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*Comment Received From: Robert Sarvey
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Retire Diablo Canyon

Diablo Canyon Extension Costs

Additional submitted attachment is included below.

Docket Number: R.23-01-007

Exhibit Number: _____

Witness: Robert Sarvey

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Implementing Senate Bill 846
Concerning Potential Extension of
Diablo Canyon Power Plant
Operations.

Rulemaking 23-01-007
(Filed January 12, 2023)

Opening Testimony of Robert Sarvey

CALifornians for Renewable Energy, Inc. (CARE)

June 30, 2023

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1 1. Questions related to Pub. Util. Code Section 712.8(c)(2)(B):

2 a. How should “too high to justify” be defined and evaluated in the context of this section?

3 The Governor and Legislature have given PG&E a 1.4-billion-dollar budget to address seismic
4 safety and deferred maintenance issues identified by the DCISC and also to fund the United
5 States Nuclear Regulatory Commission's conditions of license renewal. Public Utilities Code
6 Section 712.8 (c) (1)(C) specifies that no ratepayer funds should be used for either safety or
7 deferred maintenance issues identified by the DCISC or to fund the United States Nuclear
8 Regulatory Commission's conditions of license renewal. The statute does allow other non-
9 ratepayer funds to be utilized for safety, deferred maintenance and NRC requirements. If the
10 expenses for safety, deferred maintenance, and NRC requirements exceed the non-ratepayer
11 money then the costs are too high to justify the license renewal.

12 b. The DCISC’s most recent Fact Finding Reports (See Attachments A-C to this ruling) do
13 not recommend any upgrades or additional actions to address seismic safety or issues of deferred
14 maintenance. Do parties have any comments on these Fact Finding Reports or recommendations
15 as they relate to the Commission’s obligations under Pub. Util. Code Section 712.8(c)(2)(B)?

16 The DCISC has not yet been informed of any deferred maintenance issues. As stated in the
17 DCISC Report on Fact-Finding Meeting at DCPD on January 31 and February 1, 2023, “*The*
18 *DCISC FFT met in-person with Allen Wilson, Director, Projects, for a briefing on PG&E’s plans*
19 *to meet a specific requirement of California Senate Bill 846 (SB846) regarding the requirement*
20 *for DCPD to “...commission a study by independent consultants to catalog and evaluate any*
21 *deferred maintenance at [DCPD...].”*” PG&E stated in the May Fact Finding Report that, “*the*
22 *independent review of “deferred maintenance” required by SB846, consultants had recently been*

23
24 ⁷ DIABLO CANYON INDEPENDENT SAFETY COMMITTEE Report on Fact-Finding Meeting at DCPD on January 31 and February 1, 2023 Page D. 7-2

1 selected to perform the review. DCPD expected the SB846 independent review would be
2 completed by October 2023.”⁸

3 The schedule of this proceeding provides for the DCISC to review the independent consultants
4 report and provided its recommendations in September. The schedule for the proceeding calls for
5 a decision on these issues in October or November. SB 846 requires a commission decision on
6 extended Diablo Canyon operations by December 31 of this year. PG&E’s timing of hiring the
7 independent consultant will result in a report on deferred maintenance and capital improvement
8 projects in October. An October issuance of the report will prevent the DCISC from meeting the
9 September timelines of the schedule in this proceeding. The parties and the commission will not
10 have the independent consultants cost information for any testimony or briefing in this
11 proceeding. Until the report is issued and analyzed by the DCISC, the parties and the
12 commission the commission cannot meet its obligations under Public Resources Code Section
13 712.8(c)(2)(B).

14 The DCISC April Fact Finding Report states that, “*Following SB846 Approval PG&E initiated*
15 *review of all Preventive Maintenance changes made since 2016. About 200 PM plans reinstated,*
16 *and a small number of new PM plans added. (Program has about 12,000 total PM activities.) All*
17 *Priority 4 and 5 CM activities reviewed and about 300 Priority 4 and 5 CM activities reinstated.*
18 *PG&E’s project review identified about 250 possible projects for consideration of prioritization*
19 *for implementation during the extension of operations.”⁹ PG&E provided no cost or project
20 details on the 250 capital projects and the 200 preventive maintenance projects that were*

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22 ⁸ DCISC June 28,29 Informational Presentations - May 2 and 3 , 2023, Fact-Finding
23 Report [https://www.dcisc.org/download/events/41_2-f-diablo-canyon-independent-safety-](https://www.dcisc.org/download/events/41_2-f-diablo-canyon-independent-safety-committee-20230628-informational-presentations.pdf)
[committee-20230628-informational-presentations.pdf](https://www.dcisc.org/download/events/41_2-f-diablo-canyon-independent-safety-committee-20230628-informational-presentations.pdf) Page 52 of 143

24 ⁹ DCISC June 28,29 Informational Presentations - April 18, 19 and 20, 2023, Fact-
Finding Report [https://www.dcisc.org/download/events/41_2-f-diablo-canyon-independent-](https://www.dcisc.org/download/events/41_2-f-diablo-canyon-independent-safety-committee-20230628-informational-presentations.pdf)
[safety-committee-20230628-informational-presentations.pdf](https://www.dcisc.org/download/events/41_2-f-diablo-canyon-independent-safety-committee-20230628-informational-presentations.pdf) Page 26 of 143

1 reinstated. The DCISC May 2,3 Fact Finding Report states, “DCPP expects about 50 projects to
2 be completed within the next three years with about 12 of those 50 being performed during the
3 upcoming Refueling Outage 1R24 in the fall of 2023.”¹⁰

4 In regard to seismic safety the November Fact Finding Reports states that the DCISC is waiting
5 like the rest of us for PG&E’s license renewal application in December of this year to analyze any
6 safety upgrades required by the new application. As the November Fact Finding Report states,
7 one of “*the most important pieces of new information that will be forthcoming in the near future*
8 *is that PG&E will be submitting a new (updated) License Renewal Application to the NRC at the*
9 *end of 2023.*”¹¹ The DCISC is required to make its recommendations to the CPUC on possible
10 seismic upgrades and the associated costs in September. The NRC will take 12 -22 months to
11 review PG&E’s LRA and then we may know what the costs of the NRC seismic improvements
12 that will be required. Under this timeline the DCISC and the commission cannot meet its
13 obligations under Public Resources Code Section 712.8(c)(2)(B).

