Decision **PROPOSED DECISION OF ALJ O'DONNELL (Mailed 10/31/2005)**

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Application of Southern California Edison Company (U 338-E) for Authorization: (1) to Replace San Onofre Nuclear Generating Station Unit Nos. 2 & 3 (SONGS 2 & 3) Steam Generators; (2) Establish Ratemaking for Cost Recovery; and (3) Address Other Related Steam Generator Replacement Issues.	Application 04-02-026 (Filed February 27, 2004)

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I. Summary

By this order, we present our findings as to the cost-effectiveness of the steam generator replacement program (SGRP) proposed by Southern California Edison Company (SCE) for San Onofre Nuclear Generating Station Units 2 & 3 (collectively SONGS, separately Unit 2 or Unit 3), and related matters.[1] Based on these findings, we approve the SGRP subject to the requirements imposed herein. In addition, we certify the Final Environmental Impact Report (Final EIR) as the Environmental Impact Report (EIR) for the SGRP pursuant to the California Environmental Quality Act (CEQA).

Based on our analysis of the SGRP as discussed herein, we find that:

- The SGRP is marginally cost-effective.
- $680 million ($569 for replacement steam generator installation and $111 million for removal and disposal of the original steam generators) is a reasonable estimate of the total SGRP cost, excluding accumulated Allowance for Funds Used During Construction (AFUDC).[2]
- We will conduct an after-the-fact reasonableness review of the replacement steam generator installation costs, and the costs of removal and disposal of the original steam generators. The reasonableness review of the removal and disposal costs for the original steam generators may be done in a separate review if removal and disposal is completed a significant amount of time after SONGS resumes commercial operation.

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[1] San Onofre Nuclear Generating Station Unit 1 (Unit 1) is shut down and undergoing decommissioning.

[2] All dollar figures are in 2004 dollars unless otherwise specified.

- The maximum allowable SGRP cost (cap) is $680 million ($569 million for replacement steam generator installation and $111 million for removal and disposal of the original steam generators) plus accumulated AFUDC, multiplied by SCE's ownership share. The cap applies to total SGRP costs. To the extent that replacement steam generator installation costs are less than $569 million, more funds may be used for removal and disposal of the original steam generators, and vice versa. However, SCE will not be allowed to recover total SGRP costs in excess of the cap.
- SCE may record in a balancing account the revenue requirement associated with the steam generator replacement for each unit as of the date of operation of each unit.
- SCE may record in a balancing account the revenue requirement associated with the removal and disposal of the original steam generators for each unit as of the date removal and disposal is completed.
- SCE may include the revenue requirement for steam generator replacement for each unit in rates, subject to refund pending the results of the reasonableness review, on January 1 of the year following commercial operation of each unit. Implementation shall be by advice letter.
- SCE may include the revenue requirement for removal and disposal of the original steam generators for each unit in rates, subject to refund pending the results of the reasonableness review, on January 1 of the year following completion of the removal and disposal of the original steam generators for each unit.[3] Implementation shall be by advice letter.
- After completion of the SGRP, SCE will be required to file an application for inclusion of the SGRP costs permanently in rates. The reasonableness review of such costs shall be conducted in

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[3] The calculation of the amount to be included in rates shall recognize the recovery of 20% ($22.2 million) of the costs of removal and disposal of the original steam generators for both units through depreciation over 2006-2011.

connection with the application. In the event the removal and disposal of the original steam generators is delayed significantly beyond the commercial operation dates of both units, it may be addressed in a subsequent application.

- SCE is authorized to recover through depreciation a total of 20% ($22.2 million) of the estimated costs of removal and disposal of the original steam generators for both units over 2006-2011.
- In future ratemaking proceedings that determine the revenue requirement associated with SONGS operations and maintenance (O&M) costs and capital additions, the O&M costs and capital additions shall not exceed the amounts shown in Attachment A.

San Diego Gas & Electric Company (SDG&E), a co-owner of SONGS, has elected not to participate in the SGRP. Its participation is not addressed herein, and will be addressed in an application to be filed by SDG&E pursuant to § 851.[4]

The Commission retains the discretion to determine the appropriate ratemaking treatment, including the possibility of a reasonableness review of costs incurred, if the SGRP is cancelled for any reason.

II. Background

SONGS is currently in operation with a capacity of approximately 2,150 megawatts (MW). It is located on the California coast 62 miles southeast of Los Angeles, in San Diego County, near the City of San Clemente. The site is located within the boundaries of the Camp Pendleton Marine Corps Base. Each of the two units has two steam generators manufactured by Combustion Engineering, Inc. (CE). In each steam generator, the heat from water circulated through the reactor is used to turn another stream of water into steam to power turbines that turn electric generators.

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[4] All section references are to the Public Utilities Code unless otherwise specified.

SONGS is currently licensed by the Nuclear Regulatory Commission (NRC) to operate until 2022. SCE estimates that SONGS will likely be required to shut down because of the degradation of the steam generators in 2009. As a result, SCE is requesting approval of the SGRP in this application.

Hearings were held from January 30 through February 11, 2005. The application was submitted on June 21, 2005.

III. SCE's Request

In this application, SCE requests that the Commission approve the replacement of SONGS' steam generators. Specifically, SCE requests that the Commission:

- Find it reasonable to perform the SGRP.
- Provide for rate recovery of construction financing costs as they are incurred, subject to a reasonableness review.
- Provide for an increase in SONGS depreciation expense beginning in 2006 and ending in 2011 to provide for the removal and disposal of the original steam generators, subject to a reasonableness review.
- Provide for each unit's portion of the SGRP costs to receive ratebase recovery (not to exceed the estimate of reasonable costs) upon their completion, subject to a reasonableness review.
- Establish an estimate of the reasonable cost of $569 million (total project), excluding construction financing costs, and removal and disposal costs for the original steam generators, subject to a reasonableness review.
- Find that the SGRP will have no significant immitigable potential environmental impact.
- Determine that the impact on SCE and its ratepayers of a reduction in SDG&E's ownership share will be addressed in SDG&E's § 851 application.

SCE requests that approval of the SGRP in this proceeding means that the Commission will not disallow SGRP costs on the basis that the decision to undertake the SGRP is unreasonable.

We note that in this proceeding, SCE provided a detailed explanation of its request along with substantial documentation. Therefore, we find that it presented a prima facie case. As a result, in this decision we will address only those areas where there are differences between SCE and one or more parties.

IV. SDG&E Participation in the SGRP

This application was filed by SCE alone. Pursuant to the operating agreement among the owners of SONGS, SDG&E has chosen not to participate in the SGRP. Therefore, we will analyze the SGRP for SCE assuming that SDG&E does not participate.

As a result of its decision not to participate in the SGRP, and pursuant to the operating agreement between the owners of SONGS, SDG&E's ownership share of SONGS will be reduced, and SCE's ownership share will be increased in the same amount if the SGRP is performed. The reasonableness of the transfer of all or part of SDG&E's ownership share to SCE will be addressed in SDG&E's future § 851 application. The scope of that proceeding will be determined therein.

V. Need for and Timing of the SGRP

This section addresses the question of whether the SGRP is needed and, if needed, when it should be performed. The parties agree that the original steam generators will need to be replaced if SONGS is to continue operating to the end of its license lives.

The timing of the SGRP is dependent upon the degradation of the original steam generators, and the availability of replacement steam generators. SCE states that Refueling and Maintenance Outage (RFO) 16, which may begin as soon as 2009, is the earliest that the SGRP can be performed because of the approximate five-year lead time for steam generator fabrication.[5] No party disputes this claim.

SCE states that there is a 25% probability that the Unit 2 steam generators will not be able to operate beyond RFO 16. It also says that there is a 15% probability that the Unit 3 steam generators will not be able to operate beyond RFO 16. SCE argues that it would be irresponsible to wait beyond RFO 16 to perform the SGRP because the probability of an unplanned shutdown would be too great.

The Utility Reform Network (TURN) states that SCE has not justified why its estimated 25% probability of shutdown in RFO 16 justifies performing the SGRP at that time. TURN points out that other utilities have requested and received higher plugging limits from the NRC.[6] TURN, therefore argues that SCE has not addressed this possibility. TURN also states that due to the uncertainty in the steam generator tube degradation forecast, the tube plugging limit, and the point at which the probability of shutdown justifies that the SGRP

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[5] An RFO is when a unit is taken out of service to refuel the nuclear reactor, and perform repairs and maintenance. RFOs for each unit are generally performed sequentially so that both units are not out of service at the same time.

[6] If failing steam generator tubes can't be repaired, they are removed from service by inserting plugs (plugging). If they can be repaired, the repair is accomplished by inserting a sleeve inside the tube that spans the problem area (sleeving). Since a sleeve restricts coolant flow through the repaired tube, a specified number of sleeved tubes is considered equivalent to a plugged tube. The plugging limit is the maximum number of plugged tubes (including equivalent sleeved tubes) that would still allow adequate coolant flow through the steam generator. For SONGS, the coolant is water.

be performed, it is possible that SONGS could operate until at least one or two RFOs later.[7] TURN, therefore, recommends that such a possibility should be modeled.

SDG&E states, based on steam generator tube degradation forecasts prepared by Dominion Engineering, Inc. (DEI) for SCE, that there is a 67% probability that Unit 2 will operate until RFO 17 in 2011 and a 56% probability that Unit 3 will continue to operate until RFO 20 in 2016.[8] Therefore, SDG&E recommends that the SGRP, if it is to be performed, be delayed by at least one RFO for Unit 2, and up to three RFOs for Unit 3. In the interim, the replacement steam generators would be stored.

The SGRP is needed if SONGS is to continue operating through the end of its license lives. If the SGRP is to go forward, any delay in doing so would result in more monies being spent to repair and maintain the original steam generators, and store the replacement steam generators, without a corresponding decrease in the cost of the SGRP. The replacement steam generators will not be available before 2009. If the SGRP is to be performed, it makes no sense to spend additional funds to keep the original steam generators in operation. Therefore, if the SGRP is to go forward, it should do so on the schedule proposed by SCE.

VI. SCE's Cost-Effectiveness Model

In its cost-effectiveness evaluation, SCE calculated the present value of the revenue requirement associated with the total benefits and costs resulting from

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[7] RFOs occur at approximately 18 month intervals for each unit.

[8] See section VII.I for a more complete discussion of tube degradation forecasts.

the SGRP, excluding the SGRP costs, from 2004 through 2022.[9] This total net benefit, or cost, is divided by the present value of the revenue requirement associated with the SGRP costs to obtain the benefit-to-cost ratio. A ratio of one or greater means the SGRP is cost-effective. A ratio of less than one means that it is not cost-effective. Since no party has expressed particular concerns with SCE's model apart from the inputs, we will use SCE's model. However, instead of using the benefit-to-cost ratio, we will use SCE's model to calculate the net present value of the revenue requirement resulting from the total net costs and benefits of the SGRP including the SGRP costs (NPV). A negative NPV would indicate that the SGRP is not cost-effective.

We will now address the parties' concerns regarding various model inputs.

VII. Model Inputs

A. Cost of the SGRP

SCE estimates the cost of the SGRP at $680 million (100% level).[10] This includes $569 million for replacement steam generator installation, and $111 million for removal and disposal of the original steam generators. These estimates include a contingency amount to address uncertainties associated with the fact that the estimates are preliminary and conceptual. Of the $680 million,

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9 The calculation involves determining the benefits and costs both with and without the SGRP.

10 100% level is the total for the project. Individual participating owners' shares will be a portion of this amount. These numbers exclude construction financing costs, and allowance for funds used during construction.

$141 million (26%) is for contingencies.[11] SCE states that the level of contingencies in its estimate is sufficient to cover all known risks.

TURN states that there is a significant risk of cost overruns. Therefore, unless the Commission adopts a cost cap, TURN recommends that a 20% cost overrun be modeled.

Aglet Consumer Alliance (Aglet) states that the costs for removal and disposal of the original steam generators are especially uncertain due to the costs of cutting large holes in the containment structures for removal of the original steam generators and installation of the new ones, and the lack of documentation from the intended disposal contractor concerning its ability to accept the original steam generators.

SDG&E represents that SCE historically has been unable to reliably forecast its SONGS capital budget. For example, in January 2000, SCE forecasted its capital additions for 2004 at $37 million, whereas actual additions were $143 million. SDG&E states that, while SCE's first capital additions forecasts for 2005 and 2006 were $50 million and $80 million respectively, SCE's most recent forecasts are $114 million for each of these two years. SDG&E does not allege that SCE is imprudent in its estimates. SDG&E represents that such forecasts of capital costs for nuclear projects, such as the SGRP, are inherently unreliable due to the exposure to events beyond the utility's control.

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[11] In this proceeding, SCE defined "contingencies" as a specific provision for unforeseeable costs within the defined project scope. SCE estimated $131 million for such contingencies. SCE also added an additional $10 million for growth in the scope of the SGRP, which it calls "additional adjustments." For simplicity, we use the term "contingencies" in this decision to include both the contingencies and additional adjustments amounts included by SCE.

California Earth Corps (CEC) states that SCE has inadequately considered the costs associated with transportation of the replacement steam generators, and transportation and disposal of the original steam generators. As an example, CEC states that SCE did not consider whether there will be a sufficient work force to perform the SGRP given the SGRP planned by Pacific Gas and Electric Company (PG&E) for 2008 and 2009. CEC also states that SCE's cost estimate for steam generator removal and transportation is based upon the estimates for Unit 1 which involved one trip across the beach at a cost of $4 million (2002 dollars), whereas the SGRP will involve at least four trips, for which SCE has estimated a cost of only $8.9 million.

CEC states that, regarding environmental mitigation, SCE uses a $6.4 million contingency to cover all costs associated with mitigating environmental impacts without having had discussions with the permitting agencies or identifying what the mitigation measures might be. CEC recommends that SCE be required to redo its estimates of environmental analysis and mitigation once the Final EIR is done, and rerun its cost-effectiveness analysis based on those results.

No party has represented that SCE's SGRP cost estimate is too high. As discussed later in this decision, we impose a cap on SGRP costs, including removal and disposal of the original steam generators, based on SCE's estimates. Since SCE may not recover SGRP costs in excess of the cap, we need not address specific increases to the SGRP cost estimate above the cap. Therefore, SCE's SGRP cost estimate is reasonable for use in determining the cost-effectiveness of the SGRP. Notwithstanding the above, we will include the effect of a 10% increase in SGRP costs in our cost-effectiveness analysis to determine the sensitivity of the cost-effectiveness of the SGRP to such increases.

B. O&M Costs

SCE's O&M costs have two components; the base O&M costs, and the costs for steam generator repairs and inspections (RFO O&M costs). SCE forecasted SONGS base O&M costs and RFO O&M costs for 2004 through 2022 based on 2004 recorded costs, the 2005 budget and the test year 2006 general rate case (2006 GRC) estimates.[12]

For RFO O&M costs in the SGRP case (if the SGRP is performed), SCE assumed that it would not incur steam generator inspection costs during RFO 16 because the original steam generators will be replaced at that time rather than inspected. Thereafter, SCE assumed that steam generator inspections would occur in every other RFO rather than in every RFO as is currently the case. SCE also assumed that if the SGRP is performed, there would be no steam generator repair costs in subsequent RFOs. In the shutdown case (if the SGRP is not performed), SCE used the same methodology for 2004 through 2009, at which point SONGS would shut down.

SCE states that it developed a high O&M cost estimate that is 10% above its 2006 GRC estimate. It states that the high O&M cost estimate reasonably bounds most unforeseeable regulatory and extraordinary operating expenses.

TURN states that due to the uncertainties relating to future operations, the Commission should direct SCE to use the 2006 GRC estimate for base O&M costs as the base case, and to include a high case that is 20% above the 2006 GRC estimate.

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[12] SCE's 2006 GRC is Application 04-12-014.

TURN states that recorded RFO O&M costs for RFOs 12 and 13 were higher than the amount included in SCE's 2006 GRC forecast. In addition, TURN points out that SCE's witness Perez testified that one-time costs for Unit 3's RFO 14 will exceed SCE's forecast. Therefore, TURN recommends that SCE be required to model RFO O&M costs 10% above the amount included in its 2006 GRC as the base case, and to model a high case that assumes a 20% increase over the base case.

SDG&E states that SCE's inability to accurately forecast SONGS O&M costs is comparable to its inability to forecast its capital expenditures. SDG&E represents that SCE's SONGS O&M budget for 2004 was $40 million above the amount forecasted in its 2003 GRC.[13] SDG&E points out SCE's base O&M forecast based on its 2006 GRC is about 12% higher than its initial forecast in this proceeding due to previously unforeseen NRC compliance requirements.

As discussed above, SCE's history with respect to O&M costs demonstrates that O&M costs are likely to exceed its estimates, and that there will likely be future O&M costs that are not currently known. Since SCE states that its high O&M cost estimate, 10% above the 2006 GRC estimate, bounds most unforeseeable regulatory and extraordinary operating expenses, and we are estimating expenditures up to 17 years in advance in this proceeding, we find SCE's high O&M estimate (base O&M plus RFO O&M) reasonable and will use it in our base case. We will also consider the effect of a 10% increase above this level to determine the sensitivity of the cost-effectiveness of the SGRP to such increases.

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[13] $40 million is about 10% of the recorded total 2004 O&M costs.

C. Capital Additions

For the SGRP case, SCE forecasted its capital additions based on 2004 recorded capital additions, the forecast in its 2006 GRC, and an averaging methodology for 2009-2022. It then reduced the forecast amounts by 20% in 2019, 40% in 2020, 60% in 2021, and 80% in 2022, to reflect the fact that SONGS would not be operated beyond 2022. For the shutdown case, SCE used the base capital additions scenario for 2004-2009. It then reduced the forecast amounts by 40% in 2007, 60% in 2008, and 80% in 2009, to reflect the fact that SONGS would not be operated beyond 2009.

SCE states that it developed a high capital additions estimate that is 22% above the 2006 GRC estimate. It represents that a review of data for 1987-2004 shows that actual costs exceeded forecasts developed 5 years before by approximately 25%. It also says that excluding post-911 security measures in 2004 from the analysis yields a 15% variance. SCE states that its high capital additions estimate reasonably bounds the uncertainty inherent in its capital additions forecast.

TURN points out that SCE originally modeled a high case that assumed capital additions 50% over its estimate. Since then, it filed its 2006 GRC with higher estimated capital additions. In addition, it presented to the SONGS Board of Review a still higher number.[14] Therefore, TURN recommends the Commission direct SCE to revise its modeling of capital additions to include a high case with capital additions 50% over those included in the 2006 GRC.

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[14] The SONGS Board of Review consists of representatives of the owners of SONGS. It oversees the SONGS budget and other matters related to SONGS.

Aglet states that SCE's capital additions forecasts do not fairly incorporate the risks of major additions due to increased security requirements, seismic requirements, or environmental mitigation requirements. Aglet also argues that SCE's forecasts do not reflect changing regulatory incentives regarding capital additions. For example, Aglet states that from the beginning of commercial operations through 1995, capital additions increased. From 1996-2003, SCE was under incentive ratemaking for SONGS, during which period capital additions declined. In 2004, when cost-of-service ratemaking resumed, capital additions increased. For these reasons, Aglet states that capital additions will likely increase over time, and SCE's high capital additions estimate is more likely to occur than its base case.

