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THE CORPORATION COMMISSION  
OF THE STATE OF OKLAHOMA

CAUSE NO. 27068

Application of Public Service Company of Oklahoma  
for an Adjustment in its Rates  
and Charges for Electric Service in the State of Oklahoma

TESTIMONY OF  
WILLIAM R. STRATTON

PUBLIC SERVICE COMPANY OF OKLAHOMA

TESTIMONY OF

WILLIAM R. STRATTON

1 Q. Please state your name and employment.

2 A. I am William R. Stratton, Senior Vice President, Finance of Public  
3 Service Company of Oklahoma. My qualifications were recited in  
4 previous testimony.  
5

6 Q. Mr. Stratton, what issues will your testimony in phase III of this  
7 Cause address?  
8

9 A. First, I will present updated figures for coal and nuclear  
10 projects at the Black Fox site based on work done for the project  
11 co-owners by Management Analysis Company (MAC) and Black & Veatch  
12 Consulting Engineers (B&V). In this connection I will present the  
13 results of studies done at PSO to develop comparable data to that  
14 of the Touche-Ross report. Second, I will present data runs from  
15 our corporate financial model which compare revenue requirements  
16 and kwh rates under AFUDC and CWIP regulation (this is an update of  
17 my prior testimony). Third, I will address the customer/company  
18 impact and capital recovery issues added to this Cause by Order  
19 197606 of September 1, 1981. Previous PSO testimony has validated  
20 our projections for capacity requirements which the Black Fox  
21 project is intended to meet, and established the economic prudence  
22 and viability of the project from inception to the present time.  
23  
24  
25

## SITE SPECIFIC CONSTRUCTION COSTS

Q. Please describe the construction cost projections now accepted by PSO.

A. In connection with other studies being done for the co-owners MAC and B&V have developed site-specific cash construction projections for the project. MAC has presented a "most probable" case that anticipates in-service dates for the nuclear project units of 1993 and 1995. They have also developed a case with 1991 and 1994 in-service dates. Additionally, there is an "outer bound" MAC cash estimate that contemplates nuclear in-service dates of 1996 and 1999. B&V has estimated costs for a coal alternative consisting of two 670 megawatt units entering service in 1991 and 1994. The B&V estimate was ordered by PSO (and not the co-owners) so that we could present evidence of costs for a coal alternative that: 1) was comparable to PSO's 1400 megawatt share of the Black Fox nuclear project, and 2) was comparable to the 1991-94 timing assumed by Touche-Ross, thus rendering the capital costs I present today on a basis that will aid the Commission as it compares our study results with Touche-Ross's. Total PSO construction costs (cash plus financing costs) for six alternatives - three under CWIP regulation and three under AFUDC regulation - are presented in the two following tables on a total cost, and a cost-per-kilowatt basis:

TABLE I  
TOTAL PSO CONSTRUCTION COSTS (in billions)

	AFUDC REGULATION			CWIP REGULATION		
	91-94 Nuclear	91-94 Coal	93-95 Nuclear	91-94 Nuclear	91-94 Coal	93-95 Nuclear
Cash Construction	2.474	2.202	2.928	2.474	2.202	2.928
AFUDC	2.369	.599	3.334	.198	.154	.235
Total Construction	\$4.843	\$2.801	\$6.262	\$2.672	\$2.356	\$3.163

TABLE II  
TOTAL COST PER KILOWATT INSTALLED

	91-94 Nuclear	91-94 Coal	93-95 Nuclear	91-94 Nuclear	91-94 Coal	93-95 Nuclear
Total Construction	\$3,459	\$2,090	\$4,472	\$1,908	\$1,758	\$2,259

Q. Please explain the tables.

A. The cash construction costs stem directly from the MAC and B&V estimates. Coal construction costs are for the two 670-megawatt units. The nuclear cash construction costs are 60.87 percent of MAC's total project cost estimate, representing PSO's share of the nuclear project. Financing costs (AFUDC) were calculated by PSO's financial group based on the construction profiles from MAC and B&V and PSO's cost of capital. In this connection, I should mention that PSO's assumed cost of capital is higher than that used by Touche-Ross in its study. This is also the place to note that many of the assumptions we used were different from those adopted by Touche-Ross. For the record a comparative table of assumptions is appended as Exhibit WS-5.

Q. Did the use of different assumptions affect the comparability of the PSO and Touche-Ross studies?



A. If the differences in assumptions were not set out for assessment the answer would be yes, but I have set out the assumptions so they may be taken account of in any comparison that is made. Please note there are other important differences that would also have to be acknowledged in any comparison. First, the new PSO figures commence with cash construction costs that are site-specific and not generic as in the Touche-Ross and earlier PSO studies. Second, the "most probable" MAC case contemplates in-service dates for the nuclear units of 1993-95 and not 1991-94. The significance of the differences between the PSO and Touche-Ross studies could be debated endlessly. But what is important about them is their similarities not their differences. The close correspondence between the total construction costs in the two studies, is shown in the next table. The average of the two PSO nuclear cases is almost exactly equal to Touche-Ross's.

TABLE III

COMPARISON OF TOUCHE-ROSS & PSO  
TOTAL CONSTRUCTION COSTS (in billions)

	<u>T-R Mid-Case</u>	<u>PSO</u>
1991-94 Nuclear (1400 MW)	\$ 5.5	\$4.8
1991-94 Coal (1340 MW)	\$ 3.1	\$2.8
1993-1995 Nuclear (1400 MW)	N.A.	\$6.3

## II. REVENUE REQUIREMENTS AND BUS BAR COSTS

1 Q. What revenue requirements do you attach to the six alternatives?

2 A. The following table presents the total revenue requirements on a  
3 future dollar basis for the project alternatives using a  
4 thirty-year operating life for each unit. Thus, these figures  
5 project future dollar revenue requirements through 2024 or 2025.  
6

7 TABLE IV

### LIFE OF PROJECT REVENUE REQUIREMENTS (in billions)

9

	<u>AFUDC</u>			<u>CWIP</u>		
	<u>REGULATION</u>			<u>REGULATION</u>		
	91-94	91-94	93-95	91-94	91-94	93-95
	<u>Nuclear</u>	<u>Coal</u>	<u>Nuclear</u>	<u>Nuclear</u>	<u>Coal</u>	<u>Nuclear</u>
11 Capital	20.6	12.1	27.0	12.3	10.6	14.9
13 Fuel	20.1	94.7	22.9	20.1	94.7	22.9
14 Other Operating	<u>14.9</u>	<u>11.7</u>	<u>17.0</u>	<u>14.9</u>	<u>11.7</u>	<u>17.0</u>
15 TOTAL	\$55.6	\$118.5	\$66.9	\$47.3	\$117.0	\$54.8