14 The DCISC also concluded in the November Fact Finding report that, “*DCPP will be*
15 *performing an updated seismic assessment to comply with SB846 directives. The DCISC should*
16 *undertake a thorough review of all submittals relevant to seismic safety, as well as any*
17 *underlying information that PG&E will rely on in those submittals, so as to reach its own*
18 *conclusion(s) on the safety importance of the information therein.*”¹² The DCISC needs timely
19 submission of the updated seismic assessment pursuant to SB 846 to conduct their seismic safety
20

21 _____
22 ¹⁰ DCISC June 28,29 Informational Presentations - May 2 and 3 , 2023, Fact-Finding
Report [https://www.dcisc.org/download/events/41_2-f-diablo-canyon-independent-safety-
committee-20230628-informational-presentations.pdf](https://www.dcisc.org/download/events/41_2-f-diablo-canyon-independent-safety-committee-20230628-informational-presentations.pdf) Page 52 of 143

23 ¹¹ DCISC November DIABLO CANYON INDEPENDENT SAFETY COMMITTEE
Report on Fact-Finding Meeting at DCPD on November 8, 9 and 10, 2022 Page 16 Of 40

24 ¹² DCISC November DIABLO CANYON INDEPENDENT SAFETY COMMITTEE
Report on Fact-Finding Meeting at DCPD on November 8, 9 and 10, 2022 Page 16 Of 40

1 assessment which is not available at this time. No timeline for the seismic study has been
2 reported.

3 The commission cannot possibly meet its requirements as they relate to the Commission's
4 obligations under Pub. Util. Code Section 712.8(c)(2)(B) since the DCISC will not have the
5 information necessary to recommend any seismic upgrades until it receives the outstanding
6 reports that likely will not be available in the time frame the commission has allocated for this
7 proceeding.

8 c. Generally speaking, what are the types of activities the U.S. Nuclear Regulatory Commission
9 (NRC) might include as potential conditions of license renewal? Please include examples and
10 citations where relevant.

11 On March 17, 2023 PG&E sent Letter DCL-23-020 to the NRC detailing PG&E's commitment to
12 implement the aging management programs (AMPs) and capital upgrade commitments included
13 in the withdrawn 2009 Diablo Canyon Power Plant License Renewal Application. Attachment 1
14 "Current Implementation Schedule for DCPP Commitments Included in Withdrawn License
15 Renewal Application (LRA)" contains the 76 commitments PG&E has made to the NRC. These
16 are some of the requirement's PG&E must meet for license renewal. Although PG&E is fully
17 aware of these commitments they made to the NRC, they have not informed the commission and
18 the parties of these commitments or provided cost estimates of these activities. Additional
19 requirements will likely be imposed by NRC after PG&E files its license amendment application
20 in December of this year and we do not know the costs at this time.

21 d. Notwithstanding the reports included as Attachment D and Attachment E, will new renewable
22 energy and zero-carbon resources adequate to substitute for the Diablo Canyon powerplant, and
23 that meet the state's planning standards for energy reliability, be constructed and interconnected
24 by the end of 2023? Factual statements must be supported by evidence.

1 According to the CPUC's August 2022 report, "Summary of Compliance with Integrated
2 Resource Planning (IRP) Order D.19-11-016 and Progress Toward Mid Term Reliability (MTR)
3 D.21-06-035 Procurement," LSEs have procured 3,803 MW that count towards D.19-11-016
4 compliance obligations.¹³ The procurement obligation of 3,300 MW from D. 19-11-016 has been
5 met and exceeded by 552 MW. This total does not include all procurement underway by Load
6 Serving Entities as there is procurement ongoing for other purposes. (i.e., to meet RPS
7 requirements, storage mandates, Resource Adequacy, individual portfolio needs, etc.). In
8 response to the procurement requirements being achieved pursuant to D. 19-11-016 CPUC
9 Energy Division Staff determined that there was no need to order backstop procurement for 2023
10 based on the LSE data submitted in February 2022.¹⁴

11 Without all LSE's reporting the CPUC's February IRP analysis shows that all 2023 MTR
12 procurement requirements of 2,000 MW appear to be met with the addition of the surplus
13 procurement for D. 19-11-016 of 552 MW.¹⁵ The LSE's are on target to meet their 2023 MTR
14 procurement obligations even without all LSE's reporting and without inclusion of resources
15 procured for other procurement obligations. D.21-06-035 required 2,500 of the 9,000 MW
16 required between 2023-2025 be "Diablo-Canyon Replacement". The CPUC's Energy Division

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18 ¹³ Summary of Compliance with Integrated Resource Planning (IRP) Order D.19-11-016
19 and Progress Toward Mid Term Reliability (MTR) D.21-06-035 Procurement Energy Division
20 Staff Review of IRP August 2022 Data Filing February 2023 <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/d1911016andd21.pdf> Page 18 of 35

21 ¹⁴ Summary of Compliance with Integrated Resource Planning (IRP) Order D.19-11-016 and
22 Progress Toward Mid Term Reliability (MTR) D.21-06-035 Procurement Energy Division
23 Staff Review of IRP August 2022 Data Filing February 2023 <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/d1911016andd21.pdf> Page 6 of 35

24 ¹⁵ Summary of Compliance with Integrated Resource Planning (IRP) Order D.19-11-016
and Progress Toward Mid Term Reliability (MTR) D.21-06-035 Procurement Energy Division
Staff Review of IRP August 2022 Data Filing February 2023 <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/d1911016andd21.pdf> Page 32 of 35

1 report shows that LSE's have reported the have 2,797 MW of the 5,494 MW ordered by decision
2 to be procured in 2024.¹⁶

