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Decision 05-11-026 November 18, 2005

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Application of Pacific Gas and Electric Company (U 39 E) for Authority to Increase Revenue Requirements to Recover the Costs to Replace Steam Generators in Units 1 and 2 of the Diablo Canyon Power Plant.	Application 04-01-009 (Filed January 9, 2004)

(See Attachment A for List of Appearances)

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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 Pacific Gas and Electric Company (PG&E) for Diablo Canyon Power Plant Units 1 & 2 (Unit 1, Unit 2, collectively Diablo), and related matters. Based on our analysis of the SGRP as discussed herein, we find that the SGRP is cost-effective, and approve the application. In addition, we certify the Final Environmental Impact Report (Final EIR) for the SGRP pursuant to the California Environmental Quality Act (CEQA).[1] Our approval of the application is conditioned upon PG&E's acceptance of the requirements imposed herein. Our findings and requirements are as follows:

- The maximum allowable SGRP cost (cap) is $815 million (November 2008 dollars) as adjusted for actual inflation and cost of capital.[2] PG&E will not be allowed to recover SGRP costs in excess of this amount.
- $706 million (November 2008 dollars), as adjusted for actual inflation and cost of capital, is a reasonable estimate of the SGRP cost.[3]

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[1] The CEQA statute appears at Cal. Pub. Res. Code Sections 21000 *et seq*.

[2] The $815 million cap will be adjusted for actual inflation and cost of capital by the same percentage as the $706 million amount addressed later in this decision. All references to the cap are as adjusted for actual inflation and cost of capital.

[3] All references to the $706 million figure are as adjusted for actual inflation and cost of capital. The $706 million figure includes $326 million for Unit 1 and $380 million for Unit 2.

- We do not intend to conduct an after-the-fact reasonableness review if the SGRP cost does not exceed $706 million.
- If the SGRP cost exceeds $706 million, or the Commission later finds that it has reason to believe the costs may be unreasonable regardless of the amount, the entire SGRP cost shall be subject to a reasonableness review.
- PG&E shall record in the Utility Generation Balancing Account (UGBA) the revenue requirement associated with plant additions up to the cap as of the date of operation of each unit.[4]
- PG&E shall include the revenue requirement associated with each unit in rates, up to $326 million for Unit 1 and $380 million for Unit 2 on January 1 of the year following commercial operation of each unit, subject to refund. PG&E shall file an advice letter to request authority to implement the above rate increase for each unit. The rate increase shall not take effect until and unless the advice letter is approved by the Commission.
- After completion of the SGRP, PG&E shall file an application for inclusion of the costs thereof permanently in rates, regardless of whether the SGRP costs exceed $706 million. If a reasonableness review is performed, it shall be done in connection with that application.
- PG&E shall carry out the SGRP using the environmentally superior alternatives as specified herein and shall comply with all applicable mitigation measures as specified in the Final EIR.

[4] The $815 million cap is a total SGRP cost cap. It is not divided into a specific amount for each unit, and only applies to the SGRP as a whole. Therefore, if the cap is reached, it will likely be after the first unit is completed.

The Commission retains the discretion to require a reasonableness review, and/or specify a different ratemaking treatment. In addition, the Commission retains the discretion to determine the appropriate ratemaking treatment, and conduct a reasonableness review of costs incurred, if the SGRP is cancelled for any reason.

II. Background

Diablo is a nuclear power plant consisting of two units, Unit 1 and Unit 2, with a total capacity of approximately 2,260 megawatts (MW).[5] It generates approximately 17,000 gigawatt-hours of electricity each year, or about 20% of the electric energy delivered by PG&E in its service territory. It is located on the California coast 7.5 miles north of Avila Beach, in San Luis Obispo County. Each of the two units has four steam generators manufactured by Westinghouse Electric Corporation. In each steam generator, heat from water circulated through the reactor is used to turn another stream of water into steam to run the turbines that drive the electric generators.

