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Decision 83 08 048 AUG 17 1983

ORIGINAL

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Investigation on the Commission's own motion to consider cost-effective programs to reduce use of oil and natural gas for Southern California Edison Company's electric generation.	OII 82-04-02 (Filed April 28, 1982)

(See Decision 82-12-105 for appearances.)

Additional Appearances

John Madariaga and James Salo, Attorneys at Law, for Sierra Pacific Power Company, respondent.

FINAL OPINION

I. Introduction

On December 22, 1982, we issued an Interim Opinion for Order Instituting Investigation (OII) 82-04-02 which revised the procedure by which the Southern California Edison Company's (Edison) fuel-related expenses are recorded and passed into rates. In that Decision (D.) 82-12-105, we changed the Annual Energy Rate (AER)/Energy Cost Adjustment Clause (ECAC) procedure in two ways.

First, we increased the AER percentage from 2% to 10% for Edison. Second, we ordered uniform rate treatment for all fuel-related expenses. This change reduced from 100% to 10% the portion recovered in the AER of four fuel oil expenses: facilities charges, underlift charges, gains or losses from the sale of oil inventory, and carrying costs of fuel oil inventory. This principle applies to the other three utilities subject to ECAC.

The above changes were made to eliminate perverse incentives for utility management inherent in the prior AER/ECAC procedure. The changes also were made to allocate more risk of fuel-related expense variation to Edison's shareholders and to reduce the ratepayers' share of that risk.

To limit the increased risk to Edison's shareholders of a 10% AER, we placed a cap on the total earnings fluctuations which could result from unforecasted changes in fuel expenses. The adopted cap for Edison is 160 basis points on pretax return on common equity, about $32 million in 1983. (D.82-12-105, p. 37.)

Our Interim Opinion focused upon Edison and the application of the revised AER/ECAC procedure and policy to Edison's fuel-related operations. We now will apply the same principles to the other electric utilities within our jurisdiction: Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), and Sierra Pacific Power Company (Sierra Pacific).[1] We first will examine the financial strength of each utility to develop an appropriate cap on the AER-related earnings fluctuations. We then will evaluate each utility's operating characteristics and will derive a new AER/ECAC allocation for each company.

In addition, we will address other matters necessary for implementation of the revised AER/ECAC procedure: tariff language for the revised AER/ECAC procedure, the accounting treatment for the cap on the AER-related earning fluctuations, and the interest rate or carrying cost for fuel oil inventories.

After issuance of the Interim Opinion, hearings were held to apply the new AER/ECAC procedure and policy to the remaining major electric utilities. Evidence was presented by Edison, PG&E, SDG&E, Sierra Pacific, and the Commission staff (staff). The matter was submitted subject to the receipt of concurrent briefs on May 13, 1983. Edison on its own motion filed a reply to Toward Utility Rate Normalization's (TURN) concurrent brief on June 6, 1983.

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[1] C.P. National Corporation and Pacific Power & Light Company do not recover their fuel costs through the ECAC procedure.

II. Earnings Cap

In our Interim Opinion, we decided that a reasonable limitation should be placed on the risk to shareholders of fuel cost changes. We selected a cap on potential AER-related earnings adjustments as an appropriate limitation to avoid increasing Edison's cost of capital. We found that Edison's shareholders could bear a limited share of fuel-related risk without raising its cost of capital. In Edison's case, the cap is set at 160 basis points on pretax return on equity.

The earnings caps recommended by the other utilities and staff are as follows:

	Recommended Cap (basis points)
PG&E	125
SDG&E	122
Sierra Pacific	106[2]
Staff	
Revenue Requirements	
For PG&E	160
For SDG&E	106
For Sierra Pacific	160
Policy and Planning	
For PG&E	160
For SDG&E	160
For Sierra Pacific	160

A. PG&E

PG&E derived its earnings cap of 125 basis points by using the 160 basis points cap adopted for Edison as a reference point. PG&E reasons that since it is a riskier company than Edison, its earnings cap should be lower than Edison's to avoid increasing PG&E's

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2 Sierra Pacific did not develop its own earnings cap recommendation but argued in its brief that an earnings cap of 106 basis points is the highest figure supported in the record.

cost of capital with the same level of confidence. Because of its higher risk, PG&E asserts that a 125 basis points earnings cap would be equivalent to the 160 basis points cap adopted for Edison.

PG&E emphasizes several factors as evidence that it faces more risk than Edison. First, PG&E notes that its bond ratings have been lower than Edison's ratings. Second, PG&E's fuel and purchased power costs are subject to greater fluctuations than Edison's, exposing it to greater risk for energy costs not covered by the balancing account. Third, PG&E has a high level of investment concentrated in a single plant, Diablo Canyon (Diablo), which is further from completion than Edison's comparable plant, San Onofre Generating Station (SONGS) Units 2 and 3. Fourth, PG&E has decided to flow through investment tax credits as long as possible while Edison began normalizing its credits under the 1975 Tax Reduction Act. Finally, PG&E points out that its market-to-book ratio has not been as favorable as Edison's. PG&E then concludes that these factors together demonstrate that it faces more risk than Edison and deserves a lower earnings cap.

PG&E's financial witness testified that in his judgment an earnings cap of 125 basis points provides a sufficient differential from Edison's cap to account for PG&E's higher risk. PG&E submits that only this lower cap will produce the same minimal impact on the cost of capital that Edison is expected to experience under a 160 basis points cap.

B. SDG&E

SDG&E derived a range of earnings cap figures by analyzing the level of fuel-related risk borne by SDG&E's shareholders before the Commission adopted fuel adjustment clauses. SDG&E believes that the current revisions to the ECAC/AER procedure are intended to restore risks and incentives to management that may have been removed by the fuel adjustment clauses adopted in the early 1970s. SDG&E reasons that an earnings cap based on fuel-related earnings variation experienced by the company before a fuel adjustment clause was in place is appropriate.

SDG&E reviewed its fuel costs from 1960-1969, a period before a fuel adjustment clause was in place, and tried to determine how actual fuel costs might have varied from forecasts of fuel costs had they been made. SDG&E's financial witness developed three proxy methods to develop estimated fuel cost forecasts. The first method uses the average fuel cost experienced from 1960-1969 as the estimated fuel cost forecast for each year. The second method takes 75% of the previous year's recorded fuel cost and 25% of the current year's recorded cost as a proxy of each year's forecast. The third method uses a different weighting of the recorded data to derive a forecast: 4/7 weight to the first prior year, 2/7 weight to the second prior year, and 1/7 weight to the third prior year. Under these three methods, SDG&E derived earnings caps of 122, 54, and 77 basis points. SDG&E concludes that the largest earnings cap limitation permitted under its analysis is 122 basis points.

SDG&E also emphasizes that the risk borne by its shareholders exceeds the risk borne by the shareholders of other major California utilities. Consequently, SDG&E argues that the Commission should recognize SDG&E's higher risk status and adopt an earnings cap lower than the caps adopted for the other utilities.

C. Sierra Pacific

Sierra Pacific did not develop its own earnings cap recommendation. Instead, Sierra Pacific was content to criticize the staff proposals and to argue that Sierra Pacific is more comparable to SDG&E than to Edison. Sierra Pacific contends that "an earnings cap in the range of 106 basis points" is the highest supported by the record. Apparently Sierra Pacific has selected the Revenue Requirements Division recommendation for SDG&E as the appropriate cap for Sierra Pacific.