3 d. What are the potential upgrades, and associated costs or cost ranges, that might be
4 needed to address deferred maintenance and NRC's potential conditions license renewal at Diablo
5 Canyon? In considering this question, parties may refer to Pacific Gas and Electric Company's
6 (PG&E's) May 19, 2023 testimony,² as well as other relevant sources of information. Please
7 provide citations where relevant

8 The DCISC 32nd annual report details several expensive staffing requirements and difficult
9 upgrades that may be needed for any extended operations. DCISC consultant, "Mr. Wardell
10 reported that the FFT found the current staffing to be adequate, however in the event of extended
11 operation DCPD is planning to hire 264 new positions across all areas of the plant and has
12 started to actively recruit for candidates for those positions."¹⁷ DCISC consultant Mr.
13 McWhorter and Dr. Bunditz stated that if a decision is taken to continue power generation
14 operation beyond 2025 there will be a large number of systems and components for which
15 decisions made after 2016 will require further review.¹⁸ DCISC consultant Mr. McWhorter stated
16 that the high pressure turbines were beyond design life and could be on the list of replacement
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18

19 ¹⁶ Summary of Compliance with Integrated Resource Planning (IRP) Order D.19-11-016 and
20 Progress Toward Mid Term Reliability (MTR) D.21-06-035 Procurement Energy Division
21 Staff Review of IRP August 2022 Data Filing February 2023 <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/d1911016andd21.pdf> Page 32 of 35

22 ¹⁷ DCISC Public Meeting Agenda June 28,29, 2023
https://www.dcisc.org/download/events/41_1-f-diablo-canyon-independent-safety-committee-20230628-agenda-packet.pdf Page 65 of 138

23 ¹⁸ Diablo Canyon Independent Safety Committee Thirty-Second Annual Report on the Safety
24 of Diablo Canyon Nuclear Power Plant Operations July 1, 2021—June 30, 2022
<https://www.dcisc.org/download/library/annual-reports/32nd-annual-report-51.pdf> Page 361 of 932

1 items for extended operation.¹⁹ The DCISC fact finding team is concerned that ocean temperature
2 might exceed the design basis limits. The DCISC FFT believes that if extended operations are
3 approved that using available funds to have a vendor update the calculation for the ultimate heat
4 sink maximum temperature would be appropriate.²⁰ According to DCISC 31st annual report the
5 Eagle 21 Plant Protection upgrade, which was cancelled, is a very expensive project and one that
6 could not be completed for several years. Replacement parts for the existing system are expected
7 to remain available from the original vendor for the remaining period of the DCPD operating
8 licenses.²¹ DCISC expects PG&E to replace the governors on two emergency generators. The
9 previously completed governor replacement projects had overrun in cost, and it was estimated
10 that completing the full scope of the project on the two remaining EDGs would require
11 authorization to spend approximately \$650,000 in additional capital funds. The DCISC 32nd
12 annual report states that, *“PG&E confirmed that replacement of the heat exchangers would be a
13 very significant project and represents a project that if DCPD were seeking a license extension
14 would have definitely been undertaken.”*²² DCISC consultant McWhorter stated that when the
15 original license renewal application was filed PG&E proposed to replace all of the feedwater
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18 ¹⁹ DCISC Public Meeting Agenda June 28,29, 2023

18 https://www.dcisc.org/download/events/41_1-f-diablo-canyon-independent-safety-committee-20230628-agenda-packet.pdf Page 96 of 138

19 ²⁰ DCISC Public Meeting Agenda June 28,29, 2023

20 https://www.dcisc.org/download/events/41_1-f-diablo-canyon-independent-safety-committee-20230628-agenda-packet.pdf Page 95 of 138

21 ²¹ Diablo Canyon Independent Safety Committee Thirty-First Annual Report on the Safety of
22 Diablo Canyon Nuclear Power Plant Operations July 1, 2020—June 30, 2021

22 <https://www.dcisc.org/download/library/annual-reports/31st-annual-report-48.pdf> Page 634 of 903

23 ²² Diablo Canyon Independent Safety Committee Thirty-Second Annual Report on the Safety
24 of Diablo Canyon Nuclear Power Plant Operations July 1, 2021—June 30, 2022

24 <https://www.dcisc.org/download/library/annual-reports/32nd-annual-report-51.pdf> Page 292,293 of 932

1 heaters as they have an operational life of 20 years. McWhorter stated that the lead time to
2 replace the feedwater heater would likely take years.²³

3 According to PG&E executives PG&E's planned fall outage will employ 1,000 individuals as
4 compared to the usual 650 workers for a planned outage mainly to upgrade the facilities for
5 extended operation.²⁴ PG&E stated at the June 28,29 public meeting that most of the planned
6 outage expenditures are to extend the license. PG&E should inform the commission of what
7 portion of the costs of the refueling outage are for extended operation so they may be paid out of
8 taxpayer funds and be used to decide if the costs of upgrades or capital expenditures are too high.
9 If the upgrades are approved PG&E will need to expand its dry cask storage area to store the
10 additional 227 metric tons of spent fuel²⁵ from extended operations. PG&E has not provided any
11 information related to expansion of the dry cask storage facility and the costs are likely to be
12 substantial. PG&E should be required to provide a cost estimate for this obvious improvement
13 that will be required to store the additional spent fuel from extended operations as the current
14 spent fuel dry cask storage is only designed to accommodate 40 years of Diablo Canyon
15 operation.

16 e. Considering the answers above, please comment on whether the costs associated with
17 potential upgrades necessary to address seismic safety, issues of deferred maintenance, or NRC
18 conditions of license renewal at Diablo Canyon are "too high to justify."

19 It is impossible to tell at this time whether the costs are too high to justify. PG&E has not
20 provided the critical information necessary to make this determination. PG&E has recently hired

21 _____
22 ²³ DCISC Public meeting February 15, 16 2023 Public Meeting Agenda Page 22 of 103

23 ²⁴ PG&E presentation at June 29, 2003 to DCISC 11:00 – 11:20

24 ²⁵ <https://adams.nrc.gov/wba/view/Ascension/Number/ML23076A093> Diablo Canyon email Estimate of Spent Fuel in Tons.

