depreciation Rates - Net Basis	Ln. 2 / Ln. (3 - 1 + 2)	3.60%	3.72%	3.88%	3.91%	4.09%	4.21%
5	Form 6 Composite Depreciation Rates - Gross Basis	Ln (2 / 3)	2.89%	2.89%	2.90%	2.81%	2.84%	2.81%
6	Composite Depreciation Rates Used - Net Form 6	Ln 4	3.60%	3.72%	3.88%	3.91%	4.09%	4.21%

Illustrative Amortization Rates, 1977-1996
(percentages)

Appropriate ROR and
Capital Structure,
Carrier Inputs Otherwise

Line No.	Description	Source	1989	1990	1991	1992	1993	1994
1	Form 6 Accumulated Depreciation	RGV-143-C, TAPS-RGV WP3, Sch. 12	$3,759	$4,039	$4,277	$4,572	$4,877	$5,177
2	Form 6 Depreciation Expense	RGV-143-C, TAPS-RGV WP3, Sch. 12	$279	$283	$295	$309	$314	$307
3	Form 6 Depreciable Property	RGV-143-C, TAPS-RGV WP3, Sch. 12	$9,689	$9,765	$9,915	$9,969	$10,004	$10,037
4	Form 6 Composite Depreciation Rates - Net Basis	Ln. 2 / Ln. (3 - 1 + 2)	4.49%	4.72%	4.98%	5.41%	5.77%	5.95%
5	Form 6 Composite Depreciation Rates - Gross Basis	Ln (2 / 3)	2.88%	2.90%	2.98%	3.10%	3.14%	3.06%
6	Composite Depreciation Rates Used - Net Form 6	Ln 4	4.49%	4.72%	4.98%	5.41%	5.77%	5.95%

Illustrative Amortization Rates, 1977-1996
(percentages)

Line No.	Description	Source	1995	1996
1	Form 6 Accumulated Depreciation	RGV-143-C, TAPS-RGV WP3, Sch. 12	$5,483	$5,712
2	Form 6 Depreciation Expense	RGV-143-C, TAPS-RGV WP3, Sch. 12	$309	$300
3	Form 6 Depreciable Property	RGV-143-C, TAPS-RGV WP3, Sch. 12	$10,069	$10,063
4	Form 6 Composite Depreciation Rates - Net Basis	Ln. 2 / Ln. (3 - 1 + 2)	6.30%	6.45%
5	Form 6 Composite Depreciation Rates - Gross Basis	Ln (2 / 3)	3.06%	2.98%
6	Composite Depreciation Rates Used - Net Form 6	Ln 4	6.30%	6.45%

Illustrative Carrier Property Balances, 1977-1996

Appropriate ROR and
Capital Structure,
Carrier Inputs Otherwise

Line No.	Description[1]	Starting Balance	1977	1978	1979	1980	1981	1982	1983	1984	1985
1	Land - New Construction Exp.		$17	$0	$0	$0	$0	$0	$0	$0	$0
2	CWIP - New Construction Exp.		$42	($14)	$3	($17)	($0)	$5	($14)	($13)	($3)
3	Grand Total - New Construction Exp.	$7,741	$1,422	$98	$100	$106	$49	$65	$70	$38	$26
4	Grand Total - Acquired Property		$0	$0	$0	$170	$0	$0	$0	$0	$0
5	Grand Total - Credits for Retirements		($29)	($7)	($12)	($165)	($2)	($12)	($24)	($13)	($14)
6	Grand Total - Other Adjustments		($0)	$65	($4)	$1	($1)	($13)	($4)	($4)	$0
7	Land - EOY Balance		$17	$17	$17	$17	$17	$17	$17	$17	$17
8	CWIP - EOY Balance		$42	$24	$28	$29	$29	$33	$15	$4	$1
9	Grand Total - EOY Balance		$9,133	$9,289	$9,373	$9,486	$9,531	$9,572	$9,613	$9,634	$9,646
10	Capitalized Interest - EOY Balance	$1,216	$1,216	$1,216	$1,216	$1,216	$1,215	$1,215	$1,215	$1,214	$1,214
11	Workign Capital		$57.24	$29.20	$36.01	$34.18	$39.23	$38.95	$28.69	$32.58	$33.68
12	Operting Expenses		$242	$450	$396	$456	$466	$468	$456	$441	$462

[1]All inputs from 143-RGV-C,
TAPS-RGV WP3, Schedules 12 & 13

Illustrative Carrier Property Balances, 1977-1996

Appropriate ROR and
Capital Structure,
Carrier Inputs Otherwise

Line No.	Description[1]	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
1	Land - New Construction Exp.	$0	$0	$0	$0	$1	$0	$0	$0	$1	$0	$0
2	CWIP - New Construction Exp.	$1	($1)	$7	$11	$74	($62)	$1	($10)	$7	$20	$23
3	Grand Total - New Construction Exp.	$21	$32	$17	$48	$156	$141	$71	$36	$51	$56	$52
4	Grand Total - Acquired Property	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$81
5	Grand Total - Credits for Retirements	($3)	($17)	($13)	($5)	($4)	($53)	($16)	($11)	($10)	($4)	($116)
6	Grand Total - Other Adjustments	$0	$0	$0	($0)	$0	($0)	$0	($0)	$0	$0	$0
7	Land - EOY Balance	$17	$17	$17	$17	$18	$18	$18	$18	$19	$19	$19
8	CWIP - EOY Balance	$2	$2	$9	$20	$94	$32	$34	$24	$31	$51	$74
9	Grand Total - EOY Balance	$9,665	$9,680	$9,684	$9,726	$9,878	$9,965	$10,020	$10,045	$10,086	$10,139	$10,156
10	Capitalized Interest - EOY Balance	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,205
11	Workign Capital	$28.58	$33.33	$36.15	$36.24	$39.01	$58.84	$54.30	$44.19	$43.05	$34.49	$36.42
12	Operting Expenses	$438	$411	$449	$582	$710	$658	$717	$753	$889	$668	$601

[1]All inputs from 143-RGV-C,
TAPS-RGV WP3, Schedules 12 & 13

Explanatory Note to Exhibit 5

This exhibit is a modified version of a workpaper that supports the Carriers' unrecovered investment analysis of Exhibit RGV-7. The workpaper is contained in hearing exhibit RGV-143-C, and is labeled RGV WP6.

As noted in Part III.C.2(a)(ii), the basic idea behind Exhibit RGV-7 (and hence RGV WP6) is that revenues pay return *on* investment before return (or recovery) *of* investment. RGV-7 subtracts operating expenses from revenues, and then pays towards what the Carriers contend is the requisite return on remaining investment, along with a tax allowance. If funds remain they are applied to investment recovery *and* amortization of AFUDC.[1]

In ratemaking, AFUDC is generally amortized at the same rate that property is depreciated. Therefore, in the approach adopted by RGV WP6, one must solve for the composite "investment recovery rate" that apportions remaining monies to original investment recovery and amortization of both debt and equity portions of AFUDC. This investment recovery rate is expressed on a net percentage basis; given the fraction of funds available for investment recovery, the rate is the ratio of current period investment recovery to total net investment. However, because Carrier data on gross investment is taken from the FERC Form 6, which includes IDC, "total net investment" must be adjusted to remove the amortization of IDC.[2]

To accomplish this complex set of adjustments, RGV WP6 must solve for the net investment recovery rate through iteration. If there are revenues available for investment recovery once operating expenses are paid, then one manually makes a "guess" at the correct investment recovery rate. One continues to refine the guess until the net depreciation rate just barely uses all funds available for investment recovery.

Exhibit 5 modifies RGV WP6 in a few ways. First, DR&R allowances within TSM are removed from revenues, along with operating expenses, before any subsequent return on or of investment is paid. This corrects the Carriers' first unrealistically conservative assumption.[3]

Second, if remaining funds are insufficient to cover the purported required return on investment and tax allowance, then funds are devoted first towards paying for return of debt, rather than return on equity.[4] Funds that remain once the debt obligation is met

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[1] *See* 143-RGV-C, RGV WP6, worksheet "Imputed Depr Rates", Lines 5, 6, 10-14.

[2] *See* 143-RGV-C, RGV WP6, worksheet "WP6 Sch. 2", Lines 4 and 16, and worksheet "WP6 Sch. 4", Lines 4 and 10.

[3] Implementation in Exhibit 5 is at Schedule 1, Lines 2 and 4.

[4] *See* 141-RGV-T, and Tr. 3712 - 3716. Implementation in Exhibit 5 is at Schedule 1, Lines 7-8.

are then devoted to equity return.[5] However, as taxes must be paid on equity, a portion of these remaining funds are used to pay Federal and State taxes.[6] Funds that remain after taxes are paid is the realized after-tax return on equity.[7] The difference between realized and "required" equity returns, if positive, are then capitalized.[8] This is done by, in effect, augmenting additions to the equity portion of AFUDC.[9]

[5] *See* 141-RGV-T, and Tr. 3712 - 3716. Implementation in Exhibit 5 is at Schedule 1, Line 8.

[6] *See* 141-RGV-T, and Tr. 3712 - 3716. Implementation in Exhibit 5 is at Schedule 1, Lines 9-10.

[7] *See* 141-RGV-T, and Tr. 3712 - 3716. Implementation in Exhibit 5 is at Schedule 1, Line 11.

[8] Implementation in Exhibit 5 is at Schedule 1, Lines 12-13.

[9] Implementation in Exhibit 5 is at Schedule 5, Lines 3-6. Given the complex iteration scheme already contained within RGV WP6, the entry for Line 3 for 1977 (for example) is "value"- rather than "formula"-imported from Schedule 1, Line 13. The amortization rate for 1978 is then calculated, and the under-recovery of equity return, if any, is then determined. This amount is then "value"-imported into Schedule 5, Line 3, from Schedule 1, Line 13. The process is repeated through 1996.

Investment Recovery and Imputed Depreciation Rates

Carriers' Unrecovered Investment Analysis: Conservative Assumptions Correctected (millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984	1985
1	Operating Revenues	143-RGV-C, RGV WP6	$527	$2,348	$2,884	$3,425	$3,415	$3,463	$3,494	$3,639	$3,193
2	TSM DR&R Allowance	29-ABJ-W	23.536	95.968	113.143	127.183	120.225	121.149	115.745	110.377	104.048
3	Operating & Maintenance Expense	143-RGV-C, RGV WP6	$242	$450	$396	$456	$466	$468	$456	$441	$462
4	Operating Income	Lns. (1 - 2 - 3)	$261	$1,802	$2,375	$2,842	$2,829	$2,874	$2,923	$3,088	$2,627
5	Equity AFUDC Amortization	Sch. 5, Ln. 5	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Debt AFUDC Amortization	Sch. 5, Ln. 11	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Debt Return	Sch. 2, Ln. 10	$187	$394	$336	$306	$304	$309	$290	$293	$339
8	Total Funds for Pre-Tax Return on Equity	Lns (4-7)	$74	$1,408	$2,039	$2,536	$2,525	$2,565	$2,632	$2,796	$2,288
9	Composite State and Federal Tax Rate	Sch.9 [Lns (4+14*(1-Ln. 4))]	52.89%	52.89%	51.08%	51.08%	51.08%	51.08%	51.08%	51.08%	51.08%
10	Taxes	Lns. (8 * 9)	$39	$745	$1,041	$1,295	$1,290	$1,310	$1,344	$1,428	$1,169
11	After-Tax Return on Equity	Lns. (8 - 10)	$35	$663	$997	$1,241	$1,235	$1,255	$1,288	$1,368	$1,119
12	Required Equity Return	Sch. 2, Ln. 9	$606	$1,142	$1,325	$1,569	$1,794	$1,729	$1,624	$1,763	$1,403
13	Under-recovery of Equity Return (to be capitali	MAX [Lns (12-11), 0]	$571	$479	$328	$329	$559	$474	$336	$395	$283
14	Income Tax Allowance on Required Equity Ret	Sch 11, Ln. 11	$680	$1,282	$1,384	$1,639	$1,873	$1,805	$1,696	$1,841	$1,464
15	Recovery of Investment	Sch. 3, Ln. 18	$0	$0	$0	$0	$0	$0	$0	$0	$0
16	Profit After Complete Investment Recovery	MAX[(Ln. 4 - Lns.(5+6+7+12+14+15), 0]	$0	$0	$0	$0	$0	$0	$0	$0	$0
17	Cumulative Profit After Investment Recovery	Cumulative sum of Ln. 16	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
18	Depreciation Rates - Intermediate (for calculation purposes)	Lns. 16/(Sch. 12 [Lns. 9-8-7] - Sch. 3[Ln. 20+CumSum Ln. 17])*.75 + Ln. 19	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
19	Imputed Composite Depreciation Rates - Net Basis	Iteration until Ln. 16 = 0, and Ln. 18=Ln.19	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Investment Recovery and Imputed Depreciation Rates

Carriers' Unrecovered Investment Analysis: Conservative Assumptions Correctected (millions $)

Line No.	Description	Source	1986	1987	1988	1989	1990	1991	1992	1993	1994
1	Operating Revenues	143-RGV-C, RGV WP6	$2,967	$2,771	$2,367	$2,076	$2,540	$2,348	$2,218	$1,799	$1,921
2	TSM DR&R Allowance	29-ABJ-W	97.766	95.023	85.402	73.214	60.717	50.254	40.334	31.188	24.386
3	Operating & Maintenance Expense	143-RGV-C, RGV WP6	$438	$411	$449	$582	$710	$658	$717	$753	$889
4	Operating Income	Lns. (1 - 2 - 3)	$2,431	$2,265	$1,833	$1,420	$1,769	$1,639	$1,461	$1,015	$1,007
5	Equity AFUDC Amortization	Sch. 5, Ln. 5	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Debt AFUDC Amortization	Sch. 5, Ln. 11	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Debt Return	Sch. 2, Ln. 10	$320	$308	$320	$345	$328	$385	$427	$448	$427
8	Total Funds for Pre-Tax Return on Equity	Lns (4-7)	$2,111	$1,957	$1,513	$1,075	$1,441	$1,254	$1,034	$567	$580
9	Composite State and Federal Tax Rate	Sch.9 [Lns (4+14*(1-Ln. 4))]	51.08%	45.59%	40.20%	40.20%	40.20%	40.20%	40.20%	41.11%	41.11%
10	Taxes	Lns. (8 * 9)	$1,078	$892	$608	$432	$579	$504	$416	$233	$239
11	After-Tax Return on Equity	Lns. (8 - 10)	$1,033	$1,065	$905	$643	$862	$750	$618	$334	$342
12	Required Equity Return	Sch. 2, Ln. 9	$1,423	$1,355	$1,392	$1,352	$1,451	$1,414	$1,383	$1,304	$1,575
13	Under-recovery of Equity Return (to be capitali	MAX [Lns (12-11), 0]	$390	$291	$488	$709	$589	$664	$765	$970	$1,233
14	Income Tax Allowance on Required Equity Ret	Sch 11, Ln. 11	$1,486	$1,136	$936	$909	$976	$951	$930	$910	$1,100
15	Recovery of Investment	Sch. 3, Ln. 18	$0	$0	$0	$0	$0	$0	$0	$0	$0
16	Profit After Complete Investment Recovery	MAX[(Ln. 4 - Lns.(5+6+7+12+14+15), 0]	$0	$0	$0	$0	$0	$0	$0	$0	$0
17	Cumulative Profit After Investment Recovery	Cumulative sum of Ln. 16	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
18	Depreciation Rates - Intermediate (for calculation purposes)	Lns. 16/(Sch. 12 [Lns. 9-8-7] - Sch. 3[Ln. 20+CumSum Ln. 17])*.75 + Ln. 19	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
19	Imputed Composite Depreciation Rates - Net Basis	Iteration until Ln. 16 = 0, and Ln. 18=Ln.19	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Investment Recovery and Imputed Depreciation Rates

Carriers' Unrecovered Investment Analysis: Conservative Assumptions Correctected (millions $)

Line No.	Description	Source	1995	1996
1	Operating Revenues	143-RGV-C, RGV WP6	$2,026	$1,397
2	TSM DR&R Allowance	29-ABJ-W	19.288	13.802
3	Operating & Maintenance Expense	143-RGV-C, RGV WP6	$668	$601
4	Operating Income	Lns. (1 - 2 - 3)	$1,339	$782
5	Equity AFUDC Amortization	Sch. 5, Ln. 5	$0	$0
6	Debt AFUDC Amortization	Sch. 5, Ln. 11	$0	$0
7	Debt Return	Sch. 2, Ln. 10	$395	$355
8	Total Funds for Pre-Tax Return on Equity	Lns (4-7)	$945	$427
9	Composite State and Federal Tax Rate	Sch.9 [Lns (4+14*(1-Ln. 4))]	41.11%	41.11%
10	Taxes	Lns. (8 * 9)	$388	$176
11	After-Tax Return on Equity	Lns. (8 - 10)	$556	$252
12	Required Equity Return	Sch. 2, Ln. 9	$1,680	$1,841
13	Under-recovery of Equity Return (to be capitali	MAX [Lns (12-11), 0]	$1,124	$1,589
14	Income Tax Allowance on Required Equity Ret	Sch 11, Ln. 11	$1,173	$1,285
15	Recovery of Investment	Sch. 3, Ln. 18	$0	$0
16	Profit After Complete Investment Recovery	MAX[(Ln. 4 - Lns.(5+6+7+12+14+15), 0]	$0	$0
17	Cumulative Profit After Investment Recovery	Cumulative sum of Ln. 16	$0.000	$0.000
18	Depreciation Rates - Intermediate (for calculation purposes)	Lns. 16/(Sch. 12 [Lns. 9-8-7] - Sch. 3[Ln. 20+CumSum Ln. 17])*.75 + Ln. 19	0.00%	0.00%
19	Imputed Composite Depreciation Rates - Net Basis	Iteration until Ln. 16 = 0, and Ln. 18=Ln.19	0.00%	0.00%

"Required" Return on Rate Base

Carriers' Unrecovered Investment Analysis: Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983
1	Weighted Rate of Return	Exhibit WBT-40	15.40%	14.80%	15.70%	17.60%	19.70%	19.00%	17.60%
2	Average Rate Base	Sch. 6 Ln. 17	$10,275	$10,384	$10,584	$10,656	$10,650	$10,727	$10,878
3	Total Return on Remaining Investment	Ln.1 * Ln.2	$793	$1,537	$1,662	$1,875	$2,098	$2,038	$1,915
4	Debt Capital Structure	Exhibit WBT-38	43.88%	45.00%	37.39%	32.15%	30.67%	30.24%	28.03%
5	Cost of Debt	Exhibit WBT-39	8.28%	8.44%	8.50%	8.93%	9.31%	9.54%	9.52%
6	Debt Portion of Weighted Rate of Retu	Ln.4 * Ln.5	3.63%	3.80%	3.18%	2.87%	2.86%	2.88%	2.67%
7	Interest Expense	Ln.2 * Ln.6	$187	$394	$336	$306	$304	$309	$290
8	Equity Portion of Weighted Rate of Ret	Ln.1 - Ln.6	11.77%	11.00%	12.52%	14.73%	16.84%	16.12%	14.93%
9	Return on Equity	Ln.2 * Ln.8	$606	$1,142	$1,325	$1,569	$1,794	$1,729	$1,624
10	Return on Debt	Ln. 3 - Ln. 9	$187	$394	$336	$306	$304	$309	$290

"Required" Return on Rate Base

Carriers' Unrecovered Investment Analysis: Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1984	1985	1986	1987	1988	1989	1990
1	Weighted Rate of Return	Exhibit WBT-40	18.80%	15.90%	15.90%	15.10%	15.40%	15.00%	15.10%
2	Average Rate Base	Sch. 6 Ln. 17	$10,935	$10,954	$10,962	$11,015	$11,118	$11,312	$11,783
3	Total Return on Remaining Investment	Ln.1 * Ln.2	$2,056	$1,742	$1,743	$1,663	$1,712	$1,697	$1,779
4	Debt Capital Structure	Exhibit WBT-38	28.19%	34.12%	34.34%	31.19%	32.20%	36.32%	33.73%
5	Cost of Debt	Exhibit WBT-39	9.49%	9.07%	8.50%	8.96%	8.94%	8.39%	8.26%
6	Debt Portion of Weighted Rate of Retu	Ln.4 * Ln.5	2.68%	3.09%	2.92%	2.79%	2.88%	3.05%	2.79%
7	Interest Expense	Ln.2 * Ln.6	$293	$339	$320	$308	$320	$345	$328
8	Equity Portion of Weighted Rate of Ret	Ln.1 - Ln.6	16.12%	12.81%	12.98%	12.31%	12.52%	11.95%	12.31%
9	Return on Equity	Ln.2 * Ln.8	$1,763	$1,403	$1,423	$1,355	$1,392	$1,352	$1,451
10	Return on Debt	Ln. 3 - Ln. 9	$293	$339	$320	$308	$320	$345	$328

"Required" Return on Rate Base

Carriers' Unrecovered Investment Analysis: Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1991	1992	1993	1994	1995	1996
1	Weighted Rate of Return	Exhibit WBT-40	14.50%	13.90%	12.80%	13.80%	13.30%	13.10%
2	Average Rate Base	Sch. 6 Ln. 17	$12,406	$13,023	$13,682	$14,509	$15,597	$16,761
3	Total Return on Remaining Investment	Ln.1 * Ln.2	$1,799	$1,810	$1,751	$2,002	$2,074	$2,196
4	Debt Capital Structure	Exhibit WBT-38	37.16%	40.50%	40.59%	36.35%	31.90%	26.78%
5	Cost of Debt	Exhibit WBT-39	8.35%	8.10%	8.06%	8.10%	7.93%	7.90%
6	Debt Portion of Weighted Rate of Retu	Ln.4 * Ln.5	3.10%	3.28%	3.27%	2.94%	2.53%	2.12%
7	Interest Expense	Ln.2 * Ln.6	$385	$427	$448	$427	$395	$355
8	Equity Portion of Weighted Rate of Ret	Ln.1 - Ln.6	11.40%	10.62%	9.53%	10.86%	10.77%	10.98%
9	Return on Equity	Ln.2 * Ln.8	$1,414	$1,383	$1,304	$1,575	$1,680	$1,841
10	Return on Debt	Ln. 3 - Ln. 9	$385	$427	$448	$427	$395	$355

Carriers' Unrecovered Investment Analysis:
Conservative Assumptions Corrected (millions $)

Line No.	Description		Starting Balances	1977	1978	1979	1980	1981	1982	1983
1	Capitalized Interest - BOY	Prior Ln. 5		$0	$1,216	$1,216	$1,216	$1,216	$1,215	$1,215
2	Additions to Capitalized Interest	Sch 12, (Ln 10 - Prior Ln 10)		$1,216	$0	$0	$0	($0)	$0	$0
3	Amortization Rates	Iteration Results, Sch. 1, Ln. 18		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
4	Amortization of Capitalized Interest	(Ln. 1+Ln. 2) * Ln. 3		$0	$0	$0	$0	$0	$0	$0
5	Capitalized Interest - EOY	Ln. 1 + Ln. 2 - Ln. 4		$1,216	$1,216	$1,216	$1,216	$1,215	$1,215	$1,215
6	Accumulated Amortization of Capitalized Interest-	Ln.4 + Prior Ln. 6		$0	$0	$0	$0	$0	$0	$0
7	Gross Carrier Property-BOY	Prior Ln. 12		$7,741	$7,918	$8,074	$8,157	$8,270	$8,316	$8,357
8	Additions to CPIS	Sch. 12, Ln. 3		$1,422	$98	$100	$106	$49	$65	$70
9	Less Capitalized Interest	Ln. 2		$1,216	$0	$0	$0	($0)	$0	$0
10	Acquisitions & Retirements of CPIS	Sch 12, Lns. (4 + 5)		($29)	($7)	($12)	$5	($2)	($12)	($24)
11	Adjustments to CPIS	Sch 12, Ln. 6		($0)	$65	($4)	$1	($1)	($13)	($4)
12	Gross Carrier Property-EOY 1/	Lns (7+8-9+10+11)	$7,741	$7,918	$8,074	$8,157	$8,270	$8,316	$8,357	$8,398
13	Land Balance - EOY	Sch 12, Ln. 7		$17	$17	$17	$17	$17	$17	$17
14	CWIP Balance - EOY	Sch 12, Ln. 8		$42	$24	$28	$29	$29	$33	$15
15	Gross Carrier Depreciable Property-EOY	Lns (12-13-14)		$7,859	$8,033	$8,113	$8,224	$8,270	$8,306	$8,366
16	Recovery of Investment Including Capitalized Interest Amortized	Ln 3* Lns. ((15+Cum.(9-17)-Prior 20)		$0	$0	$0	$0	$0	$0	$0
17	Less Amortization of Capitalized Interest	Ln. 4		$0	$0	$0	$0	$0	$0	$0
18	Recovery of Investment	Ln. 16 - Ln. 17		$0	$0	$0	$0	$0	$0	$0
19	Retirements from Depreciation (Form 6)	Sch 12, Ln. 11		$0	($5)	($5)	($17)	($2)	($14)	($11)
20	Accumulated Recovery of Investment (Adjusted)	Max Sum Lns(18+19+Prior 20), 0		$0	$0	$0	$0	$0	$0	$0
21	Accumulated Amortization of Form 6 Cap. Interes	Ln. 4 + Prior Ln. 21		$0	$0	$0	$0	$0	$0	$0
22	Accumulated Recovery of Investment (Form 6 Ba	Lns (20+21)		$0	$0	$0	$0	$0	$0	$0

1/Starting Balance reflects June 1977 CWIP Balance

Carriers' Unrecovered Investment Analysis:
Conservative Assumptions Corrected (millions $)

Line No.	Description		1984	1985	1986	1987	1988	1989	1990	1991
1	Capitalized Interest - BOY	Prior Ln. 5	$1,215	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214
2	Additions to Capitalized Interest	Sch 12, (Ln 10 - Prior Ln 10)	($1)	($0)	($0)	($0)	($0)	($0)	($0)	($0)
3	Amortization Rates	Iteration Results, Sch. 1, Ln. 18	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
4	Amortization of Capitalized Interest	(Ln. 1+Ln. 2) * Ln. 3	$0	$0	$0	$0	$0	$0	$0	$0
5	Capitalized Interest - EOY	Ln. 1 + Ln. 2 - Ln. 4	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214
6	Accumulated Amortization of Capitalized Interest-	Ln.4 + Prior Ln. 6	$0	$0	$0	$0	$0	$0	$0	$0
7	Gross Carrier Property-BOY	Prior Ln. 12	$8,398	$8,420	$8,432	$8,451	$8,466	$8,470	$8,513	$8,664
8	Additions to CPIS	Sch. 12, Ln. 3	$38	$26	$21	$32	$17	$48	$156	$141
9	Less Capitalized Interest	Ln. 2	($1)	($0)	($0)	($0)	($0)	($0)	($0)	($0)
10	Acquisitions & Retirements of CPIS	Sch 12, Lns. (4 + 5)	($13)	($14)	($3)	($17)	($13)	($5)	($4)	($53)
11	Adjustments to CPIS	Sch 12, Ln. 6	($4)	$0	$0	$0	$0	($0)	$0	($0)
12	Gross Carrier Property-EOY 1/	Lns (7+8-9+10+11)	$8,420	$8,432	$8,451	$8,466	$8,470	$8,513	$8,664	$8,752
13	Land Balance - EOY	Sch 12, Ln. 7	$17	$17	$17	$17	$17	$17	$18	$18
14	CWIP Balance - EOY	Sch 12, Ln. 8	$4	$1	$2	$2	$9	$20	$94	$32
15	Gross Carrier Depreciable Property-EOY	Lns (12-13-14)	$8,399	$8,414	$8,431	$8,447	$8,444	$8,475	$8,552	$8,701
16	Recovery of Investment Including Capitalized Interest Amortized	Ln 3* Lns. ((15+Cum.(9-17)-Prior 20)	$0	$0	$0	$0	$0	$0	$0	$0
17	Less Amortization of Capitalized Interest	Ln. 4	$0	$0	$0	$0	$0	$0	$0	$0
18	Recovery of Investment	Ln. 16 - Ln. 17	$0	$0	$0	$0	$0	$0	$0	$0
19	Retirements from Depreciation (Form 6)	Sch 12, Ln. 11	($5)	($13)	($3)	($17)	($13)	($4)	($3)	($57)
20	Accumulated Recovery of Investment (Adjusted)	Max Sum Lns(18+19+Prior 20), 0	$0	$0	$0	$0	$0	$0	$0	$0
21	Accumulated Amortization of Form 6 Cap. Interes	Ln. 4 + Prior Ln. 21	$0	$0	$0	$0	$0	$0	$0	$0
22	Accumulated Recovery of Investment (Form 6 Ba	Lns (20+21)	$0	$0	$0	$0	$0	$0	$0	$0

1/Starting Balance reflects June 1977 CWIP Balance

Carriers' Unrecovered Investment Analysis:
Conservative Assumptions Corrected (millions $)

Line No.	Description		1992	1993	1994	1995	1996
1	Capitalized Interest - BOY	Prior Ln. 5	$1,214	$1,214	$1,214	$1,214	$1,214
2	Additions to Capitalized Interest	Sch 12, (Ln 10 - Prior Ln 10)	($0)	($0)	($0)	($0)	($9)
3	Amortization Rates	Iteration Results, Sch. 1, Ln. 18	0.00%	0.00%	0.00%	0.00%	0.00%
4	Amortization of Capitalized Interest	(Ln. 1+Ln. 2) * Ln. 3	$0	$0	$0	$0	$0
5	Capitalized Interest - EOY	Ln. 1 + Ln. 2 - Ln. 4	$1,214	$1,214	$1,214	$1,214	$1,205
6	Accumulated Amortization of Capitalized Interest-	Ln.4 + Prior Ln. 6	$0	$0	$0	$0	$0
7	Gross Carrier Property-BOY	Prior Ln. 12	$8,752	$8,807	$8,832	$8,873	$8,925
8	Additions to CPIS	Sch. 12, Ln. 3	$71	$36	$51	$56	$52
9	Less Capitalized Interest	Ln. 2	($0)	($0)	($0)	($0)	($9)
10	Acquisitions & Retirements of CPIS	Sch 12, Lns. (4 + 5)	($16)	($11)	($10)	($4)	($34)
11	Adjustments to CPIS	Sch 12, Ln. 6	$0	($0)	$0	$0	$0
12	Gross Carrier Property-EOY 1/	Lns (7+8-9+10+11)	$8,807	$8,832	$8,873	$8,925	$8,951
13	Land Balance - EOY	Sch 12, Ln. 7	$18	$18	$19	$19	$19
14	CWIP Balance - EOY	Sch 12, Ln. 8	$34	$24	$31	$51	$74
15	Gross Carrier Depreciable Property-EOY	Lns (12-13-14)	$8,755	$8,790	$8,823	$8,856	$8,859
16	Recovery of Investment Including Capitalized Interest Amortized	Ln 3* Lns. ((15+Cum.(9-17)-Prior 20)	$0	$0	$0	$0	$0
17	Less Amortization of Capitalized Interest	Ln. 4	$0	$0	$0	$0	$0
18	Recovery of Investment	Ln. 16 - Ln. 17	$0	$0	$0	$0	$0
19	Retirements from Depreciation (Form 6)	Sch 12, Ln. 11	($14)	($9)	($8)	($3)	($89)
20	Accumulated Recovery of Investment (Adjusted)	Max Sum Lns(18+19+Prior 20), 0	$0	$0	$0	$0	$0
21	Accumulated Amortization of Form 6 Cap. Interes	Ln. 4 + Prior Ln. 21	$0	$0	$0	$0	$0
22	Accumulated Recovery of Investment (Form 6 Ba	Lns (20+21)	$0	$0	$0	$0	$0

1/Starting Balance reflects June 1977 CWIP Balance

AFUDC

Carriers' Unrecovered Investment Analysis: Conservative Assumptions Corrected (millions $)

Ln. Col. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	Sep-68	$1	$0	$1	0.0%	$0	75.5%	$1	$0	$0	15.65%	$0	$0	$0	$0	24.5%	$0	$0	$0	5.66%	$0	$0	$0
2	Oct-68	$0	$0	$1	0.0%	$0	75.5%	$0	$0	$1	15.65%	$0	$0	$0	$0	24.5%	$0	$0	$0	5.66%	$0	$0	$0
3	Nov-68	$0	$0	$1	0.0%	$0	75.5%	$0	$0	$1	15.65%	$0	$0	$0	$0	24.5%	$0	$0	$0	5.66%	$0	$0	$0
4	Dec-68	$0	$0	$1	0.0%	$0	75.5%	$0	$0	$1	15.65%	$0	$0	$0	$0	24.5%	$0	$0	$0	5.66%	$0	$0	$0
5	Jan-69	$0	$0	$1	0.0%	$0	78.1%	$0	$0	$1	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$0	5.61%	$0	$0	$0
6	Feb-69	$0	$0	$1	0.0%	$0	78.1%	$0	$0	$1	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$0	5.61%	$0	$0	$0
7	Mar-69	$0	$0	$1	0.0%	$0	78.1%	$0	$0	$1	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$0	5.61%	$0	$0	$0
8	Apr-69	$0	$0	$1	0.0%	$0	78.1%	$0	$0	$1	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$0	5.61%	$0	$0	$0
9	May-69	$1	$0	$2	0.0%	$0	78.1%	$1	$0	$1	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$0	5.61%	$0	$0	$0
10	Jun-69	$1	$0	$4	0.0%	$0	78.1%	$1	$0	$2	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$1	5.61%	$0	$0	$0
11	Jul-69	$1	$0	$4	0.0%	$0	78.1%	$1	$0	$3	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$1	5.61%	$0	$0	$0
12	Aug-69	$1	$0	$5	0.0%	$0	78.1%	$1	$0	$3	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$1	5.61%	$0	$0	$0
13	Sep-69	$2	$0	$8	0.0%	$0	78.1%	$2	$0	$4	16.36%	$0	$0	$0	$0	21.9%	$0	$0	$1	5.61%	$0	$0	$0
14	Oct-69	$5	$0	$13	0.0%	$0	78.1%	$4	$0	$6	16.36%	$0	$0	$0	$0	21.9%	$1	$0	$2	5.61%	$0	$0	$0
15	Nov-69	$7	$0	$19	0.0%	$0	78.1%	$5	$0	$10	16.36%	$0	$0	$0	$0	21.9%	$1	$0	$3	5.61%	$0	$0	$0
16	Dec-69	$17	$0	$36	0.0%	$0	78.1%	$13	$0	$15	16.36%	$0	$0	$1	$0	21.9%	$4	$0	$4	5.61%	$0	$0	$0
17	Jan-70	($1)	$0	$36	0.0%	$1	72.9%	($1)	$0	$29	17.56%	$0	$0	$1	$0	27.2%	($0)	$0	$8	6.29%	$0	$0	$0
18	Feb-70	$9	$0	$45	0.0%	$0	72.9%	$7	$0	$28	17.56%	$0	$0	$2	$0	27.2%	$2	$0	$8	6.29%	$0	$0	$0
19	Mar-70	$12	$0	$56	0.0%	$0	72.9%	$8	$0	$35	17.56%	$1	$0	$2	$0	27.2%	$3	$0	$10	6.29%	$0	$0	$0
20	Apr-70	$18	$0	$75	0.0%	$0	72.9%	$13	$0	$43	17.56%	$1	$0	$3	$0	27.2%	$5	$0	$13	6.29%	$0	$0	$0
21	May-70	$17	$0	$91	0.0%	$0	72.9%	$12	$0	$57	17.56%	$1	$0	$4	$0	27.2%	$4	$0	$18	6.29%	$0	$0	$0
22	Jun-70	$20	$0	$111	0.0%	$0	72.9%	$14	$0	$69	17.56%	$1	$0	$5	$0	27.2%	$5	$0	$23	6.29%	$0	$0	$0
23	Jul-70	$28	$0	$139	0.0%	$4	72.9%	$21	$0	$87	17.56%	$1	$0	$6	$0	27.2%	$8	$0	$29	6.29%	$0	$0	$1
24	Aug-70	$17	$0	$156	0.0%	$0	72.9%	$13	$0	$108	17.56%	$2	$0	$7	$0	27.2%	$5	$0	$36	6.29%	$0	$0	$1
25	Sep-70	$24	$0	$181	0.0%	$0	72.9%	$18	$0	$120	17.56%	$2	$0	$9	$0	27.2%	$7	$0	$41	6.29%	$0	$0	$1
26	Oct-70	$16	$0	$196	0.0%	$0	72.9%	$11	$0	$138	17.56%	$2	$0	$11	$0	27.2%	$4	$0	$48	6.29%	$0	$0	$1
27	Nov-70	$8	$0	$205	0.0%	$0	72.9%	$6	$0	$150	17.56%	$2	$0	$13	$0	27.2%	$2	$0	$52	6.29%	$0	$0	$2
28	Dec-70	$13	$0	$218	0.0%	$0	72.9%	$10	$0	$156	17.56%	$2	$0	$16	$0	27.2%	$4	$0	$54	6.29%	$0	$0	$2
29	Jan-71	$1	$0	$219	0.0%	$11	73.3%	$0	$0	$176	16.26%	$2	$0	$18	$1	26.8%	$0	$0	$59	6.31%	$0	$0	$2
30	Feb-71	$4	$0	$222	0.0%	$0	73.3%	$3	$0	$177	16.26%	$2	$0	$20	$0	26.8%	$1	$0	$59	6.31%	$0	$0	$2
31	Mar-71	$5	$0	$227	0.0%	$0	73.3%	$4	$0	$179	16.26%	$2	$0	$23	$0	26.8%	$1	$0	$60	6.31%	$0	$0	$3
32	Apr-71	$5	$0	$232	0.0%	$0	73.3%	$3	$0	$183	16.26%	$2	$0	$25	$0	26.8%	$1	$0	$62	6.31%	$0	$0	$3
33	May-71	$6	$0	$238	0.0%	$0	73.3%	$4	$0	$187	16.26%	$3	$0	$28	$0	26.8%	$2	$0	$63	6.31%	$0	$0	$3
34	Jun-71	$6	$0	$244	0.0%	$0	73.3%	$4	$0	$191	16.26%	$3	$0	$30	$0	26.8%	$2	$0	$65	6.31%	$0	$0	$4
35	Jul-71	$9	$0	$254	0.0%	$15	73.3%	$7	$0	$210	16.26%	$3	$0	$33	$2	26.8%	$3	$0	$68	6.31%	$0	$0	$4
36	Aug-71	$15	$0	$268	0.0%	$0	73.3%	$11	$0	$217	16.26%	$3	$0	$36	$0	26.8%	$4	$0	$71	6.31%	$0	$0	$5
37	Sep-71	$10	$0	$279	0.0%	$0	73.3%	$8	$0	$228	16.26%	$3	$0	$39	$0	26.8%	$3	$0	$75	6.31%	$0	$0	$5
38	Oct-71	$12	$0	$291	0.0%	$0	73.3%	$9	$0	$236	16.26%	$3	$0	$43	$0	26.8%	$3	$0	$77	6.31%	$0	$0	$5
39	Nov-71	$16	$0	$307	0.0%	$0	73.3%	$12	$0	$245	16.26%	$3	$0	$46	$0	26.8%	$4	$0	$81	6.31%	$0	$0	$6
40	Dec-71	$19	$0	$326	0.0%	$0	73.3%	$14	$0	$257	16.26%	$3	$0	$49	$0	26.8%	$5	$0	$85	6.31%	$0	$0	$6
41	Jan-72	($1)	$0	$325	0.0%	$19	75.7%	($1)	$0	$289	15.63%	$4	$0	$53	$2	24.3%	($0)	$0	$92	6.44%	$0	$0	$7
42	Feb-72	$5	$0	$330	0.0%	$0	75.7%	$4	$0	$288	15.63%	$4	$0	$57	$0	24.3%	$1	$0	$92	6.44%	$0	$0	$7
43	Mar-72	$4	$0	$335	0.0%	$0	75.7%	$3	$0	$292	15.63%	$4	$0	$61	$0	24.3%	$1	$0	$93	6.44%	$1	$0	$8
44	Apr-72	$4	$0	$339	0.0%	$0	75.7%	$3	$0	$296	15.63%	$4	$0	$64	$0	24.3%	$1	$0	$94	6.44%	$1	$0	$8
45	May-72	$6	$0	$345	0.0%	$0	75.7%	$4	$0	$299	15.63%	$4	$0	$68	$0	24.3%	$1	$0	$96	6.44%	$1	$0	$9
46	Jun-72	$7	$0	$352	0.0%	$0	75.7%	$6	$0	$303	15.63%	$4	$0	$72	$0	24.3%	$2	$0	$97	6.44%	$1	$0	$9
47	Jul-72	$4	$0	$356	0.0%	$23	75.7%	$3	$0	$332	15.63%	$4	$0	$77	$3	24.3%	$1	$0	$102	6.44%	$1	$0	$10
48	Aug-72	$4	$0	$360	0.0%	$0	75.7%	$3	$0	$335	15.63%	$4	$0	$81	$0	24.3%	$1	$0	$103	6.44%	$1	$0	$10
49	Sep-72	$3	$0	$363	0.0%	$0	75.7%	$2	$0	$338	15.63%	$4	$0	$85	$0	24.3%	$1	$0	$104	6.44%	$1	$0	$11
50	Oct-72	$4	$0	$367	0.0%	$0	75.7%	$3	$0	$340	15.63%	$4	$0	$90	$0	24.3%	$1	$0	$104	6.44%	$1	$0	$11
51	Nov-72	$3	$0	$370	0.0%	$0	75.7%	$2	$0	$343	15.63%	$4	$0	$94	$0	24.3%	$1	$0	$105	6.44%	$1	$0	$12
52	Dec-72	$7	$0	$376	0.0%	$0	75.7%	$5	$0	$345	15.63%	$4	$0	$99	$0	24.3%	$2	$0	$106	6.44%	$1	$0	$13
53	Jan-73	($1)	$0	$375	0.0%	$26	75.9%	($1)	$0	$377	16.35%	$5	$0	$104	$3	24.1%	($0)	$0	$111	7.02%	$1	$0	$13
54	Feb-73	$2	$0	$378	0.0%	$0	75.9%	$2	$0	$376	16.35%	$5	$0	$109	$0	24.1%	$1	$0	$111	7.02%	$1	$0	$14
55	Mar-73	$4	$0	$382	0.0%	$0	75.9%	$3	$0	$378	16.35%	$5	$0	$114	$0	24.1%	$1	$0	$111	7.02%	$1	$0	$15
56	Apr-73	$3	$0	$385	0.0%	$0	75.9%	$2	$0	$381	16.35%	$5	$0	$119	$0	24.1%	$1	$0	$112	7.02%	$1	$0	$15
57	May-73	$4	$0	$389	0.0%	$0	75.9%	$3	$0	$383	16.35%	$5	$0	$125	$0	24.1%	$1	$0	$113	7.02%	$1	$0	$16

AFUDC

Carriers' Unrecovered Investment Analysis: Conservative Assumptions Corrected (millions $)

Ln. Col. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
58	Jun-73	$4	$0	$393	0.0%	$0	75.9%	$3	$0	$386	16.35%	$5	$0	$130	$0	24.1%	$1	$0	$114	7.02%	$1	$0	$17
59	Jul-73	$5	$0	$398	0.0%	$31	75.9%	$4	$0	$420	16.35%	$6	$0	$136	$4	24.1%	$1	$0	$119	7.02%	$1	$0	$17
60	Aug-73	$5	$0	$402	0.0%	$0	75.9%	$4	$0	$424	16.35%	$6	$0	$141	$0	24.1%	$1	$0	$120	7.02%	$1	$0	$18
61	Sep-73	$5	$0	$408	0.0%	$0	75.9%	$4	$0	$428	16.35%	$6	$0	$147	$0	24.1%	$1	$0	$121	7.02%	$1	$0	$19
62	Oct-73	$8	$0	$416	0.0%	$0	75.9%	$6	$0	$432	16.35%	$6	$0	$153	$0	24.1%	$2	$0	$122	7.02%	$1	$0	$19
63	Nov-73	$4	$0	$420	0.0%	$0	75.9%	$3	$0	$438	16.35%	$6	$0	$159	$0	24.1%	$1	$0	$124	7.02%	$1	$0	$20
64	Dec-73	$6	$0	$427	0.0%	$0	75.9%	$5	$0	$441	16.35%	$6	$0	$165	$0	24.1%	$2	$0	$126	7.02%	$1	$0	$21
65	Jan-74	$21	$0	$448	0.0%	$35	72.3%	$15	$0	$481	17.33%	$7	$0	$172	$4	27.7%	$6	$0	$131	8.19%	$1	$0	$22
66	Feb-74	$19	$0	$467	0.0%	$0	72.3%	$14	$0	$497	17.33%	$7	$0	$179	$0	27.7%	$5	$0	$137	8.19%	$1	$0	$23
67	Mar-74	$22	$0	$489	0.0%	$0	72.3%	$16	$0	$511	17.33%	$7	$0	$187	$0	27.7%	$6	$0	$143	8.19%	$1	$0	$24
68	Apr-74	$25	$0	$514	0.0%	$0	72.3%	$18	$0	$526	17.33%	$8	$0	$194	$0	27.7%	$7	$0	$149	8.19%	$1	$0	$25
69	May-74	$25	$0	$540	0.0%	$0	72.3%	$18	$0	$545	17.33%	$8	$0	$202	$0	27.7%	$7	$0	$156	8.19%	$1	$0	$26
70	Jun-74	$33	$0	$573	0.0%	$0	72.3%	$24	$0	$563	17.33%	$8	$0	$210	$0	27.7%	$9	$0	$163	8.19%	$1	$0	$27
71	Jul-74	$69	$0	$642	0.0%	$45	72.3%	$50	$0	$632	17.33%	$9	$0	$219	$6	27.7%	$19	$0	$178	8.19%	$1	$0	$28
72	Aug-74	$96	$0	$738	0.0%	$0	72.3%	$69	$0	$682	17.33%	$10	$0	$229	$0	27.7%	$27	$0	$197	8.19%	$1	$0	$29
73	Sep-74	$88	$0	$826	0.0%	$0	72.3%	$64	$0	$751	17.33%	$11	$0	$240	$0	27.7%	$24	$0	$224	8.19%	$2	$0	$31
74	Oct-74	$161	$0	$987	0.0%	$0	72.3%	$116	$0	$815	17.33%	$12	$0	$252	$0	27.7%	$45	$0	$248	8.19%	$2	$0	$33
75	Nov-74	$107	$0	$1,094	0.0%	$0	72.3%	$77	$0	$931	17.33%	$13	$0	$265	$0	27.7%	$30	$0	$293	8.19%	$2	$0	$35
76	Dec-74	$266	$0	$1,359	0.0%	$0	72.3%	$192	$0	$1,008	17.33%	$15	$0	$280	$0	27.7%	$74	$0	$322	8.19%	$2	$0	$37
77	Jan-75	$41	$0	$1,400	0.0%	$70	64.1%	$26	$0	$1,270	18.78%	$20	$0	$300	$10	35.9%	$15	$0	$406	7.97%	$3	$0	$39
78	Feb-75	$132	$0	$1,531	0.0%	$0	64.1%	$84	$0	$1,296	18.78%	$20	$0	$320	$0	35.9%	$47	$0	$420	7.97%	$3	$0	$42
79	Mar-75	$257	$0	$1,788	0.0%	$0	64.1%	$165	$0	$1,381	18.78%	$22	$0	$342	$0	35.9%	$92	$0	$468	7.97%	$3	$0	$45
80	Apr-75	$107	$0	$1,896	0.0%	$0	64.1%	$69	$0	$1,545	18.78%	$24	$0	$366	$0	35.9%	$39	$0	$560	7.97%	$4	$0	$49
81	May-75	$263	$0	$2,158	0.0%	$0	64.1%	$168	$0	$1,614	18.78%	$25	$0	$391	$0	35.9%	$94	$0	$598	7.97%	$4	$0	$53
82	Jun-75	$582	$0	$2,740	0.0%	$0	64.1%	$373	$0	$1,782	18.78%	$28	$0	$419	$0	35.9%	$209	$0	$693	7.97%	$5	$0	$58
83	Jul-75	($58)	$0	$2,682	0.0%	$139	64.1%	($37)	$0	$2,294	18.78%	$36	$0	$455	$21	35.9%	($21)	$0	$922	7.97%	$6	$0	$64
84	Aug-75	$282	$0	$2,963	0.0%	$0	64.1%	$180	$0	$2,257	18.78%	$35	$0	$490	$0	35.9%	$101	$0	$902	7.97%	$6	$0	$70
85	Sep-75	$648	$0	$3,612	0.0%	$0	64.1%	$415	$0	$2,437	18.78%	$38	$0	$528	$0	35.9%	$233	$0	$1,003	7.97%	$7	$0	$76
86	Oct-75	$204	$0	$3,816	0.0%	$0	64.1%	$131	$0	$2,853	18.78%	$45	$0	$573	$0	35.9%	$73	$0	$1,236	7.97%	$8	$0	$85
87	Nov-75	$271	$0	$4,087	0.0%	$0	64.1%	$174	$0	$2,984	18.78%	$47	$0	$620	$0	35.9%	$97	$0	$1,309	7.97%	$9	$0	$93
88	Dec-75	$180	$0	$4,268	0.0%	$0	64.1%	$115	$0	$3,157	18.78%	$49	$0	$669	$0	35.9%	$65	$0	$1,406	7.97%	$9	$0	$103
89	Jan-76	$230	$0	$4,497	0.0%	$250	58.0%	$133	$0	$3,523	19.31%	$57	$0	$726	$45	42.0%	$96	$0	$1,516	8.33%	$11	$0	$113
90	Feb-76	$202	$0	$4,699	0.0%	$0	58.0%	$117	$0	$3,656	19.31%	$59	$0	$785	$0	42.0%	$85	$0	$1,613	8.33%	$11	$0	$124
91	Mar-76	$178	$0	$4,877	0.0%	$0	58.0%	$103	$0	$3,774	19.31%	$61	$0	$845	$0	42.0%	$75	$0	$1,698	8.33%	$12	$0	$136
92	Apr-76	$262	$0	$5,139	0.0%	$0	58.0%	$152	$0	$3,877	19.31%	$62	$0	$908	$0	42.0%	$110	$0	$1,772	8.33%	$12	$0	$148
93	May-76	$276	$0	$5,414	0.0%	$0	58.0%	$160	$0	$4,028	19.31%	$65	$0	$973	$0	42.0%	$116	$0	$1,882	8.33%	$13	$0	$162
94	Jun-76	$220	$0	$5,634	0.0%	$0	58.0%	$127	$0	$4,188	19.31%	$67	$0	$1,040	$0	42.0%	$92	$0	$1,998	8.33%	$14	$0	$175
95	Jul-76	$298	$0	$5,932	0.0%	$371	58.0%	$173	$0	$4,687	19.31%	$75	$0	$1,115	$73	42.0%	$125	$0	$2,163	8.33%	$15	$0	$190
96	Aug-76	$236	$0	$6,168	0.0%	$0	58.0%	$137	$0	$4,859	19.31%	$78	$0	$1,194	$0	42.0%	$99	$0	$2,288	8.33%	$16	$0	$206
97	Sep-76	$232	$0	$6,400	0.0%	$0	58.0%	$134	$0	$4,996	19.31%	$80	$0	$1,274	$0	42.0%	$97	$0	$2,387	8.33%	$17	$0	$223
98	Oct-76	$136	$0	$6,536	0.0%	$0	58.0%	$79	$0	$5,131	19.31%	$83	$0	$1,357	$0	42.0%	$57	$0	$2,484	8.33%	$17	$0	$240
99	Nov-76	$159	$0	$6,695	0.0%	$0	58.0%	$92	$0	$5,210	19.31%	$84	$0	$1,440	$0	42.0%	$67	$0	$2,541	8.33%	$18	$0	$258
100	Dec-76	$208	$0	$6,902	0.0%	$0	58.0%	$120	$0	$5,302	19.31%	$85	$0	$1,526	$0	42.0%	$87	$0	$2,608	8.33%	$18	$0	$276
101	Jan-77	$50	$0	$6,952	0.0%	$486	56.1%	$28	$0	$5,908	20.97%	$103	$0	$1,629	$100	43.9%	$22	$0	$2,796	8.28%	$19	$0	$295
102	Feb-77	$108	$0	$7,060	0.0%	$0	56.1%	$61	$0	$5,936	20.97%	$104	$0	$1,733	$0	43.9%	$47	$0	$2,818	8.28%	$19	$0	$315
103	Mar-77	$356	$0	$7,416	0.0%	$0	56.1%	$200	$0	$5,997	20.97%	$105	$0	$1,837	$0	43.9%	$156	$0	$2,865	8.28%	$20	$0	$334
104	Apr-77	$46	$0	$7,461	0.0%	$0	56.1%	$26	$0	$6,196	20.97%	$108	$0	$1,946	$0	43.9%	$20	$0	$3,021	8.28%	$21	$0	$355
105	May-77	$131	$0	$7,592	0.0%	$0	56.1%	$74	$0	$6,222	20.97%	$109	$0	$2,054	$0	43.9%	$58	$0	$3,041	8.28%	$21	$0	$376
106	Jun-77	$149	$7,741	$0	100.0%	$0	56.1%	$83	$6,379	$6,295	20.97%	$110	$2,164	$0	$0	43.9%	$65	$3,164	$3,099	8.28%	$21	$398	$0
107	Jul-77	$521	$0	$521	0.0%	$0	56.1%	$293	$0	$0	20.97%	$0	$0	$0	$0	43.9%	$229	$0	$0	8.28%	$0	$0	$0
108	Aug-77	$0	$334	$187	64.1%	$0	56.1%	$0	$188	$293	20.97%	$5	$0	$5	$0	43.9%	$0	$147	$229	8.28%	$2	$0	$2
109	Sep-77	$0	$55	$132	29.5%	$0	56.1%	$0	$31	$105	20.97%	$2	$2	$5	$0	43.9%	$0	$24	$82	8.28%	$1	$0	$2
110	Oct-77	$0	$1	$131	0.5%	$0	56.1%	$0	$0	$74	20.97%	$1	$0	$7	$0	43.9%	$0	$0	$58	8.28%	$0	$0	$2
111	Nov-77	$0	$1	$130	0.5%	$0	56.1%	$0	$0	$74	20.97%	$1	$0	$8	$0	43.9%	$0	$0	$58	8.28%	$0	$0	$2
112	Dec-77	$1	$3	$129	2.1%	$0	56.1%	$1	$2	$73	20.97%	$1	$0	$9	$0	43.9%	$1	$1	$57	8.28%	$0	$0	$3
113	Jan-78	$0	$2	$127	1.3%	$0	55.0%	$0	$1	$72	20.00%	$1	$0	$10	$0	45.0%	$0	$1	$57	8.44%	$0	$0	$3
114	Feb-78	$0	$73	$54	57.6%	$0	55.0%	$0	$41	$71	20.00%	$1	$6	$5	$0	45.0%	$0	$32	$56	8.44%	$0	$2	$2

AFUDC

Carriers' Unrecovered Investment Analysis: Conservative Assumptions Corrected (millions $)

Ln. Col. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
115	Mar-78	$0	$39	$15	72.7%	$0	55.0%	$0	$22	$30	20.00%	$1	$4	$2	$0	45.0%	$0	$17	$24	8.44%	$0	$1	$1
116	Apr-78	$79	$42	$52	44.6%	$0	55.0%	$43	$23	$8	20.00%	$0	$1	$1	$0	45.0%	$35	$19	$6	8.44%	$0	$0	$0
117	May-78	($15)	$0	$36	0.5%	$0	55.0%	($8)	$0	$29	20.00%	$0	$0	$2	$0	45.0%	($7)	$0	$23	8.44%	$0	$0	$1
118	Jun-78	($11)	$0	$24	1.7%	$0	55.0%	($6)	$0	$20	20.00%	$0	$0	$2	$0	45.0%	($5)	$0	$16	8.44%	$0	$0	$1
119	Jul-78	$0	$0	$24	1.3%	$0	55.0%	$0	$0	$14	20.00%	$0	$0	$2	$0	45.0%	$0	$0	$11	8.44%	$0	$0	$1
120	Aug-78	$15	$1	$38	2.6%	$0	55.0%	$8	$1	$13	20.00%	$0	$0	$2	$0	45.0%	$7	$0	$11	8.44%	$0	$0	$1
121	Sep-78	$65	$3	$100	2.9%	$0	55.0%	$36	$2	$21	20.00%	$0	$0	$3	$0	45.0%	$29	$1	$17	8.44%	$0	$0	$1
122	Oct-78	($86)	$1	$13	5.4%	$0	55.0%	($47)	$0	$55	20.00%	$1	$0	$3	$0	45.0%	($39)	$0	$45	8.44%	$0	$0	$1
123	Nov-78	$8	$1	$20	3.6%	$0	55.0%	$4	$0	$7	20.00%	$0	$0	$3	$0	45.0%	$4	$0	$6	8.44%	$0	$0	$1
124	Dec-78	$73	$10	$84	10.1%	$0	55.0%	$40	$5	$11	20.00%	$0	$0	$3	$0	45.0%	$33	$4	$9	8.44%	$0	$0	$1
125	Jan-79	($7)	$1	$77	0.7%	$0	62.6%	($4)	$0	$46	20.00%	$1	$0	$4	$0	37.4%	($3)	$0	$38	8.50%	$0	$0	$1
126	Feb-79	$2	$0	$78	0.0%	$0	62.6%	$1	$0	$42	20.00%	$1	$0	$5	$0	37.4%	$1	$0	$35	8.50%	$0	$0	$2
127	Mar-79	$1	$0	$79	0.2%	$0	62.6%	$0	$0	$43	20.00%	$1	$0	$5	$0	37.4%	$0	$0	$36	8.50%	$0	$0	$2
128	Apr-79	$4	$0	$82	0.3%	$0	62.6%	$2	$0	$43	20.00%	$1	$0	$6	$0	37.4%	$1	$0	$36	8.50%	$0	$0	$2
129	May-79	$3	$0	$85	0.5%	$0	62.6%	$2	$0	$45	20.00%	$1	$0	$7	$0	37.4%	$1	$0	$37	8.50%	$0	$0	$2
130	Jun-79	$9	$0	$94	0.1%	$0	62.6%	$6	$0	$47	20.00%	$1	$0	$8	$0	37.4%	$3	$0	$38	8.50%	$0	$0	$3
131	Jul-79	$6	$1	$99	0.8%	$0	62.6%	$4	$0	$53	20.00%	$1	$0	$8	$0	37.4%	$2	$0	$42	8.50%	$0	$0	$3
132	Aug-79	$9	$0	$108	0.1%	$0	62.6%	$5	$0	$56	20.00%	$1	$0	$9	$0	37.4%	$3	$0	$43	8.50%	$0	$0	$3
133	Sep-79	$11	$1	$117	1.1%	$0	62.6%	$7	$1	$61	20.00%	$1	$0	$10	$0	37.4%	$4	$1	$46	8.50%	$0	$0	$3
134	Oct-79	$25	$54	$89	37.9%	$0	62.6%	$16	$31	$67	20.00%	$1	$4	$8	$0	37.4%	$10	$22	$50	8.50%	$0	$1	$3
135	Nov-79	$8	$0	$96	0.0%	$0	62.6%	$5	$0	$52	20.00%	$1	$0	$8	$0	37.4%	$3	$0	$37	8.50%	$0	$0	$3
136	Dec-79	$12	$17	$91	16.0%	$0	62.6%	$8	$10	$56	20.00%	$1	$1	$8	$0	37.4%	$5	$7	$40	8.50%	$0	$0	$3
137	Jan-80	$25	$2	$113	2.1%	$0	67.9%	$17	$2	$54	21.71%	$1	$0	$9	$0	32.2%	$8	$1	$37	8.93%	$0	$0	$3
138	Feb-80	$8	$1	$120	0.5%	$0	67.9%	$5	$0	$69	21.71%	$1	$0	$10	$0	32.2%	$2	$0	$44	8.93%	$0	$0	$3
139	Mar-80	$8	$0	$128	0.2%	$0	67.9%	$5	$0	$74	21.71%	$1	$0	$11	$0	32.2%	$3	$0	$46	8.93%	$0	$0	$3
140	Apr-80	$13	$1	$141	0.5%	$0	67.9%	$9	$0	$79	21.71%	$1	$0	$13	$0	32.2%	$4	$0	$49	8.93%	$0	$0	$4
141	May-80	$9	$0	$150	0.3%	$0	67.9%	$6	$0	$88	21.71%	$2	$0	$14	$0	32.2%	$3	$0	$53	8.93%	$0	$0	$4
142	Jun-80	$11	$1	$160	0.4%	$0	67.9%	$8	$0	$94	21.71%	$2	$0	$16	$0	32.2%	$4	$0	$56	8.93%	$0	$0	$5
143	Jul-80	$14	$1	$174	0.3%	$0	67.9%	$10	$0	$101	21.71%	$2	$0	$18	$0	32.2%	$5	$0	$59	8.93%	$0	$0	$5
144	Aug-80	$13	$1	$185	0.7%	$0	67.9%	$9	$1	$110	21.71%	$2	$0	$20	$0	32.2%	$4	$0	$64	8.93%	$0	$0	$5
145	Sep-80	$13	$30	$168	15.2%	$0	67.9%	$9	$19	$118	21.71%	$2	$3	$19	$0	32.2%	$4	$11	$67	8.93%	$0	$1	$5
146	Oct-80	$14	($0)	$182	-0.1%	$0	67.9%	$10	($0)	$108	21.71%	$2	($0)	$21	$0	32.2%	$5	($0)	$60	8.93%	$0	($0)	$6
147	Nov-80	$7	$1	$189	0.5%	$0	67.9%	$5	$1	$117	21.71%	$2	$0	$23	$0	32.2%	$2	$0	$65	8.93%	$0	$0	$6
148	Dec-80	($1)	$71	$117	37.9%	$0	67.9%	($1)	$46	$122	21.71%	$2	$9	$16	$0	32.2%	($0)	$25	$67	8.93%	$0	$2	$4
149	Jan-81	($8)	$20	$88	18.5%	$0	69.3%	($6)	$13	$75	24.30%	$2	$3	$15	$0	30.7%	($3)	$7	$41	9.31%	$0	$1	$4
150	Feb-81	$2	$1	$89	1.0%	$0	69.3%	$1	$1	$57	24.30%	$1	$0	$16	$0	30.7%	$1	$0	$32	9.31%	$0	$0	$4
151	Mar-81	$5	$2	$92	2.3%	$0	69.3%	$3	$1	$57	24.30%	$1	$0	$17	$0	30.7%	$2	$1	$32	9.31%	$0	$0	$4
152	Apr-81	($11)	$0	$81	0.2%	$0	69.3%	($8)	$0	$59	24.30%	$1	$0	$18	$0	30.7%	($3)	$0	$33	9.31%	$0	$0	$4
153	May-81	$4	$1	$84	1.2%	$0	69.3%	$3	$1	$52	24.30%	$1	$0	$19	$0	30.7%	$1	$0	$29	9.31%	$0	$0	$5
154	Jun-81	$7	$2	$88	2.7%	$0	69.3%	$5	$2	$54	24.30%	$1	$0	$19	$0	30.7%	$2	$1	$30	9.31%	$0	$0	$5
155	Jul-81	$22	$2	$108	1.9%	$0	69.3%	$15	$1	$57	24.30%	$1	$0	$20	$0	30.7%	$7	$1	$31	9.31%	$0	$0	$5
156	Aug-81	$10	$2	$116	1.5%	$0	69.3%	$7	$1	$71	24.30%	$1	$0	$21	$0	30.7%	$3	$1	$37	9.31%	$0	$0	$5
157	Sep-81	$14	$1	$128	1.1%	$0	69.3%	$10	$1	$76	24.30%	$2	$0	$22	$0	30.7%	$4	$0	$40	9.31%	$0	$0	$5
158	Oct-81	$9	$3	$135	2.2%	$0	69.3%	$6	$2	$85	24.30%	$2	$0	$24	$0	30.7%	$3	$1	$43	9.31%	$0	$0	$6
159	Nov-81	$2	$0	$136	0.3%	$0	69.3%	$1	$0	$89	24.30%	$2	$0	$25	$0	30.7%	$1	$0	$45	9.31%	$0	$0	$6
160	Dec-81	($19)	$45	$72	38.1%	$0	69.3%	($13)	$29	$90	24.30%	$2	$10	$18	$0	30.7%	($6)	$15	$46	9.31%	$0	$2	$4
161	Jan-82	($40)	$6	$27	16.9%	$0	69.8%	($28)	$3	$48	23.10%	$1	$3	$15	$0	30.2%	($12)	$2	$25	9.54%	$0	$1	$4
162	Feb-82	$3	$1	$29	3.6%	$0	69.8%	$2	$1	$17	23.10%	$0	$1	$15	$0	30.2%	$1	$0	$11	9.54%	$0	$0	$3
163	Mar-82	$2	$1	$30	3.4%	$0	69.8%	$1	$1	$18	23.10%	$0	$1	$15	$0	30.2%	$1	$0	$11	9.54%	$0	$0	$3
164	Apr-82	$4	$2	$31	6.8%	$0	69.8%	$3	$1	$19	23.10%	$0	$1	$14	$0	30.2%	$1	$1	$11	9.54%	$0	$0	$3
165	May-82	$5	$1	$36	2.7%	$0	69.8%	$4	$1	$20	23.10%	$0	$0	$14	$0	30.2%	$2	$0	$12	9.54%	$0	$0	$3
166	Jun-82	$10	$1	$45	1.8%	$0	69.8%	$7	$1	$23	23.10%	$0	$0	$15	$0	30.2%	$3	$0	$13	9.54%	$0	$0	$3
167	Jul-82	$5	$1	$49	1.6%	$0	69.8%	$4	$1	$29	23.10%	$1	$0	$15	$0	30.2%	$2	$0	$16	9.54%	$0	$0	$3
168	Aug-82	$12	$18	$44	28.9%	$0	69.8%	$8	$12	$33	23.10%	$1	$4	$11	$0	30.2%	$4	$6	$17	9.54%	$0	$1	$3
169	Sep-82	$9	$10	$43	19.3%	$0	69.8%	$6	$7	$29	23.10%	$1	$2	$10	$0	30.2%	$3	$3	$15	9.54%	$0	$0	$2
170	Oct-82	$6	$9	$39	19.4%	$0	69.8%	$4	$6	$29	23.10%	$1	$2	$8	$0	30.2%	$2	$3	$14	9.54%	$0	$0	$2
171	Nov-82	$1	$4	$36	10.4%	$0	69.8%	$0	$3	$27	23.10%	$1	$1	$8	$0	30.2%	$0	$1	$13	9.54%	$0	$0	$2

AFUDC

Carriers' Unrecovered Investment Analysis: Conservative Assumptions Corrected (millions $)