Diablo is licensed by the Nuclear Regulatory Commission (NRC) to operate until 2024 (Unit 1) and 2025 (Unit 2).[6] PG&E estimates that Diablo will likely be required to shut down because of the degradation of the steam generators in 2013 (Unit 2) and 2014 (Unit 1). As a result, PG&E is requesting approval of its SGRP in this application.

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[5] This includes a 40 MW increase in capacity due to the low-pressure turbine rotor replacement scheduled for 2005-2006.

[6] This assumes recapture of the approximately three years of operating license for Unit 1 consumed prior to fuel loading and full-power operation. PG&E forecasts an 80% probability of NRC approval of its request for recapture.

Hearings were held from September 20 through October 1, 2004. The application was submitted upon the receipt of reply briefs on November 9, 2004. On February 24, 2005, we issued Decision (D.) 05-02-052, an interim order that presented our preliminary findings as to the cost-effectiveness of the SGRP. The proceeding remained open to consider the results of the CEQA review. The Final EIR was released on August 15, 2005.

III. PG&E's Request

In this application, PG&E requests that the Commission approve the SGRP. Specifically, PG&E requests that the Commission:

1. Determine that $706 million is a reasonable and prudent cost for the SGRP;
2. Authorize PG&E to recover the costs, up to $706 million, without further reasonableness review;
3. Authorize PG&E to seek recovery in rates of any amounts above $706 million, subject to an after-the-fact reasonableness review of the additional costs;
4. Authorize PG&E to record the revenue requirement associated with SGRP plant additions for each unit equal to or less than $706 million in the UGBA as of the date of operation of each unit;
5. Authorize PG&E to include the revenue requirement associated with each unit in rates on January 1 of the year following commercial operation of each unit;
6. Authorize PG&E to record in the UGBA the revenue requirement, if any, associated with plant additions above $706 million ($326 million for Unit 1 and $380 million for Unit 2) as of the date of operation of each unit. PG&E would be at risk for these revenue requirements, and would only be allowed to include them in rates if such costs were ultimately found to be reasonable and prudent by the Commission; and

7. Approve modifications to the UGBA to allow for the recording of the above revenue requirements.

IV. Interim Decision

Based on our analysis of the SGRP, our preliminary findings in D.05-02-052 were that:[7]

- The SGRP is cost-effective.
- $706 million, as adjusted for actual inflation and cost of capital, is a reasonable estimate of the SGRP cost.
- We do not intend to conduct an after-the-fact reasonableness review if the SGRP cost does not exceed $706 million. However, we are not precluded from doing so.
- If the SGRP cost exceeds $706 million, or the Commission later finds that it has reason to believe the costs may be unreasonable regardless of the amount, the entire SGRP cost will be subject to a reasonableness review.
- The cap is $815 million as adjusted for actual inflation and cost of capital. PG&E will not be allowed to recover SGRP costs in excess of this amount.
- We intend to allow PG&E to record in the UGBA the revenue requirement associated with plant additions up to the cap as of the date of operation of each unit.
- We intend to allow PG&E to include the revenue requirement associated with each unit in rates, up to $326 million for Unit 1 and $380 million for Unit 2, on January 1 of the year following commercial operation of each unit, subject to refund. PG&E will be required to file an advice letter to request authority to implement the above rate increase for each unit. The rate increase shall not take

[7] Our preliminary findings are contained in Ordering Paragraph 1 of D.05-02-052.

effect until and unless the advice letter is approved by the Commission.

- After completion of the SGRP, PG&E will be required to file an application for inclusion of the costs thereof permanently in rates, regardless of whether the costs exceed $706 million. If a reasonableness review is performed, it will be done in connection with the application.