SDG&E states that, for the reasons discussed above, SCE's inability to control costs calls into question SCE's capital additions estimates.

CEC states that SCE failed to include in its capital additions estimates the effects of ageing power plant components. CEC represents that industry experience shows that nuclear power plants experience increased costs for repair and replacement of components in the early and the late years of operations, and that steam generator degradation is an example of the effect of ageing. CEC cited as an example a fire in 2001 that was started by a worn-out circuit breaker, and resulted in $100 million in unanticipated costs. CEC also cites as an example the $64 million reactor head replacement project, included in SCE's cost-effectiveness evaluation, the need for which was not known a year previously. CEC further states, based on industry experience at the Davis-Bessee Nuclear Power Plant, that there is at least a 1.4% chance that one of the SONGS units will require $630 million in additional capital expenditures if the SGRP is performed.

For the above reasons, CEC recommends that the Commission require SCE to rerun its cost-benefit analysis using a reasonable estimate of the costs for repair and replacement of ageing components. In the alternative, CEC recommends that the Commission factor in an additional $630 million in future capital additions. CEC also asserts that additional costs due to uncertainties related to unforeseen events and the uncertainty of how the NRC would react to them should have been included in SCE's cost-effectiveness analysis.

Data for 1987-2004 shows that actual costs exceeded the forecast developed five years before by approximately 25%. SCE states that its high capital additions estimate (22% above the 2006 GRC estimate) reasonably bounds the uncertainty inherent in its capital forecast. The 25% historical variance between estimates five years in advance and actual expenditures reflects the fact that there will be unanticipated costs due to ageing, changing NRC requirements, or some other reason. In this proceeding, we are estimating expenditures up to 17 years in advance rather than five years. Therefore, we find that a capital additions estimate of 25% above the 2006 GRC estimate is reasonable and appropriate for use in our base case. We will also consider the effect of a 10% increase above this level to determine the sensitivity of the cost-effectiveness of the SGRP to such increases.

D. Security Measures

CEC believes that there is a high probability that the NRC will impose more stringent security requirements on SONGS. To illustrate its point, it states that on September 17, 2004, the United States Court of Appeals for the District of Columbia issued an order that states that the NRC will commence a rulemaking proceeding to consider revisions to the design basis threat that forms the basis for the NRC's security requirements at nuclear power plants. CEC also says that the Government Accountability Office (GAO), in testimony before a House of Representatives subcommittee, said that the NRC could not assure that commercial nuclear power plants were safe from terrorist attack. CEC says the GAO reported that the Department of Energy is reviewing the security requirements for its nuclear power plants. CEC notes that the current requirements do not include defense against terrorist attacks by airplanes. CEC contends that additional security requirements will be imposed by the NRC to address defense against a terrorist attack by airplane that will result in increased capital and O&M costs that should be included in the cost-effectiveness evaluation of the SGRP. CEC provided three scenarios to illustrate its estimates of the increased security costs:

- The first scenario assumes that SONGS stays in operation. CEC estimates that additional security requirements would result in additional capital costs of $374 million spread over the first two years, and $12.5 million per year thereafter until the reactors are shut down. Annual O&M costs would increase by $54.5 million until the reactors are shut down, and $16 million per year after shutdown.[15]
- The second scenario assumes that SONGS is permanently shut down when the requirements are put into effect. It also assumes that a lesser level of enhanced defenses would be put in place only to safeguard spent fuel. CEC estimates that the additional capital costs would be $154 million spread over the first five years after shutdown, and $3.4 million per year thereafter. The additional annual O&M costs would be $16 million per year after shutdown.

[15] CEC does not say what the annual O&M costs would be after shutdown, but presumably they would be $16 million as in the second and third scenarios.

- The third scenario assumes that SONGS continues in operation for three years after initiation of the security requirements, and then is shut down.[16] CEC estimates that the additional capital costs will be $201.5 million spread over the first three years. The additional O&M costs would be $35 million per year for the three years the reactors are operating, and $16 million per year after shutdown.

Based on the above, CEC recommends that SCE be required to rerun its model with the above cost estimates, and perform a sensitivity analysis.

CEC's first scenario corresponds to continued operation more than three years after the enhanced requirements are put into effect. This corresponds to both the case where the SGRP is performed and the case where the SGRP is not performed, unless it is known at the time the security requirements are put into effect that neither SONGS unit will continue in operation for more than three years. Given the uncertainty as to when SONGS will shut down if the SGRP is not performed, this appears to be the most likely of the three scenarios both with and without the SGRP.

CEC's second scenario has both SONGS units permanently shutting down when the enhanced security requirements are put into effect. Since the replacement energy cost for one unit is substantial, it could be cost-effective to implement security requirements even if SONGS has only a few years of life remaining. Therefore, this scenario is unlikely.

CEC's third scenario assumes that the NRC would exempt SONGS from some of the new security requirements because it will not continue in operation

[16] This scenario assumes that the enhanced security requirements include more stringent steam generator tube integrity requirements that lead to shutdown in three years.

for more than three years. Since it is uncertain when either of the SONGS units will shut down without the SGRP, it appears unlikely that the NRC would impose lesser security requirements. As a result, this scenario is unlikely.

CEC appears to believe that enhanced security requirements will be imposed within the next few years. In that case, its first scenario would apply whether or not the SGRP is performed. The only effect on the cost-effectiveness analysis would be that the reduction in the increased O&M costs from $54.5 million to $16 million due to shutting SONGS down would occur at a later date.

We have no basis in the record for estimating the probability of the occurrence of future increased security requirements or their timing. As discussed above, CEC's assumption that lesser additional security requirements would be imposed if SONGS is shut down at the time of imposition is unlikely. Based on CEC's representations most, if not all, of any new security requirements would be imposed on SONGS with or without the SGRP. In addition, the costs estimated by CEC are illustrative examples rather than estimates based on known requirements. For the above reasons, we will not adopt CEC's cost estimates. However, the possibility of future increased security requirements supports our earlier conclusion that some increase in future O&M costs and capital additions above the amount forecast by SCE is appropriate.

E. Extended Outage

SCE did not specifically model the impact of an unplanned outage at SONGS over its remaining lives. However, it states that the difference between an 88% capacity factor and an 84% capacity factor is 350 days of operation. Therefore, SCE represents that the effect of a one-year outage is approximately equal to the effect of a reduction in the capacity factor from 88% to 84%.

TURN states that 16 domestic nuclear plants have experienced outages over 12 months since January 1, 1990, and at least six other plants have had outages of nine to twelve months. Therefore, TURN says that it is reasonable to consider the potential for a year-long outage in evaluating the cost-effectiveness of the SGRP. TURN notes that a reduction of the capacity factor from 88% to 84% would be a partial proxy for such an outage.

The effect of a one-year outage on the SGRP's cost-effectiveness will vary, depending on when it occurs due to the time value of money. Therefore, since the discount rate generally exceeds the escalation of the cost components in the cost-effectiveness analysis, the effect decreases over time. Utilizing a 4% reduction in the capacity factor as a proxy spreads the outage over the remaining life of the plant, which means that the actual costs of a one-year outage could be a greater or lesser amount depending on when it occurs. The record does not demonstrate that a one-year outage is likely.[17] Therefore, we will not include a one-year outage in our base case. However, we will include a one-year outage in our cost-effectiveness analysis to determine the effect of such an outage.

F. Capacity Factor

SCE based its 88% capacity factor on the nine-year average for 1996-2004.

TURN agrees that an 88% capacity factor is reasonable for a base case. It recommends that an 84% and an 80% capacity factor be used in the cost-effectiveness analysis to reflect the fact that SONGS has had lower capacity

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[17] Out of 102 operating nuclear plants in the United States, less than one percent experienced a shutdown of one year or longer in the last seven years. Less than 15% experienced a shutdown of one year or longer in the last 15 years.

factors in the past (SONGS averaged an 84.89% capacity factor between 1988 and 2003).

Aglet finds SCE's use of an 88% capacity factor reasonable.

Since an 88% capacity factor reflects the average for 1996-2004, and the parties have no objection to it, we find it reasonable and will use it in our base case. We will also include 92% and 84% capacity factors in our analysis to examine the effect of variations in the capacity factor on cost-effectiveness.

G. Replacement Energy Costs

There are two components to SCE's replacement energy costs: replacement generation capacity, and electricity production costs. Replacement generation capacity measures the benefit of deferring construction of 2,150 MW of replacement generation from 2009 to 2022. Electricity production costs are the costs to operate the replacement generation.

SCE assumed that replacement generation would consist of combined-cycle gas turbines (CCGT) with a heat rate of 7,250 Btu/kWh.[18]

SCE used models to forecast electricity production costs that require a gas price forecast as an input. SCE's gas price forecast assumed that liquefied natural gas would be imported to southern California. SCE represents that its forecast is conservative because it assumes lower gas prices than are presently occurring in the market.

TURN points out that, in Decision (D.) 03-12-059 and D.04-06-011, the Commission approved CCGTs with heat rates of 7,100 Btu/kWh for the Mountainview Power Project (Mountainview), and 6,971 Btu/kWh for Calpine

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[18] The heat rate is the amount of heat in British thermal units (Btu), from burning natural gas, that is necessary to generate one kilowatt-hour (kWh) of electricity.

Corporation's Otay Mesa Power Plant (Otay Mesa), respectively. As a result, TURN recommends the use of 7,100 Btu/kWh for this proceeding.

TURN states that there is a possibility that SCE's Mohave Generating Station (Mohave) will return to service in the 2009-2010 time frame, and recommends that this possibility be considered.

In D.03-12-059, the Commission authorized SCE to acquire Mountainview Power Company, LLC (MPC) as a wholly owned subsidiary of SCE and to enter into a power purchase agreement with MPC for the purchase of electricity from Mountainview. Mountainview is a CCGT with a target heat rate of 7,100 Btu/kWh. The target heat rate is the heat rate for the new plant after no more than 100 hours of operation. It is not the heat rate that would be expected over the life of the plant. The heat rate over the life of the plant would likely be higher due to the effects of ageing. SCE's forecast heat rate is approximately 2% higher than the Mountainview target heat rate.

By D.04-06-011, the Commission authorized SDG&E to execute the Otay Mesa Power Purchase Agreement (PPA) and recover the costs through commodity rates. Otay Mesa is a CCGT currently under construction by Calpine Corporation. It will have a nominal output of 585 MW, with guaranteed base load and peak heat rates of 6,971 and 7,230 Btu/kWh, respectively. This means that the actual heat rates achieved by Otay Mesa will be between 6,971 and 7,230 Btu/kWh, or within 4% of the value used by SCE. Otay Mesa has water available for cooling, which helps it achieve its low heat rate. Additionally, the PPA is only for the first 10 years of the plant's life. The heat rate over the life of the plant will likely be higher due to the effects of ageing. Therefore, the guaranteed heat rates are for the first ten years of the plant's life, not its entire operating life.

The heat rate used by SCE is for the life of a CCGT, as opposed to the first 100 hours or ten years of operation. It is within 4% of the heat rates used in D.03-12-059, and D.04-06-011. For these reasons, we find the 7,250 Btu/kWh heat rate used by SCE reasonable.

In D.04-12-016, the Commission authorized SCE to make expenditures on Mohave to allow continued operations after 2005, and to study options regarding continued operation or replacement of Mohave's power generation. SCE was also directed to evaluate other viable procurement options to be used in conjunction with Mohave. The Commission's stated goal is to return Mohave to service with as short a shut-down period as possible. At this time, it is unknown whether Mohave will be in service after 2005, and at what cost. Therefore, there is no way to include potential Mohave generation in the cost-effectiveness evaluation. As a result, we will not adopt TURN's recommendation that it be considered.

H. Transmission Mitigation

SCE states that the shutdown of SONGS would cause transmission system degradation that could lead to blackouts. Therefore, it represents that significant transmission mitigation would be necessary. SCE assumes that such mitigation would not already be in place and, therefore, included it in its cost-effectiveness evaluation. SCE further represents that such mitigation will need to be in place prior to shutdown to avoid thermal overloading of the transmission system or low voltage conditions that could lead to blackouts. SCE evaluated three transmission mitigation scenarios, and assumed that the SGRP would defer the transmission mitigation costs to 2022.

SCE's first scenario is a reinforced SCE/SDG&E 230 kilovolt (kV) interface (Barre-Ellis 230kV transmission line upgrade). This would consist of a 230kV transmission line upgrade, and the installation of voltage support equipment installed in substations.[19] This is the lowest cost scenario.

SCE's second scenario includes an Imperial Valley-Ramona 500kV transmission line project, and an upgrade to the Path 49 Upgrade Project scope. In addition, additional voltage support equipment would have to be installed at substations. This is the highest cost transmission mitigation scenario.

SCE's third scenario includes the Valley-Rainbow 500kV transmission line project. Additional voltage support equipment would also have to be installed at substations.

TURN argues that SCE's assumption that the SGRP would defer transmission upgrades to 2022 is flawed. It states that, since SDG&E says it will build a 500kV transmission line whether the SGRP is performed or not, it is unreasonable to assume that the SGRP would defer the need for a 500kV transmission line to 2022, even if SDG&E's 500kV transmission line is not completed by 2010 as SDG&E represents.

TURN states that SCE's lowest cost transmission mitigation scenario should be considered the worst case. TURN estimates, based on SDG&E's representation that a 500kV transmission line will be built regardless of whether the SGRP is performed, that only additional voltage support equipment would be needed as transmission mitigation.

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[19] Voltage support equipment is installed to maintain transmission system voltage. The capacity of the equipment is stated in units of reactive power called volt-amperes reactive (VARs). MVARs means millions of VARs.

Aglet states that since SDG&E will add a 500kV interconnection to its transmission system, SCE has overstated the transmission mitigation benefits of the SGRP.

SDG&E states that SCE's transmission mitigation scenarios are incorrect because SCE fails to recognize that SDG&E will construct a 500kV transmission line by 2010 to meet SDG&E's own needs regardless of whether the SGRP is performed. SDG&E acknowledges that it has not yet identified the preferred transmission project, and has not sought formal approval from the Independent System Operator (ISO). However, SDG&E has performed studies that identified several 500kV project alternatives since the fall of 2003 with the ISO's involvement. SDG&E states that the completion of such a project by 2010 is aggressive, but feasible. SDG&E points out that in D.04-12-048, the Commission found its long-term resource plan, which included a 500kV transmission line in the 2010 time frame, to be reasonable to satisfy transmission grid reliability needs. SDG&E states that if it files its transmission line project application in April 2006, and the Commission utilizes a full 18-month review period, a certificate of public convenience and necessity could be issued at the beginning of October 2007. That would leave 33 months to complete the project by 2010. SDG&E states that this schedule is comparable to the schedule SCE contemplates for its Devers-Palo Verde 2 Transmission Project.

SDG&E states that, while its 500kV transmission line will eliminate the need for such a line to mitigate the effect of shutting down SONGS, some voltage support equipment would be needed (598 MVARs). SDG&E estimates the cost of this equipment to be at most $61.25 million, of which $36.25 million (354 MVARs) is attributable to SCE.

SDG&E's long-term resource plan, which includes a 500kV transmission line in the 2010 time frame, was found in D.04-12-048 to be reasonable to satisfy SDG&E's transmission grid reliability needs. If the SGRP is not performed, it appears that Unit 3, and likely Unit 2, will continue in operation beyond 2010. As a result, there appears to be sufficient time for SDG&E to construct such a line. Therefore, we agree with SDG&E that such a transmission line will be built by SDG&E regardless of whether the SGRP is undertaken, and will be available to mitigate the effect of SONGS shutdown. For this reason, and the fact that we are addressing only SCE's costs for transmission mitigation if SONGS shuts down, we need only address the amount of voltage support equipment needed by SCE.

Both SCE and SDG&E agree that additional voltage support equipment will be needed to mitigate the effects of shutting down SONGS. However, they do not agree on the amount. SCE's three scenarios indicate an average of 1,136 MVARs of voltage support equipment to be installed by SCE. SDG&E estimates the total requirement for it and SCE at 598 MVARs, of which 354 MVARS would be attributable to SCE's transmission system. Given the uncertainty as to the exact nature of the transmission line SDG&E will build, we believe that the voltage support equipment requirements proposed by SCE and SDG&E provide a reasonable range (354-1,136 MVARs) of voltage support equipment to be installed on SCE's transmission system. The midpoint of this range is 745 MVARs at a cost of $78.8 million, which we find reasonable and will use in our base case.

I. Tube Degradation

Steam generator tube degradation forecasts are expressed as the percent probability that a unit (its steam generators) will exceed the plugging limit.[20] SCE's tube degradation forecasts are based on statistical forecasts by DEI. SCE adjusted the DEI forecasts (SCE increased the probability that the units would exceed the plugging limit) to include subjective components to account for changes in industry experience, and NRC guidance and requirements.

TURN recommends that SONGS should be assumed to run, in the absence of the SGRP, until the probability of exceeding the plugging limit is 50%. It states that this would be one to two refueling outages later than 2009, based on SCE's information.

Aglet points out that DEI stated that there is a large amount of uncertainty about the forecasts and that there is a new mode of degradation operating at Unit 2. Aglet also states that an SCE file report states that SCE's forecasts of steam generator repairs cannot be used with confidence more than a few refueling cycles into the future. Therefore, Aglet concludes that the rates at which degradation will occur are uncertain.

SDG&E states that SCE's adjustments are 6% for Unit 2, and 12% for Unit 3. SDG&E says that over the last three refueling outages, the trend of actual repairs to DEI forecast repairs reflects that fewer repairs than forecast by DEI were actually needed.

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[20] The forecast may also be expressed as the percentage probability that a unit will continue to operate until a specified date. For example, a 25% probability that a unit will exceed the plugging limit at a specified date is equivalent to a 75% probability that it will continue to operate until that date.

SDG&E states that, based on degradation forecasts prepared by DEI for SCE, without SCE's adjustments, there is a 33% probability that Unit 2 will exceed the plugging limit by RFO 17 in 2011.[21] Likewise, there is a 44% probability that Unit 3 will exceed the plugging limit by RFO 20 in 2017.[22] Therefore, SDG&E states that the SGRP will not be needed according to the schedule SCE proposes. SDG&E further states that it may be reasonable for SCE to acquire the replacement steam generators and to store them against possible future need.

For Unit 2, referring to only the past DEI forecasts without any subjective adjustment by SCE, the RFO 11 and RFO 12 actual repairs were both 30% less than forecast, and the RFO 13 actual repairs were 6% less than forecast. For Unit 3, the RFO 12 actual repairs were 3% more than forecast, and the RFO 13 actual repairs were 55% less than forecast. Therefore, we agree with SDG&E that the actual repairs were generally less than forecast by DEI. Since forecast repairs are based on forecast tube degradation, this means that the actual tube degradation was generally less than forecast by DEI (without SCE's subjective adjustments).

In its application, SCE increased the forecast tube degradation, over the amount forecast by DEI, based on its subjective estimate of the effect of industry experience, and NRC guidance and requirements. This subjective adjustment was an increase of 6% for Unit 2, and an increase of 12% for Unit 3. Since the

[21] This means that there is a 67% probability that Unit 2 will operate until RFO 17 in 2011.