Ln. Col. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
172	Dec-82	$0	$3	$33	7.9%	$0	69.8%	$0	$2	$24	23.10%	$0	$1	$8	$0	30.2%	$0	$1	$12	9.54%	$0	$0	$2
173	Jan-83	$1	$1	$34	1.9%	$0	72.0%	$1	$0	$23	20.75%	$0	$0	$8	$0	28.0%	$0	$0	$11	9.52%	$0	$0	$2
174	Feb-83	$3	$0	$37	0.6%	$0	72.0%	$2	$0	$23	20.75%	$0	$0	$8	$0	28.0%	$1	$0	$11	9.52%	$0	$0	$2
175	Mar-83	$12	$13	$36	26.9%	$0	72.0%	$9	$9	$25	20.75%	$0	$2	$7	$0	28.0%	$3	$4	$12	9.52%	$0	$0	$1
176	Apr-83	$12	$9	$39	18.5%	$0	72.0%	$9	$6	$25	20.75%	$0	$1	$6	$0	28.0%	$3	$3	$11	9.52%	$0	$0	$1
177	May-83	$6	$1	$44	2.1%	$0	72.0%	$4	$1	$27	20.75%	$0	$0	$6	$0	28.0%	$2	$0	$12	9.52%	$0	$0	$1
178	Jun-83	$7	$0	$50	0.9%	$0	72.0%	$5	$0	$31	20.75%	$1	$0	$7	$0	28.0%	$2	$0	$13	9.52%	$0	$0	$1
179	Jul-83	$4	$0	$53	0.4%	$0	72.0%	$3	$0	$35	20.75%	$1	$0	$7	$0	28.0%	$1	$0	$15	9.52%	$0	$0	$2
180	Aug-83	($1)	$1	$51	1.7%	$0	72.0%	($1)	$1	$38	20.75%	$1	$0	$8	$0	28.0%	($0)	$0	$16	9.52%	$0	$0	$2
181	Sep-83	$5	$42	$14	74.5%	$0	72.0%	$4	$30	$36	20.75%	$1	$6	$3	$0	28.0%	$2	$12	$15	9.52%	$0	$1	$1
182	Oct-83	$4	$2	$16	11.4%	$0	72.0%	$3	$1	$10	20.75%	$0	$0	$2	$0	28.0%	$1	$1	$4	9.52%	$0	$0	$1
183	Nov-83	$3	$4	$15	20.5%	$0	72.0%	$2	$3	$11	20.75%	$0	$1	$2	$0	28.0%	$1	$1	$5	9.52%	$0	$0	$0
184	Dec-83	$6	$3	$18	14.7%	$0	72.0%	$4	$2	$11	20.75%	$0	$0	$2	$0	28.0%	$2	$1	$4	9.52%	$0	$0	$0
185	Jan-84	$2	$1	$20	3.9%	$0	71.8%	$2	$1	$13	22.45%	$0	$0	$2	$0	28.2%	$1	$0	$5	9.49%	$0	$0	$0
186	Feb-84	$3	$0	$22	2.1%	$0	71.8%	$2	$0	$14	22.45%	$0	$0	$2	$0	28.2%	$1	$0	$6	9.49%	$0	$0	$0
187	Mar-84	$6	$5	$23	19.6%	$0	71.8%	$4	$4	$16	22.45%	$0	$0	$2	$0	28.2%	$2	$2	$6	9.49%	$0	$0	$0
188	Apr-84	$4	$2	$24	8.9%	$0	71.8%	$3	$2	$16	22.45%	$0	$0	$2	$0	28.2%	$1	$1	$6	9.49%	$0	$0	$0
189	May-84	$5	$3	$26	11.2%	$0	71.8%	$3	$2	$17	22.45%	$0	$0	$2	$0	28.2%	$1	$1	$7	9.49%	$0	$0	$0
190	Jun-84	$2	$1	$27	4.0%	$0	71.8%	$2	$1	$18	22.45%	$0	$0	$3	$0	28.2%	$1	$0	$7	9.49%	$0	$0	$0
191	Jul-84	$3	$1	$28	3.9%	$0	71.8%	$2	$1	$19	22.45%	$0	$0	$3	$0	28.2%	$1	$0	$8	9.49%	$0	$0	$1
192	Aug-84	$1	$0	$29	0.9%	$0	71.8%	$1	$0	$20	22.45%	$0	$0	$3	$0	28.2%	$0	$0	$8	9.49%	$0	$0	$1
193	Sep-84	$1	$0	$30	1.5%	$0	71.8%	$1	$0	$21	22.45%	$0	$0	$4	$0	28.2%	$0	$0	$8	9.49%	$0	$0	$1
194	Oct-84	$2	$6	$26	17.8%	$0	71.8%	$1	$4	$22	22.45%	$0	$1	$3	$0	28.2%	$0	$2	$9	9.49%	$0	$0	$1
195	Nov-84	$2	$2	$26	6.7%	$0	71.8%	$2	$1	$19	22.45%	$0	$0	$3	$0	28.2%	$1	$1	$7	9.49%	$0	$0	$1
196	Dec-84	$16	$42	$0	100.0%	$0	71.8%	$11	$30	$19	22.45%	$0	$4	$0	$0	28.2%	$4	$12	$8	9.49%	$0	$1	$0
197	Jan-85	$8	$0	$8	1.7%	$0	65.9%	$5	$0	$0	19.44%	$0	$0	$0	$0	34.1%	$3	$0	$0	9.07%	$0	$0	$0
198	Feb-85	$5	$0	$13	0.4%	$0	65.9%	$3	$0	$5	19.44%	$0	$0	$0	$0	34.1%	$2	$0	$3	9.07%	$0	$0	$0
199	Mar-85	$5	$0	$17	1.2%	$0	65.9%	$3	$0	$8	19.44%	$0	$0	$0	$0	34.1%	$2	$0	$4	9.07%	$0	$0	$0
200	Apr-85	$5	$1	$21	5.8%	$0	65.9%	$3	$1	$11	19.44%	$0	$0	$0	$0	34.1%	$2	$0	$6	9.07%	$0	$0	$0
201	May-85	$3	$1	$24	2.7%	$0	65.9%	$2	$0	$14	19.44%	$0	$0	$1	$0	34.1%	$1	$0	$7	9.07%	$0	$0	$0
202	Jun-85	$1	$25	$0	100.0%	$0	65.9%	$1	$16	$16	19.44%	$0	$1	$0	$0	34.1%	$0	$8	$8	9.07%	$0	$0	$0
203	Jul-85	$3	$3	$0	87.7%	$0	65.9%	$2	$2	$0	19.44%	$0	$0	$0	$0	34.1%	$1	$1	($0)	9.07%	($0)	$0	($0)
204	Aug-85	$1	$1	$1	43.8%	$0	65.9%	$1	$0	$0	19.44%	$0	$0	$0	$0	34.1%	$0	$0	$0	9.07%	$0	($0)	$0
205	Sep-85	$1	$0	$2	12.6%	$0	65.9%	$1	$0	$1	19.44%	$0	$0	$0	$0	34.1%	$0	$0	$0	9.07%	$0	$0	$0
206	Oct-85	$1	$1	$2	37.5%	$0	65.9%	$1	$1	$1	19.44%	$0	$0	$0	$0	34.1%	$0	$0	$1	9.07%	$0	$0	$0
207	Nov-85	$0	$0	$2	17.2%	$0	65.9%	$0	$0	$1	19.44%	$0	$0	$0	$0	34.1%	$0	$0	$1	9.07%	$0	$0	$0
208	Dec-85	($1)	$0	$1	0.0%	$0	65.9%	($1)	$0	$1	19.44%	$0	$0	$0	$0	34.1%	($0)	$0	$1	9.07%	$0	$0	$0
209	Jan-86	$1	$1	$2	24.9%	$0	65.7%	$1	$0	$1	19.77%	$0	$0	$0	$0	34.3%	$0	$0	$0	8.50%	$0	$0	$0
210	Feb-86	$1	$0	$2	16.9%	$0	65.7%	$1	$0	$1	19.77%	$0	$0	$0	$0	34.3%	$0	$0	$1	8.50%	$0	$0	$0
211	Mar-86	$0	$0	$2	1.7%	$0	65.7%	$0	$0	$1	19.77%	$0	$0	$0	$0	34.3%	$0	$0	$1	8.50%	$0	$0	$0
212	Apr-86	$1	$0	$3	5.4%	$0	65.7%	$1	$0	$2	19.77%	$0	$0	$0	$0	34.3%	$0	$0	$1	8.50%	$0	$0	$0
213	May-86	$2	$2	$3	36.4%	$0	65.7%	$1	$1	$2	19.77%	$0	$0	$0	$0	34.3%	$1	$1	$1	8.50%	$0	$0	$0
214	Jun-86	$3	$1	$5	13.7%	$0	65.7%	$2	$1	$2	19.77%	$0	$0	$0	$0	34.3%	$1	$0	$1	8.50%	$0	$0	$0
215	Jul-86	$3	$1	$7	7.1%	$0	65.7%	$2	$0	$3	19.77%	$0	$0	$0	$0	34.3%	$1	$0	$2	8.50%	$0	$0	$0
216	Aug-86	$4	$0	$11	1.8%	$0	65.7%	$3	$0	$5	19.77%	$0	$0	$0	$0	34.3%	$1	$0	$3	8.50%	$0	$0	$0
217	Sep-86	$2	$0	$13	0.9%	$0	65.7%	$1	$0	$7	19.77%	$0	$0	$0	$0	34.3%	$1	$0	$4	8.50%	$0	$0	$0
218	Oct-86	$17	$26	$4	88.0%	$0	65.7%	$11	$17	$9	19.77%	$0	$0	$0	$0	34.3%	$6	$9	$5	8.50%	$0	$0	$0
219	Nov-86	$1	$0	$4	9.5%	$0	65.7%	$1	$0	$2	19.77%	$0	$0	$0	$0	34.3%	$0	$0	$1	8.50%	$0	$0	$0
220	Dec-86	$2	$4	$2	62.9%	$0	65.7%	$1	$3	$3	19.77%	$0	$0	$0	$0	34.3%	$1	$1	$1	8.50%	$0	$0	$0
221	Jan-87	$1	$2	$2	48.3%	$0	68.8%	$1	$1	$1	17.88%	$0	$0	$0	$0	31.2%	$0	$1	$1	8.96%	$0	$0	$0
222	Feb-87	$0	$0	$2	2.7%	$0	68.8%	$0	$0	$1	17.88%	$0	$0	$0	$0	31.2%	$0	$0	$1	8.96%	$0	$0	$0
223	Mar-87	$1	$1	$2	31.8%	$0	68.8%	$1	$1	$1	17.88%	$0	$0	$0	$0	31.2%	$0	$0	$1	8.96%	$0	$0	$0
224	Apr-87	$2	$0	$3	11.7%	$0	68.8%	$1	$0	$1	17.88%	$0	$0	$0	$0	31.2%	$1	$0	$1	8.96%	$0	$0	$0
225	May-87	$4	$1	$7	9.0%	$0	68.8%	$3	$0	$2	17.88%	$0	$0	$0	$0	31.2%	$1	$0	$1	8.96%	$0	$0	$0
226	Jun-87	$7	$1	$12	10.2%	$0	68.8%	$5	$1	$5	17.88%	$0	$0	$0	$0	31.2%	$2	$0	$2	8.96%	$0	$0	$0
227	Jul-87	$8	$7	$13	33.0%	$0	68.8%	$5	$5	$8	17.88%	$0	$0	$0	$0	31.2%	$2	$2	$4	8.96%	$0	$0	$0
228	Aug-87	$4	$1	$16	5.4%	$0	68.8%	$3	$1	$9	17.88%	$0	$0	$0	$0	31.2%	$1	$0	$4	8.96%	$0	$0	$0

AFUDC

Carriers' Unrecovered Investment Analysis: Conservative Assumptions Corrected (millions $)

Ln. Col. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
229	Sep-87	$7	$16	$7	71.1%	$0	68.8%	$5	$11	$11	17.88%	$0	$0	$0	$0	31.2%	$2	$5	$5	8.96%	$0	$0	$0
230	Oct-87	$1	$1	$7	7.3%	$0	68.8%	$1	$0	$5	17.88%	$0	$0	$0	$0	31.2%	$0	$0	$2	8.96%	$0	$0	$0
231	Nov-87	$3	$1	$9	11.4%	$0	68.8%	$2	$1	$5	17.88%	$0	$0	$0	$0	31.2%	$1	$0	$2	8.96%	$0	$0	$0
232	Dec-87	$7	$14	$1	90.7%	$0	68.8%	$5	$10	$6	17.88%	$0	$0	$0	$0	31.2%	$2	$4	$3	8.96%	$0	$0	$0
233	Jan-88	$0	$0	$2	5.6%	$0	67.8%	$0	$0	$1	18.47%	$0	$0	$0	$0	32.2%	$0	$0	$0	8.94%	$0	$0	$0
234	Feb-88	$2	$1	$2	42.1%	$0	67.8%	$1	$1	$1	18.47%	$0	$0	$0	$0	32.2%	$1	$0	$1	8.94%	$0	$0	$0
235	Mar-88	$1	$1	$2	43.5%	$0	67.8%	$1	$1	$1	18.47%	$0	$0	$0	$0	32.2%	$0	$0	$1	8.94%	$0	$0	$0
236	Apr-88	$1	$0	$2	16.2%	$0	67.8%	$1	$0	$1	18.47%	$0	$0	$0	$0	32.2%	$0	$0	$1	8.94%	$0	$0	$0
237	May-88	$1	$1	$3	24.9%	$0	67.8%	$1	$1	$2	18.47%	$0	$0	$0	$0	32.2%	$0	$0	$1	8.94%	$0	$0	$0
238	Jun-88	$0	$0	$3	13.7%	$0	67.8%	$0	$0	$2	18.47%	$0	$0	$0	$0	32.2%	$0	$0	$1	8.94%	$0	$0	$0
239	Jul-88	$2	$0	$4	5.7%	$0	67.8%	$1	$0	$2	18.47%	$0	$0	$0	$0	32.2%	$1	$0	$1	8.94%	$0	$0	$0
240	Aug-88	$2	$0	$6	7.2%	$0	67.8%	$1	$0	$3	18.47%	$0	$0	$0	$0	32.2%	$1	$0	$1	8.94%	$0	$0	$0
241	Sep-88	$4	$2	$7	22.3%	$0	67.8%	$3	$1	$4	18.47%	$0	$0	$0	$0	32.2%	$1	$1	$2	8.94%	$0	$0	$0
242	Oct-88	$3	$1	$10	5.5%	$0	67.8%	$2	$0	$5	18.47%	$0	$0	$0	$0	32.2%	$1	$0	$2	8.94%	$0	$0	$0
243	Nov-88	$2	$3	$8	28.0%	$0	67.8%	$1	$2	$7	18.47%	$0	$0	$0	$0	32.2%	$1	$1	$3	8.94%	$0	$0	$0
244	Dec-88	$1	$1	$9	9.9%	$0	67.8%	$1	$1	$6	18.47%	$0	$0	$0	$0	32.2%	$0	$0	$3	8.94%	$0	$0	$0
245	Jan-89	$1	$1	$9	6.5%	$0	63.7%	$1	$0	$6	18.77%	$0	$0	$0	$0	36.3%	$0	$0	$3	8.39%	$0	$0	$0
246	Feb-89	$1	$1	$9	7.6%	$0	63.7%	$0	$1	$6	18.77%	$0	$0	$0	$0	36.3%	$0	$0	$3	8.39%	$0	$0	$0
247	Mar-89	$2	$1	$10	6.1%	$0	63.7%	$1	$0	$6	18.77%	$0	$0	$1	$0	36.3%	$1	$0	$3	8.39%	$0	$0	$0
248	Apr-89	$3	$2	$11	16.5%	$0	63.7%	$2	$1	$7	18.77%	$0	$0	$1	$0	36.3%	$1	$1	$3	8.39%	$0	$0	$0
249	May-89	$6	$8	$9	47.0%	$0	63.7%	$4	$5	$7	18.77%	$0	$0	$0	$0	36.3%	$2	$3	$4	8.39%	$0	$0	$0
250	Jun-89	$5	$3	$11	18.5%	$0	63.7%	$3	$2	$6	18.77%	$0	$0	$0	$0	36.3%	$2	$1	$3	8.39%	$0	$0	$0
251	Jul-89	$4	$2	$14	10.9%	$0	63.7%	$3	$1	$7	18.77%	$0	$0	$0	$0	36.3%	$1	$1	$4	8.39%	$0	$0	$0
252	Aug-89	$7	$5	$15	26.8%	$0	63.7%	$4	$3	$9	18.77%	$0	$0	$0	$0	36.3%	$2	$2	$5	8.39%	$0	$0	$0
253	Sep-89	$7	$1	$21	5.3%	$0	63.7%	$5	$1	$9	18.77%	$0	$0	$1	$0	36.3%	$3	$0	$5	8.39%	$0	$0	$0
254	Oct-89	$8	$5	$24	16.4%	$0	63.7%	$5	$3	$13	18.77%	$0	$0	$1	$0	36.3%	$3	$2	$7	8.39%	$0	$0	$0
255	Nov-89	$4	$1	$27	3.0%	$0	63.7%	$3	$1	$15	18.77%	$0	$0	$1	$0	36.3%	$1	$0	$9	8.39%	$0	$0	$0
256	Dec-89	$7	$15	$20	43.1%	$0	63.7%	$4	$9	$18	18.77%	$0	$0	$1	$0	36.3%	$3	$5	$10	8.39%	$0	$0	$0
257	Jan-90	$5	$3	$21	13.8%	$0	66.3%	$3	$2	$12	18.58%	$0	$0	$1	$0	33.7%	$2	$1	$7	8.26%	$0	$0	$0
258	Feb-90	$5	$2	$25	5.9%	$0	66.3%	$3	$1	$14	18.58%	$0	$0	$1	$0	33.7%	$2	$1	$8	8.26%	$0	$0	$0
259	Mar-90	$5	$1	$29	3.8%	$0	66.3%	$4	$1	$16	18.58%	$0	$0	$1	$0	33.7%	$2	$0	$9	8.26%	$0	$0	$0
260	Apr-90	$6	$1	$34	3.2%	$0	66.3%	$4	$1	$19	18.58%	$0	$0	$2	$0	33.7%	$2	$0	$10	8.26%	$0	$0	$0
261	May-90	$10	$4	$40	8.4%	$0	66.3%	$6	$2	$22	18.58%	$0	$0	$2	$0	33.7%	$3	$1	$12	8.26%	$0	$0	$0
262	Jun-90	$15	$5	$50	8.6%	$0	66.3%	$10	$3	$26	18.58%	$0	$0	$2	$0	33.7%	$5	$2	$14	8.26%	$0	$0	$0
263	Jul-90	$9	$7	$53	11.1%	$0	66.3%	$6	$4	$33	18.58%	$1	$0	$2	$0	33.7%	$3	$2	$17	8.26%	$0	$0	$1
264	Aug-90	$13	$4	$62	5.8%	$0	66.3%	$9	$3	$35	18.58%	$1	$0	$3	$0	33.7%	$5	$1	$18	8.26%	$0	$0	$1
265	Sep-90	$26	$18	$71	19.8%	$0	66.3%	$18	$12	$41	18.58%	$1	$1	$3	$0	33.7%	$9	$6	$21	8.26%	$0	$0	$1
266	Oct-90	$24	$3	$92	3.4%	$0	66.3%	$16	$2	$47	18.58%	$1	$0	$3	$0	33.7%	$8	$1	$24	8.26%	$0	$0	$1
267	Nov-90	$20	$20	$92	17.8%	$0	66.3%	$13	$13	$61	18.58%	$1	$1	$4	$0	33.7%	$7	$7	$31	8.26%	$0	$0	$1
268	Dec-90	$27	$25	$94	21.2%	$0	66.3%	$18	$17	$61	18.58%	$1	$1	$4	$0	33.7%	$9	$9	$31	8.26%	$0	$0	$1
269	Jan-91	$7	$9	$92	8.6%	$0	62.8%	$4	$6	$62	18.14%	$1	$0	$5	$0	37.2%	$2	$3	$32	8.35%	$0	$0	$1
270	Feb-91	$15	$3	$104	2.9%	$0	62.8%	$9	$2	$61	18.14%	$1	$0	$5	$0	37.2%	$6	$1	$31	8.35%	$0	$0	$1
271	Mar-91	$23	$42	$85	33.3%	$0	62.8%	$15	$27	$68	18.14%	$1	$2	$5	$0	37.2%	$9	$15	$36	8.35%	$0	$0	$1
272	Apr-91	$15	$2	$98	1.7%	$0	62.8%	$9	$1	$55	18.14%	$1	$0	$5	$0	37.2%	$5	$1	$30	8.35%	$0	$0	$1
273	May-91	$14	$3	$108	2.8%	$0	62.8%	$9	$2	$63	18.14%	$1	$0	$6	$0	37.2%	$5	$1	$34	8.35%	$0	$0	$1
274	Jun-91	$14	$2	$120	1.6%	$0	62.8%	$9	$1	$70	18.14%	$1	$0	$7	$0	37.2%	$5	$1	$39	8.35%	$0	$0	$2
275	Jul-91	$15	$11	$124	8.3%	$0	62.8%	$10	$7	$77	18.14%	$1	$1	$8	$0	37.2%	$6	$4	$43	8.35%	$0	$0	$2
276	Aug-91	($2)	$10	$112	8.3%	$0	62.8%	($1)	$6	$80	18.14%	$1	$1	$8	$0	37.2%	($1)	$4	$45	8.35%	$0	$0	$2
277	Sep-91	($67)	$3	$42	6.0%	$0	62.8%	($42)	$2	$72	18.14%	$1	$0	$9	$0	37.2%	($25)	$1	$40	8.35%	$0	$0	$2
278	Oct-91	$9	$5	$45	10.7%	$0	62.8%	$5	$4	$28	18.14%	$0	$1	$8	$0	37.2%	$3	$2	$14	8.35%	$0	$0	$2
279	Nov-91	$13	$2	$55	4.3%	$0	62.8%	$8	$2	$30	18.14%	$0	$0	$8	$0	37.2%	$5	$1	$16	8.35%	$0	$0	$2
280	Dec-91	$1	$25	$32	43.7%	$0	62.8%	$0	$16	$36	18.14%	$1	$4	$5	$0	37.2%	$0	$9	$19	8.35%	$0	$1	$1
281	Jan-92	$5	$8	$28	23.1%	$0	59.5%	$3	$5	$21	17.85%	$0	$1	$4	$0	40.5%	$2	$3	$11	8.10%	$0	$0	$1
282	Feb-92	$6	$5	$29	14.0%	$0	59.5%	$3	$3	$18	17.85%	$0	$1	$4	$0	40.5%	$2	$2	$10	8.10%	$0	$0	$1
283	Mar-92	$3	$7	$25	21.0%	$0	59.5%	$2	$4	$18	17.85%	$0	$1	$3	$0	40.5%	$1	$2	$11	8.10%	$0	$0	$1
284	Apr-92	$8	$5	$28	13.9%	$0	59.5%	$5	$3	$16	17.85%	$0	$0	$3	$0	40.5%	$3	$2	$9	8.10%	$0	$0	$1
285	May-92	$4	$2	$31	6.2%	$0	59.5%	$3	$1	$18	17.85%	$0	$0	$3	$0	40.5%	$2	$1	$11	8.10%	$0	$0	$1

AFUDC

Carriers' Unrecovered Investment Analysis: Conservative Assumptions Corrected (millions $)

Ln. Col. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
286	Jun-92	$7	$1	$36	3.6%	$0	59.5%	$4	$1	$19	17.85%	$0	$0	$3	$0	40.5%	$3	$1	$12	8.10%	$0	$0	$1
287	Jul-92	$6	$6	$35	15.1%	$0	59.5%	$3	$4	$22	17.85%	$0	$1	$3	$0	40.5%	$2	$2	$14	8.10%	$0	$0	$1
288	Aug-92	$3	$3	$36	8.6%	$0	59.5%	$2	$2	$22	17.85%	$0	$0	$3	$0	40.5%	$1	$1	$14	8.10%	$0	$0	$1
289	Sep-92	$13	$5	$44	9.6%	$0	59.5%	$8	$3	$22	17.85%	$0	$0	$3	$0	40.5%	$5	$2	$14	8.10%	$0	$0	$1
290	Oct-92	$7	$7	$43	14.6%	$0	59.5%	$4	$4	$27	17.85%	$0	$0	$3	$0	40.5%	$3	$3	$17	8.10%	$0	$0	$1
291	Nov-92	$6	$4	$45	8.5%	$0	59.5%	$4	$3	$26	17.85%	$0	$0	$3	$0	40.5%	$3	$2	$17	8.10%	$0	$0	$1
292	Dec-92	$3	$15	$33	30.6%	$0	59.5%	$2	$9	$27	17.85%	$0	$1	$3	$0	40.5%	$1	$6	$18	8.10%	$0	$0	$1
293	Jan-93	$2	$6	$29	18.0%	$0	59.4%	$1	$4	$20	16.04%	$0	$0	$2	$0	40.6%	$1	$3	$13	8.06%	$0	$0	$1
294	Feb-93	$3	$2	$29	6.8%	$0	59.4%	$2	$1	$17	16.04%	$0	$0	$3	$0	40.6%	$1	$1	$11	8.06%	$0	$0	$1
295	Mar-93	$5	$4	$31	10.5%	$0	59.4%	$3	$2	$18	16.04%	$0	$0	$3	$0	40.6%	$2	$1	$12	8.06%	$0	$0	$1
296	Apr-93	$5	$5	$32	12.5%	$0	59.4%	$3	$3	$19	16.04%	$0	$0	$2	$0	40.6%	$2	$2	$12	8.06%	$0	$0	$1
297	May-93	$2	$2	$31	6.8%	$0	59.4%	$1	$1	$19	16.04%	$0	$0	$3	$0	40.6%	$1	$1	$13	8.06%	$0	$0	$1
298	Jun-93	$4	$6	$29	17.4%	$0	59.4%	$3	$4	$19	16.04%	$0	$0	$2	$0	40.6%	$2	$2	$13	8.06%	$0	$0	$1
299	Jul-93	$1	$8	$22	25.8%	$0	59.4%	$0	$5	$18	16.04%	$0	$1	$2	$0	40.6%	$0	$3	$12	8.06%	$0	$0	$1
300	Aug-93	$2	$1	$24	2.9%	$0	59.4%	$1	$0	$13	16.04%	$0	$0	$2	$0	40.6%	$1	$0	$9	8.06%	$0	$0	$1
301	Sep-93	$1	$3	$22	13.5%	$0	59.4%	$1	$2	$14	16.04%	$0	$0	$2	$0	40.6%	$1	$1	$10	8.06%	$0	$0	$1
302	Oct-93	$3	$2	$22	8.6%	$0	59.4%	$2	$1	$13	16.04%	$0	$0	$2	$0	40.6%	$1	$1	$9	8.06%	$0	$0	$1
303	Nov-93	$4	$2	$24	8.6%	$0	59.4%	$2	$1	$13	16.04%	$0	$0	$2	$0	40.6%	$2	$1	$9	8.06%	$0	$0	$1
304	Dec-93	$7	$6	$24	21.3%	$0	59.4%	$4	$4	$14	16.04%	$0	$0	$2	$0	40.6%	$3	$3	$10	8.06%	$0	$0	$1
305	Jan-94	$3	$2	$25	6.3%	$0	63.7%	$2	$1	$14	17.06%	$0	$0	$2	$0	36.4%	$1	$1	$10	8.10%	$0	$0	$1
306	Feb-94	$2	$1	$26	4.1%	$0	63.7%	$1	$1	$15	17.06%	$0	$0	$2	$0	36.4%	$1	$0	$10	8.10%	$0	$0	$1
307	Mar-94	$5	$1	$30	2.2%	$0	63.7%	$3	$0	$15	17.06%	$0	$0	$2	$0	36.4%	$2	$0	$10	8.10%	$0	$0	$1
308	Apr-94	$4	$2	$31	6.8%	$0	63.7%	$2	$1	$18	17.06%	$0	$0	$2	$0	36.4%	$1	$1	$12	8.10%	$0	$0	$1
309	May-94	$5	$3	$34	6.9%	$0	63.7%	$3	$2	$19	17.06%	$0	$0	$2	$0	36.4%	$2	$1	$12	8.10%	$0	$0	$1
310	Jun-94	$4	$3	$35	8.2%	$0	63.7%	$3	$2	$21	17.06%	$0	$0	$2	$0	36.4%	$2	$1	$13	8.10%	$0	$0	$1
311	Jul-94	$5	$1	$38	3.4%	$0	63.7%	$3	$1	$22	17.06%	$0	$0	$3	$0	36.4%	$2	$1	$13	8.10%	$0	$0	$1
312	Aug-94	$5	$1	$42	1.4%	$0	63.7%	$3	$0	$24	17.06%	$0	$0	$3	$0	36.4%	$2	$0	$15	8.10%	$0	$0	$1
313	Sep-94	$6	$1	$47	2.8%	$0	63.7%	$4	$1	$26	17.06%	$0	$0	$3	$0	36.4%	$2	$1	$16	8.10%	$0	$0	$1
314	Oct-94	$9	$1	$55	2.1%	$0	63.7%	$6	$1	$29	17.06%	$0	$0	$4	$0	36.4%	$3	$0	$18	8.10%	$0	$0	$1
315	Nov-94	$1	$0	$56	0.5%	$0	63.7%	$1	$0	$34	17.06%	$0	$0	$4	$0	36.4%	$1	$0	$21	8.10%	$0	$0	$1
316	Dec-94	$5	$31	$31	49.9%	$0	63.7%	$3	$19	$35	17.06%	$0	$2	$3	$0	36.4%	$2	$11	$21	8.10%	$0	$1	$1
317	Jan-95	$3	$7	$27	20.6%	$0	68.1%	$2	$4	$19	15.82%	$0	$1	$2	$0	31.9%	$1	$3	$11	7.93%	$0	$0	$1
318	Feb-95	$5	$1	$31	2.8%	$0	68.1%	$4	$1	$17	15.82%	$0	$0	$2	$0	31.9%	$2	$0	$10	7.93%	$0	$0	$1
319	Mar-95	$4	$0	$35	0.2%	$0	68.1%	$3	$0	$20	15.82%	$0	$0	$3	$0	31.9%	$1	$0	$11	7.93%	$0	$0	$1
320	Apr-95	$5	$0	$40	0.6%	$0	68.1%	$4	$0	$23	15.82%	$0	$0	$3	$0	31.9%	$2	$0	$12	7.93%	$0	$0	$1
321	May-95	$3	$0	$43	0.1%	$0	68.1%	$2	$0	$26	15.82%	$0	$0	$3	$0	31.9%	$1	$0	$14	7.93%	$0	$0	$1
322	Jun-95	$4	$5	$41	10.3%	$0	68.1%	$2	$3	$28	15.82%	$0	$0	$3	$0	31.9%	$1	$2	$15	7.93%	$0	$0	$1
323	Jul-95	$4	$0	$45	0.8%	$0	68.1%	$3	$0	$27	15.82%	$0	$0	$4	$0	31.9%	$1	$0	$14	7.93%	$0	$0	$1
324	Aug-95	$5	$1	$50	1.3%	$0	68.1%	$4	$0	$30	15.82%	$0	$0	$4	$0	31.9%	$2	$0	$16	7.93%	$0	$0	$1
325	Sep-95	$4	$0	$54	0.2%	$0	68.1%	$3	$0	$33	15.82%	$0	$0	$4	$0	31.9%	$1	$0	$17	7.93%	$0	$0	$1
326	Oct-95	$5	$3	$57	4.5%	$0	68.1%	$4	$2	$36	15.82%	$0	$0	$5	$0	31.9%	$2	$1	$18	7.93%	$0	$0	$1
327	Nov-95	$4	$1	$59	2.4%	$0	68.1%	$3	$1	$37	15.82%	$0	$0	$5	$0	31.9%	$1	$0	$19	7.93%	$0	$0	$1
328	Dec-95	$12	$21	$51	28.9%	$0	68.1%	$8	$14	$39	15.82%	$1	$1	$4	$0	31.9%	$4	$7	$20	7.93%	$0	$0	$1
329	Jan-96	$5	$10	$46	17.8%	$0	73.2%	$4	$7	$34	15.00%	$0	$1	$4	$0	26.8%	$1	$3	$17	7.90%	$0	$0	$1
330	Feb-96	$3	$0	$49	0.7%	$0	73.2%	$2	$0	$31	15.00%	$0	$0	$4	$0	26.8%	$1	$0	$15	7.90%	$0	$0	$1
331	Mar-96	$4	$0	$53	0.4%	$0	73.2%	$3	$0	$33	15.00%	$0	$0	$5	$0	26.8%	$1	$0	$16	7.90%	$0	$0	$1
332	Apr-96	$3	$1	$56	1.3%	$0	73.2%	$2	$0	$36	15.00%	$0	$0	$5	$0	26.8%	$1	$0	$17	7.90%	$0	$0	$1
333	May-96	$4	$2	$57	4.1%	$0	73.2%	$3	$2	$38	15.00%	$0	$0	$5	$0	26.8%	$1	$1	$18	7.90%	$0	$0	$1
334	Jun-96	$8	$3	$62	4.6%	$0	73.2%	$6	$2	$40	15.00%	$0	$0	$6	$0	26.8%	$2	$1	$18	7.90%	$0	$0	$1
335	Jul-96	($3)	$0	$60	0.1%	$0	73.2%	($2)	$0	$43	15.00%	$1	$0	$6	$0	26.8%	($1)	$0	$19	7.90%	$0	$0	$2
336	Aug-96	$6	$0	$65	0.3%	$0	73.2%	$4	$0	$41	15.00%	$1	$0	$7	$0	26.8%	$1	$0	$18	7.90%	$0	$0	$2
337	Sep-96	$7	$1	$71	1.7%	$0	73.2%	$5	$1	$45	15.00%	$1	$0	$7	$0	26.8%	$2	$0	$20	7.90%	$0	$0	$2
338	Oct-96	$5	$0	$75	0.6%	$0	73.2%	$3	$0	$50	15.00%	$1	$0	$8	$0	26.8%	$1	$0	$21	7.90%	$0	$0	$2
339	Nov-96	$5	$0	$80	0.0%	$0	73.2%	$3	$0	$53	15.00%	$1	$0	$8	$0	26.8%	$1	$0	$23	7.90%	$0	$0	$2
340	Dec-96	$5	$11	$74	13.0%	$0	73.2%	$4	$8	$56	15.00%	$1	$1	$8	$0	26.8%	$1	$3	$24	7.90%	$0	$0	$2

SOURCE:

AFUDC **Carriers' Unrecovered Investment Analysis: Conservative Assumptions Corrected (millions $)**

Ln. Col. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

Column 1 Time in months
Column 2 Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 3 Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 4 Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 5 Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 6 Sum (prior six months Col 12) - sumproduct(prior six months Col 12 * prior six months Col 5) [A]
Column 7 Exhibit WBT-38
Column 8 Col 2 * Col 7
Column 9 (cum Col 8 - cum prior Col 9 + cum Col 6) * Col 5
Column 10 prior (Col 8 - Col 9 + Col 10) + Col 6
Column 11 [(Exhibit WBT 40) - Col 16*Col 20]/Col 7
Column 12 (Col 10 * Col 11)/12
Column 13 prior Col 14 * Col 5 + [B]
Column 14 prior Col 14 + Col 12 - Col 13
Column 15 Sum (prior six months Col 21) - sumproduct(prior six months Col 21 * prior six months Col 5) [A]
Column 16 1.0 - Col 7
Column 17 Col 2 * Col 16
Column 18 (cum Col 17 - cum prior Col 18 + cum Col 15) * Col 5
Column 19 prior (Col 17 - Col 18 + Col 19) + Col 15
Column 20 Exhibit WBT-39
Column 21 (Col 19 * Col 20) / 12
Column 22 prior Col 23 * Col 5 +[C]
Column 23 prior Col 23 + Col 21 - Col 22

[A] for the months January and July prior to June of 1977, otherwise equal to 0
[B] if Col 5 = 100%, +Col 11, otherwise 0
[C] if Col 5 = 100%, +Col 19, otherwise 0

Amortization of AFUDC

Carriers' Unrecovered Investment Analysis:
Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	Starting Balances	1977	1978	1979	1980	1981	1982	1983	1984	1985
1	Amortization Factor - Net Basis	Sch. 1 Ln.18		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2	Net Equity AFUDC - BOY	Prior Ln. 5		$2,164	$2,166	$2,738	$3,177	$3,462	$3,744	$4,260	$4,685	$4,971
3	Equity Under-recovery to Capitalize	Sch 1, Ln. 13			$560	$434	$273	$267	$500	$414	$280	$341
4	Capitalization of Under-recovery and AFUDC Additions	Ln. 3 + Sch. 4 Col. 13	$2,164	$2	$572	$439	$285	$282	$516	$425	$286	$342
5	Current Period Equity AFUDC Amortization	(Ln.2 + Ln.3) * Ln.1		$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Net Equity AFUDC - EOY	Lns.(2+3-4)	$2,164	$2,166	$2,738	$3,177	$3,462	$3,744	$4,260	$4,685	$4,971	$5,313
7	Accumulated Equity AFUDC Additions	Ln. 3 + Prior Ln. 6	$2,164	$2,166	$2,738	$3,177	$3,462	$3,744	$4,260	$4,685	$4,971	$5,313
8	Accumulated Equity AFUDC Amortization	Ln. 4 + Prior Ln. 7		$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Net Debt AFUDC - BOY	Prior Ln. 11		$398	$398	$402	$404	$407	$411	$414	$417	$418
10	Debt AFUDC Additions	Sch. 3 Col. 22	$398	$1	$4	$2	$3	$4	$4	$2	$1	$0
11	Current Period Debt AFUDC Amortization	(Ln. 8 + Ln. 9) * Ln.1		$0	$0	$0	$0	$0	$0	$0	$0	$0
12	Net Debt AFUDC - EOY	Lns. (8 + 9 - 10)	$398	$398	$402	$404	$407	$411	$414	$417	$418	$418
13	Accumulated Debt AFUDC Additions	Ln. 9 + Prior Ln. 12	$398	$398	$402	$404	$407	$411	$414	$417	$418	$418
14	Accumulated Debt AFUDC Amortization	Ln. 10 + Prior Ln. 13		$0	$0	$0	$0	$0	$0	$0	$0	$0

Amortization of AFUDC

Carriers' Unrecovered Investment Analysis:
Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
1	Amortization Factor - Net Basis	Sch. 1 Ln.18	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2	Net Equity AFUDC - BOY	Prior Ln. 5	$5,313	$5,547	$5,890	$6,129	$6,567	$7,235	$7,797	$8,437	$9,182	$10,136
3	Equity Under-recovery to Capitalize	Sch 1, Ln. 13	$233	$342	$239	$436	$665	$553	$634	$741	$951	$1,219
4	Capitalization of Under-recovery and AFUDC Additions	Ln. 3 + Sch. 4 Col. 13	$233	$343	$239	$438	$668	$562	$640	$744	$954	$1,222
5	Current Period Equity AFUDC Amortization	(Ln.2 + Ln.3) * Ln.1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Net Equity AFUDC - EOY	Lns.(2+3-4)	$5,547	$5,890	$6,129	$6,567	$7,235	$7,797	$8,437	$9,182	$10,136	$11,358
7	Accumulated Equity AFUDC Additions	Ln. 3 + Prior Ln. 6	$5,547	$5,890	$6,129	$6,567	$7,235	$7,797	$8,437	$9,182	$10,136	$11,358
8	Accumulated Equity AFUDC Amortization	Ln. 4 + Prior Ln. 7	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Net Debt AFUDC - BOY	Prior Ln. 11	$418	$418	$418	$418	$419	$419	$421	$423	$424	$425
10	Debt AFUDC Additions	Sch. 3 Col. 22	$0	$0	$0	$0	$1	$2	$2	$1	$1	$1
11	Current Period Debt AFUDC Amortization	(Ln. 8 + Ln. 9) * Ln.1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12	Net Debt AFUDC - EOY	Lns. (8 + 9 - 10)	$418	$418	$418	$419	$419	$421	$423	$424	$425	$426
13	Accumulated Debt AFUDC Additions	Ln. 9 + Prior Ln. 12	$418	$418	$418	$419	$419	$421	$423	$424	$425	$426
14	Accumulated Debt AFUDC Amortization	Ln. 10 + Prior Ln. 13	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Amortization of AFUDC

Carriers' Unrecovered Investment Analysis:
Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1996
1	Amortization Factor - Net Basis	Sch. 1 Ln.18	0.00%
2	Net Equity AFUDC - BOY	Prior Ln. 5	$11,358
3	Equity Under-recovery to Capitalize	Sch 1, Ln. 13	$1,112
4	Capitalization of Under-recovery and AFUDC Additions	Ln. 3 + Sch. 4 Col. 13	$1,115
5	Current Period Equity AFUDC Amortization	(Ln.2 + Ln.3) * Ln.1	$0
6	Net Equity AFUDC - EOY	Lns.(2+3-4)	$12,473
7	Accumulated Equity AFUDC Additions	Ln. 3 + Prior Ln. 6	$12,473
8	Accumulated Equity AFUDC Amortization	Ln. 4 + Prior Ln. 7	$0
9	Net Debt AFUDC - BOY	Prior Ln. 11	$426
10	Debt AFUDC Additions	Sch. 3 Col. 22	$1
11	Current Period Debt AFUDC Amortization	(Ln. 8 + Ln. 9) * Ln.1	$0
12	Net Debt AFUDC - EOY	Lns. (8 + 9 - 10)	$427
13	Accumulated Debt AFUDC Additions	Ln. 9 + Prior Ln. 12	$427
14	Accumulated Debt AFUDC Amortization	Ln. 10 + Prior Ln. 13	$0

Investment Remaining to be Recovered
(Net Carrier Property)

Carriers' Unrecovered Investment Analysis:
Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	Starting Balances	1977	1978	1979	1980	1981	1982	1983	1984	1985
1	Gross Carrier Property - BOY 1/	Prior Ln. 8	$7,741	$10,303	$10,482	$11,213	$11,738	$12,139	$12,471	$13,031	$13,500	$13,808
2	Gross Carrier Property Additions	Sch. 3 Ln. 8		$1,422	$98	$100	$106	$49	$65	$70	$38	$26
3	Less Capitalized Interest	Sch 12, Ln 10 - Prior Ln 10		$1,216	$0	$0	$0	($0)	$0	$0	($1)	($0)
4	Acquisitions & Retirements of CPIS	Sch 12, Lns. (4 + 5)		($29)	($7)	($12)	$5	($2)	($12)	($24)	($13)	($14)
5	Adjustments to CPIS	Sch 12, Ln. 6		($0)	$65	($4)	$1	($1)	($13)	($4)	($4)	$0
6	Equity AFUDC Additions	Sch. 5 Ln. 4	$2,164	$2	$572	$439	$285	$282	$516	$425	$286	$342
7	Debt AFUDC Additions	Sch. 5 Ln. 10	$398	$1	$4	$2	$3	$4	$4	$2	$1	$0
8	Gross Carrier Property - EOY	Lns (1+2-3+4+5+6+7)	$10,303	$10,482	$11,213	$11,738	$12,139	$12,471	$13,031	$13,500	$13,808	$14,163
9	Accumulated Recovery of Investment after Form 6 Retirements	Sch. 3 Ln. 20		$0	$0	$0	$0	$0	$0	$0	$0	$0
10	Accumulated Equity AFUDC Amort.	Sch. 5 Ln. 7		$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Accumulated Debt AFUDC Amort.	Sch. 5 Ln. 13		$0	$0	$0	$0	$0	$0	$0	$0	$0
12	CWIP Balance - EOY	Sch. 12, Ln. 8		$42	$24	$28	$29	$29	$33	$15	$4	$1
13	Net Carrier Property	Lns (8 - 9 - 10 - 11 - 12)	$10,303	$10,440	$11,190	$11,711	$12,110	$12,442	$12,997	$13,484	$13,805	$14,163
14	Working Capital	Sch. 12, Ln. 12		$57	$29	$36	$34	$39	$39	$29	$33	$34
15	ADIT	Sch. 9 Ln. 20		$250	$699	$1,099	$1,481	$1,845	$2,219	$2,574	$2,907	$3,217
16	Rate Base	Lns (13+14-15)	$10,303	$10,247	$10,520	$10,648	$10,664	$10,636	$10,817	$10,939	$10,930	$10,979
17	Average Rate Base	(Ln.16+Prior Ln.16)/2.0		$10,275	$10,384	$10,584	$10,656	$10,650	$10,727	$10,878	$10,935	$10,954

1/Starting Balance is from Sch. 3, Ln. 12

Investment Remaining to be Recovered
(Net Carrier Property)

Carriers' Unrecovered Investment Analysis:
Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
1	Gross Carrier Property - BOY 1/	Prior Ln. 8	$14,163	$14,415	$14,774	$15,018	$15,498	$16,318	$16,970	$17,667	$18,438	$19,434
2	Gross Carrier Property Additions	Sch. 3 Ln. 8	$21	$32	$17	$48	$156	$141	$71	$36	$51	$56
3	Less Capitalized Interest	Sch 12, Ln 10 - Prior Ln 10	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)
4	Acquisitions & Retirements of CPIS	Sch 12, Lns. (4 + 5)	($3)	($17)	($13)	($5)	($4)	($53)	($16)	($11)	($10)	($4)
5	Adjustments to CPIS	Sch 12, Ln. 6	$0	$0	$0	($0)	$0	($0)	$0	($0)	$0	$0
6	Equity AFUDC Additions	Sch. 5 Ln. 4	$233	$343	$239	$438	$668	$562	$640	$744	$954	$1,222
7	Debt AFUDC Additions	Sch. 5 Ln. 10	$0	$0	$0	$0	$1	$2	$2	$1	$1	$1
8	Gross Carrier Property - EOY	Lns (1+2-3+4+5+6+7)	$14,415	$14,774	$15,018	$15,498	$16,318	$16,970	$17,667	$18,438	$19,434	$20,709
9	Accumulated Recovery of Investment after Form 6 Retirements	Sch. 3 Ln. 20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10	Accumulated Equity AFUDC Amort.	Sch. 5 Ln. 7	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Accumulated Debt AFUDC Amort.	Sch. 5 Ln. 13	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12	CWIP Balance - EOY	Sch. 12, Ln. 8	$2	$2	$9	$20	$94	$32	$34	$24	$31	$51
13	Net Carrier Property	Lns (8 - 9 - 10 - 11 - 12)	$14,413	$14,772	$15,009	$15,478	$16,224	$16,938	$17,634	$18,414	$19,403	$20,658
14	Working Capital	Sch. 12, Ln. 12	$29	$33	$36	$36	$39	$59	$54	$44	$43	$34
15	ADIT	Sch. 9 Ln. 20	$3,497	$3,721	$3,893	$4,042	$4,169	$4,279	$4,360	$4,422	$4,463	$4,482
16	Rate Base	Lns (13+14-15)	$10,944	$11,085	$11,152	$11,473	$12,094	$12,718	$13,328	$14,036	$14,983	$16,210
17	Average Rate Base	(Ln.16+Prior Ln.16)/2.0	$10,962	$11,015	$11,118	$11,312	$11,783	$12,406	$13,023	$13,682	$14,509	$15,597

1/Starting Balance is from Sch. 3, Ln. 12

Investment Remaining to be Recovered
(Net Carrier Property)

Carriers' Unrecovered Investment Analysis:
Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1996
1	Gross Carrier Property - BOY 1/	Prior Ln. 8	$20,709
2	Gross Carrier Property Additions	Sch. 3 Ln. 8	$52
3	Less Capitalized Interest	Sch 12, Ln 10 - Prior Ln 10	($9)
4	Acquisitions & Retirements of CPIS	Sch 12, Lns. (4 + 5)	($34)
5	Adjustments to CPIS	Sch 12, Ln. 6	$0
6	Equity AFUDC Additions	Sch. 5 Ln. 4	$1,115
7	Debt AFUDC Additions	Sch. 5 Ln. 10	$1
8	Gross Carrier Property - EOY	Lns (1+2-3+4+5+6+7)	$21,850
9	Accumulated Recovery of Investment after Form 6 Retirements	Sch. 3 Ln. 20	$0
10	Accumulated Equity AFUDC Amort.	Sch. 5 Ln. 7	$0
11	Accumulated Debt AFUDC Amort.	Sch. 5 Ln. 13	$0
12	CWIP Balance - EOY	Sch. 12, Ln. 8	$74
13	Net Carrier Property	Lns (8 - 9 - 10 - 11 - 12)	$21,776
14	Working Capital	Sch. 12, Ln. 12	$36
15	ADIT	Sch. 9 Ln. 20	$4,501
16	Rate Base	Lns (13+14-15)	$17,312
17	Average Rate Base	(Ln.16+Prior Ln.16)/2.0	$16,761

1/Starting Balance is from Sch. 3, Ln. 12

Carriers' Unrecovered Investment Analysis, Corrected Exhibit 5

State Tax Depreciation Sch. 7

(millions $)

	Year	1	2	3	4	5	6	7	8	9	10	11	12
		1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Depreciation Factors - (1977)		5.71%	4.00%	4.00%	4.00%	4.00%	10.22%	9.61%	9.00%	8.38%	7.77%	7.15%	6.54%
Depreciation Factors - (1978)		2.00%	4.00%	4.00%	4.00%	10.75%	10.14%	9.52%	8.91%	8.29%	7.68%	7.06%	6.45%
Depreciation Factors - (1979)		2.00%	4.00%	4.00%	10.84%	10.23%	9.61%	9.00%	8.39%	7.77%	7.16%	6.54%	5.93%
Depreciation Factors - (1980)		2.00%	4.00%	10.87%	10.26%	9.65%	9.03%	8.42%	7.80%	7.19%	6.58%	5.96%	5.35%
Depreciation Factors - (1981)		2.00%	11.15%	10.20%	9.58%	8.97%	8.35%	7.74%	7.13%	6.51%	5.90%	5.28%	4.30%
Depreciation Factors - (1982-present)		5.71%	10.78%	9.82%	9.21%	8.60%	7.98%	7.37%	6.75%	6.14%	5.53%	4.91%	4.30%
Year		Property Additions [a] Sch 12 Lns. 3 (1+2)[1]	AFUDC Additions [b] Sch. 3 Col. 22	Tax Basis for Depreciation [d] [a] + [b]									
1977	1	$7,889	$398	$8,287	$474	$331	$331	$331	$331	$847	$796	$745	$695	$644	$593	$542
1978	2	$112	$4	$116	$0	$2	$5	$5	$5	$12	$12	$11	$10	$10	$9	$8
1979	3	$97	$2	$98	$0	$0	$2	$4	$4	$11	$10	$9	$9	$8	$8	$7
1980	4	$123	$3	$127	$0	$0	$0	$3	$5	$14	$13	$12	$11	$11	$10	$9
1981	5	$49	$4	$53	$0	$0	$0	$0	$1	$6	$5	$5	$5	$4	$4	$4
1982	6	$60	$4	$64	$0	$0	$0	$0	$0	$4	$7	$6	$6	$5	$5	$5
1983	7	$84	$2	$86	$0	$0	$0	$0	$0	$0	$5	$9	$8	$8	$7	$7
1984	8	$51	$1	$52	$0	$0	$0	$0	$0	$0	$0	$3	$6	$5	$5	$4
1985	9	$29	$0	$29	$0	$0	$0	$0	$0	$0	$0	$0	$2	$3	$3	$3
1986	10	$20	$0	$20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1	$2	$2
1987	11	$33	$0	$33	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2	$4
1988	12	$10	$0	$10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1
1989	13	$37	$0	$37	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1990	14	$81	$1	$82	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1991	15	$203	$2	$205	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1992	16	$69	$2	$71	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1993	17	$46	$1	$47	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1994	18	$43	$1	$44	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1995	19	$36	$1	$37	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1996	20	$29	$1	$29	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total State Tax Depreciation					$474	$334	$338	$343	$346	$894	$848	$802	$752	$699	$648	$595

[1] For 1977, Sch. 12, Lns 3 - (1+2+10)

Carriers' Unrecovered Investment Analysis, Corrected Exhibit 5

State Tax Depreciation Sch. 7

(millions $)

				Year	**13** 1989	**14** 1990	**15** 1991	**16** 1992	**17** 1993	**18** 1994	**19** 1995	**20** 1996
Depreciation Factors - (1977)					5.93%	5.31%	4.70%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1978)					5.84%	5.22%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1979)					5.32%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1980)					3.68%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1981)					3.68%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1982-present)					3.68%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Year		Property Additions [a] Sch 12 Lns. 3 (1+2)[1]	AFUDC Additions [b] Sch. 3 Col. 22	Tax Basis for Depreciation [d] [a] + [b]								
1977	1	$7,889	$398	$8,287	$491	$440	$389	$153	$102	$51	$0	$0
1978	2	$112	$4	$116	$7	$7	$6	$3	$2	$1	$1	$0
1979	3	$97	$2	$98	$6	$6	$5	$3	$2	$2	$1	$1
1980	4	$123	$3	$127	$8	$8	$7	$5	$4	$3	$2	$2
1981	5	$49	$4	$53	$3	$3	$3	$2	$2	$2	$1	$1
1982	6	$60	$4	$64	$4	$4	$4	$3	$3	$2	$2	$2
1983	7	$84	$2	$86	$6	$6	$5	$5	$4	$4	$3	$3
1984	8	$51	$1	$52	$4	$4	$4	$3	$3	$3	$2	$2
1985	9	$29	$0	$29	$3	$2	$2	$2	$2	$2	$1	$1
1986	10	$20	$0	$20	$2	$2	$2	$1	$1	$1	$1	$1
1987	11	$33	$0	$33	$3	$3	$3	$3	$2	$2	$2	$2
1988	12	$10	$0	$10	$1	$1	$1	$1	$1	$1	$1	$1
1989	13	$37	$0	$37	$2	$4	$4	$3	$3	$3	$3	$2
1990	14	$81	$1	$82	$0	$5	$9	$8	$8	$7	$7	$6
1991	15	$203	$2	$205	$0	$0	$12	$22	$20	$19	$18	$16
1992	16	$69	$2	$71	$0	$0	$0	$4	$8	$7	$7	$6
1993	17	$46	$1	$47	$0	$0	$0	$0	$3	$5	$5	$4
1994	18	$43	$1	$44	$0	$0	$0	$0	$0	$3	$5	$4
1995	19	$36	$1	$37	$0	$0	$0	$0	$0	$0	$2	$4
1996	20	$29	$1	$29	$0	$0	$0	$0	$0	$0	$0	$2
Total State Tax Depreciation					$542	$494	$454	$221	$170	$117	$63	$59

[1] For 1977, Sch. 12, Lns 3 - (1+2+10)

Carriers' Unrecovered Investment Analysis, Corrected Exhibit 5

Federal Tax Depreciation Sch. 8

(millions $)

					Year	**1** 1977	**2** 1978	**3** 1979	**4** 1980	**5** 1981	**6** 1982	**7** 1983	**8** 1984	**9** 1985	**10** 1986	**11** 1987	**12** 1988
Depreciation Factors - (1977-1980)						5.71%	10.78%	9.82%	9.21%	8.60%	7.98%	7.37%	6.75%	6.14%	5.53%	4.91%	4.30%
Depreciation Factors - (1981-1986)						15.00%	22.00%	21.00%	21.00%	21.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1987-2000)						5.00%	9.50%	8.55%	7.70%	6.93%	6.23%	5.90%	5.90%	5.90%	5.90%	5.90%	5.90%
Year		Property Addition [a] Sch 12 Lns. 3 (1+2)[1]	AFUDC Addition [b] Sch. 3 Col. 22	TEFRA Adjustment [c] Sch. 10, Ln. 3	Tax Basis for Depreciation [d] [a] + [b] - [c]												
1977	1	$7,889	$398	$0	$8,287	$474	$893	$814	$763	$712	$662	$611	$560	$509	$458	$407	$356
1978	2	$112	$4	$0	$116	$0	$7	$12	$11	$11	$10	$9	$9	$8	$7	$6	$6
1979	3	$97	$2	$0	$98	$0	$0	$6	$11	$10	$9	$8	$8	$7	$7	$6	$5
1980	4	$123	$3	$0	$127	$0	$0	$0	$7	$14	$12	$12	$11	$10	$9	$9	$8
1981	5	$49	$4	$0	$53	$0	$0	$0	$0	$8	$12	$11	$11	$11	$0	$0	$0
1982	6	$60	$4	$0	$64	$0	$0	$0	$0	$0	$10	$14	$13	$13	$13	$0	$0
1983	7	$84	$2	$4	$82	$0	$0	$0	$0	$0	$0	$12	$18	$17	$17	$17	$0
1984	8	$51	$1	$3	$49	$0	$0	$0	$0	$0	$0	$0	$7	$11	$10	$10	$10
1985	9	$29	$0	$1	$28	$0	$0	$0	$0	$0	$0	$0	$0	$4	$6	$6	$6
1986	10	$20	$0	$0	$20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3	$4	$4
1987	11	$33	$0	$0	$33	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2	$3
1988	12	$10	$0	$0	$10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1
1989	13	$37	$0	$0	$37	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1990	14	$81	$1	$0	$82	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1991	15	$203	$2	$0	$205	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1992	16	$69	$2	$0	$71	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1993	17	$46	$1	$0	$47	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1994	18	$43	$1	$0	$44	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1995	19	$36	$1	$0	$37	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1996	20	$29	$1	$0	$29	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Federal Tax Depreciation						$474	$900	$832	$793	$754	$714	$677	$637	$591	$531	$468	$399

1 For 1977, Sch. 12, Lns 3 - (1+2+10)

Carriers' Unrecovered Investment Analysis, Corrected Exhibit 5

Federal Tax Depreciation Sch. 8

(millions $)

					Year	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
						1989	1990	1991	1992	1993	1994	1995	1996
						---	---	---	---	---	---	---	---
Depreciation Factors - (1977-1980)						3.68%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1981-1986)						0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1987-2000)						5.90%	5.90%	5.90%	2.95%	0.00%	0.00%	0.00%	0.00%
Year		Property Addition [a] Sch 12 Lns. 3 (1+2)[1]	AFUDC Addition [b] Sch. 3 Col. 22	TEFRA Adjustment [c] Sch. 10, Ln. 3	Tax Basis for Depreciation [d] [a] + [b] - [c]								
1977	1	$7,889	$398	$0	$8,287	$305	$254	$204	$153	$102	$51	$0	$0
1978	2	$112	$4	$0	$116	$5	$4	$4	$3	$2	$1	$1	$0
1979	3	$97	$2	$0	$98	$5	$4	$4	$3	$2	$2	$1	$1
1980	4	$123	$3	$0	$127	$7	$6	$5	$5	$4	$3	$2	$2
1981	5	$49	$4	$0	$53	$0	$0	$0	$0	$0	$0	$0	$0
1982	6	$60	$4	$0	$64	$0	$0	$0	$0	$0	$0	$0	$0
1983	7	$84	$2	$4	$82	$0	$0	$0	$0	$0	$0	$0	$0
1984	8	$51	$1	$3	$49	$0	$0	$0	$0	$0	$0	$0	$0
1985	9	$29	$0	$1	$28	$6	$0	$0	$0	$0	$0	$0	$0
1986	10	$20	$0	$0	$20	$4	$4	$0	$0	$0	$0	$0	$0
1987	11	$33	$0	$0	$33	$3	$3	$2	$2	$2	$2	$2	$2
1988	12	$10	$0	$0	$10	$1	$1	$1	$1	$1	$1	$1	$1
1989	13	$37	$0	$0	$37	$2	$4	$3	$3	$3	$2	$2	$2
1990	14	$81	$1	$0	$82	$0	$4	$8	$7	$6	$6	$5	$5
1991	15	$203	$2	$0	$205	$0	$0	$10	$19	$18	$16	$14	$13
1992	16	$69	$2	$0	$71	$0	$0	$0	$4	$7	$6	$5	$5
1993	17	$46	$1	$0	$47	$0	$0	$0	$0	$2	$4	$4	$4
1994	18	$43	$1	$0	$44	$0	$0	$0	$0	$0	$2	$4	$4
1995	19	$36	$1	$0	$37	$0	$0	$0	$0	$0	$0	$2	$3
1996	20	$29	$1	$0	$29	$0	$0	$0	$0	$0	$0	$0	$1
Total Federal Tax Depreciation						$338	$284	$240	$199	$148	$96	$44	$42

1 For 1977, Sch. 12, Lns 3 - (1+2+10)

Carriers' Unrecovered Investment Analysis, Corrected
Calculation of ADIT Balances
(millions $)

Exhibit 5
Sch. 9

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
1	Recovery of Investment Incl. Debt AFUDC Am	(Sch3 Ln18*Sch5 Ln10)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	State Tax Depreciation	Sch. 7	$474	$334	$338	$343	$346	$894	$848	$802	$752	$699	$648	$595
3	State Tax Timing Differences	Ln. (2-1)	$474	$334	$338	$343	$346	$894	$848	$802	$752	$699	$648	$595
4	State Income Tax Rate	AK Stat.	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%
5	State Tax Effect	Ln. (3*4)	$45	$31	$32	$32	$33	$84	$80	$75	$71	$66	$61	$56
6	State ADIT Balance	Ln. 5 + Prior Ln. 6	$45	$76	$108	$140	$172	$256	$336	$412	$482	$548	$609	$665
7	Recovery of Investment Incl. Debt AFUDC Am	Ln. 1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8	Depreciation of TEFRA Adjustment	Sch. 10, Ln. 6	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Book Depreciation after TEFRA Adjustment	Ln (7-8)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10	Federal Tax Depreciation	Sch. 8	$474	$900	$832	$793	$754	$714	$677	$637	$591	$531	$468	$399
11	Tax Effect of State Timing Differences	Ln. 5	$45	$31	$32	$32	$33	$84	$80	$75	$71	$66	$61	$56
12	Total Federal Tax Deductions	Ln (10-11)	$429	$868	$801	$760	$722	$630	$598	$562	$520	$465	$407	$343
13	Federal Tax Timing Differences	Ln (12-9)	$429	$868	$801	$760	$722	$630	$598	$562	$520	$465	$407	$343
14	Federal Income Tax Rate	IRC	48.00%	48.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	39.95%	34.00%
15	Federal Tax Effect	Ln (13*14)	$206	$417	$368	$350	$332	$290	$275	$258	$239	$214	$162	$117
16	FASB 96/109 Adjustment	Cum. Ln.13 * Change Ln.14	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$384	$402
17	Amortization Basis for FASB 96/109 Adjustme	Prior Ln.17 + Ln.16 - Prior Ln.18	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$384	$787
18	Amortization of FASB 96/109 Adjustment	Ln. 17*Sch. 3 Ln.3	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
19	Federal ADIT Balance	Prior Ln.19 + Ln.15 - Ln.18	$206	$623	$991	$1,341	$1,673	$1,963	$2,238	$2,496	$2,735	$2,949	$3,112	$3,228
20	Total State And Federal ADIT Balances	Ln (6+19)	$250	$699	$1,099	$1,481	$1,845	$2,219	$2,574	$2,907	$3,217	$3,497	$3,721	$3,893

Carriers' Unrecovered Investment Analysis, Corrected
Calculation of ADIT Balances
(millions $)

Line No.	Description	Source	1989	1990	1991	1992	1993	1994	1995	1996
1	Recovery of Investment Incl. Debt AFUDC Am	(Sch3 Ln18*Sch5 Ln10)	$0	$0	$0	$0	$0	$0	$0	$0
2	State Tax Depreciation	Sch. 7	$542	$494	$454	$221	$170	$117	$63	$59
3	State Tax Timing Differences	Ln. (2-1)	$542	$494	$454	$221	$170	$117	$63	$59
4	State Income Tax Rate	AK Stat.	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%
5	State Tax Effect	Ln. (3*4)	$51	$46	$43	$21	$16	$11	$6	$6
6	State ADIT Balance	Ln. 5 + Prior Ln. 6	$716	$762	$805	$826	$841	$852	$858	$864
7	Recovery of Investment Incl. Debt AFUDC Am	Ln. 1	$0	$0	$0	$0	$0	$0	$0	$0
8	Depreciation of TEFRA Adjustment	Sch. 10, Ln. 6	$0	$0	$0	$0	$0	$0	$0	$0
9	Book Depreciation after TEFRA Adjustment	Ln (7-8)	$0	$0	$0	$0	$0	$0	$0	$0
10	Federal Tax Depreciation	Sch. 8	$338	$284	$240	$199	$148	$96	$44	$42
11	Tax Effect of State Timing Differences	Ln. 5	$51	$46	$43	$21	$16	$11	$6	$6
12	Total Federal Tax Deductions	Ln (10-11)	$287	$238	$198	$178	$132	$85	$38	$36
13	Federal Tax Timing Differences	Ln (12-9)	$287	$238	$198	$178	$132	$85	$38	$36
14	Federal Income Tax Rate	IRC	34.00%	34.00%	34.00%	34.00%	35.00%	35.00%	35.00%	35.00%
15	Federal Tax Effect	Ln (13*14)	$98	$81	$67	$61	$46	$30	$13	$13
16	FASB 96/109 Adjustment	Cum. Ln.13 * Change Ln.14	$0	$0	$0	$0	($80)	$0	$0	$0
17	Amortization Basis for FASB 96/109 Adjustme	Prior Ln.17 + Ln.16 - Prior Ln.18	$787	$787	$787	$787	$707	$707	$707	$707
18	Amortization of FASB 96/109 Adjustment	Ln. 17*Sch. 3 Ln.3	$0	$0	$0	$0	$0	$0	$0	$0
19	Federal ADIT Balance	Prior Ln.19 + Ln.15 - Ln.18	$3,326	$3,407	$3,474	$3,535	$3,581	$3,611	$3,624	$3,637
20	Total State And Federal ADIT Balances	Ln (6+19)	$4,042	$4,169	$4,279	$4,360	$4,422	$4,463	$4,482	$4,501

Carriers' Unrecovered Investment Analysis, Corrected
TEFRA Adjustment to ADIT
(millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
1	Tax Depreciation Basis before TEFRA Adjustr	Sch. 7	$8,287	$116	$98	$127	$53	$64	$86	$52	$29	$20	$33	$10
2	Tax Depreciation Basis Reduction	IRC	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	5.00%	5.00%	0.00%	0.00%	0.00%
3	TEFRA Adjustment	Ln (1*2)	$0	$0	$0	$0	$0	$0	$4	$3	$1	$0	$0	$0
4	TEFRA Adjustment Balance (BOY)	Ln. 3 + Prior Ln. 7	$0	$0	$0	$0	$0	$0	$4	$7	$8	$8	$8	$8
5	Depreciation Factor	Sch. 3 Ln.3	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
6	Depreciation of TEFRA Adjustment	Ln (4*5)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	TEFRA Adjustment Balance (EOY)	Ln (4-6)	$0	$0	$0	$0	$0	$0	$4	$7	$8	$8	$8	$8

Carriers' Unrecovered Investment Analysis, Corrected
TEFRA Adjustment to ADIT
(millions $)

Line No.	Description	Source	1989	1990	1991	1992	1993	1994	1995	1996
1	Tax Depreciation Basis before TEFRA Adjustr	Sch. 7	$37	$82	$205	$71	$47	$44	$37	$29
2	Tax Depreciation Basis Reduction	IRC	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3	TEFRA Adjustment	Ln (1*2)	$0	$0	$0	$0	$0	$0	$0	$0
4	TEFRA Adjustment Balance (BOY)	Ln. 3 + Prior Ln. 7	$8	$8	$8	$8	$8	$8	$8	$8
5	Depreciation Factor	Sch. 3 Ln.3	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
6	Depreciation of TEFRA Adjustment	Ln (4*5)	$0	$0	$0	$0	$0	$0	$0	$0
7	TEFRA Adjustment Balance (EOY)	Ln (4-6)	$8	$8	$8	$8	$8	$8	$8	$8

Income Tax Allowance
On "Required" Return

Carriers' Unrecovered Investment Analysis:
Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
1	Return on Equity	Sch. 2 Ln. 9	$606	$1,142	$1,325	$1,569	$1,794	$1,729	$1,624	$1,763	$1,403	$1,423	$1,355
2	AFUDC Amortization	Sch. 5 Ln. 5	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	Depreciation of TEFRA Adjustment	Sch. 10 Ln. 6	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	Amortization of FASB 96/109 Adjustm	WP6 Sch. 8 Ln. 18	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Federal Taxable Income	Lns. (1+2+3-4)	$606	$1,142	$1,325	$1,569	$1,794	$1,729	$1,624	$1,763	$1,403	$1,423	$1,355
6	Net to Tax Multiplier, Federal Taxes	Sch 9 Ln 14/(1-Ln14)	92.3%	92.3%	85.2%	85.2%	85.2%	85.2%	85.2%	85.2%	85.2%	85.2%	66.5%
7	Net Federal Income Tax Allowance	Lns (5 * 6 - 4)	$560	$1,055	$1,129	$1,337	$1,528	$1,473	$1,384	$1,502	$1,195	$1,212	$902
8	State Taxable Income	Lns. (1+2+7)	$1,166	$2,197	$2,454	$2,906	$3,322	$3,201	$3,008	$3,265	$2,598	$2,635	$2,257
9	Net to Tax Multiplier, State Taxes Rat	Sch.9 Ln 4/(1-Ln 4)	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%
10	State Income Tax Allowance	Ln. (8*9)	$121	$228	$255	$302	$345	$332	$312	$339	$270	$273	$234
11	Total Income Tax Allowance	Ln. (7+10)	$680	$1,282	$1,384	$1,639	$1,873	$1,805	$1,696	$1,841	$1,464	$1,486	$1,136

Income Tax Allowance
On "Required" Return

Carriers' Unrecovered Investment Analysis:
Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1988	1989	1990	1991	1992	1993	1994	1995	1996
1	Return on Equity	Sch. 2 Ln. 9	$1,392	$1,352	$1,451	$1,414	$1,383	$1,304	$1,575	$1,680	$1,841
2	AFUDC Amortization	Sch. 5 Ln. 5	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	Depreciation of TEFRA Adjustment	Sch. 10 Ln. 6	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	Amortization of FASB 96/109 Adjustm	WP6 Sch. 8 Ln. 18	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Federal Taxable Income	Lns. (1+2+3-4)	$1,392	$1,352	$1,451	$1,414	$1,383	$1,304	$1,575	$1,680	$1,841
6	Net to Tax Multiplier, Federal Taxes	Sch 9 Ln 14/(1-Ln14)	51.5%	51.5%	51.5%	51.5%	51.5%	53.8%	53.8%	53.8%	53.8%
7	Net Federal Income Tax Allowance	Lns (5 * 6 - 4)	$717	$697	$747	$728	$712	$702	$848	$905	$991
8	State Taxable Income	Lns. (1+2+7)	$2,109	$2,049	$2,198	$2,142	$2,095	$2,006	$2,423	$2,584	$2,832
9	Net to Tax Multiplier, State Taxes Rat	Sch.9 Ln 4/(1-Ln 4)	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%
10	State Income Tax Allowance	Ln. (8*9)	$219	$213	$228	$222	$217	$208	$251	$268	$294
11	Total Income Tax Allowance	Ln. (7+10)	$936	$909	$976	$951	$930	$910	$1,100	$1,173	$1,285

Carrier Property Balances
(FERC Form 6 basis)