V. Cost-Effectiveness Conclusion

In D.05-02-052, we adopted the following changes to PG&E's modeling assumptions to be used in our cost-effectiveness calculations:

- SGRP cost of $706 million (base case), and $815 million cap.
- Base capital additions of $87 million (2003 dollars) for 2016 and after.[8]
- 4.5% operations and maintenance expense escalation rate after 2011.
- September 5, 2003 and April 19, 2004, NYMEX closing prices for gas.[9]
- 30-year facility life for combined cycle generation.

The following table from D.05-02-052 shows the mean net present value of revenue requirements (NPV), in 2003 dollars, of five scenarios illustrating the

[8] Base capital additions exclude the SGRP costs and specified major capital projects included in the application. After 2015, only base capital additions were included in PG&E's forecast.

[9] NYMEX is the New York Mercantile Exchange.

results of our cost-effectiveness analysis.[10] A negative NPV indicates that the costs of the SGRP exceed the benefits, which means that the SGRP is not cost-effective. Likewise, a positive or zero NPV indicates that the SGRP is cost-effective. The term "High Gas" refers to replacement electricity costs based on the September 5, 2003 NYMEX closing prices for gas. The term "Low Gas" refers to replacement electricity costs based on the April 19, 2004 NYMEX closing prices for gas.[11] The base case (Scenario 1) used the above modeling assumptions and a $706 million SGRP cost. Subsequent scenarios incorporated additional assumptions. Each scenario is shown using the 90.6% capacity factor used by PG&E in its application, as well as an 85% and an 80% capacity factor to illustrate the effect of a lower capacity factor on the cost-effectiveness of the SGRP.

[10] The NPV refers to the net present value to ratepayers of the revenue requirements resulting from the estimated costs and benefits of the SGRP. It is calculated using PG&E's Monte Carlo simulation model.

[11] The "Low Gas" estimate is lower than the "High Gas" estimate.

Table of NPV Results From D.05-02-052

Scenario	Assumptions	Capacity factor[12]	Low Gas ($ millions)	High Gas ($ millions)
1	Base	90.6%	522	804
		85%	313	578
		80%	129	378
2	Base +1 unit refueling outage[13]	90.6%	429	687
		85%	226	468
		80%	47	275
3	Base + 1 unit refueling outage +$815 million SGRP cost	90.6%	333	591
		85%	130	372
		80%	-49	179
4	Base + 1 unit refueling outage +$815 million SGRP cost +1-year outage[14]	90.6%	194	439
		85%	-1	229
		80%	-172	45
5	Base +2 unit refueling outage +$815 million SGRP cost[15]	90.6%	217	450
		85%	21	240
		80%	-152	54

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

[13] At the time D.05-02-052 was written, the tube degradation results of the inspections of the steam generator tubes during the November 2004 outage of Unit 2, and the early 2004 outage of Unit 1 were not known. Therefore, for the purpose of this scenario, it was assumed that the results of these inspections would indicate that Unit 2 would go out of service without the SGRP one refueling cycle later.

[14] A one-year outage was assumed to occur in 2015 if the SGRP is performed. A one-year outage occurring after 2015 would have a lesser effect on cost-effectiveness because of the time value of money.

[15] At the time D.05-02-052 was written, the tube degradation results of the inspections of the steam generator tubes during the November 2004 outage of Unit 2, and the early 2004 outage of Unit 1 were not known. Therefore, for the purpose of this scenario, it was assumed that the results of these inspections would indicate that both units would go out of service without the SGRP one refueling cycle later.

PG&E performed steam generator tube inspections during the October-November 2004 refueling outage of Unit 2. When D.05-02-052 was written, the tube degradation results of the tube inspections for Unit 2 were not available, and the tube degradation results of the tube inspections during the Unit 1 refueling outage in early 2004 were not in the record. Scenarios 3, 4, and 5 were based on possible results of these inspections. We determined that Scenario 3 was the most probable outcome of those inspections, and found the SGRP cost-effective.