D. Staff

1. Revenue Requirements Division

The Revenue Requirements Division witness recommended the following earnings caps:

PG&E	160 basis points	
SDG&E	106 "	"
Sierra Pacific	160 "	"

This witness used the 160 basis points cap adopted for Edison as a reference point to develop other earnings caps. The impact of the 160 basis points cap on Edison's 1983 projected earnings per share, after tax return on equity, and pretax interest coverage was examined to measure the effect of the cap on Edison's cost of capital. This analysis showed that absorption of a 160 basis points earnings cap could lower Edison's 1983 earnings per share by 3.5%, 1983 after-tax return on common equity by 3.5%, and 1983 pre-tax interest coverage by 3.1%. Since the Commission concluded in the Interim Opinion that a 160 basis points cap would not produce a measurable impact on Edison's cost of capital, the Revenue Requirements Division witness presumed that in the Commission's view the above changes in financial indicators are acceptable. With this presumption in mind, the witness looked at the same financial indicators for the other utilities to see if there are significant differences between Edison and the others when a 160 basis points earnings cap limitation is used. A comparison of the utilities is as follows:

Impact of 160 Basis Points Cap on 1983 Financial Indicators

Utility	Earnings Per Share	After-Tax Return on Common Equity	Pre-Tax Interest Coverage
Edison	3.5%	3.5%	3.1%
PG&E	3.6%	3.6%	4.0%
SDG&E	3.2%	3.2%	3.7%
Sierra Pacific	4.2%	4.1%	3.9%

The witness concluded from the above comparison that the other utilities' exposure to a 160 basis points earnings cap would not be significantly different from the impact on Edison. However, the witness continued her analysis since this comparison of 1983 financial indicators in her opinion did not adequately consider the variability in earnings experienced year to year by the utilities. To review earnings variability, she looked primarily at the variability in return on equity investment as well as bond ratings by Standard and Poor's and Moody's for the period 1977-1981.

This review of 1977-1981 earnings variability showed that Edison's variation in return on equity was greater than that of PG&E and Sierra Pacific but less than that of SDG&E. Therefore, on this basis alone, a cap higher than 160 basis points could be justified for PG&E and Sierra Pacific. However, a lower cap would be warranted for SDG&E.

After reviewing the relative bond ratings of the utilities, the witness found that both PG&E and Sierra Pacific had ratings comparable to Edison's from 1977-1981. The witness further found that SDG&E received a consistently lower rating of BBB during the period reviewed as compared to AA for Edison.

The Revenue Requirements Division witness decided that a lower cap of 106 basis points for SDG&E is appropriate, based upon SDG&E's bond ratings and the ratio of the variation in return on equity experienced by SDG&E and that experienced by Edison over the 1977-1981 period. (Exhibit 10, pp. 2-9.) However, since the bond ratings of PG&E and Sierra Pacific are comparable to Edison's from 1977-1981, the witness recommends the same 160 basis points cap for PG&E and Sierr Pacific.

2. Policy and Planning Division

The Policy and Planning Division witness concludes that the 160 basis points cap adopted for Edison is also appropriate for the other utilities. He drew this conclusion after a review of recorded 1981 interest coverage ratios. In his opinion, 1981 is a good year to use for financial analysis since all four utilities earned within 10% of their authorized return that year. Also, in his opinion, the interest coverage ratio is the best single financial indicator of a company's financial strength.

A table of 1981 interest coverage ratios is as follows:

Utility	Pretax Interest Coverage in 1981
Edison	2.24
PG&E	2.00
SDG&E	1.94
Sierra Pacific	1.79

From the above table, the witness noted that Edison had the best ratio and the other three utilities were in worse financial condition. He then concluded that an earnings cap of 160 basis points should have no impact on the cost of capital for any of the utilities. Accordingly, he recommends adoption of a uniform 160 basis points cap for the four utilities.

E. Adopted Earnings Caps

We will adopt the following earnings caps:

PG&E	140	basis	points
SDG&E	120	"	"
Sierra Pacific	120	"	"

Our decision is guided by the principle that the utilities should receive equivalent treatment. As advocated by most of the parties, we have used the 160 basis points cap adopted for Edison as a benchmark to derive comparable earnings caps for the other utilities. We are attempting to adopt earnings caps which will have similar financial impact on the four utilities.

Unfortunately, a comparison of one utility with another does not automatically produce an answer. Each utility's financial condition is measured by many statistics and recorded data. Selection of a particular statistic or use of different recorded data often will dictate the outcome of the comparison. As a result, the judgment used in selecting and evaluating the universe of available information becomes the most important and debatable factor. This is apparent from the varying earnings caps recommended by the parties to this proceeding, each of whom selected key financial indicators and relied upon different recorded data to support their recommendations.

Our rationale for each utility is as follows:

1. PG&E

We are persuaded that PG&E now bears more risk than Edison and therefore should have a lower earnings cap. The question is how much lower should the cap be. PG&E's financial witness recommended 125 basis points based on his expert opinion. He declined to explain how he derived his figure in the following colloquy with staff counsel:

> "Q What I don't understand is how you took that all into account.
>
> "You simply state at page 14 of Exhibit 14 and repeat in your subsequent exhibit that you weighed these factors and view 125 basis points as the appropriate earnings cap.
>
> "Why did you pick 125?
>
> "Why isn't it 120 or 130?
>
> "A If staff would like to recommend 120, I would be more than willing to accept that.
>
> "Q I am not talking about staff recommending.
>
> "I am asking you how you got to 125, how mechanically you got to the 125?
>
> "A As I already stated, we accept the Commission's decision in SCE's case that a determination of an overall return on equity cannot be assessed by a single quantitative measure and to do something that is infinitely more difficult, such as incremental risk and relative riskiness I am not willing to define a single quantitative measure that will yield that number." (Tr. 2058-2059.)

As a result, we have limited insight into the judgment process of the witness.

In contrast, the staff witnesses have identified specific measures of financial performance. Using these measures as a standard, they then quantified the amount of risk that Edison and the other utilities will face under the revise AER/ECAC procedure. The staff method is easier to evaluate and criticize than PG&E's. However, by focusing on only a few measures of financial performance, the staff may be overlooking significant factors such as Diablo which affect PG&E's risk. As stated before, we do agree that PG&E at this time faces more risk than Edison. However, the staff would assign to PG&E the same 160 basis points cap given to Edison since their analysis shows no significant difference in risk between the two. We will adopt a cap of 140 basis points which is the approximate midpoint of the PG&E and staff recommendations. We are giving equal weight to the evidence offered by the two parties since we accept PG&E's subjective contention that it currently bears more risk than Edison and at the same time consider the staff quantitative analysis showing no substantial risk differential with a 160 basis points cap.

2. SDG&E

In selecting an earnings cap of 120 basis points for SDG&E, we are influenced by SDG&E's analysis measuring fuel cost variation in the 1960s, a period before the adoption of fuel adjustment clauses. We use the high end of SDG&E's earnings cap range because we are not convinced that the company's method yielding its highest earnings cap of 122 basis points overstates the risk faced by the company in the 1960s. SDG&E's financial witness cited three reasons why the company could have forecast fuel costs better than this method would indicate: (1) recorded fuel costs in the 1960s did not vary much, (2) other methods yielded lower caps, and (3) the company experienced a steady growth in sales in the 1960s. These reasons are not persuasive. If recorded fuel costs were nearly constant in the 1960s, a method using the average fuel cost as the estimated forecast of fuel cost seems suitable. Also, steadily increasing sales to us would have increased the risk associated with fuel forecasting.