1 a consultant to analyze the deferred maintenance and capital requirements for extended operation
2 but those results will not be available until October of this year. We have no idea what the NRC
3 will require for this new License Renewal Application to be submitted by December of 2023.
4 The information necessary to determine if the costs are too high will not be available before the
5 conclusion of this proceeding due to PG&E dragging their feet on hiring an independent
6 consultant. PG&E has known since AB 846 was approved of the requirement for the independent
7 evaluator.

8 PG&E's May 19 cost calculations do not include an estimated amount of deferred capital
9 expenditures. Because PG&E has failed to timely hire a contractor to analyze deferred capital
10 expenses, we do not have that information. We can make an estimate of PG&E's deferred capital
11 projects based on historical capital expenditures. Utilizing PG&E's cost analysis presented on
12 May 19, 2023 Table 1 shows that average capital cost expenditures from 2010 – 2015 averaged
13 \$215,985,000.²⁶ Starting in 2016 when the joint settlement to close Diablo Canyon capital
14 expenditures plummeted from 2016-2022 to an average of 87,633,000. This leads to an
15 estimated deferred capital expense of 898,364,000 which may be higher or lower.

16 The DCISC's 31st annual report identifies some of the Postponed Cancelled Projects.
17 *"Consultant Wardell reported that following the CPUC's approval of the retirement of DCP, a*
18 *number of capital projects were cancelled due to operations not continuing after 2025."* A list
19 of DCP cancelled capital projects and their costs from the 2020 General Rate Case which may
20 or may not be needed for extended operation is provided as Appendix 2 to this testimony.

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22

23 ²⁶ PACIFIC GAS AND ELECTRIC COMPANY RULEMAKING TO IMPLEMENT
24 SENATE BILL 846 CONCERNING POTENTIAL EXTENSION OF DIABLO CANYON
POWER PLANT OPERATIONS PREPARED TESTIMONY May 19, 2023 Page 9 of 70

$$178,313 + 229,839 + 251,090 + 209,296 + 209,934 + 217,553/6 = \$215,985,000$$

1 PG&E’s May 19, 2023 cost estimate fails to comply with The Scoping Memo which directs, “*In*
2 *the absence of a renewed NRC license with conditions or requirements whose costs can be*
3 *calculated, it is reasonable for PG&E to provide cost estimates associated with likely or potential*
4 *improvements . . .that might reasonably be required as part of the NRC relicensing process.”*
5 PG&E claims that “*the NRC has not established any conditions of a renewed operating license,*
6 *and PG&E is not able to precisely predict likely or potential improvements that might reasonably*
7 *be required as part of the NRC relicensing process.”*²⁷ PG&E has committed to 75 individual
8 actions which (Contained in Appendix 1 of this testimony) include equipment replacement and
9 aging management programs which PG&E is fully aware of and should provide cost estimates for
10 these 75 activities. PG&E’s delays will prevent the parties and the commission from evaluating
11 the costs of this license extension and prevent the commission from fulfilling its obligations under
12 SB 846.

13 The DCISC 32nd annual report states that, “*PG&E confirmed that replacement of the heat*
14 *exchangers would be a very significant project and represents a project that if DCPD were*
15 *seeking a license extension would have definitely been undertaken.”*²⁸ PG&E has not provided
16 cost estimates or time frames for the replacement of the heat exchangers.

17 c. What conclusions might the Commission draw from the CEC’s March 2023 report
18 (Attachment D), and the joint report of the CEC and Commission staff from February 2023
19 (Attachment E) to satisfy its obligations under Pub. Util. Code Section 712.8(c)(2)(D)?
20 Specifically, does either report allow the Commission to conclude that new renewable energy and

21 _____
22 ²⁷ PACIFIC GAS AND ELECTRIC COMPANY RULEMAKING TO IMPLEMENT
SENATE BILL 846 CONCERNING POTENTIAL EXTENSION OF DIABLO CANYON
POWER PLANT OPERATIONS PREPARED TESTIMONY May 19, 2023 Page 14 of 70

23 ²⁸ Diablo Canyon Independent Safety Committee Thirty-Second Annual Report on the
24 Safety of Diablo Canyon Nuclear Power Plant Operations July 1, 2021—June 30,
2022 <https://www.dcisc.org/download/library/annual-reports/32nd-annual-report-51.pdf>
[Page 292,293](#) of 932

1 zero-carbon resources are adequate to substitute for the Diablo Canyon powerplant, meet the
2 state’s planning standards for energy reliability, and will be constructed and interconnected by the
3 time of its decision? If so, how? If not, why?

4 I don’t believe the two reports enable the commission to conclude that new renewable energy and
5 zero-carbon resources are adequate to substitute for the Diablo Canyon powerplant, meet the
6 state’s planning standards for energy reliability, and will be constructed and interconnected by the
7 time of its decision. The Joint agency report concludes that, “*Under a 17 percent reserve margin*
8 *scenario, the CPUC’s procurement orders and Preferred System Plan avoid reliability shortfalls*
9 *well beyond the period covered by the current procurement orders (2023-2032).*”²⁹ Both
10 reports conclude that under speculative higher planning reserve margin’s reliability is not assured.
11 The two agency reports included in Attachment D and E are based on procurement tracking
12 activities by the CPUC’s Tracking Energy Development Task Force. (TED) The TED tracks
13 LSE’s compliance with CPUC procurement orders. It is the timely and the appropriate document
14 to evaluate LSE’s compliance with commission orders designed to provide reliability and retire
15 the states once through cooling plants. The CPUC’s February TED report, “*Summary of*
16 *Compliance with Integrated Resource Planning (IRP) Order D.19-11-016 and Progress Toward*
17 *Mid Term Reliability (MTR) D.21-06-035 Procurement,*” revealed that LSEs have procured 3,803
18 MW that satisfy D.19-11-016 compliance obligations of 3,300 MW with 552 MW available to
19 apply to the MTR decision.³⁰ The February TED analysis also shows that LSE’s have already
20 confirmed that 2,797 MW have been claimed towards 5494 MW required to be procured by D.