On March 17, 2005, the assigned Administrative Law Judge (ALJ) issued a ruling requiring PG&E to provide cost-effectiveness calculations using the tube degradation results of the tube inspections performed during the last refueling outages for both units. These calculations were to be identical to the calculations performed in connection with D.05-02-052, the results of which are shown in the above table, except that the tube degradation results of the last refueling outages for each unit would be substituted for the possible results used in Scenarios 3, 4, and 5. The ruling stated the ALJ's intention to make PG&E's response to the ruling an exhibit. On April 3, 2005, PG&E filed its response to the ruling. Since no party filed an objection to PG&E's response, it was marked for identification and received into evidence. The tube degradation results indicate that Unit 1 will run for one additional refueling cycle, and Unit 2 will run for one half of an additional refueling cycle (relative to the Scenario 1 assumptions) if the SGRP is not performed. The cost-effectiveness calculations incorporating these results are shown in the following table in 2003 dollars:

Table of NPV Results

Scenario	Assumptions	Capacity factor	Low Gas ($ millions)	High Gas ($ millions)
6	Base (updated)	90.6%	422	678
	+$815 million SGRP Cost	85%	216	438
		80%	47	254
7	Base (updated)	90.6%	226	458
	+815 million SGRP cost	85%	19	227
	+1-year outage	80%	-148	38

Scenarios 6 and 7 replace Scenarios 3, 4, and 5 because they are based on actual rather than possible tube degradation results of the last inspections for each unit.[16]

As indicated in D.05-02-052, we have no reason to believe that a one-year outage of one unit is likely. Therefore, we believe Scenario 6 is the most

[16] Scenario 3 assumed one unit will run for an additional refueling cycle without the SGRP. Scenario 5 assumed both units will run for an additional refueling cycle. Since Scenario 6 assumes that Unit 1 will run for one additional refueling cycle, and Unit 2 will run for one half of an additional refueling cycle, one would expect the results for Scenario 6 to be between the results for Scenarios 3 and 5. However, that is not the case. The calculations for Scenarios 3 and 5 were developed by adding the estimated effects of delaying the expected shutdown dates for one or both units by one refueling cycle respectively. No changes to the operations of Diablo were included except in the additional refueling cycles. This tended to understate the cost-effectiveness of the SGRP. For Scenario 6, a more comprehensive calculation was performed. It included changes to plant operations other than in the additional refueling cycles due to the updated degradation results. The revisions included such things as changes to the expected shutdown dates, increased probability of mid-cycle outages and extended outages, and increased inspection and repair costs. Scenario 7 also reflects these changes.

probable. Under this scenario, the SGRP will be cost-effective, even at the low gas price, the $815 million SGRP cost, and an 80% capacity factor.

Scenario 7 shows that, although we do not believe it likely, if we add a one-year outage in 2015 to Scenario 6, the SGRP remains cost-effective at the low gas price and the $815 million SGRP cost as long as the capacity factor remains at or above approximately 85%.

The NPVs for Scenario 6 show the SGRP to be more cost-effective than Scenario 3, the scenario determined to be most likely in D.05-02-052. Scenario 7 is Scenario 6 plus a one-year outage, and corresponds to Scenario 4 in D.05-02-052. The NPVs for Scenario 7 show the SGRP to be more cost-effective than Scenario 4, except under the High Gas assumption at 85% and 80% capacity factors where it is only slightly less cost-effective ($2 million and $7 million less, respectively). Therefore, for the reasons discussed herein and in D.05-02-052, we find the SGRP cost-effective.

VI. 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 environmental impact report (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 304 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 130 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 March 21, 2005, we gave notice of the availability of the Draft EIR. We then held public participation hearings 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 5, 2005. Comments on the Draft EIR are addressed in the Final EIR, which was released on August 15, 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.[17]

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.