We note that SDG&E has experienced more earnings variability than the other utilities, as shown in the Revenue Requirements Division report, and therefore should receive a lower earnings cap because of its higher risk. The adopted cap of 120 basis points is below the caps adopted for PG&E and Edison. We believe this earnings cap fairly represents the different risk faced by SDG&E and the other utilities at this time.

3. Sierra Pacific

Sierra Pacific, unlike the other three utilities, conducts only 8% of its overall operations in California. Because most of Sierra Pacific's operations are outside California, our regulatory incentives, including the AER/ECAC procedure should be used with caution. Accordingly, we will adopt a conservative earnings cap for this company. Staff has recommended a cap of 160 basis points. We will set an earnings cap equal to SDG&E's cap of 120 basis points. Sierra Pacific did not develop its own recommendation but simply argued that it is comparable only to SDG&E and should receive an earnings cap no higher than 106 basis points. We do not accept Sierra Pacific's entire argument. Evidence in the record supports an earnings cap as high as 160 basis points for Sierra Pacific. However, because of Sierra Pacific's limited California operation, we will adopt a cap equal to the lowest cap used for the other utilities, 120 basis points.

E. Impact of the Adopted Earnings Caps

In our Interim Opinion, we applied Edison's 160 basis points cap to the common equity portion of the jurisdictional rate base adopted in Edison's last general rate case (D.82-12-105, p. 37). The other utilities argue that their earnings caps likewise should be applied only to the common equity portion of the jurisdictional rate base for their electric operations.

The staff has applied their recommended earnings caps not only to electric rate base but also to construction work in progress (CWIP), gas department rate base, water department rate base, steam department rate base, as well as nonutility investment. Since investors look to total utility operations, rather than electric, gas, water, or steam operations on an individual basis, staff argues that any AER-related incentive should apply to total common equity.

However, only one of the staff witnesses in this proceeding included the common equity portion on nonutility investment in evaluating the effects of earnings variation on cost of capital. Since this methodological issue requires further evaluation by staff, we will adopt a conservative stance at this time and consider only the jurisdictional total rate base in our deliberations.

Staff analysis in this proceeding considered the equity portion of total rate base and CWIP in evaluating the effects of basis point variation on return on equity. In terms of methodology and financial theory, we think that the inclusion of CWIP is appropriate, since shareholders are financing not only total rate base investment, but, through the equity portion of AFUDC, construction work in progress as well. However, we recognize that there are certain projects included in CWIP whose future inclusion in rate base is uncertain. The effect of this uncertainty on a company's financial viability coupled with a new incentive mechanism that increased earnings variability is difficult to measure. Therefore, we will adopt a conservative definition of total utility rate base in order to error on the side of caution.

We will apply our adopted earnings caps to the common equity portion of jurisdictional total rate base. This approach is consistent with our interim order, which applied SCE's basis point cap to the common equity portion of their electric operations, which closely approximates total jurisdictional rate base.[3] In doing so, we recognize that our approach utilizes a conservative definition of total common equity and possibly a conservative application of financial theory. However, we believe that, in developing new incentive mechanisms to place additional risks (as well as potential returns) on utility shareholders, we should proceed with a degree of caution.

The exposure of the utilities at this time is as follows:

Utility	Total Rate Base[4]	Common Equity Ratio	Adopted Earnings Cap	Extreme Variations In Earnings (Cap Limitation)
PG&E	$6,691 million	41%	140 basis points	±$38.4 million
SDG&E	$1,505 million	37.25%	120 basis points	±$ 6.7 million
Sierra Pacific	$ 60.5 million	38.5%	120 basis points	±$280,000

	Total Variation In Earnings
PG&E	$77 million
SDG&E	$13.4 million
Sierra Pacific	$560,000

3. In addition to electric rate base operations, SCE has a small natural gas facility on Santa Catalina which represents approximately $600,000 in rate base. Its omission does not significantly affect total rate base figures.

4. For PG&E, total rate base is approximated by the most recent Commission authorizations for electric, and gas department rate base, including 1982 attrition allowances.

For SDG&E, total rate base is approximated by the Commission authorizations for electric and gas department rate base, including 1982 attrition allowances.

For Sierra Pacific, total rate base was provided by Sierra Pacific and multiplied by an 8% California jurisdictional factor.

III. The AER/ECAC Splits

Our Interim Opinion prescribed a 10% AER/90% ECAC allocation of fuel expense for Edison. Thus, Edison's shareholders now will bear 10% of any unforecast changes in fuel-related expenses. Edison's risk due to unforeseen variation in fuel-related expenses is limited to $32.04 million. As noted by PG&E (Exh. 17, pp. 1-3), based on an assumption that fuel expenses will vary normally, Edison can be expected to encounter its ±160 basis points limitation roughly one year out of five. Knowing the extreme plausible fuel expense variation, once we have selected a limit for earnings variability, we can ascertain the frequency with which a company would encounter this limit as a function of the AER percentage. We note that SDG&E's projects a somewhat assymetric distribution of potential variations in fuel-related expenses. We can, however, reasonably approximate this frequency distribution with a symmetrical, normal frequency distribution.

We will follow PG&E's method for determining the appropriate AER percentage for each company based on the comparable frequency for Edison. In doing so we will use the figures developed by the staff in Phase 1 to represent Edison's plausible extreme variation in fuel-related expense. (Exh. 1, Appendix A, Table 5.) Using Edison's earnings cap limitation of $32.04 million and its plausible extreme variation of $479 million, we find that Edison will meet its limit on earnings fluctuations about 19% of the time, either through over- or undercollection of fuel-related expenses. Associated with this 19% probability is the ratio of fuel-expense variation (corresponding to the limit on earnings variations) to the standard deviation of the distribution of fuel-expense variation (assuming a normal curve). This ratio is 1.31. Noting that the plausible extreme fuel variation (95% confidence level) is equal to 1.96 times the standard deviation, and the AER percentage times the fuel expense variation (associated with the 19% probability level)

equals the limit on earnings variability, we can express our formula for calculating the AER percentage as follows:

$$\frac{\text{earnings cap}}{\text{AER\%}} \div \frac{\text{extreme fuel variation}}{1.96} = 1.31, \text{ or}$$

$$\text{AER\%} = \frac{\text{earnings cap limitation}}{\text{plausible extreme variation in annual energy-related expenses}} \times 1.5$$

Under this formula, the calculated AER% causes the shareholder to absorb the earnings cap limitation approximately 19% of the time. In years of lesser variation, the ratepayers and shareholders share the benefits or losses proportionately. Both groups are held liable for a consistent percentage of total energy expense forecast error up to the adopted earnings cap limitation. The calculated AER/ECAC splits are:

A. PG&E

$$\frac{\$38.4 \text{ million earnings cap} \times 1.5}{\$623 \text{ million plausible extreme variation}} = 9\% \text{ AER}$$

Staff suggested that we use a plausible extreme variation of $730 million which includes Diablo. However, we choose to use PG&E's extreme variation of $623 million which excludes Diablo since the commercial operating date of Diablo is unknown at this time. Neither staff nor PG&E attempted to include the impact of Helms in their figures.

B. SDG&E

$$\frac{\$6.7 \text{ million earnings cap} \times 1.5}{\$122 \text{ million plausible extreme variation}} = 8\% \text{ AER}$$

We have use SDG&E's recommended extreme variation in annual energy-related expense which includes SONGS 2 and 3 as well as planned improvements in transmission from the southwest. The staff has used the same total plausible variation.