21
22 ²⁹ Joint Agency Reliability Planning Assessment SB 846 Quarterly Report and AB 205 Report Page 13 of
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23 ³⁰ Summary of Compliance with Integrated Resource Planning (IRP) Order D.19-11-016
24 and Progress Toward Mid Term Reliability (MTR) D.21-06-035 Procurement Energy Division
Staff Review of IRP August 2022 Data Filing February 2023 <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/d1911016andd21.pdf> Page 18 of 35

1 21-06-035 for 2024. The February TED report does not include the LSE’s February IRP filings
2 so we must wait until these results are presented to determine if there if there are 2,500 MW of
3 zero-emitting replacement power in the form of generation, generation paired with storage, or
4 demand response to retire Diablo Canyon Power Plant as required by the MTR decision.

5 c. Are there any other comments concerning interpretation of the requirements in Sections
6 712.8(c)(2)(B) through (E)?

7 The whole purpose of The Diablo Canyon extension is to provide reliability. As SB 846 states,
8 *“The Legislature finds and declares that the purpose of the extension of the Diablo Canyon*
9 *powerplant operations is to protect the state against significant uncertainty in future demand*
10 *resulting from the state’s greenhouse-gas-reduction efforts involving electrification of*
11 *transportation and building energy end uses and regional climate-related weather phenomenon,*
12 *and to address the risk that currently ordered procurement will be insufficient to meet this supply*
13 *or that there may be delays in bringing the ordered resources online on schedule.”*³¹ SB 846
14 acknowledges that Diablo Canyon is an aging power plant likely to undergo significant operating
15 issues. PRC 712.8 states, *“In lieu of a rate-based return on investment and in acknowledgment of*
16 *the greater risk of outages in an older plant that the operator could be held liable for, the*
17 *commission shall authorize the operator to recover in rates a fixed payment of fifty million*
18 *dollars (\$50,000,000), in 2022 dollars, for each unit for each year of extended operations”*

19 Diablo Canyon’s recent operating history and its performance during grid emergencies shows it is
20 not a reliable asset and because of its size it creates grid problems when even one unit is offline.
21 As CAISO’s executive officer Steve Berberich is quoted as saying, *“Steve Berberich, president*
22 *and chief executive officer of California I.S.O., on Tuesday defended his organization’s decision*
23 *to order rolling blackouts rather than dipping into reserve power supplies set aside for*

24 _____
³¹ California Public Utilities Code 712.8

1 *emergencies. He said the grid had to keep some reserves on hand in case a plant like Diablo*
2 *Canyon unexpectedly shut down.”³² His fears were well founded as Diablo Canyon Unit 1 was*
3 *offline from July 18 2020 to August 2, 2020 at the height of the summer season.³³ Well founded*
4 *fears over failure of Diablo Canyon actually triggered the August 2020 rolling blackouts the first*
5 *rolling blackouts since 2001.*

6 In the years that I have analyzed 2017 – 2021 Diablo Canyon has had extensive outages during
7 the summer season. In 2020 1,118 MW of Diablo Canyon's production was unavailable from
8 July 18 to August 3 and also from May 11 to May 17.³⁴ In 2019 the project had 1,118 MW-
9 1,622 MW unavailable to the grid from September 22 to December 22.³⁵ In 2017 Diablo Canyon
10 had 1,122 MW unavailable from April 23 to July 20 with reduced output also from July 20 to July
11 8.³⁶ In 2016 Diablo Canyon had 1,182 MW or slightly less offline from May 1 to until June 6.³⁷
12 According to CAISO Grid Emergencies report Diablo Canyon had one unit offline during Sixteen
13 Grid emergencies from 2017 to 2021.³⁸ Data from the Energy Information Agency ³⁹ presented
14 below shows Diablo Canyon had one unit out for many of grid emergencies during the period as
15 chronicled below.

16 CAISO Grid Emergencies Record For 2017-2021

17
18 ³² <https://www.nytimes.com/2020/08/20/business/energy-environment/california-blackout-electric-grid.html>

19 ³³ <https://www.eia.gov/opendata/browser/nuclear-outages/facility-nuclear-outages>

20 ³⁴ <https://www.eia.gov/opendata/browser/nuclear-outages/facility-nuclear-outages>

21 ³⁵ <https://www.eia.gov/opendata/browser/nuclear-outages/facility-nuclear-outages>

22 ³⁶ <https://www.eia.gov/opendata/browser/nuclear-outages/facility-nuclear-outages>

23 ³⁷ <https://www.eia.gov/opendata/browser/nuclear-outages/facility-nuclear-outages>

24 ³⁸ www.caiso.com/Documents/Grid-Emergencies-History-Report-1998-Present.pdf

³⁹ <https://www.eia.gov/opendata/browser/nuclear-outages/facility-nuclear-outages>

1 The California ISO is declaring Southern CA Region RESTRICTED MAINTENANCE
2 OPERATION for the period

3 from 02/13/2021 06:00 through 02/15/2021 22:00.⁴⁰

4 2021-02-15 6099 Diablo Canyon 1118 megawatts offline⁴¹

5 2021-02-14 6099 Diablo Canyon 1118 megawatts offline

6 2021-02-13 6099 Diablo Canyon 1118 megawatts offline

7 Southern CA Region Restricted Maintenance Operations [202102517] The California ISO is
8 declaring Southern CA Region RESTRICTED MAINTENANCE OPERATION for the period
9 from 02/18/2021 14:58 through 02/20/2021 22:00.

10 2021-02-20 6099 Diablo Canyon 1118 megawatts offline

11 2021-02-19 6099 Diablo Canyon 1118 megawatts offline

12 2021-02-18 6099 Diablo Canyon 1118 megawatts offline

13 The California ISO hereby issues a CAISO Grid ALERT Notice, effective 10/01/2020 18:00
14 through 10/01/2020 19:00.

15 2020-10-01 6099 Diablo Canyon 1122 megawatts offline

16 The California ISO hereby issues a CAISO Grid ALERT Notice, effective 10/15/2020 16:00
17 through 10/15/2020 18:00.

18 2020-10-15 6099 Diablo Canyon 1122 megawatts offline

19 Southern CA Region Restricted Maintenance Operations [202002505] The California ISO is
20 declaring Southern CA Region RESTRICTED MAINTENANCE OPERATION for the period
21 from 12/03/2020 10:58 through 12/03/2020 22:00.