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, hazardous materials, hydrology and water quality, land use and recreation, noise, public services, system and transportation safety, traffic, 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

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

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.[18]

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 Diablo as an operating power plant, as well as radioactive waste storage facilities, electric transmission infrastructure, other existing facilities, and Diablo's 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 Diablo.
- 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 the removal of the original steam generators and installation of the replacement steam generators.
- Original Steam Generator Removal, Transport and Storage Phase (Removal Phase)-This includes the removal of the original steam generators from the containment structures, transporting them to the on-site storage location, and construction of the on-site storage structure.

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

- Replacement Steam Generator Installation Phase (Installation Phase)-This includes the installation of the replacement steam generators.

The Final EIR analyzes one alternative for the Transport Phase, three alternatives for the Staging Phase, five alternatives for the Removal Phase, 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.[19] The Final EIR finds that, in the Transport Phase, the environmentally superior alternative is to unload the replacement steam generators from barges at the Diablo Intake Cove, rather than at Port San Luis. This is primarily due to the fact that ground transportation of the replacement steam generators would take place completely within the Diablo site, rather than between Port San Luis and the Diablo site. For the Staging and Installation Phases, no environmentally superior alternative was identified. For the Removal Phase, on-site storage of the original steam generators is found to be environmentally superior to off-site disposal. In addition, the environmentally superior alternatives for the Transport and Removal Phases, combined with any of the studied alternatives 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

[19] 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).

of environmental impact levels in the Final EIR. With these mitigation measures, the Final EIR concludes that all potential environmental effects could 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 and considered the Final EIR as part of our consideration of 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.

VII. Conclusion

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 in D.05-02-052, because the ratemaking treatment of SGRP costs is beyond the scope of the Final EIR. For the reasons discussed in this decision, and

in D.05-02-052, we approve the SGRP and adopt the preliminary findings shown in Ordering Paragraph 1 of D.05-02-052. Our approval is contingent upon PG&E's performance of the SGRP utilizing the environmentally superior alternative, and in compliance with the mitigation measures identified in the Final EIR.[20] PG&E's compliance will be overseen by the Commission's Executive Director.

VIII. Comments on Proposed Decision

The proposed decision 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 PG&E, Southern California Edison Company, Aglet Consumer Alliance, and jointly by San Luis Obispo Mothers for Peace, Greenpeace, Sierra Club, Public Citizen, and Environment California (collectively MFP).

MFP raises a number if issues that have already been addressed in the Final EIR and we will not repeat them here. In addition, MFP states that we misunderstood its recommendation regarding security measures in our interim decision in this proceeding and that our conclusions regarding its recommendation are, therefore, wrong. MFP's representations regarding the interim decision should have been addressed in its comments on the PD for the interim decision. However, MFP failed to do so. Nevertheless, we will address them herein.

[20] The environmentally superior alternative includes offloading of the replacement steam generators at the Diablo Intake Cove, on-site storage of the original steam generators, and any of the Staging and Installation Phase alternatives evaluated in the Final EIR for which mitigation measures are specified.

In its exhibits regarding enhanced security requirements, MFP presented three scenarios to illustrate its estimates of the resulting security costs. MFP states that we misunderstood its first and second scenarios. It, therefore, concludes that our decision not to adopt its recommendation was erroneous.

MFP's first scenario assumes that Diablo will stay in operation. In D.05-02-052, we stated that this scenario corresponds to both the case where the SGRP is performed and where it is not performed unless it is known at the time the enhanced security requirements are put into effect that neither Diablo unit will continue in operation for more than three years. MFP states that our understanding of its first scenario is incorrect. It says that this scenario applies only if the SGRP is performed and Diablo continues in operation for 15 years.