16 Q. These figures are astronomical! Please explain.

17 A. They are huge, but can be put into perspective. In the first  
18 place they are in future dollars, meaning that the sum of all of  
19 the years revenue requirements is expressed in this table in terms  
20 of dollars inflated at a  $9\frac{1}{2}$  percent rate. The present worth of  
21 such a dollar, discounted back from 2021 at  $9\frac{1}{2}$  percent is only 2.7  
22 cents.  
23

## III. LEVELIZED BUS-BAR COSTS

24 Q. What will you be presenting in the realm of levelized bus bar  
25 costs?

1 A. I bring two sets of comparative data to the Commission  
2 representing 10-year and life-of-project levelized bus bar costs.  
3 Q. Why two sets?  
4 A. The 10-year study is for comparison with Touche-Ross's work. By  
5 the way, remember that the so-called 10-year cost actually covers  
6 10 years of project operation, so it really addresses of one unit  
7 for 7 years and one unit for 10 years of operation.  
8 Q. What is a levelized charge and how is it developed?  
9 A. It represents the annual charge necessary to amortize costs over a  
10 set period of time. In a 10-year levelized bus bar cost study the  
11 combined capital and operating costs for the first ten years of  
12 project operation are discounted at the cost of capital rate back  
13 to commencement of service values; capital costs during  
14 construction are escalated at the same rate to the in-service  
15 date. These values are summed and the revenues required to  
16 amortize this total in equal annual payments at a carrying charge  
17 equal to the cost of capital is calculated.  
18 Q. And a levelized bus bar cost per kwh is simply this annual charge  
19 divided by the number of kilowatt hours expected to be generated by  
20 the plant?  
21 A. Yes.  
22 Q. What are the 10-year levelized bus bar costs from the PSO study?  
23 A. They are shown in the following table. For comparison Touche-  
24 Ross's figures are also shown where applicable.  
25

TABLE V

10-YEAR LEVELIZED BUS BAR COSTSUNDER AFUDC REGULATION

	<u>91-94 Nuclear</u>	<u>91-94 Coal</u>	<u>93-95 Nuclear</u>
PSO	187 mills	179 mills	239 mills
Touche-Ross	176 mills	155 mills	N/A

Q. Why are PSO's levelized bus bar costs for 1991-94 coal so much higher than Touche-Ross's?

A. Because PSO's and Touche-Ross's calculations of bus bar costs differ in several respects. As a matter of fact, if we have any serious dispute with Touche-Ross it is over their application of the bus bar cost concept and methodology.

Q. What is the conceptual difference?

A. We would not agree to use of a 10-year levelized bus bar cost comparison as the only tool for comparative evaluation of projects with a service life of 30-years. When the trade-off is between capital and operating costs, the comparison should take life cycle cost into consideration. Touche-Ross's results indicate that the economics of a nuclear project will not outweigh those of a coal project within the first 10 years of operation. In the life cycle study the opposite appears to be the case. As the Touche-Ross study acknowledges, the 10-year case is biased in favor of coal. Proper evaluation requires that that bias be recognized and taken into account. This is not to deny the higher degree of uncertainty embodied in study results that cover a forty-year time horizon.

Q. What are the differences in method between PSO's and Touche-Ross's  
1 levelized bus bar studies?

2 A. There are several. Our study addresses tax expense in the  
3 construction period; theirs does not. Our study takes account of  
4 the accumulated deferred tax offset to rate base in the calculation  
5 of capital costs; theirs does not. There are also some differences  
6 in the assumptions used in the two studies, the most important  
7 among operating expenses being our higher escalation rates for fuel  
8 and fuel transportation which raise our projected coal O&M costs  
9 over theirs. Also, we made our calculations on the basis of the  
10 new tax law, which they could not have done. The effect of these  
11 differences is to reduce the capital-related revenue requirements  
12 in PSO studies; this tends to favor the more capital intensive  
13 nuclear project.

14 Q. Why were your 10-year levelized bus bar cost calculations done on  
15 the basis of AFUDC regulation and not CWIP?

16 A. To maintain the correspondence with Touche-Ross's. Also, the  
17 discounting concepts applied in any levelized bus bar approach will  
18 equalize costs over project life so regulatory treatment is not  
19 germane.

20 Q. What were PSO's life cycle levelized bus bar costs?

21 A. They are set out in the following table.  
22  
23  
24  
25

TABLE VI

30-YEAR LEVELIZED BUS BAR COSTS

	91-94 <u>Nuclear</u>	91-94 <u>Coal</u>	93-95 <u>Nuclear</u>
	191 mills	240 mills	237 mills

Q. What conclusions do the foregoing study results point to?

A. For one thing, they lend additional credibility to the prudence of PSO's project management decisions respecting the Black Fox station. In the 1991-94 coal vs. nuclear comparison, nuclear is clearly preferable. Even if one sets the figures that relate to MAC's "most probable" nuclear case against those for 1991-94 coal, it is manifest, from the standpoint of project economics, that there was no basis to abandon the nuclear project. Thus, the decision to proceed with the project on a minimal cost basis over the past two years is validated; and certainly the comparative economics pre-1979 clearly favored nuclear. On the other hand, it is clear that now is the time to undertake the comprehensive studies and evaluation of study results upon which the project owners have embarked.

IV. FINANCIAL ANALYSIS

Q. What is the status of the financial analysis effort at PSO?

A. It is ongoing, and will remain so. However, the work done to date - on a crash basis, I might say - permits me to offer evidence that can be set alongside the Touche-Ross study output for evaluation by the Commission.



Nothing in our new studies calls the conclusions of the prior studies into serious question. Together they provide a perfectly adequate record for commission decision making. What is needed now is a Commission decision.

Q. Why is that?

A. Financial and other studies are only part of the input to PSO's decision process and PSO is only one of three co-owners who must reach a collective decision on the future of the project. This business decision will be facilitated, and likely accelerated, if the key inputs expected from the Commission's decision in this phase are available.

Q. Please discuss your financial studies.

A. They were done on the same corporate financial model as the studies filed by Touche-Ross. The differences, in addition to new tax law factors, are newly available MAC/B&V costs instead of generic costs, PSO's higher cost of capital assumptions, and incorporation of assumptions concerning disposition of the proceeds of the sale of mineral leases. Only CWIP studies were run.

Q. Why were no AFUDC studies done?

A. Given the filing requirements for this testimony time did not permit it. On the subject of AFUDC vs. CWIP regulation I am prepared to stand on my previously filed testimony and accompanying exhibits WS-1 through WS-4, the differences in inputs that time has wrought would not affect the results of those studies on the CWIP/AFUDC issue.

Q. What cases were considered?

A. Using PSO's corporate financial model a financial simulation was produced covering two basic scenarios: 1400MW nuclear and 1340MW



coal, both with CWIP in the rate base. In each case the in-service  
1 dates for the two-unit projects were established at 1991 and  
2 1994.