22 2020-12-03 6099 Diablo Canyon 1118 megawatts offline

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⁴⁰ www.caiso.com/Documents/Grid-Emergencies-History-Report-1998-Present.pdf

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⁴¹ <https://www.eia.gov/opendata/browser/nuclear-outages/facility-nuclear-outages>

1 The California ISO hereby issues a CAISO Grid TRANSMISSION EMERGENCY Notice
2 effective 12/13/2020 07:48 through 12/13/2020 23:59

3 2020-12-13 6099 Diablo Canyon 1118 megawatts offline

4 The California ISO is declaring Southern CA Region RESTRICTED MAINTENANCE
5 OPERATION for the period from 02/20/2018 07:24 through 02/20/2018 22:00.

6 2018-02-20 6099 Diablo Canyon 1118 megawatts offline

7 The California ISO is declaring Southern CA Region RESTRICTED MAINTENANCE
8 OPERATION for the period from 02/21/2018 00:01 through 02/22/2018 23:59.

9 2018-02-21 6099 Diablo Canyon 1118 megawatts offline

10 The California ISO is declaring Southern CA Region GENERATION Restricted Maintenance
11 Operations for the period from 02/24/2018 06:00 through 02/28/2018 22:00.

12 2018-02-28 6099 Diablo Canyon 1118 megawatts offline

13 2018-02-27 6099 Diablo Canyon 1118 megawatts offline

14 2018-02-26 6099 Diablo Canyon 1118 megawatts offline

15 2018-02-25 6099 Diablo Canyon 1118 megawatts offline

16 2018-02-24 6099 Diablo Canyon 1118 megawatts offline

17 The California ISO is declaring Southern CA Region RESTRICTED MAINTENANCE
18 OPERATION for the period from 02/28/2018 22:00 through 03/01/2018 23:59.

19 2018-03-01 6099 Diablo Canyon 1118 megawatts offline

20 The California ISO is declaring Southern CA Region RESTRICTED MAINTENANCE
21 OPERATION for the period from 03/02/2018 06:00 through 03/02/2018 22:00.

22 2018-03-02 6099 Diablo Canyon 1118 megawatts offline

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1 The California ISO is declaring Southern CA Region RESTRICTED MAINTENANCE
2 OPERATION for the period from 03/04/2018 06:00 through 03/04/2018 22:00.

3 2018-03-04 6099 Diablo Canyon 1118 megawatts offline

4 The California ISO is declaring Southern CA Region RESTRICTED MAINTENANCE
5 OPERATION for the period from 03/05/2018 06:00 through 03/05/2018 22:00.

6 2018-03-05 6099 Diablo Canyon 1118 megawatts offline

7 Operating Reserves are currently, or forecast to be, less than amounts required by the Western
8 Electricity Coordinating Council. If Operating Reserves deplete further, the ISO will declare a
9 Stage 2 System Emergency and may begin curtailing Interruptible Loads*. Notice issued at:
10 05/03/17 19:04, Cancelled at: 5/3/17 at 21:00

11 2017-05-03 6099 Diablo Canyon 1122 megawatts

12 The California ISO is declaring CAISO Grid RESTRICTED MAINTENANCE OPERATION for
13 the period from 06/19/2017 00:01 through 06/22/2017 22:00.

14 2017-06-22 6099 Diablo Canyon 987.36 megawatts

15 2017-06-21 6099 Diablo Canyon 1122 megawatts

16 2017-06-20 6099 Diablo Canyon 1099.5 megawatts

17 2017-06-19 6099 Diablo Canyon 1122 megawatts

18 The California ISO is declaring CAISO Grid RESTRICTED MAINTENANCE OPERATION for
19 the period from 07/07/2017 07:00 through 07/07/2017 22:00. Reason: The ISO is anticipating
20 high loads and temperatures across the CAISO Grid.

21 2017-07-07 6099 Diablo Canyon 448.8 megawatts⁴²

22 PG&E's testimony filed in application number A16-08-006 at the CPUC for, "Approval of the
23 Retirement of Diablo Canyon Power Plant" *states that the Diablo Power Plant "was no longer a*

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⁴² www.aiso.com/Documents/Grid-Emergencies-History-Report-1998-Present.pdf

1 good resource for California’s energy mix.” One of PG&E’s reasons why they proposed
2 retirement of the plant were “California electric system will need more flexible resources to
3 integrate renewable energy and has less need for baseload electricity resources. PG&E’s need
4 for baseload power from Diablo Canyon will decrease after 2025.”⁴³ “PG&E is addressing the
5 challenge of renewable resource overgeneration conditions caused by excess renewable energy
6 supply in certain times of the day. As more solar generation comes on line over time, and when its
7 output is at peak supply (e.g., in the middle of the day), there is less room on the electric system
8 for energy from inflexible and large baseload resources such as Diablo Canyon.”⁴⁴ “Due to
9 expected overgeneration throughout parts of the year, Diablo Canyon may contribute to higher
10 system costs as its current generation profile and lack of dispatchability cause challenges for
11 efficiently integrating renewable resources. Therefore, without Diablo Canyon, the cost to
12 integrate renewables may be lower.”⁴⁵

13 Diablo Canyon is an aging power plant which is often not available in grid emergencies as
14 illustrated above. As PG&E has previously testified Diablo Canyon is not a flexible resource and
15 does not help integrate renewable energy into the grid. The billions of dollars that is being
16 proposed to keep this dinosaur operating can be used to finance additional renewable resources
17 and expediate the construction of existing renewable projects. It is not “prudent” to extend the
18

19 ⁴³ Application of Pacific Gas and Electric Company for Approval of the Retirement of Diablo
Canyon Power Plant, Implementation of the Joint Proposal, And Recovery of Associated
Costs Through Proposed Ratemaking Mechanisms Page 5

20 <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M166/K001/166001245.PDF>

21 ⁴⁴ Application of Pacific Gas and Electric Company for Approval of the Retirement of Diablo
Canyon Power Plant, Implementation of the Joint Proposal, And Recovery of Associated
Costs Through Proposed Ratemaking Mechanisms Page 5

22 <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M166/K001/166001245.PDF>

23 ⁴⁵ Application of Pacific Gas and Electric Company for Approval of the Retirement of Diablo
Canyon Power Plant, Implementation of the Joint Proposal, And Recovery of Associated
Costs Through Proposed Ratemaking Mechanisms Page 5

24 <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M166/K001/166001245.PDF>

1 operation of Diablo Canyon as it is a baseload resource that does not aid in the integration of
2 renewables and diverts finite taxpayer and ratepayer resources which could be better used
3 constructing the already approved resources ordered by the CPUC to replace Diablo Canyon.