MFP's exhibit includes tables that show cumulative costs for each scenario. Its Table A shows the cumulative costs for its first scenario over a 15 year period. However, its exhibit states that "In the scenario underlying Table A, the Diablo reactors would continue to operate for a number of years after 2004." Its exhibit also states that "Each scenario begins in year X, which is the year of initiation of a program of enhanced-defense measures. Year X might be 2006, 2007, or some later year." Therefore, MFP's first scenario does not assume that operations would continue for 15 years. MFP's exhibit merely shows cumulative costs if Diablo operated for 15 years. In addition, the record shows that there is no absolute certainty as to when Diablo would shut down without the SGRP. Therefore, it is possible that Diablo could continue to operate without the SGRP for more than three years after enhanced security requirements are imposed. As a result, it does not follow that MFP's first scenario applies only if the SGRP is performed and Diablo continues in operation for 15 years.

MFP's third scenario assumes that Diablo continues in operation for three years after initiation of the enhanced security requirements, and then shuts down. Therefore, we reasonably concluded that MFP's first scenario only applies if its third scenario does not apply. As a result, MFP's first scenario would apply if Diablo operates more than three years after initiation of the enhanced security requirements. For the above reasons, MFP's argument that we misunderstood its first scenario is incorrect.

In the interim decision, we stated that MFP's second scenario assumes that Diablo is permanently shutdown when the enhanced security requirements are put into effect. Therefore, a lesser level of enhanced security requirements is assumed to be put into effect to safeguard spent fuel. We then concluded that this scenario is unlikely. MFP states that its second scenario was intended to show enhanced security costs for spent fuel only, and that it was not intended to represent a likely scenario. It, therefore, concludes that we misunderstood this scenario.

Our representation of the second scenario is accurate. In addition, the fact that MFP did not intend it to be a likely scenario does not make our determination that the second scenario is unlikely wrong. Therefore, MFP's argument that we misunderstood its second scenario is incorrect.

As discussed above, the interim decision does not reflect a misunderstanding of MFP's recommendations regarding enhanced security requirements and we see no reason to change our conclusion in the interim decision not to adopt MFP's recommendations.

In our interim decision, we placed a cap on the SGRP costs. We also noted that nothing prevents PG&E from filing a petition to modify the final decision in this proceeding if a force majeure or other events beyond its control were to

occur. PG&E recommends that such language should be included in an ordering paragraph in this decision to avoid any unnecessary confusion between this decision and the interim decision.

Our statement in the interim decision that nothing prevents PG&E from filing such a petition was merely an acknowledgement that any party can file a petition to modify a decision. The filing of such a petition does not mean that it will necessarily be granted. This language was not intended to modify the cap or authorize such a petition. For that reason, it was not included as an ordering paragraph in the interim decision, and we do not include it herein.

PG&E recommends that this decision allow the Commission's Executive Director to authorize PG&E to implement the SGRP's transport phase using the other alternative evaluated in the Final EIR because it was found to have no immitigable effects.

The Final EIR finds that, due to the long time between publication of the Final EIR and the arrival of the replacement steam generators, it may be necessary for PG&E to utilize a different alternative than the one approved herein. The Final EIR states that PG&E would need to request the Commission's approval of the change. This might require an addendum to the Final EIR, or a supplemental EIR. The appropriate vehicle for such a request is a petition to modify this decision. Assuming that it has a good reason for its request, PG&E should be able to obtain approval in a timely manner. This will also allow other parties to be heard regarding the change. Therefore, we see no reason to adopt PG&E's request.

PG&E states that the PD is incorrect in its statement that all dollars are stated in 2003 dollars unless otherwise specified. It states that all dollars are in nominal dollars unless otherwise specified. In the PD, the NPV amounts are all

in 2003 dollars. However, that is not the case for the $706 million SGRP costs, or the $815 Million cap.

PG&E's Exhibit PG&E-1 explains the derivation of the $706 million SGRP cost estimate.[21] It explains that the cost estimate for the installation of the steam generators and the owner's costs are expressed in January 2004 dollars and escalated for 58 months at a monthly escalation rate of 0.226%. For the replacement steam generator costs, no escalation was applied because PG&E expected to obtain a fixed price contract. Subsequently, PG&E signed a fixed price contract for fabrication of the replacement steam generators. However, it did not revise its cost estimate. Therefore, the $706 million SGRP cost is in November 2008 dollars. Since the $815 million cap was calculated as a 15% increase in the $706 million estimate, it too is in November 2008 dollars. We have made the necessary changes herein to reflect these facts.[22]

IX. 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. D.05-02-052 identified Scenario 3 as the most likely scenario.