[22] This means that there is a 56% probability that Unit 3 will continue to operate until RFO 20 in 2017.

results of the most recent DEI forecast used by SCE for Unit 2, incorporating more recent data than used in SCE's application, indicate less degradation, one would expect SCE to reduce its degradation estimates accordingly.[23] However, SCE did not do so because, according to its witness, no adjustment was necessary. This means that, since the more recent DEI forecast decreased and SCE's forecast was unchanged, SCE effectively increased its subjective adjustment from 6% to 12% for Unit 2. SCE has not explained why such an increase in its subjective adjustment is reasonable.[24] There may be future effects of industry experience, and NRC guidance and requirements on forecast tube degradation. However, SCE has not shown that its subjective adjustments are reasonable as discussed above. Thus we will base our cost-effectiveness analysis on the most recent DEI degradation forecasts.

The forecast of tube degradation is relevant to when SONGS would shut down if the SGRP is not performed. The record demonstrates that there is considerable uncertainty as to when the steam generators will reach the plugging limit. For determining cost-effectiveness, it is reasonable to assume the steam generators will reach the plugging limit when the probability of doing so is 50%. This is the point at which there is an equal probability they will shut down at an earlier or later date. Therefore, the question we have to address is when this will occur.

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[23] A more recent DEI forecast for Unit 3 was not available until after reply briefs were filed.

[24] The Commission has not previously adopted such subjective adjustments.

The most recent DEI forecasts indicate a 32% probability of Unit 2 reaching the plugging limit by RFO 17 in July 2011, and a 70% probability of reaching the plugging limit by RFO 18 in April 2013. These forecasts also indicate a 46% probability of Unit 3 reaching the plugging limit by RFO 19 in January 2016. This means that without the SGRP, there is approximately a 50% probability that Unit 2 will operate until mid-2012, and that Unit 3 will operate until the beginning of 2016. We find these most recent DEI forecasts reasonable and will use them in our cost-effectiveness analysis without SCE's adjustments. We note that if SCE was to apply for and be granted a higher plugging limit by the NRC, the original steam generators would be allowed to run longer. We also note that SCE has not done so.

J. Recovery of Capital Costs in the Event of an Early Shutdown

SCE states that it has reasonably and prudently maintained the original steam generators. Therefore, SCE believes it should recover all reasonably incurred capital costs for SONGS. In addition, it states that it should recover all reasonably incurred SGRP costs if the Commission denies this application.

TURN points out that an assumption underlying SCE's cost-effectiveness calculation is that, if SONGS shuts down at any time prior to the end of its license lives, the undepreciated plant balance will remain in ratebase and be fully recovered from ratepayers. TURN asserts that in D.85-08-046, the Commission concluded that the early shutdown of Humboldt Bay Unit 3 (Humboldt), a nuclear power plant, resulted in investment that was no longer used and useful and, therefore, excluded the undepreciated plant costs from ratebase. PG&E was allowed to recover plant costs, but was not allowed to earn a return on the unrecovered amount. TURN also points out that in D.92-08-036, the Commission adopted a settlement regarding the early shutdown of (SONGS) Unit 1 that allowed SCE to recover its remaining investment, but only allowed a return on the unrecovered amount equal to the embedded cost of debt. Based on the above, TURN recommends that SCE be required to run its cost-effectiveness model assuming the treatments adopted in D.85-08-046 and D.92-08-036.

Aglet believes that recovery of net plant costs in the event of an early shutdown is not assured. It states that the Commission has no firm policy on this matter, and that full recovery is unlikely.

In D.85-08-046, the Commission addressed the recovery of the remaining undepreciated plant investment in Humboldt, which was shut down before the end of its license life.[25] The Commission allowed a four-year amortization of the remaining unrecovered plant investment without a return on the unamortized balance during the amortization period.

In D.92-08-036, the Commission addressed the recovery of remaining undepreciated plant investment for Unit 1, which was shut down before the end of its license life. The Commission adopted a settlement that allowed a four-year amortization of the remaining undepreciated plant investment. It also allowed a return equal to the embedded cost of debt on the unamortized balance during the amortization period. Since this decision adopted a settlement, it did not set a precedent.

It is possible that, in the event of an early shutdown, the undepreciated plant balance may be amortized over a four-year period with a reduced or no return on the unamortized balance. However, we normally base depreciation

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[25] Humboldt shut down in 1976 with the expectation that it would eventually be returned to service. It remained in ratebase until December 1979 when it was removed from ratebase.

rates on the remaining life of the asset being depreciated. Therefore, it is also possible that depreciation rates for SONGS, in the absence of the SGRP, will be increased based on the shorter expected life. If that is done, the remaining undepreciated capital costs will be fully recovered over its remaining life with a return earned on the undepreciated balance. At this time, it is premature to make these determinations, and there is no fixed policy as to how any undepreciated plant balance would be recovered, if at all. Therefore, we will calculate the cost-effectiveness of the SGRP without assuming a limitation on capital recovery if the SGRP is not performed.

K. Discount Rate

The discount rate is used in this proceeding to determine the present value, in 2004 dollars, of future expenditures. SCE uses a 10.5% discount rate in this proceeding, which is its estimate of its incremental cost of capital. SCE states that the discount rate is higher than its authorized cost of capital because it is a forward-looking long-term cost of capital. SCE argues that it would be inappropriate to use its authorized cost of capital because it is a short-term average cost of capital, and does not reflect the cost of new or incremental capital.

Aglet states that SCE’s discount rate is based on speculation as to the incremental cost of debt and equity. Aglet also points out that the Commission has never endorsed the incremental cost of capital as a basis for cost-effectiveness analysis. Aglet states that it would be more reasonable to assume that customers, especially low-income customers, have higher discount rates.

The authorized cost of capital is often used as a discount rate to evaluate cost-effectiveness. Most of the costs in this cost-effectiveness evaluation occur in the early years of the SGRP, whereas most of the benefits occur later. Therefore, the use of a higher discount rate would tend to make the SGRP less cost-effective, and the cost-effectiveness analysis more conservative. In this case, SCE's recommended discount rate is higher than its authorized cost of capital, and no party has recommended a specific discount rate higher than 10.5%. The record is not sufficient to determine whether, in theory, an incremental cost of capital is more appropriate as a discount rate than the authorized cost of capital. Nevertheless, since SCE's recommended discount rate does not appear likely to overstate the cost-effectiveness of the SGRP, we find it reasonable and will use it in our cost-effectiveness analysis.

L. Co-Owner Participation

The current ownership shares of SONGS are:

- SCE 75.05%
- SDG&E 20.00%
- City of Anaheim (Anaheim) 3.16%
- City of Riverside (Riverside) 1.79%

SDG&E has indicated its intention, pursuant to the operating agreement, not to participate in the SGRP. However, its ownership share will be reduced accordingly, with a corresponding increase in SCE's ownership share. Although they do not agree on the amount of the reduction, SCE and SDG&E have agreed that SDG&E's likely remaining ownership share will be 0-14% if the SGRP goes forward.

SCE states that it performed its cost-effectiveness evaluation of the entire project, as opposed to only its ownership share. It says that this is appropriate because, if the overall benefits of the project exceed the overall costs, there are sufficient benefits to justify the project even if the distribution of benefits between the owners is not uniform.

TURN states that the SGRP should be evaluated assuming that SDG&E does not participate. TURN recommends that, since SCE and SDG&E submitted their dispute regarding the ownership share reduction to arbitration, the results of the arbitration should be used to evaluate the cost-effectiveness of the SGRP. TURN also states that, since Anaheim has decided not to participate in the SGRP, the results of Anaheim's non-participation should be considered in evaluating the cost-effectiveness of the SGRP.

Aglet states that the uncertainty about the economics of SDG&E's decision not to participate in the SGRP contributes to the uncertainty of the SGRP's cost-effectiveness for SCE's customers.

SDG&E plans to file a § 851 application for approval of its resulting ownership reduction pursuant to the SONGS ownership agreement. SDG&E states that it will only participate in the SGRP if the Commission finds in that proceeding that it should do so.

While SCE and SDG&E have submitted their dispute to arbitration, the result of the arbitration is not binding. It remains for the Commission to decide in a § 851 application whether SDG&E should participate in the SGRP and if not, what the ownership share reduction should be. Therefore, the arbitration results will not be considered herein. As a result, we will evaluate the cost-effectiveness of the SGRP assuming the 0-14% range of ownership by SDG&E.[26]

Anaheim has also decided not to participate in the SGRP. The record does not indicate what its likely ownership will be as a result of its non-participation in the SGRP. Therefore, we will use an ownership range for Anaheim that is

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[26] Pursuant to the SONGS ownership agreement, the reduction in the ownership share will take place after the SGRP is completed.

proportionately similar to SDG&E's. This results in an ownership range of approximately 0-2.2%.[27]

As a result of the decisions by SDG&E and Anaheim not to participate in the SGRP, SCE's ownership share will increase in the same amount SDG&E and Anaheim's will decrease. As a result, SCE's ownership will range from 82.00% to 98.21% with a midpoint of 90.10%. We will consider this ownership range in our cost-effectiveness evaluation.

M. Split Shutdown Scenario

In its application, SCE assumed that if the SGRP is not performed, Units 2 and 3 will shut down at the same time. The Commission's Office of Ratepayer Advocates (ORA) recommends that a split shutdown scenario be considered. A split shutdown scenario is where the SGRP is not performed and each unit is shut down as it reaches the NRC imposed plugging limit. Unit 2 has more tube degradation than Unit 3. Therefore, under the split shutdown scenario, Unit 2 would shut down first and Unit 3 would remain in operation for a longer period.

SCE states that it must maintain systems and facilities that are shared by both units so long as either unit is in operation. SCE represents that this would substantially increase the base O&M required for the remaining operational unit. SCE also represents that the NRC would require mid-cycle outages once one of the units is shut down, which would increase the RFO O&M expenses.[28] In other words, shutting one unit down reduces the O&M expenses by less than half. SCE states that if the SGRP is not performed, it would be more cost-effective to

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[27] Since Anaheim is not a regulated utility, a § 851 application is not required.

[28] A mid-cycle outage is a scheduled outage approximately mid-way between RFOs for the purpose of performing tube inspections.

shut both units down when one of them reaches the plugging limit than to keep the remaining unit running.

The record demonstrates that Unit 2 will likely shut down before Unit 3, and that Unit 3 can be operated when Unit 2 is shut down. Therefore, we will include a split scenario shutdown of SONGS in our cost-effectiveness evaluation of the SGRP to determine whether it is more appropriate than shutting both units down at the same time.

N. SDG&E Recommendations Regarding SCE's Acquisition of SDG&E's Ownership Share

SDG&E proposes to sell its entire interest in SONGS to SCE, and take back a purchase power contract (PPC). SDG&E states that this would be cost-effective for SCE's customers because the terms of the PPC would financially motivate SCE to manage SONGS costs.

Whether SDG&E should participate in the SGRP is not at issue in this proceeding. Likewise, the sale of all or part of SDG&E's ownership share to SCE is also not at issue. Therefore, we will not address SDG&E's proposal in this proceeding.

SDG&E proposes that SCE be required to form a partnership for SONGS for tax purposes. The purpose of the partnership would be to avoid possible income tax consequences to SDG&E and SCE of a transfer of some portion of SDG&E's ownership share in SONGS to SCE.

The sale of all or part of SDG&E's ownership share to SCE is not at issue in this proceeding. Therefore, the tax consequences of such a sale to SDG&E are not at issue. In addition, SDG&E has stated that the consequences of such a sale to SCE would not affect the cost-effectiveness of the SGRP for SCE. As a result, we will not address SDG&E's proposal in this proceeding.

O. Other Modeling Inputs

Aglet notes that SCE includes in its cost-effectiveness analysis the air quality benefits of nuclear power through calculation of a carbon adder, but does not include unquantified costs resulting from risks associated with the additional spent fuel that will be generated by SONGS due to the SGRP. Aglet points out that public health risks are inherent in nuclear power plant operations.

In D.04-12-048 and D.05-04-024, we adopted a Green House Gas (GHG) adder for carbon dioxide emissions to be used when comparing fossil generation to non-fossil generation in utility resource plans, and energy efficiency programs. The purpose was to explicitly account for the financial risk associated with GHG emissions. However, those decisions did not address major repairs to nuclear power plants as an alternative to fossil fuel fired generation. Therefore, those decisions did not address whether and to what extent the GHG adder should be applied to this proceeding.

CCGTs will produce the emissions the GHG adder is intended to address. However, nuclear power plants have their own safety, public health, and environmental risks and effects. Inclusion of such risks and effects, if they could be quantified, would decrease the cost-effectiveness of the SGRP. However, nothing in the record places a dollar amount on such risks and effects. At the same time, inclusion of the GHG adder would increase the cost-effectiveness of the SGRP. Therefore, we will consider both the GHG adder and the safety, public health, and environmental risks and effects associated with SONGS in our cost-effectiveness evaluation of the SGRP.

Aglet points out that SCE claims the SGRP will avoid statewide natural gas price increases due to a greater demand for gas if the SGRP is not performed. Aglet agrees with the concept, but states that the SGRP will increase the demand for the goods and services necessary to perform the SGRP, which will raise the prices for such goods and services. Aglet states that there is no reason to believe that this effect does not counterbalance the effect on natural gas prices. As a result, Aglet recommends that no effect of the SGRP on natural gas prices be considered in the cost-effectiveness evaluation.

Aglet's argument that the SGRP will affect the prices for goods and services involved in the SGRP is correct in theory. The goods and services indicated by Aglet are the replacement steam generators, the materials and labor to install them and remove and dispose of the original steam generators, and future O&M costs. SCE's SGRP could affect the prices for these goods and services associated with other SGRPs occurring at about the same time. However, since SCE customers will not be paying for other SGRPs occurring at about the same time as the SONGS SGRP, they will not be affected. While it is possible that the SGRP could affect the costs for goods and services other than those associated with other SGRPs, the record does not indicate that there would be any significant effect on SCE's customers. Therefore, we will not adopt Aglet's recommendation.

The SGRP, if it is approved, will be paid for by the customers of SONGS owners, not the state as a whole. The cost-effectiveness evaluation in this proceeding is limited to SCE's customers. Therefore, we will not consider the effect on other customers.

VIII. Combustion Engineering Issues

This issue concerns whether SCE should have filed suit against CE over the original steam generators. SCE argues that the other parties have not shown that SCE had a basis for a suit, that it would have prevailed in such a suit, or obtained a settlement, or what any resulting cost recovery would have been.

TURN argues that SCE has failed to seek recovery from CE related to tube degradation through litigation or settlement, and has offered no plausible explanation of this failure.

TURN says that the root cause of steam generator tube degradation is the susceptibility to a variety of degradation mechanisms of the mill-annealed Inconel-600 (Alloy 600) steel used in the tubes.[29] It represents that, by the early 1980s, SCE was aware that Alloy 600 was susceptible to degradation due to discoveries at other CE plants, and problems with tube degradation at Unit 1.[30] TURN states that, by the mid-1980s, steam generators that used Alloy 600 had been replaced at six domestic nuclear plants, and by 1985 SCE was on notice that Alloy 600 was not recommended for steam generators by industry experts. TURN represents that, by the 1990s, stress corrosion cracking was recognized as a serious problem at other CE plants, and SONGS began experiencing noticeable degradation in 1993 and 1995. It states that by 1996, SCE's own analyses revealed that SONGS was unlikely to operate for even 30 years without exceeding NRC imposed plugging limits. For these reasons, TURN states that SCE knew or should have known that the steam generators would need replacement.

TURN states that owners of other CE plants aggressively sought compensation from CE for tube degradation. TURN also states that settlements

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[29] Alloy 600 is a nickel-based steel alloy. The tubes were annealed at the steel mill after they were formed. Annealing is a heating and cooling treatment used to remove the internal stresses caused by forming, and alter the physical properties of the steel.

[30] Unit 1 had steam generators constructed by Westinghouse Electric Corporation (Westinghouse) of Alloy 600.

were obtained for 9 of 13 units for which suits were filed against CE. Of the remaining four units, one was shut down in part due to steam generator degradation, and two have not decided whether to replace their steam generators. As a result, TURN states that with one exception SCE is the only owner to have failed to secure compensation in the course of replacing steam generators.

TURN states that a suit filed by Consumers Power Company (Consumers Power) in the mid-1970s was settled for $36 million in cash, goods and services, and cancellation of about $4 million in claims by CE. In addition, CE shared 50% of the cost of fabricating two replacement steam generators. TURN represents that a suit filed by Florida Power and Light Company (FP&L) in 1995 was settled, but the terms were not made public. TURN says that Arizona Public Service Company (APS) took aggressive action against CE in 1995 regarding the Palo Verde Nuclear Power Plant (Palo Verde), of which SCE is a minority owner, and received substantial compensation in 1996. TURN also states that a substantial number of utilities filed suits against Westinghouse over problems concerning the use of Alloy 600 in steam generators, of which all but three were settled. The settlement terms were not made public.

TURN argues that the FP&L and APS suits occurred long after the units began commercial operations; 19 years for FP&L, and 9 years for APS. Therefore, TURN says that it is reasonable to believe that the FP&L and APS suits took place long after the warranties in their Nuclear Steam Supply System (NSSS) contracts could have expired.[31]

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[31] The NSSS includes the steam generators. Therefore, the NSSS contract includes the design and manufacture of the steam generators.

SONGS was originally licensed to operate until 2013. TURN notes that SCE has made the argument that, until the license lives were extended to 2022 as a result of its 1999 application to the NRC, SCE believed that the steam generators would last until the end of their license lives. TURN states that the NRC began granting 40-year operating licenses in 1982, which included recapture of time spent during construction. Therefore, TURN represents that at the time SONGS became operational, SCE knew that license recapture would be granted by the NRC that would allow a 40-year service life after the beginning of commercial operations. TURN points out that in its 1999 recapture application, SCE stated that SONGS was designed and constructed for 40 years of operation. TURN also states that the fact that SONGS was not designed for steam generator replacement, suggests that SCE relied on statements by CE regarding the 40-year design life of the steam generators.

TURN states that the terms of a 1987 settlement between SCE and CE, that guaranteed repairs of batwing tube problems through 2023, indicate that SCE assumed that it would be granted license recapture by the NRC.[32] TURN also points out that a 1988 report prepared for SCE on steam generator corrosion cites the assumption of a 40-year operating life for SONGS. For these reasons, TURN states that SCE assumed a 40-year operating life for SONGS, and that any claims by SCE that it believed, until the mid-1990s, that SONGS would have only a 30-year operating life are not credible.

TURN argues that SCE had the opportunity to raise claims against CE for breach of the warranty in the NSSS contract, and for fraud in inducing SCE to

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[32] Batwings are tube support structures within the steam generators.

enter into the contract either by misrepresentation or non-disclosure, or in the post-contract period. TURN states that SCE represented that any tolling agreement extending the time for filing suit regarding the NSSS contract would have expired upon execution of the 1987 settlement.

TURN states that the SONGS NSSS contract specified a design life of 40 years, and that all NSSS components not easily replaced or repaired would be capable of performing their intended functions throughout the 40-year design life without more than routine maintenance. TURN argues that since the FP&L and APS claims stated that CE made representations of a 40-year operating life, it would be reasonable to assume that CE made similar claims to SCE. TURN says that the FP&L and APS claims asserted that the 40-year design life constituted an express warranty of future performance, that was not negated by other provisions of the NSSS contract, and that since the steam generators could not satisfy the design life, they were not suitable for their intended purpose. TURN asserts that SCE could have made similar claims, but failed to do so.