Carriers' Unrecovered Investment Analysis:
Conservative Assumptions Corrected (millions $)

Line No	Account	Starting Balance	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
1	Land - New Construction Exp.		$16.667	$0.060	$0.000	$0.041	$0.000	$0.000	$0.085	$0.360	$0.000	$0.000
2	CWIP - New Construction Exp.		$41.820	($13.943)	$3.337	($16.992)	($0.002)	$4.810	($14.482)	($13.368)	($2.891)	$1.365
3	Grand Total - New Construction Exp	$7,741	$1,421.909	$98.292	$99.947	$106.470	$49.178	$65.145	$69.675	$37.833	$25.976	$21.410
4	Grand Total - Acquired Property		$0.000	$0.000	$0.000	$169.963	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
5	Grand Total - Credits for Retirements		($29.485)	($7.017)	($11.876)	($164.555)	($2.235)	($11.506)	($24.383)	($12.502)	($13.786)	($3.073)
6	Grand Total - Other Adjustments		($0.087)	$64.544	($4.319)	$0.829	($1.450)	($13.156)	($3.969)	($4.295)	$0.011	$0.025
7	Land - EOY Balance		$16.580	$16.678	$16.678	$16.567	$17.002	$17.002	$16.997	$17.260	$17.256	$17.257
8	CWIP - EOY Balance		$41.820	$23.611	$27.889	$29.387	$29.077	$33.385	$15.214	$3.719	$0.896	$2.260
9	Grand Total - EOY Balance		$9,133.410	$9,289.229	$9,372.981	$9,485.687	$9,531.179	$9,571.661	$9,612.984	$9,634.021	$9,646.223	$9,664.584
10	Capitalized Interest - EOY Balance	$1,216	$1,215.571	$1,215.571	$1,215.571	$1,215.571	$1,215.111	$1,215.111	$1,215.111	$1,214.314	$1,214.064	$1,214.010
11	Depreciation - Retirements		$0.000	($5.362)	($5.219)	($16.936)	($2.496)	($13.606)	($10.908)	($5.365)	($13.176)	($2.960)
12	Working Capital		$57.237	$29.204	$36.005	$34.175	$39.228	$38.954	$28.694	$32.583	$33.679	$28.582

Carrier Property Balances
(FERC Form 6 basis)

Carriers' Unrecovered Investment Analysis:
Conservative Assumptions Corrected (millions $)

Line No	Account	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
1	Land - New Construction Exp.	$0.029	$0.015	$0.000	$0.542	$0.000	$0.000	$0.000	$0.904	$0.000	$0.000
2	CWIP - New Construction Exp.	($0.693)	$7.323	$11.002	$74.176	($61.795)	$1.297	($9.538)	$6.897	$19.730	$23.336
3	Grand Total - New Construction Exp	$31.866	$17.285	$47.588	$155.563	$140.715	$70.767	$36.263	$51.185	$55.690	$51.890
4	Grand Total - Acquired Property	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$81.202
5	Grand Total - Credits for Retirement	($16.704)	($13.059)	($5.157)	($4.399)	($53.184)	($15.679)	($10.992)	($10.327)	($3.509)	($115.573)
6	Grand Total - Other Adjustments	$0.000	$0.071	($0.063)	$0.007	($0.011)	$0.006	($0.002)	$0.000	$0.000	$0.000
7	Land - EOY Balance	$17.287	$17.302	$17.302	$17.787	$17.787	$17.808	$17.809	$18.713	$18.713	$18.715
8	CWIP - EOY Balance	$1.567	$8.891	$19.894	$94.344	$32.275	$33.572	$24.034	$30.931	$50.663	$73.998
9	Grand Total - EOY Balance	$9,679.746	$9,684.044	$9,726.411	$9,877.583	$9,965.102	$10,020.196	$10,045.466	$10,086.325	$10,138.506	$10,156.025
10	Capitalized Interest - EOY Balance	$1,213.863	$1,213.813	$1,213.804	$1,213.795	$1,213.551	$1,213.520	$1,213.515	$1,213.505	$1,213.504	$1,204.649
11	Depreciation - Retirements	($16.760)	($12.779)	($3.947)	($3.314)	($57.358)	($13.901)	($8.871)	($7.612)	($2.526)	($89.329)
12	Working Capital	$33.330	$36.149	$36.242	$39.005	$58.840	$54.304	$44.192	$43.049	$34.488	$36.416

Investment Recovery
Imputed "Depreciation" rates

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered
Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984
1	Operating Revenues	143-RGV-C, RGV WP6	$527	$2,348	$2,884	$3,425	$3,415	$3,463	$3,494	$3,639
2	TSM DR&R Allowance	29-ABJ-W	23.536	95.968	113.143	127.183	120.225	121.149	115.745	110.377
3	Operating & Maintenance Expense	143-RGV-C, RGV WP6	$242	$450	$396	$456	$466	$468	$456	$441
4	Operating Income	Lns. (1 - 2 - 3)	$261	$1,802	$2,375	$2,842	$2,829	$2,874	$2,923	$3,088
5	Equity AFUDC Amortization	Sch. 5, Ln. 5	$0	$0	$52	$112	$91	$129	$208	$257
6	Debt AFUDC Amortization	Sch. 5, Ln. 11	$0	$0	$11	$25	$20	$29	$47	$58
7	Debt Return	Sch. 2, Ln. 10	$216	$435	$422	$403	$378	$350	$315	$272
8	Total Funds for Pre-Tax Return on Equity	Lns (4-7)	$45	$1,367	$1,953	$2,439	$2,451	$2,524	$2,607	$2,817
9	Tax Rate	Sch.9 [Lns (4+14*(1-Ln. 4))]	52.89%	52.89%	51.08%	51.08%	51.08%	51.08%	51.08%	51.08%
10	Taxes	Lns. (8 * 9)	$24	$723	$997	$1,246	$1,252	$1,289	$1,332	$1,439
11	After-Tax Return on Equity	Lns. (8 - 10)	$21	$644	$955	$1,193	$1,199	$1,235	$1,276	$1,378
12	Required Equity Return	Sch. 2, Ln. 9	$362	$772	$789	$836	$906	$823	$618	$566
13	Under-recovery of Equity Return (to be capitaliz	MAX [Lns (12-11), 0]	$341	$128	$0	$0	$0	$0	$0	$0
14	Income Tax Allowance on Required Equity Retu	Sch 11, Ln. 11	$407	$866	$877	$990	$1,041	$994	$863	$861
15	Recovery of Investment	Sch. 3, Ln. 18	$0	$0	$207	$453	$370	$523	$842	$1,042
16	Profit After Complete Investment Recovery	MAX[(Ln. 4 - Lns.(5+6+7+12+14+15), 0]	$0.000	$0.000	$16.542	$22.969	$22.440	$25.082	$29.063	$32.205
17	Cumulative Profit After Investment Recovery	Cumulative sum of Ln. 16	$0.000	$0.000	$16.542	$39.511	$61.951	$87.033	$116.096	$148.301
18	Depreciation Rates - Intermediate (for calculation purposes)	Lns. 16/(Sch. 12 [Lns. 9-8-7] - Sch. 3[Ln. 20+CumSum Ln. 17])*.75 + Ln. 19	0.000%	0.000%	2.699%	5.888%	5.074%	7.470%	12.800%	18.021%
19	Imputed Composite Depreciation Rates - Net Basis	Iteration until Ln. 16 = 0, and Ln. 18=Ln.19	0.000%	0.000%	2.565%	5.699%	4.880%	7.243%	12.517%	17.664%

Investment Recovery
Imputed "Depreciation" rates

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1985	1986	1987	1988	1989	1990	1991
1	Operating Revenues	143-RGV-C, RGV WP6	$3,193	$2,967	$2,771	$2,367	$2,076	$2,540	$2,348
2	TSM DR&R Allowance	29-ABJ-W	104.048	97.766	95.023	85.402	73.214	60.717	50.254
3	Operating & Maintenance Expense	143-RGV-C, RGV WP6	$462	$438	$411	$449	$582	$710	$658
4	Operating Income	Lns. (1 - 2 - 3)	$2,627	$2,431	$2,265	$1,833	$1,420	$1,769	$1,639
5	Equity AFUDC Amortization	Sch. 5, Ln. 5	$234	$247	$282	$257	$182	$2	$6
6	Debt AFUDC Amortization	Sch. 5, Ln. 11	$53	$56	$64	$58	$41	$1	$4
7	Debt Return	Sch. 2, Ln. 10	$225	$179	$131	$82	$40	$19	$16
8	Total Funds for Pre-Tax Return on Equity	Lns (4-7)	$2,402	$2,252	$2,134	$1,751	$1,380	$1,750	$1,624
9	Tax Rate	Sch.9 [Lns (4+14*(1-Ln. 4))]	51.08%	51.08%	45.59%	40.20%	40.20%	40.20%	40.20%
10	Taxes	Lns. (8 * 9)	$1,227	$1,150	$973	$704	$555	$704	$653
11	After-Tax Return on Equity	Lns. (8 - 10)	$1,175	$1,102	$1,161	$1,047	$825	$1,047	$971
12	Required Equity Return	Sch. 2, Ln. 9	$434	$319	$232	$149	$72	$33	$27
13	Under-recovery of Equity Return (to be capitaliz	MAX [Lns (12-11), 0]	$0	$0	$0	$0	$0	$0	$0
14	Income Tax Allowance on Required Equity Retu	Sch 11, Ln. 11	$699	$592	$379	$199	$118	$24	$23
15	Recovery of Investment	Sch. 3, Ln. 18	$954	$1,011	$1,154	$1,069	$843	$187	$153
16	Profit After Complete Investment Recovery	MAX[(Ln. 4 - Lns.(5+6+7+12+14+15), 0]	$27.833	$26.806	$24.567	$18.454	$123.198	$1,503.276	$1,410.357
17	Cumulative Profit After Investment Recovery	Cumulative sum of Ln. 16	$176.134	$202.940	$227.507	$245.961	$369.159	$1,872.435	$3,282.791
18	Depreciation Rates - Intermediate (for calculation purposes)	Lns. 16/(Sch. 12 [Lns. 9-8-7] - Sch. 3[Ln. 20+CumSum Ln. 17])*.75 + Ln. 19	19.864%	25.968%	39.663%	59.309%	100.000%	100.000%	100.000%
19	Imputed Composite Depreciation Rates - Net Basis	Iteration until Ln. 16 = 0, and Ln. 18=Ln.19	19.491%	25.525%	39.117%	58.644%	100.000%	100.000%	100.000%

Investment Recovery
Imputed "Depreciation" rates

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1992	1993	1994	1995	1996
1	Operating Revenues	143-RGV-C, RGV WP6	$2,218	$1,799	$1,921	$2,026	$1,397
2	TSM DR&R Allowance	29-ABJ-W	40.334	31.188	24.386	19.288	13.802
3	Operating & Maintenance Expense	143-RGV-C, RGV WP6	$717	$753	$889	$668	$601
4	Operating Income	Lns. (1 - 2 - 3)	$1,461	$1,015	$1,007	$1,339	$782
5	Equity AFUDC Amortization	Sch. 5, Ln. 5	$4	$3	$2	$2	$2
6	Debt AFUDC Amortization	Sch. 5, Ln. 11	$3	$2	$1	$1	$1
7	Debt Return	Sch. 2, Ln. 10	$14	$11	$9	$8	$10
8	Total Funds for Pre-Tax Return on Equity	Lns (4-7)	$1,446	$1,004	$998	$1,331	$772
9	Tax Rate	Sch.9 [Lns (4+14*(1-Ln. 4))]	40.20%	41.11%	41.11%	41.11%	41.11%
10	Taxes	Lns. (8 * 9)	$582	$413	$410	$547	$318
11	After-Tax Return on Equity	Lns. (8 - 10)	$865	$591	$588	$784	$455
12	Required Equity Return	Sch. 2, Ln. 9	$24	$17	$15	$14	$15
13	Under-recovery of Equity Return (to be capitaliz	MAX [Lns (12-11), 0]	$0	$0	$0	$0	$0
14	Income Tax Allowance on Required Equity Retu	Sch 11, Ln. 11	$19	$6	$12	$11	$12
15	Recovery of Investment	Sch. 3, Ln. 18	$111	$49	$42	$40	$14
16	Profit After Complete Investment Recovery	MAX[(Ln. 4 - Lns.(5+6+7+12+14+15), 0]	$1,284.858	$927.871	$925.340	$1,262.919	$728.357
17	Cumulative Profit After Investment Recovery	Cumulative sum of Ln. 16	$4,567.649	$5,495.520	$6,420.861	$7,683.780	$8,412.136
18	Depreciation Rates - Intermediate (for calculation purposes)	Lns. 16/(Sch. 12 [Lns. 9-8-7] - Sch. 3[Ln. 20+CumSum Ln. 17])*.75 + Ln. 19	100.000%	100.000%	100.000%	100.000%	100.000%
19	Imputed Composite Depreciation Rates - Net Basis	Iteration until Ln. 16 = 0, and Ln. 18=Ln.19	100.000%	100.000%	100.000%	100.000%	100.000%

Required Return on "Rate Base"

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
1	Weighted Rate of Return	Exhibit 2, col g	11.74%	12.19%	12.63%	13.67%	15.15%	14.98%	13.31%	13.94%	13.29%	12.64%	12.63%
2	Average Rate Base	Sch. 6 Ln. 17	$9,823	$9,901	$9,590	$9,063	$8,478	$7,834	$7,015	$6,008	$4,962	$3,941	$2,872
3	Total Return on Remaining Investment	Ln.1 * Ln.2	$578	$1,207	$1,211	$1,239	$1,284	$1,174	$934	$838	$659	$498	$363
4	Debt Capital Structure	Exhibit 11, col d	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%
5	Cost of Debt	Exhibit 15, Schedule 3, col i	8.86%	8.88%	8.90%	8.98%	9.01%	9.03%	9.08%	9.13%	9.16%	9.17%	9.19%
6	Debt Portion of Weighted Rate of Retu	Ln.4 * Ln.5	4.39%	4.40%	4.41%	4.45%	4.46%	4.47%	4.49%	4.52%	4.53%	4.54%	4.55%
7	Interest Expense	Ln.2 * Ln.6	$216	$435	$422	$403	$378	$350	$315	$272	$225	$179	$131
8	Equity Portion of Weighted Rate of Ret	Ln.1 - Ln.6	7.35%	7.79%	8.22%	9.22%	10.69%	10.51%	8.82%	9.42%	8.76%	8.10%	8.08%
9	Return on Equity	Ln.2 * Ln.8	$362	$772	$789	$836	$906	$823	$618	$566	$434	$319	$232
10	Return on Debt	Ln. 3 - Ln. 9	$216	$435	$422	$403	$378	$350	$315	$272	$225	$179	$131

Required Return on "Rate Base"

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1988	1989	1990	1991	1992	1993	1994	1995	1996
1	Weighted Rate of Return	Exhibit 2, col g	12.84%	12.74%	12.88%	12.75%	12.52%	11.68%	12.07%	12.08%	11.78%
2	Average Rate Base	Sch. 6 Ln. 17	$1,798	$878	$403	$338	$309	$241	$203	$182	$208
3	Total Return on Remaining Investment	Ln.1 * Ln.2	$231	$112	$52	$43	$39	$28	$24	$22	$25
4	Debt Capital Structure	Exhibit 11, col d	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%
5	Cost of Debt	Exhibit 15, Schedule 3, col i	9.20%	9.23%	9.35%	9.37%	9.37%	9.30%	9.41%	9.38%	9.24%
6	Debt Portion of Weighted Rate of Retu	Ln.4 * Ln.5	4.55%	4.57%	4.63%	4.64%	4.64%	4.60%	4.66%	4.64%	4.57%
7	Interest Expense	Ln.2 * Ln.6	$82	$40	$19	$16	$14	$11	$9	$8	$10
8	Equity Portion of Weighted Rate of Ret	Ln.1 - Ln.6	8.29%	8.17%	8.25%	8.11%	7.88%	7.08%	7.41%	7.44%	7.21%
9	Return on Equity	Ln.2 * Ln.8	$149	$72	$33	$27	$24	$17	$15	$14	$15
10	Return on Debt	Ln. 3 - Ln. 9	$82	$40	$19	$16	$14	$11	$9	$8	$10

Annual and Cumulative Investment Recovery

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No.	Description		Starting Balances	1977	1978	1979	1980	1981	1982	1983
1	Capitalized Interest - BOY	Prior Ln. 5		$0	$1,216	$1,216	$1,184	$1,117	$1,062	$985
2	Additions to Capitalized Interest	Sch 12, Ln 10 - Prior Ln 10		$1,216	$0	$0	$0	($0)	$0	$0
3	Amortization Rates	Iteration Results, Sch. 1, Ln. 18		0.00%	0.00%	2.57%	5.70%	4.88%	7.24%	12.52%
4	Amortization of Capitalized Interest	(Ln. 1+Ln. 2) * Ln. 3		$0	$0	$31	$67	$54	$77	$123
5	Capitalized Interest - EOY	Ln. 1 + Ln. 2 - Ln. 4		$1,216	$1,216	$1,184	$1,117	$1,062	$985	$862
6	Accumulated Amortization of Capitalized Interest	Ln.4 + Prior Ln. 6		$0	$0	$31	$99	$153	$230	$353
7	Gross Carrier Property-BOY	Prior Ln. 12		$7,741	$7,918	$8,074	$8,157	$8,270	$8,316	$8,357
8	Additions to CPIS	Sch. 12, Ln. 3		$1,422	$98	$100	$106	$49	$65	$70
9	Less Capitalized Interest	Ln. 2		$1,216	$0	$0	$0	($0)	$0	$0
10	Acquisitions & Retirements of CPIS	Sch 12, Lns. (4 + 5)		($29)	($7)	($12)	$5	($2)	($12)	($24)
11	Adjustments to CPIS	Sch 12, Ln. 6		($0)	$65	($4)	$1	($1)	($13)	($4)
12	Gross Carrier Property-EOY 1/	Lns (7+8-9+10+11)	$7,741	$7,918	$8,074	$8,157	$8,270	$8,316	$8,357	$8,398
13	Land Balance - EOY	Sch 12, Ln. 7		$17	$17	$17	$17	$17	$17	$17
14	CWIP Balance - EOY	Sch 12, Ln. 8		$42	$24	$28	$29	$29	$33	$15
15	Gross Carrier Depreciable Property-EOY	Lns (12-13-14)		$7,859	$8,033	$8,113	$8,224	$8,270	$8,306	$8,366
16	Recovery of Investment Including Capitalized Interest Amortized	Ln 3* Lns. ((15+Cum.(9-17)-Prior 20)		$0	$0	$239	$521	$424	$600	$965
17	Less Amortization of Capitalized Interest	Ln. 4		$0	$0	$31	$67	$54	$77	$123
18	Recovery of Investment	Ln. 16 - Ln. 17		$0	$0	$207	$453	$370	$523	$842
19	Retirements from Depreciation (Form 6)	Sch 12, Ln. 11		$0	($5)	($5)	($17)	($2)	($14)	($11)
20	Accumulated Recovery of Investment (Adjusted)	Max Sum Lns(18+19+Prior 20), 0		$0	$0	$202	$638	$1,006	$1,515	$2,346
21	Accumulated Amortization of Form 6 Cap. Interes	Ln. 4 + Prior Ln. 21		$0	$0	$31	$99	$153	$230	$353
22	Accumulated Recovery of Investment (Form 6 Ba	Lns (20+21)		$0	$0	$233	$737	$1,159	$1,745	$2,700

1/Starting Balance reflects June 1977 CWIP Balance

Annual and Cumulative Investment Recovery

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No.	Description		1984	1985	1986	1987	1988	1989	1990	1991
1	Capitalized Interest - BOY	Prior Ln. 5	$862	$709	$570	$425	$259	$107	$0	$0
2	Additions to Capitalized Interest	Sch 12, Ln 10 - Prior Ln 10	($1)	($0)	($0)	($0)	($0)	($0)	($0)	($0)
3	Amortization Rates	Iteration Results, Sch. 1, Ln. 18	17.66%	19.49%	25.52%	39.12%	58.64%	100.00%	100.00%	100.00%
4	Amortization of Capitalized Interest	(Ln. 1+Ln. 2) * Ln. 3	$152	$138	$146	$166	$152	$107	($0)	($0)
5	Capitalized Interest - EOY	Ln. 1 + Ln. 2 - Ln. 4	$709	$570	$425	$259	$107	$0	$0	$0
6	Accumulated Amortization of Capitalized Interest	Ln.4 + Prior Ln. 6	$505	$644	$789	$955	$1,107	$1,214	$1,214	$1,214
7	Gross Carrier Property-BOY	Prior Ln. 12	$8,398	$8,420	$8,432	$8,451	$8,466	$8,470	$8,513	$8,664
8	Additions to CPIS	Sch. 12, Ln. 3	$38	$26	$21	$32	$17	$48	$156	$141
9	Less Capitalized Interest	Ln. 2	($1)	($0)	($0)	($0)	($0)	($0)	($0)	($0)
10	Acquisitions & Retirements of CPIS	Sch 12, Lns. (4 + 5)	($13)	($14)	($3)	($17)	($13)	($5)	($4)	($53)
11	Adjustments to CPIS	Sch 12, Ln. 6	($4)	$0	$0	$0	$0	($0)	$0	($0)
12	Gross Carrier Property-EOY 1/	Lns (7+8-9+10+11)	$8,420	$8,432	$8,451	$8,466	$8,470	$8,513	$8,664	$8,752
13	Land Balance - EOY	Sch 12, Ln. 7	$17	$17	$17	$17	$17	$17	$18	$18
14	CWIP Balance - EOY	Sch 12, Ln. 8	$4	$1	$2	$2	$9	$20	$94	$32
15	Gross Carrier Depreciable Property-EOY	Lns (12-13-14)	$8,399	$8,414	$8,431	$8,447	$8,444	$8,475	$8,552	$8,701
16	Recovery of Investment Including Capitalized Interest Amortized	Ln 3* Lns. ((15+Cum.(9-17)-Prior 20)	$1,194	$1,092	$1,157	$1,320	$1,221	$950	$187	$153
17	Less Amortization of Capitalized Interest	Ln. 4	$152	$138	$146	$166	$152	$107	($0)	($0)
18	Recovery of Investment	Ln. 16 - Ln. 17	$1,042	$954	$1,011	$1,154	$1,069	$843	$187	$153
19	Retirements from Depreciation (Form 6)	Sch 12, Ln. 11	($5)	($13)	($3)	($17)	($13)	($4)	($3)	($57)
20	Accumulated Recovery of Investment (Adjusted)	Max Sum Lns(18+19+Prior 20), 0	$3,383	$4,324	$5,332	$6,469	$7,525	$8,365	$8,548	$8,644
21	Accumulated Amortization of Form 6 Cap. Interes	Ln. 4 + Prior Ln. 21	$505	$644	$789	$955	$1,107	$1,214	$1,214	$1,214
22	Accumulated Recovery of Investment (Form 6 Ba	Lns (20+21)	$3,889	$4,967	$6,121	$7,424	$8,632	$9,578	$9,762	$9,858

1/Starting Balance reflects June 1977 CWIP Balance

Annual and Cumulative Investment Recovery

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No.	Description		1992	1993	1994	1995	1996
1	Capitalized Interest - BOY	Prior Ln. 5	$0	$0	$0	$0	$0
2	Additions to Capitalized Interest	Sch 12, Ln 10 - Prior Ln 10	($0)	($0)	($0)	($0)	($9)
3	Amortization Rates	Iteration Results, Sch. 1, Ln. 18	100.00%	100.00%	100.00%	100.00%	100.00%
4	Amortization of Capitalized Interest	(Ln. 1+Ln. 2) * Ln. 3	($0)	($0)	($0)	($0)	($9)
5	Capitalized Interest - EOY	Ln. 1 + Ln. 2 - Ln. 4	$0	$0	$0	$0	$0
6	Accumulated Amortization of Capitalized Interest	Ln.4 + Prior Ln. 6	$1,214	$1,214	$1,214	$1,214	$1,205
7	Gross Carrier Property-BOY	Prior Ln. 12	$8,752	$8,807	$8,832	$8,873	$8,925
8	Additions to CPIS	Sch. 12, Ln. 3	$71	$36	$51	$56	$52
9	Less Capitalized Interest	Ln. 2	($0)	($0)	($0)	($0)	($9)
10	Acquisitions & Retirements of CPIS	Sch 12, Lns. (4 + 5)	($16)	($11)	($10)	($4)	($34)
11	Adjustments to CPIS	Sch 12, Ln. 6	$0	($0)	$0	$0	$0
12	Gross Carrier Property-EOY 1/	Lns (7+8-9+10+11)	$8,807	$8,832	$8,873	$8,925	$8,951
13	Land Balance - EOY	Sch 12, Ln. 7	$18	$18	$19	$19	$19
14	CWIP Balance - EOY	Sch 12, Ln. 8	$34	$24	$31	$51	$74
15	Gross Carrier Depreciable Property-EOY	Lns (12-13-14)	$8,755	$8,790	$8,823	$8,856	$8,859
16	Recovery of Investment Including Capitalized Interest Amortized	Ln 3* Lns. ((15+Cum.(9-17)-Prior 20)	$111	$49	$42	$40	$6
17	Less Amortization of Capitalized Interest	Ln. 4	($0)	($0)	($0)	($0)	($9)
18	Recovery of Investment	Ln. 16 - Ln. 17	$111	$49	$42	$40	$14
19	Retirements from Depreciation (Form 6)	Sch 12, Ln. 11	($14)	($9)	($8)	($3)	($89)
20	Accumulated Recovery of Investment (Adjusted)	Max Sum Lns(18+19+Prior 20), 0	$8,741	$8,781	$8,816	$8,853	$8,778
21	Accumulated Amortization of Form 6 Cap. Interes	Ln. 4 + Prior Ln. 21	$1,214	$1,214	$1,214	$1,214	$1,205
22	Accumulated Recovery of Investment (Form 6 Ba	Lns (20+21)	$9,955	$9,995	$10,029	$10,067	$9,983

1/Starting Balance reflects June 1977 CWIP Balance

AFUDC

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Ln. Col. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	Sep-68	$1	$0	$1	0.0%	$0	100.0%	$1	$0	$0	12.28%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
2	Oct-68	$0	$0	$1	0.0%	$0	100.0%	$0	$0	$1	12.28%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
3	Nov-68	$0	$0	$1	0.0%	$0	100.0%	$0	$0	$1	12.28%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
4	Dec-68	$0	$0	$1	0.0%	$0	100.0%	$0	$0	$1	12.28%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
5	Jan-69	$0	$0	$1	0.0%	$0	100.0%	$0	$0	$1	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
6	Feb-69	$0	$0	$1	0.0%	$0	100.0%	$0	$0	$1	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
7	Mar-69	$0	$0	$1	0.0%	$0	100.0%	$0	$0	$1	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
8	Apr-69	$0	$0	$1	0.0%	$0	100.0%	$0	$0	$1	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
9	May-69	$1	$0	$2	0.0%	$0	100.0%	$1	$0	$1	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
10	Jun-69	$1	$0	$4	0.0%	$0	100.0%	$1	$0	$2	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
11	Jul-69	$1	$0	$4	0.0%	$0	100.0%	$1	$0	$4	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
12	Aug-69	$1	$0	$5	0.0%	$0	100.0%	$1	$0	$4	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
13	Sep-69	$2	$0	$8	0.0%	$0	100.0%	$2	$0	$6	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
14	Oct-69	$5	$0	$13	0.0%	$0	100.0%	$5	$0	$8	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
15	Nov-69	$7	$0	$19	0.0%	$0	100.0%	$7	$0	$13	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
16	Dec-69	$17	$0	$36	0.0%	$0	100.0%	$17	$0	$19	13.14%	$0	$0	$1	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
17	Jan-70	($1)	$0	$36	0.0%	$1	100.0%	($1)	$0	$37	13.60%	$0	$0	$1	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
18	Feb-70	$9	$0	$45	0.0%	$0	100.0%	$9	$0	$36	13.60%	$0	$0	$2	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
19	Mar-70	$12	$0	$56	0.0%	$0	100.0%	$12	$0	$45	13.60%	$1	$0	$2	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
20	Apr-70	$18	$0	$75	0.0%	$0	100.0%	$18	$0	$57	13.60%	$1	$0	$3	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
21	May-70	$17	$0	$91	0.0%	$0	100.0%	$17	$0	$75	13.60%	$1	$0	$4	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
22	Jun-70	$20	$0	$111	0.0%	$0	100.0%	$20	$0	$92	13.60%	$1	$0	$5	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
23	Jul-70	$28	$0	$139	0.0%	$4	100.0%	$28	$0	$115	13.60%	$1	$0	$6	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
24	Aug-70	$17	$0	$156	0.0%	$0	100.0%	$17	$0	$144	13.60%	$2	$0	$8	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
25	Sep-70	$24	$0	$181	0.0%	$0	100.0%	$24	$0	$161	13.60%	$2	$0	$9	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
26	Oct-70	$16	$0	$196	0.0%	$0	100.0%	$16	$0	$185	13.60%	$2	$0	$11	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
27	Nov-70	$8	$0	$205	0.0%	$0	100.0%	$8	$0	$201	13.60%	$2	$0	$14	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
28	Dec-70	$13	$0	$218	0.0%	$0	100.0%	$13	$0	$209	13.60%	$2	$0	$16	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
29	Jan-71	$1	$0	$219	0.0%	$12	100.0%	$1	$0	$234	12.72%	$2	$0	$19	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
30	Feb-71	$4	$0	$222	0.0%	$0	100.0%	$4	$0	$235	12.72%	$2	$0	$21	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
31	Mar-71	$5	$0	$227	0.0%	$0	100.0%	$5	$0	$238	12.72%	$3	$0	$24	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
32	Apr-71	$5	$0	$232	0.0%	$0	100.0%	$5	$0	$243	12.72%	$3	$0	$26	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
33	May-71	$6	$0	$238	0.0%	$0	100.0%	$6	$0	$248	12.72%	$3	$0	$29	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
34	Jun-71	$6	$0	$244	0.0%	$0	100.0%	$6	$0	$254	12.72%	$3	$0	$32	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
35	Jul-71	$9	$0	$254	0.0%	$15	100.0%	$9	$0	$276	12.72%	$3	$0	$34	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
36	Aug-71	$15	$0	$268	0.0%	$0	100.0%	$15	$0	$285	12.72%	$3	$0	$37	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
37	Sep-71	$10	$0	$279	0.0%	$0	100.0%	$10	$0	$300	12.72%	$3	$0	$41	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
38	Oct-71	$12	$0	$291	0.0%	$0	100.0%	$12	$0	$310	12.72%	$3	$0	$44	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
39	Nov-71	$16	$0	$307	0.0%	$0	100.0%	$16	$0	$322	12.72%	$3	$0	$47	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
40	Dec-71	$19	$0	$326	0.0%	$0	100.0%	$19	$0	$339	12.72%	$4	$0	$51	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
41	Jan-72	($1)	$0	$325	0.0%	$19	100.0%	($1)	$0	$377	12.56%	$4	$0	$55	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
42	Feb-72	$5	$0	$330	0.0%	$0	100.0%	$5	$0	$376	12.56%	$4	$0	$59	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
43	Mar-72	$4	$0	$335	0.0%	$0	100.0%	$4	$0	$381	12.56%	$4	$0	$63	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
44	Apr-72	$4	$0	$339	0.0%	$0	100.0%	$4	$0	$386	12.56%	$4	$0	$67	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
45	May-72	$6	$0	$345	0.0%	$0	100.0%	$6	$0	$390	12.56%	$4	$0	$71	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
46	Jun-72	$7	$0	$352	0.0%	$0	100.0%	$7	$0	$396	12.56%	$4	$0	$75	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
47	Jul-72	$4	$0	$356	0.0%	$24	100.0%	$4	$0	$427	12.56%	$4	$0	$80	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
48	Aug-72	$4	$0	$360	0.0%	$0	100.0%	$4	$0	$431	12.56%	$5	$0	$84	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
49	Sep-72	$3	$0	$363	0.0%	$0	100.0%	$3	$0	$435	12.56%	$5	$0	$89	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
50	Oct-72	$4	$0	$367	0.0%	$0	100.0%	$4	$0	$438	12.56%	$5	$0	$93	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
51	Nov-72	$3	$0	$370	0.0%	$0	100.0%	$3	$0	$442	12.56%	$5	$0	$98	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
52	Dec-72	$7	$0	$376	0.0%	$0	100.0%	$7	$0	$445	12.56%	$5	$0	$102	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
53	Jan-73	($1)	$0	$375	0.0%	$27	100.0%	($1)	$0	$479	13.23%	$5	$0	$108	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
54	Feb-73	$2	$0	$378	0.0%	$0	100.0%	$2	$0	$478	13.23%	$5	$0	$113	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
55	Mar-73	$4	$0	$382	0.0%	$0	100.0%	$4	$0	$480	13.23%	$5	$0	$118	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
56	Apr-73	$3	$0	$385	0.0%	$0	100.0%	$3	$0	$484	13.23%	$5	$0	$124	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
57	May-73	$4	$0	$389	0.0%	$0	100.0%	$4	$0	$487	13.23%	$5	$0	$129	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0

AFUDC

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Ln. Col. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
58	Jun-73	$4	$0	$393	0.0%	$0	100.0%	$4	$0	$491	13.23%	$5	$0	$134	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
59	Jul-73	$5	$0	$398	0.0%	$32	100.0%	$5	$0	$527	13.23%	$6	$0	$140	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
60	Aug-73	$5	$0	$402	0.0%	$0	100.0%	$5	$0	$532	13.23%	$6	$0	$146	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
61	Sep-73	$5	$0	$408	0.0%	$0	100.0%	$5	$0	$537	13.23%	$6	$0	$152	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
62	Oct-73	$8	$0	$416	0.0%	$0	100.0%	$8	$0	$542	13.23%	$6	$0	$158	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
63	Nov-73	$4	$0	$420	0.0%	$0	100.0%	$4	$0	$550	13.23%	$6	$0	$164	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
64	Dec-73	$6	$0	$427	0.0%	$0	100.0%	$6	$0	$555	13.23%	$6	$0	$170	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
65	Jan-74	$21	$0	$448	0.0%	$36	100.0%	$21	$0	$597	13.90%	$7	$0	$177	$0	0.0%	$0	$0	$0	8.74%	$0	$0	$0
66	Feb-74	$19	$0	$467	0.0%	$0	100.0%	$19	$0	$618	13.90%	$7	$0	$184	$0	0.0%	$0	$0	$0	8.74%	$0	$0	$0
67	Mar-74	$22	$0	$489	0.0%	$0	100.0%	$22	$0	$638	13.90%	$7	$0	$192	$0	0.0%	$0	$0	$0	8.74%	$0	$0	$0
68	Apr-74	$25	$0	$514	0.0%	$0	100.0%	$25	$0	$659	13.90%	$8	$0	$199	$0	0.0%	$0	$0	$0	8.74%	$0	$0	$0
69	May-74	$25	$0	$540	0.0%	$0	67.0%	$17	$0	$685	13.90%	$8	$0	$207	$0	33.0%	$8	$0	$0	8.74%	$0	$0	$0
70	Jun-74	$33	$0	$573	0.0%	$0	67.0%	$22	$0	$702	13.90%	$8	$0	$215	$0	33.0%	$11	$0	$8	8.74%	$0	$0	$0
71	Jul-74	$69	$0	$642	0.0%	$45	67.0%	$46	$0	$769	13.90%	$9	$0	$224	$0	33.0%	$23	$0	$19	8.74%	$0	$0	$0
72	Aug-74	$96	$0	$738	0.0%	$0	67.0%	$64	$0	$815	13.90%	$9	$0	$234	$0	33.0%	$32	$0	$42	8.74%	$0	$0	$1
73	Sep-74	$88	$0	$826	0.0%	$0	67.0%	$59	$0	$880	13.90%	$10	$0	$244	$0	33.0%	$29	$0	$74	8.74%	$1	$0	$1
74	Oct-74	$161	$0	$987	0.0%	$0	67.0%	$108	$0	$939	13.90%	$11	$0	$255	$0	33.0%	$53	$0	$103	8.74%	$1	$0	$2
75	Nov-74	$107	$0	$1,094	0.0%	$0	67.0%	$71	$0	$1,046	13.90%	$12	$0	$267	$0	33.0%	$35	$0	$156	8.74%	$1	$0	$3
76	Dec-74	$266	$0	$1,359	0.0%	$0	67.0%	$178	$0	$1,118	13.90%	$13	$0	$280	$0	33.0%	$88	$0	$191	8.74%	$1	$0	$4
77	Jan-75	$41	$0	$1,400	0.0%	$64	53.4%	$22	$0	$1,360	13.97%	$16	$0	$296	$4	46.6%	$19	$0	$283	8.80%	$2	$0	$6
78	Feb-75	$132	$0	$1,531	0.0%	$0	53.4%	$70	$0	$1,382	13.97%	$16	$0	$312	$0	46.6%	$61	$0	$302	8.80%	$2	$0	$9
79	Mar-75	$257	$0	$1,788	0.0%	$0	53.4%	$137	$0	$1,452	13.97%	$17	$0	$329	$0	46.6%	$120	$0	$363	8.80%	$3	$0	$11
80	Apr-75	$107	$0	$1,896	0.0%	$0	53.4%	$57	$0	$1,589	13.97%	$19	$0	$347	$0	46.6%	$50	$0	$483	8.80%	$4	$0	$15
81	May-75	$263	$0	$2,158	0.0%	$0	53.4%	$140	$0	$1,647	13.97%	$19	$0	$366	$0	46.6%	$122	$0	$533	8.80%	$4	$0	$19
82	Jun-75	$582	$0	$2,740	0.0%	$0	53.4%	$310	$0	$1,787	13.97%	$21	$0	$387	$0	46.6%	$271	$0	$656	8.80%	$5	$0	$24
83	Jul-75	($58)	$0	$2,682	0.0%	$107	53.4%	($31)	$0	$2,205	13.97%	$26	$0	$413	$19	46.6%	($27)	$0	$946	8.80%	$7	$0	$30
84	Aug-75	$282	$0	$2,963	0.0%	$0	53.4%	$150	$0	$2,173	13.97%	$25	$0	$438	$0	46.6%	$131	$0	$919	8.80%	$7	$0	$37
85	Sep-75	$648	$0	$3,612	0.0%	$0	53.4%	$346	$0	$2,324	13.97%	$27	$0	$465	$0	46.6%	$302	$0	$1,050	8.80%	$8	$0	$45
86	Oct-75	$204	$0	$3,816	0.0%	$0	53.4%	$109	$0	$2,670	13.97%	$31	$0	$496	$0	46.6%	$95	$0	$1,353	8.80%	$10	$0	$55
87	Nov-75	$271	$0	$4,087	0.0%	$0	53.4%	$145	$0	$2,779	13.97%	$32	$0	$529	$0	46.6%	$127	$0	$1,448	8.80%	$11	$0	$65
88	Dec-75	$180	$0	$4,268	0.0%	$0	53.4%	$96	$0	$2,924	13.97%	$34	$0	$563	$0	46.6%	$84	$0	$1,574	8.80%	$12	$0	$77
89	Jan-76	$230	$0	$4,497	0.0%	$176	50.9%	$117	$0	$3,195	13.81%	$37	$0	$599	$53	49.1%	$113	$0	$1,712	8.74%	$12	$0	$89
90	Feb-76	$202	$0	$4,699	0.0%	$0	50.9%	$103	$0	$3,312	13.81%	$38	$0	$638	$0	49.1%	$99	$0	$1,825	8.74%	$13	$0	$103
91	Mar-76	$178	$0	$4,877	0.0%	$0	50.9%	$90	$0	$3,415	13.81%	$39	$0	$677	$0	49.1%	$87	$0	$1,924	8.74%	$14	$0	$117
92	Apr-76	$262	$0	$5,139	0.0%	$0	50.9%	$133	$0	$3,506	13.81%	$40	$0	$717	$0	49.1%	$128	$0	$2,011	8.74%	$15	$0	$131
93	May-76	$276	$0	$5,414	0.0%	$0	50.9%	$140	$0	$3,639	13.81%	$42	$0	$759	$0	49.1%	$135	$0	$2,139	8.74%	$16	$0	$147
94	Jun-76	$220	$0	$5,634	0.0%	$0	50.9%	$112	$0	$3,779	13.81%	$43	$0	$802	$0	49.1%	$108	$0	$2,275	8.74%	$17	$0	$164
95	Jul-76	$298	$0	$5,932	0.0%	$240	50.9%	$152	$0	$4,131	13.81%	$48	$0	$850	$87	49.1%	$146	$0	$2,469	8.74%	$18	$0	$182
96	Aug-76	$236	$0	$6,168	0.0%	$0	50.9%	$120	$0	$4,283	13.81%	$49	$0	$899	$0	49.1%	$116	$0	$2,615	8.74%	$19	$0	$201
97	Sep-76	$232	$0	$6,400	0.0%	$0	50.9%	$118	$0	$4,403	13.81%	$51	$0	$950	$0	49.1%	$114	$0	$2,731	8.74%	$20	$0	$220
98	Oct-76	$136	$0	$6,536	0.0%	$0	50.9%	$69	$0	$4,521	13.81%	$52	$0	$1,002	$0	49.1%	$67	$0	$2,845	8.74%	$21	$0	$241
99	Nov-76	$159	$0	$6,695	0.0%	$0	50.9%	$81	$0	$4,590	13.81%	$53	$0	$1,055	$0	49.1%	$78	$0	$2,911	8.74%	$21	$0	$262
100	Dec-76	$208	$0	$6,902	0.0%	$0	50.9%	$106	$0	$4,671	13.81%	$54	$0	$1,108	$0	49.1%	$102	$0	$2,990	8.74%	$22	$0	$284
101	Jan-77	$50	$0	$6,952	0.0%	$306	50.5%	$25	$0	$5,083	14.56%	$62	$0	$1,170	$121	49.5%	$25	$0	$3,212	8.86%	$24	$0	$308
102	Feb-77	$108	$0	$7,060	0.0%	$0	50.5%	$55	$0	$5,108	14.56%	$62	$0	$1,232	$0	49.5%	$53	$0	$3,237	8.86%	$24	$0	$332
103	Mar-77	$356	$0	$7,416	0.0%	$0	50.5%	$180	$0	$5,163	14.56%	$63	$0	$1,295	$0	49.5%	$176	$0	$3,290	8.86%	$24	$0	$356
104	Apr-77	$46	$0	$7,461	0.0%	$0	50.5%	$23	$0	$5,342	14.56%	$65	$0	$1,360	$0	49.5%	$23	$0	$3,466	8.86%	$26	$0	$382
105	May-77	$131	$0	$7,592	0.0%	$0	50.5%	$66	$0	$5,365	14.56%	$65	$0	$1,425	$0	49.5%	$65	$0	$3,489	8.86%	$26	$0	$407
106	Jun-77	$149	$7,741	$0	100.0%	$0	50.5%	$75	$5,507	$5,431	14.56%	$66	$1,491	$0	$0	49.5%	$74	$3,627	$3,554	8.86%	$26	$434	$0
107	Jul-77	$521	$0	$521	0.0%	$0	50.5%	$263	$0	$0	14.56%	$0	$0	$0	$0	49.5%	$258	$0	$0	8.86%	$0	$0	$0
108	Aug-77	$0	$334	$187	64.1%	$0	50.5%	$0	$169	$263	14.56%	$3	$0	$3	$0	49.5%	$0	$165	$258	8.86%	$2	$0	$2
109	Sep-77	$0	$55	$132	29.5%	$0	50.5%	$0	$28	$94	14.56%	$1	$1	$3	$0	49.5%	$0	$27	$93	8.86%	$1	$1	$2
110	Oct-77	$0	$1	$131	0.5%	$0	50.5%	$0	$0	$67	14.56%	$1	$0	$4	$0	49.5%	$0	$0	$65	8.86%	$0	$0	$2
111	Nov-77	$0	$1	$130	0.5%	$0	50.5%	$0	$0	$66	14.56%	$1	$0	$5	$0	49.5%	$0	$0	$65	8.86%	$0	$0	$3
112	Dec-77	$1	$3	$129	2.1%	$0	50.5%	$1	$1	$66	14.56%	$1	$0	$6	$0	49.5%	$1	$1	$65	8.86%	$0	$0	$3
113	Jan-78	$0	$2	$127	1.3%	$0	50.5%	$0	$1	$65	15.43%	$1	$0	$6	$0	49.5%	$0	$1	$64	8.88%	$0	$0	$4
114	Feb-78	$0	$73	$54	57.6%	$0	50.5%	$0	$37	$64	15.43%	$1	$4	$4	$0	49.5%	$0	$36	$63	8.88%	$0	$2	$2

AFUDC

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Ln. Col. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
115	Mar-78	$0	$39	$15	72.7%	$0	50.5%	$0	$20	$27	15.43%	$0	$3	$1	$0	49.5%	$0	$19	$27	8.88%	$0	$2	$1
116	Apr-78	$79	$42	$52	44.6%	$0	50.5%	$40	$21	$7	15.43%	$0	$1	$1	$0	49.5%	$39	$21	$7	8.88%	$0	$0	$0
117	May-78	($15)	$0	$36	0.5%	$0	50.5%	($8)	$0	$26	15.43%	$0	$0	$1	$0	49.5%	($8)	$0	$26	8.88%	$0	$0	$1
118	Jun-78	($11)	$0	$24	1.7%	$0	50.5%	($6)	$0	$18	15.43%	$0	$0	$1	$0	49.5%	($6)	$0	$18	8.88%	$0	$0	$1
119	Jul-78	$0	$0	$24	1.3%	$0	50.5%	$0	$0	$12	15.43%	$0	$0	$2	$0	49.5%	$0	$0	$12	8.88%	$0	$0	$1
120	Aug-78	$15	$1	$38	2.6%	$0	50.5%	$8	$1	$12	15.43%	$0	$0	$2	$0	49.5%	$7	$0	$12	8.88%	$0	$0	$1
121	Sep-78	$65	$3	$100	2.9%	$0	50.5%	$33	$2	$19	15.43%	$0	$0	$2	$0	49.5%	$32	$1	$19	8.88%	$0	$0	$1
122	Oct-78	($86)	$1	$13	5.4%	$0	50.5%	($44)	$0	$51	15.43%	$1	$0	$2	$0	49.5%	($43)	$0	$50	8.88%	$0	$0	$1
123	Nov-78	$8	$1	$20	3.6%	$0	50.5%	$4	$0	$7	15.43%	$0	$0	$2	$0	49.5%	$4	$0	$6	8.88%	$0	$0	$1
124	Dec-78	$73	$10	$84	10.1%	$0	50.5%	$37	$5	$10	15.43%	$0	$0	$2	$0	49.5%	$36	$5	$10	8.88%	$0	$0	$1
125	Jan-79	($7)	$1	$77	0.7%	$0	50.5%	($4)	$0	$43	16.29%	$1	$0	$3	$0	49.5%	($4)	$0	$42	8.90%	$0	$0	$2
126	Feb-79	$2	$0	$78	0.0%	$0	50.5%	$1	$0	$39	16.29%	$1	$0	$3	$0	49.5%	$1	$0	$38	8.90%	$0	$0	$2
127	Mar-79	$1	$0	$79	0.2%	$0	50.5%	$0	$0	$40	16.29%	$1	$0	$4	$0	49.5%	$0	$0	$39	8.90%	$0	$0	$2
128	Apr-79	$4	$0	$82	0.3%	$0	50.5%	$2	$0	$40	16.29%	$1	$0	$4	$0	49.5%	$2	$0	$39	8.90%	$0	$0	$2
129	May-79	$3	$0	$85	0.5%	$0	50.5%	$2	$0	$41	16.29%	$1	$0	$5	$0	49.5%	$2	$0	$41	8.90%	$0	$0	$3
130	Jun-79	$9	$0	$94	0.1%	$0	50.5%	$5	$0	$43	16.29%	$1	$0	$6	$0	49.5%	$5	$0	$42	8.90%	$0	$0	$3
131	Jul-79	$6	$1	$99	0.8%	$0	50.5%	$3	$0	$48	16.29%	$1	$0	$6	$0	49.5%	$3	$0	$47	8.90%	$0	$0	$3
132	Aug-79	$9	$0	$108	0.1%	$0	50.5%	$4	$0	$50	16.29%	$1	$0	$7	$0	49.5%	$4	$0	$49	8.90%	$0	$0	$4
133	Sep-79	$11	$1	$117	1.1%	$0	50.5%	$5	$1	$54	16.29%	$1	$0	$7	$0	49.5%	$5	$1	$53	8.90%	$0	$0	$4
134	Oct-79	$25	$54	$89	37.9%	$0	50.5%	$13	$27	$59	16.29%	$1	$3	$5	$0	49.5%	$13	$27	$58	8.90%	$0	$2	$3
135	Nov-79	$8	$0	$96	0.0%	$0	50.5%	$4	$0	$45	16.29%	$1	$0	$6	$0	49.5%	$4	$0	$44	8.90%	$0	$0	$3
136	Dec-79	$12	$17	$91	16.0%	$0	50.5%	$6	$9	$49	16.29%	$1	$1	$6	$0	49.5%	$6	$9	$48	8.90%	$0	$1	$3
137	Jan-80	$25	$2	$113	2.1%	$0	50.5%	$13	$1	$46	18.27%	$1	$0	$6	$0	49.5%	$12	$1	$45	8.98%	$0	$0	$3
138	Feb-80	$8	$1	$120	0.5%	$0	50.5%	$4	$0	$57	18.27%	$1	$0	$7	$0	49.5%	$4	$0	$56	8.98%	$0	$0	$4
139	Mar-80	$8	$0	$128	0.2%	$0	50.5%	$4	$0	$61	18.27%	$1	$0	$8	$0	49.5%	$4	$0	$60	8.98%	$0	$0	$4
140	Apr-80	$13	$1	$141	0.5%	$0	50.5%	$7	$0	$65	18.27%	$1	$0	$9	$0	49.5%	$7	$0	$63	8.98%	$0	$0	$5
141	May-80	$9	$0	$150	0.3%	$0	50.5%	$5	$0	$71	18.27%	$1	$0	$10	$0	49.5%	$5	$0	$70	8.98%	$1	$0	$5
142	Jun-80	$11	$1	$160	0.4%	$0	50.5%	$6	$0	$75	18.27%	$1	$0	$11	$0	49.5%	$6	$0	$74	8.98%	$1	$0	$6
143	Jul-80	$14	$1	$174	0.3%	$0	50.5%	$7	$0	$81	18.27%	$1	$0	$12	$0	49.5%	$7	$0	$79	8.98%	$1	$0	$6
144	Aug-80	$13	$1	$185	0.7%	$0	50.5%	$6	$1	$88	18.27%	$1	$0	$14	$0	49.5%	$6	$1	$86	8.98%	$1	$0	$7
145	Sep-80	$13	$30	$168	15.2%	$0	50.5%	$6	$15	$94	18.27%	$1	$2	$13	$0	49.5%	$6	$15	$92	8.98%	$1	$1	$7
146	Oct-80	$14	($0)	$182	-0.1%	$0	50.5%	$7	($0)	$85	18.27%	$1	($0)	$14	$0	49.5%	$7	($0)	$83	8.98%	$1	($0)	$7
147	Nov-80	$7	$1	$189	0.5%	$0	50.5%	$4	$0	$92	18.27%	$1	$0	$16	$0	49.5%	$4	$0	$90	8.98%	$1	$0	$8
148	Dec-80	($1)	$71	$117	37.9%	$0	50.5%	($1)	$36	$95	18.27%	$1	$6	$11	$0	49.5%	($1)	$35	$93	8.98%	$1	$3	$6
149	Jan-81	($8)	$20	$88	18.5%	$0	50.5%	($4)	$10	$59	21.17%	$1	$2	$10	$0	49.5%	($4)	$10	$58	9.01%	$0	$1	$5
150	Feb-81	$2	$1	$89	1.0%	$0	50.5%	$1	$0	$45	21.17%	$1	$0	$11	$0	49.5%	$1	$0	$44	9.01%	$0	$0	$5
151	Mar-81	$5	$2	$92	2.3%	$0	50.5%	$2	$1	$45	21.17%	$1	$0	$11	$0	49.5%	$2	$1	$44	9.01%	$0	$0	$5
152	Apr-81	($11)	$0	$81	0.2%	$0	50.5%	($5)	$0	$46	21.17%	$1	$0	$12	$0	49.5%	($5)	$0	$45	9.01%	$0	$0	$6
153	May-81	$4	$1	$84	1.2%	$0	50.5%	$2	$0	$41	21.17%	$1	$0	$13	$0	49.5%	$2	$0	$40	9.01%	$0	$0	$6
154	Jun-81	$7	$2	$88	2.7%	$0	50.5%	$4	$1	$42	21.17%	$1	$0	$13	$0	49.5%	$4	$1	$41	9.01%	$0	$0	$6
155	Jul-81	$22	$2	$108	1.9%	$0	50.5%	$11	$1	$45	21.17%	$1	$0	$14	$0	49.5%	$11	$1	$44	9.01%	$0	$0	$6
156	Aug-81	$10	$2	$116	1.5%	$0	50.5%	$5	$1	$54	21.17%	$1	$0	$14	$0	49.5%	$5	$1	$53	9.01%	$0	$0	$7
157	Sep-81	$14	$1	$128	1.1%	$0	50.5%	$7	$1	$59	21.17%	$1	$0	$15	$0	49.5%	$7	$1	$57	9.01%	$0	$0	$7
158	Oct-81	$9	$3	$135	2.2%	$0	50.5%	$5	$2	$65	21.17%	$1	$0	$16	$0	49.5%	$5	$1	$64	9.01%	$0	$0	$7
159	Nov-81	$2	$0	$136	0.3%	$0	50.5%	$1	$0	$68	21.17%	$1	$0	$17	$0	49.5%	$1	$0	$67	9.01%	$1	$0	$8
160	Dec-81	($19)	$45	$72	38.1%	$0	50.5%	($10)	$23	$69	21.17%	$1	$7	$12	$0	49.5%	($9)	$22	$67	9.01%	$1	$3	$5
161	Jan-82	($40)	$6	$27	16.9%	$0	50.5%	($20)	$3	$37	20.81%	$1	$2	$11	$0	49.5%	($20)	$3	$36	9.03%	$0	$1	$5
162	Feb-82	$3	$1	$29	3.6%	$0	50.5%	$2	$1	$14	20.81%	$0	$0	$10	$0	49.5%	$2	$1	$14	9.03%	$0	$0	$5
163	Mar-82	$2	$1	$30	3.4%	$0	50.5%	$1	$1	$15	20.81%	$0	$0	$10	$0	49.5%	$1	$1	$15	9.03%	$0	$0	$5
164	Apr-82	$4	$2	$31	6.8%	$0	50.5%	$2	$1	$15	20.81%	$0	$1	$10	$0	49.5%	$2	$1	$15	9.03%	$0	$0	$4
165	May-82	$5	$1	$36	2.7%	$0	50.5%	$3	$1	$16	20.81%	$0	$0	$10	$0	49.5%	$3	$0	$16	9.03%	$0	$0	$4
166	Jun-82	$10	$1	$45	1.8%	$0	50.5%	$5	$0	$18	20.81%	$0	$0	$10	$0	49.5%	$5	$0	$18	9.03%	$0	$0	$4
167	Jul-82	$5	$1	$49	1.6%	$0	50.5%	$3	$0	$23	20.81%	$0	$0	$10	$0	49.5%	$3	$0	$22	9.03%	$0	$0	$5
168	Aug-82	$12	$18	$44	28.9%	$0	50.5%	$6	$9	$25	20.81%	$0	$3	$8	$0	49.5%	$6	$9	$24	9.03%	$0	$1	$3
169	Sep-82	$9	$10	$43	19.3%	$0	50.5%	$5	$5	$22	20.81%	$0	$1	$7	$0	49.5%	$4	$5	$22	9.03%	$0	$1	$3
170	Oct-82	$6	$9	$39	19.4%	$0	50.5%	$3	$5	$21	20.81%	$0	$1	$6	$0	49.5%	$3	$5	$21	9.03%	$0	$1	$3
171	Nov-82	$1	$4	$36	10.4%	$0	50.5%	$0	$2	$20	20.81%	$0	$1	$5	$0	49.5%	$0	$2	$20	9.03%	$0	$0	$2

AFUDC

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Ln. Col. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
172	Dec-82	$0	$3	$33	7.9%	$0	50.5%	$0	$1	$18	20.81%	$0	$0	$5	$0	49.5%	$0	$1	$18	9.03%	$0	$0	$2
173	Jan-83	$1	$1	$34	1.9%	$0	50.5%	$1	$0	$17	17.46%	$0	$0	$5	$0	49.5%	$1	$0	$17	9.08%	$0	$0	$2
174	Feb-83	$3	$0	$37	0.6%	$0	50.5%	$1	$0	$17	17.46%	$0	$0	$6	$0	49.5%	$1	$0	$17	9.08%	$0	$0	$3
175	Mar-83	$12	$13	$36	26.9%	$0	50.5%	$6	$7	$19	17.46%	$0	$2	$4	$0	49.5%	$6	$7	$18	9.08%	$0	$1	$2
176	Apr-83	$12	$9	$39	18.5%	$0	50.5%	$6	$4	$18	17.46%	$0	$1	$4	$0	49.5%	$6	$4	$18	9.08%	$0	$0	$2
177	May-83	$6	$1	$44	2.1%	$0	50.5%	$3	$0	$20	17.46%	$0	$0	$4	$0	49.5%	$3	$0	$19	9.08%	$0	$0	$2
178	Jun-83	$7	$0	$50	0.9%	$0	50.5%	$3	$0	$22	17.46%	$0	$0	$4	$0	49.5%	$3	$0	$22	9.08%	$0	$0	$2
179	Jul-83	$4	$0	$53	0.4%	$0	50.5%	$2	$0	$25	17.46%	$0	$0	$5	$0	49.5%	$2	$0	$25	9.08%	$0	$0	$2
180	Aug-83	($1)	$1	$51	1.7%	$0	50.5%	($1)	$0	$27	17.46%	$0	$0	$5	$0	49.5%	($1)	$0	$26	9.08%	$0	$0	$2
181	Sep-83	$5	$42	$14	74.5%	$0	50.5%	$3	$21	$26	17.46%	$0	$4	$2	$0	49.5%	$3	$21	$25	9.08%	$0	$2	$1
182	Oct-83	$4	$2	$16	11.4%	$0	50.5%	$2	$1	$7	17.46%	$0	$0	$2	$0	49.5%	$2	$1	$7	9.08%	$0	$0	$1
183	Nov-83	$3	$4	$15	20.5%	$0	50.5%	$2	$2	$8	17.46%	$0	$0	$1	$0	49.5%	$2	$2	$8	9.08%	$0	$0	$1
184	Dec-83	$6	$3	$18	14.7%	$0	50.5%	$3	$2	$8	17.46%	$0	$0	$1	$0	49.5%	$3	$2	$8	9.08%	$0	$0	$1
185	Jan-84	$2	$1	$20	3.9%	$0	50.5%	$1	$0	$9	18.65%	$0	$0	$1	$0	49.5%	$1	$0	$9	9.13%	$0	$0	$1
186	Feb-84	$3	$0	$22	2.1%	$0	50.5%	$1	$0	$10	18.65%	$0	$0	$1	$0	49.5%	$1	$0	$10	9.13%	$0	$0	$1
187	Mar-84	$6	$5	$23	19.6%	$0	50.5%	$3	$3	$11	18.65%	$0	$0	$1	$0	49.5%	$3	$3	$11	9.13%	$0	$0	$1
188	Apr-84	$4	$2	$24	8.9%	$0	50.5%	$2	$1	$11	18.65%	$0	$0	$1	$0	49.5%	$2	$1	$11	9.13%	$0	$0	$1
189	May-84	$5	$3	$26	11.2%	$0	50.5%	$2	$2	$12	18.65%	$0	$0	$1	$0	49.5%	$2	$2	$12	9.13%	$0	$0	$1
190	Jun-84	$2	$1	$27	4.0%	$0	50.5%	$1	$1	$13	18.65%	$0	$0	$2	$0	49.5%	$1	$1	$13	9.13%	$0	$0	$1
191	Jul-84	$3	$1	$28	3.9%	$0	50.5%	$1	$1	$13	18.65%	$0	$0	$2	$0	49.5%	$1	$1	$13	9.13%	$0	$0	$1
192	Aug-84	$1	$0	$29	0.9%	$0	50.5%	$1	$0	$14	18.65%	$0	$0	$2	$0	49.5%	$1	$0	$14	9.13%	$0	$0	$1
193	Sep-84	$1	$0	$30	1.5%	$0	50.5%	$1	$0	$15	18.65%	$0	$0	$2	$0	49.5%	$1	$0	$15	9.13%	$0	$0	$1
194	Oct-84	$2	$6	$26	17.8%	$0	50.5%	$1	$3	$15	18.65%	$0	$0	$2	$0	49.5%	$1	$3	$15	9.13%	$0	$0	$1
195	Nov-84	$2	$2	$26	6.7%	$0	50.5%	$1	$1	$13	18.65%	$0	$0	$2	$0	49.5%	$1	$1	$13	9.13%	$0	$0	$1
196	Dec-84	$16	$42	$0	100.0%	$0	50.5%	$8	$21	$13	18.65%	$0	$2	$0	$0	49.5%	$8	$21	$13	9.13%	$0	$1	$0
197	Jan-85	$8	$0	$8	1.7%	$0	50.5%	$4	$0	$0	17.34%	$0	$0	$0	$0	49.5%	$4	$0	($0)	9.16%	($0)	$0	($0)
198	Feb-85	$5	$0	$13	0.4%	$0	50.5%	$2	$0	$4	17.34%	$0	$0	$0	$0	49.5%	$2	$0	$4	9.16%	$0	($0)	$0
199	Mar-85	$5	$0	$17	1.2%	$0	50.5%	$3	$0	$6	17.34%	$0	$0	$0	$0	49.5%	$2	$0	$6	9.16%	$0	$0	$0
200	Apr-85	$5	$1	$21	5.8%	$0	50.5%	$3	$1	$9	17.34%	$0	$0	$0	$0	49.5%	$3	$1	$9	9.16%	$0	$0	$0
201	May-85	$3	$1	$24	2.7%	$0	50.5%	$2	$0	$11	17.34%	$0	$0	$0	$0	49.5%	$2	$0	$10	9.16%	$0	$0	$0
202	Jun-85	$1	$25	$0	100.0%	$0	50.5%	$1	$12	$12	17.34%	$0	$1	$0	$0	49.5%	$1	$12	$12	9.16%	$0	$0	$0
203	Jul-85	$3	$3	$0	87.7%	$0	50.5%	$2	$1	$0	17.34%	$0	$0	$0	$0	49.5%	$2	$1	($0)	9.16%	($0)	$0	($0)
204	Aug-85	$1	$1	$1	43.8%	$0	50.5%	$1	$0	$0	17.34%	$0	$0	$0	$0	49.5%	$1	$0	$0	9.16%	$0	($0)	$0
205	Sep-85	$1	$0	$2	12.6%	$0	50.5%	$1	$0	$0	17.34%	$0	$0	$0	$0	49.5%	$1	$0	$0	9.16%	$0	$0	$0
206	Oct-85	$1	$1	$2	37.5%	$0	50.5%	$1	$1	$1	17.34%	$0	$0	$0	$0	49.5%	$1	$1	$1	9.16%	$0	$0	$0
207	Nov-85	$0	$0	$2	17.2%	$0	50.5%	$0	$0	$1	17.34%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.16%	$0	$0	$0
208	Dec-85	($1)	$0	$1	0.0%	$0	50.5%	($1)	$0	$1	17.34%	$0	$0	$0	$0	49.5%	($1)	$0	$1	9.16%	$0	$0	$0
209	Jan-86	$1	$1	$2	24.9%	$0	50.5%	$1	$0	$0	16.04%	$0	$0	$0	$0	49.5%	$1	$0	$0	9.17%	$0	$0	$0
210	Feb-86	$1	$0	$2	16.9%	$0	50.5%	$0	$0	$1	16.04%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.17%	$0	$0	$0
211	Mar-86	$0	$0	$2	1.7%	$0	50.5%	$0	$0	$1	16.04%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.17%	$0	$0	$0
212	Apr-86	$1	$0	$3	5.4%	$0	50.5%	$0	$0	$1	16.04%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.17%	$0	$0	$0
213	May-86	$2	$2	$3	36.4%	$0	50.5%	$1	$1	$2	16.04%	$0	$0	$0	$0	49.5%	$1	$1	$2	9.17%	$0	$0	$0
214	Jun-86	$3	$1	$5	13.7%	$0	50.5%	$2	$0	$1	16.04%	$0	$0	$0	$0	49.5%	$1	$0	$1	9.17%	$0	$0	$0
215	Jul-86	$3	$1	$7	7.1%	$0	50.5%	$1	$0	$3	16.04%	$0	$0	$0	$0	49.5%	$1	$0	$3	9.17%	$0	$0	$0
216	Aug-86	$4	$0	$11	1.8%	$0	50.5%	$2	$0	$4	16.04%	$0	$0	$0	$0	49.5%	$2	$0	$4	9.17%	$0	$0	$0
217	Sep-86	$2	$0	$13	0.9%	$0	50.5%	$1	$0	$6	16.04%	$0	$0	$0	$0	49.5%	$1	$0	$6	9.17%	$0	$0	$0
218	Oct-86	$17	$26	$4	88.0%	$0	50.5%	$8	$13	$7	16.04%	$0	$0	$0	$0	49.5%	$8	$13	$7	9.17%	$0	$0	$0
219	Nov-86	$1	$0	$4	9.5%	$0	50.5%	$0	$0	$2	16.04%	$0	$0	$0	$0	49.5%	$0	$0	$2	9.17%	$0	$0	$0
220	Dec-86	$2	$4	$2	62.9%	$0	50.5%	$1	$2	$2	16.04%	$0	$0	$0	$0	49.5%	$1	$2	$2	9.17%	$0	$0	$0
221	Jan-87	$1	$2	$2	48.3%	$0	50.5%	$0	$1	$1	16.00%	$0	$0	$0	$0	49.5%	$0	$1	$1	9.19%	$0	$0	$0
222	Feb-87	$0	$0	$2	2.7%	$0	50.5%	$0	$0	$1	16.00%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.19%	$0	$0	$0
223	Mar-87	$1	$1	$2	31.8%	$0	50.5%	$1	$0	$1	16.00%	$0	$0	$0	$0	49.5%	$1	$0	$1	9.19%	$0	$0	$0
224	Apr-87	$2	$0	$3	11.7%	$0	50.5%	$1	$0	$1	16.00%	$0	$0	$0	$0	49.5%	$1	$0	$1	9.19%	$0	$0	$0
225	May-87	$4	$1	$7	9.0%	$0	50.5%	$2	$0	$2	16.00%	$0	$0	$0	$0	49.5%	$2	$0	$2	9.19%	$0	$0	$0
226	Jun-87	$7	$1	$12	10.2%	$0	50.5%	$3	$1	$3	16.00%	$0	$0	$0	$0	49.5%	$3	$1	$3	9.19%	$0	$0	$0
227	Jul-87	$8	$7	$13	33.0%	$0	50.5%	$4	$3	$6	16.00%	$0	$0	$0	$0	49.5%	$4	$3	$6	9.19%	$0	$0	$0
228	Aug-87	$4	$1	$16	5.4%	$0	50.5%	$2	$0	$7	16.00%	$0	$0	$0	$0	49.5%	$2	$0	$7	9.19%	$0	$0	$0