2. Scenarios 6 and 7 replace Scenarios 3, 4, and 5 because they are based on actual rather than possible tube degradation results of the last inspections for each unit.

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[21] The SGRP cost estimate consists of steam generator installation costs, owner's costs and replacement steam generator costs.

[22] This error also appeared in D.05-02-052.

3. Under Scenario 6, the most probable scenario, the SGRP will be cost-effective, even at the low gas price, the $815 million SGRP cost, and an 80% capacity factor.

4. Scenario 7 shows that, although we do not believe it likely, if we add a one-year outage in 2015 to Scenario 6, the SGRP remains cost-effective at the low gas price and the $815 million SGRP cost as long as the capacity factor remains at or above approximately 85%.

5. The NPVs for Scenario 6 show the SGRP to be more cost-effective than shown in Scenario 3.

6. The NPVs for Scenario 7 show the SGRP to be more cost-effective than Scenario 4, except under the High Gas assumption at 85% and 80% capacity factors where it is only slightly less cost-effective.

7. The SGRP is cost-effective for the reasons discussed herein and in D.05-02-052.

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

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

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

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

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

13. The Final EIR identifies the environmentally superior alternative for the Transport Phase as the Diablo Intake Cove, and for the Removal Phase as on-site

storage. No environmentally superior alternative was identified for the Staging and Installation Phases.

14. The Final EIR finds that the environmentally superior alternatives for the Transport and Removal Phases, combined with any of the studied alternatives for the Staging and Installation Phases, are superior to the no-project alternative.

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

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

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

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

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

20. 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.

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

22. Nothing in the Final EIR precludes the ratemaking treatment specified in D.05-02-052.

Conclusions of Law

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

2. The Commission should adopt the MMCRP.

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

4. For the reasons discussed in this decision and in D.05-02-052, the Commission should approve the SGRP and adopt the preliminary findings in Ordering Paragraph 1 of D.05-02-052.

5. The Commission's approval of the SGRP should be contingent upon PG&E's performance of the SGRP utilizing the environmentally superior alternatives for the Transport and Removal Phases, as well as any of the studied Staging and Installation Phase alternatives, and in compliance with the mitigation measures identified in the Final EIR.

6. 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.

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

8. 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.

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

10. PG&E 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.

11. The Executive Director should not authorize PG&E to commence actual construction until PG&E 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.

12. The Executive Director should be authorized to enter into an agreement with PG&E 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.

13. PG&E'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.

14. PG&E should be required to file a written notice in this docket, served on all parties to this proceeding, of its agreement, executed by an officer of PG&E duly authorized (as evidenced by a resolution of its board of directors duly authenticated by a secretary or assistant secretary of PG&E) to acknowledge PG&E'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.

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

16. 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 Pacific Gas and Electric Company (PG&E) for approval of its steam generator replacement program (SGRP) for Diablo Canyon Power Plant Units 1 & 2 (Diablo) is approved subject to the conditions imposed herein.

2. The maximum allowable SGRP cost (cap) is $815 million (November 2008 dollars) as adjusted for actual inflation and cost of capital. PG&E shall not be allowed to recover SGRP costs in excess of this amount. Our approval of the SGRP is conditioned upon PG&E's acceptance of the cap.

3. We do not intend to conduct an after-the-fact reasonableness review if the SGRP cost does not exceed $706 million (November 2008 dollars), as adjusted for actual inflation and cost of capital. However, we are not precluded from doing so for any reason.