C. Sierra Pacific

$$\frac{\$280{,}000 \text{ earnings cap} \times 1.5}{\$1{,}913{,}000 \text{ plausible extreme variation}} = 22\% \text{ AER}$$

Staff used a plausible average variation in annual energy-related expense of $9,549,187 which included expenses from all of Sierra Pacific's electric operations inside and outside of California. We have applied a California jurisdictional factor of 10.484% to Sierra Pacific's recommended plausible extreme variation of $18,249,000. The resulting $1,913,000 figure is consistent with the calculations for the other utilities since it represents the extreme rather than average variation in annual energy-related expense. Also, use of a 10.484% California jurisdictional factor for electric operations is consistent with our use of an 8% jurisdictional electric rate base factor to calculate the earnings cap limitation.

D. AER Revenue

AER revenue currently is included in the Electric Revenue Adjustment Mechanism (ERAM). ERAM was first adopted in the 1982 test year general rate cases for PG&E and SDG&E. In both cases, the utility sales forecasts were substantially below the staff sales forecasts. Adoption of the utility forecasts would have required much larger revenue increases; use of the staff forecasts would have permitted much lower increases. More important, to the extent actual sales exceeded or dropped below the adopted sales forecast, the utility would get more or less revenue than that authorized by the Commission.

To resolve this problem, the Commission adopted ERAM. Under this mechanism, rates are adjusted to account for the variation between actual sales and forecast sales. In this way, the utility receives the exact amount of revenue authorized to it despite unpredicted sales variations.

The utilities urge us to remove AER revenue from ERAM. They argue that unlike other base rates, the AER now covers energy-related expenses which are not fixed and vary greatly with sales. As sales increase, a utility will incur more fuel and purchased power expense; on the other hand, as sales decrease, the utility's fuel and purchases power cost should shrink. Therefore, the utilities contend that the AER revenue should be removed from ERAM so that revenue can fluctuate as sales change, allowing revenue to offset expense.

Staff submits that the AER should remain in ERAM. Staff contends that ERAM is beyond the scope of this proceeding. Staff further argues that the removal of the AER from ERAM now would make it difficult to calculate new AER/ECAC allocations on a consistent basis for all the utilities. Finally, staff believes that the removal of the AER from ERAM would undercut the Commission's goal in this proceeding of allocating more risk away from ratepayers to utility shareholders.

We will exclude AER revenue from ERAM as requested by the utilities. ERAM was established to eliminate controversy over the adopted sales forecast in the general rate cases, where almost all expenses were nonvariable (or "fixed") with respect to sales variations. The effect of ERAM on fixed expenses is to adjust rates (for sales fluctuations only) so that the utility's authorized fixed costs are exactly covered, no more no less, regardless of the sales forecasts used to calculate the annual energy rate. However, the effect of ERAM on expenses that are variable with respect to sales, i.e., AER fuel-related expenses, is very different. If actual sales exceed forecast sales, then the utility must bear the burden of higher energy costs associated with a higher than predicted level of kWh sales. Meanwhile ratepayers would benefit from paying for a lower level of sales volume than actually produced and consumed. Conversely, if actual sales are less than forecast sales, then the utility receives the AER revenue associated with a higher sales volume, even though their actual energy costs are lower than projected. Meanwhile the ratepayer would be liable for the shortfall in AER revenue due to lower than predicted sales. Hence, we would be back to a situation that ERAM was designed to eliminate: If we keep the AER in ERAM as advocated by staff, we will create controversy over sales forecasts in our AER/ECAC proceedings. Furthermore, we could be inadvertently developing an incentive mechanism that was not the subject, nor intention of this proceeding.

We note that both PG&E and SDG&E have calculated plausible extreme variations in annual energy-related expense without including a factor for sales forecasting error. Furthermore, it appears from Sierra Pacific's testimony that its calculation also does not include

an adjustment for sales forecasting error. Accordingly, our adopted earnings caps and AER/ECAC splits for the three utilities are all made on a consistent basis.

IV. Tariff Revisions and Accounting Treatment of the AER Cap

Edison, PG&E, and SDG&E filed proposed tariffs for implementation of the revised AER/ECAC procedures. At hearing, staff proposed minor modifications to the proposed tariffs which were not disputed by the utilities. (See Vol. 16, Tr. 1687-1691.)

In addition, the Revenue Requirements Division witness proposed her own accounting treatment and tariff provisions in Chapter V of Exhibit 10. At hearing, she modified her proposal to permit (1) the use of 12-month period ended recorded rate of return on CPUC jurisdictional rate base, not to exceed the authorized 12-month return, to calculate the revenue requirement associated with fuel oil inventory, and (2) a single annual filing to calculate the earnings limitation rather than two semiannual filings. (See Vol. 18, Tr. 1867-1868.)

Since there appears to be no dispute over the meaning of the tariff language, we will approve the utilities' proposed tariffs as modified by the staff. The staff tariff proposals shall supersede any conflicting utility proposal.

V. Fuel Oil Inventory Carrying Cost

In our Interim Opinion, we directed all parties to address the appropriate carrying cost of fuel oil inventory in the second phase of this proceeding. (D.82-12-105, p. 39.) The actual level of fuel oil inventory is not an issue in this proceeding but will be determined in each utility's AER/ECAC proceeding. Edison, PG&E, SDG&E, staff, and TURN made recommendations on the appropriate carrying cost.

A. Edison

Edison breaks its fuel oil inventory into three components: dead storage, fuel management requirement, and potential oil demand. Dead storage consists of oil in tank bottoms which cannot be readily removed and used. Fuel management requirement represents the oil required to satisfy limitations in the distribution logistics of Edison's oil pipeline, storage, and receiving facilities. Potential oil demand is that volume of oil necessary to meet expected oil demand as affected by variations in load, resource mix, etc. Together these three components constitute Edison's Minimum Operational Inventory Level (MOIL).

In addition, Edison asserts that at times it may be necessary to keep long-term oil inventory above the MOIL because of changes in the availability of other energy resources.

Edison proposes that the carrying cost of the MOIL plus an adjustment for additional long-term fuel oil inventory should be its authorized rate of return. Edison asserts that the financing cost of this fuel oil inventory is the same as for Edison's other assets. Since the cost of funds allowed on other assets is the authorized rate of return, Edison argues that the same rate of return is the appropriate cost of funds for the above fuel oil inventory.

For amounts of oil above or below the MOIL plus additional long-term inventory, Edison recommends that a short-term cost of funds should be used. Edison suggests that the three-month prime commercial rate should be used to compute the carrying cost of oil inventory variations from the MOIL plus additional long-term inventory.

B. PG&E

PG&E recommends that the carrying cost of oil inventory should be its authorized rate of return. PG&E's financial witness explained that any long-term oil inventory is equivalent to any other long-term investment which is supported by the company's capital structure.

With respect to short-term variations from the authorized long-term inventory, PG&E maintains that the carrying cost also should be the authorized rate of return. PG&E argues that if these short-term variations are not offsetting, then the additional volumes become a continuing phenomenon which should be financed with corporate funds. PG&E submits that use of a different carrying cost for short-term variations would create an incentive to incorrectly estimate short-term or long-term inventory volume. Use of the authorized rate of return for both long-term and short-term inventory would preclude this bias.