3 Q. Why wasn't a financial study relating to the MAC "most probable"  
4 1993-95 nuclear case run?

5 A. Such a study would not be comparable to the Touche-Ross study  
6 which was confined to 1991-94 in service dates. Also, limitations  
7 in PSO's financial modeling capability precluded such a study in  
8 the time available. Our model reaches out only ten years, and  
9 major modifications which would take many weeks to accomplish would  
10 be required to extend its horizon an additional five years. These  
11 limitations extend to Touche-Ross who used our corporate model in  
12 their financial studies.

13 Q. Isn't the absence of a financial study on the "most probable" case  
14 still a serious omission?

15 A. Ultimately such a study will probably be performed at PSO. But  
16 its absence from this record is not critical. Remember that  
17 revenue requirements and levelized bus bar costs for the 1993-95  
18 case have been provided. These studies, which relate strictly to  
19 the project, could be done; but the financial simulation, which  
20 requires input respecting every aspect of the company's business  
21 through 1995, could not. Finally, and most pertinent to the matters  
22 at hand, PSO's maximum annual financing requirements for the  
23 1993-95 case are quite near those for the 1991-94 case. For  
24 purposes of this Cause, the 1991-94 case is adequate to present  
25 financibility issues for Commission decision making, and PSO will  
not object to a decision on the basis that financial studies for  
the 1993-95 case were not available.

- 1 Q. Was a financial projection related to the "outer bound" case as  
2 presented by MAC done?
- 3 A. No, the project would be a sub-marginal endeavor from either the  
4 financial or economic standpoint if the upper bound case were to  
5 eventuate. As PSO and the co-owners ponder the future course of  
6 the Black Fox project after the decision in this Cause, we will  
7 evaluate the probabilities and costs of the adversities embodied in  
8 MAC's "outer bound" case. We will also consider anticipatory or  
9 remedial actions to cope with them.
- 10 Q. Your last answer infers that the co-owners' decision will come  
11 after the order in this Cause is entered.
- 12 A. Yes. We are expecting an order during 1981. While the Commission  
13 deliberates we will be carrying on more studies and detailed  
14 evaluations. This Commission's order will be a critical decision  
15 input for PSO and of significance to the co-owners as well.
- 16 Q. What will be the project owners' decision process?
- 17 A. As I see it, it will involve further work by MAC and B&V, a great  
18 deal of detailed analysis by each owner of its specific economic,  
19 financial and business situation as related to the project's  
20 future. Out of this work will come a series of individual  
21 acknowledgements and, finally, a collective decision on whether to  
22 proceed with the project as now conceived or to pursue an  
23 alternative course.
- 24 Q. Has the 670 megwatt, two unit coal alternative been established as  
25 the substitute for nuclear capacity?
- A. Most emphatically not. As Mr. Meyer stated in PSO's opening  
testimony in this phase our presentation relating to two 670  
megwatt coal units establishes a parallel by which coal fired

capacity in nearly equivalent amount and simultaneous timing can be compared for economic and financial purposes with the 1400 megawatt nuclear case for PSO alone. Only thus can the Commission obtain comparable data on this record to evaluate the impact of the project upon the company and its customers.

Q. Then the owners could decide to continue on with the nuclear project?

A. That is certainly under consideration. Project economics as between coal and nuclear are in rough equilibrium. Protection of the current investment is a powerful incentive to continue. The project is certainly licensable. If the owners joint need for power projections indicate capacity requirements which Black Fox nuclear could meet it would still have to be given serious consideration notwithstanding the obvious problems of project finance.

Q. What if Black Fox nuclear no longer meets the need for power?

A. In that case - keeping in mind always that the existing investment needs to be recovered - it seems clear to me that the conversion alternative has much to commend it. I must emphasize, however, that the specifics of the conversion alternative, whether a joint or PSO-only venture, would take much time and study to emerge. Speaking strictly from PSO's standpoint, it is essential to obtain an expression from the Commission whether the nuclear project should go forward or not, and, if not, specification of the capital recovery principles that the Commission would adopt.

Q. Why is the capital recovery decision so important to PSO?

A. Because PSO simply cannot tolerate an outright write-off of our present investment in the project. This would be financially

disastrous, as well as grossly inequitable. A utility is not permitted to enjoy the full fruits of its business successes, so it does not have that resource to absorb the major adversities it encounters. Just as the effects of major natural occurrences are amortized through rates, so should the effects of other major uncontrollable set-backs. If Public Service Company of Oklahoma is to remain a viable entity providing energy services to our retail and wholesale customers, recovery of the Black Fox investment is a necessity if the nuclear option proves impossible.

Q. What will the decision process involve?

A. First, a decision to continue with nuclear as the preferred fuel or not. I believe that decision could come within a month after the Commission's order. By saying this I do not wish to convey an impression that an alternative system expansion plan could be presented to the Commission in such a short time frame. Quite to the contrary, especially if the decision is that the site should be converted to a coal fired generation station. Under that circumstance, all three co-owners would have to conduct careful system expansion planning studies. We would totally reevaluate the sizes of the units to be employed, their timing and the ownership shares in these units.

Q. When might a conversion alternative be developed?

A. It would clearly be well into the spring or early summer of 1982 before PSO could present such a plan to the Commission. Such a plan would be presented consistently with the precepts of the Advanced Planning Rules now being considered by the Commission. If the coal alternative is pursued we would seek a Commission ruling that the coal-convertible portion of PSO's existing investment in

Black Fox be continued in the CWIP account and be granted rate base treatment as a cash earning asset of this company.

Q. What about conservation alternatives to the nuclear project?

A. They too will be studied. All our financial case studies force the conclusion that under present and foreseeable utility economics PSO must have its construction investment in the rate base if we are to provide central station capability of any magnitude to meet load growth and replace existing gas fired capability at a pace commensurate with the physical and economic obsolescence of our existing plants. Even with construction investment in the rate base the company's financial strength will be tested to the hilt under any program that combined a comprehensive conservation effort (which would include capital intensive elements) with a compatible construction program. One fact often lost in the exhortations to utilities to be more active in conservation is the cost of conservation programs themselves. Saving a kilowatt through conservation at three-quarters the cost of installing a new kilowatt of capacity involves substantial investment which itself requires a financial healthy utility. Not only that, but conservation investment on a significant scale represents a novel business strategy for the electric utility industry, and legal questions have been raised concerning the propriety of including conservation investments in rate base. Such an untried program will be viewed by the investment community as carrying an increased business risk. For that reason it is likely to require a countervailing reduction of financial risk involving a higher equity ratio and a higher cost of capital. Moreover candor requires me to report that investors now see a diminution in the



1 regulatory certainty of compensation of utility investments. Who  
2 is to predict whether, 7 or 10 years hence - when for all we know  
3 nuclear power may again be in favor - that investments in  
4 conservation programs may not be the stepchild. Earlier testimony  
5 in this Cause recounted recent industry history in which first one  
6 then another fuel or business strategy has risen to favor only to  
7 fall from grace in a few years. Conservation, the Messiah of 1981  
8 may be the pariah of 1989 - especially if the optimistic benefits  
9 projected are not realized.