4. If the SGRP cost exceeds $706 million, as adjusted for actual inflation and cost of capital, or the Commission later finds that it has reason to believe the costs may be unreasonable regardless of the amount, the entire SGRP cost shall be subject to a reasonableness review.

5. PG&E shall record in the Utility Generation Balancing Account (UGBA) the revenue requirement associated with plant additions up to the cap as of the date of operation of each unit.

6. PG&E shall include the revenue requirement associated with each unit in rates subject to refund, up to $326 million for Unit 1 and $380 million for Unit 2, on January 1 of the year following commercial operation of each unit. PG&E shall file an advice letter to request authority to implement the above rate increase, subject to refund, for each unit. The rate increase shall not take effect until and unless the advice letter is approved by the Commission.

7. After completion of the SGRP, PG&E shall file an application for inclusion of the costs thereof permanently in rates, regardless of whether the costs exceed $706 million. If a reasonableness review is performed, it shall be done in connection with the application.

8. The appropriate inflation adjustment to the $706 million reasonable cost and the $815 million cap shall be determined in the above application based on a reliable publication such as the Consumer Price Index.

9. The Commission retains the discretion to require a reasonableness review of SGRP costs, and/or to specify a different ratemaking treatment of such costs.

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

11. 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.

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

13. PG&E shall, as a condition of our approval of the SGRP, carry out the SGRP using the environmentally superior alternative for the Replacement Steam Generator Transport Phase and the Original Steam Generator Removal, Transport, and Storage Phase of the SGRP as identified in the Final EIR, and may utilize any alternative studied in the Final EIR for the Replacement Steam Generator Staging and Preparation Phase and the Replacement Steam Generator Installation Phase.

14. PG&E shall, as a condition of our approval of the SGRP, comply with all applicable mitigation measures as specified in the Final EIR.

15. 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.

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

17. 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.

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

19. PG&E shall comply with all orders and directives of the Executive Director concerning implementation of the environmental mitigation measures described in the Final EIR.

20. The Executive Director shall not authorize PG&E to commence actual construction until PG&E 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.

21. The Executive Director is authorized to enter into an agreement with PG&E 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.

22. PG&E'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.

23. PG&E shall file a written notice in this docket, served on all parties to this proceeding, of its agreement, executed by an officer of PG&E duly authorized (as evidenced by a resolution of its board of directors duly authenticated by a secretary or assistant secretary of PG&E) to acknowledge PG&E'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.

24. 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.

25. Application 04-01-009 is closed.

This order is effective today.

Dated November 18, 2005, at San Francisco, California.

MICHAEL R. PEEVEY
President
GEOFFREY F. BROWN
SUSAN P. KENNEDY
JOHN A. BOHN
Commissioners

I reserve the right to file a concurrence.

/s/ MICHAEL R. PEEVEY
Commissioner

Commissioner Grueneich recused herself from this agenda item and was not part of the quorum in its consideration.

ATTACHMENT A
LIST OF APPEARANCES

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ATTACHMENT A
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(END OF ATTACHMENT A)

A.04-01-009
D.05-11-026

President Michael R. Peevey concurring:

While I will be voting for the proposed decision today, I would like to say a few words about the reasonableness review process and its effectiveness. In the decision before us today, PG&E will only be subject to a review of its costs if those costs exceed $706 million. And it may be subject to reasonableness review if its costs exceed $706 M. While the proposed decision imposes a cap of $815 million, I question whether a cost cap provides the right incentive to keep project costs down.

I think a better incentive mechanism would be to establish a cost benchmark such that if costs come in below estimates, the utility retains the savings and if costs go over the benchmark, the utility's shareholders foot the bill. This approach better incentivizes the utility to contain costs, and it eliminates the burden of an after-the-fact reasonableness review.

For the upcoming decision regarding a similar steam generator replacement project for Southern California Edison's San Onofre nuclear power plant, I intend to offer an alternate decision along these lines.

MICHAEL R. PEEVEY
Commissioner

San Francisco, CA
November 18, 2005