TURN states that in 1985, SCE decided to seek compensation from CE regarding batwing and tube annealing problems. The matter was resolved in a settlement in 1987 (1987 settlement). TURN states that in settling these claims, SCE failed to seek legal or financial protections from CE related to the foreseeable consequences of other tube degradation mechanisms that were known at the time to affect steam generators with Alloy 600 tubes. For this reason, TURN represents that the 1987 settlement was unreasonable.

TURN says SCE should have known at the time of the 1987 settlement that the steam generators might not achieve the 40-year design life. TURN states that minutes of the SONGS Board of Review meeting at that time cite compensable damages of $5 million for additional inspection and repair costs, although the settlement included only $750,000 in cash. Additionally, the SONGS Board of Review was told that SCE intended to be protected from future cost exposure by negotiating a limited warranty extension for the steam generators, although no such warranty extension was included in the settlement. TURN states that SCE did not pursue the issue of the suitability of Alloy 600 for steam generator tubes after the 1987 settlement, and did not obtain a tolling agreement that would have permitted an extension of statutory or contractual warranty periods. Therefore, TURN asserts that either the 1987 settlement jeopardized the viability of future claims, or SCE was negligent in its management of its relationship with CE.

In 1993, SCE reached a settlement (1993 settlement) with CE over deficiencies in the steam generator feedrings that were initially identified in 1981, and that led to their failure in 1990.[33] The settlement provided $4 million in cash, and discounts on the prices of certain goods and services. Since this settlement was not related to Alloy 600 tube problems, and was related to a pre-existing dispute dating back to 1981, TURN represents that it does not provide a basis for reaching a conclusion on the reasonableness of the 1987 settlement.

As a result of damage to four reactor coolant pump heat exchangers (heat exchangers) in 1993, SCE and SDG&E filed suit in 1996 (1996 suit) against CE alleging that it provided improper testing procedures. CE raised a counterclaim asserting a breach of the NSSS contract by SCE and SDG&E due to failure to maintain property insurance. SCE and SDG&E jointly argued that since the NSSS contract had been completely performed in 1983/84, they had no

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[33] The steam generator feedring is component of the steam generator that circulates feedwater within the steam generator. Feedwater is the water that is converted into steam to turn the turbines.

continuing obligations to CE. Based on these arguments, the court dismissed the ongoing applicability of the NSSS contract and related theories of negligence and negligent misrepresentation. As a result, TURN states that future warranty claims are likely estopped, including those related to Alloy 600. TURN also argues that the court ruling did not prohibit SCE from raising claims of fraud.

For all of the above reasons, TURN argues that the Commission should impose a disallowance for SCE's failure to pursue litigation against CE regardless of whether the SGRP is approved, because ratepayers will be harmed due to the shortened lives of the original steam generators, and compensation could have been obtained from CE. TURN states that the amount of the disallowance should be the average of the amounts received by Consumers Power and APS, in 2004 dollars. It recommends that the disallowance be imposed as a reduction in project costs if the SGRP is approved, or as a reduction to recoverable SONGS related expenses if it is not approved.

Aglet and ORA support TURN's positions regarding SCE's dealings with CE. Aglet agrees with TURN that SCE's imprudent actions will lead to unreasonable costs whether the SGRP is performed or not.

SONGS began commercial operation in 1983 and 1984, respectively. During the steam generator warranty period specified in the NSSS contract, SCE identified two steam generator problems. The first problem involved improper annealing of 86 tubes in the steam generators. The second problem involved tube wear caused by vibration of the batwings. In 1985, SCE notified CE that it considered CE to be responsible for fixing the annealing and batwing problems. In addition, SCE deducted amounts from CE invoices for work pursuant to the warranty provisions.

Subsequently, the owners of SONGS entered into the 1987 settlement. As a result of the 1987 settlement, CE inspected all steam generator tubes, reviewed relevant documentation and plugged the affected tubes. In addition, CE provided SCE with a $750,000 credit to cover the cost of plugging additional tubes that may experience batwing wear during future operation. CE also agreed that CE would perform, at its own expense, any plugging of tubes that became necessary as a result of improper annealing or batwing wear prior to the end of operations or 2023, whichever comes first.

The 1987 settlement addressed known problems at SONGS with annealing and batwings. SONGS had not experienced stress corrosion cracking or other unanticipated corrosion at that time. The fact that the 1987 settlement did not address problems that had not occurred at SONGS at that time does not make it unreasonable. In addition, the record shows that the 1987 settlement did not provide a broad release of potential steam generator corrosion claims against CE. We also note that SDG&E was a party to the settlement. SDG&E's participation in the 1987 settlement indicates that it too thought the settlement to be reasonable. For the above reasons, we find that SCE acted reasonably with respect to the 1987 settlement.

The 1993 settlement regarding steam generator feedrings provided SCE with $4 million in discounts on certain goods and services to be purchased from CE in future years. In the settlement discussions, CE proposed that the settlement include a release of claims related in any way to the steam generators that SCE either knew, suspected, or could have come to know about in the exercise of due care. The 1993 settlement did not include such a release. This indicates that CE recognized that SCE had not previously provided such a broad release.

In 1993, SCE conducted tests of the heat exchangers for Unit 2. SCE determined that they were damaged as a result of the testing. SCE subsequently determined that CE had improperly prepared the drawings and specifications the test procedure was based on. As a result, SCE and SDG&E filed the 1996 suit against CE seeking compensation for the damage. CE raised a counterclaim asserting a breach of the NSSS contract by SCE and SDG&E due to failure to maintain property insurance. SCE and SDG&E jointly argued that since the NSSS contract had been completely performed in 1983/84, they had no continuing obligations to CE. The court found, among other things, that the NSSS contract had been performed, and dismissed the suit.

In connection with the 1996 suit, it was SDG&E's position, as well as SCE's, that the NSSS contract warranty had expired. Therefore, SDG&E agreed with SCE's position at that time. In addition, the court's decision indicates that the NSSS contract had expired before that time. Therefore, we find that SCE acted reasonably in making that assertion.

The above history demonstrates that on a number of occasions, beginning shortly after the commencement of commercial operations, SCE pursued claims against CE, some of which were related to the steam generators. Therefore, we find that SCE would have pursued claims against CE regarding the steam generators if it reasonably believed it had a valid claim.

SONGS is owned by SCE, SDG&E, Anaheim, and Riverside. As such, although SCE is the operating agent, it is reasonable to assume that SCE's actions regarding CE were taken with the knowledge of the other owners. SDG&E is answerable to its shareholders, and Anaheim and Riverside are answerable to their citizens for actions taken by them or on their behalf by SCE. The record shows that, for example, the 1987 settlement was discussed by the SONGS Board of Review which consists of members representing each of the owners. Therefore, the other owners could and should have been aware of SCE's actions regarding CE. We have no reason to believe that the other owners have or had any incentive not to sue CE concerning the steam generators if they reasonably believed there was a basis for such a suit with a reasonable chance for a favorable outcome. There is nothing in the record that indicates that the other owners disagreed with SCE's actions regarding CE.[34] In addition, the record in this proceeding indicates that SDG&E is more than willing to make it known when it disagrees with SCE regarding matters related to SONGS. Thus, it appears that the other owners agreed with SCE's actions regarding CE. This in turn supports the reasonableness of SCE's actions regarding CE. As a result, we find that SCE acted reasonably with regards to CE, including the 1987 settlement, the 1993 settlement, and the 1996 suit.

Not withstanding the above, if we were to assume that SCE should have sued CE, we would have to assume that the result, if any, would have been a settlement, because the record does not indicate that any of the suits against CE were resolved other than by a settlement. Of the settlements, the record only indicates the results of two: Consumers Power and APS. The Consumers Power suit concerned damage as a result of the use of phosphate in the water treatment. This damage mechanism was not present at SONGS. The APS suit concerned a design defect in the steam generators that was unrelated to Alloy 600, and is not present at SONGS. Therefore, the results of these settlements provide no basis for determining the value of a settlement had one been reached. The results of

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[34] SDG&E and Anaheim are parties to this proceeding.

all other settlements are confidential. As a result, there is no basis in the record for determining what the value of a settlement would have been if SCE had sued CE and reached a settlement. For all of the above reasons, we will not adopt TURN's recommendation.

IX. Reasonableness Review—SGRP

In this application, SCE is requesting that the Commission pre-approve the SGRP. SCE intends this to mean that, if granted, the Commission would not be able to disallow construction costs or their recovery in rates on the grounds that SCE's decision to implement the SGRP was unreasonable. SCE represents that it will submit the incurred costs for a reasonableness review, and that the Commission would not be relinquishing its authority to review the reasonableness of recorded costs and construction practices. Specifically, SCE proposes to file an application to establish the reasonableness of the SGRP construction costs, excluding the costs of removal and disposal of the original steam generators, six months after SONGS returns to commercial operations. In addition, SCE proposes to file an application to establish the reasonableness of the costs of removal and disposal of the original steam generators six months after the last removal and disposal costs are incurred.

TURN states that it would be willing to participate in a reasonableness review when the SGRP is complete. However, it would prefer that the Commission adopt up-front and transparent standards for the review.

Aglet states that SCE should not be allowed to recover any SGRP costs in rates without a reasonableness review.

ORA supports a mandatory reasonableness review of SGRP costs.

The effect of SCE's request for pre-approval of the SGRP is that the Commission would not be able to disallow construction costs or their recovery in rates on the grounds that SCE's decision to implement the SGRP was unreasonable. SCE has not requested an exemption from a reasonableness review, and we will not grant one. As for pre-approval, our evaluation of the cost-effectiveness of the SGRP is based on the information in the record at this time. It is possible that subsequent developments could make it unreasonable to continue with the SGRP. That would be a reasonableness review issue.

X. Reasonableness Review— Management of the Original Steam Generators

TURN states that the Commission did not adequately address the issue of whether SCE reasonably managed its original steam generators. TURN represents that it attempted to ascertain whether SCE had taken all reasonable steps to arrest or slow steam generator corrosion. However, it says that SCE refused to supply the necessary documents.

TURN represents that CE recommended removal of copper-bearing components from the NSSS. TURN states that a 1988 report prepared for SCE revealed that a relatively high copper content in the tube sheet sludge can accelerate corrosion of carbon steel components in the steam generators. TURN says that SCE has replaced only 2 of 13 feedwater heaters that were cited in the study as a source of the sludge, and the condenser tube sheets contain a copper alloy. TURN states that SCE was not reasonably aggressive in removing copper bearing components, and that some copper-bearing components remain in the steam generators to the present day.

For the above reasons, TURN recommends that a separate reasonableness review of SCE's management of its original steam generators be required. If the review found that SCE acted unreasonably, TURN recommends that SCE should be subject to a penalty that would be credited against the SGRP costs if the SGRP is approved.

TURN's request for a separate reasonableness review is based primarily on its representation that SCE unreasonably denied its requests for information. This application was filed in February 2004, and hearings were held beginning in late January 2005. Therefore, TURN had plenty of time to pursue this issue. If TURN felt that SCE had unreasonably denied its requests for information, it should have filed a motion to compel production of the documents it requested. Had it done so, the assigned Administrative Law judge (ALJ) could have determined whether SCE acted reasonably in denying TURN's request, and taken appropriate action. However, TURN chose not to file such a motion. Therefore, we do not find TURN's argument that it was denied the information persuasive. We note that, in this proceeding, SCE addressed the steps it has taken to prevent, detect, mitigate, and repair the degradation of the steam generators. We also note that most of the parties believe that the steam generators will operate past 2010 without the SGRP, and that the failure of the steam generators is due primarily to CE. For these reasons, we do not currently see a need for a separate reasonableness review of SCE's management of the original steam generators.

XI. Aglet and TURN Proposals for Guaranteed Savings

Aglet proposes that, in lieu of a reasonableness review, SCE should provide guaranteed ratepayer savings of half of the savings estimated by SCE over the remaining life of SONGS. Aglet states that its proposal would offset the uncertainty of whether the project would be cost-effective. Each year, under the proposal, the savings would be determined by subtracting the actual costs from an estimate of the costs that would have been incurred during the year if the SGRP had not been performed. The ratepayers would receive a payment of the difference if the savings are below the required level. In any year where the estimated savings exceed the required level, SCE could recapture a portion of any previous payments. Aglet recommends that implementation details should be determined in a workshop. Aglet states that it would accept a reasonable limit on gross benefits (roughly equal to replacement energy costs plus one half of the promised net benefits) that could be guaranteed to ratepayers. Aglet represents that a number tied to the net present value of SGRP costs should relieve SCE's concerns about unbounded shareholder risks resulting from Aglet's proposal.

TURN's proposal is similar to Aglet's. TURN recommends that the Commission could adopt the methodology it proposes, or conduct a separate phase of this proceeding to address implementation of its proposal.

SCE opposes Aglet's and TURN's proposals. It states that they are unfair in that SCE's shareholders could incur losses while ratepayers are receiving benefits. For example, if the benefits were less than half of the projected total benefits, SCE would be required to provide payments to ratepayers even though the SGRP is cost-effective. In addition, there would be uncertainty as to the amount SCE would have to provide, if any, until 2022. SCE asserts that this raises accounting issues, and could lead to concern in the investment community. In addition, SCE states that the benefit would have to be calculated each year based on an estimate of what would have happened if the SGRP had not been performed.

In this proceeding, SCE has not requested, and we will not grant a blanket exemption from a reasonableness review. Therefore, the primary benefit to SCE included in Aglet's and TURN's proposals does not exist. Aglet's and TURN's proposals guarantee ratepayers a specified level of savings. If the savings are less than the specified amount, but greater than zero, SCE would have to make payments to ratepayers even though the SGRP yields benefits to them. Therefore, Aglet's and TURN's proposals are inequitable in that they could require a payment to ratepayers even when the SGRP is cost-effective, without a corresponding potential benefit to SCE. The basis from which savings would be determined would be an estimate of the costs that would have resulted if the SGRP had not been performed. Therefore, the level of any achieved savings can only be estimated. For these reasons, we will not adopt Aglet's and TURN's proposals.

XII. Ratemaking Treatment

A. Construction Financing Costs

Under traditional ratemaking treatment of projects such as the SGRP, recorded expenditures earn AFUDC. When the project is completed, the expenditures and the AFUDC are put into ratebase. In this proceeding, SCE proposes that it be allowed to recover construction financing costs as they are incurred. No AFUDC would be accrued, and only the expenditures would be put into ratebase. SCE states that its proposal would: (1) reduce its financing requirements, (2) improve its financial metrics, (3) signal investors that the Commission is committed to supporting SCE's financial integrity, and (4) have no significant adverse impact on ratepayers on a present value basis.[35]

TURN states that there is no precedent supporting SCE's proposal. In addition, TURN represents that it would cost ratepayers an additional $3.6 million, and SCE has made no extensive showing of financial hardship in support of its request. TURN states that SCE's ratio of construction work in

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[35] Financial metrics include interest coverage, the ratio of total debt to total capital, the ratio of cash flow to total debt, the ratio of cash flow to construction expenditures, etc.

progress to total capitalization is currently 6% compared to more than 25% in the early 1980s when SONGS was built. In addition, TURN represents that SCE should be able to secure funds from its corporate parent under the "first priority condition" adopted in the original holding company decision, D.88-01-063, and interpreted in D.02-01-039.[36] For these reasons, TURN opposes SCE's request.

Aglet states that upfront payment of construction financing costs requires ratepayers to pay for the SGRP, in part, before completion. Aglet represents that ratepayers would be at risk for recovery of these funds if the SGRP is not completed, or some external event, such as an earthquake, security concerns or a national shutdown of nuclear plants leads to a delay in completion of the SGRP or to plant closure. Aglet also says that upfront payment of financing costs is without precedent, and is essentially a loan from ratepayers to SCE. For these reasons, Aglet opposes SCE's request.

SCE's proposal is a substantial departure from normal ratemaking treatment of capital expenditures. It is without precedent, and would have ratepayers paying for a project before it is used and useful to them. Therefore, SCE would have to demonstrate some extraordinary need for us to consider it. In this case, SCE has not demonstrated that its proposal is needed in order to complete the SGRP. Other than the fact that its financial ratings are lower than when it built SONGS, SCE has shown no financial need for its proposal. In addition, SCE has not shown any ratepayer benefit that would offset the $3.6

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[36] The "first priority condition" requires the parent holding company to infuse all types of capital into its utility subsidiary when necessary to fulfill the utility's obligation to serve.

million additional cost of its proposal. For the above reasons, we will not adopt it. The SGRP will accrue AFUDC instead.

B. Removal and Disposal Costs

SCE proposes that the costs for removing the original steam generators and disposing of them be recovered over the remaining lives of the original steam generators (2006-2011) through depreciation.

TURN recommends that SCE's proposal be denied, and that the costs be recovered through depreciation over the remaining life of SONGS. TURN also recommends that taxes associated with these costs be normalized (recovered with a deferred tax liability before the removal occurs, and a declining deferred tax asset after the removal occurs). TURN states that SCE's proposal to shift cost responsibility towards residential customers through funding reliance on the generation revenue requirement should be rejected. Instead, TURN recommends that an appropriate share of these costs be collected from direct access customers through the cost responsibility surcharge. TURN states that SCE's depreciation reserve for SONGS is far greater than would be expected for a plant that has reached the midpoint of its useful life. TURN also notes that in its 2006 GRC, SCE is requesting depreciation of the removal and disposal costs of the old steam generators at Palo Verde, as the result of an SGRP, over the remainder of the plant's useful life. TURN argues that it is appropriate to recover these costs over the remaining useful life of SONGS because the beneficiaries of the SGRP are the future customers that will be taking service from SONGS after the SGRP.

TURN argues that SCE's proposed tax flow through and gross-up would create high costs during 2006-2008, because the early collection of removal costs is treated as taxable income and grossed up to include the resulting taxes. The cost of removal deduction would be applied after the removal costs are incurred.

TURN states that its normalization proposal would smooth the revenue requirement effect over the years through 2011.

TURN says that SCE's proposal to collect the removal and disposal costs through the generation revenue requirement, rather than from the nuclear decommissioning cost trusts (trusts), would exempt direct access customers from making any contribution. Therefore, TURN recommends that, if trust funds cannot be used for this purpose, SCE should be directed to collect an appropriate share from direct access customers through inclusion in the cost responsibility surcharge being addressed in Rulemaking (R.) 02-01-011.

Aglet supports TURN's position that removal and disposal costs should be recovered through depreciation over the remaining SONGS lives. Aglet opposes SCE's proposal for a separate balancing account for removal and disposal costs, because Aglet believes it is unnecessary.

A basic principle of depreciation is that the original cost of the item being depreciated, including any net salvage value, be recovered over the life of the item. The net salvage value, would include the cost of removal and disposal of the item being depreciated, and can be negative. However, the cost of removal and disposal of the original steam generators was intended to be paid for out of the trusts when SONGS is decommissioned, not out of the depreciation reserve.