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Appendix 1
Current Implementation Schedule for DCPP Commitments
Included in Withdrawn License Renewal Application (LRA)

Commitment #1 Enhance the Closed-Cycle Cooling Water program to: Utilize inspections of the CCW supply isolation check valves to the reactor coolant pumps (valves CCW-1-585 and CCW-2-585) as a leading indicator of the condition of the interior of piping components otherwise inaccessible for visual inspection. This periodic internal inspection will detect loss of material and fouling. The inspections are scheduled to be performed for Unit 1 and for Unit 2 at least once every five years. Plant procedures will be enhanced to include the acceptance criteria. Expected Completion Date 11/2/24

Commitment #2 Enhance the Fire Protection program procedures to Include inspection of all fire rated doors listed in the DCPP Fire Hazards Analysis, and Include qualification criteria for individuals performing inspections of fire dampers and fire doors. Estimated Completion Date 11/2/24

Commitment # 3 Enhance the Fire Water System program: Sprinkler heads in service for 50 years will be replaced or representative samples from one or more sample areas will be tested consistent with NFPA 25, Inspection, Testing and Maintenance of Water-Based Fire Protection Systems, 2011 Edition guidance. Test procedures will be repeated at 10-year intervals during the period of extended operation, for sprinkler heads that were not replaced prior to being in service for 50 years, to ensure that signs of degradation, such as corrosion, are detected prior to the loss of intended function, and To perform non-intrusive follow-up volumetric examinations if internal visual inspections detect surface irregularities to determine if wall thickness is within acceptable limits. Visual inspections will evaluate for the presence of sufficient foreign material to obstruct fire water pipe or sprinklers. Estimated Completion Date 8/26/2024

Commitment # 4 Enhance the Fuel Oil Chemistry program to: Include the periodic draining, cleaning, and visual inspection of the diesel generator day tanks, the portable diesel-driven fire pump fuel oil tanks, and portable caddy fuel oil tanks, and Include sampling of the new fuel oil prior to introduction into the portable diesel-driven fire pump tanks and portable caddy fuel oil tanks, and Provide for one-time supplemental ultrasonic thickness measurements of accessible portions of fuel oil tank bottoms, and State that trending of water and particulate levels is controlled in accordance with DCPP Technical Specifications and plant procedures for the diesel fuel oil storage tanks and the diesel generator day tanks, and Include monitoring and trending of water and sediment levels of new fuel oil for the portable diesel driven fire pump fuel oil tank and portable caddy fuel oil tank. Estimated Completion Date 11/02/24

Commitment # 5 Implement the One-Time Inspection (OTI) program as described in LRA Section B2.1.16. Estimated Completion Date 8/26/25

Commitment # 6 Implement the Selective Leaching of Materials program as described in LRA Section B2.1.17 Estimated Completion Date 12-01-28

Commitment # 8 Implement the External Surfaces Monitoring Program as described in LRA Section B2.1.20 and to be in conformance with LR-ISG-2012-02, Section E as discussed in PG&E Letter DCL-14-103, Enclosure 1, Attachment 7E. Estimated Completion Date 8/26/25

Commitment # 9 Implement the Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program as described in LRA Section B2.1.22 and to be in conformance with LR-ISG-2012-02 as discussed in PG&E Letters DCL-14-103. Estimated Completion Date 8/26/25

Commitment # 10 Enhance the Lubricating Oil Analysis program to: Developed a new procedure to govern the Lubricating Oil Analysis program testing, evaluation, and disposition for in scope equipment, and Include procedural guidance for oil sampling and analysis for chemical and physical properties, and Specify standard analyses that will be performed on oils in a new procedure, and Include in a new procedure acceptance criteria for each of the lubricating oils commonly used on-site, including the oils associated with the equipment within the scope of the Lubricating Oil Analysis program. DCPD acceptance criteria for lubricating oil analysis will be derived from original equipment manufacturer (OEM) vendor manuals, industry guidance, and the advice of qualified offsite laboratories, and Include trending in a new procedure, an Address conditions where action limits are reached or exceeded. Estimated Completion Date 11/02/24

Commitment # 11 Implement the Electrical Cables and Connections Not Subject to 10 CFR 50.49 EQ Requirements program as described in LRA Section B2.1.24 Estimated Completion Date 8/26/25

Commitment # 12 Enhance the Electrical Cable and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Used in Instrumentation Circuits program to Identify license renewal scope and require an engineering evaluation of the calibration results when the loop fails to meet acceptance criteria. Estimated Completion Date 8/26/25

Commitment # 13 Enhance the Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements program to Implement the aging management program for testing of the medium voltage cables not subject to 10 CFR 50.49 EQ requirements and enhance the periodic inspections and removal of water from the cable pull boxes containing in scope medium voltage cables not subject to 10 CFR 50.49 EQ requirements. Estimated Completion Date 8/26/25

Commitment # 14 Enhance the Structures Monitoring program procedures to Monitor groundwater samples every five years for pH, sulfates and chloride concentrations, including consideration for potential seasonal variations, and Specify inspections of bar racks and associated structural components in the intake structure. Inspect the administration building, the elevated walkway connecting the turbine building to the administration building, and the structural members that support the walkway. Estimated Completion Date 8/26/25