9 Q. What alternatives were considered in your financial studies?

10 A. The two cases are based on the 91-94 nuclear and coal construction  
11 cost estimates presented by MAC and B&V. The first assumes  
12 continuation of the nuclear project. The second assumes conversion  
13 of the project to coal. The intent is to provide data comparable  
14 to Touche-Ross's, but using site-specific construction costs.

15 Q. How was the recent sale of undeveloped oil and gas leases treated?

16 A. The gain was netted against the convertible construction  
17 investment in the conversion case, as Touche-Ross has proposed. In  
18 the nuclear case the gain was credited back to the ratepayers.

19 Q. What gain on the lease sale was used in your analysis?

20 A. \$47 million.

21 Q. Do PSO's studies provide for a return on both the unamortized  
22 non-convertible construction investment and the lease sale gain?

23 A. Yes, a return has been considered in both cases on a consistent  
24 basis. Similarly, a ten year amortization is used in the  
25 conversion case and a ten-year pay-back in the nuclear case.

Q. Did you develop variations of the two scenarios?

1 A. Yes, we varied the level of return allowed on the unamortized  
2 balance of investment or lease sale gain. Exhibit WS-6 presents  
3 study results for four return levels under each of the two  
4 scenarios. They permit a comparison of PSO's cases to the  
5 Touche-Ross CWIP case on such important financial parameters as  
6 coverage, return on equity, percent of construction investment  
internally generated, and AFUDC as a percent of return on equity.

7 Q. Is the 1991-94 MAC case comparable to the Touche-Ross case?

8 A. Strictly speaking, it is MAC's "most probable" case that imposes  
9 an approximately equal financial strain as the Touche-Ross low case  
10 for nuclear, which they used for purposes of financial analysis.  
11 But a 1993-95 case really isn't comparable to a 1991-94 case even  
12 if it could be executed on the corporate model. Therefore, I  
13 believe that our 1991-94 nuclear financial study is adequate.  
14 MAC's 1991-94 costs would put PSO's financial integrity to a severe  
15 test, even under supportive regulation.

16 Q. Please describe the four return levels under each of the two  
17 scenarios.

18 A. They are as follows, in declining order: 1) Full Return - this  
19 return is calculated on the full embedded cost of capital including  
20 a 16 1/2 percent equity return. 2) PSO Common - this return  
21 calculation utilizes the embedded cost of debt and preferred and  
22 the common dividend rate for the equity return. 3) PSO Partial -  
23 this return is calculated on the embedded cost of debt and  
24 preferred. 4) Touche-Ross Partial - this return computation  
25 utilizes the embedded cost of debt and preferred and a zero cost  
for equity capital.

Q. Please describe the results of your study.



1 A. The results of our study are shown on Exhibit WS-6. The schedule  
2 contains eight columns, four columns for the nuclear continuation  
3 and four for the coal conversion. Each of the two scenarios is  
4 shown under the various return calculations described in the  
5 previous answer. On the three pages of the exhibit, certain  
6 financial data is presented. For each category, 9 years of data is  
7 shown so that side-by-side comparisons can be made.

8 Q. Please describe the first page of Exhibit WS-6.

9 A. The first item shown is total cash construction for the company  
10 (i.e. all projects including the scenario project) for the nine  
11 years 1982 - 1990, followed by the construction investment  
12 applicable to the scenario project. Nine year totals are indicated  
13 for each of the cash flows shown. These totals represent the total  
14 construction dollars for 1982 - 1990 only and do not represent the  
15 total cost of the project. The data under the nuclear scenario for  
16 total construction and the nuclear project is comparable to  
17 Touche-Ross (TR) Exhibit VII-2 on page 81 of their report and the  
18 nine year expenditure totals are within \$13 Million of the TR  
19 Report. The next item shown is the percentage of construction  
20 funds generated internally. All of the scenarios are run with CWIP  
21 in the rate base, which produces the highest internally generated  
22 funds, yet internal generation still falls below the 40% standard  
23 in the heavy construction years. There is no significant  
24 difference in the internally generated funds when comparing coal to  
25 nuclear through 1990 due to CWIP regulation. The nuclear scenario  
is comparable with Exhibit VII-4, p. 83 of the TR Report and the TR  
Partial and Full return columns in the conversion scenario are  
comparable with the partial and full return columns with CWIP in

1 The last item shown on page one is the percentage of balance for  
2 common attributable to AFUDC (net of tax). As would be expected  
3 under CWIP regulation, this percentage is insignificant in all  
4 periods for both scenarios. This is an indication that the  
5 company's reported earnings are actually available to pay financing  
6 costs on the company's construction program. The nuclear scenario  
7 columns are comparable with the CWIP section of Exhibit VII-4, p.  
8 83 of the TR Report and the TR Partial and Full return columns in  
9 the conversion scenario are comparable to the partial and full  
10 return columns with CWIP in Exhibit X-4, p. 107 of the TR Report.

11 Q. Please describe page two of WS-6.

12 A. The first two items show the securities to be issued in the  
13 various cases. The company's financial model finances to a  
14 predetermined capital structure and will in certain instances give  
15 negative numbers. You can see, however, that these negative  
16 numbers are small. In reality the company will finance in  
17 economically sized issues. Important to note in these sections is  
18 that both the debt and common financing requirements are less under  
19 coal than they are under nuclear due to the higher capital costs of  
20 the nuclear construction program. In addition, under the coal  
21 scenario the common equity financing requirements are significantly  
22 higher when only a partial return is realized on the unamortized  
23 non-convertible investment balance. Such external financing is  
24 required to cover the return deficiency if proper security is to be  
25 maintained for the bond holders. Under nuclear continuation, the  
variation in total common issues declines with a declining return  
component. This is because a higher return rate works to the  
ratepayers' interest in the amortization of the lease sale proceeds

to their credit in the nuclear case. Sections 3 and 4 of page 2 show indenture coverages and Moody's coverages, all of which remain adequate throughout the nine years in both cases. Adequate Moody's coverage insures the company's ability to finance at reasonable costs. The nuclear continuation data for Moody's coverage is comparable to the CWIP section data in Exhibit VII-4, p. 83 of the TR Report and the Full and TR Partial columns under the coal conversion are comparable to the full and partial return columns with CWIP on Exhibit X-2, p. 105 of the TR Report. Under AFUDC regulation, these coverages could not be maintained, and the company's ability to finance at reasonable costs would be jeopardized as shown on these TR Report exhibits.