In this case, there are two sets of steam generators, the original ones and the replacements, and costs of removal and disposal for each set. SONGS went into commercial operation in 1983 and 1984. Contributions to the SONGS trusts, which are set in Nuclear Decommissioning Cost Triennial Review proceedings, have been calculated based upon license lives ending in 2013. Therefore, by the time the SGRP is performed, roughly 80% of the removal and disposal costs of the original steam generators will have been accumulated in the trusts.[37] If the SGRP is performed, the trusts cannot be used for the original steam generators because the original steam generators will be removed and disposed of prior to decommissioning. However, the trusts will be used for the replacement steam generators when SONGS is decommissioned.

By the time the SGRP is complete, current ratepayers will have already paid for about 80% of the cost of removal and disposal of the replacement steam generators through contributions to the trusts.[38] If they are also required to pay for 100% of the removal and disposal costs of the original steam generators through depreciation before the SGRP is complete, they will have paid for a total of 180% of the costs of removal and disposal of one set of steam generators, thus subsidizing future ratepayers. Likewise, if the costs of removal and disposal of the original steam generators are charged only to future ratepayers by being depreciated over the remaining lives of the plant after the SGRP is complete, future ratepayers will have to pay for 100% of the costs of removal and disposal of the original steam generators through depreciation, as well as 20% of the costs of removal and disposal of the replacement steam generators through

[37] This assumes that the next Nuclear Decommissioning Cost Triennial Review utilizes the 2022 license expiration dates. Continued use of the 2013 license expiration dates will cause a higher percentage to be accumulated.

[38] Current ratepayers are those who receive service up to the completion of the SGRP in approximately 2011. They are the ratepayers who will have received electricity generated by SONGS using the original steam generators. Future ratepayers are the ratepayers who will receive electricity generated by SONGS using the replacement steam generators.

contributions to the trusts. This would amount to a total of 120% of the costs of removal and disposal of one set of steam generators; thus subsidizing current ratepayers.

Since current ratepayers will have paid for approximately 80% of the costs of removal and disposal of the replacement steam generators through contributions to the trusts by the time the SGRP is complete, they should only have to pay for 20% of the removal and disposal costs of the original steam generators through depreciation.[39] As a result, we will authorize SCE to recover through depreciation 20% of the estimated costs of removal and disposal of the original steam generators ($22.2 million) over 2006-2011. The remaining amount will be depreciated over the remaining lives of SONGS after the SGRP is performed.

As to the issues of tax normalization and revenue requirement allocation regarding the depreciation costs, the record does not demonstrate why depreciation of the costs of removal and disposal of the original steam generators should be treated differently than other SONGS depreciation expenses. Therefore, we will not adopt TURN's recommendations. To the extent that TURN believes that the cost responsibility surcharge should include such depreciation costs, it should raise its proposal in R.02-01-011.

[39] Likewise, future ratepayers would pay for 80% of the costs of removal and disposal of the original steam generators through depreciation, and 20% of the costs of removal and disposal of the replacement steam generators through contributions to the trusts.

C. Recovery of the Remaining Book Value of the Original Steam Generators

Aglet recommends that recovery of the undepreciated book value of the original steam generators, that would no longer be used and useful, be deferred until the Commission decides related issues in R.04-09-003.

SCE states that the original steam generators are included in a group account, and depreciated as such. This means that the undepreciated plant balance for the original steam generators is not separately tracked. SCE represents that it is not requesting a change in the depreciation expense for the cost of the original steam generators, and the net book value of the original steam generators will be zero by the time they are replaced.

R.04-09-003 pertains to gains or losses on sales of utility assets. SCE has not proposed that the original steam generators be sold. Indeed, it is unlikely that there would be a buyer if they were to be offered for sale. Therefore, it does not appear that R.04-09-003 would apply to them. Regardless of whether it would apply, R.04-09-003 is scheduled to be decided well before the original steam generators are disposed of. If a decision in R.04-09-003 should apply to them, there will be ample opportunity to do so. Therefore, we will not adopt Aglet's recommendation. We also note that, if the book value of the original steam generators is zero at that time, as SCE represents, the issue will be moot.

D. Potential Stranded Costs from Departing Load

TURN represents that SCE proposes to collect the SGRP costs through the generation revenue requirement charged to bundled customers. TURN says that while this is appropriate, some portion of the costs could become stranded in the event the Legislature enacts a core/non-core retail market structure, or the expiration of the ABX1 statutory suspension of direct access leads to significant migration away from bundled service. It states that under SCE's proposal, a current bundled service customer leaving for direct access at a future date would no longer pay the SGRP costs. TURN points out that the Commission, in connection with SCE's Mountainview project, and SDG&E's motion seeking approval of several new long-term generation projects (including Palomar, Ramco, and Otay Mesa), adopted the requirement that customers currently on unbundled service who subsequently leave for direct access should be obligated to pay for any stranded costs associated with these investments for no less than ten years of the operation of the facilities. TURN recommends this same treatment for the SGRP if approved. SCE supports TURN's recommendation.

The stranded cost issue is not unique to the SGRP, and is beyond the scope of this proceeding. Therefore, we will not address it herein. It is more appropriately addressed in connection with any consideration of reopening direct access.

E. SGRP Cost Cap

TURN recommends that if the SGRP is approved, the cost should be capped at SCE's current estimated cost, and that ratepayers should not be responsible for costs above that level whether the costs are reasonably incurred or not. It says that this is essential to preserve at least some semblance of cost-effectiveness for ratepayers.

Aglet recommends that, if its guaranteed savings proposal is not adopted, the Commission should impose a cost cap to provide SCE with some incentive to control costs, and to limit ratepayer exposure to cost overruns, and to help ensure that the SGRP is cost-effective.

ORA recommends that a strict cost cap of $700 million including removal and disposal of the original steam generators, as adjusted for inflation and the cost of capital, be adopted if the SGRP is approved. This would also include replacement energy costs if the SGRP is delayed. As an alternative, ORA recommends a 50/50 sharing of any reasonable costs above the cap.

SDG&E takes no position regarding a cost cap for SCE. However, if the SGRP goes forward, and SDG&E is required by the Commission to participate in the SGRP, SDG&E states that a cost cap should not be imposed on it, because it has no control on the costs, as opposed to SCE which does.

As discussed later in this decision, we impose a cost cap due to the marginal cost-effectiveness of the SGRP. This proceeding does not address whether SDG&E should participate in the SGRP. Therefore, we will not address whether a cap should apply to SDG&E in this decision.

F. Other Ratemaking Issues

Aglet opposes a separate balancing account for capital related revenue requirements. Aglet states that it would not object to SCE recovering capital related costs in rates beginning on the commercial operating date if its guaranteed savings proposal is adopted. However, if it is not adopted, Aglet recommends that the Commission authorize a deferred debit account similar to a Major Additions Adjustment Clause (MAAC) account. The account would record monthly revenue requirements subject to refund following the reasonableness review. Aglet states that past MAAC accounts have recorded revenues from interim rates, but that SCE has not shown that interim rates are needed.

The Commission has routinely established MAAC accounts for major capital projects and provided interim rate recovery, subject to refund, prior to the conclusion of a reasonableness review. In this instance, interim rate recovery would begin when SONGS resumes commercial operation after the SGRP is complete for each unit. Since the ratepayers will be receiving service at that point, it is reasonable that they begin paying for it at that point. Therefore, we will establish similar accounts herein. Implementation of interim rate recovery will be by advice letter.

Aglet states that, if the Commission allows any inflation adjustments to the adopted project costs, they should be limited to ordinary inflation. Aglet argues that SCE should not be allowed additional costs simply because the costs increased. Aglet suggests that adjustments for inflation be limited to recorded changes in the Consumer Price Index, All Urban Consumers, as published by the U.S. Bureau of Labor Statistics.

In this decision, costs are expressed in 2004 dollars. Actual costs will be expressed in nominal dollars when they are recorded. A meaningful comparison of recorded costs with the costs specified herein will require all costs to be converted to equivalent year dollars. An inflation adjustment will be necessary to accomplish this. We intend that the inflation adjustment be made based on reliable publications such as the Consumer Price Index published by the U.S. Bureau of Labor Statistics. We do not intend that the costs be adjusted merely because recorded costs are different than forecasted herein. Since no party addressed this issue in the record, the selection of the appropriate inflation adjustment applicable to recorded SGRP costs will be addressed in SCE's application to include SGRP costs permanently in rates.[40]

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[40] In order to implement interim rates through the advice letter process as discussed above, it will be necessary to make a preliminary determination of the inflation adjustment. However, the final inflation adjustment will be set in the application to include SGRP costs permanently in rates.

ORA recommends that SCE be required to submit progress reports on the status of the SGRP as it proceeds in order to monitor progress, and ensure that a reliable cost history will be available for the reasonableness review. ORA has not demonstrated in this proceeding that periodic progress reports would materially assist in any future reasonableness review. Therefore, we will not require them at this point. However, ORA is free to ask for information at any time pursuant to § 309.5(e) and § 314(a).

XIII. Cost-Effectiveness Conclusion

Our base case, as addressed in the previous discussions, is for SCE only and includes the following adjustments to SCE's cost-effectiveness calculations based on its 2006 GRC:

- SGRP cost of $680 million, excluding AFUDC.
- The cost-effectiveness analysis is for SCE only.
- O&M costs 10% above SCE's estimate.
- Capital additions 25% above SCE's estimate.
- $78.8 million for transmission mitigation.
- Unit 2 and Unit 3 shutdown, without the SGRP, in the middle of 2012.
- SDG&E and Anaheim do not participate in the SGRP.
- The ownership shares for SDG&E and Anaheim are reduced by 0-14% and 0-2.2% respectively. The resulting ownership range for SCE is 82.00-98.21%, with a mid-point of 90.10%.
- Construction financing costs are recovered through inclusion of AFUDC in ratebase after the SGRP is complete.
- SGRP costs are allowed in rates, subject to refund pending a reasonableness review, on January 1 of the year following the commercial operation date of each unit.

- SCE is authorized to depreciate a total of 20% of its ownership share of the estimated costs of removal and disposal of the original steam generators over the period 2006-2011.[41]

In order to test the sensitivity of the results to variations in the inputs to the calculations, we will include the following changes to the above:

- 92% and 84% capacity factor.
- 10% higher SGRP cost.
- 16% (one standard deviation) higher gas cost.
- 10% higher O&M costs.
- 10% higher capital additions.
- One year outage.
- Split shutdown.[42]

The following table shows the NPV, in 2004 dollars, of seven scenarios illustrating the results of our cost-effectiveness analysis.[43] An eighth scenario is also included that illustrates the results of our analysis if our base case is revised to utilize the O&M costs and capital additions estimated by SCE based on the 2006 GRC.

Table of Results

Scenario	Assumptions	Capacity factor[44]	SCE Ownership Share

[41] $22.2 million times SCE's ownership share is the total amount to be recovered over the period 2006-2011.

[42] Under a split shutdown scenario, Unit 2 would shut down in the middle of 2012, and Unit 3 would shut down in January 2016 if the SGRP is not performed.

[43] The NPV is the net present value of the revenue requirement resulting from the total net costs and benefits of the SGRP, including the SGRP costs.

[44] Reducing the capacity factor reduces the replacement energy costs because SONGS is generating less energy that needs to be replaced.

			98.21% ($millions)	90.10% ($millions)	82.00% ($millions)
1	Base	92%	(6.5)	(71.0)	(135.2)
		88%	(220.1)	(265.4)	(310.4)
		84%	(433.7)	(459.8)	(485.7)
2	Base	92%	(78.4)	(142.8)	(207.0)
	+10% higher	88%	(291.9)	(337.2)	(382.2)
	SGRP cost	84%	(505.5)	(531.6)	(557.5)
3	Base	92%	518.6	408.0	297.6
	+16% higher gas cost	88%	296.7	205.6	114.7
		84%	74.9	3.2	(68.3)
4	Base	92%	(274.4)	(316.6)	(357.0)
	+10% higher O&M	88%	(488.0)	(511.0)	(532.3)
		84%	(701.5)	(705.4)	(707.6)
5	Base	92%	(64.1)	(124.9)	(185.5)
	+10% higher	88%	(277.7)	(319.4)	(360.7)
	Capital Additions	84%	(491.2)	(513.8)	(536.0)
6	Base	92%	(170.9)	(221.7)	(272.4)
	+one year outage	88%	(384.4)	(416.2)	(447.6)
		84%	(598.0)	(610.6)	(622.9)
7	Base	92%	213.5	184.1	154.7
	+split shutdown	88%	60.7	51.2	41.6
		84%	(92.0)	(81.8)	(133.7)
8	Base (using SCE	92%	405.3	308.8	212.5
	O&M and	88%	191.7	114.4	37.2
	capital additions)	84%	(21.8)	(80.0)	(138.0)

For the reasons discussed previously in this decision, we do not consider a 92% capacity factor, an 84% capacity factor, or a one-year outage likely. In addition, the above analysis demonstrates that the split shutdown scenario (Scenario 7) is more costly than shutting both units down when one unit reaches the plugging limit.[45] This means that, if the SGRP is not performed, both units would be shut down when either unit reaches the plugging limit. Therefore, we find that our base case (Scenario 1) using an 88% capacity factor is reasonable, and appropriate for use in determining the cost-effectiveness of the SGRP.

The above analysis demonstrates that our base case has an NPV of negative $220.1-310.4 million, depending on SCE's ownership share. However, this does not include a GHG adder that would decrease the net cost of the SGRP by $375.6-313.5 million depending on SCE's ownership share, thus increasing its NPV by that amount.[46] It also does not consider the unquantified safety, public health, and environmental risks and effects associated with SONGS that would reduce the cost-effectiveness of the SGRP. We have no reason to believe that the unquantified safety, public health, and environmental risks and effects associated with SONGS would completely offset the GHG adder. We also note that the above table demonstrates that variations in the gas price, capacity factor, ownership percentage, O&M costs, capital additions, and SGRP costs could make the SGRP more or less cost-effective. As a result, we conclude that the SGRP is

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[45] The base case scenario (Scenario 1) is less cost-effective than the base case scenario with the split shutdown (Scenario 7). The only difference between the two scenarios is the split shutdown. For the NPV to increase due to inclusion of the split shutdown, the net cost of operating SONGS without the SGRP would have to increase. Therefore, the split shutdown scenario is more costly than shutting down both units at the same time.

[46] See section VII.O. for a discussion of the GHG adder. The GHG adder for the base case is $375.6 million for a 98.21% ownership share and $313.5 million for an 82.00% ownership share at an 88% capacity factor.

marginally cost-effective. That is, it is about equally likely to be cost-effective as not cost-effective.

XIV. CEQA Review

CEQA requires the Commission to consider the environmental consequences of its discretionary decisions. In this proceeding, the Commission is the lead agency under CEQA with respect to the environmental review of the SGRP, and preparation of the Final EIR. Accordingly, we employed environmental consultants to prepare an EIR evaluating the SGRP. The purpose of the EIR is to identify potentially significant environmental effects associated with the SGRP, and propose mitigation measures and alternatives that would minimize environmental consequences.

During the course of the CEQA review, we provided various opportunities for public involvement, as required by CEQA, and took advantage of the public input received. We issued a Notice of Preparation of an EIR on October 1, 2004, and distributed it to the State Clearinghouse and other federal, State, and local agencies that may be affected by the SGRP. The Notice of Preparation was also mailed to 160 interested or affected individuals, including nearby residents, public agencies, private organizations, and interest groups. Interested parties had 30 days to submit comments regarding the scope of the EIR. In addition, we held three scoping meetings prior to the final selection of alternatives and the preparation of the analysis presented in the Draft EIR. The scoping meetings were attended by approximately 34 individuals including representatives of organizations, interest groups and government agencies. These meetings provided us with public input on the proper scope and content of the EIR.

The Commission staff (staff) subsequently issued a scoping report summarizing the issues and concerns identified during the scoping process. It was made available for public review at local EIR Information Repositories and on the Internet. The scoping report determined that an EIR is required. The staff then hired an environmental consultant, and supervised its work on the Draft EIR. On April 15, 2005, the Draft EIR was published. We then held two public informational workshops to describe the SGRP, the findings of the Draft EIR, and how to participate in the Commission's decision-making process. The public review and comment period for the Draft EIR ended on May 31, 2005. Comments on the Draft EIR are addressed in the Final EIR which was released on September 21, 2005.

The Commission, as the lead agency, must certify the Final EIR before the SGRP may be approved. Certification consists of two steps. First, the Commission must conclude that the Final EIR has been completed in compliance with CEQA; and second, the Commission must have reviewed and considered the Final EIR prior to approving the SGRP. Additionally, the Commission must find that the Final EIR reflects its independent judgment.[47]

The Final EIR includes the Draft EIR, along with the comments received on the Draft EIR, individual responses to the comments, and revisions as necessary in response to those comments and other information received. It utilizes an interdisciplinary approach that ensures the integrated use of the natural and social sciences and the consideration of qualitative as well as quantitative factors. It is organized and written so that it is meaningful and useful to decision-makers and the public. Therefore, the Final EIR is competent, comprehensive, and in compliance with CEQA.

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[47] Pub. Res. Code Section 21082.1(c)(3).

The Final EIR analyzes the environmental impacts of the SGRP and alternatives. CEQA provides that agency approval of a project or an alternative may require modifications or mitigations to avoid significant effects on the environment. If specified conditions make mitigation measures or alternatives identified in the Final EIR infeasible, the measures must be identified, and the agency must explain how project benefits outweigh significant effects on the environment.

The Final EIR identifies potential environmental impacts of the SGRP and alternatives in the areas of air quality, biological resources, cultural resources, geology, soils, paleontology, hazardous materials, hydrology and water quality, land use and recreation, military operations, noise and vibration, public services, socioeconomics, system and transportation safety, traffic and circulation, and visual resources. The Commission has no power to regulate or condition the SGRP with respect to safety issues, nuclear materials handling and storage issues including facility design. However, the Final EIR analyzes SGRP activities that are exclusively regulated by the federal government to provide full disclosure of potential environmental safety impacts associated with the SGRP.[48]

The Final EIR evaluates the environmental impacts of the SGRP against a baseline. In this case, the baseline is the environmental conditions that existed in the area where the SGRP will be performed in October 2004 when the Notice of Preparation of an EIR was published. The baseline includes SONGS as an operating power plant, as well as radioactive waste storage facilities, electric

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[48] The NRC is responsible for the licensing and oversight of SONGS, and has pre-emptive jurisdiction over state and local regulations regarding the use, storage, and transportation of nuclear materials, and public safety.

transmission infrastructure, other existing facilities, and its current NRC operating licenses.

The SGRP consists of four major phases:

- Replacement Steam Generator Transport Phase (Transport Phase)—This includes the transportation of the replacement steam generators from the overseas manufacturer to SONGS.
- Replacement Steam Generator Staging and Preparation Phase (Staging Phase)—This includes the staging and preparation of facilities, areas, equipment, workers, and the replacement steam generators to allow for their installation.
- Original Steam Generator Removal, Staging and Disposal Phase (Removal Phase)—This includes the removal of the original steam generators from the containment structures, and transporting them to an off-site location for disposal.
- Replacement Steam Generator Installation and Return to Service Phase (Installation Phase)—This includes the installation of the replacement steam generators, and returning SONGS to service.