Finally, PG&E notes that ad valorem taxes and insurance are part of the cost of carrying oil inventory. These expenses currently are examined in general rate cases. PG&E asks that we transfer these expenses from the general rate cases and include them as part of the carrying cost allowed in the AER/ECAC proceedings.

C. <u>SDG&E</u>

SDG&E also contends that the appropriate carrying cost is the authorized rate of return if the Commission includes a cost component for bankers' acceptances in deriving SDG&E's authorized return. Bankers' acceptances are the principal instrument currently used by SDG&E to finance its oil inventory. However, if the Commission excludes bankers' acceptances in its derivation of a return, then SDG&E believes that the appropriate carrying cost should be a rate equal to bankers' acceptances.

D. <u>Staff</u>

Staff recommends that the ECAC portion of the carrying cost on the adopted fuel oil inventory levels for each utility except for SDG&E should be the utility's actual realized rate of return, not to exceed the authorized rate of return. Staff submits that use of the actual return earned by the utility rather than the authorized return avoids giving the utilities a guaranteed return on fuel oil inventory recovered through the ECAC balancing account.

For the portion of carrying cost recovered through the AER, staff recommends use of the last adopted rate of return. And for fluctuations above the adopted oil inventory level, staff recommends use of the three-month commercial paper borrowing rate.

For SDG&E, staff recommends the interest rate on bankers' acceptances as the appropriate carrying cost. This recommendation is consistent with staff's recommended exclusion of bankers' acceptances from SDG&E's adopted capital structure for base rates in Application 82-12-57, SDG&E's pending general rate case.

E. TURN

TURN recommends that the carrying cost of all oil inventory subject to ECAC balancing account treatment should be limited to a short-term interest rate. TURN points out that its recommendation is not based on the actual source of inventory financing but on equity and risk considerations. TURN argues that: "Regardless of the alleged source of the financing, the utilities must be required to give up something in return for the substantial risk reduction that accompanies balancing account ratemaking." (TURN brief, p. 5.) TURN argues that by including most fuel oil inventory in ECAC, the Commission has removed any risk from this investment. In TURN's opinion, a "riskless" investment subject to balancing account recovery should receive no more than short-term interest as the carrying cost.

F. Adopted Carrying Costs

We will adopt the recommendations of the Revenue Requirements Division witness. As recommended, the carrying cost of the adopted inventory levels for PG&E, Edison, and Sierra Pacific recovered in ECAC will be the actual rate of return earned by the utilities, not to exceed the authorized rate of return. An adjustment to reflect the utility'a actual 12-month period ended rate of return should be made in the annual "trueup" up to the level of the authorized return. By using the actual rather than authorized rate of return, we avoid guaranteeing recovery of the utilities' authorized returns through ECAC. This reasoning does not apply to the portion of oil inventory carrying cost recovered through the AER. Therefore, the authorized rate of return should be used to calculate the AER.

For oil inventory above the adopted inventory level, the three-month commercial paper rate shall be used. This treatment is appropriate since fluctuations above the adopted oil inventory level should be temporary and financed with short-term instruments.

We also adopt staff's recommendation that SDG&E's carrying costs should be tied to bankers' acceptances rather than its rate of return since bankers' acceptances are SDG&E's principal instrument for financing oil inventory.

Finally, we will defer PG&E's request to include ad valorem taxes and insurance as carrying costs recovered in the AER/ECAC proceeding to the general rate case. These items currently are recovered in base rates and are being reviewed in PG&E's pending general rate case.

G. Conclusions

The Commission began this formal investigation in order to "consider cost-effective programs to reduce use of oil and natural gas" for SCE, PG&E, SDG&E and Sierra Pacific. We focused on the incentives and disincentives embodied in the ECAC and AER procedures, for the purpose of determining:

a. Whether the current 2% of estimated fuel cost included in the AER should be maintained, increased, or eliminated.

b. Whether gains or losses on the sale of fuel oil and underlift facilities charges should continue to be estimated in advance and included in the AER.

c. Whether the carrying cost of oil in inventory should continue to be included in the AER.

d. How and to what extent carrying costs of excess oil in inventory should be recovered.

e. Whether the ECAC balancing account ratemaking procedure should be gradually terminated in phases, or terminated completely, or whether any particular fuel component now included in ECAC should be excluded.

f. Whether it is feasible and/or desirable to change the allocation of risks and rewards between ratepayers and shareholders created by the ECAC to minimize fuel costs.

As a result of our investigation, we have revised the AER/ECAC treatment to more appropriately allocate the risk that actual energy expenses will vary from estimated expenses between the utilities' ratepayers and shareholders. In establishing these new procedures, we have exercised caution in making our determinations for several reasons. First, we recognize the difficulty in evaluating the effects of incentives or disincentives on a utility's cost of capital. Part of this difficulty stems from the complexity involved in assessing the financial risk, and factors contributing to that risk, for any specific company. Part of it stems from the fact that ratemaking procedures and accounting conventions for utilities are fundamentally different from those applied to unregulated industries.

Second, we acknowledge the difficulty in assessing the effectiveness of any utility incentive/disincentive until it is carefully evaluated over time. Finally, the AER/ECAC mechanism represents only one of a possible range of programs to reduce the use of oil and natural gas for California utilities. Until we have identified and evaluated the complete range of possible options, we should not advance too quickly with any single incentive mechanism.

Our task now is to proceed with developing methodologies and programs for evaluating the effects of these AER/ECAC procedures on utility earnings, forecasting accuracy and fuel-related decisions. At the same time, we will continue to identify and evaluate other regulatory procedures which could provide appropriate incentives and disincentives to utility management for reducing the use of oil and natural gas. As a first step in this process, utilities and staff are directed to file a report to the Commission addressing the issues identified in Appendix A.

Findings of Fact

1. The four utilities subject to revised AER/ECAC procedures, Edison, PG&E, SDG&E, and Sierra Pacific, should receive equivalent treatment.

2. A comparison of Edison with the other three utilities requires a degree of subjectivity since a utility's financial condition cannot be measured precisely or quantified.

3. PG&E's position is at this time it bears more risk than Edison.

4. Staff analysis, however, does not disclose a substantial risk differential between PG&E and Edison.

5. Equal weighing of PG&E and staff evidence is appropriate, resulting in a 140 basis points cap for PG&E.

6. SDG&E at this time bears more risk than Edison.

7. SDG&E's first method of approximating fuel cost variation resulting in a 122 basis points cap is superior to the other methods.

8. An earnings cap of 120 basis points for SDG&E fairly represents the relative risk at this time faced by SDG&E as compared to Edison and PG&E.

9. Sierra Pacific did not develop an earnings cap recommendation.

10. An earnings cap as high as 160 basis points for Sierra Pacific is supported in this record.

11. Only 8% of Sierra Pacific's total operations are conducted in California.

12. An earnings cap of 120 basis points equal to the lowest cap set for the other electric utilities is appropriate for Sierra Pacific because of its limited California operations.

13. Application of the adopted earnings caps to conservative total rate base figures is reasonable at this time.

14. Edison can be expected to encounter its $\pm$160 basis point limitation about 19% of the time.

15. It is reasonable to approximate each company's frequency distribution for fuel-related expenses with a normal frequency distribution.

16. PG&E's method for calculating the AER percentage, as modified above, is appropriate.

17. Since the commercial operating date of Diablo is unknown, PG&E's estimated plausible extreme variation in annual energy-related expense which excludes Diablo should be used to calculate PG&E's AER percentage.