Q. Please describe page three of Exhibit WS-6.

A. The first item on page three is the additional rate relief that will be required in each of the years shown under the two scenarios and their variations. These additional rate requirements are predicated upon the fact that the financial model has rate relief in 1981 of \$44 million, representing the interim rate relief obtained in late 1980. The amounts by which the rate relief has been decreased or increased for nuclear or coal respectively is shown in the second table on this page entitled amortization and return. In both cases the amortization and return amounts decrease from one year to the next and under the 10 year amortization assumption both would cease after 1991. This amortization and return table shows the effect that various return treatments can have. The bottom line of any such analysis from the customer's view is the required rate relief. The rate relief under the nuclear scenario when added to the amortization of the lease sale

gain, which Touche-Ross did not consider, ranges from \$460-474 million for the nine years. This is comparable to \$460 million on Exhibit VIII-1, p. 86 of the Touche-Ross Report. However, PSO's nuclear rate impact is lower than TR due to the flowback of the lease sale gain to the customer. The amortization rate relief under coal conversion for the TR partial and full columns of WS-6 compares closely with the nine year totals on Exhibit X-7, p. 110 of the TR Report. A comparison of PSO's nine year total rate relief under coal conversion with TR Partial or Full return to the CWIP full and partial columns of Exhibit X-8, p. 111 of the TR Report indicates PSO's rate relief is about \$70 million less than TR. This is because, even though PSO is based on 16½% ROE and TR 15% RCE, PSO's coal construction during the nine years is \$760 million less. Under CWIP regulation this means rate increases would be lower. The third item on page three shows the return on average common equity under each of the various assumptions. Under the coal conversion scenario, the company's only opportunity to earn its required 16½%

return is when a full return is allowed on the unamortized balance of the amortizing investment. The financial ramifications of failure to earn a full return were manifested on page two of WS-6 in higher requirements for outside financing. The coal conversion TR Partial and Full columns are comparable to the partial and full return, with CWIP, columns on Exhibit X-5, p. 108 of the TR Report, the only reconciling difference being that PSO solved for 16½% return on equity whereas TR solved for 15%. The TR Report reveals the devastating impact of the no return situation.

The last item on page 3 shows the dividends paid in each year assuming a 10% payout on the average common equity balance. These dividends have been calculated by the model without regard to any of the dividend restrictions contained in the company's bond indenture or articles of incorporation.

Q. Would you summarize your financial analysis.

A. Our results with the site specific cash construction on a CWIP regulation basis is extremely close to the Touche-Ross Report for the nine year period. Any variations can be explained by (1) the small variations from year to year between our site specific and Touche-Ross's generic construction cash expenditures relative to nuclear, (2) a large variation of such expenditures relative to coal, and, (3) our study using 16½% return on equity vs. Touche-Ross 15%. Since our results are relatively close to theirs under CWIP regulation, PSO would concur with TR's projections of devastating results under AFUDC regulation.

Q. What estimates were used as the starting point for amortization and return of Black Fox Station sunk costs?

A. The estimates used in the financial model represent costs as of July, 1981 and are as follows:

	<u>(\$000)</u>
Sunk Costs	\$192,272
Cancellation Costs	42,670
Costs Convertible from Nuclear to Coal	(25,372)
Salvage	<u>(10,583)</u>
For An Estimated Total Cost to Amortize	<u>\$198,985</u>

This was rounded to \$199 million.



Q. Will these numbers change?

A. Yes. As time passes sunk costs will increase. MAC's testimony refers to sunk costs as of January, 1982 and is therefore a higher number than shown here. The exact amount of the initial amortizable balance cannot be determined in advance, but will reflect salvage recoveries and cancellation costs actually realized. Estimates could be used as the basis for setting the level of investment to be amortized and compensated, with provision for future adjustment as the balance becomes firm.

V.

CAPITAL RECOVERY ALTERNATIVES

Q. What will you cover next?

A. The final consideration raised in Order No. 197606, - - - "capital recovery alternatives applicable to the various investment components of the project in the event of cancellation or conversion to a coal fired facility." This is a subject which the Commission's consultants have addressed at length. Witnesses from MAC and B&V have identified and quantified these investment components in previous testimony.

Q. Do you have any preliminary observations?

A. Yes. I must first touch briefly on the capital recovery scenario posited by Mr. Talbot of ESRG. Mr. Talbot apparently believes that PSO's non-convertible investment of \$199 million should first be written off as a loss and then recovered without a return component from the ratepayers over some unspecified time horizon. This a totally unrealistic solution. Such a write-off would utterly

1 destroy PSO's equity capitalization. It would extinguish retained  
2 earnings, thereby eradicating the common dividend, the bulwark of  
3 value in an electric utility equity, which is the basis for all  
4 other financing. The immediate impact would be a down-grading by no  
5 less than two notches of all senior securities, thereby boosting the  
6 company's cost of debt by no less than 1 1/2% and rendering access  
7 to the capital markets conjectural at best. Moreover, it would do  
8 this at a time when Mr. Talbot and his clients are urging an  
9 aggressive conservation program. Earlier I pointed out that major  
10 conservation programs carry major financing requirements in a  
11 climate of increased investor risk. Mr. Talbot assumes too much if  
12 he expects PSO to absorb a near fatal shock to its financial  
13 integrity and still perform successfully as the chosen instrument  
14 for conservation initiatives. He can't have his cake and eat it  
15 too. If this Commission concludes that it is in the best interest  
16 of Oklahoma that the Black Fox project be converted to coal, it must  
17 prescribe a method of capital cost recovery that will permit the  
18 company to proceed simultaneously to meet capability expansion needs  
19 as well as conservation program requirements and objectives.  
20 Pursuing this dual objective requires more, not less, financial  
21 capacity.

21 Q. Please move now to the consideration of the capital recovery  
22 alternatives discussed by Touche-Ross.

23 A. At the outset, let me say that the Touche-Ross partial return  
24 recommendation does approach the lower bound of reasonableness.

25 Corporate financial considerations lead me to propose a  
modification to the Touche-Ross recommendation. It is as follows:  
that the sharing concept, with which we agree, take into account at



1 a minimum, all cash requirements of the outstanding investment in  
2 Black Fox. It is not only the bond holders and preferred  
3 stockholders who are looking to a stream of revenues from this  
4 investment. The common equity investors likewise anticipate a  
5 dividend stream that will continue to grow in nominal dollar value  
6 as has been experienced since 1952. In every class of investment  
7 there is a legitimate expectation of a current cash flow stream  
8 while the investment is being amortized. We believe the  
9 Touche-Ross recommendation falls short in recognizing this  
10 entitlement in a heretofore prudent investment. As has been  
11 testified by a Touche-Ross principal "Cash-flow is the name of the  
12 game". To that end, we believe that the return component should  
13 recognize the entire current cash requirement related to the  
14 investment in the Black Fox project. The stockholder would forego  
15 the accumulation of retained earnings on this liquidating  
16 investment. The return to be provided during amortization should  
17 be 9.6%, which is PSO's composite interest and dividend rate, and  
18 still well below the company's actual cost of capital of 12.33%.

19 Q. What about offsetting the net proceeds of the recent sale of  
20 mineral leases against the amount to be amortized?

21 A. We agree this should be done, as it is consistent with the sharing  
22 concept. This would reduce the amount to be amortized by  
23 \$46,671,000.