AFUDC

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Ln. Col. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
229	Sep-87	$7	$16	$7	71.1%	$0	50.5%	$4	$8	$8	16.00%	$0	$0	$0	$0	49.5%	$3	$8	$8	9.19%	$0	$0	$0
230	Oct-87	$1	$1	$7	7.3%	$0	50.5%	$1	$0	$3	16.00%	$0	$0	$0	$0	49.5%	$1	$0	$3	9.19%	$0	$0	$0
231	Nov-87	$3	$1	$9	11.4%	$0	50.5%	$1	$1	$4	16.00%	$0	$0	$0	$0	49.5%	$1	$1	$4	9.19%	$0	$0	$0
232	Dec-87	$7	$14	$1	90.7%	$0	50.5%	$3	$7	$5	16.00%	$0	$0	$0	$0	49.5%	$3	$7	$4	9.19%	$0	$0	$0
233	Jan-88	$0	$0	$2	5.6%	$0	50.5%	$0	$0	$1	16.41%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.20%	$0	$0	$0
234	Feb-88	$2	$1	$2	42.1%	$0	50.5%	$1	$1	$1	16.41%	$0	$0	$0	$0	49.5%	$1	$1	$1	9.20%	$0	$0	$0
235	Mar-88	$1	$1	$2	43.5%	$0	50.5%	$1	$1	$1	16.41%	$0	$0	$0	$0	49.5%	$1	$1	$1	9.20%	$0	$0	$0
236	Apr-88	$1	$0	$2	16.2%	$0	50.5%	$0	$0	$1	16.41%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.20%	$0	$0	$0
237	May-88	$1	$1	$3	24.9%	$0	50.5%	$1	$0	$1	16.41%	$0	$0	$0	$0	49.5%	$1	$0	$1	9.20%	$0	$0	$0
238	Jun-88	$0	$0	$3	13.7%	$0	50.5%	$0	$0	$1	16.41%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.20%	$0	$0	$0
239	Jul-88	$2	$0	$4	5.7%	$0	50.5%	$1	$0	$1	16.41%	$0	$0	$0	$0	49.5%	$1	$0	$1	9.20%	$0	$0	$0
240	Aug-88	$2	$0	$6	7.2%	$0	50.5%	$1	$0	$2	16.41%	$0	$0	$0	$0	49.5%	$1	$0	$2	9.20%	$0	$0	$0
241	Sep-88	$4	$2	$7	22.3%	$0	50.5%	$2	$1	$3	16.41%	$0	$0	$0	$0	49.5%	$2	$1	$3	9.20%	$0	$0	$0
242	Oct-88	$3	$1	$10	5.5%	$0	50.5%	$1	$0	$4	16.41%	$0	$0	$0	$0	49.5%	$1	$0	$4	9.20%	$0	$0	$0
243	Nov-88	$2	$3	$8	28.0%	$0	50.5%	$1	$2	$5	16.41%	$0	$0	$0	$0	49.5%	$1	$2	$5	9.20%	$0	$0	$0
244	Dec-88	$1	$1	$9	9.9%	$0	50.5%	$1	$0	$4	16.41%	$0	$0	$0	$0	49.5%	$1	$0	$4	9.20%	$0	$0	$0
245	Jan-89	$1	$1	$9	6.5%	$0	50.5%	$1	$0	$4	16.18%	$0	$0	$0	$0	49.5%	$1	$0	$4	9.23%	$0	$0	$0
246	Feb-89	$1	$1	$9	7.6%	$0	50.5%	$0	$0	$5	16.18%	$0	$0	$0	$0	49.5%	$0	$0	$5	9.23%	$0	$0	$0
247	Mar-89	$2	$1	$10	6.1%	$0	50.5%	$1	$0	$5	16.18%	$0	$0	$0	$0	49.5%	$1	$0	$4	9.23%	$0	$0	$0
248	Apr-89	$3	$2	$11	16.5%	$0	50.5%	$2	$1	$5	16.18%	$0	$0	$0	$0	49.5%	$1	$1	$5	9.23%	$0	$0	$0
249	May-89	$6	$8	$9	47.0%	$0	50.5%	$3	$4	$6	16.18%	$0	$0	$0	$0	49.5%	$3	$4	$5	9.23%	$0	$0	$0
250	Jun-89	$5	$3	$11	18.5%	$0	50.5%	$2	$1	$5	16.18%	$0	$0	$0	$0	49.5%	$2	$1	$5	9.23%	$0	$0	$0
251	Jul-89	$4	$2	$14	10.9%	$0	50.5%	$2	$1	$6	16.18%	$0	$0	$0	$0	49.5%	$2	$1	$6	9.23%	$0	$0	$0
252	Aug-89	$7	$5	$15	26.8%	$0	50.5%	$3	$3	$7	16.18%	$0	$0	$0	$0	49.5%	$3	$3	$7	9.23%	$0	$0	$0
253	Sep-89	$7	$1	$21	5.3%	$0	50.5%	$4	$1	$7	16.18%	$0	$0	$0	$0	49.5%	$4	$1	$7	9.23%	$0	$0	$0
254	Oct-89	$8	$5	$24	16.4%	$0	50.5%	$4	$2	$10	16.18%	$0	$0	$0	$0	49.5%	$4	$2	$10	9.23%	$0	$0	$0
255	Nov-89	$4	$1	$27	3.0%	$0	50.5%	$2	$0	$12	16.18%	$0	$0	$1	$0	49.5%	$2	$0	$12	9.23%	$0	$0	$0
256	Dec-89	$7	$15	$20	43.1%	$0	50.5%	$4	$7	$14	16.18%	$0	$0	$1	$0	49.5%	$3	$7	$14	9.23%	$0	$0	$0
257	Jan-90	$5	$3	$21	13.8%	$0	50.5%	$2	$2	$10	16.34%	$0	$0	$1	$0	49.5%	$2	$2	$10	9.35%	$0	$0	$0
258	Feb-90	$5	$2	$25	5.9%	$0	50.5%	$3	$1	$11	16.34%	$0	$0	$1	$0	49.5%	$3	$1	$10	9.35%	$0	$0	$0
259	Mar-90	$5	$1	$29	3.8%	$0	50.5%	$3	$1	$12	16.34%	$0	$0	$1	$0	49.5%	$3	$1	$12	9.35%	$0	$0	$0
260	Apr-90	$6	$1	$34	3.2%	$0	50.5%	$3	$1	$15	16.34%	$0	$0	$1	$0	49.5%	$3	$1	$14	9.35%	$0	$0	$1
261	May-90	$10	$4	$40	8.4%	$0	50.5%	$5	$2	$17	16.34%	$0	$0	$1	$0	49.5%	$5	$2	$17	9.35%	$0	$0	$1
262	Jun-90	$15	$5	$50	8.6%	$0	50.5%	$7	$2	$20	16.34%	$0	$0	$1	$0	49.5%	$7	$2	$20	9.35%	$0	$0	$1
263	Jul-90	$9	$7	$53	11.1%	$0	50.5%	$5	$3	$25	16.34%	$0	$0	$2	$0	49.5%	$5	$3	$25	9.35%	$0	$0	$1
264	Aug-90	$13	$4	$62	5.8%	$0	50.5%	$7	$2	$27	16.34%	$0	$0	$2	$0	49.5%	$7	$2	$26	9.35%	$0	$0	$1
265	Sep-90	$26	$18	$71	19.8%	$0	50.5%	$13	$9	$32	16.34%	$0	$0	$2	$0	49.5%	$13	$9	$31	9.35%	$0	$0	$1
266	Oct-90	$24	$3	$92	3.4%	$0	50.5%	$12	$2	$36	16.34%	$0	$0	$2	$0	49.5%	$12	$2	$35	9.35%	$0	$0	$1
267	Nov-90	$20	$20	$92	17.8%	$0	50.5%	$10	$10	$47	16.34%	$1	$0	$3	$0	49.5%	$10	$10	$46	9.35%	$0	$0	$1
268	Dec-90	$27	$25	$94	21.2%	$0	50.5%	$13	$13	$47	16.34%	$1	$1	$3	$0	49.5%	$13	$13	$46	9.35%	$0	$0	$1
269	Jan-91	$7	$9	$92	8.6%	$0	50.5%	$3	$4	$47	16.06%	$1	$0	$3	$0	49.5%	$3	$4	$46	9.37%	$0	$0	$2
270	Feb-91	$15	$3	$104	2.9%	$0	50.5%	$8	$2	$46	16.06%	$1	$0	$4	$0	49.5%	$7	$2	$45	9.37%	$0	$0	$2
271	Mar-91	$23	$42	$85	33.3%	$0	50.5%	$12	$21	$52	16.06%	$1	$1	$3	$0	49.5%	$12	$21	$51	9.37%	$0	$1	$2
272	Apr-91	$15	$2	$98	1.7%	$0	50.5%	$7	$1	$43	16.06%	$1	$0	$4	$0	49.5%	$7	$1	$42	9.37%	$0	$0	$2
273	May-91	$14	$3	$108	2.8%	$0	50.5%	$7	$2	$49	16.06%	$1	$0	$4	$0	49.5%	$7	$2	$48	9.37%	$0	$0	$2
274	Jun-91	$14	$2	$120	1.6%	$0	50.5%	$7	$1	$55	16.06%	$1	$0	$5	$0	49.5%	$7	$1	$54	9.37%	$0	$0	$3
275	Jul-91	$15	$11	$124	8.3%	$0	50.5%	$8	$6	$61	16.06%	$1	$0	$5	$0	49.5%	$8	$6	$59	9.37%	$0	$0	$3
276	Aug-91	($2)	$10	$112	8.3%	$0	50.5%	($1)	$5	$63	16.06%	$1	$0	$6	$0	49.5%	($1)	$5	$61	9.37%	$0	$0	$3
277	Sep-91	($67)	$3	$42	6.0%	$0	50.5%	($34)	$1	$57	16.06%	$1	$0	$6	$0	49.5%	($33)	$1	$56	9.37%	$0	$0	$3
278	Oct-91	$9	$5	$45	10.7%	$0	50.5%	$4	$3	$21	16.06%	$0	$1	$6	$0	49.5%	$4	$3	$21	9.37%	$0	$0	$3
279	Nov-91	$13	$2	$55	4.3%	$0	50.5%	$6	$1	$23	16.06%	$0	$0	$6	$0	49.5%	$6	$1	$22	9.37%	$0	$0	$3
280	Dec-91	$1	$25	$32	43.7%	$0	50.5%	$0	$12	$28	16.06%	$0	$3	$4	$0	49.5%	$0	$12	$27	9.37%	$0	$1	$2
281	Jan-92	$5	$8	$28	23.1%	$0	50.5%	$3	$4	$16	15.61%	$0	$1	$3	$0	49.5%	$2	$4	$16	9.37%	$0	$0	$2
282	Feb-92	$6	$5	$29	14.0%	$0	50.5%	$3	$2	$14	15.61%	$0	$0	$3	$0	49.5%	$3	$2	$14	9.37%	$0	$0	$2
283	Mar-92	$3	$7	$25	21.0%	$0	50.5%	$2	$3	$15	15.61%	$0	$1	$2	$0	49.5%	$2	$3	$14	9.37%	$0	$0	$1
284	Apr-92	$8	$5	$28	13.9%	$0	50.5%	$4	$2	$13	15.61%	$0	$0	$2	$0	49.5%	$4	$2	$13	9.37%	$0	$0	$1
285	May-92	$4	$2	$31	6.2%	$0	50.5%	$2	$1	$14	15.61%	$0	$0	$2	$0	49.5%	$2	$1	$14	9.37%	$0	$0	$1

AFUDC

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Ln. Col. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
286	Jun-92	$7	$1	$36	3.6%	$0	50.5%	$3	$1	$16	15.61%	$0	$0	$2	$0	49.5%	$3	$1	$15	9.37%	$0	$0	$1
287	Jul-92	$6	$6	$35	15.1%	$0	50.5%	$3	$3	$18	15.61%	$0	$0	$2	$0	49.5%	$3	$3	$18	9.37%	$0	$0	$1
288	Aug-92	$3	$3	$36	8.6%	$0	50.5%	$2	$2	$18	15.61%	$0	$0	$2	$0	49.5%	$2	$2	$18	9.37%	$0	$0	$1
289	Sep-92	$13	$5	$44	9.6%	$0	50.5%	$6	$2	$18	15.61%	$0	$0	$2	$0	49.5%	$6	$2	$18	9.37%	$0	$0	$1
290	Oct-92	$7	$7	$43	14.6%	$0	50.5%	$3	$4	$22	15.61%	$0	$0	$2	$0	49.5%	$3	$4	$22	9.37%	$0	$0	$1
291	Nov-92	$6	$4	$45	8.5%	$0	50.5%	$3	$2	$22	15.61%	$0	$0	$2	$0	49.5%	$3	$2	$21	9.37%	$0	$0	$1
292	Dec-92	$3	$15	$33	30.6%	$0	50.5%	$2	$7	$23	15.61%	$0	$1	$2	$0	49.5%	$1	$7	$22	9.37%	$0	$0	$1
293	Jan-93	$2	$6	$29	18.0%	$0	50.5%	$1	$3	$17	14.01%	$0	$0	$2	$0	49.5%	$1	$3	$17	9.30%	$0	$0	$1
294	Feb-93	$3	$2	$29	6.8%	$0	50.5%	$1	$1	$15	14.01%	$0	$0	$2	$0	49.5%	$1	$1	$14	9.30%	$0	$0	$1
295	Mar-93	$5	$4	$31	10.5%	$0	50.5%	$3	$2	$15	14.01%	$0	$0	$2	$0	49.5%	$3	$2	$15	9.30%	$0	$0	$1
296	Apr-93	$5	$5	$32	12.5%	$0	50.5%	$3	$2	$16	14.01%	$0	$0	$2	$0	49.5%	$3	$2	$15	9.30%	$0	$0	$1
297	May-93	$2	$2	$31	6.8%	$0	50.5%	$1	$1	$16	14.01%	$0	$0	$2	$0	49.5%	$1	$1	$16	9.30%	$0	$0	$1
298	Jun-93	$4	$6	$29	17.4%	$0	50.5%	$2	$3	$16	14.01%	$0	$0	$2	$0	49.5%	$2	$3	$16	9.30%	$0	$0	$1
299	Jul-93	$1	$8	$22	25.8%	$0	50.5%	$0	$4	$15	14.01%	$0	$0	$1	$0	49.5%	$0	$4	$15	9.30%	$0	$0	$1
300	Aug-93	$2	$1	$24	2.9%	$0	50.5%	$1	$0	$11	14.01%	$0	$0	$2	$0	49.5%	$1	$0	$11	9.30%	$0	$0	$1
301	Sep-93	$1	$3	$22	13.5%	$0	50.5%	$1	$2	$12	14.01%	$0	$0	$1	$0	49.5%	$1	$2	$12	9.30%	$0	$0	$1
302	Oct-93	$3	$2	$22	8.6%	$0	50.5%	$1	$1	$11	14.01%	$0	$0	$1	$0	49.5%	$1	$1	$11	9.30%	$0	$0	$1
303	Nov-93	$4	$2	$24	8.6%	$0	50.5%	$2	$1	$11	14.01%	$0	$0	$1	$0	49.5%	$2	$1	$11	9.30%	$0	$0	$1
304	Dec-93	$7	$6	$24	21.3%	$0	50.5%	$3	$3	$12	14.01%	$0	$0	$1	$0	49.5%	$3	$3	$12	9.30%	$0	$0	$1
305	Jan-94	$3	$2	$25	6.3%	$0	50.5%	$1	$1	$12	14.68%	$0	$0	$1	$0	49.5%	$1	$1	$12	9.41%	$0	$0	$1
306	Feb-94	$2	$1	$26	4.1%	$0	50.5%	$1	$1	$13	14.68%	$0	$0	$1	$0	49.5%	$1	$1	$12	9.41%	$0	$0	$1
307	Mar-94	$5	$1	$30	2.2%	$0	50.5%	$2	$0	$13	14.68%	$0	$0	$2	$0	49.5%	$2	$0	$13	9.41%	$0	$0	$1
308	Apr-94	$4	$2	$31	6.8%	$0	50.5%	$2	$1	$15	14.68%	$0	$0	$2	$0	49.5%	$2	$1	$15	9.41%	$0	$0	$1
309	May-94	$5	$3	$34	6.9%	$0	50.5%	$3	$1	$16	14.68%	$0	$0	$2	$0	49.5%	$3	$1	$15	9.41%	$0	$0	$1
310	Jun-94	$4	$3	$35	8.2%	$0	50.5%	$2	$2	$17	14.68%	$0	$0	$2	$0	49.5%	$2	$2	$17	9.41%	$0	$0	$1
311	Jul-94	$5	$1	$38	3.4%	$0	50.5%	$2	$1	$18	14.68%	$0	$0	$2	$0	49.5%	$2	$1	$17	9.41%	$0	$0	$1
312	Aug-94	$5	$1	$42	1.4%	$0	50.5%	$2	$0	$19	14.68%	$0	$0	$2	$0	49.5%	$2	$0	$19	9.41%	$0	$0	$1
313	Sep-94	$6	$1	$47	2.8%	$0	50.5%	$3	$1	$21	14.68%	$0	$0	$2	$0	49.5%	$3	$1	$21	9.41%	$0	$0	$1
314	Oct-94	$9	$1	$55	2.1%	$0	50.5%	$5	$1	$24	14.68%	$0	$0	$3	$0	49.5%	$5	$1	$23	9.41%	$0	$0	$2
315	Nov-94	$1	$0	$56	0.5%	$0	50.5%	$1	$0	$28	14.68%	$0	$0	$3	$0	49.5%	$1	$0	$27	9.41%	$0	$0	$2
316	Dec-94	$5	$31	$31	49.9%	$0	50.5%	$3	$15	$28	14.68%	$0	$1	$2	$0	49.5%	$3	$15	$28	9.41%	$0	$1	$1
317	Jan-95	$3	$7	$27	20.6%	$0	50.5%	$2	$4	$16	14.73%	$0	$0	$2	$0	49.5%	$2	$3	$15	9.38%	$0	$0	$1
318	Feb-95	$5	$1	$31	2.8%	$0	50.5%	$3	$0	$14	14.73%	$0	$0	$2	$0	49.5%	$3	$0	$13	9.38%	$0	$0	$1
319	Mar-95	$4	$0	$35	0.2%	$0	50.5%	$2	$0	$16	14.73%	$0	$0	$2	$0	49.5%	$2	$0	$15	9.38%	$0	$0	$1
320	Apr-95	$5	$0	$40	0.6%	$0	50.5%	$3	$0	$18	14.73%	$0	$0	$2	$0	49.5%	$3	$0	$17	9.38%	$0	$0	$1
321	May-95	$3	$0	$43	0.1%	$0	50.5%	$1	$0	$20	14.73%	$0	$0	$2	$0	49.5%	$1	$0	$20	9.38%	$0	$0	$2
322	Jun-95	$4	$5	$41	10.3%	$0	50.5%	$2	$2	$22	14.73%	$0	$0	$2	$0	49.5%	$2	$2	$21	9.38%	$0	$0	$2
323	Jul-95	$4	$0	$45	0.8%	$0	50.5%	$2	$0	$21	14.73%	$0	$0	$3	$0	49.5%	$2	$0	$20	9.38%	$0	$0	$2
324	Aug-95	$5	$1	$50	1.3%	$0	50.5%	$3	$0	$23	14.73%	$0	$0	$3	$0	49.5%	$3	$0	$22	9.38%	$0	$0	$2
325	Sep-95	$4	$0	$54	0.2%	$0	50.5%	$2	$0	$25	14.73%	$0	$0	$3	$0	49.5%	$2	$0	$25	9.38%	$0	$0	$2
326	Oct-95	$5	$3	$57	4.5%	$0	50.5%	$3	$1	$27	14.73%	$0	$0	$3	$0	49.5%	$3	$1	$27	9.38%	$0	$0	$2
327	Nov-95	$4	$1	$59	2.4%	$0	50.5%	$2	$1	$29	14.73%	$0	$0	$4	$0	49.5%	$2	$1	$28	9.38%	$0	$0	$2
328	Dec-95	$12	$21	$51	28.9%	$0	50.5%	$6	$10	$30	14.73%	$0	$1	$3	$0	49.5%	$6	$10	$29	9.38%	$0	$1	$2
329	Jan-96	$5	$10	$46	17.8%	$0	50.5%	$3	$5	$26	14.27%	$0	$1	$3	$0	49.5%	$3	$5	$25	9.24%	$0	$0	$2
330	Feb-96	$3	$0	$49	0.7%	$0	50.5%	$2	$0	$23	14.27%	$0	$0	$3	$0	49.5%	$2	$0	$23	9.24%	$0	$0	$2
331	Mar-96	$4	$0	$53	0.4%	$0	50.5%	$2	$0	$25	14.27%	$0	$0	$3	$0	49.5%	$2	$0	$24	9.24%	$0	$0	$2
332	Apr-96	$3	$1	$56	1.3%	$0	50.5%	$2	$0	$27	14.27%	$0	$0	$4	$0	49.5%	$2	$0	$26	9.24%	$0	$0	$2
333	May-96	$4	$2	$57	4.1%	$0	50.5%	$2	$1	$28	14.27%	$0	$0	$4	$0	49.5%	$2	$1	$28	9.24%	$0	$0	$2
334	Jun-96	$8	$3	$62	4.6%	$0	50.5%	$4	$2	$29	14.27%	$0	$0	$4	$0	49.5%	$4	$1	$28	9.24%	$0	$0	$2
335	Jul-96	($3)	$0	$60	0.1%	$0	50.5%	($1)	$0	$32	14.27%	$0	$0	$4	$0	49.5%	($1)	$0	$31	9.24%	$0	$0	$3
336	Aug-96	$6	$0	$65	0.3%	$0	50.5%	$3	$0	$30	14.27%	$0	$0	$5	$0	49.5%	$3	$0	$30	9.24%	$0	$0	$3
337	Sep-96	$7	$1	$71	1.7%	$0	50.5%	$4	$1	$33	14.27%	$0	$0	$5	$0	49.5%	$4	$1	$32	9.24%	$0	$0	$3
338	Oct-96	$5	$0	$75	0.6%	$0	50.5%	$2	$0	$36	14.27%	$0	$0	$5	$0	49.5%	$2	$0	$35	9.24%	$0	$0	$3
339	Nov-96	$5	$0	$80	0.0%	$0	50.5%	$2	$0	$38	14.27%	$0	$0	$6	$0	49.5%	$2	$0	$37	9.24%	$0	$0	$4
340	Dec-96	$5	$11	$74	13.0%	$0	50.5%	$3	$6	$40	14.27%	$0	$1	$6	$0	49.5%	$3	$5	$40	9.24%	$0	$0	$3

SOURCE:

AFUDC

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Ln. Col. No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Additions	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Additions	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

Column 1 Time in months
Column 2 Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 3 Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 4 Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 5 Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 6 Sum (prior six months Col 12) - sumproduct(prior six months Col 12 * prior six months Col 5) [A]
Column 7 Exhibit 11, col d
Column 8 Col 2 * Col 7
Column 9 (cum Col 8 - cum prior Col 9 + cum Col 6) * Col 5
Column 10 prior (Col 8 - Col 9 + Col 10) + Col 6
Column 11 Exhibit 20, col b
Column 12 (Col 10 * Col 11)/12
Column 13 prior Col 14 * Col 5 + [B]
Column 14 prior Col 14 + Col 12 - Col 13
Column 15 Sum (prior six months Col 21) - sumproduct(prior six months Col 21 * prior six months Col 5) [A]
Column 16 1.0 - Col 7
Column 17 Col 2 * Col 16
Column 18 (cum Col 17 - cum prior Col 18 + cum Col 15) * Col 5
Column 19 prior (Col 17 - Col 18 + Col 19) + Col 15
Column 20 Exhibit 15, Schedule 3, col i
Column 21 (Col 19 * Col 20) / 12
Column 22 prior Col 23 * Col 5 +[C]
Column 23 prior Col 23 + Col 21 - Col 22

[A] for the months January and July prior to June of 1977, otherwise equal to 0
[B] if Col 5 = 100%, +Col 11, otherwise 0
[C] if Col 5 = 100%, +Col 19, otherwise 0

Amortization of AFUDC

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	Starting Balances	1977	1978	1979	1980	1981	1982
1	Amortization Factor - Net Basis	Sch. 1 Ln.18		0.00%	0.00%	2.57%	5.70%	4.88%	7.24%
2	Net Equity AFUDC - BOY	Prior Ln. 5		$1,491	$1,864	$2,005	$1,957	$1,853	$1,773
3	Equity Under-recovery to Capitalize	Sch 1, Ln. 13		$373	$133				
4	Capitalization of Under-recovery and AFUDC Additions	Ln. 3 + Sch. 4 Col. 13	$1,491	$374	$140	$4	$8	$10	$11
5	Current Period Equity AFUDC Amortization	(Ln.2 + Ln.3) * Ln.1		$0	$0	$52	$112	$91	$129
6	Net Equity AFUDC - EOY	Lns.(2+3-4)	$1,491	$1,864	$2,005	$1,957	$1,853	$1,773	$1,655
7	Accumulated Equity AFUDC Additions	Ln. 3 + Prior Ln. 6	$1,491	$1,864	$2,005	$2,008	$2,017	$2,027	$2,038
8	Accumulated Equity AFUDC Amortization	Ln. 4 + Prior Ln. 7		$0	$0	$52	$164	$254	$384
9	Net Debt AFUDC - BOY	Prior Ln. 11		$434	$434	$439	$430	$409	$394
10	Debt AFUDC Additions	Sch. 3 Col. 22	$434	$1	$4	$2	$4	$5	$5
11	Current Period Debt AFUDC Amortization	(Ln. 8 + Ln. 9) * Ln.1		$0	$0	$11	$25	$20	$29
12	Net Debt AFUDC - EOY	Lns. (8 + 9 - 10)	$434	$434	$439	$430	$409	$394	$370
13	Accumulated Debt AFUDC Additions	Ln. 9 + Prior Ln. 12	$434	$434	$439	$441	$445	$450	$455
14	Accumulated Debt AFUDC Amortization	Ln. 10 + Prior Ln. 13		$0	$0	$11	$36	$56	$85

Amortization of AFUDC

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1983	1984	1985	1986	1987	1988	1989
1	Amortization Factor - Net Basis	Sch. 1 Ln.18	12.52%	17.66%	19.49%	25.52%	39.12%	58.64%	100.00%
2	Net Equity AFUDC - BOY	Prior Ln. 5	$1,655	$1,454	$1,200	$967	$720	$439	$182
3	Equity Under-recovery to Capitalize	Sch 1, Ln. 13							
4	Capitalization of Under-recovery and AFUDC Additions	Ln. 3 + Sch. 4 Col. 13	$7	$4	$1	$0	$1	$0	$1
5	Current Period Equity AFUDC Amortization	(Ln.2 + Ln.3) * Ln.1	$208	$257	$234	$247	$282	$257	$182
6	Net Equity AFUDC - EOY	Lns.(2+3-4)	$1,454	$1,200	$967	$720	$439	$182	$0
7	Accumulated Equity AFUDC Additions	Ln. 3 + Prior Ln. 6	$2,045	$2,049	$2,050	$2,050	$2,051	$2,051	$2,052
8	Accumulated Equity AFUDC Amortization	Ln. 4 + Prior Ln. 7	$592	$849	$1,083	$1,330	$1,612	$1,869	$2,052
9	Net Debt AFUDC - BOY	Prior Ln. 11	$370	$326	$270	$218	$162	$99	$41
10	Debt AFUDC Additions	Sch. 3 Col. 22	$3	$2	$0	$0	$0	$0	$0
11	Current Period Debt AFUDC Amortization	(Ln. 8 + Ln. 9) * Ln.1	$47	$58	$53	$56	$64	$58	$41
12	Net Debt AFUDC - EOY	Lns. (8 + 9 - 10)	$326	$270	$218	$162	$99	$41	$0
13	Accumulated Debt AFUDC Additions	Ln. 9 + Prior Ln. 12	$458	$460	$460	$460	$461	$461	$461
14	Accumulated Debt AFUDC Amortization	Ln. 10 + Prior Ln. 13	$132	$190	$242	$298	$362	$420	$461

Amortization of AFUDC

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1990	1991	1992	1993	1994	1995	1996
1	Amortization Factor - Net Basis	Sch. 1 Ln.18	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
2	Net Equity AFUDC - BOY	Prior Ln. 5	$0	$0	$0	$0	$0	$0	$0
3	Equity Under-recovery to Capitalize	Sch 1, Ln. 13							
4	Capitalization of Under-recovery and AFUDC Additions	Ln. 3 + Sch. 4 Col. 13	$2	$6	$4	$3	$2	$2	$2
5	Current Period Equity AFUDC Amortization	(Ln.2 + Ln.3) * Ln.1	$2	$6	$4	$3	$2	$2	$2
6	Net Equity AFUDC - EOY	Lns.(2+3-4)	$0	$0	$0	$0	$0	$0	$0
7	Accumulated Equity AFUDC Additions	Ln. 3 + Prior Ln. 6	$2,054	$2,060	$2,064	$2,067	$2,069	$2,071	$2,073
8	Accumulated Equity AFUDC Amortization	Ln. 4 + Prior Ln. 7	$2,054	$2,060	$2,064	$2,067	$2,069	$2,071	$2,073
9	Net Debt AFUDC - BOY	Prior Ln. 11	$0	$0	$0	$0	$0	$0	$0
10	Debt AFUDC Additions	Sch. 3 Col. 22	$1	$4	$3	$2	$1	$1	$1
11	Current Period Debt AFUDC Amortization	(Ln. 8 + Ln. 9) * Ln.1	$1	$4	$3	$2	$1	$1	$1
12	Net Debt AFUDC - EOY	Lns. (8 + 9 - 10)	$0	$0	$0	$0	$0	$0	$0
13	Accumulated Debt AFUDC Additions	Ln. 9 + Prior Ln. 12	$462	$466	$469	$470	$471	$473	$474
14	Accumulated Debt AFUDC Amortization	Ln. 10 + Prior Ln. 13	$462	$466	$469	$470	$471	$473	$474

Investment Remaining to be Recovered
(Net Carrier Property)

Appropriate Rate of Return and Capital Structure In Unrecovered
Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	Starting Balances	1977	1978	1979	1980	1981	1982	1983	1984	1985
1	Gross Carrier Property - BOY 1/	Prior Ln. 8	$7,741	$9,665	$10,216	$10,517	$10,607	$10,732	$10,794	$10,850	$10,901	$10,929
2	Gross Carrier Property Additions	Sch. 3 Ln. 8		$1,422	$98	$100	$106	$49	$65	$70	$38	$26
3	Less Capitalized Interest	Sch 12, Ln 10 - Prior Ln 10		$1,216	$0	$0	$0	($0)	$0	$0	($1)	($0)
4	Acquisitions & Retirements of CPIS	Sch 12, Lns. (4 + 5)		($29)	($7)	($12)	$5	($2)	($12)	($24)	($13)	($14)
5	Adjustments to CPIS	Sch 12, Ln. 6		($0)	$65	($4)	$1	($1)	($13)	($4)	($4)	$0
6	Equity AFUDC Additions	Sch. 5 Ln. 4	$1,491	$374	$140	$4	$8	$10	$11	$7	$4	$1
7	Debt AFUDC Additions	Sch. 5 Ln. 10	$434	$1	$4	$2	$4	$5	$5	$3	$2	$0
8	Gross Carrier Property - EOY	Lns (1+2-3+4+5+6+7)	$9,665	$10,216	$10,517	$10,607	$10,732	$10,794	$10,850	$10,901	$10,929	$10,942
9	Accumulated Recovery of Investment after Form 6 Retirements	Sch. 3 Ln. 20		$0	$0	$202	$638	$1,006	$1,515	$2,346	$3,383	$4,324
10	Accumulated Equity AFUDC Amort.	Sch. 5 Ln. 7		$0	$0	$52	$164	$254	$384	$592	$849	$1,083
11	Accumulated Debt AFUDC Amort.	Sch. 5 Ln. 13		$0	$0	$11	$36	$56	$85	$132	$190	$242
12	CWIP Balance - EOY	Sch. 12, Ln. 8		$42	$24	$28	$29	$29	$33	$15	$4	$1
13	Net Carrier Property	Lns (8 - 9 - 10 - 11 - 12)	$9,665	$10,175	$10,493	$10,314	$9,865	$9,448	$8,832	$7,816	$6,503	$5,292
14	Working Capital	Sch. 12, Ln. 12		$57	$29	$36	$34	$39	$39	$29	$33	$34
15	ADIT	Sch. 9 Ln. 20		$252	$702	$992	$1,131	$1,298	$1,392	$1,295	$1,069	$867
16	Rate Base	Lns (13+14-15)	$9,665	$9,980	$9,821	$9,358	$8,768	$8,189	$7,479	$6,550	$5,466	$4,458
17	Average Rate Base	(Ln.16+Prior Ln.16)/2.0		$9,823	$9,901	$9,590	$9,063	$8,478	$7,834	$7,015	$6,008	$4,962

1/Starting Balance is from Sch. 3, Ln. 12

Investment Remaining to be Recovered
(Net Carrier Property)

Appropriate Rate of Return and Capital Structure In Unrecovered
Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
1	Gross Carrier Property - BOY 1/	Prior Ln. 8	$10,942	$10,961	$10,977	$10,982	$11,025	$11,180	$11,277	$11,339	$11,369	$11,413
2	Gross Carrier Property Additions	Sch. 3 Ln. 8	$21	$32	$17	$48	$156	$141	$71	$36	$51	$56
3	Less Capitalized Interest	Sch 12, Ln 10 - Prior Ln 10	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)
4	Acquisitions & Retirements of CPIS	Sch 12, Lns. (4 + 5)	($3)	($17)	($13)	($5)	($4)	($53)	($16)	($11)	($10)	($4)
5	Adjustments to CPIS	Sch 12, Ln. 6	$0	$0	$0	($0)	$0	($0)	$0	($0)	$0	$0
6	Equity AFUDC Additions	Sch. 5 Ln. 4	$0	$1	$0	$1	$2	$6	$4	$3	$2	$2
7	Debt AFUDC Additions	Sch. 5 Ln. 10	$0	$0	$0	$0	$1	$4	$3	$2	$1	$1
8	Gross Carrier Property - EOY	Lns (1+2-3+4+5+6+7)	$10,961	$10,977	$10,982	$11,025	$11,180	$11,277	$11,339	$11,369	$11,413	$11,469
9	Accumulated Recovery of Investment after Form 6 Retirements	Sch. 3 Ln. 20	$5,332	$6,469	$7,525	$8,365	$8,548	$8,644	$8,741	$8,781	$8,816	$8,853
10	Accumulated Equity AFUDC Amort.	Sch. 5 Ln. 7	$1,330	$1,612	$1,869	$2,052	$2,054	$2,060	$2,064	$2,067	$2,069	$2,071
11	Accumulated Debt AFUDC Amort.	Sch. 5 Ln. 13	$298	$362	$420	$461	$462	$466	$469	$470	$471	$473
12	CWIP Balance - EOY	Sch. 12, Ln. 8	$2	$2	$9	$20	$94	$32	$34	$24	$31	$51
13	Net Carrier Property	Lns (8 - 9 - 10 - 11 - 12)	$3,999	$2,533	$1,158	$128	$21	$75	$32	$27	$26	$21
14	Working Capital	Sch. 12, Ln. 12	$29	$33	$36	$36	$39	$59	$54	$44	$43	$34
15	ADIT	Sch. 9 Ln. 20	$604	$245	($79)	($317)	($265)	($218)	($181)	($144)	($121)	($119)
16	Rate Base	Lns (13+14-15)	$3,423	$2,321	$1,274	$481	$325	$351	$267	$215	$190	$174
17	Average Rate Base	(Ln.16+Prior Ln.16)/2.0	$3,941	$2,872	$1,798	$878	$403	$338	$309	$241	$203	$182

1/Starting Balance is from Sch. 3, Ln. 12

Investment Remaining to be Recovered
(Net Carrier Property)

Appropriate Rate of Return and Capital Structure In Unrecovered
Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1996
1	Gross Carrier Property - BOY 1/	Prior Ln. 8	$11,469
2	Gross Carrier Property Additions	Sch. 3 Ln. 8	$52
3	Less Capitalized Interest	Sch 12, Ln 10 - Prior Ln 10	($9)
4	Acquisitions & Retirements of CPIS	Sch 12, Lns. (4 + 5)	($34)
5	Adjustments to CPIS	Sch 12, Ln. 6	$0
6	Equity AFUDC Additions	Sch. 5 Ln. 4	$2
7	Debt AFUDC Additions	Sch. 5 Ln. 10	$1
8	Gross Carrier Property - EOY	Lns (1+2-3+4+5+6+7)	$11,498
9	Accumulated Recovery of Investment after Form 6 Retirements	Sch. 3 Ln. 20	$8,778
10	Accumulated Equity AFUDC Amort.	Sch. 5 Ln. 7	$2,073
11	Accumulated Debt AFUDC Amort.	Sch. 5 Ln. 13	$474
12	CWIP Balance - EOY	Sch. 12, Ln. 8	$74
13	Net Carrier Property	Lns (8 - 9 - 10 - 11 - 12)	$99
14	Working Capital	Sch. 12, Ln. 12	$36
15	ADIT	Sch. 9 Ln. 20	($107)
16	Rate Base	Lns (13+14-15)	$242
17	Average Rate Base	(Ln.16+Prior Ln.16)/2.0	$208

1/Starting Balance is from Sch. 3, Ln. 12

Unrecovered Investment, Corrected, with Right Inputs Exhibit 6

State Tax Depreciation Sch. 7

(millions $)

	Year	1	2	3	4	5	6	7	8	9	10	11	12
		1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Depreciation Factors - (1977)		5.71%	4.00%	4.00%	4.00%	4.00%	10.22%	9.61%	9.00%	8.38%	7.77%	7.15%	6.54%
Depreciation Factors - (1978)		2.00%	4.00%	4.00%	4.00%	10.75%	10.14%	9.52%	8.91%	8.29%	7.68%	7.06%	6.45%
Depreciation Factors - (1979)		2.00%	4.00%	4.00%	10.84%	10.23%	9.61%	9.00%	8.39%	7.77%	7.16%	6.54%	5.93%
Depreciation Factors - (1980)		2.00%	4.00%	10.87%	10.26%	9.65%	9.03%	8.42%	7.80%	7.19%	6.58%	5.96%	5.35%
Depreciation Factors - (1981)		2.00%	11.15%	10.20%	9.58%	8.97%	8.35%	7.74%	7.13%	6.51%	5.90%	5.28%	4.30%
Depreciation Factors - (1982-present)		5.71%	10.78%	9.82%	9.21%	8.60%	7.98%	7.37%	6.75%	6.14%	5.53%	4.91%	4.30%
Year		Property Additions [a] Sch 12 Lns. 3 (1+2)[1]	AFUDC Additions [b] Sch. 3 Col. 22	Tax Basis for Depreciation [d] [a] + [b]									
1977	1	$7,889	$434	$8,323	$476	$333	$333	$333	$333	$851	$800	$749	$698	$646	$595	$544
1978	2	$112	$4	$117	$0	$2	$5	$5	$5	$13	$12	$11	$10	$10	$9	$8
1979	3	$97	$2	$99	$0	$0	$2	$4	$4	$11	$10	$9	$9	$8	$8	$7
1980	4	$123	$4	$128	$0	$0	$0	$3	$5	$14	$13	$12	$12	$11	$10	$9
1981	5	$49	$5	$54	$0	$0	$0	$0	$1	$6	$6	$5	$5	$5	$4	$4
1982	6	$60	$5	$65	$0	$0	$0	$0	$0	$4	$7	$6	$6	$6	$5	$5
1983	7	$84	$3	$87	$0	$0	$0	$0	$0	$0	$5	$9	$9	$8	$8	$7
1984	8	$51	$2	$53	$0	$0	$0	$0	$0	$0	$0	$3	$6	$5	$5	$5
1985	9	$29	$0	$29	$0	$0	$0	$0	$0	$0	$0	$0	$2	$3	$3	$3
1986	10	$20	$0	$20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1	$2	$2
1987	11	$33	$0	$33	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2	$4
1988	12	$10	$0	$10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1
1989	13	$37	$0	$37	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1990	14	$81	$1	$82	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1991	15	$203	$4	$206	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1992	16	$69	$3	$72	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1993	17	$46	$2	$47	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1994	18	$43	$1	$45	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1995	19	$36	$1	$37	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1996	20	$29	$1	$30	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total State Tax Depreciation					$476	$335	$340	$344	$348	$898	$852	$806	$755	$703	$651	$598

[1] For 1977, Sch. 12, Lns 3 - (1+2+10)

Unrecovered Investment, Corrected, with Right Inputs Exhibit 6

State Tax Depreciation Sch. 7

(millions $)

				Year	**13** 1989	**14** 1990	**15** 1991	**16** 1992	**17** 1993	**18** 1994	**19** 1995	**20** 1996
Depreciation Factors - (1977)					5.93%	5.31%	4.70%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1978)					5.84%	5.22%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1979)					5.32%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1980)					3.68%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1981)					3.68%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1982-present)					3.68%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Year		Property Additions [a] Sch 12 Lns. 3 (1+2)[1]	AFUDC Additions [b] Sch. 3 Col. 22	Tax Basis for Depreciation [d] [a] + [b]								
1977	1	$7,889	$434	$8,323	$493	$442	$391	$153	$102	$51	$0	$0
1978	2	$112	$4	$117	$8	$7	$6	$3	$2	$1	$1	$0
1979	3	$97	$2	$99	$6	$6	$5	$3	$2	$2	$1	$1
1980	4	$123	$4	$128	$8	$8	$7	$5	$4	$3	$2	$2
1981	5	$49	$5	$54	$4	$3	$3	$2	$2	$2	$1	$1
1982	6	$60	$5	$65	$4	$4	$4	$3	$3	$2	$2	$2
1983	7	$84	$3	$87	$6	$6	$5	$5	$4	$4	$3	$3
1984	8	$51	$2	$53	$4	$4	$4	$3	$3	$3	$2	$2
1985	9	$29	$0	$29	$3	$2	$2	$2	$2	$2	$1	$1
1986	10	$20	$0	$20	$2	$2	$2	$1	$1	$1	$1	$1
1987	11	$33	$0	$33	$3	$3	$3	$3	$2	$2	$2	$2
1988	12	$10	$0	$10	$1	$1	$1	$1	$1	$1	$1	$1
1989	13	$37	$0	$37	$2	$4	$4	$3	$3	$3	$3	$3
1990	14	$81	$1	$82	$0	$5	$9	$8	$8	$7	$7	$6
1991	15	$203	$4	$206	$0	$0	$12	$22	$20	$19	$18	$16
1992	16	$69	$3	$72	$0	$0	$0	$4	$8	$7	$7	$6
1993	17	$46	$2	$47	$0	$0	$0	$0	$3	$5	$5	$4
1994	18	$43	$1	$45	$0	$0	$0	$0	$0	$3	$5	$4
1995	19	$36	$1	$37	$0	$0	$0	$0	$0	$0	$2	$4
1996	20	$29	$1	$30	$0	$0	$0	$0	$0	$0	$0	$2
Total State Tax Depreciation					$545	$496	$456	$222	$171	$117	$64	$60

[1] For 1977, Sch. 12, Lns 3 - (1+2+10)

Unrecovered Investment, Corrected, with Right Inputs Exhibit 6

Federal Tax Depreciation Sch. 8

(millions $)

					Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
						1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
						------	------	------	------	------	------	------	------	------	------	------	------
Depreciation Factors - (1977-1980)						5.71%	10.78%	9.82%	9.21%	8.60%	7.98%	7.37%	6.75%	6.14%	5.53%	4.91%	4.30%
Depreciation Factors - (1981-1986)						15.00%	22.00%	21.00%	21.00%	21.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1987-2000)						5.00%	9.50%	8.55%	7.70%	6.93%	6.23%	5.90%	5.90%	5.90%	5.90%	5.90%	5.90%
Year		Property Addition [a] Sch 12 Lns. 3 (1+2)[1]	AFUDC Addition [b] Sch. 3 Col. 22	TEFRA Adjustment [c] Sch. 10, Ln. 3	Tax Basis for Depreciation [d] [a] + [b] - [c]												
1977	1	$7,889	$434	$0	$8,323	$476	$897	$818	$767	$716	$664	$613	$562	$511	$460	$409	$358
1978	2	$112	$4	$0	$117	$0	$7	$13	$11	$11	$10	$9	$9	$8	$7	$6	$6
1979	3	$97	$2	$0	$99	$0	$0	$6	$11	$10	$9	$8	$8	$7	$7	$6	$5
1980	4	$123	$4	$0	$128	$0	$0	$0	$7	$14	$13	$12	$11	$10	$9	$9	$8
1981	5	$49	$5	$0	$54	$0	$0	$0	$0	$8	$12	$11	$11	$11	$0	$0	$0
1982	6	$60	$5	$0	$65	$0	$0	$0	$0	$0	$10	$14	$14	$14	$14	$0	$0
1983	7	$84	$3	$4	$83	$0	$0	$0	$0	$0	$0	$12	$18	$17	$17	$17	$0
1984	8	$51	$2	$3	$50	$0	$0	$0	$0	$0	$0	$0	$7	$11	$10	$10	$10
1985	9	$29	$0	$1	$28	$0	$0	$0	$0	$0	$0	$0	$0	$4	$6	$6	$6
1986	10	$20	$0	$0	$20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3	$4	$4
1987	11	$33	$0	$0	$33	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2	$3
1988	12	$10	$0	$0	$10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1
1989	13	$37	$0	$0	$37	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1990	14	$81	$1	$0	$82	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1991	15	$203	$4	$0	$206	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1992	16	$69	$3	$0	$72	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1993	17	$46	$2	$0	$47	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1994	18	$43	$1	$0	$45	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1995	19	$36	$1	$0	$37	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1996	20	$29	$1	$0	$30	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Federal Tax Depreciation						$476	$904	$836	$796	$758	$718	$681	$640	$594	$534	$470	$401

1 For 1977, Sch. 12, Lns 3 - (1+2+10)

Unrecovered Investment, Corrected, with Right Inputs Exhibit 6

Federal Tax Depreciation Sch. 8

(millions $)

					Year	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
						1989	1990	1991	1992	1993	1994	1995	1996
						---	---	---	---	---	---	---	---
Depreciation Factors - (1977-1980)						3.68%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1981-1986)						0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1987-2000)						5.90%	5.90%	5.90%	2.95%	0.00%	0.00%	0.00%	0.00%
Year		Property Addition [a] Sch 12 Lns. 3 (1+2)[1]	AFUDC Addition [b] Sch. 3 Col. 22	TEFRA Adjustment [c] Sch. 10, Ln. 3	Tax Basis for Depreciation [d] [a] + [b] - [c]								
1977	1	$7,889	$434	$0	$8,323	$307	$256	$204	$153	$102	$51	$0	$0
1978	2	$112	$4	$0	$117	$5	$4	$4	$3	$2	$1	$1	$0
1979	3	$97	$2	$0	$99	$5	$4	$4	$3	$2	$2	$1	$1
1980	4	$123	$4	$0	$128	$7	$6	$5	$5	$4	$3	$2	$2
1981	5	$49	$5	$0	$54	$0	$0	$0	$0	$0	$0	$0	$0
1982	6	$60	$5	$0	$65	$0	$0	$0	$0	$0	$0	$0	$0
1983	7	$84	$3	$4	$83	$0	$0	$0	$0	$0	$0	$0	$0
1984	8	$51	$2	$3	$50	$0	$0	$0	$0	$0	$0	$0	$0
1985	9	$29	$0	$1	$28	$6	$0	$0	$0	$0	$0	$0	$0
1986	10	$20	$0	$0	$20	$4	$4	$0	$0	$0	$0	$0	$0
1987	11	$33	$0	$0	$33	$3	$3	$2	$2	$2	$2	$2	$2
1988	12	$10	$0	$0	$10	$1	$1	$1	$1	$1	$1	$1	$1
1989	13	$37	$0	$0	$37	$2	$4	$3	$3	$3	$2	$2	$2
1990	14	$81	$1	$0	$82	$0	$4	$8	$7	$6	$6	$5	$5
1991	15	$203	$4	$0	$206	$0	$0	$10	$20	$18	$16	$14	$13
1992	16	$69	$3	$0	$72	$0	$0	$0	$4	$7	$6	$6	$5
1993	17	$46	$2	$0	$47	$0	$0	$0	$0	$2	$4	$4	$4
1994	18	$43	$1	$0	$45	$0	$0	$0	$0	$0	$2	$4	$4
1995	19	$36	$1	$0	$37	$0	$0	$0	$0	$0	$0	$2	$4
1996	20	$29	$1	$0	$30	$0	$0	$0	$0	$0	$0	$0	$1
Total Federal Tax Depreciation						$339	$286	$241	$200	$149	$97	$44	$42

1 For 1977, Sch. 12, Lns 3 - (1+2+10)

Unrecovered Investment Analysis, Corrected, w/Right Inputs
Calculation of ADIT Balances
(millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
1	Recovery of Investment Incl. Debt AFUDC Am	(Sch3 Ln18*Sch5 Ln10)	$0	$0	$219	$478	$390	$552	$889	$1,100	$1,006	$1,067	$1,217	$1,128
2	State Tax Depreciation	Sch. 7	$476	$335	$340	$344	$348	$898	$852	$806	$755	$703	$651	$598
3	State Tax Timing Differences	Ln. (2-1)	$476	$335	$121	($134)	($42)	$346	($36)	($295)	($251)	($364)	($566)	($530)
4	State Income Tax Rate	AK Stat.	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%
5	State Tax Effect	Ln. (3*4)	$45	$32	$11	($13)	($4)	$32	($3)	($28)	($24)	($34)	($53)	($50)
6	State ADIT Balance	Ln. 5 + Prior Ln. 6	$45	$76	$88	$75	$71	$104	$100	$72	$49	$15	($39)	($88)
7	Recovery of Investment Incl. Debt AFUDC Am	Ln. 1	$0	$0	$219	$478	$390	$552	$889	$1,100	$1,006	$1,067	$1,217	$1,128
8	Depreciation of TEFRA Adjustment	Sch. 10, Ln. 6	$0	$0	$0	$0	$0	$0	$1	$1	$1	$1	$2	$1
9	Book Depreciation after TEFRA Adjustment	Ln (7-8)	$0	$0	$219	$478	$390	$552	$888	$1,099	$1,005	$1,065	$1,216	$1,126
10	Federal Tax Depreciation	Sch. 8	$476	$904	$836	$796	$758	$718	$681	$640	$594	$534	$470	$401
11	Tax Effect of State Timing Differences	Ln. 5	$45	$32	$11	($13)	($4)	$32	($3)	($28)	($24)	($34)	($53)	($50)
12	Total Federal Tax Deductions	Ln (10-11)	$431	$872	$825	$809	$762	$685	$684	$668	$618	$568	$523	$451
13	Federal Tax Timing Differences	Ln (12-9)	$431	$872	$606	$331	$372	$133	($204)	($431)	($387)	($497)	($692)	($675)
14	Federal Income Tax Rate	IRC	48.00%	48.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	39.95%	34.00%
15	Federal Tax Effect	Ln (13*14)	$207	$419	$279	$152	$171	$61	($94)	($198)	($178)	($229)	($277)	($230)
16	FASB 96/109 Adjustment	Cum. Ln.13 * Change Ln.14	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$74	$32
17	Amortization Basis for FASB 96/109 Adjustme	Prior Ln.17 + Ln.16 - Prior Ln.18	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$74	$77
18	Amortization of FASB 96/109 Adjustment	Ln. 17*Sch. 3 Ln.3	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$29	$45
19	Federal ADIT Balance	Prior Ln.19 + Ln.15 - Ln.18	$207	$625	$904	$1,056	$1,227	$1,288	$1,195	$997	$818	$590	$284	$9
20	Total State And Federal ADIT Balances	Ln (6+19)	$252	$702	$992	$1,131	$1,298	$1,392	$1,295	$1,069	$867	$604	$245	($79)

Unrecovered Investment Analysis, Corrected, w/Right Inputs
Calculation of ADIT Balances
(millions $)

Line No.	Description	Source	1989	1990	1991	1992	1993	1994	1995	1996
1	Recovery of Investment Incl. Debt AFUDC Am	(Sch3 Ln18*Sch5 Ln10)	$885	$188	$157	$113	$50	$43	$41	$16
2	State Tax Depreciation	Sch. 7	$545	$496	$456	$222	$171	$117	$64	$60
3	State Tax Timing Differences	Ln. (2-1)	($340)	$308	$299	$109	$120	$74	$22	$44
4	State Income Tax Rate	AK Stat.	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%
5	State Tax Effect	Ln. (3*4)	($32)	$29	$28	$10	$11	$7	$2	$4
6	State ADIT Balance	Ln. 5 + Prior Ln. 6	($120)	($91)	($63)	($53)	($42)	($35)	($33)	($29)
7	Recovery of Investment Incl. Debt AFUDC Am	Ln. 1	$885	$188	$157	$113	$50	$43	$41	$16
8	Depreciation of TEFRA Adjustment	Sch. 10, Ln. 6	$1	$0	$0	$0	$0	$0	$0	$0
9	Book Depreciation after TEFRA Adjustment	Ln (7-8)	$883	$188	$157	$113	$50	$43	$41	$16
10	Federal Tax Depreciation	Sch. 8	$339	$286	$241	$200	$149	$97	$44	$42
11	Tax Effect of State Timing Differences	Ln. 5	($32)	$29	$28	$10	$11	$7	$2	$4
12	Total Federal Tax Deductions	Ln (10-11)	$371	$257	$213	$189	$138	$90	$42	$38
13	Federal Tax Timing Differences	Ln (12-9)	($512)	$68	$56	$76	$87	$46	$1	$22
14	Federal Income Tax Rate	IRC	34.00%	34.00%	34.00%	34.00%	35.00%	35.00%	35.00%	35.00%
15	Federal Tax Effect	Ln (13*14)	($174)	$23	$19	$26	$31	$16	$0	$8
16	FASB 96/109 Adjustment	Cum. Ln.13 * Change Ln.14	$0	$0	$0	$0	$5	$0	$0	$0
17	Amortization Basis for FASB 96/109 Adjustme	Prior Ln.17 + Ln.16 - Prior Ln.18	$32	$0	$0	$0	$5	$0	$0	$0
18	Amortization of FASB 96/109 Adjustment	Ln. 17*Sch. 3 Ln.3	$32	$0	$0	$0	$5	$0	$0	$0
19	Federal ADIT Balance	Prior Ln.19 + Ln.15 - Ln.18	($197)	($173)	($154)	($128)	($102)	($86)	($86)	($78)
20	Total State And Federal ADIT Balances	Ln (6+19)	($317)	($265)	($218)	($181)	($144)	($121)	($119)	($107)

Unrecovered Investment Analysis, Corrected, w/Right Inputs
TEFRA Adjustment to ADIT
(millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
1	Tax Depreciation Basis before TEFRA Adjustn	Sch. 7	$8,323	$117	$99	$128	$54	$65	$87	$53	$29	$20	$33	$10
2	Tax Depreciation Basis Reduction	IRC	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	5.00%	5.00%	0.00%	0.00%	0.00%
3	TEFRA Adjustment	Ln (1*2)	$0	$0	$0	$0	$0	$0	$4	$3	$1	$0	$0	$0
4	TEFRA Adjustment Balance (BOY)	Ln. 3 + Prior Ln. 7	$0	$0	$0	$0	$0	$0	$4	$6	$7	$5	$4	$2
5	Depreciation Factor	Sch. 3 Ln.3	0.00%	0.00%	2.57%	5.70%	4.88%	7.24%	12.52%	17.66%	19.49%	25.52%	39.12%	58.64%
6	Depreciation of TEFRA Adjustment	Ln (4*5)	$0	$0	$0	$0	$0	$0	$1	$1	$1	$1	$2	$1
7	TEFRA Adjustment Balance (EOY)	Ln (4-6)	$0	$0	$0	$0	$0	$0	$4	$5	$5	$4	$2	$1

Unrecovered Investment Analysis, Corrected, w/Right Inputs
TEFRA Adjustment to ADIT
(millions $)

Line No.	Description	Source	1989	1990	1991	1992	1993	1994	1995	1996
1	Tax Depreciation Basis before TEFRA Adjustn	Sch. 7	$37	$82	$206	$72	$47	$45	$37	$30
2	Tax Depreciation Basis Reduction	IRC	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3	TEFRA Adjustment	Ln (1*2)	$0	$0	$0	$0	$0	$0	$0	$0
4	TEFRA Adjustment Balance (BOY)	Ln. 3 + Prior Ln. 7	$1	$0	$0	$0	$0	$0	$0	$0
5	Depreciation Factor	Sch. 3 Ln.3	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
6	Depreciation of TEFRA Adjustment	Ln (4*5)	$1	$0	$0	$0	$0	$0	$0	$0
7	TEFRA Adjustment Balance (EOY)	Ln (4-6)	$0	$0	$0	$0	$0	$0	$0	$0

Income Tax Allowance on Required Return

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
1	Return on Equity	Sch. 2 Ln. 9	$362	$772	$789	$836	$906	$823	$618	$566	$434	$319
2	AFUDC Amortization	Sch. 5 Ln. 5	$0	$0	$52	$112	$91	$129	$208	$257	$234	$247
3	Depreciation of TEFRA Adjustment	Sch. 10 Ln. 6	$0	$0	$0	$0	$0	$0	$1	$1	$1	$1
4	Amortization of FASB 96/109 Adjustm	Sch. 9 Ln. 18	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Federal Taxable Income	Lns. (1+2+3-4)	$362	$772	$840	$948	$997	$953	$827	$825	$670	$567
6	Net to Tax Multiplier, Federal Taxes	Sch 9 Ln 14/(1-Ln14)	92.3%	92.3%	85.2%	85.2%	85.2%	85.2%	85.2%	85.2%	85.2%	85.2%
7	Net Federal Income Tax Allowance	Lns (5 * 6 - 4)	$334	$712	$716	$808	$850	$811	$704	$702	$571	$483
8	State Taxable Income	Lns. (1+2+7)	$697	$1,484	$1,556	$1,756	$1,847	$1,764	$1,531	$1,526	$1,239	$1,049
9	Net to Tax Multiplier, State Taxes Rat	Sch.9 Ln 4/(1-Ln 4)	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%
10	State Income Tax Allowance	Ln. (8*9)	$72	$154	$161	$182	$192	$183	$159	$158	$129	$109
11	Total Income Tax Allowance	Ln. (7+10)	$407	$866	$877	$990	$1,041	$994	$863	$861	$699	$592

Income Tax Allowance on Required Return

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No.	Description	Source	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
1	Return on Equity	Sch. 2 Ln. 9	$232	$149	$72	$33	$27	$24	$17	$15	$14	$15
2	AFUDC Amortization	Sch. 5 Ln. 5	$282	$257	$182	$2	$6	$4	$3	$2	$2	$2
3	Depreciation of TEFRA Adjustment	Sch. 10 Ln. 6	$2	$1	$1	$0	$0	$0	$0	$0	$0	$0
4	Amortization of FASB 96/109 Adjustm	Sch. 9 Ln. 18	$29	$45	$32	$0	$0	$0	$5	$0	$0	$0
5	Federal Taxable Income	Lns. (1+2+3-4)	$487	$363	$223	$35	$34	$29	$15	$17	$16	$17
6	Net to Tax Multiplier, Federal Taxes	Sch 9 Ln 14/(1-Ln14)	66.5%	51.5%	51.5%	51.5%	51.5%	51.5%	53.8%	53.8%	53.8%	53.8%
7	Net Federal Income Tax Allowance	Lns (5 * 6 - 4)	$295	$142	$83	$18	$17	$15	$4	$9	$8	$9
8	State Taxable Income	Lns. (1+2+7)	$809	$548	$337	$53	$51	$44	$23	$27	$24	$26
9	Net to Tax Multiplier, State Taxes Rat	Sch.9 Ln 4/(1-Ln 4)	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%
10	State Income Tax Allowance	Ln. (8*9)	$84	$57	$35	$6	$5	$5	$2	$3	$2	$3
11	Total Income Tax Allowance	Ln. (7+10)	$379	$199	$118	$24	$23	$19	$6	$12	$11	$12

Carrier Property Balance
(FERC Form 6 Basis)

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No	Account	Starting Balance	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
1	Land - New Construction Exp.		$16.667	$0.060	$0.000	$0.041	$0.000	$0.000	$0.085	$0.360	$0.000	$0.000
2	CWIP - New Construction Exp.		$41.820	($13.943)	$3.337	($16.992)	($0.002)	$4.810	($14.482)	($13.368)	($2.891)	$1.365
3	Grand Total - New Construction Exp	$7,741	$1,421.909	$98.292	$99.947	$106.470	$49.178	$65.145	$69.675	$37.833	$25.976	$21.410
4	Grand Total - Acquired Property		$0.000	$0.000	$0.000	$169.963	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
5	Grand Total - Credits for Retirements		($29.485)	($7.017)	($11.876)	($164.555)	($2.235)	($11.506)	($24.383)	($12.502)	($13.786)	($3.073)
6	Grand Total - Other Adjustments		($0.087)	$64.544	($4.319)	$0.829	($1.450)	($13.156)	($3.969)	($4.295)	$0.011	$0.025
7	Land - EOY Balance		$16.580	$16.678	$16.678	$16.567	$17.002	$17.002	$16.997	$17.260	$17.256	$17.257
8	CWIP - EOY Balance		$41.820	$23.611	$27.889	$29.387	$29.077	$33.385	$15.214	$3.719	$0.896	$2.260
9	Grand Total - EOY Balance		$9,133.410	$9,289.229	$9,372.981	$9,485.687	$9,531.179	$9,571.661	$9,612.984	$9,634.021	$9,646.223	$9,664.584
10	Capitalized Interest - EOY Balance	$1,216	$1,215.571	$1,215.571	$1,215.571	$1,215.571	$1,215.111	$1,215.111	$1,215.111	$1,214.314	$1,214.064	$1,214.010
11	Depreciation - Retirements		$0.000	($5.362)	($5.219)	($16.936)	($2.496)	($13.606)	($10.908)	($5.365)	($13.176)	($2.960)
12	Working Capital		$57.237	$29.204	$36.005	$34.175	$39.228	$38.954	$28.694	$32.583	$33.679	$28.582

* All data from RGV-143-C, WP3, Sch. 12-13

Carrier Property Balance
(FERC Form 6 Basis)

Appropriate Rate of Return and Capital Structure In Carriers' Unrecovered Investment Analysis With Conservative Assumptions Corrected (millions $)

Line No	Account	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
1	Land - New Construction Exp.	$0.029	$0.015	$0.000	$0.542	$0.000	$0.000	$0.000	$0.904	$0.000	$0.000
2	CWIP - New Construction Exp.	($0.693)	$7.323	$11.002	$74.176	($61.795)	$1.297	($9.538)	$6.897	$19.730	$23.336
3	Grand Total - New Construction Exp	$31.866	$17.285	$47.588	$155.563	$140.715	$70.767	$36.263	$51.185	$55.690	$51.890
4	Grand Total - Acquired Property	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$81.202
5	Grand Total - Credits for Retirement	($16.704)	($13.059)	($5.157)	($4.399)	($53.184)	($15.679)	($10.992)	($10.327)	($3.509)	($115.573)
6	Grand Total - Other Adjustments	$0.000	$0.071	($0.063)	$0.007	($0.011)	$0.006	($0.002)	$0.000	$0.000	$0.000
7	Land - EOY Balance	$17.287	$17.302	$17.302	$17.787	$17.787	$17.808	$17.809	$18.713	$18.713	$18.715
8	CWIP - EOY Balance	$1.567	$8.891	$19.894	$94.344	$32.275	$33.572	$24.034	$30.931	$50.663	$73.998
9	Grand Total - EOY Balance	$9,679.746	$9,684.044	$9,726.411	$9,877.583	$9,965.102	$10,020.196	$10,045.466	$10,086.325	$10,138.506	$10,156.025
10	Capitalized Interest - EOY Balance	$1,213.863	$1,213.813	$1,213.804	$1,213.795	$1,213.551	$1,213.520	$1,213.515	$1,213.505	$1,213.504	$1,204.649
11	Depreciation - Retirements	($16.760)	($12.779)	($3.947)	($3.314)	($57.358)	($13.901)	($8.871)	($7.612)	($2.526)	($89.329)
12	Working Capital	$33.330	$36.149	$36.242	$39.005	$58.840	$54.304	$44.192	$43.049	$34.488	$36.416

* All data from RGV-143-C, WP3, Sch. 12.