18. There is no dispute between SDG&E and staff on the appropriate total extreme variation for SDG&E.

19. Sierra Pacific's extreme plausible variation is $18,249,000; staff's figure represented an average plausible variation.

20. A California jurisdictional factor of 10.484% should be applied to Sierra Pacific's $18,249,000 total variation.

21. AER percentages of 9% for PG&E, 8% for SDG&E, and 22% for Sierra Pacific are reasonable at this time.

22. ERAM was adopted to eliminate controversy over sales forecasts in general rate cases.

23. Inclusion of AER revenue in ERAM under the revised AER/ECAC procedure would create controversy over sales forecasts in AER/ECAC proceedings.

24. The AER should be removed from ERAM.

25. Edison, PG&E, and SDG&E have submitted proposed tariffs to implement the revised AER/ECAC procedures.

26. Staff has suggested several modifications to the proposed tariffs which are not contested by the sponsoring utilities.

27. The Revenue Requirements Division's proposed tariff language was modified at hearing.

28. Use of the actual or earned rate of return as the carrying cost of adopted fuel oil inventory recovered in ECAC is preferable since it avoids a guaranteed return to the utility.

29. Use of the authorized rate of return for the AER portion of the adopted fuel oil inventory is appropriate.

30. For oil inventory above the adopted inventory level, the three-month commercial paper rate should be used as the carrying cost. ✓

31. SDG&E's carrying cost of fuel oil inventory should be the interest rate on bankers' acceptances. ✓

Conclusions of Law

1. The Commission should revise the AER/ECAC procedure to conform with the above Findings of Fact.

2. This order should be made effective today so that the revised AER/ECAC procedure can be implemented with the currently pending reasonablenss reviews of Edison and PG&E.

FINAL ORDER

IT IS ORDERED that:

1. Southern California Edison Company (Edison), Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), and Sierra Pacific Power Company (Sierra Pacific) shall file tariffs consistent with this decision within 30 days of the effective date of this order.

2. Edison, PG&E, SDG&E, and Sierra Pacific are subject to the revised AER/ECAC procedure with the following AER/ECAC splits and earnings caps:

Utility	AER/ECAC	Earnings Cap
Edison	10%/90%	160 basis points
PG&E	9%/91%	140 " "
SDG&E	8%/92%	120 " "
Sierra Pacific	22%/78%	120

3. The carrying cost of fuel oil inventory shall be calculated in the manner set forth in this decision

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4. AER revenue is removed from ERAM.

5. Each respondent utility shall, within sixty days after completion of the AER period, file a comparative analysis of the detail of the differences between the recorded and estimated elements of the AER. The analysis should quantify the cause of the differences, including climatological factors, fuel and purchased power prices and quantities, and other major variables.

6. Southern California Edison, Pacific Gas and Electric, San Diego Gas and Electric, Sierra Pacific Power Company and Commission staff shall prepare for the assigned Commissioner a report addressing the issues identified in Appendix A within 270 days from the effective date of this order

This order is effective today.

Dated AUG 17 1983, at San Francisco, California.

VICTOR CALVO
PRISCILLA C. GREW
DONALD VIAL
WILLIAM T. BAGLEY
Commissioners

Commissioner Leonard M. Grimes, Jr., being necessarily absent, did not participate.

I CERTIFY THAT THIS DECISION WAS APPROVED BY THE ABOVE COMMISSIONERS TODAY.

Joseph E. Bodovitz, Executive Director

APPENDIX A

Issues to be Addressed

1. Methodological issues in evaluating the effect of regulatory procedures and incentives/disincentives on utility cost of capital, including:

- What is the appropriate measure of utility earnings available for return to shareholders, and how does that relate to utility "reported" earnings?
- What is the relationship between utility earnings and the cost of capital?
- What methods are available, and appropriate for evaluating the effect of earnings variability on the cost of capital?
- Should those methods be applied to total utility earnings or only some portion thereof?
- What methods are available, and appropriate, for developing an upper bound on shareholders' exposure to earnings variability?
- What methods are available, and appropriate, for isolating the effects of one incentive/disincentive mechanism on utility cost of capital?

2. What methods are available to "track" the effectiveness of the AER/ECAC mechanism in improving utility forecasting accuracy? How could those methods be implemented as an ongoing Commission program?

3. What other incentive/disincentive mechanisms are available for reallocating the risk of fuel price variation among shareholders and ratepayers. How do these other mechanisms interrelate with an AER/ECAC mechanism?

standard, they then quantified the amount of risk that Edison and the other utilities will face under the revised AER/ECAC procedure. The staff method is easier to evaluate and criticize than PG&E's. However, by focusing on only a few measures of financial performance, the staff may be overlooking significant factors such as Diablo which affect PG&E's risk. As stated before, we do agree that PG&E at this time faces more risk than Edison. However, the staff would assign to PG&E the same 160 basis points cap given to Edison since their analysis shows no significant difference in risk between the two. We will adopt a cap of 140 basis points which is the approximate midpoint of the PG&E and staff recommendations. We are giving equal weight to the evidence offered by the two parties since we accept PG&E's subjective contention that it currently bears more risk than Edison and at the same time consider the staff quantitative analysis showing no substantial risk differential with a 160 basis points cap.

2. SDG&E

In selecting an earnings cap of 120 basis points for SDG&E, we are influenced by SDG&E's analysis measuring fuel cost variation in the 1960s, a period before the adoption of fuel adjustment clauses. The theory behind this analysis is appealing as it comports with our objective of returning to utility management the incentives for cost-effectiveness that fuel adjustment clauses have removed.

We use the high end of SDG&E's earnings cap range because we are not convinced that the company's method yielding its highest earnings cap of 122 basis points overstates the risk faced by the company in the 1960s. SDG&E's financial witness cited three reasons why the company could have forecast fuel costs better than this method would indicate: (1) recorded fuel costs in the 1960s did not vary much, (2) other methods yielded lower caps, and (3) the company experienced a steady growth in sales in the 1960s. These reasons are should be applied only to the common equity portion of the jurisdictional rate base for their electric operations.

The staff has applied their recommended earnings caps not only to electric rate base but also to construction work in progress, gas department rate base, water department rate base, steam department rate base, as well as nonutility investment. In staff's view, investors look to total utility operations rather than electric, gas, water, or steam operations on an individual basis. Since an investment is made in the total utility, staff believes that any AER-related incentive should apply to total common equity. Both staff witnesses conceded that their use of total common equity was inconsistent with the method adopted for Edison in our Interim Opinion.

We will apply our adopted earnings caps only to the common equity portion of jurisdictional electric rate base. This approach is consistent with our treatment of Edison. Furthermore, our purpose in revising the AER/ECAC procedures is to create additional incentives in utility management of electric operations. Inclusion of nonelectric investment in the formula would distort these incentives and would unfairly penalize utilities with diversified operations. Finally, we are embarking on a new allocation of risk among shareholders and ratepayers which may result in unforeseen results. For this reason, we will proceed cautiously and apply our chosen earnings caps to conservative electric rate base figures.