24 Q. You say that an offset would further the sharing concept, how so?

25 A. The non-producing leases sold were among the assets of PSO's  
exploration program which is financed by uncompensated investment  
on the part of PSO's investors, amortized over time by PSO's

1 rate-payers. The investment in the leases sold was \$7,606,000, of  
2 which approximately \$4,277,000 had been amortized prior to sale,  
3 leaving \$3,329,000 still being financed in total by the  
4 stockholders. As is true with the entire exploration program there  
5 had been a sharing in the costs related to the leases sold. PSO  
6 investors had advanced the \$7.6 million to acquire them, had earned  
7 no return on this investment at any point in the process and  
8 ratepayers had retired the investment to the extent of \$4.3  
9 million by the time the leases were sold, when PSO stockholders  
10 were still carrying \$3.3 million. On a "stand alone" basis, the  
11 proceeds of the lease sale would properly be shared between the  
12 ratepayer and investor.

13 Q. Please describe PSO's gas exploration program.

14 A. PSO, with the consent of the Commission, embarked upon a program  
15 of volitional investment in non-utility fuel assets in 1970 to  
16 secure an indigenous Oklahoma fuel supply. Ratepayers are  
17 amortizing PSO's investment in the creation of a fuel reserve to  
18 serve them. Through 1980 PSO's Oklahoma fuel exploration program  
19 involved a total expenditure of \$79.6 million, which had been  
20 retired to the extent of \$44.3 million by fuel clause charges to  
21 ratepayers. Meanwhile, as this program matured the ratepayers  
22 received fuel clause credits of more than \$57 million, a \$13  
23 million margin of credits over charges. All this time PSO  
24 investors have supported this program, including non-producing  
25 leases, at an opportunity cost of many millions of dollars from  
returns foregone.

Q. Should the sharing concept apply to this program too?

- 1 A. It is time that PSO investors, whose funds have been committed to  
2 this program, share in the benefits that it is producing. We  
3 believe that a method to introduce this sharing may be at hand in  
4 connection with the capital recovery alternatives that the  
5 Commission will consider in this case should the nuclear project be  
6 converted. The proceeds from the succesful gas fuel exploration  
7 program should, in our judgment, be a source of funds to amortize  
8 and compensate the investment in nuclear fuel diversification if  
9 that is to be discontinued. In that vein, PSO suggeststo the  
10 Commission that the proper capital recovery alternative to apply,  
11 if the Commission believes that Black Fox site ought to be  
12 dedicated to coal, is one in which the investment not transferable  
13 to the coal plant be established as a deferred debit, then reduced  
14 by the net proceeds of the recent sale of oil and gas leases, and  
15 thereafter the net revenue stream from PSO's Oklahoma exploration  
16 program should contribute to amortization and compensation of the  
17 investment. We forecast approximately \$70 million in net Oklahoma  
18 exploration revenues over the next 8 years.
- 19 Q. Are there other sources of funds to help amortize the investment  
20 than the revenues from the on-going program?
- 21 A. Yes. As the leases recently sold are drilled, additional revenues  
22 will flow from PSO's retained interests in those properties. Those  
23 revenues can supplement the revenues from PSO's own Oklahoma  
24 program. Of course these prospective revenues cannot now be  
25 estimated.
- Q. What other fuel-related sources of revenue might be drawn upon to  
aid in amortization?

1 A. Another fuel related revenue stream which is available to retire  
2 and compensate the amortizable investment in Black Fox is the net  
3 proceeds to PSO from off-system sales of gas undertaken to balance  
4 deliverabilities of gas under contract to PSO with boiler fuel  
5 requirements. Gas must be contracted for in quantities sufficient  
6 to meet peak day and peak season boiler fuel needs, but at off-peak  
7 times the wells must still be produced lest "take or pay" charges  
8 become an onerous financial burden or even accumulate to the point  
9 of unrecoverability. The ratepayers have made only nominal  
10 contributions to sustain the gas contracting program which has long  
11 benefited them with an assured fuel supply at very favorable  
12 prices. At the moment the entire benefit of this program is being  
13 flowed to ratepayers, when under any concept of fairness a sharing  
14 is in order. The net proceeds from the sale of seasonally surplus  
15 gas should therefore be dedicated, under the sharing concept,  
16 toward the retirement and compensation of amortizable investment in  
Black Fox should the occasion arise.

17 Q. What other sources might there be?

18 A. Obviously, all proceeds from material salvage should be credited  
19 toward amortization.

20 Q. How would you characterize this alternative program for  
21 amortization?

22 A. This multi-sourced capital recovery alternative will probably not  
23 require any increase in base rates, nor surcharge that would  
24 increase the revenue requirement established in Phase I this case.  
25 Rather it would rationalize the shared risk concept between PSO  
investors and ratepayers by balancing the results obtained from  
PSO's immensely successful gas fuel programs (from which, at the

moment, our ratepayers are receiving the entire net benefit)

1 against the extraordinary revenue requirements associated with the  
2 potential conversion of the Black Fox project.

3 Q. What return factor should be allowed on the unamortized investment?

4 A. No less than the 9.6% PSO-Common return used in our financial  
5 studies. If the revenue sources dedicated to amortization are  
6 limited to those I have mentioned above, a full return should be  
7 granted because of the risk that those sources will not fully  
8 retire the investment to be amortized.

9  
10 VI. THE CONSERVATION FUND

11 Q. Do you have further comments?

12 A. At this point there is another subject which should be touched  
13 upon in connection with potential conversion of Black Fox to coal.  
14 It relates to PSO's prospective investments in conservation. PSO  
15 has presented conservation and load management goals. One area of  
16 continuing dispute between the company and some intervenors is what  
17 might be attainable through a conservation program that embodies  
18 activities , including the so-called "soft path" alternatives, more  
19 vast than PSO contemplates at present. While PSO regards its goals  
20 as ambitious, our program is slated to go forward at a measured  
21 pace and only after evaluation of each proposed conservation  
22 strategy. We have felt that comparative financial tests must be  
23 made if we were to expect the Commission to consider conservation  
24 investments favorably for return treatment within rate cases. On  
25 the other hand, the conversion alternative does re-open the  
planning window for a time during which the commencement of a new  
generating facility might be deferred. Within that planning



1 window, we agree with the intervenors that additional stimulus  
2 (albeit a high risk stimulus from the business standpoint) should  
3 be given to the conservation program. To that end, PSO offers for  
4 Commission consideration a program to tap the flow of funds from  
5 the revenue streams dedicated to amortization of the nuclear  
6 investment for the purpose of establishing a Conservation Fund,  
7 probably "below the line," as a supplemental activity at PSO. We  
8 would propose that this fund be established as a revolving fund for  
9 higher risk conservation investments. It would receive revenues at  
10 a level of \$100,000 per month for one year, and \$150,000, per month  
11 in the ensuing year, with a review at the end of two years. The  
12 fund-supported conservation initiatives would be carried on by a  
13 separate profit center group within PSO whose results would be  
14 judged on a business basis. This profit center would have the  
15 oversight of a Citizens' Advisory Board for guidance on program  
16 directions and applications.