Annual Regulatorily-Enforced Return Deficiency, 1977-1996
(millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982
1	Appropriate DOC Revenue Requirement	Exhibit 33, Ln. 6	$1,360	$3,107	$3,075	$3,269	$3,288	$3,084
2	TSM Revenue Requirement	31-BWF-E; 30-BWF-E: Line 125	$860	$2,480	$2,654	$3,081	$3,354	$3,548
3	TSM DR&R Charges	29-ABJ-W: Horst Testimony	$24	$96	$113	$127	$120	$121
4	TSM Revenue Requirement, Less DR&R	Lns. 2 - 3	$836	$2,384	$2,541	$2,954	$3,234	$3,427
5	Regulatorily Enforced Return Deficiency (Nominal $)	Ln. 4 - Ln. 1	($524)	($723)	($534)	($315)	($54)	$343
6	Weighted Rate of Return plus Unity	1 + (Exhibit 2, col g)	1.1174	1.1219	1.1263	1.1367	1.1515	1.1498
7	Present Value Factor (1997 $)	Product(Line 6, this year to 1996)	11.2640	10.0806	8.9853	7.9777	7.0183	6.0949
8	Return Deficiency (1997 Present Value $)	Ln. 5 * Ln. 7	($5,903)	($7,292)	($4,794)	($2,510)	($379)	$2,088

Annual Regulatorily-Enforced Return Deficiency, 1977-1996
(millions $)

Line No.	Description	Source	1983	1984	1985	1986	1987	1988
1	Appropriate DOC Revenue Requirement	Exhibit 33, Ln. 6	$2,651	$2,505	$2,164	$1,908	$1,652	$1,473
2	TSM Revenue Requirement	31-BWF-E; 30-BWF-E: Line 125	$3,524	$3,388	$3,245	$3,101	$2,739	$2,413
3	TSM DR&R Charges	29-ABJ-W: Horst Testimony	$116	$110	$104	$98	$95	$85
4	TSM Revenue Requirement, Less DR&R	Lns. 2 - 3	$3,408	$3,277	$3,141	$3,003	$2,644	$2,328
5	Regulatorily Enforced Return Deficiency (Nominal $)	Ln. 4 - Ln. 1	$757	$773	$978	$1,095	$992	$855
6	Weighted Rate of Return plus Unity	1 + (Exhibit 2, col g)	1.1331	1.1394	1.1329	1.1264	1.1263	1.1284
7	Present Value Factor (1997 $)	Product(Line 6, this year to 1996)	5.3008	4.6782	4.1058	3.6242	3.2175	2.8567
8	Return Deficiency (1997 Present Value $)	Ln. 5 * Ln. 7	$4,014	$3,614	$4,014	$3,969	$3,191	$2,441

Annual Regulatorily-Enforced Return Deficiency, 1977-1996
(millions $)

Line No.	Description	Source	1989	1990	1991	1992	1993	1994
1	Appropriate DOC Revenue Requirement	Exhibit 33, Ln. 6	$1,436	$1,423	$1,275	$1,287	$1,215	$1,277
2	TSM Revenue Requirement	31-BWF-E; 30-BWF-E: Line 125	$2,312	$2,354	$2,220	$2,151	$2,046	$2,057
3	TSM DR&R Charges	29-ABJ-W: Horst Testimony	$73	$61	$50	$40	$31	$24
4	TSM Revenue Requirement, Less DR&R	Lns. 2 - 3	$2,239	$2,293	$2,169	$2,111	$2,015	$2,033
5	Regulatorily Enforced Return Deficiency (Nominal $)	Ln. 4 - Ln. 1	$803	$870	$894	$824	$800	$756
6	Weighted Rate of Return plus Unity	1 + (Exhibit 2, col g)	1.1274	1.1288	1.1275	1.1252	1.1168	1.1207
7	Present Value Factor (1997 $)	Product(Line 6, this year to 1996)	2.5316	2.2455	1.9893	1.7644	1.5680	1.4040
8	Return Deficiency (1997 Present Value $)	Ln. 5 * Ln. 7	$2,032	$1,953	$1,778	$1,453	$1,254	$1,061

Annual Regulatorily-Enforced Return Deficiency, 1977-1996
(millions $)

Line No.	Description	Source	1995	1996
1	Appropriate DOC Revenue Requirement	Exhibit 33, Ln. 6	$996	$867
2	TSM Revenue Requirement	31-BWF-E; 30-BWF-E: Line 125	$1,722	$1,514
3	TSM DR&R Charges	29-ABJ-W: Horst Testimony	$19	$14
4	TSM Revenue Requirement, Less DR&R	Lns. 2 - 3	$1,703	$1,501
5	Regulatorily Enforced Return Deficiency (Nominal $)	Ln. 4 - Ln. 1	$706	$634
6	Weighted Rate of Return plus Unity	1 + (Exhibit 2, col g)	1.1208	1.1178
7	Present Value Factor (1997 $)	Product(Line 6, this year to 1996)	1.2528	1.1178
8	Return Deficiency (1997 Present Value $)	Ln. 5 * Ln. 7	$885	$709

Cumulative Sum Regulatorily-Enforced Return "Deficiency", 1977-1996
(millions $)

Line No.	Description	Source	
1	Nominal Dollar Regulatorily Enforced Return Excess	Sum, Exh. 7, Sch. 1, Ln. 5	$9,928
2	1997 Dollar Regulatorily Enforced Return Excess	Sum, Exh. 7, Sch. 1, Ln. 8	$13,580

Appropriate Carrier Property Balances, 1977-1996
FERC Form 6 Basis
(Millions $)

Line No.	Description	Starting Balance	1977	1978	1979	1980	1981	1982	1983	1984	1985
1	Land - New Construction Exp.		$17	$0	$0	$0	$0	$0	$0	$0	$0
2	CWIP - New Construction Exp.		$42	($14)	$3	($17)	($0)	$5	($14)	($13)	($3)
3	Grand Total - New Construction Exp.	$7,741	$1,422	$98	$100	$106	$49	$65	$70	$38	$26
4	Grand Total - Acquired Property		$0	$0	$0	$170	$0	$0	$0	$0	$0
5	Grand Total - Credits for Retirements		($29)	($7)	($12)	($165)	($2)	($12)	($24)	($13)	($14)
6	Grand Total - Other Adjustments		($0)	$65	($4)	$1	($1)	($13)	($4)	($4)	$0
7	Land - EOY Balance		$17	$17	$17	$17	$17	$17	$17	$17	$17
8	CWIP - EOY Balance		$42	$24	$28	$29	$29	$33	$15	$4	$1
9	Grand Total - EOY Balance		$9,133	$9,289	$9,373	$9,486	$9,531	$9,572	$9,613	$9,634	$9,646
10	Capitalized Interest - EOY Balance	$1,216	$1,216	$1,216	$1,216	$1,216	$1,215	$1,215	$1,215	$1,214	$1,214

Data from 143-RGV-C, TAPS-RGV WP3, Schedule 12,
retirements data for 1986-1996 from Supplemental
Pages of Annual Reports on file

Appropriate Carrier Property Balances, 1977-1996
FERC Form 6 Basis
(Millions $)

Line No.	Description	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
1	Land - New Construction Exp.	$0	$0	$0	$0	$1	$0	$0	$0	$1	$0
2	CWIP - New Construction Exp.	$1	($1)	$7	$11	$74	($62)	$1	($10)	$7	$20
3	Grand Total - New Construction Exp.	$21	$32	$17	$48	$156	$141	$71	$36	$51	$56
4	Grand Total - Acquired Property	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Grand Total - Credits for Retirements	($3)	($16)	($13)	($5)	($4)	($53)	($16)	($11)	($10)	($3)
6	Grand Total - Other Adjustments	$0	$0	$0	($0)	$0	($0)	$0	($0)	$0	$0
7	Land - EOY Balance	$17	$17	$17	$17	$18	$18	$18	$18	$19	$19
8	CWIP - EOY Balance	$2	$2	$9	$20	$94	$32	$34	$24	$31	$51
9	Grand Total - EOY Balance	$9,665	$9,680	$9,684	$9,726	$9,878	$9,965	$10,020	$10,045	$10,086	$10,139
10	Capitalized Interest - EOY Balance	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214

Data from 143-RGV-C, TAPS-RGV WP3, Schedule 12,
retirements data for 1986-1996 from Supplemental
Pages of Annual Reports on file

Parties' Positions on Working Capital, 1977-1996
(Millions $)

Line No.	(a) Date	(b) Carriers and Williams	(c) Tesoro	(d) Difference
		Exhibit 143-RGV-C, TAPS-RGV WP3, Sch. 13; Exhibit 189A-BEWT, BEW_R_RGV WP1 - DR 22RE, Sch. 13	30-BWF-E ('77-'83), 31-BWF-E (84-'00); Ln 83	col c - col b
1	1977	57.237	65.665	8.428
2	1978	29.204	47.508	18.304
3	1979	36.005	56.915	20.910
4	1980	34.175	57.733	23.558
5	1981	39.228	37.542	-1.686
6	1982	38.954	37.080	-1.874
7	1983	28.694	37.650	8.956
8	1984	32.583	37.921	5.338
9	1985	33.679	39.173	5.494
10	1986	28.582	37.856	9.274
11	1987	33.330	37.098	3.768
12	1988	36.149	37.071	0.922
13	1989	36.242	37.546	1.304
14	1990	39.005	37.346	-1.659
15	1991	58.840	37.482	-21.358
16	1992	54.304	37.414	-16.890
17	1993	44.192	36.685	-7.507
18	1994	43.049	37.504	-5.545
19	1995	34.488	36.684	2.196
20	1996	36.416	38.443	2.027
			Cumulative Sum, column d	**53.960**

TAPS Carrier Parent and Composite Carrier Parent Capital Structure 1968-1996

Line No.	Year	Hess		Arco		Exxon		Mobil		ExxonMobil		Phillips		BP	
		(a) Common Equity	(b) Ownership Percentage	(a) Common Equity	(b) Ownership Percentage	(a) Common Equity	(b) Ownership Percentage	(a) Common Equity	(b) Ownership Percentage	(a) Common Equity	(b) Ownership Percentage	(a) Common Equity	(b) Ownership Percentage	(a) Common Equity	(b) Ownership Percentage
1	1968	69.17%	3.00%	64.86%	28.08%	81.35%	25.52%	84.33%	8.68%	0.00%	0.00%	69.72%	3.32%	81.87%	0.00%
2	1969	45.98%	3.00%	80.11%	28.08%	81.27%	25.52%	84.49%	8.68%	0.00%	0.00%	65.81%	3.32%	74.31%	0.00%
3	1970	49.21%	3.00%	74.61%	28.08%	80.34%	25.52%	81.01%	8.68%	0.00%	0.00%	66.52%	3.32%	74.49%	0.00%
4	1971	54.75%	3.00%	75.32%	28.08%	80.09%	25.52%	80.04%	8.68%	0.00%	0.00%	67.24%	3.32%	79.04%	0.00%
5	1972	53.94%	3.00%	76.92%	28.08%	81.49%	25.52%	81.97%	8.68%	0.00%	0.00%	68.29%	3.32%	80.55%	0.00%
6	1973	56.31%	3.00%	74.58%	28.08%	82.78%	25.52%	83.42%	8.68%	0.00%	0.00%	69.55%	3.32%	82.95%	0.00%
7	1974	57.69%	1.50%	72.81%	21.00%	82.89%	20.00%	78.14%	5.00%	0.00%	0.00%	76.54%	1.66%	83.44%	15.84%
8	1975	60.44%	1.50%	67.45%	21.00%	82.07%	20.00%	77.89%	5.00%	0.00%	0.00%	72.04%	1.66%	77.17%	15.84%
9	1976	61.37%	1.50%	64.38%	21.00%	82.36%	20.00%	71.94%	5.00%	0.00%	0.00%	75.47%	1.66%	70.95%	15.84%
10	1977	61.88%	1.50%	58.04%	21.00%	82.57%	20.00%	70.00%	5.00%	0.00%	0.00%	78.47%	1.66%	74.72%	15.84%
11	1978	62.34%	1.50%	57.92%	21.00%	83.39%	20.00%	71.35%	5.00%	0.00%	0.00%	80.49%	1.66%	53.41%	15.84%
12	1979	67.97%	1.50%	61.69%	21.00%	82.66%	20.00%	75.16%	5.00%	0.00%	0.00%	83.78%	1.66%	64.30%	15.84%
13	1980	67.73%	1.50%	63.73%	21.32%	83.57%	20.30%	77.95%	4.18%	0.00%	0.00%	85.55%	1.39%	70.63%	16.59%
14	1981	61.41%	1.50%	63.23%	21.32%	84.11%	20.30%	79.31%	4.18%	0.00%	0.00%	82.77%	1.39%	69.90%	16.59%
15	1982	55.83%	1.50%	64.31%	21.32%	84.99%	20.30%	75.00%	4.18%	0.00%	0.00%	74.31%	1.39%	69.10%	16.59%
16	1983	54.58%	1.50%	66.64%	21.32%	85.61%	20.30%	70.41%	4.18%	0.00%	0.00%	73.01%	1.39%	69.15%	16.59%
17	1984	55.31%	1.50%	66.21%	21.32%	84.02%	20.30%	53.56%	4.18%	0.00%	0.00%	69.39%	1.39%	70.38%	16.59%
18	1985	56.29%	1.50%	43.22%	21.32%	84.89%	20.30%	57.55%	4.18%	0.00%	0.00%	18.94%	1.39%	72.18%	16.59%
19	1986	58.77%	1.50%	40.12%	21.32%	87.30%	20.30%	64.22%	4.18%	0.00%	0.00%	21.73%	1.39%	72.00%	16.59%
20	1987	65.40%	1.50%	46.58%	21.32%	85.69%	20.30%	68.74%	4.18%	0.00%	0.00%	21.80%	1.39%	74.00%	16.59%
21	1988	61.47%	1.50%	50.01%	21.32%	85.36%	20.30%	70.42%	4.18%	0.00%	0.00%	30.16%	1.39%	70.24%	49.93%
22	1989	51.63%	1.50%	52.16%	21.32%	74.90%	20.30%	73.47%	4.18%	0.00%	0.00%	34.80%	1.39%	65.12%	49.93%
23	1990	54.62%	1.50%	52.37%	21.32%	79.45%	20.30%	76.60%	4.17%	0.00%	0.00%	41.09%	1.39%	67.80%	49.93%
24	1991	50.21%	1.50%	50.73%	21.32%	79.60%	20.30%	74.00%	4.17%	0.00%	0.00%	41.42%	1.39%	62.01%	49.93%
25	1992	50.66%	1.50%	49.32%	21.32%	78.69%	20.30%	72.82%	4.17%	0.00%	0.00%	41.41%	1.39%	56.29%	49.93%
26	1993	45.20%	1.50%	45.78%	21.32%	78.54%	20.30%	73.65%	4.17%	0.00%	0.00%	45.45%	1.39%	57.64%	49.93%
27	1994	47.90%	1.50%	44.50%	21.32%	79.83%	20.30%	75.73%	4.17%	0.00%	0.00%	48.59%	1.39%	65.89%	49.93%
28	1995	49.56%	1.50%	49.50%	21.32%	83.02%	20.30%	76.40%	4.17%	0.00%	0.00%	50.57%	1.39%	71.21%	49.93%
29	1996	63.78%	1.50%	53.81%	22.17%	84.97%	20.31%	76.79%	3.27%	0.00%	0.00%	55.35%	1.44%	78.57%	49.93%

TAPS Carrier Parent and Composite Carrier Parent Capital Structure 1968-1996

Line No.	Year	Unocal		Sohio		Composite
		(a) Common Equity	(b) Ownership Percentage	(a) Common Equity	(b) Ownership Percentage	TAPS Capital Structure
1	1968	66.86%	3.32%	80.47%	28.08%	75.50%
2	1969	68.48%	3.32%	77.13%	28.08%	78.06%
3	1970	67.61%	3.32%	65.66%	28.08%	72.85%
4	1971	67.89%	3.32%	66.20%	28.08%	73.25%
5	1972	67.64%	3.32%	71.45%	28.08%	75.70%
6	1973	69.44%	3.32%	72.24%	28.08%	75.90%
7	1974	69.99%	1.66%	60.01%	33.34%	72.30%
8	1975	69.31%	1.66%	42.37%	33.34%	64.08%
9	1976	68.24%	1.66%	29.61%	33.34%	58.01%
10	1977	64.31%	1.66%	26.34%	33.34%	56.12%
11	1978	66.85%	1.66%	32.25%	33.34%	55.00%
12	1979	70.03%	1.66%	46.81%	33.34%	62.61%
13	1980	74.09%	1.39%	57.26%	33.34%	67.85%
14	1981	76.23%	1.39%	62.21%	33.34%	69.34%
15	1982	77.38%	1.39%	63.77%	33.34%	69.77%
16	1983	78.30%	1.39%	69.16%	33.34%	71.98%
17	1984	79.32%	1.39%	71.48%	33.34%	71.82%
18	1985	22.06%	1.39%	70.91%	33.34%	65.88%
19	1986	24.00%	1.39%	69.70%	33.34%	65.66%
20	1987	27.14%	1.39%	74.00%	33.34%	68.81%
21	1988	32.90%	1.39%	0.00%	0.00%	67.80%
22	1989	36.79%	1.39%	0.00%	0.00%	63.68%
23	1990	38.60%	1.39%	0.00%	0.00%	66.27%
24	1991	35.01%	1.39%	0.00%	0.00%	62.84%
25	1992	38.34%	1.39%	0.00%	0.00%	59.50%
26	1993	39.33%	1.39%	0.00%	0.00%	59.41%
27	1994	36.50%	1.39%	0.00%	0.00%	63.65%
28	1995	36.42%	1.39%	0.00%	0.00%	68.10%
29	1996	38.86%	1.39%	0.00%	0.00%	73.22%

Appropriate Capital Structure 1968 - 1996
(In Millions)

	Debt Additions	Debt Balance	Total Property (End of Period)	Percent Debt	Percent Equity
	(a)	(b)	(c)	(d)	(e)
	RCA Exhibit 15, Sch. 3, Column c	cumulative sum of 'a'	Exhibit 143-RGV-C, TAPS-RGV WP3, Sch. 3	b / c	100% - d
1968	-	-	0.978	0.00%	100.00%
1969	-	-	36.438	0.00%	100.00%
1970	-	-	218.037	0.00%	100.00%
1971	-	-	326.389	0.00%	100.00%
1972	-	-	376.418	0.00%	100.00%
1973	-	-	426.544	0.00%	100.00%
1974.1	-	-	514.474	0.00%	100.00%
1974.2	448.047	448.047	1,359.463	32.96%	67.04%
1975	1,541.983	1,990.030	4,267.549	46.63%	53.37%
1976	1,397.050	3,387.081	6,902.301	49.07%	50.93%
1977.1	444.750	3,831.831	7,741.072	49.50%	50.50%
Thereafter				49.50%	50.50%

1974.1 = January through April 1974
1974.2 = May through December 1974
1977.1 = January through June 1977

Parties' Positions on Cost of Debt, 1968-1996
(percentages)

Line No.	(a) Date	(b) Carriers and Williams*	(c) Tesoro
		T-6, Exhibit WBT-19	FJH-T, Exhibit FJH-12
1	1968	5.66	6.96
2	1969	5.61	7.59
3	1970	6.28	8.99
4	1971	6.31	8.17
5	1972	6.44	7.75
6	1973	7.02	7.03
7	1974	8.19	8.84
8	1975	7.97	10.17
9	1976	8.33	10.73
10	1977	8.28	9.35
11	1978	8.44	9.03
12	1979	8.50	9.97
13	1980	8.93	11.91
14	1981	9.31	14.95
15	1982	9.54	13.30
16	1983	9.52	12.50
17	1984	9.49	12.60
18	1985	9.06	13.10
19	1986	8.50	11.60
20	1987	8.96	9.70
21	1988	8.94	10.70
22	1989	8.39	10.30
23	1990	8.26	9.00
24	1991	8.35	9.90
25	1992	8.10	9.50
26	1993	8.06	8.90
27	1994	8.10	7.90
28	1995	7.93	9.20
29	1996	7.91	7.20

*Carriers' sponsor separate costs of debt for each owner, but provide a composit cost of debt for illustrative purposes. Williams sponsors the Carrier-calculated composit debt cost.

Appropriate Spread Between US Treasuries and Pipeline Cost of Debt
for Backcasting the 1974-1996 Cost of Debt
(Percent Rates)

Line No.	Description	Source	1997	1998	1999
	(a)	(b)	(c)	(d)	(e)
	Proxy Group of Five Oil Pipeline Companies				
1	Arithmetic Average	FJH-T, Exhibit FJH-4	8.81	8.18	7.24
	Proxy Group of Gas Pipeline Companies				
2	Average of the operating subsidiaries	FJH-T, Exhibit FJH-4	8.14	7.83	7.72
3	*Average*	(Lns. (1 + 2)) / 2	8.48	8.01	7.48
4	Return on long-term US Treasuries	JSG-T, Exh. JSG-2, Sch. 12	6.60	5.66	6.11
5	Difference between US Treasuries and Average of oil and gas pipelines	Lns. 3 - 4	1.88	2.35	1.37
6	*Average difference used for backcasting purposes*	Average of Ln. 5		**1.86**	

Appropriate Cost of Debt for 1974-1996 Issuances
(Percent Rates)

Line No.	Year	Long-Term Government Bonds	Cost of Debt
		(a)	(b)
		JSG-T, Exhibit JSG-2, Schedule 12	a + 1.86*
1	1968	5.26	7.12
2	1969	6.12	7.98
3	1970	6.58	8.44
4	1971	5.70	7.56
5	1972	5.54	7.40
6	1973	6.21	8.07
7	1974	6.88	8.74
8	1975	6.96	8.82
9	1976	6.79	8.65
10	1977	7.53	9.39
11	1978	8.40	10.26
12	1979	9.26	11.12
13	1980	11.23	13.09
14	1981	13.31	15.17
15	1982	12.61	14.47
16	1983	11.17	13.03
17	1984	12.36	14.22
18	1985	10.89	12.75
19	1986	8.19	10.05
20	1987	8.70	10.56
21	1988	9.03	10.89
22	1989	8.56	10.42
23	1990	8.71	10.57
24	1991	8.14	10.00
25	1992	7.50	9.36
26	1993	6.44	8.30
27	1994	7.40	9.26
28	1995	6.89	8.75
29	1996	6.72	8.58

*Exhibit 13, Line 6, Column (d)

Explanatory Note to Exhibit 15:

Derivation of a Hypothetical Embedded Cost of Debt

Schedule 3 shows the calculation of the embedded cost of debt. By definition, the embedded cost of debt is the weighted average cost of debt, where weights are determined by the proportion of debt at a given cost to the outstanding debt balance. Debt costs in any given year are shown in Exhibit 14, column b. Therefore, to derive the embedded cost of debt one need determine only the outstanding debt balance for any given year. The outstanding debt balance is affected by additions to capital financed with debt, and subtractions therefrom.

Additions to capital financed with debt come from two sources. First, when capital additions to Carrier property are made, property is deemed to have been financed with 49.5 percent debt. Second, starting in 1993, bonds with a 19-year term (see Exhibit 15, Schedule 1) used to finance original construction begin to mature. The outstanding principle balance on such bonds must then be refinanced with debt at current market rates. Exhibit 15, Schedule 2 calculates the size of the balloon payment.

Balloon payments (Schedule 3, column (j)) are determined by the amount of funds remaining on a hypothetical bond note after 19 years (the term to maturity, calculated at Schedule 1) have passed. No payments are deemed to have been made before TAPS initially went into service. Annual “sinking fund” payments on a given bond issuance are calculated as the product of the depreciation factors in Exhibit 23 (see lines 24-43, Schedule 2) times the net balance of unpaid principle (see lines 1-21, Schedule 2). Net unpaid principle is the year’s unpaid principle less the year’s sinking fund payment.

Subtractions from the outstanding debt balance are determined by the depreciation schedule. To maintain the 49.5 percent capital structure, debt principle is paid down at the same rate as Carrier property is depreciated. Carrier property is depreciated according to Exhibit 23. In Schedule 3 these payments are referred to as “sinking fund” payments; see column (f).

Calculation of Weighted Average Term to Maturity for Major TAPS Financings

Line No.	(a) Date	(b) Company	(c) Millions $	(d) Maturity (years)	(e) c * d
1	10/17/1974	Exxon PLC	250	30	7,500
2	11/1/1974	Arco PLC	200	7	1,400
3	11/26/1974	Union	150	8	1,200
4	12/4/1974	Sohio/BP PLC	250	25	6,250
5	1/15/1975	Arco PLC	250	7.5	1,875
6	1/29/1975	Sohio/BP PLC	250	8	2,000
7	2/19/1975	Mobil PLC	300	30	9,000
8	6/5/1975	Union	150	10	1,500
9	7/16/1975	Arco PLC	200	8	1,600
10	8/12/1975	BP North America	50	5	250
11	8/12/1975	BP North America	100	25	2,500
12	10/16/1975	Exxon PLC	150	5	750
13	10/16/1975	Exxon PLC	300	25	7,500
14	11/13/1975	Phillips	250	25	6,250
15	11/13/1975	Sohio/BP PLC	1,750	18 & 33	44,625
16	1/27/1976	Arco PLC	200	8	1,600
17	2/10/1976	BP North America	150	25	3,750
18	2/26/1976	Exxon PLC	150	7	1,050
19	2/26/1976	Exxon PLC	250	25	6,250
20	3/2/1976	Union	200	30	6,000
21	3/11/1976	Sohio	200	1.5	300
22	3/11/1976	Sohio	50	3	150
23	3/11/1976	Sohio	75	5	375
24	4/27/1976	Sohio PLC	250	25	6,250
25	6/15/1976	Amerada	150	20	3,000
26	9/28/1976	Arco PLC	150	6	900
27	9/28/1976	Arco PLC	150	20	3,000
28	9/30/1976	Sohio/BP PLC	500	18 & 23	10,250
29	12/2/1976	Sohio	75	5	375
30	12/2/1976	Sohio	75	3	225
31	12/2/1976	Sohio	200	10	2,000
32	3/15/1977	Sohio	250	30	7,500
33		**Totals**	7,675		147,175

Weighted Average Number of Years to Maturity **19**
(line 33, cols e/c, rounded to whole year)

Major Financings Undertaken by TAPS Owners and Parent Companies, 11/1973-10/1977
From pp. 99-100, WBT-26; Exhibit 27 (RBG-3) of OR78-1

Calculation of size of Balloon Payments, Used for Backcasting 1974 -1996 Embedded Cost of Debt

Line No.			1974 (A)	1975 (B)	1976 (C)	1977 (D)	1978 (E)	1979 (F)
Years to Maturity (Sch. 1)		19	*Outstanding Debenture Balance EOY, for Debt Issued in Year (Millions $)*					
	Capitalization Financed by Debt	Exhibit 15, Sch. 3, Col d	448.047	1541.983	1397.050	703.549	62.989	40.531
	Years to depreciate capital		16	17	18	19	19	19
			(Prior A) - a	(Prior B) - b	(Prior C) - c	(Prior D) - d	(Prior E - e)	(Prior F - f)
1		1977	441.862	1520.698	1377.765	693.837		
2		1978	413.961	1424.676	1290.769	650.026	59.012	
3		1979	380.656	1310.052	1186.918	597.727	54.264	37.270
4		1980	343.392	1181.808	1070.728	539.214	48.952	33.621
5		1981	307.733	1059.084	959.539	483.220	43.868	30.130
6		1982	271.656	934.921	847.047	426.570	38.725	26.598
7		1983	237.251	816.516	739.771	372.546	33.821	23.229
8		1984	204.146	702.582	636.545	320.562	29.102	19.988
9		1985	176.342	606.894	549.851	276.903	25.138	17.266
10		1986	150.147	516.741	468.171	235.769	21.404	14.701
11		1987	124.787	429.463	389.097	195.948	17.789	12.218
12		1988	101.770	350.249	317.328	159.805	14.508	9.964
13		1989	82.285	283.188	256.571	129.208	11.730	8.056
14		1990	66.505	228.881	207.369	104.430	9.481	6.511
15		1991	54.379	187.149	169.558	85.389	7.752	5.324
16		1992	43.239	148.809	134.822	67.896	6.164	4.233
17		1993	43.239	118.267	107.151	53.961	4.899	3.365
18		1994	43.239	118.267	85.303	42.958	3.900	2.679
19		1995	43.239	118.267	85.303	34.088	3.095	2.125
20		1996	43.239	118.267	85.303	34.088	2.560	1.758
21								
22	*Balloon Payment Due*		43.239	118.267	85.303	34.088	0.000	0.000
23								

Line No.	Depreciation Factors		(a)	(b)	(c)	(d)	(e)	(f)
			Sinking fund payment for debt issued in year (millions $)					
	FACT Exhibit 24, Ln. 8		FACT * (EOY Balance for year, Col. A)	FACT * (EOY Balance for year, Col. B)	FACT * (EOY Balance for year, Col. C)	FACT * (EOY Balance for year, Col. D)	FACT * (EOY Balance for year, Col. E)	FACT * (EOY Balance for year, Col. F)
24	0.013804166	1977	6.185	21.286	19.285	9.712	N/A	N/A
25	0.063143318	1978	27.901	96.022	86.997	43.811	3.977	N/A
26	0.080456035	1979	33.306	114.624	103.850	52.299	4.748	3.261
27	0.097892549	1980	37.263	128.244	116.190	58.513	5.312	3.648
28	0.103843969	1981	35.659	122.724	111.189	55.994	5.083	3.491
29	0.117235791	1982	36.077	124.163	112.492	56.651	5.143	3.532
30	0.126647024	1983	34.404	118.405	107.276	54.024	4.904	3.369
31	0.139537087	1984	33.105	113.934	103.225	51.984	4.719	3.241
32	0.136195079	1985	27.804	95.688	86.694	43.659	3.964	2.722
33	0.148548658	1986	26.195	90.153	81.680	41.134	3.734	2.565
34	0.168900783	1987	25.360	87.278	79.075	39.822	3.615	2.483
35	0.184448800	1988	23.017	79.214	71.768	36.142	3.281	2.254
36	0.191465638	1989	19.485	67.061	60.757	30.597	2.778	1.908
37	0.191769402	1990	15.780	54.307	49.202	24.778	2.249	1.545
38	0.182334043	1991	12.126	41.733	37.810	19.041	1.729	1.187
39	0.204863309	1992	11.140	38.340	34.736	17.493	1.588	1.091
40	0.205244266	1993	0.000	30.542	27.671	13.935	1.265	0.869
41	0.203892105	1994	0.000	0.000	21.847	11.002	0.999	0.686
42	0.206482928	1995	0.000	0.000	0.000	8.870	0.805	0.553
43	0.172904106	1996	0.000	0.000	0.000	0.000	0.535	0.368

Calculation of size of Balloon Payments, Used for Backcasting 1974 -1996 Embedded Cost of Debt

Years to Maturity (Sch. 1)		19						
			1980	1981	1982	1983	1984	1985
			(G)	(H)	(I)	(J)	(K)	(L)
			(Prior G - g)	(Prior H - h)	(Prior I - i)	(Prior J - j)	(Prior K - k)	(Prior L - l)
Line	*Capitalization Financed by Debt*	Exhibit 15, Sch. 3, Col d	66.485	17.697	8.926	30.424	23.162	16.391
No.	*Years to depreciate capital*		19	19	19	19	19	19
1		1977						
2		1978						
3		1979						
4		1980	59.977					
5		1981	53.748	15.859				
6		1982	47.447	14.000	7.880			
7		1983	41.438	12.227	6.882	26.571		
8		1984	35.656	10.521	5.922	22.863	19.930	
9		1985	30.800	9.088	5.115	19.749	17.215	14.158
10		1986	26.225	7.738	4.355	16.815	14.658	12.055
11		1987	21.795	6.431	3.620	13.975	12.182	10.019
12		1988	17.775	5.245	2.952	11.398	9.935	8.171
13		1989	14.372	4.241	2.387	9.215	8.033	6.606
14		1990	11.616	3.427	1.929	7.448	6.493	5.340
15		1991	9.498	2.802	1.577	6.090	5.309	4.366
16		1992	7.552	2.228	1.254	4.842	4.221	3.472
17		1993	6.002	1.771	0.997	3.849	3.355	2.759
18		1994	4.778	1.410	0.794	3.064	2.671	2.196
19		1995	3.792	1.119	0.630	2.431	2.119	1.743
20		1996	3.136	0.925	0.521	2.011	1.753	1.442
21								
22	*Balloon Payment Due*		0.000	0.000	0.000	0.000	0.000	0.000
23								

Depreciation Factors

	FACT Exhibit 24, Ln. 8		(g) FACT * (EOY Balance for year, Col. G)	(h) FACT * (EOY Balance for year, Col. H)	(i) FACT * (EOY Balance for year, Col. I)	(j) FACT * (EOY Balance for year, Col. J)	(k) FACT * (EOY Balance for year, Col. K)	(l) FACT * (EOY Balance for year, Col. L)
24	0.013804166	1977	N/A	N/A	N/A	N/A	N/A	N/A
25	0.063143318	1978	N/A	N/A	N/A	N/A	N/A	N/A
26	0.080456035	1979	N/A	N/A	N/A	N/A	N/A	N/A
27	0.097892549	1980	6.508	N/A	N/A	N/A	N/A	N/A
28	0.103843969	1981	6.228	1.838	N/A	N/A	N/A	N/A
29	0.117235791	1982	6.301	1.859	1.046	N/A	N/A	N/A
30	0.126647024	1983	6.009	1.773	0.998	3.853	N/A	N/A
31	0.139537087	1984	5.782	1.706	0.960	3.708	3.232	N/A
32	0.136195079	1985	4.856	1.433	0.806	3.114	2.714	2.232
33	0.148548658	1986	4.575	1.350	0.760	2.934	2.557	2.103
34	0.168900783	1987	4.429	1.307	0.736	2.840	2.476	2.036
35	0.184448800	1988	4.020	1.186	0.668	2.578	2.247	1.848
36	0.191465638	1989	3.403	1.004	0.565	2.182	1.902	1.564
37	0.191769402	1990	2.756	0.813	0.458	1.767	1.540	1.267
38	0.182334043	1991	2.118	0.625	0.352	1.358	1.184	0.974
39	0.204863309	1992	1.946	0.574	0.323	1.248	1.088	0.894
40	0.205244266	1993	1.550	0.457	0.257	0.994	0.866	0.713
41	0.203892105	1994	1.224	0.361	0.203	0.785	0.684	0.563
42	0.206482928	1995	0.987	0.291	0.164	0.633	0.551	0.454
43	0.172904106	1996	0.656	0.193	0.109	0.420	0.366	0.301

Calculation of size of Balloon Payments, Used for Backcasting 1974 -1996 Embedded Cost of Debt

Years to Maturity (Sch. 1)		19						
			1986	1987	1988	1989	1990	1991
			(M)	(N)	(O)	(P)	(Q)	(R)
			(Prior M - m)	(Prior N - n)	(Prior O - o)	(Prior P - p)	(Prior Q - q)	(Prior R - r)
Line	*Capitalization Financed by Debt*	Exhibit 15, Sch. 3, Col d	18.071	21.752	9.584	27.035	82.318	27.230
No.	*Years to depreciate capital*		19	19	19	19	19	19
1		1977						
2		1978						
3		1979						
4		1980						
5		1981						
6		1982						
7		1983						
8		1984						
9		1985						
10		1986	15.386					
11		1987	12.788	18.078				
12		1988	10.429	14.743	7.816			
13		1989	8.432	11.921	6.320	21.859		
14		1990	6.815	9.635	5.108	17.667	66.532	
15		1991	5.573	7.878	4.177	14.446	54.401	22.265
16		1992	4.431	6.264	3.321	11.486	43.256	17.704
17		1993	3.521	4.978	2.639	9.129	34.378	14.070
18		1994	2.803	3.963	2.101	7.268	27.369	11.202
19		1995	2.225	3.145	1.667	5.767	21.718	8.889
20		1996	1.840	2.601	1.379	4.770	17.963	7.352
21								
22	*Balloon Payment Due*		0.000	0.000	0.000	0.000	0.000	0.000
23								

Depreciation Factors

	FACT Exhibit 24, Ln. 8		(m) FACT * (EOY Balance for year, Col. M)	(n) FACT * (EOY Balance for year, Col. N)	(o) FACT * (EOY Balance for year, Col. O)	(p) FACT * (EOY Balance for year, Col. P)	(q) FACT * (EOY Balance for year, Col. Q)	(r) FACT * (EOY Balance for year, Col. R)
24	0.013804166	1977	N/A	N/A	N/A	N/A	N/A	N/A
25	0.063143318	1978	N/A	N/A	N/A	N/A	N/A	N/A
26	0.080456035	1979	N/A	N/A	N/A	N/A	N/A	N/A
27	0.097892549	1980	N/A	N/A	N/A	N/A	N/A	N/A
28	0.103843969	1981	N/A	N/A	N/A	N/A	N/A	N/A
29	0.117235791	1982	N/A	N/A	N/A	N/A	N/A	N/A
30	0.126647024	1983	N/A	N/A	N/A	N/A	N/A	N/A
31	0.139537087	1984	N/A	N/A	N/A	N/A	N/A	N/A
32	0.136195079	1985	N/A	N/A	N/A	N/A	N/A	N/A
33	0.148548658	1986	2.684	N/A	N/A	N/A	N/A	N/A
34	0.168900783	1987	2.599	3.674	N/A	N/A	N/A	N/A
35	0.184448800	1988	2.359	3.334	1.768	N/A	N/A	N/A
36	0.191465638	1989	1.997	2.823	1.497	5.176	N/A	N/A
37	0.191769402	1990	1.617	2.286	1.212	4.192	15.786	N/A
38	0.182334043	1991	1.243	1.757	0.931	3.221	12.131	4.965
39	0.204863309	1992	1.142	1.614	0.856	2.959	11.145	4.561
40	0.205244266	1993	0.909	1.286	0.682	2.358	8.878	3.634
41	0.203892105	1994	0.718	1.015	0.538	1.861	7.009	2.869
42	0.206482928	1995	0.579	0.818	0.434	1.501	5.651	2.313
43	0.172904106	1996	0.385	0.544	0.288	0.997	3.755	1.537

Calculation of size of Balloon Payments, Used for Backcasting 1974 -1996 Embedded Cost of Debt

Line No.			1992 (S) (Prior S - s)	1993 (T) (Prior T - t)	1994 (U) (Prior U - u)	1995 (V) (Prior V - v)	1996 (W) (Prior W - w)
	Years to Maturity (Sch. 1)	19					
	Capitalization Financed by Debt	Exhibit 15, Sch. 3, Col d	34.833	18.958	26.536	29.147	26.242
	Years to depreciate capital		19	19	19	19	19
1		1977					
2		1978					
3		1979					
4		1980					
5		1981					
6		1982					
7		1983					
8		1984					
9		1985					
10		1986					
11		1987					
12		1988					
13		1989					
14		1990					
15		1991					
16		1992	27.697				
17		1993	22.013	15.067			
18		1994	17.524	11.995	21.126		
19		1995	13.906	9.518	16.764	23.129	
20		1996	11.502	7.873	13.865	19.130	26.242
21							
22	*Balloon Payment Due*		0.000	0.000	0.000	0.000	0.000
23							

Depreciation Factors

	FACT Exhibit 24, Ln. 8		(s) FACT * (EOY Balance for year, Col. S)	(t) FACT * (EOY Balance for year, Col. T)	(u) FACT * (EOY Balance for year, Col. U)	(v) FACT * (EOY Balance for year, Col. V)	(w) FACT * (EOY Balance for year, Col. W)
24	0.013804166	1977	N/A	N/A	N/A	N/A	N/A
25	0.063143318	1978	N/A	N/A	N/A	N/A	N/A
26	0.080456035	1979	N/A	N/A	N/A	N/A	N/A
27	0.097892549	1980	N/A	N/A	N/A	N/A	N/A
28	0.103843969	1981	N/A	N/A	N/A	N/A	N/A
29	0.117235791	1982	N/A	N/A	N/A	N/A	N/A
30	0.126647024	1983	N/A	N/A	N/A	N/A	N/A
31	0.139537087	1984	N/A	N/A	N/A	N/A	N/A
32	0.136195079	1985	N/A	N/A	N/A	N/A	N/A
33	0.148548658	1986	N/A	N/A	N/A	N/A	N/A
34	0.168900783	1987	N/A	N/A	N/A	N/A	N/A
35	0.184448800	1988	N/A	N/A	N/A	N/A	N/A
36	0.191465638	1989	N/A	N/A	N/A	N/A	N/A
37	0.191769402	1990	N/A	N/A	N/A	N/A	N/A
38	0.182334043	1991	N/A	N/A	N/A	N/A	N/A
39	0.204863309	1992	7.136	N/A	N/A	N/A	N/A
40	0.205244266	1993	5.685	3.891	N/A	N/A	N/A
41	0.203892105	1994	4.488	3.072	5.411	N/A	N/A
42	0.206482928	1995	3.618	2.477	4.362	6.018	N/A
43	0.172904106	1996	2.404	1.646	2.899	3.999	0.000

Appropriate Embedded Cost of Debt for 1974-1996

Line No.	Year	Capital Additions (Millions $)	"Catch up" debt factors	"Catch up" Debt Additions (Millions $)	Debt Additions (Millions $)	Appropriate DOC Depreciation Factors	Sinking Fund Debt Payments (Millions $)	Debt Balance EOY (Millions $)	Yearly Cost of Debt (Percent)	Debt Additions Times Cost	Balloon Payment (Millions $)	Cost of Old (Ballooned) Debt (Percent)	Embedded Cost of Debt (Percent)
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
		Exhibit 143-RGV-C, TAPS-RGV WP3, Sch. 3	('a' this year)/ Sum('a' 1974.2-1977.1)	b * Sum('a' 1968-1974.1) * .495	If year>1974.1, then.495*a + c; else 0	Exhibit 24, Ln. 8	e*(prior g + d)	prior g + d - f	Exhibit 14, Col. b	d * h	Exhibit 15, Sch. 2, Ln. 22	Debt vintage: Exhibit 15, Sch. 2, Lns. 7-10; debt cost: Exhibit 14	[(Prior l*Prior g) + i + j*(h-k)] / (f+g)
1	1968	0.978	-	-	-	-	-	-	7.12	-	-	-	-
2	1969	35.460	-	-	-	-	-	-	7.98	-	-	-	-
3	1970	181.599	-	-	-	-	-	-	8.44	-	-	-	-
4	1971	108.353	-	-	-	-	-	-	7.56	-	-	-	-
5	1972	50.029	-	-	-	-	-	-	7.40	-	-	-	-
6	1973	50.126	-	-	-	-	-	-	8.07	-	-	-	-
7	1974.1	87.930	-	-	-	-	-	-	8.74	-	-	-	-
8	1974.2	844.989	0.11693	29.777	448.047	-	-	448.047	8.74	3,915.93	-	-	8.74
9	1975	2,908.086	0.40241	102.481	1,541.983	-	-	1,990.030	8.82	13,600.29	-	-	8.80
10	1976	2,634.751	0.36459	92.848	1,397.050	-	-	3,387.081	8.65	12,084.49	-	-	8.74
11	1977.1	838.771	0.11607	29.558	444.750	-	-	3,831.831	9.39	4,176.20	-	-	8.82
12	1977.2	522.826	-	-	258.799	0.013804	56.468	4,034.162	9.39	2,430.12	-	-	8.86
13	1978	127.250	-	-	62.989	0.063143	258.708	3,838.443	10.26	646.27	-	-	8.88
14	1979	81.880	-	-	40.531	0.080456	312.087	3,566.887	11.12	450.70	-	-	8.90
15	1980	134.313	-	-	66.485	0.097893	355.680	3,277.692	13.09	870.29	-	-	8.98
16	1981	35.751	-	-	17.697	0.103844	342.206	2,953.182	15.17	268.46	-	-	9.01
17	1982	18.033	-	-	8.926	0.117236	347.265	2,614.844	14.47	129.16	-	-	9.03
18	1983	61.462	-	-	30.424	0.126647	335.015	2,310.252	13.03	396.42	-	-	9.08
19	1984	46.791	-	-	23.162	0.139537	325.598	2,007.816	14.22	329.36	-	-	9.13
20	1985	33.112	-	-	16.391	0.136195	275.687	1,748.520	12.75	208.98	-	-	9.16
21	1986	36.507	-	-	18.071	0.148549	262.425	1,504.166	10.05	181.61	-	-	9.17
22	1987	43.943	-	-	21.752	0.168901	257.729	1,268.189	10.56	229.70	-	-	9.19
23	1988	19.362	-	-	9.584	0.184449	235.684	1,042.089	10.89	104.37	-	-	9.20
24	1989	54.617	-	-	27.035	0.191466	204.701	864.424	10.42	281.71	-	-	9.23
25	1990	166.300	-	-	82.318	0.191769	181.556	765.186	10.57	870.10	-	-	9.35
26	1991	55.011	-	-	27.230	0.182334	144.485	647.932	10.00	272.30	-	-	9.37
27	1992	70.371	-	-	34.833	0.204863	139.874	542.892	9.36	326.04	-	-	9.37
28	1993	38.299	-	-	18.958	0.205244	115.317	446.534	8.30	157.35	43.239	8.74	9.30
29	1994	53.609	-	-	26.536	0.203892	96.455	376.615	9.26	245.73	118.267	8.82	9.41
30	1995	58.883	-	-	29.147	0.206483	83.783	321.979	8.75	255.04	85.303	8.65	9.38
31	1996	53.015	-	-	26.242	0.172904	60.209	288.012	8.58	225.16	34.088	9.39	9.24

1974.1 = January through April 1974
1974.2 = May through December 1974
1977.1 = January through June 1977
1977.2 = July through December 1977

Parties' Positions on Return on Equity, 1968-1996
(percentages)

Line No.	(a) Date	(b) Carriers* Exhibit 143-RGV-C, Sch. 3	(c) Williams JSG-T, Exhibit JSG-2, Sch. 13	(d) Tesoro FJH-T, Exhibit FJH-12
1	1968	15.65	14.01	11.98
2	1969	16.36	14.91	12.39
3	1970	17.56	15.63	13.30
4	1971	16.26	14.81	12.78
5	1972	15.63	14.59	12.51
6	1973	16.35	15.12	12.01
7	1974	17.33	16.02	13.15
8	1975	18.78	16.54	14.19
9	1976	19.31	15.91	14.42
10	1977	20.97	15.70	13.52
11	1978	22.73	16.64	13.27
12	1979	22.40	18.09	13.91
13	1980	23.92	20.44	15.19
14	1981	26.46	21.26	17.12
15	1982	25.25	21.29	15.84
16	1983	22.83	17.85	15.33
17	1984	24.54	18.54	15.40
18	1985	21.71	17.61	15.71
19	1986	22.05	15.94	14.77
20	1987	20.06	15.95	13.57
21	1988	20.68	16.30	14.20
22	1989	21.13	15.88	13.95
23	1990	20.84	16.62	13.13
24	1991	20.52	16.73	13.70
25	1992	20.37	16.44	13.44
26	1993	18.56	16.21	13.07
27	1994	19.41	16.66	12.44
28	1995	18.02	16.37	13.26
29	1996	17.05	15.08	12.00

*Carriers' sponsor separate costs of equity for each owner, but provide a composit equity return for illustrative purposes. Composit equity return rate can also be calculated from Exhibit WBT-18 and Exhibit WBT-19 in T-6.

Appropriate Modifications to Williams Petroleum's Approach to
Determining the Cost of Equity for 1968-1996, Based on Alaska Pipeline Decisions
(percent rates)

Line No.	Year	Kenai ROE	Kuparuk ROE	Average of Kenai/Kuparuk Overlap Years	Projection Basis	US Treasuries	Risk Premium over Treasuries	Risk Premium Projection	Projected ROE	Alaska Pipeline ROE
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(l)
		JSG-T, Exhibit JSG-2, Sch. 6	JSG-T, Exhibit JSG-2, Sch. 6	if a&b not 0, then (a + b) / 2; else 0	if c not 0, then c; else non-zero a or b	JSG-T, Exhibit JSG-2, Sch. 12	if d not 0, then d - e, else 0	5-year avg. of f's nearest non-zero entries	if d = 0, then e+g, else 0	d or h, which ever is non-zero
1	1968	-	-	-	-	5.26	-	4.98	10.24	10.24
2	1969	-	-	-	-	6.12	-	4.98	11.10	11.10
3	1970	-	-	-	-	6.58	-	4.98	11.56	11.56
4	1971	-	-	-	-	5.70	-	4.98	10.68	10.68
5	1972	-	-	-	-	5.54	-	4.98	10.52	10.52
6	1973	-	-	-	-	6.21	-	4.98	11.19	11.19
7	1974	-	-	-	-	6.88	-	4.98	11.86	11.86
8	1975	-	-	-	-	6.96	-	4.98	11.94	11.94
9	1976	-	-	-	-	6.79	-	4.98	11.77	11.77
10	1977	-	-	-	-	7.53	-	4.98	12.51	12.51
11	1978	-	-	-	-	8.40	-	4.98	13.38	13.38
12	1979	-	-	-	-	9.26	-	4.98	14.24	14.24
13	1980	-	-	-	-	11.23	-	4.98	16.21	16.21
14	1981	-	19.95	-	19.95	13.31	6.64	**4.98**	-	19.95
15	1982	-	19.95	-	19.95	12.61	7.34	-	-	19.95
16	1983	-	14.69	-	14.69	11.17	3.52	-	-	14.69
17	1984	-	15.90	-	15.90	12.36	3.54	-	-	15.90
18	1985	15.50	14.00	14.75	14.75	10.89	3.86	-	-	14.75
19	1986	16.65	13.00	14.83	14.83	8.19	6.64	-	-	14.83
20	1987	14.98	13.50	14.24	14.24	8.70	5.54	-	-	14.24
21	1988	14.74	-	-	14.74	9.03	5.71	-	-	14.74
22	1989	14.74	-	-	14.74	8.56	6.18	-	-	14.74
23	1990	14.50	-	-	14.50	8.71	5.79	-	-	14.50
24	1991	14.50	-	-	14.50	8.14	6.36	-	-	14.50
25	1992	14.50	-	-	14.50	7.50	7.00	**6.21**	-	14.50
26	1993	-	-	-	-	6.44	-	6.21	12.65	12.65
27	1994	-	-	-	-	7.40	-	6.21	13.61	13.61
28	1995	-	-	-	-	6.89	-	6.21	13.10	13.10
29	1996	-	-	-	-	6.72	-	6.21	12.93	12.93

Appropriate Cost of Equity for the Average Pipeline, 1968-1996
(No Special TAPS Risk Premium Included)
(Percent rates)

Line No.	Year	Williams' Pipeline Proxy-Based DCF Return	Williams' Pipeline Proxy-Based DCF Return, Risk Premium Removed	Return Suggested by AK Pipeline Decisions, as Appropriate Modified	Return on Equity, Excluding Special TAPS Risk Premium
		(a)	(b)	(c)	(d)
		JSG-2, Schedule 13	a - 0.50	Exhibit 17, col i	(b + c) / 2
1	1968	13.32	12.82	10.24	11.53
2	1969	14.18	13.68	11.10	12.39
3	1970	14.64	14.14	11.56	12.85
4	1971	13.76	13.26	10.68	11.97
5	1972	13.60	13.10	10.52	11.81
6	1973	14.27	13.77	11.19	12.48
7	1974	14.94	14.44	11.86	13.15
8	1975	15.02	14.52	11.94	13.23
9	1976	14.85	14.35	11.77	13.06
10	1977	15.59	15.09	12.51	13.80
11	1978	16.46	15.96	13.38	14.67
12	1979	17.32	16.82	14.24	15.53
13	1980	19.29	18.79	16.21	17.50
14	1981	21.37	20.87	19.95	20.41
15	1982	20.67	20.17	19.95	20.06
16	1983	19.23	18.73	14.69	16.71
17	1984	20.42	19.92	15.90	17.91
18	1985	18.95	18.45	14.75	16.60
19	1986	16.25	15.75	14.83	15.29
20	1987	16.76	16.26	14.24	15.25
21	1988	17.09	16.59	14.74	15.67
22	1989	16.62	16.12	14.74	15.43
23	1990	17.19	16.69	14.50	15.60
24	1991	16.62	16.12	14.50	15.31
25	1992	15.72	15.22	14.50	14.86
26	1993	14.39	13.89	12.65	13.27
27	1994	14.73	14.23	13.61	13.92
28	1995	15.38	14.88	13.10	13.99
29	1996	14.63	14.13	12.93	13.53

Calculation of 33-Basis Point Risk Premium for
Non-Completion Risk During Pre-Construction

Inputs to calculation of non-completion risk premium			
i	Part IV.B.4	Years	25
ii	Part IV.B.4	Probability of Project Success	98.00%
iii	Exhibit 18	No Risk Premium ROE, 1968-1974 Mean	12.31%
iv	Solution to make (g) sum to $100	Compensatory Risk Premium	0.36%
v	90% * (iv)	Risk Premium Applied to Total Equity	0.33%
vi	(iii) + (iv)	Total return on equity	12.67%

Line #	Year	Net DOC Rate Base	SL Dep.	Return	Cash Flows	Discount Factor	Probability of Success	Expected Present Value of Cash Flow ('d')
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	1	$ 100.00	$ 4.00	$ 12.67	$ 16.67	0.89	98%	$ 14.55
2	2	$ 96.00	$ 4.00	$ 12.17	$ 16.17	0.79	98%	$ 12.56
3	3	$ 92.00	$ 4.00	$ 11.66	$ 15.66	0.71	98%	$ 10.83
4	4	$ 88.00	$ 4.00	$ 11.15	$ 15.15	0.63	98%	$ 9.33
5	5	$ 84.00	$ 4.00	$ 10.65	$ 14.65	0.56	98%	$ 8.03
6	6	$ 80.00	$ 4.00	$ 10.14	$ 14.14	0.50	98%	$ 6.90
7	7	$ 76.00	$ 4.00	$ 9.63	$ 13.63	0.44	98%	$ 5.93
8	8	$ 72.00	$ 4.00	$ 9.12	$ 13.12	0.40	98%	$ 5.08
9	9	$ 68.00	$ 4.00	$ 8.62	$ 12.62	0.35	98%	$ 4.35
10	10	$ 64.00	$ 4.00	$ 8.11	$ 12.11	0.31	98%	$ 3.72
11	11	$ 60.00	$ 4.00	$ 7.60	$ 11.60	0.28	98%	$ 3.17
12	12	$ 56.00	$ 4.00	$ 7.10	$ 11.10	0.25	98%	$ 2.70
13	13	$ 52.00	$ 4.00	$ 6.59	$ 10.59	0.22	98%	$ 2.29
14	14	$ 48.00	$ 4.00	$ 6.08	$ 10.08	0.20	98%	$ 1.94
15	15	$ 44.00	$ 4.00	$ 5.58	$ 9.58	0.18	98%	$ 1.64
16	16	$ 40.00	$ 4.00	$ 5.07	$ 9.07	0.16	98%	$ 1.39
17	17	$ 36.00	$ 4.00	$ 4.56	$ 8.56	0.14	98%	$ 1.17
18	18	$ 32.00	$ 4.00	$ 4.06	$ 8.06	0.12	98%	$ 0.98
19	19	$ 28.00	$ 4.00	$ 3.55	$ 7.55	0.11	98%	$ 0.81
20	20	$ 24.00	$ 4.00	$ 3.04	$ 7.04	0.10	98%	$ 0.68
21	21	$ 20.00	$ 4.00	$ 2.53	$ 6.53	0.09	98%	$ 0.56
22	22	$ 16.00	$ 4.00	$ 2.03	$ 6.03	0.08	98%	$ 0.46
23	23	$ 12.00	$ 4.00	$ 1.52	$ 5.52	0.07	98%	$ 0.37
24	24	$ 8.00	$ 4.00	$ 1.01	$ 5.01	0.06	98%	$ 0.30
25	25	$ 4.00	$ 4.00	$ 0.51	$ 4.51	0.05	98%	$ 0.24
							Total	$ 100.00

Sources and notes

a = Assumes $100 in Year 1. Thereafter [a] - [b] from previous year
b = Straight line depreciation over 25 years; see Part IV.B.4 for finding
c = [a] x [vi]
d = [b] + [c]
e = 1 / (1 + [iii])^Year
f = [ii]
g = [d] x [e] x [f]

Calculation of 42-Basis Point Risk Premium
for Economic Risk During Pre-construction and Construction

Inputs to calculation of equity recovery risk premium			
i	Part IV.B.4	Years	25
ii	Part IV.B.4	Probability of Total Loss, 1968-1977 Equity	2.5%
iii	1- (ii)	Probability of No Loss, 1968-1977 Equity	97.50%
iv	Exhibit 18	No Risk Premium ROE, 1968-1977 Mean	12.63%
v	Solution to make (g) sum to $100	Compensatory Risk Premium	0.46%
vi	90% * (v)	Risk Premium Applied to Total Equity	0.42%
vii	(iv) + (v)	Total return on equity	13.09%

Line #	Year	Net DOC Rate Base	SL Dep.	Return	Cash Flows	Discount Factor	Probability of Success	Expected Present Value of Cash Flow ('d')
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	1	$ 100.00	$ 4.00	$ 13.09	$ 17.09	0.89	97.5%	$ 14.79
2	2	$ 96.00	$ 4.00	$ 12.57	$ 16.57	0.79	97.5%	$ 12.73
3	3	$ 92.00	$ 4.00	$ 12.04	$ 16.04	0.70	97.5%	$ 10.95
4	4	$ 88.00	$ 4.00	$ 11.52	$ 15.52	0.62	97.5%	$ 9.40
5	5	$ 84.00	$ 4.00	$ 11.00	$ 15.00	0.55	97.5%	$ 8.07
6	6	$ 80.00	$ 4.00	$ 10.47	$ 14.47	0.49	97.5%	$ 6.91
7	7	$ 76.00	$ 4.00	$ 9.95	$ 13.95	0.44	97.5%	$ 5.92
8	8	$ 72.00	$ 4.00	$ 9.42	$ 13.42	0.39	97.5%	$ 5.06
9	9	$ 68.00	$ 4.00	$ 8.90	$ 12.90	0.34	97.5%	$ 4.31
10	10	$ 64.00	$ 4.00	$ 8.38	$ 12.38	0.30	97.5%	$ 3.67
11	11	$ 60.00	$ 4.00	$ 7.85	$ 11.85	0.27	97.5%	$ 3.12
12	12	$ 56.00	$ 4.00	$ 7.33	$ 11.33	0.24	97.5%	$ 2.65
13	13	$ 52.00	$ 4.00	$ 6.81	$ 10.81	0.21	97.5%	$ 2.25
14	14	$ 48.00	$ 4.00	$ 6.28	$ 10.28	0.19	97.5%	$ 1.90
15	15	$ 44.00	$ 4.00	$ 5.76	$ 9.76	0.17	97.5%	$ 1.60
16	16	$ 40.00	$ 4.00	$ 5.24	$ 9.24	0.15	97.5%	$ 1.34
17	17	$ 36.00	$ 4.00	$ 4.71	$ 8.71	0.13	97.5%	$ 1.13
18	18	$ 32.00	$ 4.00	$ 4.19	$ 8.19	0.12	97.5%	$ 0.94
19	19	$ 28.00	$ 4.00	$ 3.67	$ 7.67	0.10	97.5%	$ 0.78
20	20	$ 24.00	$ 4.00	$ 3.14	$ 7.14	0.09	97.5%	$ 0.65
21	21	$ 20.00	$ 4.00	$ 2.62	$ 6.62	0.08	97.5%	$ 0.53
22	22	$ 16.00	$ 4.00	$ 2.09	$ 6.09	0.07	97.5%	$ 0.43
23	23	$ 12.00	$ 4.00	$ 1.57	$ 5.57	0.06	97.5%	$ 0.35
24	24	$ 8.00	$ 4.00	$ 1.05	$ 5.05	0.06	97.5%	$ 0.28
25	25	$ 4.00	$ 4.00	$ 0.52	$ 4.52	0.05	97.5%	$ 0.23
							Total	$ 100.00

Sources and notes

a = Assumes $100 in Year 1. Thereafter [a] - [b] from previous year
b = Straight line depreciation over 25 years; see Part IV.B.4 for finding
c = [a] x [vii]
d = [b] + [c]
e = 1 / (1 + [iv])^Year
f = [iii]
g = [d] x [e] x [f]

Appropriate Annual Rate of Return on Equity for TAPS, 1968-1996
(Percentage Rates)

Line No.	Year	Return on Equity, Excluding Special TAPS Risk Premium	Risk Premium Adjusted Back-Cast Return on Equity
		(a)	(b)
		Exhibit 18	a + .75 (sum of Risk Premiums From Exhibit 19, Schedules 1 & 2)
1	1968	11.53	12.28
2	1969	12.39	13.14
3	1970	12.85	13.60
4	1971	11.97	12.72
5	1972	11.81	12.56
6	1973	12.48	13.23
7	1974	13.15	13.90
8	1975	13.23	13.98
9	1976	13.06	13.81
10	1977	13.80	14.55
11	1978	14.67	15.42
12	1979	15.53	16.28
13	1980	17.50	18.25
14	1981	20.41	21.16
15	1982	20.06	20.81
16	1983	16.71	17.46
17	1984	17.91	18.66
18	1985	16.60	17.35
19	1986	15.29	16.04
20	1987	15.25	16.00
21	1988	15.67	16.42
22	1989	15.43	16.18
23	1990	15.60	16.35
24	1991	15.31	16.06
25	1992	14.86	15.61
26	1993	13.27	14.02
27	1994	13.92	14.67
28	1995	13.99	14.74
29	1996	13.53	14.28

Calculation of Appropriate AFUDC, 1968-1996
(millions $)

Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Addn's	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Addn's	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	Sep-68	$0.978	$0	$1	0.0%	$0	100.0%	$1	$0	$0	12.28%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
2	Oct-68	$0.000	$0	$1	0.0%	$0	100.0%	$0	$0	$1	12.28%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
3	Nov-68	$0.000	$0	$1	0.0%	$0	100.0%	$0	$0	$1	12.28%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
4	Dec-68	$0.000	$0	$1	0.0%	$0	100.0%	$0	$0	$1	12.28%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
5	Jan-69	$0.244	$0	$1	0.0%	$0	100.0%	$0	$0	$1	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
6	Feb-69	$0.000	$0	$1	0.0%	$0	100.0%	$0	$0	$1	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
7	Mar-69	$0.000	$0	$1	0.0%	$0	100.0%	$0	$0	$1	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
8	Apr-69	$0.242	$0	$1	0.0%	$0	100.0%	$0	$0	$1	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
9	May-69	$0.854	$0	$2	0.0%	$0	100.0%	$1	$0	$1	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
10	Jun-69	$1.234	$0	$4	0.0%	$0	100.0%	$1	$0	$2	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
11	Jul-69	$0.712	$0	$4	0.0%	$0	100.0%	$1	$0	$4	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
12	Aug-69	$1.124	$0	$5	0.0%	$0	100.0%	$1	$0	$4	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
13	Sep-69	$2.164	$0	$8	0.0%	$0	100.0%	$2	$0	$6	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
14	Oct-69	$5.192	$0	$13	0.0%	$0	100.0%	$5	$0	$8	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
15	Nov-69	$6.530	$0	$19	0.0%	$0	100.0%	$7	$0	$13	13.14%	$0	$0	$0	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
16	Dec-69	$17.161	$0	$36	0.0%	$0	100.0%	$17	$0	$19	13.14%	$0	$0	$1	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
17	Jan-70	($0.886)	$0	$36	0.0%	$1	100.0%	($1)	$0	$37	13.60%	$0	$0	$1	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
18	Feb-70	$8.996	$0	$45	0.0%	$0	100.0%	$9	$0	$36	13.60%	$0	$0	$2	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
19	Mar-70	$11.607	$0	$56	0.0%	$0	100.0%	$12	$0	$45	13.60%	$1	$0	$2	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
20	Apr-70	$18.351	$0	$75	0.0%	$0	100.0%	$18	$0	$57	13.60%	$1	$0	$3	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
21	May-70	$16.501	$0	$91	0.0%	$0	100.0%	$17	$0	$75	13.60%	$1	$0	$4	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
22	Jun-70	$19.677	$0	$111	0.0%	$0	100.0%	$20	$0	$92	13.60%	$1	$0	$5	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
23	Jul-70	$28.292	$0	$139	0.0%	$4	100.0%	$28	$0	$115	13.60%	$1	$0	$6	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
24	Aug-70	$17.456	$0	$156	0.0%	$0	100.0%	$17	$0	$144	13.60%	$2	$0	$8	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
25	Sep-70	$24.416	$0	$181	0.0%	$0	100.0%	$24	$0	$161	13.60%	$2	$0	$9	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
26	Oct-70	$15.631	$0	$196	0.0%	$0	100.0%	$16	$0	$185	13.60%	$2	$0	$11	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
27	Nov-70	$8.254	$0	$205	0.0%	$0	100.0%	$8	$0	$201	13.60%	$2	$0	$14	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
28	Dec-70	$13.301	$0	$218	0.0%	$0	100.0%	$13	$0	$209	13.60%	$2	$0	$16	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
29	Jan-71	$0.630	$0	$219	0.0%	$12	100.0%	$1	$0	$234	12.72%	$2	$0	$19	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
30	Feb-71	$3.625	$0	$222	0.0%	$0	100.0%	$4	$0	$235	12.72%	$2	$0	$21	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
31	Mar-71	$4.975	$0	$227	0.0%	$0	100.0%	$5	$0	$238	12.72%	$3	$0	$24	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
32	Apr-71	$4.708	$0	$232	0.0%	$0	100.0%	$5	$0	$243	12.72%	$3	$0	$26	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
33	May-71	$6.100	$0	$238	0.0%	$0	100.0%	$6	$0	$248	12.72%	$3	$0	$29	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
34	Jun-71	$6.142	$0	$244	0.0%	$0	100.0%	$6	$0	$254	12.72%	$3	$0	$32	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
35	Jul-71	$9.385	$0	$254	0.0%	$15	100.0%	$9	$0	$276	12.72%	$3	$0	$34	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
36	Aug-71	$14.829	$0	$268	0.0%	$0	100.0%	$15	$0	$285	12.72%	$3	$0	$37	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
37	Sep-71	$10.408	$0	$279	0.0%	$0	100.0%	$10	$0	$300	12.72%	$3	$0	$41	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
38	Oct-71	$12.104	$0	$291	0.0%	$0	100.0%	$12	$0	$310	12.72%	$3	$0	$44	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
39	Nov-71	$16.481	$0	$307	0.0%	$0	100.0%	$16	$0	$322	12.72%	$3	$0	$47	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
40	Dec-71	$18.967	$0	$326	0.0%	$0	100.0%	$19	$0	$339	12.72%	$4	$0	$51	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
41	Jan-72	($1.212)	$0	$325	0.0%	$19	100.0%	($1)	$0	$377	12.56%	$4	$0	$55	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
42	Feb-72	$4.997	$0	$330	0.0%	$0	100.0%	$5	$0	$376	12.56%	$4	$0	$59	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
43	Mar-72	$4.452	$0	$335	0.0%	$0	100.0%	$4	$0	$381	12.56%	$4	$0	$63	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
44	Apr-72	$4.215	$0	$339	0.0%	$0	100.0%	$4	$0	$386	12.56%	$4	$0	$67	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
45	May-72	$5.853	$0	$345	0.0%	$0	100.0%	$6	$0	$390	12.56%	$4	$0	$71	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
46	Jun-72	$7.497	$0	$352	0.0%	$0	100.0%	$7	$0	$396	12.56%	$4	$0	$75	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
47	Jul-72	$4.158	$0	$356	0.0%	$24	100.0%	$4	$0	$427	12.56%	$4	$0	$80	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
48	Aug-72	$3.660	$0	$360	0.0%	$0	100.0%	$4	$0	$431	12.56%	$5	$0	$84	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
49	Sep-72	$2.846	$0	$363	0.0%	$0	100.0%	$3	$0	$435	12.56%	$5	$0	$89	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
50	Oct-72	$3.711	$0	$367	0.0%	$0	100.0%	$4	$0	$438	12.56%	$5	$0	$93	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0

Calculation of Appropriate AFUDC, 1968-1996
(millions $)

Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Addn's	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Addn's	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
51	Nov-72	$3.201	$0	$370	0.0%	$0	100.0%	$3	$0	$442	12.56%	$5	$0	$98	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
52	Dec-72	$6.653	$0	$376	0.0%	$0	100.0%	$7	$0	$445	12.56%	$5	$0	$102	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
53	Jan-73	($1.040)	$0	$375	0.0%	$27	100.0%	($1)	$0	$479	13.23%	$5	$0	$108	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
54	Feb-73	$2.485	$0	$378	0.0%	$0	100.0%	$2	$0	$478	13.23%	$5	$0	$113	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
55	Mar-73	$3.837	$0	$382	0.0%	$0	100.0%	$4	$0	$480	13.23%	$5	$0	$118	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
56	Apr-73	$3.288	$0	$385	0.0%	$0	100.0%	$3	$0	$484	13.23%	$5	$0	$124	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
57	May-73	$3.686	$0	$389	0.0%	$0	100.0%	$4	$0	$487	13.23%	$5	$0	$129	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
58	Jun-73	$3.982	$0	$393	0.0%	$0	100.0%	$4	$0	$491	13.23%	$5	$0	$134	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
59	Jul-73	$5.164	$0	$398	0.0%	$32	100.0%	$5	$0	$527	13.23%	$6	$0	$140	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
60	Aug-73	$4.630	$0	$402	0.0%	$0	100.0%	$5	$0	$532	13.23%	$6	$0	$146	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
61	Sep-73	$5.206	$0	$408	0.0%	$0	100.0%	$5	$0	$537	13.23%	$6	$0	$152	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
62	Oct-73	$7.992	$0	$416	0.0%	$0	100.0%	$8	$0	$542	13.23%	$6	$0	$158	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
63	Nov-73	$4.485	$0	$420	0.0%	$0	100.0%	$4	$0	$550	13.23%	$6	$0	$164	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
64	Dec-73	$6.412	$0	$427	0.0%	$0	100.0%	$6	$0	$555	13.23%	$6	$0	$170	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
65	Jan-74	$21.430	$0	$448	0.0%	$36	100.0%	$21	$0	$597	13.90%	$7	$0	$177	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
66	Feb-74	$19.355	$0	$467	0.0%	$0	100.0%	$19	$0	$618	13.90%	$7	$0	$184	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
67	Mar-74	$21.796	$0	$489	0.0%	$0	100.0%	$22	$0	$638	13.90%	$7	$0	$192	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
68	Apr-74	$25.349	$0	$514	0.0%	$0	100.0%	$25	$0	$659	13.90%	$8	$0	$199	$0	0.0%	$0	$0	$0	0.00%	$0	$0	$0
69	May-74	$25.309	$0	$540	0.0%	$0	67.0%	$17	$0	$685	13.90%	$8	$0	$207	$0	33.0%	$8	$0	$0	8.74%	$0	$0	$0
70	Jun-74	$33.131	$0	$573	0.0%	$0	67.0%	$22	$0	$702	13.90%	$8	$0	$215	$0	33.0%	$11	$0	$8	8.74%	$0	$0	$0
71	Jul-74	$69.084	$0	$642	0.0%	$45	67.0%	$46	$0	$769	13.90%	$9	$0	$224	$0	33.0%	$23	$0	$19	8.74%	$0	$0	$0
72	Aug-74	$95.964	$0	$738	0.0%	$0	67.0%	$64	$0	$815	13.90%	$9	$0	$234	$0	33.0%	$32	$0	$42	8.74%	$0	$0	$1
73	Sep-74	$88.045	$0	$826	0.0%	$0	67.0%	$59	$0	$880	13.90%	$10	$0	$244	$0	33.0%	$29	$0	$74	8.74%	$1	$0	$1
74	Oct-74	$160.956	$0	$987	0.0%	$0	67.0%	$108	$0	$939	13.90%	$11	$0	$255	$0	33.0%	$53	$0	$103	8.74%	$1	$0	$2
75	Nov-74	$106.622	$0	$1,094	0.0%	$0	67.0%	$71	$0	$1,047	13.90%	$12	$0	$267	$0	33.0%	$35	$0	$156	8.74%	$1	$0	$3
76	Dec-74	$265.876	$0	$1,359	0.0%	$0	67.0%	$178	$0	$1,118	13.90%	$13	$0	$280	$0	33.0%	$88	$0	$191	8.74%	$1	$0	$4
77	Jan-75	$40.513	$0	$1,400	0.0%	$64.487	53.4%	$22	$0	$1,361	13.98%	$16	$0	$296	$4	46.6%	$19	$0	$283	8.80%	$2	$0	$6
78	Feb-75	$131.521	$0	$1,531	0.0%	$0	53.4%	$70	$0	$1,382	13.98%	$16	$0	$312	$0	46.6%	$61	$0	$302	8.80%	$2	$0	$9
79	Mar-75	$256.892	$0	$1,788	0.0%	$0	53.4%	$137	$0	$1,453	13.98%	$17	$0	$329	$0	46.6%	$120	$0	$363	8.80%	$3	$0	$11
80	Apr-75	$107.239	$0	$1,896	0.0%	$0	53.4%	$57	$0	$1,590	13.98%	$19	$0	$347	$0	46.6%	$50	$0	$483	8.80%	$4	$0	$15
81	May-75	$262.621	$0	$2,158	0.0%	$0	53.4%	$140	$0	$1,647	13.98%	$19	$0	$366	$0	46.6%	$122	$0	$533	8.80%	$4	$0	$19
82	Jun-75	$581.761	$0	$2,740	0.0%	$0	53.4%	$310	$0	$1,787	13.98%	$21	$0	$387	$0	46.6%	$271	$0	$655	8.80%	$5	$0	$24
83	Jul-75	($58.262)	$0	$2,682	0.0%	$107	53.4%	($31)	$0	$2,205	13.98%	$26	$0	$413	$19	46.6%	($27)	$0	$946	8.80%	$7	$0	$30
84	Aug-75	$281.674	$0	$2,963	0.0%	$0	53.4%	$150	$0	$2,174	13.98%	$25	$0	$438	$0	46.6%	$131	$0	$919	8.80%	$7	$0	$37
85	Sep-75	$648.093	$0	$3,612	0.0%	$0	53.4%	$346	$0	$2,324	13.98%	$27	$0	$465	$0	46.6%	$302	$0	$1,050	8.80%	$8	$0	$45
86	Oct-75	$204.497	$0	$3,816	0.0%	$0	53.4%	$109	$0	$2,670	13.98%	$31	$0	$496	$0	46.6%	$95	$0	$1,352	8.80%	$10	$0	$55
87	Nov-75	$271.352	$0	$4,087	0.0%	$0	53.4%	$145	$0	$2,779	13.98%	$32	$0	$529	$0	46.6%	$127	$0	$1,448	8.80%	$11	$0	$65
88	Dec-75	$180.187	$0	$4,268	0.0%	$0	53.4%	$96	$0	$2,924	13.98%	$34	$0	$563	$0	46.6%	$84	$0	$1,574	8.80%	$12	$0	$77
89	Jan-76	$229.571	$0	$4,497	0.0%	$176	50.9%	$117	$0	$3,196	13.81%	$37	$0	$600	$53	49.1%	$113	$0	$1,712	8.74%	$12	$0	$89
90	Feb-76	$202.281	$0	$4,699	0.0%	$0	50.9%	$103	$0	$3,313	13.81%	$38	$0	$638	$0	49.1%	$99	$0	$1,824	8.74%	$13	$0	$103
91	Mar-76	$177.661	$0	$4,877	0.0%	$0	50.9%	$90	$0	$3,416	13.81%	$39	$0	$677	$0	49.1%	$87	$0	$1,923	8.74%	$14	$0	$117
92	Apr-76	$261.510	$0	$5,139	0.0%	$0	50.9%	$133	$0	$3,506	13.81%	$40	$0	$717	$0	49.1%	$128	$0	$2,011	8.74%	$15	$0	$131
93	May-76	$275.789	$0	$5,414	0.0%	$0	50.9%	$140	$0	$3,639	13.81%	$42	$0	$759	$0	49.1%	$135	$0	$2,139	8.74%	$16	$0	$147
94	Jun-76	$219.714	$0	$5,634	0.0%	$0	50.9%	$112	$0	$3,780	13.81%	$44	$0	$803	$0	49.1%	$108	$0	$2,274	8.74%	$17	$0	$164
95	Jul-76	$297.548	$0	$5,932	0.0%	$240	50.9%	$152	$0	$4,132	13.81%	$48	$0	$850	$87	49.1%	$146	$0	$2,469	8.74%	$18	$0	$181
96	Aug-76	$236.383	$0	$6,168	0.0%	$0	50.9%	$120	$0	$4,283	13.81%	$49	$0	$900	$0	49.1%	$116	$0	$2,615	8.74%	$19	$0	$201
97	Sep-76	$231.738	$0	$6,400	0.0%	$0	50.9%	$118	$0	$4,404	13.81%	$51	$0	$950	$0	49.1%	$114	$0	$2,731	8.74%	$20	$0	$220
98	Oct-76	$135.767	$0	$6,536	0.0%	$0	50.9%	$69	$0	$4,522	13.81%	$52	$0	$1,002	$0	49.1%	$67	$0	$2,844	8.74%	$21	$0	$241
99	Nov-76	$159.200	$0	$6,695	0.0%	$0	50.9%	$81	$0	$4,591	13.81%	$53	$0	$1,055	$0	49.1%	$78	$0	$2,911	8.74%	$21	$0	$262
100	Dec-76	$207.590	$0	$6,902	0.0%	$0	50.9%	$106	$0	$4,672	13.81%	$54	$0	$1,109	$0	49.1%	$102	$0	$2,989	8.74%	$22	$0	$284