The exposure of the utilities at this time is as follows:

Utility	Electric Rate Base	Common Equity Ratio	Adopted Earnings Cap	Earnings Cap Limitation
PG&E	$5,330 million	41%	140 basis points	$30.6 million
SDG&E	$1,425.7 million	37.25%	120 basis points	$6.4 million
Sierra Pacific	$60.5 million*	38.5%	120 basis points	$280,000

*California jurisdictional

equals the limit on earnings variability, we can express our formula for calculating the AER percentage as follows:

$$\frac{\text{earnings cap}}{\text{AER\%}} \div \frac{\text{extreme fuel variation}}{1.96} = 1.31, \text{ or}$$

$$\text{AER\%} = \frac{\text{earnings cap limitation}}{\text{plausible extreme variation in annual energy-related expenses}} \times 1.5$$

Under this formula, the calculated AER% causes the shareholder to absorb the earnings cap limitation approximately 19% of the time. In years of lesser variation, the ratepayers and shareholders share the benefits or losses proportionately. Both groups are held liable for a consistent percentage of total energy expense forecast error up to the adopted earnings cap limitation. The calculated AER/ECAC splits are:

A. PG&E

$$\frac{\$30.6 \text{ million earnings cap} \times 1.5}{\$623 \text{ million plausible extreme variation}} = 7\% \text{ AER}$$

Staff suggested that we use a plausible extreme variation of $730 million which includes Diablo. However, we choose to use PG&E's extreme variation of $623 million which excludes Diablo since the commercial operating date of Diablo is unknown at this time. Neither staff nor PG&E attempted to include the impact of Helms in their figures.

B. SDG&E

$$\frac{\$6.4 \text{ million earnings cap} \times 1.5}{\$122 \text{ million plausible extreme variation}} = 8\% \text{ AER}$$

We have used SDG&E's recommended extreme variation in annual energy-related expense which includes SONGS 2 and 3 as well as planned improvements in transmission from the southwest. The staff has used the same total plausible variation.

C. Sierra Pacific

$$\frac{\$280{,}000 \text{ earnings cap} \times 1.5}{\$1{,}913{,}000 \text{ plausible extreme variation}} = 22\% \text{ AER}$$

sales increase, a utility will incur more fuel and purchased power expense; on the other hand, as sales decrease, the utility's fuel and purchased power cost should shrink. Therefore, the utilities contend that the AER revenue should be removed from ERAM so that revenue can fluctuate as sales change, allowing revenue to offset expense.

Staff submits that the AER should remain in ERAM. Staff contends that ERAM is beyond the scope of this proceeding. Staff further argues that the removal of the AER from ERAM now would make it difficult to calculate new AER/ECAC allocations on a consistent basis for all the utilities. Finally, staff believes that the removal of the AER from ERAM would undercut the Commission's goal in this proceeding of allocating more risk away from ratepayers to utility shareholders.

We will exclude AER revenue from ERAM as requested by the utilities. The purpose of ERAM is to eliminate controversy over the adopted sales forecast in the general rate cases. If we should keep the AER in ERAM as advocated by staff, we will create controversy over sales forecasts in our AER/ECAC proceedings. For example, if actual sales exceed forecast sales, then the utility must bear the burden of higher energy costs allocated under the AER percentage. The ratepayer also would benefit from the surplus revenue from the higher than predicted sales. Conversely, if actual sales are less than forecast sales, then the utility reaps the benefit of lower energy costs attributable to the AER percentage. Meanwhile the ratepayer would be liable for the shortfall in AER revenue due to lower than predicted sales. Both situations are unfair.

We note that both PG&E and SDG&E have calculated plausible extreme variations in annual energy-related expense without including a factor for sales forecasting error. Furthermore, it appears from Sierra Pacific's testimony that its calculation also does not include

utilities, not to exceed the authorized rate of return. An adjustment to reflect the utility's actual 12-month period ended rate of return should be made in the annual "trueup" up to the level of the authorized return. By using the actual rather than authorized rate of return, we avoid guaranteeing recovery of the utilities' authorized returns through ECAC. This reasoning does not apply to the portion of oil inventory carrying cost recovered through the AER. Therefore, the authorized rate of return should be used to calculate the AER.

For oil inventory above the adopted inventory level, the three-month commercial paper rate shall be used. This treatment is appropriate since fluctuations above the adopted oil inventory level should be temporary and financed with short-term instruments.

We also adopt staff's recommendation that SDG&E's carrying costs should be tied to bankers' acceptances rather than its rate of return since bankers' acceptances are SDG&E's principal instrument for financing oil inventory.

Finally, we will defer PG&E's request to include ad valorem taxes and insurance as carrying costs recovered in the AER/ECAC proceeding to the general rate case. These items currently are recovered in base rates and are being reviewed in PG&E's pending general rate case.

Findings of Fact

1. The four utilities subject to revised AER/ECAC procedures, Edison, PG&E, SDG&E, and Sierra Pacific, should receive equivalent treatment.

2. A comparison of Edison with the other three utilities requires a degree ~~if~~ of subjectivity since a utility's financial condition cannot be measured precisely or quantified.

3. PG&E's position is at this time it bears more risk than Edison.

4. Staff analysis, however, does not disclose a substantial risk differential between PG&E and Edison.

5. Equal weighting of PG&E and staff evidence is appropriate, resulting in a 140 basis points cap for PG&E.

6. SDG&E at this time bears more risk than Edison.

7. SDG&E's analysis of fuel cost variation in the 1960s is a good method to derive an earnings cap.

8. SDG&E's first method of approximating fuel cost variation resulting in a 122 basis points cap is superior to the other methods.

9. An earnings cap of 120 basis points for SDG&E fairly represents the relative risk at this time faced by SDG&E as compared to Edison and PG&E.

10. Sierra Pacific did not develop an earnings cap recommendation.

11. An earnings cap as high as 160 basis points for Sierra Pacific is supported in this record.

12. Only 8% of Sierra Pacific's total operations are conducted in California.

13. An earnings cap of 120 basis points equal to the lowest cap set for the other electric utilities is appropriate for Sierra Pacific because of its limited California operations.

14. Application of the adopted earnings caps to conservative electric rate base figures is reasonable at this time.

15. The adopted earnings caps should be applied only to the jurisdictional electric rate base of each utility.

16. Edison can be expected to encounter its ±160 basis point limitation about 19% of the time.

17. It is reasonable to approximate each company's frequency distribution for fuel-related expenses with a normal frequency distribution.

18. PG&E's method for calculating the AER percentage, as modified above, is appropriate.

19. Since the commercial operating date of Diablo is unknown, PG&E's estimated plausible extreme variation in annual energy-related expense which excludes Diablo should be used to calculate PG&E's AER percentage.

20. There is no dispute between SDG&E and staff on the appropriate total extreme variation for SDG&E.

21. Sierra Pacific's extreme plausible variation is $18,249,000; staff's figure represented an average plausible variation.

22. A California jurisdictional factor of 10.484% should be applied to Sierra Pacific's $18,249,000 total variation.

23. AER percentages of 7% for PG&E, 8% for SDG&E, and 22% for Sierra Pacific are reasonable at this time.

24. ERAM was adopted to eliminate controversy over sales forecasts in general rate cases.

25. Inclusion of AER revenue in ERAM under the revised AER/ECAC procedure would create controversy over sales forecasts in AER/ECAC proceedings.

26. The AER should be removed from ERAM.

27. Edison, PG&E, and SDG&E have submitted proposed tariffs to implement the revised AER/ECAC procedures.

28. Staff has suggested several modifications to the proposed tariffs which are not contested by the sponsoring utilities.

29. The Revenue Requirements Division's proposed tariff language was modified at hearing.

30. Use of the actual or earned rate of return as the carrying cost of adopted fuel oil inventory recovered in ECAC is preferable since it avoids a guaranteed return to the utility.