#### 17 VIII. THE ORDER

18 Q. What should the Phase III order cover?

19 A. PSO believes that the Phase III order in this Cause should include  
20 the following decision elements:

21 First, after review of the record, a determination that PSO's  
22 forecasting techniques and forecasts are acceptable and endorsed by  
23 the Commission.

24 Second, a recognition of the need for additional capacity on PSO's  
25 system in accordance with forecast needs, even as tempered by the  
more optimistic conservation projections advanced on the record in  
this cause.

1       Third, a recognition that the company has acted prudently with  
2       respect to the Black Fox project in its initiation, in its  
3       expansion of the project to cover the needs of the co-owners who  
4       also serve electric consumers in Oklahoma, in its vigorous  
5       prosecution through March 1979, in the reduction on the level of  
6       financial outlay on the project subsequent to Three Mile Island  
7       incident, and in its present level of expenditures on behalf of the  
8       project, which are minimal and prudent from the standpoint of asset  
9       protection.

10       Fourth, to express the Commission's conclusion whether, in the  
11       public interest, the Black Fox project should be built as planned  
12       or converted to a coal fired facility, subject to future review of  
13       a power supply plan and construction program to be presented by  
14       Public Service Company of Oklahoma.

15       Fifth, if the Commission concludes that the project should go  
16       forward as now planned, to include the Black Fox construction  
17       investment in rate base in the this Cause and award a cash return  
18       on the same.

19       Sixth, if the Commission concludes that the project should be  
20       converted to a coal fired facility, to prescribe the principles for  
21       disposition of the investment: (a) covering the amount convertible  
22       to a coal fired facility, (b) indicating whether CWIP treatment  
23       should be accorded on such investment forthwith or await future  
24       review by the Commission of the Company's power supply plan and,  
25       (c) as to the balance, prescribing that it be amortized and the  
      principles governing amortization.

Seventh, in recognition of the interests of co-owners and the  
      benefit to Oklahoma of a mutual decision by the co-owners on the



1 future of the Black Fox project, a period of not less than 30 days  
2 from the date of the order should be established by which PSO shall  
3 indicate its acceptance thereof (or propose modifications thereto)  
4 with an opportunity for appropriate representations from the  
5 co-owners.

6 Finally, in the interest of perception by the financial community  
7 as to the future of utility regulation in Oklahoma, particularly in  
8 what will be a time of financial stress for PSO whether it goes  
9 forward with the Black Fox project or not, an indication of the  
10 Commission's view and anticipated treatment of construction  
11 investments in the rate-making process.  
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ASSUMPTIONS USED FOR BUSBAR COST CALCULATIONS

	<u>TR Generic</u>	<u>PSO-Site Specific</u>
Discount rates		
Back	12½%	14.71%
Out	12½%	14.71%
Tax law	Old	New
Capitalization	48-10-42	48-10-42
Cost of equity	15%	16½%
Cost of preferred	10%	13%
Cost of L-T debt	10.8%	13.5%
Cost of S-T debt	-	11.0%
AFUDC rate and COC	12.5%	14.7%
Inflation rate	8.5%	9.5%
Escalation rate during construction		
Coal	9.5%	9.5%
Nuclear	10.5%	9.5%
Coal-cost	\$7.25/Ton	\$7.65/Ton
-escal.	9½%	10½%
Tans-cost	\$15.00/Ton	\$17.58/Ton
	10½%	13½% thru 84 11½% thereafter
Cars-cost	\$40,000 each	\$42,000 each
-escal.	10%	9½% thru 91 10½% thereafter
Car maint. -cost	3.25¢/Mi.	2.0¢/Mi.
-escal.	8½%	10½%
Coal O&M-cost	3.5 mill/kWh	3.45 mill/kWh
-escal.	8½%	9½%
Nuclear O&M-cost	4.0 mill/kWh	6.5 mill/kWh
-escal.	8½%	9½%
Insurance-cost	\$500,000/unit	\$500,000/unit
-escal.	8½%	9½%
Decom. TR-invest at 12½%	\$75.4 million	\$75.4 million
-PSO invest at 11%	8½%	9½%
Nuclear fuel-cost	22.66 mill/kWh levelized	32 mills/kWh levelized
Construction Cost per KW		
Coal		
91 & 94 w/AFUDC	\$2 317	\$2 090
Nuclear		
91 & 94 w/AFUDC	\$3 947	\$3 459
Nuclear		
93 & 95 w/AFUDC	—	\$4 472

## PUBLIC SERVICE COMPANY OF OKLAHOMA

## CASE STUDY SUMMARIES

		TEN YEAR AMORTIZATION				WITH CWIP			
		CONTINUE WITH 2-1150 MW				CONVERT TO COAL 2-670 MW			
RETURN →		FULL	PSO PARTIAL	PSO COMMON	TR PARTIAL	FULL	PSO PARTIAL	PSO COMMON	TR PARTIAL
CASH CONSTRUCTION									
TOTAL COMPANY									
(000's)	1982	91208				75501			
	1983	174919				90201			
	1984	313064				125426			
	1985	333599				109441			
	1986	385082				121938			
	1987	401060				130848			
	1988	362382				256089			
	1989	381814				523864			
	1990	500782				438114			
	TOTAL	2943910				1871422			
MHC OR BUY PLANT									
(000's)	1982	15707				0			
	1983	84718				0			
	1984	187638				0			
	1985	226741				2582			
	1986	272635				9491			
	1987	321540				51328			
	1988	290866				184573			
	1989	298726				440776			
	1990	405747				343079			
	TOTAL	2104318				1031829			
% INTERNAL GENERATED FUND									
	1982	91	92	92	94	110	103	104	96
	1983	52	53	53	54	92	87	88	82
	1984	35	36	36	36	70	67	67	64
	1985	35	36	36	36	79	76	76	72
	1986	34	34	34	34	73	71	71	68
	1987	36	36	36	36	72	71	71	68
	1988	42	42	42	42	45	44	44	43
	1989	43	43	43	43	29	29	29	28
	1990	37	37	37	37	35	34	34	34
% COMMON AFUDC									
(NET OF TAX)	1982	2.47	2.41	2.42	2.36	2.40	2.60	2.56	2.83
	1983	3.43	3.37	3.38	3.30	3.51	3.74	3.70	4.03
	1984	3.54	3.50	3.50	3.44	4.03	4.24	4.21	4.51
	1985	3.58	3.55	3.55	3.51	4.69	4.90	4.86	5.16
	1986	3.48	3.46	3.45	3.43	5.22	5.40	5.37	5.64
	1987	3.84	3.82	3.82	3.79	6.50	6.67	6.65	6.90
	1988	3.19	3.18	3.18	3.16	5.70	5.80	5.80	5.94
	1989	2.13	2.13	2.13	2.12	3.55	3.59	3.59	3.65
	1990	1.84	1.83	1.83	1.83	2.82	2.84	2.84	2.86