Calculation of Appropriate AFUDC, 1968-1996
(millions $)

Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Addn's	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Addn's	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
101	Jan-77	$49.871	$0	$6,952	0.0%	$306	50.5%	$25	$0	$5,084	14.55%	$62	$0	$1,171	$121	49.5%	$25	$0	$3,212	8.82%	$24	$0	$308
102	Feb-77	$108.028	$0	$7,060	0.0%	$0	50.5%	$55	$0	$5,109	14.55%	$62	$0	$1,233	$0	49.5%	$53	$0	$3,236	8.82%	$24	$0	$332
103	Mar-77	$355.530	$0	$7,416	0.0%	$0	50.5%	$180	$0	$5,164	14.55%	$63	$0	$1,295	$0	49.5%	$176	$0	$3,290	8.82%	$24	$0	$356
104	Apr-77	$45.571	$0	$7,461	0.0%	$0	50.5%	$23	$0	$5,343	14.55%	$65	$0	$1,360	$0	49.5%	$23	$0	$3,466	8.82%	$25	$0	$381
105	May-77	$131.126	$0	$7,592	0.0%	$0	50.5%	$66	$0	$5,366	14.55%	$65	$0	$1,425	$0	49.5%	$65	$0	$3,488	8.82%	$26	$0	$407
106	Jun-77	$148.646	$7,741	$0	100.0%	$0	50.5%	$75	$5,507	$5,432	14.55%	$66	$1,491	$0	$0	49.5%	$74	$3,627	$3,553	8.82%	$26	$433	$0
107	Jul-77	$521.361	$0	$521	0.0%	$0	50.5%	$263	$0	$0	14.55%	$0	$0	$0	$0	49.5%	$258	$0	$0	8.86%	$0	$0	$0
108	Aug-77	$0.000	$334	$187	64.1%	$0	50.5%	$0	$169	$263	14.55%	$3	$0	$3	$0	49.5%	$0	$165	$258	8.86%	$2	$0	$2
109	Sep-77	$0.000	$55	$132	29.5%	$0	50.5%	$0	$28	$94	14.55%	$1	$1	$3	$0	49.5%	$0	$27	$93	8.86%	$1	$1	$2
110	Oct-77	$0.000	$1	$131	0.5%	$0	50.5%	$0	$0	$67	14.55%	$1	$0	$4	$0	49.5%	$0	$0	$65	8.86%	$0	$0	$2
111	Nov-77	$0.000	$1	$130	0.5%	$0	50.5%	$0	$0	$66	14.55%	$1	$0	$5	$0	49.5%	$0	$0	$65	8.86%	$0	$0	$3
112	Dec-77	$1.466	$3	$129	2.1%	$0	50.5%	$1	$1	$66	14.55%	$1	$0	$6	$0	49.5%	$1	$1	$65	8.86%	$0	$0	$3
113	Jan-78	$0.000	$2	$127	1.3%	$0	50.5%	$0	$1	$65	15.42%	$1	$0	$6	$0	49.5%	$0	$1	$64	8.88%	$0	$0	$4
114	Feb-78	$0.000	$73	$54	57.6%	$0	50.5%	$0	$37	$64	15.42%	$1	$4	$4	$0	49.5%	$0	$36	$63	8.88%	$0	$2	$2
115	Mar-78	$0.000	$39	$15	72.7%	$0	50.5%	$0	$20	$27	15.42%	$0	$3	$1	$0	49.5%	$0	$19	$27	8.88%	$0	$2	$1
116	Apr-78	$78.797	$42	$52	44.6%	$0	50.5%	$40	$21	$7	15.42%	$0	$1	$1	$0	49.5%	$39	$21	$7	8.88%	$0	$0	$0
117	May-78	($15.413)	$0	$36	0.5%	$0	50.5%	($8)	$0	$26	15.42%	$0	$0	$1	$0	49.5%	($8)	$0	$26	8.88%	$0	$0	$1
118	Jun-78	($11.412)	$0	$24	1.7%	$0	50.5%	($6)	$0	$18	15.42%	$0	$0	$1	$0	49.5%	($6)	$0	$18	8.88%	$0	$0	$1
119	Jul-78	$0.184	$0	$24	1.3%	$0	50.5%	$0	$0	$12	15.42%	$0	$0	$2	$0	49.5%	$0	$0	$12	8.88%	$0	$0	$1
120	Aug-78	$14.907	$1	$38	2.6%	$0	50.5%	$8	$1	$12	15.42%	$0	$0	$2	$0	49.5%	$7	$0	$12	8.88%	$0	$0	$1
121	Sep-78	$64.862	$3	$100	2.9%	$0	50.5%	$33	$2	$19	15.42%	$0	$0	$2	$0	49.5%	$32	$1	$19	8.88%	$0	$0	$1
122	Oct-78	($86.230)	$1	$13	5.4%	$0	50.5%	($44)	$0	$51	15.42%	$1	$0	$2	$0	49.5%	($43)	$0	$50	8.88%	$0	$0	$1
123	Nov-78	$8.134	$1	$20	3.6%	$0	50.5%	$4	$0	$7	15.42%	$0	$0	$2	$0	49.5%	$4	$0	$6	8.88%	$0	$0	$1
124	Dec-78	$73.421	$10	$84	10.1%	$0	50.5%	$37	$5	$10	15.42%	$0	$0	$2	$0	49.5%	$36	$5	$10	8.88%	$0	$0	$1
125	Jan-79	($7.144)	$1	$77	0.7%	$0	50.5%	($4)	$0	$43	16.28%	$1	$0	$3	$0	49.5%	($4)	$0	$42	8.90%	$0	$0	$2
126	Feb-79	$1.699	$0	$78	0.0%	$0	50.5%	$1	$0	$39	16.28%	$1	$0	$3	$0	49.5%	$1	$0	$38	8.90%	$0	$0	$2
127	Mar-79	$0.725	$0	$79	0.2%	$0	50.5%	$0	$0	$40	16.28%	$1	$0	$4	$0	49.5%	$0	$0	$39	8.90%	$0	$0	$2
128	Apr-79	$3.515	$0	$82	0.3%	$0	50.5%	$2	$0	$40	16.28%	$1	$0	$4	$0	49.5%	$2	$0	$39	8.90%	$0	$0	$2
129	May-79	$3.451	$0	$85	0.5%	$0	50.5%	$2	$0	$41	16.28%	$1	$0	$5	$0	49.5%	$2	$0	$41	8.90%	$0	$0	$3
130	Jun-79	$9.331	$0	$94	0.1%	$0	50.5%	$5	$0	$43	16.28%	$1	$0	$6	$0	49.5%	$5	$0	$42	8.90%	$0	$0	$3
131	Jul-79	$5.606	$1	$99	0.8%	$0	50.5%	$3	$0	$48	16.28%	$1	$0	$6	$0	49.5%	$3	$0	$47	8.90%	$0	$0	$3
132	Aug-79	$8.536	$0	$108	0.1%	$0	50.5%	$4	$0	$50	16.28%	$1	$0	$7	$0	49.5%	$4	$0	$49	8.90%	$0	$0	$4
133	Sep-79	$10.836	$1	$117	1.1%	$0	50.5%	$5	$1	$54	16.28%	$1	$0	$7	$0	49.5%	$5	$1	$53	8.90%	$0	$0	$4
134	Oct-79	$25.480	$54	$89	37.9%	$0	50.5%	$13	$27	$59	16.28%	$1	$3	$5	$0	49.5%	$13	$27	$58	8.90%	$0	$2	$3
135	Nov-79	$7.506	$0	$96	0.0%	$0	50.5%	$4	$0	$45	16.28%	$1	$0	$6	$0	49.5%	$4	$0	$44	8.90%	$0	$0	$3
136	Dec-79	$12.338	$17	$91	16.0%	$0	50.5%	$6	$9	$49	16.28%	$1	$1	$6	$0	49.5%	$6	$9	$48	8.90%	$0	$1	$3
137	Jan-80	$24.800	$2	$113	2.1%	$0	50.5%	$13	$1	$46	18.25%	$1	$0	$6	$0	49.5%	$12	$1	$45	8.98%	$0	$0	$3
138	Feb-80	$7.678	$1	$120	0.5%	$0	50.5%	$4	$0	$57	18.25%	$1	$0	$7	$0	49.5%	$4	$0	$56	8.98%	$0	$0	$4
139	Mar-80	$7.840	$0	$128	0.2%	$0	50.5%	$4	$0	$61	18.25%	$1	$0	$8	$0	49.5%	$4	$0	$60	8.98%	$0	$0	$4
140	Apr-80	$13.319	$1	$141	0.5%	$0	50.5%	$7	$0	$65	18.25%	$1	$0	$9	$0	49.5%	$7	$0	$63	8.98%	$0	$0	$5
141	May-80	$9.317	$0	$150	0.3%	$0	50.5%	$5	$0	$71	18.25%	$1	$0	$10	$0	49.5%	$5	$0	$70	8.98%	$1	$0	$5
142	Jun-80	$11.464	$1	$160	0.4%	$0	50.5%	$6	$0	$75	18.25%	$1	$0	$11	$0	49.5%	$6	$0	$74	8.98%	$1	$0	$6
143	Jul-80	$14.285	$1	$174	0.3%	$0	50.5%	$7	$0	$81	18.25%	$1	$0	$12	$0	49.5%	$7	$0	$79	8.98%	$1	$0	$6
144	Aug-80	$12.716	$1	$185	0.7%	$0	50.5%	$6	$1	$88	18.25%	$1	$0	$14	$0	49.5%	$6	$1	$86	8.98%	$1	$0	$7
145	Sep-80	$12.692	$30	$168	15.2%	$0	50.5%	$6	$15	$94	18.25%	$1	$2	$13	$0	49.5%	$6	$15	$92	8.98%	$1	$1	$7
146	Oct-80	$14.194	($0)	$182	-0.1%	$0	50.5%	$7	($0)	$85	18.25%	$1	($0)	$14	$0	49.5%	$7	($0)	$83	8.98%	$1	($0)	$7
147	Nov-80	$7.321	$1	$189	0.5%	$0	50.5%	$4	$0	$92	18.25%	$1	$0	$16	$0	49.5%	$4	$0	$90	8.98%	$1	$0	$8
148	Dec-80	($1.313)	$71	$117	37.9%	$0	50.5%	($1)	$36	$95	18.25%	$1	$6	$11	$0	49.5%	($1)	$35	$93	8.98%	$1	$3	$6
149	Jan-81	($8.296)	$20	$88	18.5%	$0	50.5%	($4)	$10	$59	21.16%	$1	$2	$10	$0	49.5%	($4)	$10	$58	9.01%	$0	$1	$5
150	Feb-81	$1.749	$1	$89	1.0%	$0	50.5%	$1	$0	$45	21.16%	$1	$0	$11	$0	49.5%	$1	$0	$44	9.01%	$0	$0	$5

Calculation of Appropriate AFUDC, 1968-1996
(millions $)

Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Addn's	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Addn's	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
151	Mar-81	$4.919	$2	$92	2.3%	$0	50.5%	$2	$1	$45	21.16%	$1	$0	$11	$0	49.5%	$2	$1	$44	9.01%	$0	$0	$5
152	Apr-81	($10.878)	$0	$81	0.2%	$0	50.5%	($5)	$0	$46	21.16%	$1	$0	$12	$0	49.5%	($5)	$0	$45	9.01%	$0	$0	$6
153	May-81	$3.726	$1	$84	1.2%	$0	50.5%	$2	$0	$41	21.16%	$1	$0	$13	$0	49.5%	$2	$0	$40	9.01%	$0	$0	$6
154	Jun-81	$7.222	$2	$88	2.7%	$0	50.5%	$4	$1	$42	21.16%	$1	$0	$13	$0	49.5%	$4	$1	$41	9.01%	$0	$0	$6
155	Jul-81	$21.536	$2	$108	1.9%	$0	50.5%	$11	$1	$45	21.16%	$1	$0	$14	$0	49.5%	$11	$1	$44	9.01%	$0	$0	$6
156	Aug-81	$9.854	$2	$116	1.5%	$0	50.5%	$5	$1	$54	21.16%	$1	$0	$14	$0	49.5%	$5	$1	$53	9.01%	$0	$0	$7
157	Sep-81	$13.808	$1	$128	1.1%	$0	50.5%	$7	$1	$59	21.16%	$1	$0	$15	$0	49.5%	$7	$1	$57	9.01%	$0	$0	$7
158	Oct-81	$9.272	$3	$135	2.2%	$0	50.5%	$5	$2	$65	21.16%	$1	$0	$16	$0	49.5%	$5	$1	$64	9.01%	$0	$0	$7
159	Nov-81	$1.654	$0	$136	0.3%	$0	50.5%	$1	$0	$68	21.16%	$1	$0	$17	$0	49.5%	$1	$0	$67	9.01%	$1	$0	$8
160	Dec-81	($18.815)	$45	$72	38.1%	$0	50.5%	($10)	$23	$69	21.16%	$1	$7	$12	$0	49.5%	($9)	$22	$67	9.01%	$1	$3	$5
161	Jan-82	($39.518)	$6	$27	16.9%	$0	50.5%	($20)	$3	$37	20.81%	$1	$2	$11	$0	49.5%	($20)	$3	$36	9.03%	$0	$1	$5
162	Feb-82	$3.121	$1	$29	3.6%	$0	50.5%	$2	$1	$14	20.81%	$0	$0	$10	$0	49.5%	$2	$1	$14	9.03%	$0	$0	$5
163	Mar-82	$1.723	$1	$30	3.4%	$0	50.5%	$1	$1	$15	20.81%	$0	$0	$10	$0	49.5%	$1	$1	$15	9.03%	$0	$0	$5
164	Apr-82	$3.745	$2	$31	6.8%	$0	50.5%	$2	$1	$15	20.81%	$0	$1	$10	$0	49.5%	$2	$1	$15	9.03%	$0	$0	$4
165	May-82	$5.213	$1	$36	2.7%	$0	50.5%	$3	$1	$16	20.81%	$0	$0	$10	$0	49.5%	$3	$0	$16	9.03%	$0	$0	$4
166	Jun-82	$10.069	$1	$45	1.8%	$0	50.5%	$5	$0	$18	20.81%	$0	$0	$10	$0	49.5%	$5	$0	$18	9.03%	$0	$0	$4
167	Jul-82	$5.197	$1	$49	1.6%	$0	50.5%	$3	$0	$23	20.81%	$0	$0	$10	$0	49.5%	$3	$0	$22	9.03%	$0	$0	$5
168	Aug-82	$12.156	$18	$44	28.9%	$0	50.5%	$6	$9	$25	20.81%	$0	$3	$8	$0	49.5%	$6	$9	$24	9.03%	$0	$1	$3
169	Sep-82	$9.022	$10	$43	19.3%	$0	50.5%	$5	$5	$22	20.81%	$0	$1	$7	$0	49.5%	$4	$5	$22	9.03%	$0	$1	$3
170	Oct-82	$6.323	$9	$39	19.4%	$0	50.5%	$3	$5	$21	20.81%	$0	$1	$6	$0	49.5%	$3	$5	$21	9.03%	$0	$1	$3
171	Nov-82	$0.543	$4	$36	10.4%	$0	50.5%	$0	$2	$20	20.81%	$0	$1	$5	$0	49.5%	$0	$2	$20	9.03%	$0	$0	$2
172	Dec-82	$0.440	$3	$33	7.9%	$0	50.5%	$0	$1	$18	20.81%	$0	$0	$5	$0	49.5%	$0	$1	$18	9.03%	$0	$0	$2
173	Jan-83	$1.446	$1	$34	1.9%	$0	50.5%	$1	$0	$17	17.46%	$0	$0	$5	$0	49.5%	$1	$0	$17	9.08%	$0	$0	$2
174	Feb-83	$2.967	$0	$37	0.6%	$0	50.5%	$1	$0	$17	17.46%	$0	$0	$6	$0	49.5%	$1	$0	$17	9.08%	$0	$0	$3
175	Mar-83	$12.156	$13	$36	26.9%	$0	50.5%	$6	$7	$19	17.46%	$0	$2	$4	$0	49.5%	$6	$7	$18	9.08%	$0	$1	$2
176	Apr-83	$11.964	$9	$39	18.5%	$0	50.5%	$6	$4	$18	17.46%	$0	$1	$4	$0	49.5%	$6	$4	$18	9.08%	$0	$0	$2
177	May-83	$5.997	$1	$44	2.1%	$0	50.5%	$3	$0	$20	17.46%	$0	$0	$4	$0	49.5%	$3	$0	$19	9.08%	$0	$0	$2
178	Jun-83	$6.524	$0	$50	0.9%	$0	50.5%	$3	$0	$22	17.46%	$0	$0	$4	$0	49.5%	$3	$0	$22	9.08%	$0	$0	$2
179	Jul-83	$3.630	$0	$53	0.4%	$0	50.5%	$2	$0	$25	17.46%	$0	$0	$5	$0	49.5%	$2	$0	$25	9.08%	$0	$0	$2
180	Aug-83	($1.387)	$1	$51	1.7%	$0	50.5%	($1)	$0	$27	17.46%	$0	$0	$5	$0	49.5%	($1)	$0	$26	9.08%	$0	$0	$2
181	Sep-83	$5.401	$42	$14	74.5%	$0	50.5%	$3	$21	$26	17.46%	$0	$4	$2	$0	49.5%	$3	$21	$25	9.08%	$0	$2	$1
182	Oct-83	$3.740	$2	$16	11.4%	$0	50.5%	$2	$1	$7	17.46%	$0	$0	$2	$0	49.5%	$2	$1	$7	9.08%	$0	$0	$1
183	Nov-83	$3.091	$4	$15	20.5%	$0	50.5%	$2	$2	$8	17.46%	$0	$0	$1	$0	49.5%	$2	$2	$8	9.08%	$0	$0	$1
184	Dec-83	$5.933	$3	$18	14.7%	$0	50.5%	$3	$2	$8	17.46%	$0	$0	$1	$0	49.5%	$3	$2	$8	9.08%	$0	$0	$1
185	Jan-84	$2.443	$1	$20	3.9%	$0	50.5%	$1	$0	$9	18.66%	$0	$0	$1	$0	49.5%	$1	$0	$9	9.13%	$0	$0	$1
186	Feb-84	$2.919	$0	$22	2.1%	$0	50.5%	$1	$0	$10	18.66%	$0	$0	$1	$0	49.5%	$1	$0	$10	9.13%	$0	$0	$1
187	Mar-84	$5.833	$5	$23	19.6%	$0	50.5%	$3	$3	$11	18.66%	$0	$0	$1	$0	49.5%	$3	$3	$11	9.13%	$0	$0	$1
188	Apr-84	$3.978	$2	$24	8.9%	$0	50.5%	$2	$1	$11	18.66%	$0	$0	$1	$0	49.5%	$2	$1	$11	9.13%	$0	$0	$1
189	May-84	$4.588	$3	$26	11.2%	$0	50.5%	$2	$2	$12	18.66%	$0	$0	$1	$0	49.5%	$2	$2	$12	9.13%	$0	$0	$1
190	Jun-84	$2.182	$1	$27	4.0%	$0	50.5%	$1	$1	$13	18.66%	$0	$0	$2	$0	49.5%	$1	$1	$13	9.13%	$0	$0	$1
191	Jul-84	$2.806	$1	$28	3.9%	$0	50.5%	$1	$1	$13	18.66%	$0	$0	$2	$0	49.5%	$1	$1	$13	9.13%	$0	$0	$1
192	Aug-84	$1.364	$0	$29	0.9%	$0	50.5%	$1	$0	$14	18.66%	$0	$0	$2	$0	49.5%	$1	$0	$14	9.13%	$0	$0	$1
193	Sep-84	$1.420	$0	$30	1.5%	$0	50.5%	$1	$0	$15	18.66%	$0	$0	$2	$0	49.5%	$1	$0	$15	9.13%	$0	$0	$1
194	Oct-84	$1.504	$6	$26	17.8%	$0	50.5%	$1	$3	$15	18.66%	$0	$0	$2	$0	49.5%	$1	$3	$15	9.13%	$0	$0	$1
195	Nov-84	$2.224	$2	$26	6.7%	$0	50.5%	$1	$1	$13	18.66%	$0	$0	$2	$0	49.5%	$1	$1	$13	9.13%	$0	$0	$1
196	Dec-84	$15.530	$42	$0	100.0%	$0	50.5%	$8	$21	$13	18.66%	$0	$2	$0	$0	49.5%	$8	$21	$13	9.13%	$0	$1	$0
197	Jan-85	$8.145	$0	$8	1.7%	$0	50.5%	$4	$0	($0)	17.35%	($0)	$0	($0)	$0	49.5%	$4	$0	($0)	9.16%	($0)	$0	($0)
198	Feb-85	$4.541	$0	$13	0.4%	$0	50.5%	$2	$0	$4	17.35%	$0	($0)	$0	$0	49.5%	$2	$0	$4	9.16%	$0	($0)	$0
199	Mar-85	$5.035	$0	$17	1.2%	$0	50.5%	$3	$0	$6	17.35%	$0	$0	$0	$0	49.5%	$2	$0	$6	9.16%	$0	$0	$0
200	Apr-85	$5.114	$1	$21	5.8%	$0	50.5%	$3	$1	$9	17.35%	$0	$0	$0	$0	49.5%	$3	$1	$9	9.16%	$0	$0	$0

Calculation of Appropriate AFUDC, 1968-1996
(millions $)

Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Addn's	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Addn's	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
201	May-85	$3.059	$1	$24	2.7%	$0	50.5%	$2	$0	$11	17.35%	$0	$0	$0	$0	49.5%	$2	$0	$10	9.16%	$0	$0	$0
202	Jun-85	$1.075	$25	$0	100.0%	$0	50.5%	$1	$12	$12	17.35%	$0	$1	$0	$0	49.5%	$1	$12	$12	9.16%	$0	$0	$0
203	Jul-85	$3.104	$3	$0	87.7%	$0	50.5%	$2	$1	($0)	17.35%	($0)	$0	($0)	$0	49.5%	$2	$1	($0)	9.16%	($0)	$0	($0)
204	Aug-85	$1.274	$1	$1	43.8%	$0	50.5%	$1	$0	$0	17.35%	$0	($0)	$0	$0	49.5%	$1	$0	$0	9.16%	$0	($0)	$0
205	Sep-85	$1.171	$0	$2	12.6%	$0	50.5%	$1	$0	$0	17.35%	$0	$0	$0	$0	49.5%	$1	$0	$0	9.16%	$0	$0	$0
206	Oct-85	$1.278	$1	$2	37.5%	$0	50.5%	$1	$1	$1	17.35%	$0	$0	$0	$0	49.5%	$1	$1	$1	9.16%	$0	$0	$0
207	Nov-85	$0.414	$0	$2	17.2%	$0	50.5%	$0	$0	$1	17.35%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.16%	$0	$0	$0
208	Dec-85	($1.097)	$0	$1	0.0%	$0	50.5%	($1)	$0	$1	17.35%	$0	$0	$0	$0	49.5%	($1)	$0	$1	9.16%	$0	$0	$0
209	Jan-86	$1.426	$1	$2	24.9%	$0	50.5%	$1	$0	$0	16.04%	$0	$0	$0	$0	49.5%	$1	$0	$0	9.17%	$0	$0	$0
210	Feb-86	$0.855	$0	$2	16.9%	$0	50.5%	$0	$0	$1	16.04%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.17%	$0	$0	$0
211	Mar-86	$0.403	$0	$2	1.7%	$0	50.5%	$0	$0	$1	16.04%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.17%	$0	$0	$0
212	Apr-86	$0.785	$0	$3	5.4%	$0	50.5%	$0	$0	$1	16.04%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.17%	$0	$0	$0
213	May-86	$1.529	$2	$3	36.4%	$0	50.5%	$1	$1	$2	16.04%	$0	$0	$0	$0	49.5%	$1	$1	$2	9.17%	$0	$0	$0
214	Jun-86	$3.016	$1	$5	13.7%	$0	50.5%	$2	$0	$1	16.04%	$0	$0	$0	$0	49.5%	$1	$0	$1	9.17%	$0	$0	$0
215	Jul-86	$2.768	$1	$7	7.1%	$0	50.5%	$1	$0	$3	16.04%	$0	$0	$0	$0	49.5%	$1	$0	$3	9.17%	$0	$0	$0
216	Aug-86	$4.096	$0	$11	1.8%	$0	50.5%	$2	$0	$4	16.04%	$0	$0	$0	$0	49.5%	$2	$0	$4	9.17%	$0	$0	$0
217	Sep-86	$2.030	$0	$13	0.9%	$0	50.5%	$1	$0	$6	16.04%	$0	$0	$0	$0	49.5%	$1	$0	$6	9.17%	$0	$0	$0
218	Oct-86	$16.698	$26	$4	88.0%	$0	50.5%	$8	$13	$7	16.04%	$0	$0	$0	$0	49.5%	$8	$13	$7	9.17%	$0	$0	$0
219	Nov-86	$0.835	$0	$4	9.5%	$0	50.5%	$0	$0	$2	16.04%	$0	$0	$0	$0	49.5%	$0	$0	$2	9.17%	$0	$0	$0
220	Dec-86	$2.066	$4	$2	62.9%	$0	50.5%	$1	$2	$2	16.04%	$0	$0	$0	$0	49.5%	$1	$2	$2	9.17%	$0	$0	$0
221	Jan-87	$0.941	$2	$2	48.3%	$0	50.5%	$0	$1	$1	16.00%	$0	$0	$0	$0	49.5%	$0	$1	$1	9.19%	$0	$0	$0
222	Feb-87	$0.252	$0	$2	2.7%	$0	50.5%	$0	$0	$1	16.00%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.19%	$0	$0	$0
223	Mar-87	$1.163	$1	$2	31.8%	$0	50.5%	$1	$0	$1	16.00%	$0	$0	$0	$0	49.5%	$1	$0	$1	9.19%	$0	$0	$0
224	Apr-87	$1.739	$0	$3	11.7%	$0	50.5%	$1	$0	$1	16.00%	$0	$0	$0	$0	49.5%	$1	$0	$1	9.19%	$0	$0	$0
225	May-87	$4.131	$1	$7	9.0%	$0	50.5%	$2	$0	$2	16.00%	$0	$0	$0	$0	49.5%	$2	$0	$2	9.19%	$0	$0	$0
226	Jun-87	$6.657	$1	$12	10.2%	$0	50.5%	$3	$1	$3	16.00%	$0	$0	$0	$0	49.5%	$3	$1	$3	9.19%	$0	$0	$0
227	Jul-87	$7.798	$7	$13	33.0%	$0	50.5%	$4	$3	$6	16.00%	$0	$0	$0	$0	49.5%	$4	$3	$6	9.19%	$0	$0	$0
228	Aug-87	$3.655	$1	$16	5.4%	$0	50.5%	$2	$0	$7	16.00%	$0	$0	$0	$0	49.5%	$2	$0	$7	9.19%	$0	$0	$0
229	Sep-87	$7.007	$16	$7	71.1%	$0	50.5%	$4	$8	$8	16.00%	$0	$0	$0	$0	49.5%	$3	$8	$8	9.19%	$0	$0	$0
230	Oct-87	$1.272	$1	$7	7.3%	$0	50.5%	$1	$0	$3	16.00%	$0	$0	$0	$0	49.5%	$1	$0	$3	9.19%	$0	$0	$0
231	Nov-87	$2.743	$1	$9	11.4%	$0	50.5%	$1	$1	$4	16.00%	$0	$0	$0	$0	49.5%	$1	$1	$4	9.19%	$0	$0	$0
232	Dec-87	$6.586	$14	$1	90.7%	$0	50.5%	$3	$7	$5	16.00%	$0	$0	$0	$0	49.5%	$3	$7	$4	9.19%	$0	$0	$0
233	Jan-88	$0.316	$0	$2	5.6%	$0	50.5%	$0	$0	$1	16.42%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.20%	$0	$0	$0
234	Feb-88	$1.650	$1	$2	42.1%	$0	50.5%	$1	$1	$1	16.42%	$0	$0	$0	$0	49.5%	$1	$1	$1	9.20%	$0	$0	$0
235	Mar-88	$1.437	$1	$2	43.5%	$0	50.5%	$1	$1	$1	16.42%	$0	$0	$0	$0	49.5%	$1	$1	$1	9.20%	$0	$0	$0
236	Apr-88	$0.910	$0	$2	16.2%	$0	50.5%	$0	$0	$1	16.42%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.20%	$0	$0	$0
237	May-88	$1.372	$1	$3	24.9%	$0	50.5%	$1	$0	$1	16.42%	$0	$0	$0	$0	49.5%	$1	$0	$1	9.20%	$0	$0	$0
238	Jun-88	$0.439	$0	$3	13.7%	$0	50.5%	$0	$0	$1	16.42%	$0	$0	$0	$0	49.5%	$0	$0	$1	9.20%	$0	$0	$0
239	Jul-88	$1.693	$0	$4	5.7%	$0	50.5%	$1	$0	$1	16.42%	$0	$0	$0	$0	49.5%	$1	$0	$1	9.20%	$0	$0	$0
240	Aug-88	$1.841	$0	$6	7.2%	$0	50.5%	$1	$0	$2	16.42%	$0	$0	$0	$0	49.5%	$1	$0	$2	9.20%	$0	$0	$0
241	Sep-88	$3.728	$2	$7	22.3%	$0	50.5%	$2	$1	$3	16.42%	$0	$0	$0	$0	49.5%	$2	$1	$3	9.20%	$0	$0	$0
242	Oct-88	$2.898	$1	$10	5.5%	$0	50.5%	$1	$0	$4	16.42%	$0	$0	$0	$0	49.5%	$1	$0	$4	9.20%	$0	$0	$0
243	Nov-88	$1.784	$3	$8	28.0%	$0	50.5%	$1	$2	$5	16.42%	$0	$0	$0	$0	49.5%	$1	$2	$5	9.20%	$0	$0	$0
244	Dec-88	$1.292	$1	$9	9.9%	$0	50.5%	$1	$0	$4	16.42%	$0	$0	$0	$0	49.5%	$1	$0	$4	9.20%	$0	$0	$0
245	Jan-89	$1.191	$1	$9	6.5%	$0	50.5%	$1	$0	$4	16.18%	$0	$0	$0	$0	49.5%	$1	$0	$4	9.23%	$0	$0	$0
246	Feb-89	$0.705	$1	$9	7.6%	$0	50.5%	$0	$0	$5	16.18%	$0	$0	$0	$0	49.5%	$0	$0	$5	9.23%	$0	$0	$0
247	Mar-89	$1.805	$1	$10	6.1%	$0	50.5%	$1	$0	$5	16.18%	$0	$0	$0	$0	49.5%	$1	$0	$4	9.23%	$0	$0	$0
248	Apr-89	$3.021	$2	$11	16.5%	$0	50.5%	$2	$1	$5	16.18%	$0	$0	$0	$0	49.5%	$1	$1	$5	9.23%	$0	$0	$0
249	May-89	$6.348	$8	$9	47.0%	$0	50.5%	$3	$4	$6	16.18%	$0	$0	$0	$0	49.5%	$3	$4	$5	9.23%	$0	$0	$0
250	Jun-89	$4.545	$3	$11	18.5%	$0	50.5%	$2	$1	$5	16.18%	$0	$0	$0	$0	49.5%	$2	$1	$5	9.23%	$0	$0	$0

Calculation of Appropriate AFUDC, 1968-1996
(millions $)

Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Addn's	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Addn's	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
251	Jul-89	$3.932	$2	$14	10.9%	$0	50.5%	$2	$1	$6	16.18%	$0	$0	$0	$0	49.5%	$2	$1	$6	9.23%	$0	$0	$0
252	Aug-89	$6.670	$5	$15	26.8%	$0	50.5%	$3	$3	$7	16.18%	$0	$0	$0	$0	49.5%	$3	$3	$7	9.23%	$0	$0	$0
253	Sep-89	$7.190	$1	$21	5.3%	$0	50.5%	$4	$1	$7	16.18%	$0	$0	$0	$0	49.5%	$4	$1	$7	9.23%	$0	$0	$0
254	Oct-89	$8.172	$5	$24	16.4%	$0	50.5%	$4	$2	$10	16.18%	$0	$0	$0	$0	49.5%	$4	$2	$10	9.23%	$0	$0	$0
255	Nov-89	$4.093	$1	$27	3.0%	$0	50.5%	$2	$0	$12	16.18%	$0	$0	$1	$0	49.5%	$2	$0	$12	9.23%	$0	$0	$0
256	Dec-89	$6.945	$15	$20	43.1%	$0	50.5%	$4	$7	$14	16.18%	$0	$0	$1	$0	49.5%	$3	$7	$14	9.23%	$0	$0	$0
257	Jan-90	$4.851	$3	$21	13.8%	$0	50.5%	$2	$2	$10	16.35%	$0	$0	$1	$0	49.5%	$2	$2	$10	9.35%	$0	$0	$0
258	Feb-90	$5.225	$2	$25	5.9%	$0	50.5%	$3	$1	$11	16.35%	$0	$0	$1	$0	49.5%	$3	$1	$10	9.35%	$0	$0	$0
259	Mar-90	$5.339	$1	$29	3.8%	$0	50.5%	$3	$1	$12	16.35%	$0	$0	$1	$0	49.5%	$3	$1	$12	9.35%	$0	$0	$0
260	Apr-90	$6.405	$1	$34	3.2%	$0	50.5%	$3	$1	$15	16.35%	$0	$0	$1	$0	49.5%	$3	$1	$14	9.35%	$0	$0	$1
261	May-90	$9.574	$4	$40	8.4%	$0	50.5%	$5	$2	$17	16.35%	$0	$0	$1	$0	49.5%	$5	$2	$17	9.35%	$0	$0	$1
262	Jun-90	$14.758	$5	$50	8.6%	$0	50.5%	$7	$2	$20	16.35%	$0	$0	$1	$0	49.5%	$7	$2	$20	9.35%	$0	$0	$1
263	Jul-90	$9.246	$7	$53	11.1%	$0	50.5%	$5	$3	$25	16.35%	$0	$0	$2	$0	49.5%	$5	$3	$25	9.35%	$0	$0	$1
264	Aug-90	$13.457	$4	$62	5.8%	$0	50.5%	$7	$2	$27	16.35%	$0	$0	$2	$0	49.5%	$7	$2	$26	9.35%	$0	$0	$1
265	Sep-90	$26.482	$18	$71	19.8%	$0	50.5%	$13	$9	$32	16.35%	$0	$0	$2	$0	49.5%	$13	$9	$31	9.35%	$0	$0	$1
266	Oct-90	$24.058	$3	$92	3.4%	$0	50.5%	$12	$2	$36	16.35%	$0	$0	$2	$0	49.5%	$12	$2	$35	9.35%	$0	$0	$1
267	Nov-90	$20.327	$20	$92	17.8%	$0	50.5%	$10	$10	$47	16.35%	$1	$0	$3	$0	49.5%	$10	$10	$46	9.35%	$0	$0	$1
268	Dec-90	$26.576	$25	$94	21.2%	$0	50.5%	$13	$13	$47	16.35%	$1	$1	$3	$0	49.5%	$13	$13	$46	9.35%	$0	$0	$1
269	Jan-91	$6.718	$9	$92	8.6%	$0	50.5%	$3	$4	$47	16.06%	$1	$0	$3	$0	49.5%	$3	$4	$46	9.37%	$0	$0	$2
270	Feb-91	$14.897	$3	$104	2.9%	$0	50.5%	$8	$2	$46	16.06%	$1	$0	$4	$0	49.5%	$7	$2	$45	9.37%	$0	$0	$2
271	Mar-91	$23.354	$42	$85	33.3%	$0	50.5%	$12	$21	$52	16.06%	$1	$1	$3	$0	49.5%	$12	$21	$51	9.37%	$0	$1	$2
272	Apr-91	$14.557	$2	$98	1.7%	$0	50.5%	$7	$1	$43	16.06%	$1	$0	$4	$0	49.5%	$7	$1	$42	9.37%	$0	$0	$2
273	May-91	$13.831	$3	$108	2.8%	$0	50.5%	$7	$2	$49	16.06%	$1	$0	$4	$0	49.5%	$7	$2	$48	9.37%	$0	$0	$2
274	Jun-91	$13.658	$2	$120	1.6%	$0	50.5%	$7	$1	$55	16.06%	$1	$0	$5	$0	49.5%	$7	$1	$54	9.37%	$0	$0	$3
275	Jul-91	$15.370	$11	$124	8.3%	$0	50.5%	$8	$6	$61	16.06%	$1	$0	$5	$0	49.5%	$8	$6	$59	9.37%	$0	$0	$3
276	Aug-91	($1.860)	$10	$112	8.3%	$0	50.5%	($1)	$5	$63	16.06%	$1	$0	$6	$0	49.5%	($1)	$5	$61	9.37%	$0	$0	$3
277	Sep-91	($67.475)	$3	$42	6.0%	$0	50.5%	($34)	$1	$57	16.06%	$1	$0	$6	$0	49.5%	($33)	$1	$56	9.37%	$0	$0	$3
278	Oct-91	$8.532	$5	$45	10.7%	$0	50.5%	$4	$3	$21	16.06%	$0	$1	$6	$0	49.5%	$4	$3	$21	9.37%	$0	$0	$3
279	Nov-91	$12.701	$2	$55	4.3%	$0	50.5%	$6	$1	$23	16.06%	$0	$0	$6	$0	49.5%	$6	$1	$22	9.37%	$0	$0	$3
280	Dec-91	$0.728	$25	$32	43.7%	$0	50.5%	$0	$12	$28	16.06%	$0	$3	$4	$0	49.5%	$0	$12	$27	9.37%	$0	$1	$2
281	Jan-92	$4.970	$8	$28	23.1%	$0	50.5%	$3	$4	$16	15.61%	$0	$1	$3	$0	49.5%	$2	$4	$16	9.37%	$0	$0	$2
282	Feb-92	$5.584	$5	$29	14.0%	$0	50.5%	$3	$2	$14	15.61%	$0	$0	$3	$0	49.5%	$3	$2	$14	9.37%	$0	$0	$2
283	Mar-92	$3.136	$7	$25	21.0%	$0	50.5%	$2	$3	$15	15.61%	$0	$1	$2	$0	49.5%	$2	$3	$14	9.37%	$0	$0	$1
284	Apr-92	$7.719	$5	$28	13.9%	$0	50.5%	$4	$2	$13	15.61%	$0	$0	$2	$0	49.5%	$4	$2	$13	9.37%	$0	$0	$1
285	May-92	$4.323	$2	$31	6.2%	$0	50.5%	$2	$1	$14	15.61%	$0	$0	$2	$0	49.5%	$2	$1	$14	9.37%	$0	$0	$1
286	Jun-92	$6.763	$1	$36	3.6%	$0	50.5%	$3	$1	$16	15.61%	$0	$0	$2	$0	49.5%	$3	$1	$15	9.37%	$0	$0	$1
287	Jul-92	$5.601	$6	$35	15.1%	$0	50.5%	$3	$3	$18	15.61%	$0	$0	$2	$0	49.5%	$3	$3	$18	9.37%	$0	$0	$1
288	Aug-92	$3.490	$3	$36	8.6%	$0	50.5%	$2	$2	$18	15.61%	$0	$0	$2	$0	49.5%	$2	$2	$18	9.37%	$0	$0	$1
289	Sep-92	$12.752	$5	$44	9.6%	$0	50.5%	$6	$2	$18	15.61%	$0	$0	$2	$0	49.5%	$6	$2	$18	9.37%	$0	$0	$1
290	Oct-92	$6.620	$7	$43	14.6%	$0	50.5%	$3	$4	$22	15.61%	$0	$0	$2	$0	49.5%	$3	$4	$22	9.37%	$0	$0	$1
291	Nov-92	$6.430	$4	$45	8.5%	$0	50.5%	$3	$2	$22	15.61%	$0	$0	$2	$0	49.5%	$3	$2	$21	9.37%	$0	$0	$1
292	Dec-92	$2.983	$15	$33	30.6%	$0	50.5%	$2	$7	$23	15.61%	$0	$1	$2	$0	49.5%	$1	$7	$22	9.37%	$0	$0	$1
293	Jan-93	$1.672	$6	$29	18.0%	$0	50.5%	$1	$3	$17	14.02%	$0	$0	$2	$0	49.5%	$1	$3	$17	9.29%	$0	$0	$1
294	Feb-93	$2.740	$2	$29	6.8%	$0	50.5%	$1	$1	$15	14.02%	$0	$0	$2	$0	49.5%	$1	$1	$14	9.29%	$0	$0	$1
295	Mar-93	$5.125	$4	$31	10.5%	$0	50.5%	$3	$2	$15	14.02%	$0	$0	$2	$0	49.5%	$3	$2	$15	9.29%	$0	$0	$1
296	Apr-93	$5.219	$5	$32	12.5%	$0	50.5%	$3	$2	$16	14.02%	$0	$0	$2	$0	49.5%	$3	$2	$15	9.29%	$0	$0	$1
297	May-93	$2.181	$2	$31	6.8%	$0	50.5%	$1	$1	$16	14.02%	$0	$0	$2	$0	49.5%	$1	$1	$16	9.29%	$0	$0	$1
298	Jun-93	$4.215	$6	$29	17.4%	$0	50.5%	$2	$3	$16	14.02%	$0	$0	$2	$0	49.5%	$2	$3	$16	9.29%	$0	$0	$1
299	Jul-93	$0.821	$8	$22	25.8%	$0	50.5%	$0	$4	$15	14.02%	$0	$0	$1	$0	49.5%	$0	$4	$15	9.29%	$0	$0	$1
300	Aug-93	$2.036	$1	$24	2.9%	$0	50.5%	$1	$0	$11	14.02%	$0	$0	$2	$0	49.5%	$1	$0	$11	9.29%	$0	$0	$1

Calculation of Appropriate AFUDC, 1968-1996
(millions $)

Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Addn's	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Addn's	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
301	Sep-93	$1.253	$3	$22	13.5%	$0	50.5%	$1	$2	$12	14.02%	$0	$0	$1	$0	49.5%	$1	$2	$12	9.29%	$0	$0	$1
302	Oct-93	$2.629	$2	$22	8.6%	$0	50.5%	$1	$1	$11	14.02%	$0	$0	$1	$0	49.5%	$1	$1	$11	9.29%	$0	$0	$1
303	Nov-93	$3.788	$2	$24	8.6%	$0	50.5%	$2	$1	$11	14.02%	$0	$0	$1	$0	49.5%	$2	$1	$11	9.29%	$0	$0	$1
304	Dec-93	$6.619	$6	$24	21.3%	$0	50.5%	$3	$3	$12	14.02%	$0	$0	$1	$0	49.5%	$3	$3	$12	9.29%	$0	$0	$1
305	Jan-94	$2.594	$2	$25	6.3%	$0	50.5%	$1	$1	$12	14.67%	$0	$0	$1	$0	49.5%	$1	$1	$12	9.39%	$0	$0	$1
306	Feb-94	$1.793	$1	$26	4.1%	$0	50.5%	$1	$1	$13	14.67%	$0	$0	$1	$0	49.5%	$1	$1	$12	9.39%	$0	$0	$1
307	Mar-94	$4.643	$1	$30	2.2%	$0	50.5%	$2	$0	$13	14.67%	$0	$0	$2	$0	49.5%	$2	$0	$13	9.39%	$0	$0	$1
308	Apr-94	$3.777	$2	$31	6.8%	$0	50.5%	$2	$1	$15	14.67%	$0	$0	$2	$0	49.5%	$2	$1	$15	9.39%	$0	$0	$1
309	May-94	$5.348	$3	$34	6.9%	$0	50.5%	$3	$1	$16	14.67%	$0	$0	$2	$0	49.5%	$3	$1	$15	9.39%	$0	$0	$1
310	Jun-94	$4.342	$3	$35	8.2%	$0	50.5%	$2	$2	$17	14.67%	$0	$0	$2	$0	49.5%	$2	$2	$17	9.39%	$0	$0	$1
311	Jul-94	$4.658	$1	$38	3.4%	$0	50.5%	$2	$1	$18	14.67%	$0	$0	$2	$0	49.5%	$2	$1	$17	9.39%	$0	$0	$1
312	Aug-94	$4.686	$1	$42	1.4%	$0	50.5%	$2	$0	$19	14.67%	$0	$0	$2	$0	49.5%	$2	$0	$19	9.39%	$0	$0	$1
313	Sep-94	$5.679	$1	$47	2.8%	$0	50.5%	$3	$1	$21	14.67%	$0	$0	$2	$0	49.5%	$3	$1	$21	9.39%	$0	$0	$1
314	Oct-94	$9.200	$1	$55	2.1%	$0	50.5%	$5	$1	$24	14.67%	$0	$0	$3	$0	49.5%	$5	$1	$23	9.39%	$0	$0	$2
315	Nov-94	$1.400	$0	$56	0.5%	$0	50.5%	$1	$0	$28	14.67%	$0	$0	$3	$0	49.5%	$1	$0	$27	9.39%	$0	$0	$2
316	Dec-94	$5.489	$31	$31	49.9%	$0	50.5%	$3	$15	$28	14.67%	$0	$1	$2	$0	49.5%	$3	$15	$28	9.39%	$0	$1	$1
317	Jan-95	$3.277	$7	$27	20.6%	$0	50.5%	$2	$4	$16	14.74%	$0	$0	$2	$0	49.5%	$2	$3	$15	9.35%	$0	$0	$1
318	Feb-95	$5.161	$1	$31	2.8%	$0	50.5%	$3	$0	$14	14.74%	$0	$0	$2	$0	49.5%	$3	$0	$13	9.35%	$0	$0	$1
319	Mar-95	$3.819	$0	$35	0.2%	$0	50.5%	$2	$0	$16	14.74%	$0	$0	$2	$0	49.5%	$2	$0	$15	9.35%	$0	$0	$1
320	Apr-95	$5.248	$0	$40	0.6%	$0	50.5%	$3	$0	$18	14.74%	$0	$0	$2	$0	49.5%	$3	$0	$17	9.35%	$0	$0	$1
321	May-95	$2.680	$0	$43	0.1%	$0	50.5%	$1	$0	$20	14.74%	$0	$0	$2	$0	49.5%	$1	$0	$20	9.35%	$0	$0	$1
322	Jun-95	$3.501	$5	$41	10.3%	$0	50.5%	$2	$2	$22	14.74%	$0	$0	$2	$0	49.5%	$2	$2	$21	9.35%	$0	$0	$2
323	Jul-95	$4.151	$0	$45	0.8%	$0	50.5%	$2	$0	$21	14.74%	$0	$0	$3	$0	49.5%	$2	$0	$20	9.35%	$0	$0	$2
324	Aug-95	$5.192	$1	$50	1.3%	$0	50.5%	$3	$0	$23	14.74%	$0	$0	$3	$0	49.5%	$3	$0	$22	9.35%	$0	$0	$2
325	Sep-95	$4.286	$0	$54	0.2%	$0	50.5%	$2	$0	$25	14.74%	$0	$0	$3	$0	49.5%	$2	$0	$25	9.35%	$0	$0	$2
326	Oct-95	$5.294	$3	$57	4.5%	$0	50.5%	$3	$1	$27	14.74%	$0	$0	$3	$0	49.5%	$3	$1	$27	9.35%	$0	$0	$2
327	Nov-95	$3.944	$1	$59	2.4%	$0	50.5%	$2	$1	$29	14.74%	$0	$0	$4	$0	49.5%	$2	$1	$28	9.35%	$0	$0	$2
328	Dec-95	$12.330	$21	$51	28.9%	$0	50.5%	$6	$10	$30	14.74%	$0	$1	$3	$0	49.5%	$6	$10	$29	9.35%	$0	$1	$2
329	Jan-96	$5.440	$10	$46	17.8%	$0	50.5%	$3	$5	$26	14.28%	$0	$1	$3	$0	49.5%	$3	$5	$25	9.19%	$0	$0	$2
330	Feb-96	$3.309	$0	$49	0.7%	$0	50.5%	$2	$0	$23	14.28%	$0	$0	$3	$0	49.5%	$2	$0	$23	9.19%	$0	$0	$2
331	Mar-96	$4.470	$0	$53	0.4%	$0	50.5%	$2	$0	$25	14.28%	$0	$0	$3	$0	49.5%	$2	$0	$24	9.19%	$0	$0	$2
332	Apr-96	$3.284	$1	$56	1.3%	$0	50.5%	$2	$0	$27	14.28%	$0	$0	$4	$0	49.5%	$2	$0	$26	9.19%	$0	$0	$2
333	May-96	$3.996	$2	$57	4.1%	$0	50.5%	$2	$1	$28	14.28%	$0	$0	$4	$0	49.5%	$2	$1	$28	9.19%	$0	$0	$2
334	Jun-96	$7.992	$3	$62	4.6%	$0	50.5%	$4	$2	$29	14.28%	$0	$0	$4	$0	49.5%	$4	$1	$28	9.19%	$0	$0	$2
335	Jul-96	($2.752)	$0	$60	0.1%	$0	50.5%	($1)	$0	$32	14.28%	$0	$0	$4	$0	49.5%	($1)	$0	$31	9.19%	$0	$0	$3
336	Aug-96	$5.579	$0	$65	0.3%	$0	50.5%	$3	$0	$30	14.28%	$0	$0	$5	$0	49.5%	$3	$0	$30	9.19%	$0	$0	$3
337	Sep-96	$7.101	$1	$71	1.7%	$0	50.5%	$4	$1	$33	14.28%	$0	$0	$5	$0	49.5%	$4	$1	$32	9.19%	$0	$0	$3
338	Oct-96	$4.709	$0	$75	0.6%	$0	50.5%	$2	$0	$36	14.28%	$0	$0	$5	$0	49.5%	$2	$0	$35	9.19%	$0	$0	$3
339	Nov-96	$4.724	$0	$80	0.0%	$0	50.5%	$2	$0	$38	14.28%	$0	$0	$6	$0	49.5%	$2	$0	$37	9.19%	$0	$0	$4
340	Dec-96	$5.164	$11	$74	13.0%	$0	50.5%	$3	$6	$40	14.28%	$0	$1	$6	$0	49.5%	$3	$5	$40	9.19%	$0	$0	$3

SOURCE:

Column 1	Time in months
Column 2	Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 3	Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 4	Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 5	Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 6	Sum (prior six months Col 12) - sumproduct(prior six months Col 12 * prior six months Col 5) [A]
Column 7	Exhibit 11, col d
Column 8	Col 2 * Col 7

Calculation of Appropriate AFUDC, 1968-1996
(millions $)

Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Addn's	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Addn's	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
		Property Additions	Transfers to Property	Property Balance																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

Column 9 (cum Col 8 - cum prior Col 9 + cum Col 6) * Col 5
Column 10 prior (Col 8 - Col 9 + Col 10) + Col 6
Column 11 Exhibit 20, col b
Column 12 (Col 10 * Col 11)/12
Column 13 prior Col 14 * Col 5 + [B]
Column 14 prior Col 14 + Col 12 - Col 13
Column 15 Sum (prior six months Col 21) - sumproduct(prior six months Col 21 * prior six months Col 5) [A]
Column 16 1.0 - Col 7
Column 17 Col 2 * Col 16
Column 18 (cum Col 17 - cum prior Col 18 + cum Col 15) * Col 5
Column 19 prior (Col 17 - Col 18 + Col 19) + Col 15
Column 20 Exhibit 15, Schedule 3, col i
Column 21 (Col 19 * Col 20) / 12
Column 22 prior Col 23 * Col 5 +[C]
Column 23 prior Col 23 + Col 21 - Col 22

[A] for the months January and July prior to June of 1977, otherwise equal to 0
[B] if Col 5 = 100%, +Col 12, otherwise 0
[C] if Col 5 = 100%, +Col 19, otherwise 0

Appropriate Depreciation and Accumulated Depreciation, 1977-1996
(millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982
1	TSM-6/Baden Depreciation 77-83; TSM Depreciation 84-96	(30-BWF-E, 235-JFB-T); (31-BWF-E)	108.493	453.437	549.208	626.832	602.059	611.310
2	Amortization of Excluded Costs	31-BWF-E, Ln. 119		47.407	55.891	66.134	65.989	70.407
3	Appropriate Annual Depreciation	Line 1 + Line 2	108.493	500.844	605.099	692.966	668.048	681.717
4	Adjustments to Accumulated Depreciation	FERC Form 6, from 143-RGV-C	0.000	0.000	0.557	0.071	1.010	0.000
5	Adjusted Retirements from Accumulated Depreciation	Exhibit 23, Ln. 8	0.000	(6.985)	(10.932)	(51.829)	(2.496)	(13.606)
6	Accumulated Depreciation	Lns (3 + 4 + 5) + Prior Ln. 6	108.493	602.352	1197.077	1838.285	2504.847	3172.958

Appropriate Depreciation and Accumulated Depreciation, 1977-1996
(millions $)

Line No.	Description	Source	1983	1984	1985	1986	1987	1988
1	TSM-6/Baden Depreciation 77-83; TSM Depreciation 84-96	(30-BWF-E, 235-JFB-T); (31-BWF-E)	589.012	569.053	542.938	514.506	503.605	458.916
2	Amortization of Excluded Costs	31-BWF-E, Ln. 119	71.471	72.701				
3	Appropriate Annual Depreciation	Line 1 + Line 2	660.483	641.754	542.938	514.506	503.605	458.916
4	Adjustments to Accumulated Depreciation	FERC Form 6, from 143-RGV-C	0.000	0.075	0.000	0.000	0.000	0.000
5	Adjusted Retirements from Accumulated Depreciation	Exhibit 23, Ln. 8	(22.444)	(11.508)	(13.782)	(2.969)	(16.646)	(12.973)
6	Accumulated Depreciation	Lns (3 + 4 + 5) + Prior Ln. 6	3810.997	4441.318	4970.473	5482.011	5968.970	6414.913

Appropriate Depreciation and Accumulated Depreciation, 1977-1996
(millions $)

Line No.	Description	Source	1989	1990	1991	1992	1993	1994
1	TSM-6/Baden Depreciation 77-83; TSM Depreciation 84-96	(30-BWF-E, 235-JFB-T); (31-BWF-E)	395.419	335.514	295.711	285.871	237.084	195.984
2	Amortization of Excluded Costs	31-BWF-E, Ln. 119						
3	Appropriate Annual Depreciation	Line 1 + Line 2	395.419	335.514	295.711	285.871	237.084	195.984
4	Adjustments to Accumulated Depreciation	FERC Form 6, from 143-RGV-C	0.000	(0.004)	0.000	0.000	0.000	0.000
5	Adjusted Retirements from Accumulated Depreciation	Exhibit 23, Ln. 8	(4.723)	(4.342)	(57.358)	(15.635)	(10.901)	(10.166)
6	Accumulated Depreciation	Lns (3 + 4 + 5) + Prior Ln. 6	6805.609	7136.777	7375.129	7645.366	7871.548	8057.367

Appropriate Depreciation and Accumulated Depreciation, 1977-1996
(millions $)

Line No.	Description	Source	1995	1996
1	TSM-6/Baden Depreciation 77-83; TSM Depreciation 84-96	(30-BWF-E, 235-JFB-T); (31-BWF-E)	165.315	126.791
2	Amortization of Excluded Costs	31-BWF-E, Ln. 119		
3	Appropriate Annual Depreciation	Line 1 + Line 2	165.315	126.791
4	Adjustments to Accumulated Depreciation	FERC Form 6, from 143-RGV-C	(0.298)	19.148
5	Adjusted Retirements from Accumulated Depreciation	Exhibit 23, Ln. 8	(2.642)	(114.107)
6	Accumulated Depreciation	Lns (3 + 4 + 5) + Prior Ln. 6	8219.741	8251.573

Explanatory Note to Exhibit 23

The more rapid depreciation schedule that we adopt needs to be imposed on property that has a shorter life than 34.5 years (the stipulated life of the TAPS). We do this with different degrees of precision for retirements that occurred in the periods 1977-1985 and 1986-1996. For the first period, the Carriers' annual reports do not contain information regarding the vintages of the property retired. Accordingly, we treat retirements in any given year in the aggregate. For the second period, where the Supplemental pages do indeed provide vintage information on retirements, the accelerated depreciation profile that we adopt here is separately imposed on each vintage of retirement for each year.

Several steps are needed to impose the same depreciation profile, implicit in our finding regarding TSM depreciation, on assets that are shorter-lived than 34.5 years. First, we "normalize" the year that the composite asset is retired to reflect a 34.5 year service life. In effect, we determine the year that the asset would have been retired *if* the amount of FERC Form 6 retirements from accumulated depreciation were realized at that date, but assuming that the asset had gone into service in 1977, and that it had a 34.5 year life. Accordingly, we take the ratio of FERC data on retirements to accumulated depreciation to FERC total retirements, multiply the result by 34 years, and add this figure to 1977. If the result is greater than 2011 (the stipulated life of TAPS), we assume the property was expected to be fully depreciated by 2011. This is accomplished by lines 1-4 of Schedule 1 (for retirements that occur during 1977-1985) and columns a-d of the Yearly Schedules (for retirements that occur during 1986-1996).

Second, we assess how much the asset retired in the normalized year would have been depreciated given our finding regarding TSM depreciation. We first determine the amortization factors based on TSM depreciation charges for 1977-2000. For 2001-2011, because we do not have TSM depreciation charges upon which to rely, we adopt TSM's depreciation factors, as they are reasonably close to the ones that we derive. Using these yearly depreciation factors, we then determine the amount of depreciation that would have cumulatively been realized by a given date. This is accomplished on line 5-6 of Schedule 1 (for retirements during 1977-1985) and column (e) of the Yearly Schedules (for retirements that occur during 1986-1996). The depreciation factor of line 5 is derived in Schedule 2.

Finally, lines 7-8 (or column (f), respectively) determine the "adjusted" retirements from accumulated depreciation. They take the amount of depreciation that would have accumulated (line 7, column (e)) in the normalized year of retirement (line 4, column (d)) and apply it to the amount of FERC-recorded retirements from accumulated depreciation (line 2, column (a)).

We note that for 1996 Retirements from Carrier Property include $730,000,[1] in retirements from Construction Work in Progress (CWIP), out of total retirement amounts of $115,568,000. Because there can be no depreciation from Carrier property that has not yet been placed in service, we adjust accumulated depreciation amounts to reflect retirements only of depreciable property.

We note further that adjusting retirements for 1996 is complicated because Mobil shows a charge to Carrier property of $89,910,000 due to a "Net 1% Sale",[2] which it includes in its retirements figure. Mobil records $51,761,000 in charges to accumulated depreciation that corresponds to this sale. The company does not, however, indicate the vintages of property sold. Therefore, rather than decomposing charges to accumulated depreciation due to retirements into its components, we apply the adjustment as if the sold property were a single composite item.

[1] Mobil Alaska Pipeline Company's Annual Report, Supplemental page 2.

[2] Annual Report, Supplemental page 9.