31. Use of the authorized rate of return for the AER portion of the adopted fuel oil inventory is appropriate.

32. For oil inventory above the adopted inventory level, the three-month commercial paper rate should be used as the carrying cost.

33. SDG&E's carrying cost of fuel oil inventory should be the interest rate on bankers' acceptances.

Conclusions of Law

1. The Commission should revise the AER/ECAC procedure to conform with the above Findings of Fact.

2. This order should be made effective today so that the revised AER/ECAC procedure can be implemented with the currently pending reasonablenss reviews of Edison and PG&E.

FINAL ORDER

IT IS ORDERED that:

1. Southern California Edison Company (Edison), Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), and Sierra Pacific Power Company (Sierra Pacific) shall file tariffs consistent with this decision within 30 days of the effective date of this order.

2. Edison, PG&E, SDG&E, and Sierra Pacific are subject to the revised AER/ECAC procedure with the following AER/ECAC splits and earnings caps:

Utility	AER/ECAC	Earnings Cap
Edison	10%/90%	160 basis points
PG&E	7%/93%	140 " "
SDG&E	8%/92%	120 " "
Sierra Pacific	22%/78%	120

3. The carrying cost of fuel oil inventory shall be calculated in the manner set forth in this decision

A table of 1981 interest coverage ratios is as follows:

Utility	Interest Coverage in 1981
Edison	2.24
PG&E	2.00
SDG&E	1.94
Sierra Pacific	1.79

From the above table, the witness noted that Edison had the best ratio and the other three utilities were in worse financial condition. He then concluded that an earnings cap of 160 basis points should have no impact on the cost of capital for any of the utilities. Accordingly, he recommends adoption of a uniform 160 basis points cap for the four utilities.

E. Adopted Earnings Caps

We will adopt the following earnings caps:

PG&E	140 basis points
SDG&E	120 " "
Sierra Pacific	120 " "

Our decision is guided by the principle that the utilities should receive equivalent treatment. As advocated by most of the parties, we have used the 160 basis points cap adopted for Edison as a benchmark to derive comparable earnings caps for the other utilities. We are attempting to adopt earnings caps which will have similar financial impact on the four utilities.

Unfortunately, a comparison of one utility with another does not automatically produce an answer. Each utility's financial condition is measured by many statistics and recorded data. Selection of a particular statistic or use of different recorded data often will dictate the outcome of the comparison. As a result, the judgment used in selecting and evaluating the universe of available information becomes the most important and debatable factor. This is apparent from the varying earnings caps recommended by the parties to with our interim order, which applied SCE's basis point cap to the common equity portion of their electric operations, which closely approximates total jurisdictional rate base.[3] In doing so, we recognize that our approach utilizes a conservative definition of total common equity and possibly a conservative application of financial theory. However, we believe that, in developing new incentive mechanisms to place additional risks (as well as potential returns) on utility shareholders, we should proceed with a degree of caution.

The exposure of the utilities at this time is as follows:

Utility	Total Rate Base[4]	Common Equity Ratio	Adopted Earnings Cap	Extreme Variations In Earnings (Cap Limitation)
PG&E	$6,691 million	41%	140 basis points	±$38.4 million ✓
SDG&E	$1,505 million	37.25%	120 basis points	±$ 6.7 million
Sierra Pacific	$ 60.5 million	38.5%	120 basis points	±$280,000

	Total Variation In Earnings
PG&E	$77 million
SDG&E	$13.4 million
Sierra Pacific	$560,000

3. In addition to electric rate base operations, SCE has a small natural gas facility on Santa Catalina which represents approximately $600,000 in rate base. Its commission does not significantly affect total rate base figures.

4. For PG&E, total rate base is approximated by the most recent Commission authorizations for electric, and gas department rate base, including 1982 attrition allowances.

For SDG&E, total rate base is approximated by the Commission authorizations for electric and gas department rate base, including 1982 attrition allowances.

For Sierra Pacific, total rate base was provided by Sierra Pacific and multiplied by an 8% California jurisdictional factor.

equals the limit on earnings variability, we can express our formula for calculating the AER percentage as follows:

$$\frac{\text{earnings cap}}{\text{AER\%}} \div \frac{\text{extreme fuel variation}}{1.96} = 1.31, \text{ or}$$

$$\text{AER\%} = \frac{\text{earnings cap limitation}}{\text{plausible extreme variation in annual energy-related expenses}} \times 1.5$$

Under this formula, the calculated AER% causes the shareholder to absorb the earnings cap limitation approximately 19% of the time. In years of lesser variation, the ratepayers and shareholders share the benefits or losses proportionately. Both groups are held liable for a consistent percentage of total energy expense forecast error up to the adopted earnings cap limitation. The calculated AER/ECAC splits are:

A. PG&E

$$\frac{\text{\$38.4 million earnings cap} \times 1.5}{\text{\$623 million plausible extreme variation}} = 9\% \text{ AER}$$

Staff suggested that we use a plausible extreme variation of $730 million which includes Diablo. However, we choose to use PG&E's extreme variation of $623 million which excludes Diablo since the commercial operating date of Daiblo is unknown at this time. Neither staff nor PG&E attempted to include the impact of Helms in their figures.

B. SDG&E

$$\frac{\text{\$6.7 million earnings cap} \times 1.5}{\text{\$122 million plausible extreme variation}} = 8\% \text{ AER}$$

We have use SDG&E's recommended extreme variation in annual energy-related expense which includes SONGS 2 and 3 as well as planned improvements in transmission from the southwest. The staff has used the same total plausible variation.

C. Sierra Pacific

$$\frac{\text{\$280,000 earnings cap} \times 1.5}{\text{\$1,913,000 plausible extreme variation}} = 22\% \text{ AER}$$

associated with a higher sales volume, even though their actual energy costs are lower than projected. Meanwhile the ratepayer would be liable for the shortfall in AER revenue due to lower than predicted sales. Hence, we would be back to a situation that ERAM was designed to eliminate: If we keep the AER in ERAM as advocated by staff, we will create controversy over sales forecasts in our AER/ECAC proceedings. Furthermore, we could be inadvertantly developing an incentive mechanism that was not the subject, nor intention of this proceeding.

We note that both PG&E and SDG&E have calculated plausible extreme variations in annual energy-related expense without including a factor for sales forecasting error. Furthermore, it appears from Sierra Pacific's testimony that its calculation also does not include

4. Staff analysis, however, does not disclose a substantial risk differential between PG&E and Edison.

5. Equal weighting of PG&E and staff evidence is appropriate, resulting in a 140 basis points cap for PG&E.

6. SDG&E at this time bears more risk than Edison.

7. SDG&E's first method of approximating fuel cost variation resulting in a 122 basis points cap is superior to the other methods.

8. An earnings cap of 120 basis points for SDG&E fairly represents the relative risk at this time faced by SDG&E as compared to Edison and PG&E.

9. Sierra Pacific did not develop an earnings cap recommendation.

10. An earnings cap as high as 160 basis points for Sierra Pacific is supported in this record.

11. Only 8% of Sierra Pacific's total operations are conducted in California.

12. An earnings cap of 120 basis points equal to the lowest cap set for the other electric utilities is appropriate for Sierra Pacific because of its limited California operations.

13. Application of the adopted earnings caps to conservative total rate base figures is reasonable at this time.

14. Edison can be expected to encounter its $\pm$160 basis point limitation about 19% of the time.

15. It is reasonable to approximate each company's frequency distribution for fuel-related expenses with a normal frequency distribution.