The Final EIR analyzes two alternative transport routes for the Transport Phase, one alternative for the Removal Phase (on-site storage of the original steam generators), and a no-project alternative. For the SGRP as a whole, it finds that there are no environmental impacts that are significant and immitigable (Class I impacts), and identifies environmental impacts that may be mitigated or avoided.[49] The Final EIR finds that, in the Transport Phase, the environmentally superior alternative is to transport the replacement steam generators inland through Camp Pendleton Marine Corps Base to the SONGS site. This is

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[49] CEQA classifies environmental impacts as: Class I (significant and immitigable), Class II (less than significant with mitigation incorporated), Class III (less than significant), and Class IV (beneficial).

primarily due to the fact that ground transportation of the replacement steam generators would take place almost completely on paved roads, thus avoiding environmental impacts on San Onofre State Beach and the San Onofre Bluffs. For the Staging and Installation Phases, no environmentally superior alternative was identified. For the Removal Phase, off-site disposal of the original steam generators is found to be environmentally superior to on-site storage. In addition, the environmentally superior alternatives for the Transport and Removal Phases, combined with SCE's proposals for the Staging and Installation Phases, are found to be superior to the no project alternative.

The Final EIR identifies environmental effects of the SGRP that may be mitigated to less than significant levels or avoided. The adoption and implementation of these mitigation measures was assumed in the determination of environmental impact levels in the Final EIR. With these mitigation measures, the Final EIR concludes that all potential environmental effects can be mitigated to less than significant levels. The mitigation measures identified in the Final EIR are reasonable and feasible. Therefore, we will adopt them and make implementation of them a condition of our approval of the SGRP.

The Final EIR includes the Mitigation Monitoring, Compliance and Reporting Program (MMCRP). The purpose of the MMCRP is to ensure that the mitigation measures in the Final EIR are implemented. We have reviewed the MMCRP and find that it conforms to the recommendations in the Final EIR for measures required to mitigate or avoid environmental effects of the SGRP. Therefore, we will adopt the MMCRP.

As discussed above, we have reviewed the Final EIR as part of our consideration of the whether to approve the SGRP. Based on that review, we find that the Final EIR represents our independent judgment regarding the environmental impact of the SGRP. For the above reasons, we certify the Final EIR for the SGRP in compliance with CEQA. The executive summary of the Final EIR, including the mitigation measures for the SGRP, is included herein as Attachment B.

XV. Conclusion

As discussed above, nothing in the Final EIR precludes the SGRP from going forward. In addition, since we have imposed a cap on SGRP costs, any increases in SGRP costs incurred to comply with the requirements of the Final EIR fall within the cap. Therefore, nothing in the Final EIR alters the cost-effectiveness of the SGRP. In addition, nothing in the Final EIR precludes the ratemaking treatment specified herein because the ratemaking treatment of SGRP costs is beyond the scope of the Final EIR.

Approval of the SGRP, given its marginally cost-effective status, would put the ratepayers at risk for increases in SGRP costs, O&M costs, and capital additions. Therefore, in order to put reasonable bounds on ratepayer risk and provide a reasonable assurance that the SGRP will remain cost-effective, we will place a cap on the SGRP costs at the amount estimated by SCE. We will also limit future recovery of O&M costs and capital additions to the amounts included in our base case, as shown in Attachment A. As discussed below, these limitations should, based on SCE’s representations in this proceeding, impose little risk on SCE’s shareholders, while providing a reasonable balance of the risk between ratepayers and shareholders.

In this proceeding, SCE presented its base case estimates of O&M costs, capital additions, and SGRP costs. It stated that these base case estimates are reasonable for use in determining the cost-effectiveness of the SGRP. In essence, it said that these estimates form a reasonable basis for assigning the risk of future cost increases above the forecast levels to ratepayers, subject to a reasonableness review of only the SGRP costs. This would place virtually all of the risk on ratepayers. This is not reasonable given the marginal cost-effectiveness of the SGRP, and provides little incentive for SCE to operate efficiently. Alternately, one could limit SCE's future recovery of these costs to its forecast amounts. However, this would put all of the risk on SCE.

The O&M cost estimate used in our base case is equal to the amount that SCE represents reasonably bounds the uncertainty inherent in its forecasts. The capital additions estimate used in our base case is slightly greater (3%) than the amount SCE states reasonably bounds the uncertainty inherent in its forecasts. These amounts for O&M and capital additions are 10% and 25% higher, respectively, than the SCE's base case estimates, which are based on its 2006 GRC. SCE's base case estimates are, in turn, higher than the base case amounts originally used in its application. Therefore, based on SCE's representations in this proceeding, there should be little chance of costs exceeding the O&M costs and capital additions included in our base case. SCE also represents that its SGRP cost estimate, which includes 26% for contingencies, is reasonable. Since the O&M and capital additions limitations we impose herein are significantly higher than SCE's base case estimates that it claims are reasonable, and the cap on SGRP costs is equal to the amount SCE argues is reasonable, these limitations should impose little risk on SCE, and fairly balance the risk of future cost increases between ratepayers and shareholders.

We intend that, in future SCE ratemaking proceedings that determine the revenue requirement associated with SONGS O&M costs and capital additions, the amounts authorized shall not exceed the amounts shown in Attachment A. However, we recognize that such costs will vary from year to year. Therefore, to the extent that the authorized revenue requirements associated with SONGS O&M costs and/or capital additions are set based on lower amounts (than specified in Attachment A) in certain years, the unused portions may be used to increase the limits on the authorized amounts in subsequent years.[50] However, amounts may not be borrowed from later years to increase the limit in earlier years. In addition, amounts may not be switched between O&M costs and capital additions. For example, O&M amounts for 2016 may not be used for capital additions for 2016, and unused O&M amounts from previous years may not be used to increase capital additions for 2016.

The O&M costs and capital additions shown in Attachment A are expressed in 2004 dollars. They will have to be converted to future year dollars in proceedings such as GRCs where revenue requirements and rates are set. An inflation adjustment will be necessary to accomplish this.[51] We intend that the inflation adjustment be made based on reliable publications such as the Consumer Price Index published by the U.S. Bureau of Labor Statistics. Since this issue was not addressed in the record, the selection of the appropriate inflation adjustment applicable to the costs shown in Attachment A will be considered in proceedings such as GRCs where revenue requirements and rates are set.

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[50] For example, if the O&M amount on which the revenue requirement is set for a particular year is $1 million (2004 dollars) less than the amount specified in Attachment A, that $1 million (2004 dollars) may be added to the O&M amount specified in Attachment A for a subsequent year.

[51] The inflation adjustment for O&M costs may be different from the inflation adjustment for capital additions.

For the reasons discussed herein, we will approve the SGRP.[52] Our approval is subject to the conditions imposed herein, including SCE's performance of the SGRP utilizing the environmentally superior alternative, and in compliance with the mitigation measures identified in the Final EIR. SCE's compliance will be overseen by the Commission's Executive Director.

SCE has incurred costs related to the SGRP, and continues to do so. It is possible that the SGRP could be cancelled in the future. The reasonableness of costs incurred to date has not been addressed in this proceeding. If SCE cancels the SGRP for any reason at any time, and requests recovery of any of the incurred costs from ratepayers, the Commission retains the discretion to conduct a reasonableness review of the costs incurred, including cancellation costs, and to determine the appropriate ratemaking treatment, if any, of incurred SGRP costs.

XVI. Affirmation of ALJ Ruling

On June 28, 2005, SCE filed a motion to accept the gas price forecast set forth in Advice Letter 1878-E into the record. Advice Letter 1878-E was filed on March 25, 2005 pursuant to Ordering Paragraphs 1 and 24 of D.04-12-048. It contains SCE's gas price forecasts for 2005 through 2014.

On July 14, 2005, CEC filed a motion to reopen the record for the limited purpose of receiving into the record the executive summary of a document entitled "Safety and Security of Commercial Spent Nuclear Fuel Storage: Public Report" prepared by the National Academy of Sciences. The report addresses

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[52] Our approval means that we find it reasonable at this time based on the information in the record at this time. This does not mean that subsequent developments could not make it unreasonable to continue with the SGRP.

potential safety and security risks of spent fuel storage at commercial reactors, and potential remedies.

Responses to SCE's motion were filed jointly by the Cogeneration Association of California and the Energy Producers and Users Coalition (Coalition).[53] Responses were also filed by TURN, ORA, SDG&E, and CEC.

The Coalition did not object to SCE's motion provided that certain updates are allowed in other proceedings. Such updates are beyond the scope of this proceeding.

TURN does not object to SCE's motion provided that the Commission directs SCE to provide the parties with cost-effectiveness model runs that incorporate changes previously proposed by TURN and other parties. We note that such model runs would have no evidentiary value because they would not be in the record. To include them in the record, the parties would have to file the appropriate motions after receipt and review of the results. Granting such motions could necessitate additional hearings and briefs. TURN notes that SCE went to some length in its reply brief to convince the Commission that no more model runs should be performed, and that this proceeding should be decided on the existing record.

ORA opposes SCE's motion. It states that if the motion is granted, other information in the record would also have to be updated. ORA also points out that SCE presented a very different and lower gas price forecast in a June 20, 2005 workshop in R.04-04-026.

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[53] The Cogeneration Association of California and the Energy Producers and Users Coalition have not been active parties in this proceeding.

SDG&E opposes SCE's motion, and states that if it is granted, SCE's entire cost-effectiveness showing should be updated.

CEC opposes SCE's motion, and agrees with TURN's response. CEC also states that if the motion is granted, other parties should be allowed to move other information into the record as demonstrated by CEC's motion.

Only SCE filed in opposition to CEC's motion. SCE states that it opposes the motion because the document CEC seeks to introduce is speculative, not new, and has already been referenced in the record.

The Commission has in the past allowed additional information into the record without the opportunity for further hearings where the information was non-controversial and readily verifiable. The Commission has also determined that additional information that is subject to varying interpretation and legitimate challenge cannot be resolved outside the hearing process where the parties and the Commission can test the credibility, reliability, completeness and accuracy of the information. In this case, SCE's gas price forecast is neither non-controversial nor readily verifiable. Therefore, there is no basis for allowing SCE's gas price forecast to be updated without, at the very least, allowing other parties to update their showings concerning gas price forecasts.

The gas price forecast is not the only issue in this proceeding. There is nothing unique about the gas price forecast that would warrant treating it differently than other issues. Therefore, if gas price forecasts are to be updated, there is no reason that information on other issues should not also be updated by other parties. In addition, it would likely be necessary to require SCE to update its entire showing to incorporate other more recent developments that may be relevant. In order to allow updates by other parties, SCE would have to be required to perform additional model runs for the parties.

Updates by SCE and/or the other parties of their showings on gas prices and/or other issues would likely necessitate additional hearings and briefs. In the time required to do the updates, hearings, and briefs, there could be additional events, such as additional gas price forecasts, refueling outages, etc. that arguably would require further updates. In short, granting SCE's motion could delay resolution of this proceeding indefinitely. At some point, notwithstanding continuing developments, the record must be closed and the matter submitted for decision. That point has been reached in this proceeding. These reasons are sufficient to deny SCE's motion. The same logic applies to CEC's motion, and warrants its denial.

Advice Letter 1878-E presents gas price forecasts through 2014 rather than 2022, which is the period covered by the application. Therefore, even if it were to be accepted into the record as requested, it could not be used to calculate the cost-effectiveness of the SGRP because it is incomplete. In addition, SCE's presentation of a different gas price forecast in the June 20, 2005 workshop demonstrates that the forecast in Advice Letter 1878-E is not SCE's most recent forecast.[54] Either of these facts is sufficient to warrant a denial of SCE's motion.

SCE could have presented more recent forecasts prior to the close of the evidentiary hearings, but chose not to do so. In addition, SCE argued in its reply brief that: "The time for adding evidence to this already full record is past."[55] As discussed above, SCE was correct.

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54 The workshop forecast covers 2005 through 2014, and is very different from the forecast in Advice Letter 1878-E.

55 SCE Reply Brief, p. i.

For the above reasons, the ALJ issued a ruling on September 30, 2005, denying the motions. For the same reasons, we affirm his ruling.

XVII. Categorization and Need for Hearings

The June 24, 2004 Assigned Commissioner's Ruling and Scoping Memo confirmed the Commission's preliminary finding in Resolution ALJ 176-3130 dated March 16, 2004 that the category for this proceeding is ratesetting and that hearings are necessary.

XVIII. Comments on Proposed Decision

The proposed decision (PD) of the ALJ in this matter was mailed to the parties in accordance with Pub. Util. Code § 311(d) and Rule 77.1 of the Rules of Practice and Procedure. Comments and/or reply comments were filed by _____on ____ and ____, 2005, respectively.

XIX. Assignment of Proceeding

Geoffrey F. Brown is the Assigned Commissioner and Jeffrey P. O'Donnell is the assigned ALJ in this proceeding.

Findings of Fact

1. SDG&E has elected not to participate in the SGRP.
2. SONGS is currently licensed by the NRC to operate until 2022.
3. SCE has presented a prima facie case in this proceeding.
4. As a result of SDG&E's decision not to participate in the SGRP, and pursuant to the operating agreement between the owners of SONGS, SDG&E's ownership share of SONGS will be reduced, and SCE's ownership share will be increased in the same amount if the SGRP is performed.
5. The timing of the SGRP is dependent upon the degradation of the original steam generators, and the availability of replacement steam generators.

6. Other utilities have requested and received higher plugging limits from the NRC.

7. The SGRP is needed if SONGS is to continue operating through the end of its license lives.

8. If the SGRP is to go forward, any delay in doing so would result in more monies being spent to repair and maintain the original steam generators, and store the replacement steam generators, without a corresponding decrease in the cost of the SGRP.

9. The replacement steam generators will not be available before 2009.

10. SCE's estimate of the cost of the SGRP is $680 million ($569 million for replacement steam generator installation, and $111 million for removal and disposal of the original steam generators), of which $141 million (26%) is for contingencies.

11. SCE states that the level of contingencies in its estimate is sufficient to cover all known risks.

12. No party has represented that SCE's SGRP cost estimate is too high.

13. SCE states that its high O&M cost estimate, 10% above its 2006 GRC estimate, reasonably bounds most unforeseeable regulatory and extraordinary operating expenses.

14. Recorded RFO O&M costs for RFOs 12 and 13 were higher than the amount included in SCE's 2006 GRC forecast.

15. One-time costs for Unit 3's RFO 14 will exceed SCE's forecast.

16. SCE's SONGS O&M budget for 2004 was $40 million above the amount forecasted in its 2003 GRC.

17. SCE's base O&M forecast based on its 2006 GRC is about 12% higher than its initial forecast in this proceeding.

18. SCE's history with respect to O&M costs demonstrates that O&M costs are likely to exceed its estimates, and that there will likely be future O&M expenses that are not currently known.

19. SCE states that its high capital additions estimate reasonably bounds the uncertainty inherent in its capital additions forecast.

20. A fire in 2001, which was started by a worn-out circuit breaker, resulted in $100 million in unanticipated capital costs.

21. The need for the $64 million reactor head replacement project was not known a year previously.

22. The 25% historical variance between capital additions estimates five years in advance and actual expenditures reflects the fact that there will be unanticipated costs due to ageing, changing NRC requirements, or some other reason.

23. There is no basis in the record for estimating the probability of the occurrence of future increased security requirements or their timing.

24. CEC's assumption that lesser additional security requirements would be imposed if SONGS is shut down at the time of imposition is unlikely.

25. Based on CEC's representations most, if not all, of any new security requirements would be imposed on SONGS with or without the SGRP.

26. The costs estimated by CEC are illustrative examples rather than estimates based on known requirements.

27. The possibility of future increased security requirements supports our conclusion that some increase in future O&M costs and capital additions above the amount forecast by SCE is appropriate.

28. The effect of a one-year outage on the SGRP's cost-effectiveness will vary, depending on when it occurs, due to the time value of money.

29. Since the discount rate generally exceeds the escalation of the cost components in the cost-effectiveness analysis, the effect of a one-year outage decreases over time.

30. Utilizing a 4% reduction in the capacity factor as a proxy for a one-year outage spreads the outage over the remaining life of the plant, which means that the actual costs of a one-year outage could be a greater or lesser amount depending on when it occurs.

31. The record does not demonstrate that a one-year outage is likely.

32. In D.03-12-059, the Commission authorized SCE to enter into a power purchase agreement with MPC for the purchase of electricity from Mountainview.

33. Mountainview is a CCGT with a target heat rate of 7,100 Btu/kWh, which is the heat rate for the new plant after no more than 100 hours of operation.

34. The target heat rate is not the heat rate that would be expected over Mountainview's life.

35. The heat rate over Mountainview's life would likely be higher than the target heat rate due to the effects of ageing.

36. SCE's forecast heat rate is approximately 2% higher than the Mountainview target heat rate.

37. By D.04-06-011, the Commission authorized SDG&E to execute the Otay Mesa PPA.

38. Otay Mesa is a CCGT with guaranteed baseload and peak heat rates of 6,971 and 7,230 Btu/kWh, respectively.

39. The actual heat rates achieved by Otay Mesa will be between 6,971 and 7,230 Btu/kWh, or within 4% of the value used by SCE.

40. Otay Mesa has water available for cooling, which helps it achieve its low heat rate.

41. The Otay Mesa PPA is only for the first 10 years of the plant's life.

42. The heat rate over the life of Otay Mesa will likely be higher than the guaranteed baseload and peak heat rates due to the effects of ageing.

43. The guaranteed heat rates for Otay Mesa are for the first ten years of the plant's life, not its entire operating life.

44. The heat rate used by SCE is for the life of a CCGT, as opposed to the first 100 hours or ten years of operation, and is within 4% of the heat rates used in D.03-12-059, and D.04-06-011.

45. SDG&E's long-term resource plan, which includes a 500kV transmission line in the 2010 time frame, was found in D.04-12-048 to be reasonable to satisfy SDG&E's transmission grid reliability needs.

46. If the SGRP is not performed, it appears that Unit 3, and likely Unit 2, will continue in operation beyond 2010.

47. There is sufficient time for SDG&E to construct a 500kV transmission line in the 2010 time frame to satisfy its transmission grid reliability needs.

48. Since a transmission line will be built by SDG&E, regardless of whether the SGRP is undertaken, that will be available to mitigate the effect of SONGS shutdown, and we are addressing only SCE's costs for transmission mitigation if SONGS shuts down, we need only address the amount of voltage support equipment needed by SCE.

49. Both SCE and SDG&E agree that additional voltage support equipment will be needed to mitigate against SONGS shutdown.

50. SCE's three scenarios indicate an average of 1,136 MVARs of voltage support equipment to be installed by SCE.

51. SDG&E estimates the total requirement for it and SCE at 598 MVARs, of which 354 MVARS would be attributable to SCE's transmission system.

52. SCE adjusted the DEI forecasts to include subjective components to account for changes in industry experience, and NRC guidance and requirements.

53. For Unit 2, referring to only the past DEI forecasts without any subjective adjustment by SCE, the RFO 11 and RFO 12 actual repairs were both 30% less than forecast, and the RFO 13 actual repairs were 6% less than forecast. For Unit 3, the RFO 12 actual repairs were 3% more than forecast, and the RFO 13 actual repairs were 55% less than forecast.

54. Since actual repairs were generally less than DEI's forecast repairs, and DEI's forecast repairs were based on forecast tube degradation, actual tube degradation was generally less than forecast by DEI.