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983
1	Property Account - Grand Total - Credits for Retirements of Depreciable Property 1/	Exhibit 8, Ln. 5	($29.49)	($7.02)	($11.88)	($164.56)	($2.24)	($11.51)	($24.38)
2	Depreciation Account - Grand Total - Retirements	FERC Form 6 - From 143-RGV-C	0.00	(5.36)	(5.22)	(16.94)	(2.50)	(13.61)	(10.91)
3	Ratio of Depreciation to Property Retirements (Retirements Factor)	Ln. 2/Ln. 1	0.00%	76.41%	43.95%	10.29%	111.68%	118.25%	44.74%
4	Year of Asset Retirement, normalized to 34.5-year horizon, nearest year	Lesser of [(Ln. 3 * 34) + 1977], 2011	1977	2003	1992	1981	2011	2011	1992
5	Cumulative Undepreciated Property Factor to date	Schedule 2, Ln. 10	98.6196%	92.3869%	84.9366%	76.5400%	68.5036%	60.3545%	52.5512%
6	Cumulative Depreciation Factor to date	1 - Ln. 5	1.3804%	7.6131%	15.0634%	23.4600%	31.4964%	39.6455%	47.4488%
7	Depreciation Account - Adjusted Retirements Factor	Ln. 6 corresponding to Ln. 4, Read from Year	0.00%	99.54%	92.05%	31.50%	100.00%	100.00%	92.05%
8	Depreciation Account - Adjusted Retirements	For 1977-1985: If Ln. 1>Ln. 2, Ln.2, else Ln. 7 * Ln. 1; else year's Schedule	0.00	(6.98)	(10.93)	(51.83)	(2.50)	(13.61)	(22.44)

1/ Data in 1996 adjusted from Exhibit 8 to reflect retirements from CWIP

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

Line No.	Description	Source	1984	1985	1986	1987	1988	1989	1990
1	Property Account - Grand Total - Credits for Retirements of Depreciable Property 1/	Exhibit 8, Ln. 5	($12.50)	($13.79)	($2.97)	($16.48)	($12.98)	($5.35)	($4.40)
2	Depreciation Account - Grand Total - Retirements	FERC Form 6 - From 143-RGV-C	(5.37)	(13.18)	(2.88)	(16.54)	(12.73)	(3.94)	(3.40)
3	Ratio of Depreciation to Property Retirements (Retirements Factor)	Ln. 2/Ln. 1	42.91%	95.58%					
4	Year of Asset Retirement, normalized to 34.5-year horizon, nearest year	Lesser of [(Ln. 3 * 34) + 1977], 2011	1992	2010					
5	Cumulative Undepreciated Property Factor to date	Schedule 2, Ln. 10	45.0251%	38.6831%	32.7040%	26.8846%	21.5748%	17.0754%	13.4422%
6	Cumulative Depreciation Factor to date	1 - Ln. 5	54.9749%	61.3169%	67.2960%	73.1154%	78.4252%	82.9246%	86.5578%
7	Depreciation Account - Adjusted Retirements Factor	Ln. 6 corresponding to Ln. 4, Read from Year	92.05%	99.97%					
8	Depreciation Account - Adjusted Retirements	For 1977-1985: If Ln. 1>Ln. 2, Ln.2, else Ln. 7 * Ln. 1; else year's Schedule	(11.51)	(13.78)	(2.97)	(16.65)	(12.97)	(4.72)	(3.52)

1/ Data in 1996 adjusted from Exhibit 8 to reflect retirements from CWIP

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

Line No.	Description	Source	1991	1992	1993	1994	1995	1996
1	Property Account - Grand Total - Credits for Retirements of Depreciable Property 1/	Exhibit 8, Ln. 5	($52.93)	($15.65)	($10.98)	($10.32)	($3.37)	($114.83)
2	Depreciation Account - Grand Total - Retirements	FERC Form 6 - From 143-RGV-C	(57.08)	(13.87)	(8.85)	(7.58)	(2.35)	(89.33)
3	Ratio of Depreciation to Property Retirements (Retirements Factor)	Ln. 2/Ln. 1						
4	Year of Asset Retirement, normalized to 34.5-year horizon, nearest year	Lesser of [(Ln. 3 * 34) + 1977], 2011						
5	Cumulative Undepreciated Property Factor to date	Schedule 2, Ln. 10	10.5850%	7.9521%	5.8531%	4.2007%	2.8921%	1.8967%
6	Cumulative Depreciation Factor to date	1 - Ln. 5	89.4150%	92.0479%	94.1469%	95.7993%	97.1079%	98.1033%
7	Depreciation Account - Adjusted Retirements Factor	Ln. 6 corresponding to Ln. 4, Read from Year						
8	Depreciation Account - Adjusted Retirements	For 1977-1985: If Ln. 1>Ln. 2, Ln.2, else Ln. 7 * Ln. 1; else year's Schedule	(57.92)	(15.52)	(10.77)	(10.10)	(2.64)	(114.11)

1/ Data in 1996 adjusted from Exhibit 8 to reflect retirements from CWIP

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984
1	Gross Depreciable Property EOY	Exhibit 8, Lns (9-8-7)	$9,075.01	$9,248.94	$9,328.41	$9,439.73	$9,485.10	$9,521.27	$9,580.77	$9,613.04
2	Capitalized Interest - EOY	Exhibit 8, Ln. 10	$1,215.57	$1,215.57	$1,215.57	$1,215.57	$1,215.11	$1,215.11	$1,215.11	$1,214.31
3	Depreciable Property Net Capitalized Interest	Lns. 1 - 2	$7,859.44	$8,033.37	$8,112.84	$8,224.16	$8,269.99	$8,306.16	$8,365.66	$8,398.73
4	Depreciation Expense (Net Capitalized Interest)	Exhibit 22, Ln. 1	$108	$501	$605	$693	$668	$682	$660	$642
5	Gross Accumulated Depreciation	Cumlative sum, ln. 4	$108	$609	$1,214	$1,907	$2,575	$3,257	$3,918	$4,559
6	Composite Depreciation Rate (Net basis, unadjusted)	To 2000, Ln. 4/(Lns. 3+4-5); after, 31-BWF-E, Ln. 14	1.38%	6.32%	8.06%	9.89%	10.50%	11.90%	12.93%	14.32%
7	TSM Basis Cumulative "Undepreciated Property Factor" to date	Prior Ln. 7 - Lns. (6 * 7)	98.62%	92.39%	84.94%	76.54%	68.50%	60.35%	52.55%	45.03%

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

Line No.	Description	Source	1985	1986	1987	1988	1989	1990	1991	1992
1	Gross Depreciable Property EOY	Exhibit 8, Lns (9-8-7)	$9,628.07	$9,645.07	$9,660.89	$9,657.85	$9,689.22	$9,765.45	$9,915.04	$9,968.82
2	Capitalized Interest - EOY	Exhibit 8, Ln. 10	$1,214.06	$1,214.01	$1,213.86	$1,213.81	$1,213.80	$1,213.80	$1,213.55	$1,213.52
3	Depreciable Property Net Capitalized Interest	Lns. 1 - 2	$8,414.01	$8,431.06	$8,447.03	$8,444.04	$8,475.41	$8,551.66	$8,701.49	$8,755.30
4	Depreciation Expense (Net Capitalized Interest)	Exhibit 22, Ln. 1	$543	$515	$504	$459	$395	$336	$296	$286
5	Gross Accumulated Depreciation	Cumlative sum, ln. 4	$5,102	$5,617	$6,120	$6,579	$6,975	$7,310	$7,606	$7,892
6	Composite Depreciation Rate (Net basis, unadjusted)	To 2000, Ln. 4/(Lns. 3+4-5); after, 31-BWF-E, Ln. 14	14.09%	15.46%	17.79%	19.75%	20.85%	21.28%	21.26%	24.87%
7	TSM Basis Cumulative "Undepreciated Property Factor" to date	Prior Ln. 7 - Lns. (6 * 7)	38.68%	32.70%	26.88%	21.57%	17.08%	13.44%	10.58%	7.95%

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

Line No.	Description	Source	1993	1994	1995	1996	1997	1998	1999
1	Gross Depreciable Property EOY	Exhibit 8, Lns (9-8-7)	$10,003.62	$10,036.68	$10,069.13	$10,063.31	$10,165.66	$10,180.24	$10,223.96
2	Capitalized Interest - EOY	Exhibit 8, Ln. 10	$1,213.52	$1,213.51	$1,213.50	$1,204.65	$1,204.64	$1,204.64	$1,204.64
3	Depreciable Property Net Capitalized Interest	Lns. 1 - 2	$8,790.11	$8,823.18	$8,855.63	$8,858.66	$8,961.02	$8,975.60	$9,019.33
4	Depreciation Expense (Net Capitalized Interest)	Exhibit 22, Ln. 1	$237	$196	$165	$127	$82	$50	$49
5	Gross Accumulated Depreciation	Cumlative sum, ln. 4	$8,129	$8,325	$8,490	$8,617	$8,699	$8,748	$8,797
6	Composite Depreciation Rate (Net basis, unadjusted)	To 2000, Ln. 4/(Lns. 3+4-5); after, 31-BWF-E, Ln. 14	26.39%	28.23%	31.15%	34.42%	23.70%	17.87%	17.92%
7	TSM Basis Cumulative "Undepreciated Property Factor" to date	Prior Ln. 7 - Lns. (6 * 7)	5.85%	4.20%	2.89%	1.90%	1.45%	1.19%	0.98%

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

Line No.	Description	Source	2000	2001	2002	2003	2004	2005	2006
1	Gross Depreciable Property EOY	Exhibit 8, Lns (9-8-7)	$10,280.94						
2	Capitalized Interest - EOY	Exhibit 8, Ln. 10	$1,204.64						
3	Depreciable Property Net Capitalized Interest	Lns. 1 - 2	$9,076.31						
4	Depreciation Expense (Net Capitalized Interest)	Exhibit 22, Ln. 1	$56						
5	Gross Accumulated Depreciation	Cumlative sum, ln. 4	$8,853						
6	Composite Depreciation Rate (Net basis, unadjusted)	To 2000, Ln. 4/(Lns. 3+4-5); after, 31-BWF-E, Ln. 14	20.19%	14.7448%	16.1863%	17.0635%	18.8198%	21.4145%	25.2500%
7	TSM Basis Cumulative "Undepreciated Property Factor" to date	Prior Ln. 7 - Lns. (6 * 7)	0.78%	0.66%	0.56%	0.46%	0.37%	0.29%	0.22%

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

Line No.	Description	Source	2007	2008	2009	2010	2011
1	Gross Depreciable Property EOY	Exhibit 8, Lns (9-8-7)					
2	Capitalized Interest - EOY	Exhibit 8, Ln. 10					
3	Depreciable Property Net Capitalized Interest	Lns. 1 - 2					
4	Depreciation Expense (Net Capitalized Interest)	Exhibit 22, Ln. 1					
5	Gross Accumulated Depreciation	Cumlative sum, ln. 4					
6	Composite Depreciation Rate (Net basis, unadjusted)	To 2000, Ln. 4/(Lns. 3+4-5); after, 31-BWF-E, Ln. 14	29.0970%	35.3774%	42.3358%	54.4304%	100.0000%
7	TSM Basis Cumulative "Undepreciated Property Factor" to date	Prior Ln. 7 - Lns. (6 * 7)	0.16%	0.10%	0.06%	0.03%	0.00%

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

	a	b	c	d	e	f
Retirements by Vintage Year	Credits to Property	Charges to Accrued Depreciation	Useful life as proportion of Inferred Expected Life	Year of retirement, assuming normalized 34.5 year life	Adjusted Undepreciated Property As Percentage of Property Retired	Adjusted Chrages to Accrued Depreciation
	FERC Form 6	FERC Form 6	b/a	if b>a, 2011, else c*34 + 1977	lookup ln. 7 from Sch. 2, given d	a*(1-e)
1977	2,046	1,998	97.65%	2010	0.03%	2045.458
1978	58	48	82.76%	2005	0.29%	57.829
1979	77	74	96.10%	2010	0.03%	76.980
1980	72	63	87.50%	2007	0.16%	71.888
1981	586	575	98.12%	2010	0.03%	585.845
1982	92	87	94.57%	2009	0.06%	91.947
1983	36	31	86.11%	2006	0.22%	35.921
1984						
1985	3	3	100.00%	2011	0.00%	3.000
1986						
1987						
1988						
1989						
1990						
1991						
1992						
1993						
1994						
1995						
1996						
1997						
1998						
1999						
2000						
Total	2,970	2,879				2,969

Weighted Average Vintage 1978

Exhibit 23
Schedule for 1986

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

	a	b	c	d	e	f
Retirements by Vintage Year	Credits to Property	Charges to Accrued Depreciation	Useful life as proportion of Inferred Expected Life	Year of retirement, assuming normalized 34.5 year life	Adjusted Undepreciated Property As Percentage of Property Retired	Adjusted Chrages to Accrued Depreciation
	FERC Form 6	FERC Form 6	b/a	if b>a, 2011, else c*34 + 1977	lookup ln. 7 from Sch. 2, given d	a*(1-e)
1977	12,367	12,538	100.00%	2011	0.00%	12538.000
1978	2,770	2,769	99.96%	2011	0.00%	2770.000
1979	44	38	86.36%	2006	0.22%	43.903
1980	184	153	83.15%	2005	0.29%	183.458
1981	343	308	89.80%	2008	0.10%	342.654
1982	556	541	97.30%	2010	0.03%	555.853
1983	151	135	89.40%	2007	0.16%	150.764
1984	37	32	86.49%	2006	0.22%	36.919
1985	20	17	85.00%	2006	0.22%	19.956
1986	4	4	100.00%	2011	0.00%	4.000
1987						
1988						
1989						
1990						
1991						
1992						
1993						
1994						
1995						
1996						
1997						
1998						
1999						
2000						
Total	16,476	16,535				16,646

Weighted Average Vintage 1978

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

	a	b	c	d	e	f
Retirements by Vintage Year	Credits to Property	Charges to Accrued Depreciation	Useful life as proportion of Inferred Expected Life	Year of retirement, assuming normalized 34.5 year life	Adjusted Undepreciated Property As Percentage of Property Retired	Adjusted Chrages to Accrued Depreciation
	FERC Form 6	FERC Form 6	b/a	if b>a, 2011, else c*34 + 1977	lookup ln. 7 from Sch. 2, given d	a*(1-e)
1977	10,449	10,361	99.16%	2011	0.00%	10449.000
1978	136	107	78.68%	2004	0.37%	135.491
1979	15	14	93.33%	2009	0.06%	14.991
1980	138	111	80.43%	2004	0.37%	137.483
1981	1,892	1,843	97.41%	2010	0.03%	1891.499
1982	189	169	89.42%	2007	0.16%	188.705
1983	104	88	84.62%	2006	0.22%	103.771
1984	16	12	75.00%	2003	0.46%	15.926
1985	17	11	64.71%	1999	0.98%	16.834
1986	16	5	31.25%	1988	21.57%	12.548
1987	7	7	100.00%	2011	0.00%	7.000
1988						
1989						
1990						
1991						
1992						
1993						
1994						
1995						
1996						
1997						
1998						
1999						
2000						
Total	12,979	12,728				12,973

Weighted Average Vintage 1978

Exhibit 23
Schedule for 1988

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

	a	b	c	d	e	f
Retirements by Vintage Year	Credits to Property	Charges to Accrued Depreciation	Useful life as proportion of Inferred Expected Life	Year of retirement, assuming normalized 34.5 year life	Adjusted Undepreciated Property As Percentage of Property Retired	Adjusted Chrages to Accrued Depreciation
	FERC Form 6	FERC Form 6	b/a	if b>a, 2011, else c*34 + 1977	lookup ln. 7 from Sch. 2, given d	a*(1-e)
1977	2,392	2,986	100.00%	2011	0.00%	2986.000
1978	33	40	100.00%	2011	0.00%	40.000
1979	129	82	63.57%	1999	0.98%	127.742
1980	104	79	75.96%	2003	0.46%	103.520
1981	1,080	234	21.67%	1984	45.03%	593.729
1982	244	212	86.89%	2007	0.16%	243.619
1983	1,217	190	15.61%	1982	60.35%	482.486
1984	47	42	89.36%	2007	0.16%	46.927
1985	56	33	58.93%	1997	1.45%	55.190
1986	24	24	100.00%	2011	0.00%	24.000
1987	3	3	100.00%	2011	0.00%	3.000
1988	17	11	64.71%	1999	0.98%	16.834
1989						
1990						
1991						
1992						
1993						
1994						
1995						
1996						
1997						
1998						
1999						
2000						
Total	5,346	3,936				4,723

Weighted Average Vintage 1980

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

	a	b	c	d	e	f
Retirements by Vintage Year	Credits to Property	Charges to Accrued Depreciation	Useful life as proportion of Inferred Expected Life	Year of retirement, assuming normalized 34.5 year life	Adjusted Undepreciated Property As Percentage of Property Retired	Adjusted Chrages to Accrued Depreciation
	FERC Form 6	FERC Form 6	b/a	if b>a, 2011, else c*34 + 1977	lookup ln. 7 from Sch. 2, given d	a*(1-e)
1977	2,075	2,172	100.00%	2011	0.00%	2172.000
1978	349	349	100.00%	2011	0.00%	349.000
1979	4	4	100.00%	2011	0.00%	4.000
1980	26	26	100.00%	2011	0.00%	26.000
1981	97	94	96.91%	2010	0.03%	96.974
1982	267	256	95.88%	2010	0.03%	266.929
1983	1,155	81	7.01%	1979	84.94%	173.982
1984	356	355	99.72%	2011	0.00%	356.000
1985	12	12	100.00%	2011	0.00%	12.000
1986	24	24	100.00%	2011	0.00%	24.000
1987	5	5	100.00%	2011	0.00%	5.000
1988	27	20	74.07%	2002	0.56%	26.850
1989	5	2	40.00%	1991	10.58%	4.471
1990						
1991						
1992						
1993						
1994						
1995						
1996						
1997						
1998						
1999						
2000						
Total	4,402	3,400				3,517

Weighted Average Vintage 1980

Exhibit 23
Schedule for 1990

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

	a	b	c	d	e	f
Retirements by Vintage Year	Credits to Property	Charges to Accrued Depreciation	Useful life as proportion of Inferred Expected Life	Year of retirement, assuming normalized 34.5 year life	Adjusted Undepreciated Property As Percentage of Property Retired	Adjusted Chrages to Accrued Depreciation
	FERC Form 6	FERC Form 6	b/a	if b>a, 2011, else c*34 + 1977	lookup ln. 7 from Sch. 2, given d	a*(1-e)
1977	48,856	54,246	100.00%	2011	0.00%	54246.000
1978	32	29	90.63%	2008	0.10%	31.968
1979	18	12	66.67%	2000	0.78%	17.860
1980	773	756	97.80%	2010	0.03%	772.795
1981	61	37	60.66%	1998	1.19%	60.275
1982	489	439	89.78%	2008	0.10%	488.507
1983	1,047	541	51.67%	1995	2.89%	1016.719
1984	662	634	95.77%	2010	0.03%	661.825
1985	194	171	88.14%	2007	0.16%	193.697
1986	49	44	89.80%	2008	0.10%	48.951
1987	14	14	100.00%	2011	0.00%	14.000
1988	57	41	71.93%	2001	0.66%	56.622
1989	538	88	16.36%	1983	52.55%	255.275
1990	123	13	10.57%	1981	68.50%	38.741
1991	16	16	100.00%	2011	0.00%	16.000
1992						
1993						
1994						
1995						
1996						
1997						
1998						
1999						
2000						
Total	52,929	57,081				57,919

Weighted Average Vintage 1978

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

	a	b	c	d	e	f
Retirements by Vintage Year	Credits to Property	Charges to Accrued Depreciation	Useful life as proportion of Inferred Expected Life	Year of retirement, assuming normalized 34.5 year life	Adjusted Undepreciated Property As Percentage of Property Retired	Adjusted Chrages to Accrued Depreciation
	FERC Form 6	FERC Form 6	b/a	if b>a, 2011, else c*34 + 1977	lookup ln. 7 from Sch. 2, given d	a*(1-e)
1976	1	1	100.00%	2011	0.00%	1.000
1977	8,205	8,161	99.46%	2011	0.00%	8205.000
1978	58	36	62.07%	1998	1.19%	57.311
1979	215	193	89.77%	2008	0.10%	214.783
1980	332	274	82.53%	2005	0.29%	331.023
1981	458	440	96.07%	2010	0.03%	457.879
1982	1,077	1,024	95.08%	2009	0.06%	1076.374
1983	1,746	801	45.88%	1993	5.85%	1643.804
1984	929	872	93.86%	2009	0.06%	928.460
1985	522	447	85.63%	2006	0.22%	520.851
1986	482	397	82.37%	2005	0.29%	480.581
1987	529	514	97.16%	2010	0.03%	528.860
1988	204	204	100.00%	2011	0.00%	204.000
1989	103	81	78.64%	2004	0.37%	102.614
1990	669	365	54.56%	1996	1.90%	656.311
1991	109	55	50.46%	1994	4.20%	104.421
1992	8	8	100.00%	2011	0.00%	8.000
1993						
1994						
1995						
1996						
1997						
1998						
1999						
2000						
Total	15,646	13,872				15,520
Weighted Average Vintage		1980				

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

	a	b	c	d	e	f
Retirements by Vintage Year	Credits to Property	Charges to Accrued Depreciation	Useful life as proportion of Inferred Expected Life	Year of retirement, assuming normalized 34.5 year life	Adjusted Undepreciated Property As Percentage of Property Retired	Adjusted Chrages to Accrued Depreciation
	FERC Form 6	FERC Form 6	b/a	if b>a, 2011, else c*34 + 1977	lookup ln. 7 from Sch. 2, given d	a*(1-e)
1975	2	2	100.00%	2011	0.00%	2.000
1976						
1977	1,507	1,328	88.12%	2007	0.16%	1504.649
1978	439	447	100.00%	2011	0.00%	447.000
1979	355	370	100.00%	2011	0.00%	370.000
1980	211	141	66.82%	2000	0.78%	209.357
1981	681	645	94.71%	2009	0.06%	680.604
1982	2,133	2,009	94.19%	2009	0.06%	2131.760
1983	1,417	777	54.83%	1996	1.90%	1390.123
1984	309	260	84.14%	2006	0.22%	308.320
1985	241	230	95.44%	2009	0.06%	240.860
1986	363	310	85.40%	2006	0.22%	362.201
1987	655	579	88.40%	2007	0.16%	653.978
1988	997	820	82.25%	2005	0.29%	994.065
1989	276	190	68.84%	2000	0.78%	273.851
1990	558	414	74.19%	2002	0.56%	554.896
1991	98	97	98.98%	2011	0.00%	98.000
1992	196	86	43.88%	1992	7.95%	180.414
1993	545	145	26.61%	1986	32.70%	366.763
1994						
1995						
1996						
1997						
1998						
1999						
2000						
Total	10,981	8,848				10,767
Weighted Average Vintage		1984				

Exhibit 23
Schedule for 1993

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

	a	b	c	d	e	f
Retirements by Vintage Year	Credits to Property	Charges to Accrued Depreciation	Useful life as proportion of Inferred Expected Life	Year of retirement, assuming normalized 34.5 year life	Adjusted Undepreciated Property As Percentage of Property Retired	Adjusted Chrages to Accrued Depreciation
	FERC Form 6	FERC Form 6	b/a	if b>a, 2011, else c*34 + 1977	lookup ln. 7 from Sch. 2, given d	a*(1-e)
1977	2,514	2,488	98.97%	2011	0.00%	2514.000
1978	206	191	92.72%	2009	0.06%	205.880
1979	5	3	60.00%	1997	1.45%	4.928
1980	134	120	89.55%	2007	0.16%	133.791
1981	614	535	87.13%	2007	0.16%	613.042
1982	1,608	1,249	77.67%	2003	0.46%	1600.581
1983	3,388	1,613	47.61%	1993	5.85%	3189.696
1984	585	501	85.64%	2006	0.22%	583.713
1985	20	15	75.00%	2003	0.46%	19.908
1986	112	87	77.68%	2003	0.46%	111.483
1987	114	81	71.05%	2001	0.66%	113.243
1988	158	113	71.52%	2001	0.66%	156.951
1989	358	204	56.98%	1996	1.90%	351.210
1990	149	133	89.26%	2007	0.16%	148.768
1991	200	137	68.50%	2000	0.78%	198.443
1992	139	99	71.22%	2001	0.66%	138.077
1993	18	8	44.44%	1992	7.95%	16.569
1994						
1995						
1996						
1997						
1998						
1999						
2000						
Total	10,322	7,577				10,100

Weighted Average Vintage 1982

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

	a	b	c	d	e	f
Retirements by Vintage Year	Credits to Property	Charges to Accrued Depreciation	Useful life as proportion of Inferred Expected Life	Year of retirement, assuming normalized 34.5 year life	Adjusted Undepreciated Property As Percentage of Property Retired	Adjusted Chrages to Accrued Depreciation
	FERC Form 6	FERC Form 6	b/a	if b>a, 2011, else c*34 + 1977	lookup ln. 7 from Sch. 2, given d	a*(1-e)
1977	116	123	100.00%	2011	0.00%	123.000
1978	81	62	76.54%	2003	0.46%	80.626
1979						
1980	37	33	89.19%	2007	0.16%	36.942
1981	291	233	80.07%	2004	0.37%	289.910
1982	528	480	90.91%	2008	0.10%	527.468
1983	858	54	6.29%	1979	84.94%	129.244
1984	138	129	93.48%	2009	0.06%	137.920
1985	40	41	100.00%	2011	0.00%	41.000
1986	27	27	100.00%	2011	0.00%	27.000
1987	52	52	100.00%	2011	0.00%	52.000
1988	34	27	79.41%	2004	0.37%	33.873
1989	342	329	96.20%	2010	0.03%	341.909
1990	541	519	95.93%	2010	0.03%	540.857
1991	135	120	88.89%	2007	0.16%	134.789
1992	20	20	100.00%	2011	0.00%	20.000
1993	116	95	81.90%	2005	0.29%	115.659
1994	10	7	70.00%	2001	0.66%	9.934
1995						
1996						
1997						
1998						
1999						
2000						
Total	3,366	2,351				2,642

Weighted Average Vintage 1985

Appropriate Retirements from Accumulated Depreciaton, 1977-1996
(millions)

	a	b	c	d	e	f
Retirements by Vintage Year	Credits to Property	Charges to Accrued Depreciation	Useful life as proportion of Inferred Expected Life	Year of retirement, assuming normalized 34.5 year life	Adjusted Undepreciated Property As Percentage of Property Retired	Adjusted Chrages to Accrued Depreciation
	FERC Form 6	FERC Form 6	b/a	if b>a, 2011, else c*34 + 1977	lookup ln. 7 from Sch. 2, given d	a*(1-e)
1977	2,146	1,244	57.97%	1997	1.45%	2114.942
1978	79	80	100.00%	2011	0.00%	80.000
1979	184	64	34.78%	1989	17.08%	152.581
1980	17	-3	N/A	N/A	100.00%	-3.000
1981	1,565	1,186	75.78%	2003	0.46%	1557.779
1982	4,380	3,342	76.30%	2003	0.46%	4359.790
1983	3,366	2,503	74.36%	2002	0.56%	3347.273
1984	1,477	879	59.51%	1997	1.45%	1455.624
1985	58	44	75.86%	2003	0.46%	57.732
1986	307	158	51.47%	1994	4.20%	294.104
1987	382	342	89.53%	2007	0.16%	381.404
1988	776	565	72.81%	2002	0.56%	771.683
1989	731	205	28.04%	1987	26.88%	534.473
1990	7,252	6,296	86.82%	2007	0.16%	7240.686
1991	1,385	1,020	73.65%	2002	0.56%	1377.295
1992	524	389	74.24%	2002	0.56%	521.085
1993	280	170	60.71%	1998	1.19%	276.672
1994	13	14	100.00%	2011	0.00%	14.000
1995						
1996						
1997						
1998						
1999						
2000						
Sub Total	24,922	18,498				24,534
Weighted Average Vintage	1985					
1% Net Sale	89,910	70,831	78.78%	2004	0.37%	89,573.220
Total	114,832	89,329				114,107

Appropriate Factors for Amortization of AFUDC, 1977-1996
(Percentages)

Line No.	Description		1977	1978	1979	1980	1981	1982	1983	1984
1	Grand Total, Carrier Property - EOY (millions)	Exhibit 8, Ln. 9	$9,133	$9,289	$9,373	$9,486	$9,531	$9,572	$9,613	$9,634
2	Land - EOY (millions)	Exhibit 8, Ln. 7	$17	$17	$17	$17	$17	$17	$17	$17
3	CWIP - EOY (millions)	Exhibit 8, Ln. 8	$42	$24	$28	$29	$29	$33	$15	$4
4	Capitalized Interest - EOY (millions)	Exhibit 8, Ln. 10	$1,216	$1,216	$1,216	$1,216	$1,215	$1,215	$1,215	$1,214
5	Gross Depreciable Property, Less IDC, EOY (millions)	Ln 1 - Lns(2 + 3 + 4)	$7,859	$8,033	$8,113	$8,224	$8,270	$8,306	$8,366	$8,399
6	Appropriate Depreciation Expense (millions)	Exhibit 22, Ln. 3	$108	$501	$605	$693	$668	$682	$660	$642
7	Accumulated P-97-4 Depreciation (millions)	Exhibit 22, Ln. 6	$108	$602	$1,197	$1,838	$2,505	$3,173	$3,811	$4,441
8	Amortization Rate - Net Basis	Ln 6 / Lns (5 + 6 - 7)	1.38%	6.31%	8.05%	9.79%	10.38%	11.72%	12.66%	13.95%

Appropriate Factors for Amortization of AFUDC, 1977-1996
(Percentages)

Line No.	Description		1985	1986	1987	1988	1989	1990	1991	1992
1	Grand Total, Carrier Property - EOY (millions)	Exhibit 8, Ln. 9	$9,646	$9,665	$9,680	$9,684	$9,726	$9,878	$9,965	$10,020
2	Land - EOY (millions)	Exhibit 8, Ln. 7	$17	$17	$17	$17	$17	$18	$18	$18
3	CWIP - EOY (millions)	Exhibit 8, Ln. 8	$1	$2	$2	$9	$20	$94	$32	$34
4	Capitalized Interest - EOY (millions)	Exhibit 8, Ln. 10	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214	$1,214
5	Gross Depreciable Property, Less IDC, EOY (millions)	Ln 1 - Lns(2 + 3 + 4)	$8,414	$8,431	$8,447	$8,444	$8,475	$8,552	$8,701	$8,755
6	Appropriate Depreciation Expense (millions)	Exhibit 22, Ln. 3	$543	$515	$504	$459	$395	$336	$296	$286
7	Accumulated P-97-4 Depreciation (millions)	Exhibit 22, Ln. 6	$4,970	$5,482	$5,969	$6,415	$6,806	$7,138	$7,375	$7,646
8	Amortization Rate - Net Basis	Ln 6 / Lns (5 + 6 - 7)	13.62%	14.85%	16.89%	18.44%	19.15%	19.18%	18.23%	20.49%

Appropriate Factors for Amortization of AFUDC, 1977-1996
(Percentages)

Line No.	Description		1993	1994	1995	1996
1	Grand Total, Carrier Property - EOY (millions)	Exhibit 8, Ln. 9	$10,045	$10,086	$10,139	$10,156
2	Land - EOY (millions)	Exhibit 8, Ln. 7	$18	$19	$19	$19
3	CWIP - EOY (millions)	Exhibit 8, Ln. 8	$24	$31	$51	$74
4	Capitalized Interest - EOY (millions)	Exhibit 8, Ln. 10	$1,214	$1,214	$1,214	$1,205
5	Gross Depreciable Property, Less IDC, EOY (millions)	Ln 1 - Lns(2 + 3 + 4)	$8,790	$8,823	$8,856	$8,859
6	Appropriate Depreciation Expense (millions)	Exhibit 22, Ln. 3	$237	$196	$165	$127
7	Accumulated P-97-4 Depreciation (millions)	Exhibit 22, Ln. 6	$7,872	$8,058	$8,220	$8,252
8	Amortization Rate - Net Basis	Ln 6 / Lns (5 + 6 - 7)	20.52%	20.39%	20.65%	17.29%

Appropriate Amortization of AFUDC, 1977-1996
(millions $)

Line No.	Description	Source	Starting Balances	1977	1978	1979	1980	1981	1982	1983
1	Amortization Factor - Net Basis	Exhibit 24, Ln. 8		1.38%	6.31%	8.05%	9.79%	10.38%	11.72%	12.66%
2	Net Equity AFUDC - BOY	Prior Ln. 5		$1,491	$1,471	$1,385	$1,278	$1,160	$1,049	$936
3	Equity AFUDC Additions	Exhibit 21, Col. 13	$1,491	$1	$7	$4	$8	$10	$11	$7
4	Current Period Equity AFUDC Amortization	(Ln.2 + Ln.3) * Ln.1		$21	$93	$112	$126	$122	$124	$119
5	Net Equity AFUDC - EOY	Lns. (2 + 3 - 4)	$1,491	$1,471	$1,385	$1,278	$1,160	$1,049	$936	$823
6	Accumulated Equity AFUDC Additions	Ln. 3 + Prior Ln. 6	$1,491	$1,492	$1,499	$1,503	$1,512	$1,522	$1,533	$1,540
7	Accumulated Equity AFUDC Amortization	Ln. 4 + Prior Ln. 7		$21	$114	$226	$352	$473	$598	$717
8	Net Debt AFUDC - BOY	Prior Ln. 11		$433	$428	$405	$374	$341	$310	$278
9	Debt AFUDC Additions	Exhibit 21, Col. 22	$433	$1	$4	$2	$4	$5	$5	$3
10	Current Period Debt AFUDC Amortization	(Ln. 8 + Ln. 9) * Ln.1		$6	$27	$33	$37	$36	$37	$36
11	Net Debt AFUDC - EOY	Lns. (8 + 9 - 10)	$433	$428	$405	$374	$341	$310	$278	$246
12	Accumulated Debt AFUDC Additions	Ln. 9 + Prior Ln. 12	$433	$434	$438	$440	$444	$449	$454	$457
13	Accumulated Debt AFUDC Amortization	Ln. 10 + Prior Ln. 13		$6	$33	$66	$103	$139	$176	$212
14	Total Current Period AFUDC Amortization	Ln. 4 + Ln. 10		$27	$121	$145	$163	$158	$161	$155

Appropriate Amortization of AFUDC, 1977-1996
(millions $)

Line No.	Description	Source	1984	1985	1986	1987	1988	1989	1990	1991
1	Amortization Factor - Net Basis	Exhibit 24, Ln. 8	13.95%	13.62%	14.85%	16.89%	18.44%	19.15%	19.18%	18.23%
2	Net Equity AFUDC - BOY	Prior Ln. 5	$823	$712	$615	$524	$436	$356	$288	$235
3	Equity AFUDC Additions	Exhibit 21, Col. 13	$4	$1	$0	$1	$0	$1	$2	$6
4	Current Period Equity AFUDC Amortization	(Ln.2 + Ln.3) * Ln.1	$115	$97	$91	$89	$80	$68	$56	$44
5	Net Equity AFUDC - EOY	Lns. (2 + 3 - 4)	$712	$615	$524	$436	$356	$288	$235	$197
6	Accumulated Equity AFUDC Additions	Ln. 3 + Prior Ln. 6	$1,544	$1,545	$1,545	$1,545	$1,546	$1,547	$1,548	$1,555
7	Accumulated Equity AFUDC Amortization	Ln. 4 + Prior Ln. 7	$832	$929	$1,021	$1,109	$1,190	$1,258	$1,314	$1,358
8	Net Debt AFUDC - BOY	Prior Ln. 11	$246	$213	$184	$157	$131	$107	$87	$71
9	Debt AFUDC Additions	Exhibit 21, Col. 22	$2	$0	$0	$0	$0	$0	$1	$4
10	Current Period Debt AFUDC Amortization	(Ln. 8 + Ln. 9) * Ln.1	$35	$29	$27	$27	$24	$21	$17	$14
11	Net Debt AFUDC - EOY	Lns. (8 + 9 - 10)	$213	$184	$157	$131	$107	$87	$71	$61
12	Accumulated Debt AFUDC Additions	Ln. 9 + Prior Ln. 12	$459	$459	$460	$460	$460	$461	$462	$465
13	Accumulated Debt AFUDC Amortization	Ln. 10 + Prior Ln. 13	$246	$275	$303	$329	$353	$374	$391	$404
14	Total Current Period AFUDC Amortization	Ln. 4 + Ln. 10	$150	$126	$119	$115	$105	$89	$73	$58

Appropriate Amortization of AFUDC, 1977-1996
(millions $)

Line No.	Description	Source	1992	1993	1994	1995	1996
1	Amortization Factor - Net Basis	Exhibit 24, Ln. 8	20.49%	20.52%	20.39%	20.65%	17.29%
2	Net Equity AFUDC - BOY	Prior Ln. 5	$197	$160	$129	$105	$85
3	Equity AFUDC Additions	Exhibit 21, Col. 13	$4	$3	$2	$2	$2
4	Current Period Equity AFUDC Amortization	(Ln.2 + Ln.3) * Ln.1	$41	$33	$27	$22	$15
5	Net Equity AFUDC - EOY	Lns. (2 + 3 - 4)	$160	$129	$105	$85	$72
6	Accumulated Equity AFUDC Additions	Ln. 3 + Prior Ln. 6	$1,559	$1,562	$1,564	$1,566	$1,568
7	Accumulated Equity AFUDC Amortization	Ln. 4 + Prior Ln. 7	$1,399	$1,432	$1,459	$1,481	$1,496
8	Net Debt AFUDC - BOY	Prior Ln. 11	$61	$50	$41	$34	$28
9	Debt AFUDC Additions	Exhibit 21, Col. 22	$3	$2	$1	$1	$1
10	Current Period Debt AFUDC Amortization	(Ln. 8 + Ln. 9) * Ln.1	$13	$11	$9	$7	$5
11	Net Debt AFUDC - EOY	Lns. (8 + 9 - 10)	$50	$41	$34	$28	$24
12	Accumulated Debt AFUDC Additions	Ln. 9 + Prior Ln. 12	$468	$469	$471	$472	$473
13	Accumulated Debt AFUDC Amortization	Ln. 10 + Prior Ln. 13	$417	$428	$437	$444	$449
14	Total Current Period AFUDC Amortization	Ln. 4 + Ln. 10	$54	$44	$36	$29	$20

Appropriate State Tax Depreciation, 1977-1996
(millions $)

State Tax Depreciation				Year	**1** 1977	**2** 1978	**3** 1979	**4** 1980	**5** 1981	**6** 1982	**7** 1983	**8** 1984	**9** 1985	**10** 1986
Depreciation Factors - (1977)					5.71%	4.00%	4.00%	4.00%	4.00%	10.22%	9.61%	9.00%	8.38%	7.77%
Depreciation Factors - (1978)					2.00%	4.00%	4.00%	4.00%	10.75%	10.14%	9.52%	8.91%	8.29%	7.68%
Depreciation Factors - (1979)					2.00%	4.00%	4.00%	10.84%	10.23%	9.61%	9.00%	8.39%	7.77%	7.16%
Depreciation Factors - (1980)					2.00%	4.00%	10.87%	10.26%	9.65%	9.03%	8.42%	7.80%	7.19%	6.58%
Depreciation Factors - (1981)					2.00%	11.15%	10.20%	9.58%	8.97%	8.35%	7.74%	7.13%	6.51%	5.90%
Depreciation Factors - (1982-present)					5.71%	10.78%	9.82%	9.21%	8.60%	7.98%	7.37%	6.75%	6.14%	5.53%
Year		Property Additions (a) Exhibit 8, Lns. 3 - (1+2)[1]	AFUDC Additions (b) Exhibit 21 col 22	Tax Basis for Depreciation (c) (a) + (b)										
1977	1	$7,889	$434	$8,322	$476	$333	$333	$333	$333	$851	$800	$749	$698	$646
1978	2	$112	$4	$117	$0	$2	$5	$5	$5	$13	$12	$11	$10	$10
1979	3	$97	$2	$99	$0	$0	$2	$4	$4	$11	$10	$9	$9	$8
1980	4	$123	$4	$128	$0	$0	$0	$3	$5	$14	$13	$12	$12	$11
1981	5	$49	$5	$54	$0	$0	$0	$0	$1	$6	$6	$5	$5	$5
1982	6	$60	$5	$65	$0	$0	$0	$0	$0	$4	$7	$6	$6	$6
1983	7	$84	$3	$87	$0	$0	$0	$0	$0	$0	$5	$9	$9	$8
1984	8	$51	$2	$53	$0	$0	$0	$0	$0	$0	$0	$3	$6	$5
1985	9	$29	$0	$29	$0	$0	$0	$0	$0	$0	$0	$0	$2	$3
1986	10	$20	$0	$20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1
1987	11	$33	$0	$33	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1988	12	$10	$0	$10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1989	13	$37	$0	$37	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1990	14	$81	$1	$82	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1991	15	$203	$4	$206	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1992	16	$69	$3	$72	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1993	17	$46	$2	$47	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1994	18	$43	$1	$45	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1995	19	$36	$1	$37	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1996	20	$29	$1	$30	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total State Tax Depreciation					$476	$335	$340	$344	$348	$898	$852	$806	$755	$703

[1] For 1977, Exh. 8, Lns 3 - (1+2+10)

Appropriate State Tax Depreciation, 1977-1996
(millions $)

State Tax Depreciation				Year	**11** 1987	**12** 1988	**13** 1989	**14** 1990	**15** 1991	**16** 1992	**17** 1993	**18** 1994	**19** 1995	**20** 1996
Depreciation Factors - (1977)					7.15%	6.54%	5.93%	5.31%	4.70%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1978)					7.06%	6.45%	5.84%	5.22%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1979)					6.54%	5.93%	5.32%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1980)					5.96%	5.35%	3.68%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1981)					5.28%	4.30%	3.68%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1982-present)					4.91%	4.30%	3.68%	3.07%	2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Year		Property Additions (a) Exhibit 8, Lns. 3 - (1+2)[1]	AFUDC Additions (b) Exhibit 21 col 22	Tax Basis for Depreciation (c) (a) + (b)										
1977	1	$7,889	$434	$8,322	$595	$544	$493	$442	$391	$153	$102	$51	$0	$0
1978	2	$112	$4	$117	$9	$8	$8	$7	$6	$3	$2	$1	$1	$0
1979	3	$97	$2	$99	$8	$7	$6	$6	$5	$3	$2	$2	$1	$1
1980	4	$123	$4	$128	$10	$9	$8	$8	$7	$5	$4	$3	$2	$2
1981	5	$49	$5	$54	$4	$4	$4	$3	$3	$2	$2	$2	$1	$1
1982	6	$60	$5	$65	$5	$5	$4	$4	$4	$3	$3	$2	$2	$2
1983	7	$84	$3	$87	$8	$7	$6	$6	$5	$5	$4	$4	$3	$3
1984	8	$51	$2	$53	$5	$5	$4	$4	$4	$3	$3	$3	$2	$2
1985	9	$29	$0	$29	$3	$3	$3	$2	$2	$2	$2	$2	$1	$1
1986	10	$20	$0	$20	$2	$2	$2	$2	$2	$1	$1	$1	$1	$1
1987	11	$33	$0	$33	$2	$4	$3	$3	$3	$3	$2	$2	$2	$2
1988	12	$10	$0	$10	$0	$1	$1	$1	$1	$1	$1	$1	$1	$1
1989	13	$37	$0	$37	$0	$0	$2	$4	$4	$3	$3	$3	$3	$3
1990	14	$81	$1	$82	$0	$0	$0	$5	$9	$8	$8	$7	$7	$6
1991	15	$203	$4	$206	$0	$0	$0	$0	$12	$22	$20	$19	$18	$16
1992	16	$69	$3	$72	$0	$0	$0	$0	$0	$4	$8	$7	$7	$6
1993	17	$46	$2	$47	$0	$0	$0	$0	$0	$0	$3	$5	$5	$4
1994	18	$43	$1	$45	$0	$0	$0	$0	$0	$0	$0	$3	$5	$4
1995	19	$36	$1	$37	$0	$0	$0	$0	$0	$0	$0	$0	$2	$4
1996	20	$29	$1	$30	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2
Total State Tax Depreciation					$651	$598	$545	$496	$456	$222	$171	$117	$64	$60

Appropriate Federal Tax Depreciation, 1977-1996
(millions $)

Federal Tax Depreciation						Year	**1** 1977	**2** 1978	**3** 1979	**4** 1980	**5** 1981	**6** 1982	**7** 1983
Depreciation Factors - (1977-1980)							5.71%	10.78%	9.82%	9.21%	8.60%	7.98%	7.37%
Depreciation Factors - (1981-1986)							15.00%	22.00%	21.00%	21.00%	21.00%	0.00%	0.00%
Depreciation Factors - (1987-Present)							5.00%	9.50%	8.55%	7.70%	6.93%	6.23%	5.90%
Year		Property Addition (a) Exhibit 8, Lns. 3 - (1+2)1	AFUDC Addition (b) Exhibit 21 col 22	TEFRA Adjustment (c) Exhibit 27, Ln. 3	Tax Basis for Depreciation (d) (a) + (b) - (c)								
1977	1	$7,889	$434	$0	$8,322		$476	$897	$818	$767	$715	$664	$613
1978	2	$112	$4	$0	$117		$0	$7	$13	$11	$11	$10	$9
1979	3	$97	$2	$0	$99		$0	$0	$6	$11	$10	$9	$8
1980	4	$123	$4	$0	$128		$0	$0	$0	$7	$14	$13	$12
1981	5	$49	$5	$0	$54		$0	$0	$0	$0	$8	$12	$11
1982	6	$60	$5	$0	$65		$0	$0	$0	$0	$0	$10	$14
1983	7	$84	$3	$4	$83		$0	$0	$0	$0	$0	$0	$12
1984	8	$51	$2	$3	$50		$0	$0	$0	$0	$0	$0	$0
1985	9	$29	$0	$1	$28		$0	$0	$0	$0	$0	$0	$0
1986	10	$20	$0	$0	$20		$0	$0	$0	$0	$0	$0	$0
1987	11	$33	$0	$0	$33		$0	$0	$0	$0	$0	$0	$0
1988	12	$10	$0	$0	$10		$0	$0	$0	$0	$0	$0	$0
1989	13	$37	$0	$0	$37		$0	$0	$0	$0	$0	$0	$0
1990	14	$81	$1	$0	$82		$0	$0	$0	$0	$0	$0	$0
1991	15	$203	$4	$0	$206		$0	$0	$0	$0	$0	$0	$0
1992	16	$69	$3	$0	$72		$0	$0	$0	$0	$0	$0	$0
1993	17	$46	$2	$0	$47		$0	$0	$0	$0	$0	$0	$0
1994	18	$43	$1	$0	$45		$0	$0	$0	$0	$0	$0	$0
1995	19	$36	$1	$0	$37		$0	$0	$0	$0	$0	$0	$0
1996	20	$29	$1	$0	$30		$0	$0	$0	$0	$0	$0	$0
Total Federal Tax Depreciation							$476	$903	$836	$796	$758	$718	$681

[1] For 1977, Exh.8, Lns 3 - (1+2+10)

Appropriate Federal Tax Depreciation, 1977-1996
(millions $)

Federal Tax Depreciation						Year	**8** 1984	**9** 1985	**10** 1986	**11** 1987	**12** 1988	**13** 1989	**14** 1990
Depreciation Factors - (1977-1980)							6.75%	6.14%	5.53%	4.91%	4.30%	3.68%	3.07%
Depreciation Factors - (1981-1986)							0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1987-Present)							5.90%	5.90%	5.90%	5.90%	5.90%	5.90%	5.90%
Year		Property Addition (a) Exhibit 8, Lns. 3 - (1+2)1	AFUDC Addition (b) Exhibit 21 col 22	TEFRA Adjustment (c) Exhibit 27, Ln. 3	Tax Basis for Depreciation (d) (a) + (b) - (c)								
1977	1	$7,889	$434	$0	$8,322		$562	$511	$460	$409	$358	$307	$256
1978	2	$112	$4	$0	$117		$9	$8	$7	$6	$6	$5	$4
1979	3	$97	$2	$0	$99		$8	$7	$7	$6	$5	$5	$4
1980	4	$123	$4	$0	$128		$11	$10	$9	$9	$8	$7	$6
1981	5	$49	$5	$0	$54		$11	$11	$0	$0	$0	$0	$0
1982	6	$60	$5	$0	$65		$14	$14	$14	$0	$0	$0	$0
1983	7	$84	$3	$4	$83		$18	$17	$17	$17	$0	$0	$0
1984	8	$51	$2	$3	$50		$7	$11	$10	$10	$10	$0	$0
1985	9	$29	$0	$1	$28		$0	$4	$6	$6	$6	$6	$0
1986	10	$20	$0	$0	$20		$0	$0	$3	$4	$4	$4	$4
1987	11	$33	$0	$0	$33		$0	$0	$0	$2	$3	$3	$3
1988	12	$10	$0	$0	$10		$0	$0	$0	$0	$1	$1	$1
1989	13	$37	$0	$0	$37		$0	$0	$0	$0	$0	$2	$4
1990	14	$81	$1	$0	$82		$0	$0	$0	$0	$0	$0	$4
1991	15	$203	$4	$0	$206		$0	$0	$0	$0	$0	$0	$0
1992	16	$69	$3	$0	$72		$0	$0	$0	$0	$0	$0	$0
1993	17	$46	$2	$0	$47		$0	$0	$0	$0	$0	$0	$0
1994	18	$43	$1	$0	$45		$0	$0	$0	$0	$0	$0	$0
1995	19	$36	$1	$0	$37		$0	$0	$0	$0	$0	$0	$0
1996	20	$29	$1	$0	$30		$0	$0	$0	$0	$0	$0	$0
Total Federal Tax Depreciation							$640	$594	$534	$470	$401	$339	$286

Appropriate Federal Tax Depreciation, 1977-1996
(millions $)

Federal Tax Depreciation						Year	**15** 1991	**16** 1992	**17** 1993	**18** 1994	**19** 1995	**20** 1996
Depreciation Factors - (1977-1980)							2.46%	1.84%	1.23%	0.61%	0.00%	0.00%
Depreciation Factors - (1981-1986)							0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1987-Present)							5.90%	2.95%	0.00%	0.00%	0.00%	0.00%
Year		Property Addition (a) Exhibit 8, Lns. 3 - (1+2)1	AFUDC Addition (b) Exhibit 21 col 22	TEFRA Adjustment (c) Exhibit 27, Ln. 3	Tax Basis for Depreciation (d) (a) + (b) - (c)							
1977	1	$7,889	$434	$0	$8,322		$204	$153	$102	$51	$0	$0
1978	2	$112	$4	$0	$117		$4	$3	$2	$1	$1	$0
1979	3	$97	$2	$0	$99		$4	$3	$2	$2	$1	$1
1980	4	$123	$4	$0	$128		$5	$5	$4	$3	$2	$2
1981	5	$49	$5	$0	$54		$0	$0	$0	$0	$0	$0
1982	6	$60	$5	$0	$65		$0	$0	$0	$0	$0	$0
1983	7	$84	$3	$4	$83		$0	$0	$0	$0	$0	$0
1984	8	$51	$2	$3	$50		$0	$0	$0	$0	$0	$0
1985	9	$29	$0	$1	$28		$0	$0	$0	$0	$0	$0
1986	10	$20	$0	$0	$20		$0	$0	$0	$0	$0	$0
1987	11	$33	$0	$0	$33		$2	$2	$2	$2	$2	$2
1988	12	$10	$0	$0	$10		$1	$1	$1	$1	$1	$1
1989	13	$37	$0	$0	$37		$3	$3	$3	$2	$2	$2
1990	14	$81	$1	$0	$82		$8	$7	$6	$6	$5	$5
1991	15	$203	$4	$0	$206		$10	$20	$18	$16	$14	$13
1992	16	$69	$3	$0	$72		$0	$4	$7	$6	$6	$5
1993	17	$46	$2	$0	$47		$0	$0	$2	$4	$4	$4
1994	18	$43	$1	$0	$45		$0	$0	$0	$2	$4	$4
1995	19	$36	$1	$0	$37		$0	$0	$0	$0	$2	$4
1996	20	$29	$1	$0	$30		$0	$0	$0	$0	$0	$1
Total Federal Tax Depreciation							$241	$200	$149	$97	$44	$42

Appropriate TEFRA Adjustment to Rates, 1977-1996
(millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983
1	Tax Depreciation Basis before TEFRA Adjustment	Exhibit 26, Schedule 1, col c	$8,322	$117	$99	$128	$54	$65	$87
2	Tax Depreciation Basis Reduction	143-RGV-C, TAPS-RGV WP3, Sch. 8	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%
3	TEFRA Adjustment	Ln. 1 * Ln. 2	$0	$0	$0	$0	$0	$0	$4
4	TEFRA Adjustment Balance (BOY)	Ln. 3 + Prior Ln. 7	$0	$0	$0	$0	$0	$0	$4
5	Depreciation Factor	Exhibit 24, Ln. 8	1.38%	6.31%	8.05%	9.79%	10.38%	11.72%	12.66%
6	Amortization of TEFRA Adjustment	Ln. 4 * Ln. 5	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.553
7	TEFRA Adjustment Balance (EOY)	Ln. 4 - Ln. 6	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$3.816

Appropriate TEFRA Adjustment to Rates, 1977-1996
(millions $)

Line No.	Description	Source	1984	1985	1986	1987	1988	1989	1990
1	Tax Depreciation Basis before TEFRA Adjustment	Exhibit 26, Schedule 1, col c	$53	$29	$20	$33	$10	$37	$82
2	Tax Depreciation Basis Reduction	143-RGV-C, TAPS-RGV WP3, Sch. 8	5.00%	5.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3	TEFRA Adjustment	Ln. 1 * Ln. 2	$3	$1	$0	$0	$0	$0	$0
4	TEFRA Adjustment Balance (BOY)	Ln. 3 + Prior Ln. 7	$6	$7	$6	$5	$4	$3	$3
5	Depreciation Factor	Exhibit 24, Ln. 8	13.95%	13.62%	14.85%	16.89%	18.44%	19.15%	19.18%
6	Amortization of TEFRA Adjustment	Ln. 4 * Ln. 5	$0.899	$0.954	$0.899	$0.870	$0.790	$0.669	$0.541
7	TEFRA Adjustment Balance (EOY)	Ln. 4 - Ln. 6	$5.546	$6.051	$5.152	$4.282	$3.492	$2.823	$2.282

Appropriate TEFRA Adjustment to Rates, 1977-1996
(millions $)

Line No.	Description	Source	1991	1992	1993	1994	1995	1996
1	Tax Depreciation Basis before TEFRA Adjustment	Exhibit 26, Schedule 1, col c	$206	$72	$47	$45	$37	$30
2	Tax Depreciation Basis Reduction	143-RGV-C, TAPS-RGV WP3, Sch. 8	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3	TEFRA Adjustment	Ln. 1 * Ln. 2	$0	$0	$0	$0	$0	$0
4	TEFRA Adjustment Balance (BOY)	Ln. 3 + Prior Ln. 7	$2	$2	$1	$1	$1	$1
5	Depreciation Factor	Exhibit 24, Ln. 8	18.23%	20.49%	20.52%	20.39%	20.65%	17.29%
6	Amortization of TEFRA Adjustment	Ln. 4 * Ln. 5	$0.416	$0.382	$0.305	$0.240	$0.194	$0.129
7	TEFRA Adjustment Balance (EOY)	Ln. 4 - Ln. 6	$1.866	$1.484	$1.179	$0.939	$0.745	$0.616

Appropriate ADIT Balances, 1977-1996
(millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
1	Regulatory Depreciation Incl. Amortization of Debt AFUDC	Exh.22 Ln. 3+Exh. 25 Ln.10	$114	$528	$638	$730	$704	$719	$696	$676	$572	$542
2	State Tax Depreciation	Exhibit 26, Schedule 1	$476	$335	$340	$344	$348	$898	$852	$806	$755	$703
3	State Tax Timing Differences	Ln. 2 - Ln. 1	$361	($193)	($298)	($386)	($356)	$179	$156	$129	$183	$161
4	State Income Tax Rate	AK Stat.	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%
5	State Tax Effect	Ln. 3 * Ln. 4	$34	($18)	($28)	($36)	($33)	$17	$15	$12	$17	$15
6	State ADIT Balance	Ln. 5 + Prior Ln. 6	$34	$16	($12)	($49)	($82)	($65)	($50)	($38)	($21)	($6)
7	Regulatory Depreciation Incl. Amortization of Debt AFUDC	Ln.1	$114	$528	$638	$730	$704	$719	$696	$676	$572	$542
8	Depreciation of TEFRA Adjustment	Exhibit 27, Ln. 6	$0	$0	$0	$0	$0	$0	$1	$1	$1	$1
9	Regulatory Depreciation after TEFRA Adjustment	Ln. 7 - Ln. 8	$114	$528	$638	$730	$704	$719	$696	$675	$571	$541
10	Federal Tax Depreciation	Exhibit 26, Schedule 2	$476	$903	$836	$796	$758	$718	$681	$640	$594	$534
11	Tax Effect of State Timing Differences	Ln. 5	$34	($18)	($28)	($36)	($33)	$17	$15	$12	$17	$15
12	Total Federal Tax Deductions	Ln. 10 - Ln.11	$442	$922	$864	$832	$791	$701	$666	$628	$577	$519
13	Federal Tax Timing Differences	Ln.12 - Ln. 9	$327	$393	$226	$102	$87	($18)	($29)	($47)	$6	($22)
14	Federal Income Tax Rate	IRC	48.00%	48.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%
15	Federal Tax Effect	Ln. 13 * Ln. 14	$157	$189	$104	$47	$40	($8)	($13)	($22)	$3	($10)
16	FASB 96/109 Adjustment	Cum. Ln 13 * Change in Ln 14	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
17	Amortization Basis for FASB 96/109 Adjustment	Lns(Prior 17 + 16 - Prior 18)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
18	Amortization of FASB 96/109 Adjustment	Ln. 17 * Exhibit 24 Ln. 8	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
19	Federal ADIT Balance	Prior Ln.19 + Ln.15 - Ln.18	$157	$346	$450	$497	$537	$529	$515	$494	$496	$486
20	Total State And Federal ADIT Balances	Ln. 6 + Ln. 19	$191	$362	$438	$448	$455	$464	$465	$455	$475	$480

Appropriate ADIT Balances, 1977-1996
(millions $)

Line No.	Description	Source	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
1	Regulatory Depreciation Incl. Amortization of Debt AFUDC	Exh.22 Ln. 3+Exh. 25 Ln.10	$530	$483	$416	$352	$309	$299	$248	$205	$173	$132
2	State Tax Depreciation	Exhibit 26, Schedule 1	$651	$598	$545	$496	$456	$222	$171	$117	$64	$60
3	State Tax Timing Differences	Ln. 2 - Ln. 1	$120	$115	$129	$144	$147	($77)	($77)	($87)	($109)	($72)
4	State Income Tax Rate	AK Stat.	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%
5	State Tax Effect	Ln. 3 * Ln. 4	$11	$11	$12	$14	$14	($7)	($7)	($8)	($10)	($7)
6	State ADIT Balance	Ln. 5 + Prior Ln. 6	$5	$16	$28	$42	$56	$48	$41	$33	$23	$16
7	Regulatory Depreciation Incl. Amortization of Debt AFUDC	Ln.1	$530	$483	$416	$352	$309	$299	$248	$205	$173	$132
8	Depreciation of TEFRA Adjustment	Exhibit 27, Ln. 6	$1	$1	$1	$1	$0	$0	$0	$0	$0	$0
9	Regulatory Depreciation after TEFRA Adjustment	Ln. 7 - Ln. 8	$529	$482	$415	$352	$309	$298	$247	$204	$172	$132
10	Federal Tax Depreciation	Exhibit 26, Schedule 2	$470	$401	$339	$286	$241	$200	$149	$97	$44	$42
11	Tax Effect of State Timing Differences	Ln. 5	$11	$11	$12	$14	$14	($7)	($7)	($8)	($10)	($7)
12	Total Federal Tax Deductions	Ln. 10 - Ln.11	$458	$390	$327	$272	$228	$207	$156	$105	$54	$49
13	Federal Tax Timing Differences	Ln.12 - Ln. 9	($71)	($92)	($88)	($80)	($81)	($92)	($91)	($99)	($118)	($83)
14	Federal Income Tax Rate	IRC	39.95%	34.00%	34.00%	34.00%	34.00%	34.00%	35.00%	35.00%	35.00%	35.00%
15	Federal Tax Effect	Ln. 13 * Ln. 14	($28)	($31)	($30)	($27)	($28)	($31)	($32)	($35)	($41)	($29)
16	FASB 96/109 Adjustment	Cum. Ln 13 * Change in Ln 14	$62	$57	$0	$0	$0	$0	($5)	$0	$0	$0
17	Amortization Basis for FASB 96/109 Adjustment	Lns(Prior 17 + 16 - Prior 18)	$62	$108	$88	$71	$58	$47	$32	$26	$20	$16
18	Amortization of FASB 96/109 Adjustment	Ln. 17 * Exhibit 24 Ln. 8	$10	$20	$17	$14	$11	$10	$7	$5	$4	$3
19	Federal ADIT Balance	Prior Ln.19 + Ln.15 - Ln.18	$447	$396	$349	$308	$270	$229	$191	$151	$105	$73
20	Total State And Federal ADIT Balances	Ln. 6 + Ln. 19	$453	$412	$377	$350	$326	$278	$232	$184	$128	$89

Appropriate Rate Base, 1977-1996
(millions $)

Line No.	Description	Source	Starting Balances	1977	1978	1979	1980	1981	1982
1	Gross Carrier Property - BOY 1/	Prior Ln. 10	$7,741	$9,665	$9,843	$10,011	$10,101	$10,226	$10,288
2	Gross Additions, New Construction Exp.	Exhibit 8, Ln. 3		$1,422	$98	$100	$106	$49	$65
3	Less Additions to Capitalized Interest	Exh. 8, [Ln. 10 - Prior Ln. 10]		$1,216	$0	$0	$0	($0)	$0
4	Gross Property Additions, Net IDC	Ln. 2 - Ln. 3		$206	$98	$100	$106	$50	$65
5	Acquisitions of Carrier Property in Service	Exhibit 8, Ln. 4		$0	$0	$0	$170	$0	$0
6	Retirements of CPIS	Exhibit 8, Ln. 5		($29)	($7)	($12)	($165)	($2)	($12)
7	Adjustments to CPIS	Exhibit 8, Ln. 6		($0)	$65	($4)	$1	($1)	($13)
8	Equity AFUDC Additions	Exhibit 21, col. 13	$1,491	$1	$7	$4	$8	$10	$11
9	Debt AFUDC Additions	Exhibit 21, col. 22	$433	$1	$4	$2	$4	$5	$5
10	Gross Carrier Property - EOY	Lns (1+4+5+6+7+8+9)	$9,665	$9,843	$10,011	$10,101	$10,226	$10,288	$10,344
11	Accumulated Depreciation	Exhibit 22, Ln. 6		$108	$602	$1,197	$1,838	$2,505	$3,173
12	Accumulated Equity AFUDC Amortization	Exhibit 25, Ln. 7		$21	$114	$226	$352	$473	$598
13	Accumulated Debt AFUDC Amortization	Exhibit 25, Ln. 13		$6	$33	$66	$103	$139	$176
14	CWIP Balance - EOY	Exhibit 8, Ln. 8		$42	$24	$28	$29	$29	$33
15	Net Carrier Property	Lns (10 -11-12-13-14)	$9,665	$9,666	$9,238	$8,584	$7,904	$7,142	$6,364
16	Working Capital	Exhibit 9, col (b)		$57	$29	$36	$34	$39	$39
17	ADIT	Exhibit 28, Ln. 20		$191	$362	$438	$448	$455	$464
18	Rate Base - Year-end	Lns (15+16-17)	$9,665	$9,533	$8,905	$8,183	$7,490	$6,726	$5,939
19	Average Rate Base	(Ln.18+Prior Ln.18)/2		$9,599	$9,219	$8,544	$7,836	$7,108	$6,333

1/ Starting Balance is from Exhibit 8, Line 3

Appropriate Rate Base, 1977-1996
(millions $)

Line No.	Description	Source	1983	1984	1985	1986	1987	1988	1989
1	Gross Carrier Property - BOY 1/	Prior Ln. 10	$10,344	$10,396	$10,423	$10,436	$10,455	$10,472	$10,476
2	Gross Additions, New Construction Exp.	Exhibit 8, Ln. 3	$70	$38	$26	$21	$32	$17	$48
3	Less Additions to Capitalized Interest	Exh. 8, [Ln. 10 - Prior Ln. 10]	$0	($1)	($0)	($0)	($0)	($0)	($0)
4	Gross Property Additions, Net IDC	Ln. 2 - Ln. 3	$70	$39	$26	$21	$32	$17	$48
5	Acquisitions of Carrier Property in Service	Exhibit 8, Ln. 4	$0	$0	$0	$0	$0	$0	$0
6	Retirements of CPIS	Exhibit 8, Ln. 5	($24)	($13)	($14)	($3)	($16)	($13)	($5)
7	Adjustments to CPIS	Exhibit 8, Ln. 6	($4)	($4)	$0	$0	$0	$0	($0)
8	Equity AFUDC Additions	Exhibit 21, col. 13	$7	$4	$1	$0	$1	$0	$1
9	Debt AFUDC Additions	Exhibit 21, col. 22	$3	$2	$0	$0	$0	$0	$0
10	Gross Carrier Property - EOY	Lns (1+4+5+6+7+8+9)	$10,396	$10,423	$10,436	$10,455	$10,472	$10,476	$10,520
11	Accumulated Depreciation	Exhibit 22, Ln. 6	$3,811	$4,441	$4,970	$5,482	$5,969	$6,415	$6,806
12	Accumulated Equity AFUDC Amortization	Exhibit 25, Ln. 7	$717	$832	$929	$1,021	$1,109	$1,190	$1,258
13	Accumulated Debt AFUDC Amortization	Exhibit 25, Ln. 13	$212	$246	$275	$303	$329	$353	$374
14	CWIP Balance - EOY	Exhibit 8, Ln. 8	$15	$4	$1	$2	$2	$9	$20
15	Net Carrier Property	Lns (10 -11-12-13-14)	$5,641	$4,899	$4,260	$3,648	$3,063	$2,509	$2,062
16	Working Capital	Exhibit 9, col (b)	$29	$33	$34	$29	$33	$36	$36
17	ADIT	Exhibit 28, Ln. 20	$465	$455	$475	$480	$453	$412	$377
18	Rate Base - Year-end	Lns (15+16-17)	$5,205	$4,477	$3,819	$3,196	$2,643	$2,133	$1,721
19	Average Rate Base	(Ln.18+Prior Ln.18)/2	$5,572	$4,841	$4,148	$3,507	$2,920	$2,388	$1,927

Appropriate Rate Base, 1977-1996
(millions $)

Line No.	Description	Source	1990	1991	1992	1993	1994	1995	1996
1	Gross Carrier Property - BOY 1/	Prior Ln. 10	$10,520	$10,674	$10,772	$10,834	$10,864	$10,908	$10,964
2	Gross Additions, New Construction Exp.	Exhibit 8, Ln. 3	$156	$141	$71	$36	$51	$56	$52
3	Less Additions to Capitalized Interest	Exh. 8, [Ln. 10 - Prior Ln. 10]	($0)	($0)	($0)	($0)	($0)	($0)	($9)
4	Gross Property Additions, Net IDC	Ln. 2 - Ln. 3	$156	$141	$71	$36	$51	$56	$61
5	Acquisitions of Carrier Property in Service	Exhibit 8, Ln. 4	$0	$0	$0	$0	$0	$0	$81
6	Retirements of CPIS	Exhibit 8, Ln. 5	($4)	($53)	($16)	($11)	($10)	($3)	($116)
7	Adjustments to CPIS	Exhibit 8, Ln. 6	$0	($0)	$0	($0)	$0	$0	$0
8	Equity AFUDC Additions	Exhibit 21, col. 13	$2	$6	$4	$3	$2	$2	$2
9	Debt AFUDC Additions	Exhibit 21, col. 22	$1	$4	$3	$2	$1	$1	$1
10	Gross Carrier Property - EOY	Lns (1+4+5+6+7+8+9)	$10,674	$10,772	$10,834	$10,864	$10,908	$10,964	$10,993
11	Accumulated Depreciation	Exhibit 22, Ln. 6	$7,138	$7,375	$7,646	$7,872	$8,058	$8,220	$8,252
12	Accumulated Equity AFUDC Amortization	Exhibit 25, Ln. 7	$1,314	$1,358	$1,399	$1,432	$1,459	$1,481	$1,496
13	Accumulated Debt AFUDC Amortization	Exhibit 25, Ln. 13	$391	$404	$417	$428	$437	$444	$449
14	CWIP Balance - EOY	Exhibit 8, Ln. 8	$94	$32	$34	$24	$31	$51	$74
15	Net Carrier Property	Lns (10 -11-12-13-14)	$1,738	$1,602	$1,339	$1,107	$923	$767	$722
16	Working Capital	Exhibit 9, col (b)	$39	$59	$54	$44	$43	$34	$36
17	ADIT	Exhibit 28, Ln. 20	$350	$326	$278	$232	$184	$128	$89
18	Rate Base - Year-end	Lns (15+16-17)	$1,427	$1,336	$1,115	$919	$783	$674	$669
19	Average Rate Base	(Ln.18+Prior Ln.18)/2	$1,574	$1,381	$1,225	$1,017	$851	$728	$671

Parties' Positions on Operating Expenses, 1977-1996
(Excluding Depreciation and DRR)
(millions $)

	(a)	(b)	(c)
Date	Carriers and Williams	Tesoro	Difference
	Exhibit 143-RGV-C, TAPS-RGV WP3, Sch. 13; Exhibit 189-BEW-T, BEW_R_RGV WP1 - DR 22RE, Sch. 13	225-JFB-T, 30-BWF-E, 31-BWF-E	a-b
1977	242.373	223.974	18.399
1978	450.207	449.768	0.439
1979	395.732	384.043	11.689
1980	455.681	453.548	2.133
1981	465.612	462.477	3.135
1982	467.774	461.445	6.329
1983	455.867	442.947	12.920
1984	440.939	416.275	24.664
1985	462.037	450.009	12.028
1986	438.168	445.722	-7.554
1987	411.118	407.370	3.748
1988	448.977	447.893	1.084
1989	582.207	581.103	1.104
1990	710.403	705.430	4.973
1991	658.447	656.963	1.484
1992	716.605	684.210	32.395
1993	752.560	742.893	9.667
1994	889.183	885.356	3.827
1995	667.652	663.874	3.778
1996	601.107	598.140	2.967

Cumulative Sum $149.209

Appropriate Return on Rate Base, 1977-1996
(millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983
1	Weighted Rate of Return	Exhibit 2, col g	11.74%	12.19%	12.63%	13.67%	15.15%	14.98%	13.31%
2	Average Rate Base	Exhibit 29, Ln. 19	$9,599	$9,219	$8,544	$7,836	$7,108	$6,333	$5,572
3	Total Return on Rate Base	Ln.1 * Ln.2	$563	$1,124	$1,079	$1,071	$1,077	$949	$742
4	Debt Capital Structure	Exhibit 11, col d	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%
5	Cost of Debt	Exh. 15 Sch. 3, col l	8.86%	8.88%	8.90%	8.98%	9.01%	9.03%	9.08%
6	Debt Weighted Rate of Return	Ln.4 * Ln.5	4.39%	4.40%	4.41%	4.45%	4.46%	4.47%	4.49%
7	Interest Expense	Ln.2 * Ln.6	$210	$405	$376	$348	$317	$283	$250
8	Equity Weighted Rate of Return	Ln.1 - Ln.6	7.35%	7.79%	8.22%	9.22%	10.69%	10.51%	8.82%
9	Return on Equity	Ln.2 * Ln.8	$353	$719	$703	$723	$760	$666	$491

Appropriate Return on Rate Base, 1977-1996
(millions $)

Line No.	Description	Source	1984	1985	1986	1987	1988	1989	1990
1	Weighted Rate of Return	Exhibit 2, col g	13.94%	13.29%	12.64%	12.63%	12.84%	12.74%	12.88%
2	Average Rate Base	Exhibit 29, Ln. 19	$4,841	$4,148	$3,507	$2,920	$2,388	$1,927	$1,574
3	Total Return on Rate Base	Ln.1 * Ln.2	$675	$551	$443	$369	$307	$246	$203
4	Debt Capital Structure	Exhibit 11, col d	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%
5	Cost of Debt	Exh. 15 Sch. 3, col l	9.13%	9.16%	9.17%	9.19%	9.20%	9.23%	9.35%
6	Debt Weighted Rate of Return	Ln.4 * Ln.5	4.52%	4.53%	4.54%	4.55%	4.55%	4.57%	4.63%
7	Interest Expense	Ln.2 * Ln.6	$219	$188	$159	$133	$109	$88	$73
8	Equity Weighted Rate of Return	Ln.1 - Ln.6	9.42%	8.76%	8.10%	8.08%	8.29%	8.17%	8.25%
9	Return on Equity	Ln.2 * Ln.8	$456	$363	$284	$236	$198	$157	$130

Appropriate Return on Rate Base, 1977-1996
(millions $)

Line No.	Description	Source	1991	1992	1993	1994	1995	1996
1	Weighted Rate of Return	Exhibit 2, col g	12.75%	12.52%	11.68%	12.07%	12.08%	11.78%
2	Average Rate Base	Exhibit 29, Ln. 19	$1,381	$1,225	$1,017	$851	$728	$671
3	Total Return on Rate Base	Ln.1 * Ln.2	$176	$153	$119	$103	$88	$79
4	Debt Capital Structure	Exhibit 11, col d	49.50%	49.50%	49.50%	49.50%	49.50%	49.50%
5	Cost of Debt	Exh. 15 Sch. 3, col l	9.37%	9.37%	9.30%	9.41%	9.38%	9.24%
6	Debt Weighted Rate of Return	Ln.4 * Ln.5	4.64%	4.64%	4.60%	4.66%	4.64%	4.57%
7	Interest Expense	Ln.2 * Ln.6	$64	$57	$47	$40	$34	$31
8	Equity Weighted Rate of Return	Ln.1 - Ln.6	8.11%	7.88%	7.08%	7.41%	7.44%	7.21%
9	Return on Equity	Ln.2 * Ln.8	$112	$97	$72	$63	$54	$48

Appropriate Income Tax Allowance, 1977-1996
(millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984
1	Total Return on Rate Base	Exhibit 31 Ln. 3	$563	$1,124	$1,079	$1,071	$1,077	$949	$742	$675
2	Interest Expense	Exhibit 31 Ln. 7	$210	$405	$376	$348	$317	$283	$250	$219
3	Equity Portion of Return on Rate Base	Ln. 1 - Ln. 2	$353	$719	$703	$723	$760	$666	$491	$456
	Permanent Differences - Federal Income Tax:									
4	Amortization of Equity AFUDC	Exhibit 25 Ln. 4	$21	$93	$112	$126	$122	$124	$119	$115
5	Amortization of TEFRA Adjustment	Exhibit 27 Ln. 6	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.55	$0.90
6	Amortization of Deferred Tax Adjustments	Exhibit 28 Ln. 18	$0	$0	$0	$0	$0	$0	$0	$0
7	Subtotal for Federal Income Tax Allowance	Lns (3 + 4 + 5 - 6)	$374	$812	$814	$849	$881	$790	$611	$572
8	Federal Income Tax Rate	RGV-143-C, Sch. 8	48.00%	48.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%
9	Net-to-Tax Multiplier - Federal Income Tax	Ln. 8 / (1 - Ln. 8)	92.31%	92.31%	85.19%	85.19%	85.19%	85.19%	85.19%	85.19%
10	Federal Income Tax Allowance	Ln. 7 * Ln. 9 - Ln. 6	$345	$749	$694	$723	$751	$673	$521	$488
	Permanent Differences - State Income Tax:									
11	Amortization of Equity AFUDC	Exhibit 25 Ln. 4	$21	$93	$112	$126	$122	$124	$119	$115
12	Subtotal for State Income Tax Allowance	Lns (3 + 10 + 11)	$718	$1,561	$1,508	$1,572	$1,632	$1,463	$1,131	$1,059
13	Alaska State Income Tax Rate	RGV-143-C, Sch. 8	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%
14	Net-to-Tax Multiplier - State Income Tax	Ln 13 / (1 - Ln. 13)	10.38%	10.38%	10.38%	10.38%	10.38%	10.38%	10.38%	10.38%
15	State Income Tax Allowance	Ln. 12 * Ln. 14	$75	$162	$156	$163	$169	$152	$117	$110
16	Total Income Tax Allowance	Ln. 10 + Ln. 15	$419	$911	$850	$886	$920	$825	$638	$597