## PUBLIC SERVICE COMPANY OF OKLAHOMA

## CASE STUDY SUMMARIES

		TEN YEAR AMORTIZATION WITH CWIP							
		CONTINUE WITH 2-1150 MW'S				CONVERT TO COAL 2-670 MW'S			
RETURN →		FULL	PSO PARTIAL	PSO COMMON	TR PARTIAL	FULL	PSO PARTIAL	PSO COMMON	TR PARTIAL
<u>COMMON ISSUE</u>									
\$ (000,000)	1982	<25>	<27>	<26>	<28>	<2>	4	3	9
	1983	23	22	22	20	<5>	<1>	<1>	4
	1984	61	60	61	59	<9>	<5>	<5>	<1>
	1985	66	65	65	64	<14>	<11>	<11>	<7>
	1986	77	76	76	75	<11>	<9>	<9>	<5>
	1987	74	74	74	72	<11>	<9>	<9>	<6>
	1988	54	53	53	52	29	30	30	32
	1989	49	49	49	48	113	114	114	116
	1990	82	81	81	81	85	85	85	86
	TOTAL	461	453	455	443	175	198	197	228
<u>DEBT ISSUE</u>									
\$ (000,000)	1982	<14>	<14>	<14>	<14>	<8>	<7>	<7>	<7>
	1983	66	66	66	66	33	33	33	33
	1984	121	121	121	121	37	37	37	37
	1985	121	121	121	121	19	19	19	19
	1986	142	142	142	142	24	24	24	24
	1987	161	161	161	161	38	37	37	37
	1988	150	150	150	150	90	90	90	90
	1989	138	138	138	138	179	179	179	179
	1990	276	275	276	276	247	247	247	247
	TOTAL	1161	1160	1161	1161	659	659	659	659
<u>INDENTURE COVERAGE</u>									
<u>WATER ISSUE</u>									
	1982	5.29	5.38	5.36	5.48	5.04	4.88	4.93	4.56
	1983	4.27	4.34	4.33	4.41	5.25	4.29	4.33	4.05
	1984	3.51	3.54	3.53	3.59	5.80	3.95	3.97	3.75
	1985	3.34	3.36	3.36	3.39	6.63	3.92	3.95	3.77
	1986	3.12	3.13	3.13	3.15	7.17	3.69	3.70	3.56
	1987	2.96	2.97	2.97	2.98	8.05	3.41	3.42	3.32
	1988	2.87	2.88	2.88	2.89	7.49	2.98	2.98	2.92
	1989	2.82	2.82	2.83	2.83	5.65	2.64	2.64	2.61
	1990	2.53	2.54	2.54	2.54	5.46	2.36	2.36	2.35
<u>MOODY'S COVERAGE</u>									
	1982	4.80	4.88	4.86	4.97	4.74	4.48	4.53	4.22
	1983	4.56	4.62	4.61	4.69	4.61	4.40	4.43	4.18
	1984	4.28	4.32	4.31	4.37	4.48	4.32	4.34	4.13
	1985	4.05	4.08	4.08	4.11	4.42	4.28	4.30	4.13
	1986	3.92	3.93	3.94	3.96	4.32	4.22	4.23	4.09
	1987	3.85	3.86	3.86	3.88	4.16	4.08	4.09	3.98
	1988	3.79	3.79	3.79	3.80	4.03	3.98	3.98	3.91
	1989	3.78	3.78	3.79	3.79	3.98	3.95	3.95	3.90
	1990	3.76	3.77	3.77	3.77	3.88	3.87	3.87	3.85



## PUBLIC SERVICE COMPANY OF OKLAHOMA

## CASE STUDY SUMMARIES

RETURN →		TEN YEAR AMORTIZATION				WITH KWWP			
		CONTINUE WITH 2-1150 MW		CONVERT TO COAL 2-670 MW					
		FULL	PSO PARTIAL	PSO COMMON	TE PARTIAL	FULL	PSO PARTIAL	PSO COMMON	TE PARTIAL
<u>RATE RELIEF</u> ( \$ 000,000 )	1982	72	75	74	76	103	93	95	84
	1983	15	17	17	20	60	52	53	43
	1984	26	28	27	30	51	44	45	36
	1985	46	48	48	50	52	46	47	38
	1986	43	44	45	47	40	35	35	28
	1987	79	80	80	82	70	56	66	61
	1988	17	17	18	19	20	17	17	13
	1989	58	59	59	60	95	92	93	89
	1990	28	28	28	28	20	19	19	17
	TOTAL	384	396	396	412	571	574	530	469
<u>AMORTIZATION + RETURN</u>	1982	< 13 >	< 10 >	< 11 >	< 7 >	43	33	35	24
	1983	< 13 >	< 10 >	< 10 >	< 7 >	40	32	33	23
	1984	< 12 >	< 10 >	< 10 >	< 7 >	37	30	31	22
	1985	< 11 >	< 9 >	< 9 >	< 7 >	34	28	29	21
	1986	< 10 >	< 9 >	< 9 >	< 7 >	32	26	27	20
	1987	< 9 >	< 8 >	< 8 >	< 6 >	29	25	25	20
	1988	< 8 >	< 7 >	< 7 >	< 6 >	26	23	23	19
	1989	< 7 >	< 7 >	< 7 >	< 6 >	23	21	21	18
	1990	< 6 >	< 6 >	< 6 >	< 5 >	20	19	19	17
	TOTAL	< 89 >	< 76 >	< 77 >	< 58 >	284	237	243	184
<u>RETURN ON AVERAGE COMMON EQUITY</u>	1982	15.94	16.30	16.22	16.69	16.67	15.40	15.62	14.11
	1983	16.50	16.82	16.78	17.18	16.50	15.45	15.62	14.33
	1984		16.72	16.68	17.00		15.67	15.79	14.69
	1985		16.63	16.63	16.85		15.79	15.91	14.98
	1986		16.59	16.61	16.75		15.93	16.01	15.25
	1987		16.57	16.57	16.68		16.06	16.10	15.51
	1988		16.53	16.55	16.62		16.21	16.21	15.80
	1989		16.52	16.54	16.58		16.32	16.32	16.06
	1990	✓	16.52	16.52	16.54	✓	16.43	16.43	16.29
<u>DIVIDENDS PAID ( MODEL ) ( \$ 000,000 )</u>	1982	40	40	40	40	40	40	40	40
	1983	43	43	43	43	42	42	42	42
	1984	50	50	50	50	44	44	44	44
	1985	60	60	60	60	46	46	46	46
	1986	71	71	71	71	48	48	48	48
	1987	84	84	84	84	50	50	50	50
	1988	96	96	96	96	54	54	54	54
	1989	108	108	108	108	65	65	65	65
	1990	122	122	122	122	79	79	79	79
	TOTAL								