55. SCE's subjective adjustment was an increase of 6% for Unit 2, and an increase of 12% for Unit 3.

56. Since the more recent DEI forecast used by SCE decreased, and SCE's forecast was unchanged, SCE effectively increased its subjective adjustment from 6% to 12% for Unit 2. SCE has not explained why such an increase in its subjective adjustment is reasonable.

57. The record demonstrates that there is considerable uncertainty as to when the steam generators will reach the plugging limit.

58. The most recent DEI forecasts indicate a 32% probability of Unit 2 reaching the plugging limit by RFO 17 in July 2011, and a 70% probability of reaching the plugging limit by RFO 18 in April 2013. These forecasts also indicate a 46% probability of Unit 3 reaching the plugging limit by RFO 19 in January 2016. This means that without the SGRP, there is approximately a 50% probability that

Unit 2 will operate until mid-2012, and that Unit 3 will operate until the beginning of 2016.

59. If SCE was to apply for and be granted a higher plugging limit by the NRC, the original steam generators would be allowed to run longer than forecast, but SCE has not done so.

60. In D.85-08-046, the Commission addressed the recovery of the remaining undepreciated plant investment in Humboldt that was shut down before the end of its license life. The Commission allowed a four-year amortization of the remaining unrecovered plant investment without a return on the unamortized balance during the amortization period.

61. In D.92-08-036, the Commission addressed the recovery of remaining undepreciated plant investment for Unit 1, which was shut down before the end of its license life. The Commission adopted a settlement that allowed a four-year amortization of the remaining unrecovered plant investment. It also allowed a return equal to the embedded cost of debt on the unamortized balance during the amortization period. Since this decision adopted a settlement, it did not set a precedent.

62. It is premature to make determinations on the ratemaking treatment of an undepreciated plant balance in the event of an early shutdown, and there is no fixed policy as to how any undepreciated plant balance would be recovered, if at all.

63. The authorized cost of capital is often used as a discount rate to evaluate cost-effectiveness.

64. Since most of the costs in this cost-effectiveness evaluation occur in the early years of the SGRP, whereas most of the benefits occur later, the use of a

higher discount rate would tend to make the SGRP less cost-effective, and the cost-effectiveness analysis more conservative.

65. SCE's recommended 10.5% discount rate is higher than its authorized cost of capital, and no party has recommended a specific higher discount rate.

66. The record is not sufficient to determine whether, in theory, an incremental cost of capital is more appropriate as a discount rate than the authorized cost of capital.

67. SCE currently owns 75.05% of SONGS.

68. SDG&E currently owns 20.00% of SONGS.

69. Anaheim currently owns 3.16% of SONGS.

70. Riverside currently owns 1.79% of SONGS.

71. SCE and SDG&E have agreed that SDG&E's likely remaining ownership share will be 0-14% if the SGRP goes forward.

72. While SCE and SDG&E have submitted their dispute regarding the resulting ownership reduction due to SDG&E's non-participation in the SGRP to arbitration, the result of the arbitration is not binding.

73. Anaheim has decided not to participate in the SGRP.

74. The record does not indicate what Anaheim's likely ownership share will be as a result of its non-participation in the SGRP.

75. In its application, SCE assumed that if the SGRP is not performed, Units 2 and 3 will shut down at the same time.

76. Under the split shutdown scenario, Unit 2 would shut down first and Unit 3 would remain in operation for a longer period.

77. The record demonstrates that Unit 2 will likely shut down before Unit 3, and that Unit 3 can be operated when Unit 2 is shut down.

78. In D.04-12-048 and D.05-04-024, the Commission adopted a GHG adder for carbon dioxide emissions to be used when comparing fossil generation to non-fossil generation in utility resource plans, and energy efficiency programs. The purpose of the GHG adder is to explicitly account for the financial risk associated with GHG emissions.

79. Since D.04-12-048 and D.05-04-024 did not address major repairs to nuclear power plants as an alternative to fossil fuel fired generation, they did not address whether and to what extent the GHG adder should be applied to this proceeding.

80. CCGTs will produce the emissions the GHG adder is intended to address.

81. Nuclear power plants have safety, public health, and environmental risks and effects.

82. Inclusion of nuclear power plant safety, public health, and environmental risks and effects, if they could be quantified, would decrease the cost-effectiveness of the SGRP.

83. Nothing in the record places a dollar amount on nuclear power plant safety, public health, and environmental risks and effects.

84. Inclusion of the GHG adder would increase the cost-effectiveness of the SGRP.

85. This proceeding addresses the effect of the SGRP on SCE's customers only.

86. SCE's SGRP could affect the prices for replacement steam generators, the materials and labor to install them and remove and dispose of the original steam generators, and future O&M costs associated with other SGRPs occurring at about the same time. However, since SCE's customers will not be paying for other SGRPs occurring at about the same time as the SONGS SGRP, they will not be affected.

87. While it is possible that the SGRP could affect the costs for goods and services other than those associated with other SGRPs, the record does not indicate that there would be any significant effect on SCE's customers.

88. SONGS began commercial operation in 1983 and 1984.

89. As a result of the 1987 settlement, CE inspected all steam generator tubes, reviewed relevant documentation, plugged the affected tubes, provided SCE with a $750,000 credit to cover the cost of plugging additional tubes that may experience batwing wear during future operation, and agreed that CE would perform, at its own expense, any plugging of tubes that became necessary as a result of improper annealing or batwing wear prior to the end of operations or 2023, whichever comes first.

90. The 1987 settlement addressed known problems at SONGS with annealing and batwings.

91. SONGS had not experienced stress corrosion cracking or other unanticipated corrosion at the time of the 1987 settlement.

92. The fact that the 1987 settlement did not address problems that had not occurred at SONGS at that time does not make it unreasonable.

93. The record shows that the 1987 settlement did not provide a broad release of potential steam generator corrosion claims against CE.

94. SDG&E's participation in the 1987 settlement indicates that it thought the settlement to be reasonable.

95. The 1993 settlement regarding steam generator feedrings provided SCE with $4 million in discounts on certain goods and services to be purchased from CE in future years.

96. The 1993 settlement did not include a release of claims related in any way to the steam generators that SCE either knew, suspected, or could have come to

know about in the exercise of due care, although CE proposed one, which indicates that CE recognized that SCE had not previously provided such a broad release.

97. SCE and SDG&E filed the 1996 suit against CE seeking compensation for damage to the heat exchangers.

98. CE raised a counterclaim asserting a breach of the NSSS contract by SCE and SDG&E due to failure to maintain property insurance.

99. SCE and SDG&E jointly argued that since the NSSS contract had been completely performed in 1983/84, they had no continuing obligations to CE.

100. The court found, among other things, that the NSSS contract had been performed, and dismissed the 1996 suit.

101. In connection with the 1996 suit, it was SDG&E's position, as well as SCE's, that the NSSS contract warranty had expired.

102. The court's decision indicates that the NSSS contract had expired as claimed by SCE and SDG&E.

103. On a number of occasions, beginning shortly after the commencement of commercial operations, SCE pursued claims against CE, some of which were related to the steam generators.

104. SDG&E is answerable to its shareholders, and Anaheim and Riverside are answerable to their citizens for actions taken by them or on their behalf by SCE.

105. The record shows that, for example, the 1987 settlement was discussed by the SONGS Board of Review, which consists of members representing each of the owners.

106. We have no reason to believe that the other owners have or had any incentive not to sue CE concerning the steam generators if they reasonably

believed there was a basis for such a suit with a reasonable chance for a favorable outcome.

107. There is nothing in the record that indicates that the other owners disagreed with SCE's actions regarding CE.

108. The record indicates that SDG&E is more than willing to make it known when it disagrees with SCE regarding matters related to SONGS.

109. It appears that the other owners agreed with SCE's actions regarding CE, which supports the reasonableness of SCE's actions regarding CE.

110. If we were to assume that SCE should have sued CE, we would have to assume that the result, if any, would have been a settlement, because the record does not indicate that any of the suits against CE were resolved other than by a settlement.

111. The record only indicates the results of two settlements with CE: Consumers Power and APS.

112. The Consumers Power suit concerned damage as a result of the use of phosphate in the water treatment. This damage mechanism was not present at SONGS.

113. The APS suit concerned a design defect in the steam generators that was unrelated to Alloy 600, and is not present at SONGS.

114. The results of the Consumers Power and APS settlements provide no basis for determining the value of a settlement, and the results of all other settlements are confidential.

115. SCE has not requested an exemption from a reasonableness review.

116. TURN's request for a separate reasonableness review of the management of the original steam generators is based primarily on its representation that SCE unreasonably denied its requests for information.

117. TURN had plenty of time to investigate the reasonableness of SCE's management of the original steam generators.

118. If TURN felt that SCE had unreasonably denied its requests for information, it should have filed a motion to compel production of the documents it requested, but it chose not to do so.

119. SCE addressed the steps it has taken to prevent, detect, mitigate, and repair the degradation of the steam generators in the record.

120. Since SCE has not requested, and the Commission will not grant a blanket exemption from a reasonableness review, the primary benefit to SCE included in Aglet's and TURN's guaranteed savings proposals does not exist.

121. Since Aglet's and TURN's proposals guarantee ratepayers a specified level of savings, if the savings are less than the specified amount, but greater than zero, SCE would have to make payments to ratepayers even though the SGRP yields benefits to them.

122. Aglet's and TURN's guaranteed savings proposals are inequitable in that they could require a payment to ratepayers even when the SGRP is cost-effective, without a corresponding potential benefit to SCE.

123. Since, under Aglet's and TURN's guaranteed savings proposals, the basis from which savings would be determined would be an estimate of the costs that would have resulted if the SGRP had not been performed, the level of any achieved savings can only be estimated.

124. Under traditional ratemaking treatment of projects such as the SGRP, recorded expenditures earn AFUDC. When the project is completed, the expenditures and the AFUDC are put into ratebase.

125. Under SCE's construction financing proposal, it would be allowed to recover construction financing costs as they are incurred. No AFUDC would be accrued, and only the expenditures would be put into ratebase.

126. SCE's construction financing proposal is a substantial departure from normal ratemaking treatment of capital expenditures, is without precedent, and would have ratepayers paying for a project before it is used and useful to them.

127. SCE has not demonstrated that its construction financing proposal is needed in order to complete the SGRP.

128. Other than the fact that its financial ratings are lower than when it built SONGS, SCE has shown no financial need for its construction financing proposal.

129. SCE has not shown any ratepayer benefit that would offset the $3.6 million cost of its construction financing proposal.

130. The cost of removal and disposal of the original steam generators was intended to be paid for out of the trusts when SONGS is decommissioned, not out of the depreciation reserve.

131. In this case, there are two sets of steam generators, the original ones and the replacements, and costs of removal and disposal for each set.

132. By the time the SGRP is performed, roughly 80% of the removal and disposal costs of the original steam generators will have been accumulated in the trusts.

133. If the SGRP is performed, the trusts cannot be used for the original steam generators because the original steam generators will be removed and disposed of prior to decommissioning, and will be used for the replacement steam generators when SONGS is decommissioned.

134. By the time the SGRP is complete, current ratepayers will have already paid for about 80% of the cost of removal and disposal of the replacement steam

generators through contributions to the trusts. If they are also required to pay for 100% of the removal and disposal costs of the original steam generators through depreciation before the SGRP is complete, they will have paid for a total of 180% of the costs of removal and disposal of one set of steam generators, thus subsidizing future ratepayers.

135. If the costs of removal and disposal of the original steam generators are charged only to future ratepayers by being depreciated over the remaining lives of SONGS after the SGRP is complete, future ratepayers will have to pay for 100% of the costs of removal and disposal of the original steam generators through depreciation, as well as 20% of the costs of removal and disposal of the replacement steam generators through contributions to the trusts. This would amount to a total of 120% of the costs of removal and disposal of one set of steam generators; thus subsidizing current ratepayers.

136. As to the issues of tax normalization and revenue requirement allocation regarding the depreciation costs, the record does not demonstrate why depreciation of the costs of removal and disposal of the original steam generators should be treated differently than other SONGS depreciation expenses.

137. R.04-09-003 pertains to gains or losses on sales of utility assets.

138. SCE has not proposed that the original steam generators be sold.

139. R.04-09-003 does not apply to the original steam generators.

140. Since R.04-09-003 is scheduled to be decided well before the original steam generators are disposed of, if a decision in R.04-09-003 should apply to them, there will be ample opportunity to do so.

141. The Commission has routinely established MAAC accounts for major capital projects and provided interim rate recovery, subject to refund, prior to the conclusion of a reasonableness review.

142. In this decision, costs are expressed in 2004 dollars.

143. Actual costs will be expressed in nominal dollars when they are recorded.

144. A meaningful comparison of recorded SGRP costs with the costs specified herein will require all costs to be converted to equivalent year dollars by an inflation adjustment.

145. The inflation adjustment should be made based on reliable publications such as the Consumer Price Index published by the U.S. Bureau of Labor Statistics.

146. The record is not sufficient to address how the inflation adjustment should be made.

147. ORA is free to ask for information at any time pursuant to § 309.5(e) and § 314(a).

148. A 92% capacity factor, an 84% capacity factor, or a one-year outage is unlikely.

149. The split shutdown scenario is more costly than shutting both units down when one unit reaches the plugging limit.

150. The base case has an NPV of negative $220.0-310.4 million, depending on SCE's ownership share.

151. The base case does not include a GHG adder that would decrease the net cost of the SGRP by $375.6-313.5 million depending on SCE's ownership share, or the unquantified safety, public health, and environmental risks and effects associated with SONGS that would offset the GHG adder.

152. There is no reason to believe that the unquantified safety, public health, and environmental risks and effects associated with SONGS would completely offset the GHG adder.

153. Variations in the gas price, capacity factor, ownership percentage, O&M costs, capital additions, and SGRP costs could make the SGRP more or less cost-effective.

154. The Commission is the lead agency under CEQA with respect to the environmental review of the SGRP and preparation of the Final EIR.

155. The Final EIR is competent, comprehensive, and in compliance with CEQA.

156. The Final EIR identifies activities and potential environmental impacts that are under the exclusive jurisdiction of the federal government.

157. There are no Class I impacts from the SGRP or alternatives studied in the Final EIR.

158. The Final EIR identifies environmental effects of the SGRP and alternatives that may be mitigated or avoided.

159. The Final EIR identifies the environmentally superior alternative for the Transport Phase as transportation of the replacement steam generators inland through Camp Pendleton Marine Corps Base to the SONGS site. For the Removal Phase, the environmentally superior alternative is off-site disposal of the original steam generators. No environmentally superior alternative was identified for the Staging and Installation Phases.

160. The Final EIR finds that the environmentally superior alternatives for the Transport and Removal Phases, combined with SCE's proposals for the Staging and Installation Phases, are superior to the no project alternative.

161. The Final EIR concludes that the SGRP, with the recommended mitigation measures, will not impose any significant impact on the environment.

162. The mitigation measures identified in the Final EIR are reasonable and feasible.

163. The MMCRP conforms to the recommendations of the Final EIR for measures required to mitigate or avoid environmental impacts of the SGRP.

164. The Final EIR represents our independent judgment regarding the environmental impact of the SGRP.

165. Nothing in the Final EIR precludes the SGRP from going forward.

166. Since we have imposed a cap on SGRP costs, any increases in SGRP costs incurred to comply with the requirements of the Final EIR fall within the cap.

167. Nothing in the Final EIR alters the cost-effectiveness of the SGRP.

168. Nothing in the Final EIR precludes the ratemaking treatment specified herein.

169. Approval of the SGRP, given its marginally cost-effective status, would put the ratepayers at risk for increases in SGRP costs, O&M costs, and capital additions.

170. The O&M cost estimate used in the base case is equal to the amount that SCE represents reasonably bounds the uncertainty inherent in its forecasts.

171. The capital additions estimate used in the base case is slightly greater (3%) than the amount SCE states reasonably bounds the uncertainty inherent in its forecasts.

172. The base case amounts for O&M and capital additions are 10% and 25% higher, respectively, than SCE's base case estimates, which are based on its 2006 GRC.

173. SCE's base case estimates, based on its 2006 GRC, are higher than the base case amounts originally used in its application.

174. Based on SCE's representations in this proceeding, there should be little chance of costs exceeding the O&M costs and capital additions included in the base case.

175. SCE's SGRP cost estimate includes 26% for contingencies.

176. Since the base case O&M costs and capital additions limitations are significantly higher than the amounts SCE claims are reasonable, and the cap on SGRP costs is equal to the amount SCE argues is reasonable, they should impose little risk on SCE.

177. The O&M costs and capital additions shown in Attachment A are expressed in 2004 dollars and will have to be converted to future year dollars, in proceedings such as GRCs where revenue requirements and rates are set, through the use of an inflation adjustment.

178. The inflation adjustment should be made based on reliable publications such as the Consumer Price Index published by the U.S. Bureau of Labor Statistics.

179. SCE has incurred costs related to the SGRP, and continues to do so.

180. It is possible that SCE will decide to cancel the SGRP.

181. The reasonableness of SGRP costs incurred to date has not been addressed in this proceeding.

182. On June 28, 2005, SCE filed a motion to accept the gas price forecast set forth in Advice Letter 1878-E into the record.

183. Advice Letter 1878-E was filed on March 25, 2005 pursuant to Ordering Paragraphs 1 and 24 of D.04-12-048. It contains gas price forecasts for 2005 through 2014.

184. On July 13, 2005, CEC filed a motion to reopen the record for the limited purpose of receiving into the record the executive summary of a document entitled "Safety and Security of Commercial Spent Nuclear Fuel Storage: Public Report" prepared by the National Academy of Sciences. The report addresses

potential safety and security risks of spent fuel storage at commercial reactors, and potential remedies.

185. If the Commission were to direct SCE to provide the parties with cost-effectiveness model runs that incorporate changes previously proposed by TURN and other parties, such model runs would have no evidentiary value because they would not be in the record. To include them into the record, the parties would have to file the appropriate motions after receipt and review of the results. Granting such motions could necessitate additional hearings and briefs.

186. SCE presented a very different and lower gas price forecast in a June 20, 2005 workshop in R.04-04-026.

187. The Commission has in the past allowed additional information into the record without the opportunity for further hearings where the information was non-controversial and readily verifiable.

188. The Commission has determined in the past that additional information that is subject to varying interpretation and legitimate challenge cannot be resolved outside the hearing process where the parties and the Commission can test the credibility, reliability, completeness and accuracy of the information.

189. SCE's gas price forecast, which is the subject of its motion, is neither non-controversial nor readily verifiable.

190. There is no basis for allowing SCE's gas price forecast to be updated without, at the very least, allowing other parties to update their showings concerning gas price forecasts.

191. The gas price forecast is not the only issue in this proceeding.

192. There is nothing unique about the gas price forecast that would warrant treating it differently than other issues.

193. If gas price forecasts are to be updated, there is no reason that information on other issues should not also be updated by other parties.

194. If SCE's motion is granted, it will likely be necessary to require SCE to update its entire showing to incorporate other more recent developments that may be relevant.

195. In order to allow updates by other parties, SCE would have to be required to perform additional model runs for the parties.

196. Updates by SCE, CEC, and/or the other parties of their showings on gas prices and/or other issues would likely necessitate additional hearings and briefs.

197. In the time required to do the updates, hearings, and briefs, there could be additional events, such as additional gas price forecasts, refueling outages, etc. that arguably would require further updates.