Appropriate Income Tax Allowance, 1977-1996
(millions $)

Line No.	Description	Source	1985	1986	1987	1988	1989	1990	1991	1992
1	Total Return on Rate Base	Exhibit 31 Ln. 3	$551	$443	$369	$307	$246	$203	$176	$153
2	Interest Expense	Exhibit 31 Ln. 7	$188	$159	$133	$109	$88	$73	$64	$57
3	Equity Portion of Return on Rate Base	Ln. 1 - Ln. 2	$363	$284	$236	$198	$157	$130	$112	$97
	Permanent Differences - Federal Income Tax:									
4	Amortization of Equity AFUDC	Exhibit 25 Ln. 4	$97	$91	$89	$80	$68	$56	$44	$41
5	Amortization of TEFRA Adjustment	Exhibit 27 Ln. 6	$0.95	$0.90	$0.87	$0.79	$0.67	$0.54	$0.42	$0.38
6	Amortization of Deferred Tax Adjustments	Exhibit 28 Ln. 18	$0	$0	$10	$20	$17	$14	$11	$10
7	Subtotal for Federal Income Tax Allowance	Lns (3 + 4 + 5 - 6)	$461	$376	$315	$259	$210	$172	$146	$129
8	Federal Income Tax Rate	RGV-143-C, Sch. 8	46.00%	46.00%	39.95%	34.00%	34.00%	34.00%	34.00%	34.00%
9	Net-to-Tax Multiplier - Federal Income Tax	Ln. 8 / (1 - Ln. 8)	85.19%	85.19%	66.53%	51.52%	51.52%	51.52%	51.52%	51.52%
10	Federal Income Tax Allowance	Ln. 7 * Ln. 9 - Ln. 6	$393	$321	$199	$114	$91	$75	$65	$57
	Permanent Differences - State Income Tax:									
11	Amortization of Equity AFUDC	Exhibit 25 Ln. 4	$97	$91	$89	$80	$68	$56	$44	$41
12	Subtotal for State Income Tax Allowance	Lns (3 + 10 + 11)	$853	$696	$524	$392	$317	$261	$221	$194
13	Alaska State Income Tax Rate	RGV-143-C, Sch. 8	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%
14	Net-to-Tax Multiplier - State Income Tax	Ln 13 / (1 - Ln. 13)	10.38%	10.38%	10.38%	10.38%	10.38%	10.38%	10.38%	10.38%
15	State Income Tax Allowance	Ln. 12 * Ln. 14	$88	$72	$54	$41	$33	$27	$23	$20
16	Total Income Tax Allowance	Ln. 10 + Ln. 15	$481	$393	$253	$154	$124	$102	$87	$77

Appropriate Income Tax Allowance, 1977-1996
(millions $)

Line No.	Description	Source	1993	1994	1995	1996
1	Total Return on Rate Base	Exhibit 31 Ln. 3	$119	$103	$88	$79
2	Interest Expense	Exhibit 31 Ln. 7	$47	$40	$34	$31
3	Equity Portion of Return on Rate Base	Ln. 1 - Ln. 2	$72	$63	$54	$48
	Permanent Differences - Federal Income Tax:					
4	Amortization of Equity AFUDC	Exhibit 25 Ln. 4	$33	$27	$22	$15
5	Amortization of TEFRA Adjustment	Exhibit 27 Ln. 6	$0.30	$0.24	$0.19	$0.13
6	Amortization of Deferred Tax Adjustments	Exhibit 28 Ln. 18	$7	$5	$4	$3
7	Subtotal for Federal Income Tax Allowance	Lns (3 + 4 + 5 - 6)	$99	$85	$72	$61
8	Federal Income Tax Rate	RGV-143-C, Sch. 8	35.00%	35.00%	35.00%	35.00%
9	Net-to-Tax Multiplier - Federal Income Tax	Ln. 8 / (1 - Ln. 8)	53.85%	53.85%	53.85%	53.85%
10	Federal Income Tax Allowance	Ln. 7 * Ln. 9 - Ln. 6	$47	$40	$35	$30
	Permanent Differences - State Income Tax:					
11	Amortization of Equity AFUDC	Exhibit 25 Ln. 4	$33	$27	$22	$15
12	Subtotal for State Income Tax Allowance	Lns (3 + 10 + 11)	$152	$130	$111	$93
13	Alaska State Income Tax Rate	RGV-143-C, Sch. 8	9.40%	9.40%	9.40%	9.40%
14	Net-to-Tax Multiplier - State Income Tax	Ln 13 / (1 - Ln. 13)	10.38%	10.38%	10.38%	10.38%
15	State Income Tax Allowance	Ln. 12 * Ln. 14	$16	$14	$12	$10
16	Total Income Tax Allowance	Ln. 10 + Ln. 15	$62	$54	$46	$40

Appropriate TAPS Revenue Requirement, 1977-1996
(millions $)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983
1	Operating Expense Excluding Depreciation and DR&R	Exhibit 30, col a	$242.373	$450.207	$395.732	$455.681	$465.612	$467.774	$455.867
2	Depreciation Expense	Exhibit 22 Ln. 3	$108.493	$500.844	$605.099	$692.966	$668.048	$681.717	$660.483
3	Amortization of AFUDC	Exhibit 25, Ln 14	$27	$121	$145	$163	$158	$161	$155
4	Return on Rate Base	Exhibit 31 Ln 3	$563	$1,124	$1,079	$1,071	$1,077	$949	$742
5	Income Tax Allowance	Exhibit 32 Ln. 16	$419	$911	$850	$886	$920	$825	$638
6	Total Cost of Service	Sum Lns 1 to 5	$1,360	$3,107	$3,075	$3,269	$3,288	$3,084	$2,651

Appropriate TAPS Revenue Requirement, 1977-1996
(millions $)

Line No.	Description	Source	1984	1985	1986	1987	1988	1989	1990
1	Operating Expense Excluding Depreciation and DR&R	Exhibit 30, col a	$440.939	$462.037	$438.168	$411.118	$448.977	$582.207	$710.403
2	Depreciation Expense	Exhibit 22 Ln. 3	$641.754	$542.938	$514.506	$503.605	$458.916	$395.419	$335.514
3	Amortization of AFUDC	Exhibit 25, Ln 14	$150	$126	$119	$115	$105	$89	$73
4	Return on Rate Base	Exhibit 31 Ln 3	$675	$551	$443	$369	$307	$246	$203
5	Income Tax Allowance	Exhibit 32 Ln. 16	$597	$481	$393	$253	$154	$124	$102
6	Total Cost of Service	Sum Lns 1 to 5	$2,505	$2,164	$1,908	$1,652	$1,473	$1,436	$1,423

Appropriate TAPS Revenue Requirement, 1977-1996
(millions $)

Line No.	Description	Source	1991	1992	1993	1994	1995	1996
1	Operating Expense Excluding Depreciation and DR&R	Exhibit 30, col a	$658.447	$716.605	$752.560	$889.183	$667.652	$601.107
2	Depreciation Expense	Exhibit 22 Ln. 3	$295.711	$285.871	$237.084	$195.984	$165.315	$126.791
3	Amortization of AFUDC	Exhibit 25, Ln 14	$58	$54	$44	$36	$29	$20
4	Return on Rate Base	Exhibit 31 Ln 3	$176	$153	$119	$103	$88	$79
5	Income Tax Allowance	Exhibit 32 Ln. 16	$87	$77	$62	$54	$46	$40
6	Total Cost of Service	Sum Lns 1 to 5	$1,275	$1,287	$1,215	$1,277	$996	$867

Carriers' Position on Capital Structure, 1997-1999

Line No.	Year	Hess		Arco		Exxon		Mobil		ExxonMobil	
		(a) Common Equity	(b) Ownership Percentage	(a) Common Equity	(b) Ownership Percentage	(a) Common Equity	(b) Ownership Percentage	(a) Common Equity	(b) Ownership Percentage	(a) Common Equity	(b) Ownership Percentage
1	1997	60.39%	1.50%	65.34%	22.17%	84.81%	20.31%	80.16%	3.27%	0.00%	0.00%
2	1998	49.95%	1.50%	61.56%	22.17%	89.70%	20.31%	79.52%	3.27%	0.00%	0.00%
3	1999	56.48%	1.50%	60.36%	22.17%	N/A	N/A	87.81%	3.27%	87.81%	20.31%

Carriers' Position on Capital Structure, 1997-1999

Line No.	Year	Phillips		BP		Unocal		Composite
		(a) Common Equity	(b) Ownership Percentage	(a) Common Equity	(b) Ownership Percentage	(a) Common Equity	(b) Ownership Percentage	TAPS Capital Structure
1	1997	56.82%	1.44%	81.39%	49.93%	46.22%	1.39%	77.34%
2	1998	46.15%	1.44%	78.43%	49.93%	41.69%	1.39%	75.62%
3	1999	47.03%	1.44%	78.45%	49.93%	39.42%	1.39%	75.33%

Appropriate AFUDC Additions, 1997-2000
(millions $)

Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Addn's	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC
		Property Additions	Transfers to Property	Property Balance									
	1	2	3	4	5	6	7	8	9	10	11	12	13
341	Jan-97	$2.899101	$0.212635	$76.647849	0.3%	$0	50.5%	$1.464046	$0.107381	$37.350498	13.46%	$0.418948	$0.015289
342	Feb-97	$3.829269	$0.340958	$80.136159	0.4%	$0	50.5%	$1.933781	$0.172184	$38.707164	13.46%	$0.434165	$0.025124
343	Mar-97	$5.577921	$0.136936	$85.577144	0.2%	$0	50.5%	$2.816850	$0.069153	$40.468760	13.46%	$0.453925	$0.010127
344	Apr-97	$4.941123	$0.207434	$90.310833	0.2%	$0	50.5%	$2.495267	$0.104754	$43.216458	13.46%	$0.484745	$0.015544
345	May-97	$7.116876	$0.288298	$97.139411	0.3%	$0	50.5%	$3.594022	$0.145591	$45.606971	13.46%	$0.511558	$0.021460
346	Jun-97	$7.180996	$0.282613	$104.037793	0.3%	$0	50.5%	$3.626403	$0.142720	$49.055402	13.46%	$0.550238	$0.020974
347	Jul-97	$7.792312	$0.146199	$111.683906	0.1%	$0	50.5%	$3.935118	$0.073830	$52.539086	13.46%	$0.589313	$0.010813
348	Aug-97	$4.095979	$0.000000	$115.779885	0.0%	$0	50.5%	$2.068469	$0.000000	$56.400373	13.46%	$0.632624	$0.000000
349	Sep-97	$6.536663	$2.283662	$120.032886	1.9%	$0	50.5%	$3.301015	$1.153249	$58.468842	13.46%	$0.655826	$0.177040
350	Oct-97	$4.304639	$0.283296	$124.054230	0.2%	$0	50.5%	$2.173843	$0.143064	$60.616608	13.46%	$0.679916	$0.022696
351	Nov-97	$4.919018	$1.579993	$127.393254	1.2%	$0	50.5%	$2.484104	$0.797897	$62.647386	13.46%	$0.702695	$0.130083
352	Dec-97	$2.834491	$100.596793	$29.630952	77.2%	$0	50.5%	$1.431418	$50.801381	$64.333594	13.46%	$0.721608	$8.644816
353	Jan-98	$1.173523	$0.000000	$30.804475	0.0%	$0	50.5%	$0.592629	$0.000000	$14.963631	13.01%	$0.162231	$0.000000
354	Feb-98	$1.078999	$0.000000	$31.883474	0.0%	$0	50.5%	$0.544894	$0.000000	$15.556260	13.01%	$0.168656	$0.000000
355	Mar-98	$2.028235	$0.000000	$33.911709	0.0%	$0	50.5%	$1.024259	$0.000000	$16.101154	13.01%	$0.174563	$0.000000
356	Apr-98	$0.439219	($1.042638)	$35.393566	-3.0%	$0	50.5%	$0.221806	($0.526532)	$17.125413	13.01%	$0.185668	($0.114532)
357	May-98	$0.323717	$0.039848	$35.677435	0.1%	$0	50.5%	$0.163477	$0.020123	$17.873751	13.01%	$0.193781	$0.004545
358	Jun-98	$2.864602	$0.320232	$38.221805	0.8%	$0	50.5%	$1.446624	$0.161717	$18.017104	13.01%	$0.195335	$0.035418
359	Jul-98	$4.354180	$0.000000	$42.575985	0.0%	$0	50.5%	$2.198861	$0.000000	$19.302011	13.01%	$0.209266	$0.000000
360	Aug-98	$1.127393	$0.000000	$43.703378	0.0%	$0	50.5%	$0.569333	$0.000000	$21.500872	13.01%	$0.233105	$0.000000
361	Sep-98	$3.593634	$0.000000	$47.297012	0.0%	$0	50.5%	$1.814785	$0.000000	$22.070206	13.01%	$0.239278	$0.000000
362	Oct-98	$2.710088	$1.602236	$48.404863	3.2%	$0	50.5%	$1.368594	$0.809129	$23.884991	13.01%	$0.258953	$0.163546
363	Nov-98	$2.711389	$0.896299	$50.219953	1.8%	$0	50.5%	$1.369251	$0.452631	$24.444456	13.01%	$0.265019	$0.091176
364	Dec-98	$10.150065	$21.471030	$38.898988	35.6%	$0	50.5%	$5.125783	$10.842870	$25.361076	13.01%	$0.274956	$1.911179
365	Jan-99	$0.808833	$0.000000	$39.707821	0.0%	$0	50.5%	$0.408461	$0.000000	$19.643989	14.36%	$0.235073	$0.000000
366	Feb-99	$2.137482	$0.051179	$41.794124	0.1%	$0	50.5%	$1.079428	$0.025846	$20.052450	14.36%	$0.239961	$0.004859
367	Mar-99	$2.014968	$0.509175	$43.299917	1.2%	$0	50.5%	$1.017559	$0.257133	$21.106033	14.36%	$0.252569	$0.048903
368	Apr-99	$1.338505	$0.000000	$44.638422	0.0%	$0	50.5%	$0.675945	$0.000000	$21.866458	14.36%	$0.261669	$0.000000
369	May-99	$2.002943	$0.000000	$46.641365	0.0%	$0	50.5%	$1.011486	$0.000000	$22.542403	14.36%	$0.269757	$0.000000
370	Jun-99	$4.354465	$0.000000	$50.995830	0.0%	$0	50.5%	$2.199005	$0.000000	$23.553889	14.36%	$0.281862	$0.000000
371	Jul-99	$4.427730	$0.029618	$55.393942	0.1%	$0	50.5%	$2.236004	$0.014957	$25.752894	14.36%	$0.308176	$0.002792
372	Aug-99	$2.790398	$2.006215	$56.178125	3.4%	$0	50.5%	$1.409151	$1.013139	$27.973941	14.36%	$0.334755	$0.190674
373	Sep-99	$4.506935	$4.452553	$56.232506	7.3%	$0	50.5%	$2.276002	$2.248539	$28.369953	14.36%	$0.339494	$0.416312
374	Oct-99	$8.376746	$0.000000	$64.609252	0.0%	$0	50.5%	$4.230257	$0.000000	$28.397416	14.36%	$0.339822	$0.000000
375	Nov-99	$5.693005	$5.152861	$65.149396	7.3%	$0	50.5%	$2.874968	$2.602195	$32.627672	14.36%	$0.390444	$0.435159
376	Dec-99	$18.980666	$40.738810	$43.391252	48.4%	$0	50.5%	$9.585236	$20.573099	$32.900445	14.36%	$0.393709	$2.853272
377	Jan-00	$1.736155	$0.000000	$45.127407	0.0%	$0	50.5%	$0.876758	$0.000000	$21.912582	14.75%	$0.269342	$0.000000
378	Feb-00	$1.968606	$0.000000	$47.096013	0.0%	$0	50.5%	$0.994146	$0.000000	$22.789341	14.75%	$0.280119	$0.000000

Appropriate AFUDC Additions, 1997-2000
(millions $)

Line No.	Date	Construction Work in Progress			In-service Ratio	Compounding Additions Equity AFUDC	Equity %	Equity Addn's	Equity Transfers	Equity Base	ROE	Incremental Equity AFUDC	Transfers Equity AFUDC
		Property Additions	Transfers to Property	Property Balance									
	1	2	3	4	5	6	7	8	9	10	11	12	13
379	Mar-00	$2.198982	$6.272882	$43.022113	12.7%	$0	50.5%	$1.110486	$3.167806	$23.783487	14.75%	$0.292339	$0.506744
380	Apr-00	$1.922147	$0.000000	$44.944260	0.0%	$0	50.5%	$0.970684	$0.000000	$21.726167	14.75%	$0.267051	$0.000000
381	May-00	$4.073904	$0.000000	$49.018164	0.0%	$0	50.5%	$2.057322	$0.000000	$22.696851	14.75%	$0.278982	$0.000000
382	Jun-00	$4.715232	$0.000000	$53.733396	0.0%	$0	50.5%	$2.381192	$0.000000	$24.754173	14.75%	$0.304270	$0.000000
383	Jul-00	$4.715232	$0.000000	$58.448628	0.0%	$0	50.5%	$2.381192	$0.000000	$27.135365	14.75%	$0.333539	$0.000000
384	Aug-00	$4.715232	$0.000000	$63.163860	0.0%	$0	50.5%	$2.381192	$0.000000	$29.516557	14.75%	$0.362808	$0.000000
385	Sep-00	$4.715232	$0.000000	$67.879092	0.0%	$0	50.5%	$2.381192	$0.000000	$31.897749	14.75%	$0.392077	$0.000000
386	Oct-00	$4.715232	$0.000000	$72.594324	0.0%	$0	50.5%	$2.381192	$0.000000	$34.278942	14.75%	$0.421345	$0.000000
387	Nov-00	$4.715232	$0.000000	$77.309556	0.0%	$0	50.5%	$2.381192	$0.000000	$36.660134	14.75%	$0.450614	$0.000000
388	Dec-00	$8.733863	$55.628420	$30.415000	64.7%	$0	50.5%	$4.410601	$28.092352	$39.041326	14.75%	$0.479883	$4.253099

SOURCE:

Column 1	Time in months
Column 2	Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 3	Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 4	Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 5	Exhibit 143-RGV-C, TAPS-RGV WP3, Schedule 3
Column 6	Sum (prior six months Col 12) - sumproduct(prior six months Col 12 * prior six months Col 5) [A]
Column 7	Part VI.A.1
Column 8	Col 2 * Col 7
Column 9	(cum Col 8 - cum prior Col 9 + cum Col 6) * Col 5
Column 10	prior (Col 8 - Col 9 + Col 10) + Col 6
Column 11	Part VI.A.3
Column 12	(Col 10 * Col 11)/12
Column 13	prior Col 14 * Col 5 + [B]
Column 14	prior Col 14 + Col 12 - Col 13
Column 15	Sum (prior six months Col 21) - sumproduct(prior six months Col 21 * prior six months Col 5) [A]
Column 16	1.0 - Col 7
Column 17	Col 2 * Col 16
Column 18	(cum Col 17 - cum prior Col 18 + cum Col 15) * Col 5
Column 19	prior (Col 17 - Col 18 + Col 19) + Col 15
Column 20	Part VI.A.2
Column 21	(Col 19 * Col 20) / 12
Column 22	prior Col 23 * Col 5 +[C]
Column 23	prior Col 23 + Col 21 - Col 22

Appropriate AFUDC Additions, 1997-2000
(millions $)

Line No.	Date	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Addn's	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
	1	14	15	16	17	18	19	20	21	22	23
341	Jan-97	$5.930018	$0.000000	49.5%	$1.435055	$0.105254	$36.610885	7.84%	$0.239191	$0.009652	$3.718312
342	Feb-97	$6.339059	$0.000000	49.5%	$1.895488	$0.168774	$37.940685	7.84%	$0.247879	$0.015753	$3.950437
343	Mar-97	$6.782857	$0.000000	49.5%	$2.761071	$0.067783	$39.667399	7.84%	$0.259160	$0.006311	$4.203287
344	Apr-97	$7.252057	$0.000000	49.5%	$2.445856	$0.102680	$42.360686	7.84%	$0.276756	$0.009632	$4.470411
345	May-97	$7.742156	$0.000000	49.5%	$3.522854	$0.142708	$44.703862	7.84%	$0.292065	$0.013228	$4.749248
346	Jun-97	$8.271420	$0.000000	49.5%	$3.554593	$0.139894	$48.084008	7.84%	$0.314149	$0.012866	$5.050530
347	Jul-97	$8.849920	$0.000000	49.5%	$3.857194	$0.072368	$51.498708	7.84%	$0.336458	$0.006603	$5.380386
348	Aug-97	$9.482544	$0.000000	49.5%	$2.027510	$0.000000	$55.283534	7.84%	$0.361186	$0.000000	$5.741572
349	Sep-97	$9.961329	$0.000000	49.5%	$3.235648	$1.130413	$57.311043	7.84%	$0.374432	$0.107196	$6.008808
350	Oct-97	$10.618549	$0.000000	49.5%	$2.130796	$0.140231	$59.416279	7.84%	$0.388186	$0.013691	$6.383304
351	Nov-97	$11.191161	$0.000000	49.5%	$2.434914	$0.782097	$61.406844	7.84%	$0.401191	$0.078199	$6.706296
352	Dec-97	$3.267953	$0.000000	49.5%	$1.403073	$49.795413	$63.059661	7.84%	$0.411990	$5.180400	$1.937885
353	Jan-98	$3.430184	$0.000000	49.5%	$0.580894	$0.000000	$14.667321	7.84%	$0.095826	$0.000000	$2.033712
354	Feb-98	$3.598840	$0.000000	49.5%	$0.534105	$0.000000	$15.248215	7.84%	$0.099622	$0.000000	$2.133333
355	Mar-98	$3.773403	$0.000000	49.5%	$1.003976	$0.000000	$15.782320	7.84%	$0.103111	$0.000000	$2.236445
356	Apr-98	$4.073604	$0.000000	49.5%	$0.217413	($0.516106)	$16.786296	7.84%	$0.109670	($0.067882)	$2.413997
357	May-98	$4.262840	$0.000000	49.5%	$0.160240	$0.019725	$17.519815	7.84%	$0.114463	$0.002693	$2.525766
358	Jun-98	$4.422757	$0.000000	49.5%	$1.417978	$0.158515	$17.660330	7.84%	$0.115381	$0.020986	$2.620162
359	Jul-98	$4.632023	$0.000000	49.5%	$2.155319	$0.000000	$18.919793	7.84%	$0.123609	$0.000000	$2.743771
360	Aug-98	$4.865128	$0.000000	49.5%	$0.558060	$0.000000	$21.075112	7.84%	$0.137691	$0.000000	$2.881462
361	Sep-98	$5.104406	$0.000000	49.5%	$1.778849	$0.000000	$21.633172	7.84%	$0.141337	$0.000000	$3.022798
362	Oct-98	$5.199813	$0.000000	49.5%	$1.341494	$0.793107	$23.412021	7.84%	$0.152959	$0.096851	$3.078906
363	Nov-98	$5.373656	$0.000000	49.5%	$1.342138	$0.443668	$23.960407	7.84%	$0.156541	$0.053987	$3.181460
364	Dec-98	$3.737433	$0.000000	49.5%	$5.024282	$10.628160	$24.858877	7.84%	$0.162411	$1.131509	$2.212362
365	Jan-99	$3.972506	$0.000000	49.5%	$0.400372	$0.000000	$19.254999	7.84%	$0.125799	$0.000000	$2.338162
366	Feb-99	$4.207608	$0.000000	49.5%	$1.058054	$0.025334	$19.655371	7.84%	$0.128415	$0.002860	$2.463717
367	Mar-99	$4.411274	$0.000000	49.5%	$0.997409	$0.252041	$20.688091	7.84%	$0.135162	$0.028635	$2.570244
368	Apr-99	$4.672942	$0.000000	49.5%	$0.662560	$0.000000	$21.433459	7.84%	$0.140032	$0.000000	$2.710276
369	May-99	$4.942700	$0.000000	49.5%	$0.991457	$0.000000	$22.096019	7.84%	$0.144361	$0.000000	$2.854637
370	Jun-99	$5.224561	$0.000000	49.5%	$2.155460	$0.000000	$23.087476	7.84%	$0.150838	$0.000000	$3.005475
371	Jul-99	$5.529946	$0.000000	49.5%	$2.191726	$0.014661	$25.242936	7.84%	$0.164921	$0.001606	$3.168790
372	Aug-99	$5.674026	$0.000000	49.5%	$1.381247	$0.993077	$27.420001	7.84%	$0.179144	$0.109261	$3.238673
373	Sep-99	$5.597208	$0.000000	49.5%	$2.230933	$2.204014	$27.808172	7.84%	$0.181680	$0.237626	$3.182727
374	Oct-99	$5.937031	$0.000000	49.5%	$4.146489	$0.000000	$27.835091	7.84%	$0.181856	$0.000000	$3.364582
375	Nov-99	$5.892316	$0.000000	49.5%	$2.818037	$2.550666	$31.981580	7.84%	$0.208946	$0.246610	$3.326919
376	Dec-99	$3.432753	$0.000000	49.5%	$9.395430	$20.165711	$32.248951	7.84%	$0.210693	$1.611014	$1.926598
377	Jan-00	$3.702095	$0.000000	49.5%	$0.859397	$0.000000	$21.478670	7.84%	$0.140327	$0.000000	$2.066925
378	Feb-00	$3.982214	$0.000000	49.5%	$0.974460	$0.000000	$22.338067	7.84%	$0.145942	$0.000000	$2.212867

Appropriate AFUDC Additions, 1997-2000
(millions $)

Line No.	Date	Equity AFUDC Balance	Compounding Additions Debt AFUDC	Debt %	Debt Addn's	Debt Transfers	Debt Base	COD	Incremental Debt AFUDC	Transfers Debt AFUDC	Debt AFUDC Balance
	1	14	15	16	17	18	19	20	21	22	23
379	Mar-00	$3.767808	$0.000000	49.5%	$1.088496	$3.105077	$23.312527	7.84%	$0.152309	$0.281592	$2.083584
380	Apr-00	$4.034859	$0.000000	49.5%	$0.951463	$0.000000	$21.295946	7.84%	$0.139134	$0.000000	$2.222718
381	May-00	$4.313841	$0.000000	49.5%	$2.016582	$0.000000	$22.247409	7.84%	$0.145350	$0.000000	$2.368068
382	Jun-00	$4.618111	$0.000000	49.5%	$2.334040	$0.000000	$24.263991	7.84%	$0.158525	$0.000000	$2.526592
383	Jul-00	$4.951650	$0.000000	49.5%	$2.334040	$0.000000	$26.598031	7.84%	$0.173774	$0.000000	$2.700366
384	Aug-00	$5.314458	$0.000000	49.5%	$2.334040	$0.000000	$28.932071	7.84%	$0.189023	$0.000000	$2.889389
385	Sep-00	$5.706534	$0.000000	49.5%	$2.334040	$0.000000	$31.266111	7.84%	$0.204272	$0.000000	$3.093661
386	Oct-00	$6.127879	$0.000000	49.5%	$2.334040	$0.000000	$33.600151	7.84%	$0.219521	$0.000000	$3.313182
387	Nov-00	$6.578494	$0.000000	49.5%	$2.334040	$0.000000	$35.934190	7.84%	$0.234770	$0.000000	$3.547952
388	Dec-00	$2.805277	$0.000000	49.5%	$4.323262	$27.536068	$38.268230	7.84%	$0.250019	$2.293807	$1.504164

Appropriate Depreciation Charges, 1997-2000
(millions $)

Line No.	Description	Source	1997	1998	1999	2000
1	Net Depreciable Property In Service, BOY 1/	Prior Line 11	$606.511872	$685.123043	$675.332318	$689.627199
2	Grand Total, New Construction Expenditures	Part VI.B.1, Table, Ln. 2	$61.176000	$30.324000	$95.277000	$44.757000
3	Additions to Capitalized Interest	Part VI.B.1, Table, Ln. 9 - Prior Ln. 9	($0.007000)	($0.002000)	($0.004000)	$0.000000
4	Transfers to Depreciable Property from CWIP 2/	Part VI.B.1, Table, Ln. 7 - Prior Ln. 7	$44.290000	($9.278000)	($4.250000)	$12.823000
5	Total Additions to Depreciable Property in Service	Lns. (2 - 3 + 4)	$105.473000	$21.048000	$91.031000	$57.580000
6	Depreciation Basis	Lns. 1 + 5	$711.984872	$706.171043	$766.363318	$747.207199
7	Composit Depreciation Factor	Part VI.B.1	0.033333333	0.034482759	0.035714286	0.037037037
8	Depreciation	Lns. 7 * 6	$23.732829	$24.350726	$27.370118	$27.674341
9	Retirements	Part VI.B.1, Table, Ln. 4	($3.115000)	($6.458000)	($49.053000)	($44.737000)
10	Adjustments	Part VI.B.1, Table, Ln. 5	($0.014000)	($0.030000)	($0.313000)	$0.000000
11	Net Depreciable Property In Service, EOY	Lns. (6 - 8 + 9 + 10)	$685.123043	$675.332318	$689.627199	$674.795859

1/ For 1997, Exhibit 24, Ln 5 - Ln 7
2/ For 1997, Part VI.B.1. Table, Ln 7 - Exhibit 8, Ln. 8

Appropriate Amortization of AFUDC, 1997-2000
(millions $)

Line No.	Description	Source	1997	1998	1999	2000
1	Amortization Factor	Part VI.B.3.c	3.33%	3.45%	3.57%	3.70%
2	Net Equity AFUDC - BOY 1/	Prior Ln. 5	$71.553625	$77.959339	$77.290303	$78.340764
3	Equity AFUDC Additions	Exhibit 35, Col. 13	$9.093966	$2.091332	$3.951971	$4.759844
4	Current Period Equity AFUDC Amortization	(Ln.2 + Ln.3) * Ln.1	$2.688253	$2.760368	$2.901510	$3.077800
5	Net Equity AFUDC - EOY	Lns.(2+3-4)	$77.959339	$77.290303	$78.340764	$80.022808
6	Accumulated Equity AFUDC Additions 1/	Ln. 3 + Prior Ln. 6	$1,576.896714	$1,578.988046	$1,582.940017	$1,587.699861
7	Accumulated Equity AFUDC Amortization 1/	Ln. 4 + Prior Ln. 7	$1,498.937375	$1,501.697743	$1,504.599253	$1,507.677053
8	Net Debt AFUDC - BOY 1/	Prior Ln. 11	$24.112478	$28.580477	$28.790393	$29.919861
9	Debt AFUDC Additions	Exhibit 35, Col. 22	$5.453532	$1.238144	$2.237612	$2.575398
10	Current Period Debt AFUDC Amortization	(Ln. 8 + Ln. 9) * Ln.1	$0.985534	$1.028228	$1.108143	$1.203528
11	Net Debt AFUDC - EOY	Lns. (8 + 9 - 10)	$28.580477	$28.790393	$29.919861	$31.291731
12	Accumulated Debt AFUDC Additions 1/	Ln. 9 + Prior Ln. 12	$478.571569	$479.809714	$482.047325	$484.622723
13	Accumulated Debt AFUDC Amortization 1/	Ln. 10 + Prior Ln. 13	$449.991093	$451.019321	$452.127464	$453.330992
14	Annual AFUDC Amortization	Ln. 4 + Ln. 10	$3.673787	$3.788596	$4.009653	$4.281328

1/ 1997 BOY balance from corresponding line, Exhibit 25

Appropriate Retirements from Accumulated Depreciaton, 1997-2000
(millions)

Line No.	Description	Source	1997	1998	1999	2000
1	Property Account - Grand Total - Credits for Retirements	Exhibit 8, Ln. 5	($3.12)	($6.46)	($2.63)	($6.57)
2	Depreciation Account - Grand Total - Retirements	FERC Form 6 - From 143-RGV-C, TAPS-RGV WP3, Sch. 12	(3.08)	(6.38)	(2.58)	(5.36)
3	Depreciation Account - Adjusted Retirements	Year's worksheet	(3.11)	(6.44)	(2.63)	(6.55)

Appropriate Retirements from Accumulated Depreciaton, 1997-2000
(millions)

Line No.	Description	Source	1977	1978	1979	1980	1981	1982	1983	1984
1	Gross Depreciable Property EOY	Exhibit 8, Lns (9-8-7)	$9,075.01	$9,248.94	$9,328.41	$9,439.73	$9,485.10	$9,521.27	$9,580.77	$9,613.04
2	Capitalized Interest - EOY	Exhibit 8, Ln. 10	$1,215.57	$1,215.57	$1,215.57	$1,215.57	$1,215.11	$1,215.11	$1,215.11	$1,214.31
3	Depreciable Property Net Capitalized Interest	Lns. 1 - 2	$7,859.44	$8,033.37	$8,112.84	$8,224.16	$8,269.99	$8,306.16	$8,365.66	$8,398.73
4	Depreciation Expense (Net Capitalized Interest)	Exhibit 22, Ln. 1	$108	$501	$605	$693	$668	$682	$660	$642
5	Gross Accumulated Depreciation	Cumlative sum, ln. 4	$108	$609	$1,214	$1,907	$2,575	$3,257	$3,918	$4,559
6	Composite Depreciation Rate (Net basis, unadjusted)	To 2000, Ln. 4/(Lns. 3+4-5); 31-BWF-E, Ln. 14 after	1.38%	6.32%	8.06%	9.89%	10.50%	11.90%	12.93%	14.32%
7	TSM Basis Cumulative "Undepreciated Property Factor" to date	Prior Ln. 7 - Lns. (6 * 7)	98.62%	92.39%	84.94%	76.54%	68.50%	60.35%	52.55%	45.03%

Appropriate Retirements from Accumulated Depreciaton, 1997-2000
(millions)

Line No.	Description	Source	1985	1986	1987	1988	1989	1990	1991	1992
1	Gross Depreciable Property EOY	Exhibit 8, Lns (9-8-7)	$9,628.07	$9,645.07	$9,660.89	$9,657.85	$9,689.22	$9,765.45	$9,915.04	$9,968.82
2	Capitalized Interest - EOY	Exhibit 8, Ln. 10	$1,214.06	$1,214.01	$1,213.86	$1,213.81	$1,213.80	$1,213.80	$1,213.55	$1,213.52
3	Depreciable Property Net Capitalized Interest	Lns. 1 - 2	$8,414.01	$8,431.06	$8,447.03	$8,444.04	$8,475.41	$8,551.66	$8,701.49	$8,755.30
4	Depreciation Expense (Net Capitalized Interest)	Exhibit 22, Ln. 1	$543	$515	$504	$459	$395	$336	$296	$286
5	Gross Accumulated Depreciation	Cumlative sum, ln. 4	$5,102	$5,617	$6,120	$6,579	$6,975	$7,310	$7,606	$7,892
6	Composite Depreciation Rate (Net basis, unadjusted)	To 2000, Ln. 4/(Lns. 3+4-5); 31-BWF-E, Ln. 14 after	14.09%	15.46%	17.79%	19.75%	20.85%	21.28%	21.26%	24.87%
7	TSM Basis Cumulative "Undepreciated Property Factor" to date	Prior Ln. 7 - Lns. (6 * 7)	38.68%	32.70%	26.88%	21.57%	17.08%	13.44%	10.58%	7.95%

Appropriate Retirements from Accumulated Depreciaton, 1997-2000
(millions)

Line No.	Description	Source	1993	1994	1995	1996	1997	1998	1999
1	Gross Depreciable Property EOY	Exhibit 8, Lns (9-8-7)	$10,003.62	$10,036.68	$10,069.13	$10,063.31	$10,165.66	$10,180.24	$10,223.96
2	Capitalized Interest - EOY	Exhibit 8, Ln. 10	$1,213.52	$1,213.51	$1,213.50	$1,204.65	$1,204.64	$1,204.64	$1,204.64
3	Depreciable Property Net Capitalized Interest	Lns. 1 - 2	$8,790.11	$8,823.18	$8,855.63	$8,858.66	$8,961.02	$8,975.60	$9,019.33
4	Depreciation Expense (Net Capitalized Interest)	Exhibit 22, Ln. 1	$237	$196	$165	$127	$82	$50	$49
5	Gross Accumulated Depreciation	Cumlative sum, ln. 4	$8,129	$8,325	$8,490	$8,617	$8,699	$8,748	$8,797
6	Composite Depreciation Rate (Net basis, unadjusted)	To 2000, Ln. 4/(Lns. 3+4-5); 31-BWF-E, Ln. 14 after	26.39%	28.23%	31.15%	34.42%	23.70%	17.87%	17.92%
7	TSM Basis Cumulative "Undepreciated Property Factor" to date	Prior Ln. 7 - Lns. (6 * 7)	5.85%	4.20%	2.89%	1.90%	1.45%	1.19%	0.98%

Appropriate Retirements from Accumulated Depreciaton, 1997-2000
(millions)

Line No.	Description	Source	2000	2001	2002	2003	2004	2005	2006
1	Gross Depreciable Property EOY	Exhibit 8, Lns (9-8-7)	$10,280.94						
2	Capitalized Interest - EOY	Exhibit 8, Ln. 10	$1,204.64						
3	Depreciable Property Net Capitalized Interest	Lns. 1 - 2	$9,076.31						
4	Depreciation Expense (Net Capitalized Interest)	Exhibit 22, Ln. 1	$56						
5	Gross Accumulated Depreciation	Cumlative sum, ln. 4	$8,853						
6	Composite Depreciation Rate (Net basis, unadjusted)	To 2000, Ln. 4/(Lns. 3+4-5); 31-BWF-E, Ln. 14 after	20.19%	14.7448%	16.1863%	17.0635%	18.8198%	21.4145%	25.2500%
7	TSM Basis Cumulative "Undepreciated Property Factor" to date	Prior Ln. 7 - Lns. (6 * 7)	0.78%	0.66%	0.56%	0.46%	0.37%	0.29%	0.22%

Appropriate Retirements from Accumulated Depreciaton, 1997-2000
(millions)

Line No.	Description	Source	2007	2008	2009	2010	2011
1	Gross Depreciable Property EOY	Exhibit 8, Lns (9-8-7)					
2	Capitalized Interest - EOY	Exhibit 8, Ln. 10					
3	Depreciable Property Net Capitalized Interest	Lns. 1 - 2					
4	Depreciation Expense (Net Capitalized Interest)	Exhibit 22, Ln. 1					
5	Gross Accumulated Depreciation	Cumlative sum, ln. 4					
6	Composite Depreciation Rate (Net basis, unadjusted)	To 2000, Ln. 4/(Lns. 3+4-5); 31-BWF-E, Ln. 14 after	29.0970%	35.3774%	42.3358%	54.4304%	100.0000%
7	TSM Basis Cumulative "Undepreciated Property Factor" to date	Prior Ln. 7 - Lns. (6 * 7)	0.16%	0.10%	0.06%	0.03%	0.00%

Appropriate Retirements from Accumulated Depreciaton, 1997-2000
(millions)

	a	b	c	d	e	f
Retirements by Vintage Year	Credits to Property	Charges to Accrued Depreciation	Useful life as proportion of Inferred Expected Life	Year of retirement, assuming normalized 34.5 year life	Adjusted Undepreciated Property As Percentage of Property Retired	Adjusted Chrages to Accrued Depreciation
	FERC Form 6	FERC Form 6	b/a	if a>b, 2011, else c*34 + 1977	lookup ln. 7 from Sch. 2, given d	a*(1-e)
1977	1,684	1,684	100.00%	2011	0.000%	1684.000
1978	50	49	98.00%	2010	0.026%	49.987
1979	9	9	100.00%	2011	0.000%	9.000
1980	259	259	100.00%	2011	0.000%	259.000
1981	4	4	100.00%	2011	0.000%	4.000
1982	64	64	100.00%	2011	0.000%	64.000
1983	54	54	100.00%	2011	0.000%	54.000
1984						
1985	151	151	100.00%	2011	0.000%	151.000
1986	45	45	100.00%	2011	0.000%	45.000
1987	11	11	100.00%	2011	0.000%	11.000
1988	29	29	100.00%	2011	0.000%	29.000
1989	147	138	93.88%	2009	0.058%	146.915
1990	82	80	97.56%	2010	0.026%	81.978
1991	95	90	94.74%	2009	0.058%	94.945
1992	212	208	98.11%	2010	0.026%	211.944
1993	41	41	100.00%	2011	0.000%	41.000
1994	13	13	100.00%	2011	0.000%	13.000
1995	165	152	92.12%	2008	0.101%	164.834
1996						
1997						
1998						
1999						
2000						
Total	3,115	3,081				3,115

Weighted Average Vintage 1982

Appropriate Retirements from Accumulated Depreciaton, 1997-2000
(millions)

	a	b	c	d	e	f
Retirements by Vintage Year	Credits to Property	Charges to Accrued Depreciation	Useful life as proportion of Inferred Expected Life	Year of retirement, assuming normalized 34.5 year life	Adjusted Undepreciated Property As Percentage of Property Retired	Adjusted Chrages to Accrued Depreciation
	FERC Form 6	FERC Form 6	b/a	if a>b, 2011, else c*34 + 1977	lookup ln. 7 from Sch. 2, given d	a*(1-e)
1977						
1978						
1979						
1980						
1981	6	6	100.00%	2011	0.000%	6.000
1982	17	17	100.00%	2011	0.000%	17.000
1983	70	70	100.00%	2011	0.000%	70.000
1984	56	56	100.00%	2011	0.000%	56.000
1985	14	14	100.00%	2011	0.000%	14.000
1986	127	127	100.00%	2011	0.000%	127.000
1987	14	14	100.00%	2011	0.000%	14.000
1988	3	3	100.00%	2011	0.000%	3.000
1989	353	351	99.43%	2011	0.000%	353.000
1990	199	176	88.44%	2007	0.156%	198.690
1991	1,504	1,493	99.27%	2011	0.000%	1504.000
1992	1,518	1,505	99.14%	2011	0.000%	1518.000
1993	1,358	1,358	100.00%	2011	0.000%	1358.000
1994	490	473	96.53%	2010	0.026%	489.870
1995	50	50	100.00%	2011	0.000%	50.000
1996	339	339	100.00%	2011	0.000%	339.000
1997	75	62				62.000
1998	265	265				265.000
1999						
2000						
Total	6,458	6,379				6,445

Weighted Average Vintage 1992

Appropriate Retirements from Accumulated Depreciaton, 1997-2000
(millions)

	a	b	c	d	e	f
Retirements by Vintage Year	Credits to Property	Charges to Accrued Depreciation	Useful life as proportion of Inferred Expected Life	Year of retirement, assuming normalized 34.5 year life	Adjusted Undepreciated Property As Percentage of Property Retired	Adjusted Chrages to Accrued Depreciation
	FERC Form 6	FERC Form 6	b/a	if a>b, 2011, else c*34 + 1977	lookup ln. 7 from Sch. 2, given d	a*(1-e)
1977	875	875	100.00%	2011	0.00%	875.000
1978						
1979						
1980	43	37	86.05%	2006	0.22%	42.905
1981						
1982	74	51	68.92%	2000	0.78%	73.424
1983						
1984	536	537	100.00%	2011	0.00%	537.000
1985	29	28	96.55%	2010	0.03%	28.992
1986						
1987	6	7	100.00%	2011	0.00%	7.000
1988	13	13	100.00%	2011	0.00%	13.000
1989	43	43	100.00%	2011	0.00%	43.000
1990	197	193	97.97%	2010	0.03%	196.948
1991	221	206	93.21%	2009	0.06%	220.872
1992	277	277	100.00%	2011	0.00%	277.000
1993	234	235	100.00%	2011	0.00%	235.000
1994	64	60	93.75%	2009	0.06%	63.963
1995	16	16	100.00%	2011	0.00%	16.000
1996						
1997						
1998						
1999						
2000						
Total	2,628	2,578				2,630

Weighted Average Vintage 1985

Appropriate Retirements from Accumulated Depreciaton, 1997-2000
(millions)

	a	b	c	d	e	f
Retirements by Vintage Year	Credits to Property	Charges to Accrued Depreciation	Useful life as proportion of Inferred Expected Life	Year of retirement, assuming normalized 34.5 year life	Adjusted Undepreciated Property As Percentage of Property Retired	Adjusted Chrages to Accrued Depreciation
	FERC Form 6	FERC Form 6	b/a	if a>b, 2011, else c*34 + 1977	lookup ln. 7 from Sch. 2, given d	a*(1-e)
1975						
1976	4.302	3.472	0.807	2004	0.375%	4.286
1977	170.485	151.816	0.890	2007	0.156%	170.219
1978						
1979	205.924	180.924	0.879	2007	0.156%	205.603
1980	51.455	51.289	0.997	2011	0.000%	51.455
1981						
1982	231.780	200.532	0.865	2006	0.220%	231.270
1983	34.809	34.062	0.979	2010	0.026%	34.800
1984	781.323	662.837	0.848	2006	0.220%	779.604
1985	6.910	4.337	0.628	1998	1.189%	6.828
1986						
1987	41.470	37.094	0.894	2007	0.156%	41.405
1988	194.439	165.066	0.849	2006	0.220%	194.011
1989	279.847	237.500	0.849	2006	0.220%	279.231
1990	1983.767	1480.444	0.746	2002	0.556%	1972.730
1991	1258.791	1053.601	0.837	2005	0.294%	1255.086
1992	354.819	269.151	0.759	2003	0.461%	353.182
1993	793.397	661.024	0.833	2005	0.294%	791.062
1994	162.984	160.332	0.984	2010	0.026%	162.941
1995	46.725	46.538	0.996	2011	0.000%	46.725
1996	145.432	116.835	0.803	2004	0.375%	144.887
1997						
1998						
1999						
2000						
Total	6,574	5,362				6,551

Weighted Average Vintage 1989

Appropriate State Tax Depreciation, 1997-2000
(millions $)

State Tax Depreciation[2]				Year	**21** 1997	**22** 1998	**23** 1999	**24** 2000
Depreciation Factors - (1977)					0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1978)					0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1979)					0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1980)					0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1981)					0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1982-present)					0.00%	0.00%	0.00%	0.00%
Year		Property Additions (a) Exhibit 8 and Part VI.B.1, col c - cols (a+b)[1]	AFUDC Additions (b) Exhibits 21 and 35, col 22	Tax Basis for Depreciation (c) (a) + (b)				
1977	1	$7,888.922995	$0.649170	$7,889.572165	$0.000000	$0.000000	$0.000000	$0.000000
1978	2	$112.175000	$4.405407	$116.580407	$0.000000	$0.000000	$0.000000	$0.000000
1979	3	$96.610000	$2.175618	$98.785618	$0.000000	$0.000000	$0.000000	$0.000000
1980	4	$123.421000	$4.239075	$127.660075	$0.783961	$0.000000	$0.000000	$0.000000
1981	5	$49.180000	$4.883692	$54.063692	$0.663956	$0.332005	$0.000000	$0.000000
1982	6	$60.335000	$4.805775	$65.140775	$1.199958	$0.799994	$0.399964	$0.000000
1983	7	$84.072000	$3.309559	$87.381559	$2.146266	$1.609656	$1.073133	$0.536523
1984	8	$50.841000	$1.748567	$52.589567	$1.614605	$1.291705	$0.968752	$0.645852
1985	9	$28.867000	$0.315518	$29.182518	$1.075172	$0.895962	$0.716781	$0.537571
1986	10	$20.045000	$0.199332	$20.244332	$0.870162	$0.745862	$0.621541	$0.497241
1987	11	$32.530000	$0.308453	$32.838453	$1.613156	$1.411495	$1.209867	$1.008206
1988	12	$9.947000	$0.112255	$10.059255	$0.555915	$0.494151	$0.432377	$0.370613
1989	13	$36.586000	$0.459883	$37.045883	$2.274802	$2.047304	$1.819842	$1.592343
1990	14	$80.845000	$1.104859	$81.949859	$5.535303	$5.032131	$4.528877	$4.025705
1991	15	$202.510000	$3.584536	$206.094536	$15.186076	$13.920655	$12.655235	$11.389608
1992	16	$69.470000	$2.535052	$72.005052	$5.747875	$5.305692	$4.863581	$4.421470
1993	17	$45.801000	$1.567387	$47.368387	$4.072071	$3.781229	$3.490340	$3.199498
1994	18	$43.384000	$1.392469	$44.776469	$4.124226	$3.849254	$3.574326	$3.299354
1995	19	$35.960000	$1.269024	$37.229024	$3.657640	$3.429054	$3.200430	$2.971844
1996	20	$28.554000	$1.134040	$29.688040	$3.199035	$2.916761	$2.734476	$2.552162
1997	21	$105.466000	$5.453532	$110.919532	$6.338275	$11.952134	$10.897511	$10.216465
1998	22	$21.016000	$1.238144	$22.254144	$0.000000	$1.271669	$2.397995	$2.186403
1999	23	$46.445000	$2.237612	$48.682612	$0.000000	$0.000000	$2.781870	$5.245795
2000	24	$57.580000	$2.575398	$60.155398	$0.000000	$0.000000	$0.000000	$3.437460
Total State Tax Depreciation					$60.658453	$61.086712	$58.366901	$58.134115

1 For 1977, Exhibit 8, col c - cols (a+b+e)

[2] Depreciation factors for earlier years are at Exhibit 26

Appropriate Federal Tax Depreciation
(millions $)

Federal Tax Depreciation[2]					Year	**21**	**22**	**23**	**24**
						1997	1998	1999	2000
						------	------	------	------
Depreciation Factors - (1977-1980)						0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1981-1986)						0.00%	0.00%	0.00%	0.00%
Depreciation Factors - (1987-Present)						0.00%	0.00%	0.00%	0.00%
Year		Property Addition (a) Exhibit 8 and Part VI.B.1, col c - cols (a+b)[1]	AFUDC Addition (b) Exhibits 21 and 35, col 22	TEFRA Adjustment (c) Exhibit 40	Tax Basis for Depreciation (d) (a) + (b) - (c)				
1977	1	$7,888.922995	$0.649170	$0.000000	$7,889.572165	$0.000000	$0.000000	$0.000000	$0.000000
1978	2	$112.175000	$4.405407	$0.000000	$116.580407	$0.000000	$0.000000	$0.000000	$0.000000
1979	3	$96.610000	$2.175618	$0.000000	$98.785618	$0.000000	$0.000000	$0.000000	$0.000000
1980	4	$123.421000	$4.239075	$0.000000	$127.660075	$0.783961	$0.000000	$0.000000	$0.000000
1981	5	$49.180000	$4.883692	$0.000000	$54.063692	$0.000000	$0.000000	$0.000000	$0.000000
1982	6	$60.335000	$4.805775	$0.000000	$65.140775	$0.000000	$0.000000	$0.000000	$0.000000
1983	7	$84.072000	$3.309559	$4.369078	$83.012481	$0.000000	$0.000000	$0.000000	$0.000000
1984	8	$50.841000	$1.748567	$2.629478	$49.960088	$0.000000	$0.000000	$0.000000	$0.000000
1985	9	$28.867000	$0.315518	$1.459126	$27.723392	$0.000000	$0.000000	$0.000000	$0.000000
1986	10	$20.045000	$0.199332	$0.000000	$20.244332	$0.000000	$0.000000	$0.000000	$0.000000
1987	11	$32.530000	$0.308453	$0.000000	$32.838453	$1.939078	$1.939078	$1.939078	$1.939078
1988	12	$9.947000	$0.112255	$0.000000	$10.059255	$0.593989	$0.593989	$0.593989	$0.593989
1989	13	$36.586000	$0.459883	$0.000000	$37.045883	$2.187522	$2.187522	$2.187522	$2.187522
1990	14	$80.845000	$1.104859	$0.000000	$81.949859	$4.839057	$4.839057	$4.839057	$4.839057
1991	15	$202.510000	$3.584536	$0.000000	$206.094536	$12.169676	$12.169676	$12.169676	$12.169676
1992	16	$69.470000	$2.535052	$0.000000	$72.005052	$4.488039	$4.251826	$4.251826	$4.251826
1993	17	$45.801000	$1.567387	$0.000000	$47.368387	$3.280498	$2.952448	$2.797056	$2.797056
1994	18	$43.384000	$1.392469	$0.000000	$44.776469	$3.445549	$3.100994	$2.790895	$2.644006
1995	19	$35.960000	$1.269024	$0.000000	$37.229024	$3.183082	$2.864773	$2.578296	$2.320466
1996	20	$28.554000	$1.134040	$0.000000	$29.688040	$2.820364	$2.538327	$2.284495	$2.056045
1997	21	$105.466000	$5.453532	$0.000000	$110.919532	$5.545977	$10.537356	$9.483620	$8.535258
1998	22	$21.016000	$1.238144	$0.000000	$22.254144	$0.000000	$1.112707	$2.114144	$1.902729
1999	23	$46.445000	$2.237612	$0.000000	$48.682612	$0.000000	$0.000000	$2.434131	$4.624848
2000	24	$57.580000	$2.575398	$0.000000	$60.155398	$0.000000	$0.000000	$0.000000	$3.007770
Total Federal Tax Depreciation						$45.276791	$49.087755	$50.463785	$53.869327

[1] For 1977, Exhibit 8, col c - cols (a+b+e)

[2] Depreciation factors for earlier years are at Exhibit 26

Appropriate TEFRA Adjustment to Rates, 1997-2000
(millions $)

Line No.	Description	Source	1997	1998	1999	2000
1	Tax Depreciation Basis before TEFRA Adjustment	Exhibit 39, Schedule 1	$110.919532	$22.254144	$48.682612	$60.155398
2	Tax Depreciation Basis Reduction	143-RGV-C, TAPS-RGV WP3, Sch. 9	0.00%	0.00%	0.00%	0.00%
3	TEFRA Adjustment	Ln. 1 * Ln. 2	$0.000000	$0.000000	$0.000000	$0.000000
4	TEFRA Adjustment Balance (BOY) 1/	Ln. 3 + Prior Ln. 7	$0.616108	$0.595572	$0.575035	$0.554498
5	Amortization Factor	Part VI.B.3.b	3.33%	3.45%	3.57%	3.70%
6	Amortization of TEFRA Adjustment	Ln. 4 * Ln. 5	$0.0205369	$0.0205369	$0.020537	$0.020537
7	TEFRA Adjustment Balance (EOY)	Ln. 4 - Ln. 6	$0.595572	$0.575035	$0.554498	$0.533961

1/ For 1997, BOY balance from Ln. 4, Exhibit 27

Appropriate ADIT Balances, 1997-2000
(millions $)

Line No.	Description	Source	1997	1998	1999	2000
1	Regulatory Depreciation Incl. Amortization of Debt AFUDC	Exh. 36 Ln.8+Exh. 37 Ln.10	$24.718363	$25.378954	$28.478262	$28.877869
2	State Tax Depreciation	Exhibit 39, Schedule 1	$60.658453	$61.086712	$58.366901	$58.134115
3	State Tax Timing Differences	Ln. 2 - Ln. 1	$35.940091	$35.707758	$29.888640	$29.256246
4	State Income Tax Rate	AK Stat.	$0.094000	$0.094000	$0.094000	$0.094000
5	State Tax Effect	Ln. 3 * Ln. 4	$3.378369	$3.356529	$2.809532	$2.750087
6	State ADIT Balance 1/	Ln. 5 + Prior Ln. 6	$19.184881	$22.541410	$25.350942	$28.101029
7	Regulatory Depreciation Incl. Amortization of Debt AFUDC	Ln.1	$24.718363	$25.378954	$28.478262	$28.877869
8	Depreciation of TEFRA Adjustment	Exhibit 40, Ln. 6	$0.020537	$0.020537	$0.020537	$0.020537
9	Regulatory Depreciation after TEFRA Adjustment	Ln. 7 - Ln. 8	$24.697826	$25.358417	$28.457725	$28.857332
10	Federal Tax Depreciation	Exhibit 39, Schedule 2	$45.276791	$49.087755	$50.463785	$53.869327
11	Tax Effect of State Timing Differences	Ln. 5	$3.378369	$3.356529	$2.809532	$2.750087
12	Total Federal Tax Deductions	Ln. 10 - Ln.11	$41.898422	$45.731225	$47.654253	$51.119240
13	Federal Tax Timing Differences	Ln.12 - Ln. 9	$17.200597	$20.372808	$19.196528	$22.261908
14	Federal Income Tax Rate	IRC	35.00%	35.00%	35.00%	35.00%
15	Federal Tax Effect	Ln. 13 * Ln. 14	$6.020209	$7.130483	$6.718785	$7.791668
16	FASB 96/109 Adjustment	Cum. Ln 13 * Change in Ln 14	$0.000000	$0.000000	$0.000000	$0.000000
17	Amortization Basis for FASB 96/109 Adjustment 1/	Lns(Prior 17 + 16 - Prior 18)	$13.424545	$12.977061	$12.529576	$12.082091
18	Amortization of FASB 96/109 Adjustment	Ln. 17 * Depreciation Factors, Part VI.B.3.b	$0.447485	$0.447485	$0.447485	$0.447485
19	Federal ADIT Balance 1/	Prior Ln.19 + Ln.15 - Ln.18	$78.928053	$85.611051	$91.882351	$99.226534
20	Total State And Federal ADIT Balances	Ln. 6 + Ln. 19	$98.112934	$108.152461	$117.233293	$127.327563

[1] For prior to 1997 see corresponding line, Exhibit 28

Appropriate Rate Base, 1997-2000
(millions $)

Line No.	Description	Source	1997	1998	1999	2000
1	Gross Carrier Property - BOY	Prior Ln. 10	$10,992.972780	$11,065.574278	$11,092.741755	$11,144.846337
2	Gross Carrier Property Additions	Part IV.B.1, Table, Ln. 3	$61.176000	$30.324000	$95.277000	$44.757000
3	Less Additions to Capitalized Interest	Part IV.B.1, Table, [Ln. 10 - Prior Ln. 10]	($0.007000)	($0.002000)	($0.004000)	$0.000000
4	Gross Carrier Property Additions, Net IDC	Ln. 2 - Ln. 3	$61.183000	$30.326000	$95.281000	$44.757000
5	Acquisitions of Carrier Property in Service	Part IV.B.1, Table, Ln. 4	$0.000000	$0.000000	$0.000000	$0.000000
6	Retirements of CPIS	Part IV.B.1, Table, Ln. 5	($3.115000)	($6.458000)	($49.053000)	($44.737000)
7	Adjustments to CPIS	Part IV.B.1, Table, Ln. 6	($0.014000)	($0.030000)	($0.313000)	$0.000000
8	Equity AFUDC Additions	Exhibit 35, col. 13	$9.093966	$2.091332	$3.951971	$4.759844
9	Debt AFUDC Additions	Exhibit 35, col. 22	$5.453532	$1.238144	$2.237612	$2.575398
10	Gross Carrier Property - EOY 1/	Lns (1+4+5+6+7+8+9)	$11,065.574278	$11,092.741755	$11,144.846337	$11,152.201579
11	Depreciation	Exhibit 36, Ln. 8	$23.732829	$24.350726	$27.370118	$27.674341
12	Adjustments to Accumulated Depreciation	FERC Form 6, from 143-RGV-C	$0.224000	($0.311000)	$0.016000	$0.000000
13	RCA-Adjusted Retirements from Accumulated	Exhibit 38, Ln. 3	($3.114602)	($6.444560)	($2.630104)	($6.550819)
14	Accumulated Depreciation 2/	Lns (11 + 12 + 13) + Prior Ln. 14	$8,272.993355	$8,290.588521	$8,315.344536	$8,336.468057
15	Accumulated Equity AFUDC Amortization	Exhibit 37, Ln. 7	$1,498.937375	$1,501.697743	$1,504.599253	$1,507.677053
16	Accumulated Debt AFUDC Amortization	Exhibit 37, Ln. 13	$449.991093	$451.019321	$452.127464	$453.330992
17	CWIP Balance - EOY	Part VI.B.1, Table, Ln. 7	$29.708000	$38.986000	$43.236000	$30.413000
18	Net Carrier Property	Lns (10-14-15-16-17)	$813.944455	$810.450170	$829.539085	$824.312477
19	Working Capital	Part VI.B.1, Table, Ln. 10	$43.959000	$43.062000	$47.445000	$23.800000
20	ADIT	Exhibit 41, Ln. 20	$98.112934	$108.152461	$117.233293	$127.327563
21	Rate Base, EOY	Lns (18+19-20)	$759.790522	$745.359709	$759.750792	$720.784914
22	Average Rate Base	(Ln.21+Prior Ln.21)/2	$714.306826	$752.575116	$752.555251	$740.267853

1/ 1996 EOY Balance from Exhibit 29, Line 10
2/ 1996 Balance is from Exhibit 22, Line 6

Appropriate Return on Rate Base, 1997-2000
(millions $)

Line No.	Description	Source	1997	1998	1999	2000
1	Weighted Rate of Return	Part VI.A.5	10.68%	10.45%	11.13%	11.33%
2	Average Rate Base	Exhibit 42, Ln. 22	$714.306826	$752.575116	$752.555251	$740.267808
3	Total Return on Rate Base	Ln.1 * Ln.2	$76.287969	$78.644100	$83.759399	$83.872343
4	Debt Capital Structure	Part VI.A.1	49.50%	49.50%	49.50%	49.50%
5	Cost of Debt	Part VI.A.2	7.84%	7.84%	7.84%	7.84%
6	Debt Weighted Rate of Return	Ln.4 * Ln.5	3.88%	3.88%	3.88%	3.88%
7	Interest Expense	Ln.2 * Ln.6	$27.720819	$29.205935	$29.205164	$28.728313
8	Equity Weighted Rate of Return	Ln.1 - Ln.6	6.80%	6.57%	7.25%	7.45%
9	Return on Equity	Ln.2 * Ln.8	$48.567150	$49.438164	$54.554235	$55.144030

Appropriate Income Tax Allowance, 1997-2000
(millions $)

Line No.	Description	Source	1997	1998	1999	2000
1	Total Return on Rate Base	Exhibit 43 Ln. 3	$76.287969	$78.644100	$83.759399	$83.872343
2	Interest Expense	Exhibit 43 Ln. 7	$27.720819	$29.205935	$29.205164	$28.728313
3	Equity Portion of Return on Rate Base	Ln. 1 - Ln. 2	$48.567150	$49.438164	$54.554235	$55.144030
	Permanent Differences - Federal Income Tax:					
4	Amortization of Equity AFUDC	Exhibit 37 Ln. 4	$2.688253	$2.760368	$2.901510	$3.077800
5	Amortization of TEFRA Adjustment	Exhibit 40 Ln. 6	$0.020537	$0.020537	$0.020537	$0.020537
6	Amortization of Deferred Tax Adjustments	Exhibit 41 Ln. 18	$0.447485	$0.447485	$0.447485	$0.447485
7	Subtotal for Federal Income Tax Allowance	Lns (3 + 4 + 5 - 6)	$50.828455	$51.771585	$57.028797	$57.794882
8	Federal Income Tax Rate	RGV-143-C, TAPS-RGV WP3, Sch.8	35.00%	35.00%	35.00%	35.00%
9	Net-to-Tax Multiplier - Federal Income Tax	Ln. 8 / (1 - Ln. 8)	53.85%	53.85%	53.85%	53.85%
10	Federal Income Tax Allowance	Ln. 7 * Ln. 9 - Ln. 6	$26.921683	$27.429522	$30.260329	$30.672836
	Permanent Differences - State Income Tax:					
11	Amortization of Equity AFUDC	Exhibit 37 Ln. 4	$2.688253	$2.760368	$2.901510	$3.077800
12	Subtotal for State Income Tax Allowance	Lns (3 + 10 + 11)	$78.177086	$79.628055	$87.716074	$88.894666
13	Alaska State Income Tax Rate	RGV-143-C, TAPS-RGV WP3, Sch.8	9.40%	9.40%	9.40%	9.40%
14	Net-to-Tax Multiplier - State Income Tax	Ln 13 / (1 - Ln. 13)	10.38%	10.38%	10.38%	10.38%
15	State Income Tax Allowance	Ln. 12 * Ln. 14	$8.111088	$8.261630	$9.100785	$9.223067
16	Total Income Tax Allowance	Ln. 10 + Ln. 15	$35.032772	$35.691153	$39.361114	$39.895903

Appropriate TAPS Revenue Requirement, 1997-2000
(millions $)

Line No.	Description	Source	1997	1998	1999	2000
1	Operating Expense Excluding Depreciation and DR&R	Part VI.D	$603.775	$565.598	$567.658	$553.280
2	Depreciation Expense	Exhibit 36 Ln. 8	$23.732829	$24.350726	$27.370118	$27.674341
3	Amortization of AFUDC	Exhibit 37, Ln 14	$3.673787	$3.788596	$4.009653	$4.281328
4	Return on Rate Base	Exhibit 43 Ln 3	$76.287969	$78.644100	$83.759399	$83.872343
5	Income Tax Allowance	Exhibit 44 Ln. 16	$35.032772	$35.691153	$39.361114	$39.895903
6	Total Cost of Service	Sum Lns 1 to 5	$742.502356	$708.072574	$722.158284	$709.003915

1997-2000 Just and Reasonable Intrastate Rates

Line No.	Description	Source	1997	1998	1999	2000
1	GVEA Deliveries	143-RGV-C, TAPS RGV-WP 3, Schedule 16, Ln. 1	17.53	18.54	21.98	22.73
2	Petro Star Valdez Deliveries	143-RGV-C, TAPS RGV-WP 3, Schedule 16, Ln. 2	3.41	3.58	3.73	3.78
3	Valdez Marine Terminal Intrastate Deliveries	143-RGV-C, TAPS RGV-WP 3, Schedule 16, Ln. 3	16.06	15.68	0.00	0.00
4	Valdez Marine Terminal Interstate Deliveries	143-RGV-C, TAPS RGV-WP 3, Schedule 16, Ln. 4	444.98	402.82	365.10	341.41
5	Total Barrels	Lns (1 + 2 + 3 + 4)	481.97	440.61	390.80	367.92
6	GVEA Distance	Exhibit RGV-14, Schedule 1	469.06	469.06	469.06	469.06
7	Petro Star Valdez Distance	Exhibit RGV-14, Schedule 1	796.00	796.00	796.00	796.00
8	Valdez Marine Terminal Distance	Exhibit RGV-14, Schedule 1	800.32	800.32	800.32	800.32
9	GVEA Barrel Miles	Line (1 * 6)	8,221	8,694	10,309	10,662
10	Petro Star Valdez Barrel Miles	Line (2 * 7)	2,717	2,850	2,967	3,005
11	Valdez Marine Terminal Intrastate Barrel Miles	Line (3 * 8)	12,851	12,547	0	0
12	Valdez Marine Terminal Interstate Barrel Miles	Line (4 * 8)	356,124	322,382	292,194	273,239
13	Total Barrel Miles	Lns (9 + 10 + 11 + 12)	379,912	346,472	305,470	286,905
14	GVEA Connection Costs (millions $)	143-RGV-C, TAPS RGV-WP 3, Schedule 15, Ln. 1	$0.767000	$0.000000	$0.000000	$0.000000
15	GVEA Connection Costs Per GVEA Barrel	Line (14 / 1)	$0.04	$0.00	$0.00	$0.00
16	Non-Distance Related Costs (millions $)	143-RGV-C, TAPS RGV-WP 3, Schedule 15, Ln. 2	$77.493000	$79.641000	$80.288000	$80.13
17	Non-Distance Related Costs Per Barrel	Lns (16 / 5)	$0.16	$0.18	$0.21	$0.22
18	Total DOC Cost of Service (millions $)	Exhibit 45, Ln. 6	$742.502356	$708.072574	$722.158284	$709.003915
19	Remaining Cost of Service (millions $)	Line (18 - 14 - 16)	$664.242356	$628.431574	$641.870284	$628.876915
20	GVEA Portion of Cost of Service (millions $)	Lns (((15 + 17) * 1) + (19 * (9 / 13)))	$17.958115	$19.119489	$26.175934	$28.319938
21	Petro Star Valdez Portion of Cost of Service (millions $)	Lns ((17 * 2) + (19 * (10 / 13)))	$5.298741	$5.815849	$6.999475	$7.409420
22	Valdez Marine Terminal Intrastate Portion of Cost of Service (M $)	Lns ((17 * 3) + (19 * (11 / 13)))	$25.050051	$25.590733	$0.000000	$0.000000
23	Valdez Marine Terminal Interstate Portion of Cost of Service (M $)	Lns ((17 * 4) + (19 * (12 / 13)))	$694.195450	$657.546503	$688.982875	$673.274557
24	GVEA Tariff ($/BBL)	Lns (20 / 1)	$1.02	$1.03	$1.19	$1.25
25	Petro Star Valdez Tariff ($/BBL)	Lns (21 / 2)	$1.55	$1.62	$1.88	$1.96
26	Valdez Marine Terminal Intrastate Tariff ($/BBL)	Lns (22 / 3)	$1.56	$1.63	N/A	N/A