198. Granting SCE's and/or CEC's motion could delay resolution of this proceeding indefinitely.

199. At some point, notwithstanding continuing developments, the record must be closed and the matter submitted for decision. That point has been reached in this proceeding.

200. Since Advice Letter 1878-E presents gas price forecasts through 2014 rather than 2022, it could not be used to calculate the cost-effectiveness of the SGRP because it is incomplete.

201. SCE's presentation of a different gas price forecast in the June 20, 2005 workshop demonstrates that the forecast in Advice Letter 1878-E is not SCE's most recent forecast.

202. SCE could have presented more recent forecasts prior to the close of the evidentiary hearings, but chose not to do so.

203. SCE argued in its reply brief that: "The time for adding evidence to this already full record is past."

Conclusions of Law

1. If the SGRP is to go forward, it should do so on the schedule proposed by SCE.

2. Since no party has expressed particular concerns with SCE's model apart from the inputs, the Commission should use SCE's model to calculate the cost-effectiveness of the SGRP in this proceeding.

3. SCE's SGRP cost estimate is reasonable for use in determining the cost-effectiveness of the SGRP.

4. Since SCE states that its high O&M cost estimate (10% above the 2006 GRC estimate) bounds most unforeseeable regulatory and extraordinary operating expenses, and we are estimating expenditures up to 17 years in advance in this proceeding, its high O&M cost estimate is reasonable and should be used in our base case.

5. Since data for 1987-2004 shows that SCE's actual capital additions exceeded its forecasts developed five years before by approximately 25%, SCE states that its high capital additions estimate (22% above the 2006 GRC estimate) reasonably bounds the uncertainty inherent in its capital forecast, and we are estimating expenditures up to 17 years in advance in this proceeding, a capital additions estimate of 25% above the 2006 GRC estimate is reasonable and should be used in our base case.

6. Since an 88% capacity factor reflects the average capacity factor for 1996-2004, and the parties have no objection to it, it is reasonable and should be used in our base case.

7. The 7,250 Btu/kWh heat rate used by SCE is reasonable.

8. Since it unknown whether Mohave will be in service after 2005, and at what cost, there is no way to include potential Mohave generation in the cost-effectiveness evaluation of the SGRP.

9. To mitigate the effects of shutting down SONGS, 745 MVARs of voltage support equipment will need to be installed on SCE's transmission system at a cost of $78.8 million.

10. Since SCE has not shown that its subjective adjustments are reasonable, we should base our cost-effectiveness analysis on the most recent DEI degradation forecasts.

11. For determining cost-effectiveness, it is reasonable to assume the original steam generators will reach the plugging limit when the probability of doing so is 50%, the point at which there is an equal probability they will shut down at an earlier or later date.

12. The most recent DEI forecasts, without SCE's subjective adjustments, are reasonable and should be used in the Commission's cost-effectiveness analysis.

13. The Commission should calculate the cost-effectiveness of the SGRP without explicitly assuming a limitation on capital recovery if the SGRP is not performed.

14. Since SCE's recommended discount rate does not appear likely to overstate the cost-effectiveness of the SGRP, it is reasonable and should be used in the Commission's cost-effectiveness analysis.

15. Since it remains for the Commission to decide in a § 851 application whether SDG&E should participate in the SGRP and if not, what the ownership share reduction should be, the arbitration results should not be considered herein.

16. The cost-effectiveness of the SGRP should be evaluated assuming a 0-14% range of ownership by SDG&E.

17. The Commission should use an ownership range for Anaheim that is proportionately similar to SDG&E's (approximately 0-2.2%).

18. As a result of the decisions by SDG&E and Anaheim not to participate in the SGRP, SCE's ownership share will range from 82.00% to 98.21% with a midpoint of 90.10%.

19. Since whether SDG&E should participate in the SGRP is not at issue in this proceeding, the sale of all or part of SDG&E's ownership share to SCE is also not at issue, and need not be addressed in this proceeding.

20. The tax consequences to SCE of the sale of all or part of SDG&E's ownership share of SONGS to SCE will not affect the cost-effectiveness of the SGRP.

21. The tax consequences to SDG&E of a sale of all or part of its ownership share to SCE are not at issue in this proceeding, and need not be addressed herein.

22. The Commission should consider the GHG adder and the safety, public health, and environmental risks and effects associated with SONGS in its cost-effectiveness evaluation of the SGRP.

23. The Commission should not consider the effect of the SGRP on statewide gas prices because the cost-effectiveness evaluation in this proceeding is limited to SCE's customers who will pay for the SGRP if it is approved.

24. SCE acted reasonably with respect to the 1987 settlement.

25. SCE acted reasonably in connection with the 1996 suit in asserting that the NSSS contract warranty had expired.

26. SCE would have pursued claims against CE regarding the steam generators if it reasonably believed it had a valid claim.

27. Since SONGS is owned by SCE, SDG&E, Anaheim, and Riverside, although SCE is the operating agent, it is reasonable to assume that SCE's actions regarding CE were taken with the knowledge of the other owners.

28. The other owners could and should have been aware of SCE's actions regarding CE.

29. SCE acted reasonably with regards to CE, including the 1987 settlement, the 1993 settlement, and the 1996 suit.

30. There is no basis in the record for determining what the value of a settlement would have been if SCE had sued CE and reached a settlement.

31. TURN's argument that it was denied information regarding SCE's management of the original steam generators is not persuasive.

32. There is currently no need for a separate reasonableness review of SCE's management of the original steam generators.

33. Aglet's and TURN's guaranteed savings proposals should not be adopted.

34. SCE's construction financing proposal should not be adopted.

35. Since current ratepayers will have paid for approximately 80% of the costs of removal and disposal of the replacement steam generators through contributions to the trusts by the time the SGRP is completed, they should only have to pay for 20% of the removal and disposal costs of the original steam generators through depreciation.

36. SCE should be authorized to recover through depreciation a total of 20% of its ownership share of the estimated costs of removal and disposal of the original steam generators over 2006-2011. The remaining amount should be depreciated over the remaining lives of SONGS after the SGRP is performed.

37. TURN's recommendations regarding tax normalization and revenue requirement allocation should not be adopted.

38. Aglet's recommendation that recovery of the undepreciated book value of the original steam generators be deferred until the Commission decides related issues in R.04-09-003 should not be adopted.

39. Since the stranded cost issue is not unique to the SGRP, is beyond the scope of this proceeding, and is more appropriately addressed in connection with any consideration of reopening direct access, it should not be addressed in this proceeding.

40. Since this proceeding does not address whether SDG&E should participate in the SGRP, the Commission should not address whether a cap would apply to SDG&E in this proceeding.

41. Since the ratepayers will be receiving service at that point, it is reasonable that interim rate recovery should begin when SONGS resumes commercial operation after the SGRP is complete for each unit, and the Commission should establish accounts similar to MAAC accounts for that purpose. Interim rate recovery should be implemented by advice letter filings. Such advice letter filings should include a preliminary determination of the inflation adjustment.

42. The selection of the appropriate inflation adjustment applicable to recorded SGRP costs should be addressed in SCE's application to include SGRP costs permanently in rates.

43. Since ORA has not demonstrated in this proceeding that periodic progress reports would materially assist in any future reasonableness review, the Commission should not require them at this point.

44. If the SGRP is not performed, both units would be shut down when either unit reaches the plugging limit.

45. The base case using an 88% capacity factor is reasonable and appropriate for use in determining the cost-effectiveness of the SGRP.

46. The SGRP is marginally cost-effective.

47. The mitigation measures in the Final EIR should be adopted.

48. The Commission should adopt the MMCRP.

49. The Final EIR should be certified for the SGRP, in accordance with CEQA.

50. The SGRP should be approved, subject to the conditions imposed herein. Our approval means that we find it reasonable at this time based on the information in the record at this time. This does not mean that subsequent developments could not make it unreasonable to continue with the SGRP.

51. The Commission's approval of the SGRP should be contingent upon SCE's performance of the SGRP utilizing the environmentally superior alternatives for the Transport and Removal Phases, as well as SCE's proposals for the Staging and Installation Phases, and in compliance with the mitigation measures identified in the Final EIR.

52. The Commission's Executive Director should supervise and oversee the SGRP insofar as it relates to monitoring and enforcement of the mitigation measures described in the Final EIR.

53. The Executive Director should be allowed to delegate such duties to the Commission staff or outside staff.

54. The Executive Director should be authorized to employ staff independent of the Commission staff to carry out such functions, including, without limitation, the on-site environmental inspection, monitoring and mitigation supervision of construction of the SGRP. Such staff should be individually qualified professional environmental monitors or be employed by one or more qualified firms or organizations.

55. In monitoring the implementation of the environmental mitigation measures described in the Final EIR, the Executive Director should attribute the acts and omissions of SCE's employees, contractors, subcontractors or other agents to SCE.

56. SCE should be required to comply with all orders and directives of the Executive Director concerning implementation of the environmental mitigation measures described in the Final EIR.

57. The Executive Director should not authorize SCE to commence actual construction until SCE has entered into a cost reimbursement agreement with the Commission for the recovery of the costs of the MMCRP described in the Final EIR including, but not limited to, special studies, outside staff, or Commission staff costs directly attributable to mitigation monitoring.

58. The Executive Director should be authorized to enter into an agreement with SCE that provides for such reimbursement on terms and conditions consistent with this decision in a form satisfactory to the Executive Director. The terms and conditions of such agreement should be deemed conditions of approval of the application to the same extent as if they were set forth in full in this decision.

59. SCE's right to construct the SGRP as set forth in this decision should be subject to all other necessary state and local permitting processes and approvals.

60. SCE should be required to file a written notice in this docket, served on all parties to this proceeding, executed by an officer of SCE duly authorized (as evidenced by a resolution of its board of directors duly authenticated by a secretary or assistant secretary of SCE), to acknowledge SCE's acceptance of the conditions set forth herein. Failure to file and serve such notice within 75

calendar days of the effective date of this decision should result in the lapse of the authority granted herein.

61. The Executive Director should file a Notice of Determination for the SGRP as required by CEQA and the regulations promulgated thereto.

62. In order to put reasonable bounds on ratepayer risk and provide a reasonable assurance that the SGRP will remain cost-effective, the Commission should place a cap on the SGRP costs at the amount estimated by SCE, and limit future recovery of O&M costs and capital additions to the amounts included in the base case, as shown in Attachment A. These limitations should, based on SCE's representations in this proceeding, impose little risk on SCE's shareholders, and fairly balance the risk of future cost increases between ratepayers and shareholders.

63. In future SCE ratemaking proceedings that determine the revenue requirement associated with SONGS O&M costs and capital additions, the amounts authorized should not exceed the amounts shown in Attachment A.

64. Since O&M costs and capital additions will vary from year to year, to the extent that the authorized revenue requirement associated with SONGS O&M costs and capital additions is set at lower amounts in certain years, the unused portions should be allowed to be used to increase the limits on the authorized amounts in subsequent years. However, amounts should not be borrowed from later years to increase the limit in earlier years. In addition, amounts should not be switched between O&M costs and capital additions.

65. Since the inflation adjustment was not addressed in the record, the selection of the appropriate inflation adjustment applicable to the costs shown in Attachment A should be considered in proceedings such as GRCs where revenue requirements and rates are set.

66. If SCE cancels the SGRP for any reason at any time, and requests recovery of any of the incurred costs from ratepayers, the Commission should retain the discretion to conduct a reasonableness review of the costs incurred, including cancellation costs, and to determine the appropriate ratemaking treatment, if any, of incurred SGRP costs.

67. Allowing updates of the record in other proceedings is beyond the scope of this proceeding.

68. The ALJ's ruling denying SCE's and CEC's motions should be affirmed.

69. This decision should be effective immediately so that the SGRP may proceed in a timely manner.

O R D E R

IT IS ORDERED that:

1. The application of Southern California Edison Company (SCE) for approval of its steam generator replacement program (SGRP) for San Onofre Nuclear Generating Station Units 2 & 3 (collectively SONGS, separately Unit 2 or Unit 3) is approved subject to the following conditions.

2. Our approval of the SGRP means that we will not disallow SGRP costs on the basis that the decision to undertake the SGRP is unreasonable at this time.

3. The Commission will conduct an after-the-fact reasonableness review of the SGRP costs. The reasonableness review of the costs of removal and disposal of the original steam generators may be done in a separate review if removal and disposal is completed a significant amount of time after SONGS resumes commercial operation.

4. The maximum allowable SGRP cost (cap) is $680 million (2004 dollars) plus accumulated Allowance for Funds Used During Construction (AFUDC) ($569

million for replacement steam generator installation, $111 million for removal and disposal of the original steam generators, and accumulated AFUDC), multiplied by SCE's ownership share. The cap applies to total SGRP costs. To the extent that replacement steam generator installation costs are less than $569 million, more funds may be used for removal and disposal of the original steam generators, and vice versa. SCE will not be allowed to recover costs in excess of the cap.

5. SCE may record in a balancing account the revenue requirement associated with the steam generator replacement for each unit as of the date of operation of each unit.

6. SCE may record in a balancing account the revenue requirement associated with the removal and disposal of the original steam generators for each unit as of the date removal and disposal is completed. This amount shall not include recovery of any revenue requirement associated with the amount to be recovered through depreciation pursuant to Ordering Paragraph 10.

7. SCE may include the revenue requirement associated with the balancing account balance for steam generator replacement for each unit in rates, subject to refund pending the reasonableness review, on January 1 of the year following commercial operation of each unit. SCE shall file an advice letter to implement the above. The rate increase shall not take place until and unless the advice letter is approved by the Commission.

8. SCE may include the revenue requirement associated with the balancing account balance for removal and disposal of the original steam generators for each unit in rates, subject to refund pending the reasonableness review, on January 1 of the year following completion of the removal and disposal of the original steam generators for each unit. SCE shall file an advice letter to

implement the above. The rate increase shall not take place until and unless the advice letter is approved by the Commission.

9. After completion of the SGRP, SCE shall be required to file an application for inclusion of the SGRP costs permanently in rates. The reasonableness review of such costs shall be conducted in connection with the application. In the event the removal and disposal of the original steam generators is delayed significantly beyond the commercial operation of both units, it may be addressed in a subsequent application.

10. SCE is authorized to recover through depreciation a total of 20% of its ownership share ($22.2 million times its ownership share) of the estimated removal and disposal costs for the original steam generators over 2006-2011.

11. The selection of the appropriate inflation adjustment to convert the 2004 dollars adopted herein to nominal dollars will be addressed in SCE's application to include SGRP costs permanently in rates.

12. In future SCE ratemaking proceedings that determine the revenue requirement associated with SONGS operations and maintenance (O&M) costs and capital additions, the amounts authorized in rates shall not exceed the amounts shown in Attachment A. To the extent that the authorized revenue requirement associated with SONGS O&M costs and capital additions is set at lower amounts in certain years, the unused portions may be used to increase the limits on the authorized amounts in subsequent years. However, amounts may not be borrowed from later years and to increase the limit in earlier years. In addition, amounts may not be switched between O&M costs and capital additions.

13. The selection of the appropriate inflation adjustment to convert future O&M costs and capital additions as shown in Attachment A from 2004 dollars to

the appropriate future year dollars shall be determined in the proceedings specified in Ordering Paragraph 12.

14. If SCE cancels the SGRP for any reason at any time, and requests recovery of any of the incurred costs from ratepayers, the Commission retains the discretion to conduct a reasonableness review of the costs incurred, including cancellation costs, and to determine the appropriate ratemaking treatment, if any.

15. The Final Environmental Impact Report (Final EIR) is certified for the SGRP, and is certified for use by responsible agencies in considering subsequent approvals of portions thereof.

16. The Mitigation Monitoring, Compliance and Reporting Program (MMCRP) included in the Final EIR is adopted.

17. SCE shall, as a condition of our approval of the SGRP, carry out the SGRP using the environmentally superior alternatives for the Replacement Steam Generator Transport Phase and the Original Steam Generator Removal, Staging, and Disposal Phase of the SGRP as identified in the Final EIR, and may utilize SCE's proposals studied in the Final EIR for the Replacement Steam Generator Staging and Preparation Phase and the Replacement Steam Generator Installation and Return to Service Phase.

18. SCE shall, as a condition of our approval of the SGRP, comply with all applicable mitigation measures as specified in the Final EIR.

19. The Commission's Executive Director shall supervise and oversee the SGRP insofar as it relates to monitoring and enforcement of the mitigation measures described in the Final EIR.

20. The Executive Director may delegate such duties to the Commission staff or outside staff.

21. The Executive Director is authorized to employ staff independent of the Commission staff to carry out such functions including, without limitation, the on-site environmental inspection, monitoring and mitigation supervision of construction of the SGRP. Such staff shall be individually qualified professional environmental monitors or be employed by one or more qualified firms or organizations.

22. In monitoring the implementation of the environmental mitigation measures described in the Final EIR, the Executive Director shall attribute the acts and omissions of SCE's employees, contractors, subcontractors or other agents to SCE.

23. SCE shall comply with all orders and directives of the Executive Director concerning implementation of the environmental mitigation measures described in the Final EIR.

24. The Executive Director shall not authorize SCE to commence actual construction until SCE has entered into a cost reimbursement agreement with the Commission for the recovery of the costs of the MMCRP described in the Final EIR including, but not limited to, special studies, outside staff, or Commission staff costs directly attributable to mitigation monitoring.

25. The Executive Director is authorized to enter into an agreement with SCE that provides for such reimbursement on terms and conditions consistent with this decision in a form satisfactory to the Executive Director. The terms and conditions of such agreement shall be deemed conditions of approval of this application to the same extent as if they were set forth in full in this decision.

26. SCE's right to construct the SGRP as set forth in this decision is subject to all other necessary state and local permitting processes and approvals.

27. SCE shall file a written notice in this docket, served on all parties to this proceeding, executed by an officer of SCE duly authorized (as evidenced by a resolution of its board of directors duly authenticated by a secretary or assistant secretary of SCE), to acknowledge SCE's acceptance of the conditions set forth herein. Failure to file and serve such notice within 75 calendar days of the effective date of this decision shall result in the lapse of the authority granted herein.

28. The Executive Director shall file a Notice of Determination for the SGRP as required by the California Environmental Quality Act and the regulations promulgated thereto.

29. We affirm the Administrative Law Judge's ruling discussed herein.

30. Application 04-02-026 is closed.

This order is effective today.

Dated ____________________________, at San Francisco, California.

ATTACHMENT A

Table of Adopted O&M Costs and Capital Additions
(2004 dollars)

Year	O&M Costs ($millions)	Capital Additions ($millions)
2009	483,009	90,458
2010	499,781	97,583
2011	523,769	92,834
2012	525,820	93,271
2013	516,780	92,645
2014	518,086	91,983
2015	521,096	94,976
2016	521,212	95,939
2017	579,514	94,162
2018	447,402	94,105
2019	590,119	76,667
2020	510,288	57,716
2021	524,595	33,517
2022	456,044	16,675

Notes:

1. Capital additions exclude taxes, return, and administrative and general expenses (A&G).
2. O&M includes labor insurance, and fuel, but excludes A&G and franchise fees.
3. This table shows 100% of the O&M and capital additions. The amount authorized for SCE will be its ownership portion times the above amounts. For example, if SCE owns 90.10% of SONGS, SCE would be authorized a maximum of 90.10% of the values shown in the table.

(END OF ATTACHMENT A)