Commitment # 15 Deleted

Commitment # 16 Implement the Electrical Cable Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements program as described in LRA Section B2.1.35. Completion Date 8/26/25

Commitment # 17 Enhance the Metal Enclosed Bus program: The existing bus work order inspection activities for inspection and testing of the MEBs will be proceduralized to include specific inspection scope, frequencies and actions to be taken when acceptance criteria are not met. Expected Completion Date 8/26/25

Commitment #18 Enhance the Transmission Conductor, Connections, Insulators and Switchyard Bus and Connections program procedures to: Identify components required to support station blackout recovery which are in the scope of license renewal aging management. In the 230 kV switchyard, these are the components between the startup transformers and disconnects 217 and 219. In the 500 kV switchyard these are the components between the main transformers and switchyard breakers 532/632 in Unit 1 and 542/642 in Unit 2, and Include gathering and reviewing completed maintenance and inspection results, by the plant staff, to identify adverse trends, and Identify that an engineering evaluation will be conducted when a degraded condition is detected that considers the extent of the condition, reportability of the event, potential root causes, probably of recurrence, and the corrective actions required. Expected Completion Date 8/26/25

Commitment # 19 Implement the Thermal Aging Embrittlement of Cast Austenitic Stainless-Steel program as described in LRA Section B2.1.39. Expected Completion Date 11/02/24

Commitment # 20 DCPD procedures will be enhanced and implemented to conform to LR-ISG-2011-05, "Ongoing Review of Operating Experience," as discussed in PG&E Letter DCL-14-103, Enclosure 1, Attachment 5. Expected Completion Date 11/02/24

Commitment # 21 Enhance the Metal Fatigue of Reactor Coolant Pressure Boundary program to: • Include additional locations which are not covered by the current Metal Fatigue of Reactor Coolant Pressure Boundary program. Additional locations will include the NUREG/CR 6260 locations for the effects of the reactor coolant environment on fatigue. Usage factors in the NUREG/CR 6260 sample locations will include the

environmental factors, $F(en)$, calculated by NUREG/CR 6583 and NUREG/CR 5704 or appropriate alternative methods, and • Include additional transients that contribute to fatigue usage and those transients used in fatigue flaw growth analyses supporting the leak-before-break analysis, ASME Section XI tolerance evaluations, and relief from ASME Section XI inspections, which are not covered by the current Metal Fatigue of Reactor Coolant Pressure Boundary program. Usage factors in the NUREG/CR 6260 sample locations will include the environmental factors, $F(en)$, calculated by NUREG/CR 6583 and NUREG/CR 5704 or appropriate alternative methods, and • Include additional cycle count and fatigue usage action limits, which will invoke appropriate corrective actions if a component approaches a cycle count action limit or a fatigue usage action limit. Action limits permit completion of corrective actions before the design limits are exceeded. Cycle Count Action Limits: An action limit initiates corrective action when the cycle count for any of the critical thermal or pressure transients is projected to reach the action limit defined in the program before the end of the next fuel cycle. In order to assure sufficient margin to accommodate occurrence of a low probability transient, corrective actions must be initiated before the remaining number of allowable cycles for any specified transient becomes less than one. Action limits will also be established based on the number of transients used in fatigue flaw growth analyses. Cumulative Fatigue Usage (CUF) Action Limits: An action limit requires corrective action when calculated cumulative usage factor (CUF) for any monitored location is projected to reach 1.0 within the next 3 fuel cycles, and • The procedures governing the DCPM Metal Fatigue of Reactor Coolant Pressure Boundary program will be enhanced to specify the frequency of periodic reviews of the results of the monitored cycle count and cumulative usage factor data at least once per fuel cycle. This review will compare the results against the corrective action limits to determine any approach to action limits and any necessary revisions to the fatigue analyses will be included in the corrective actions, and The procedures governing the DCPM Metal Fatigue of Reactor Coolant Pressure Boundary program will be enhanced to include appropriate corrective actions to be invoked if a component approaches a cycle count action limit or a fatigue usage action limit. The corrective action options for a component that has exceeded action limits include a revised fatigue analysis or repair or replacement of the component. Corrective actions for fatigue crack growth analysis action limits include reanalyzing the fatigue crack growth analysis consistent with or reconciled to the originally submitted analysis. The reanalysis will receive the same level of regulatory review as the original analysis. Estimated Completion Date 11/02/24

Commitment # 22 PG&E will: A. For Reactor Coolant System Nickel-Alloy Pressure Boundary Components: (1) Implement applicable NRC Orders, Bulletins and Generic Letters associated with nickel-alloys; (2) implement staff-accepted industry guidelines, (3) participate in the industry initiatives, such as owners group programs and the EPRI Materials Reliability Program, for managing aging effects associated with nickel-alloys, and (4) upon completion of these programs, but not less than 24 months before entering the period of extended operation, PG&E will submit an inspection plan for reactor coolant system nickel-alloy pressure boundary components to the NRC for review and approval. Expected Completion Date: Not less than 24 months before entering the period of extended operation.

Commitment # 23 DCPD will replace the current carbon steel with stainless steel clad CCP 2-2 pump casing in the CVCS with a completely stainless-steel pump casing. Commitment Complete.

Commitment # 24 Deleted N/A N/A

Commitment # 25 DCPD will re-evaluate the RCS Pressure-Temperature limits and COMS setpoints as necessary to comply with 10 CFR 50 Append ix G Prior to operation beyond 23 EFPY. Commitment Complete.

Commitment # 26 The missile shield hoist crane will be removed from containment during the replacement reactor vessel closure head (RRVCH) project. The Unit 2 RRVCH project was completed during the fifteenth refueling outage beginning October 2009 and Unit 1 RRVCH project is planned during the sixteenth refueling outage beginning October 2010. Completed. PG&E Letter DCL-10-158. Commitment Complete.

Commitment # 27 DCPD will repair or replace the hot leg surge nozzle, or augment the in service inspection program to require ASME Section XI volumetric examination at intervals. Estimated Completion Prior to the period of extended operation 11/02/2024

Commitment # 28 The Unit 1 reactor pressure vessel (RPV) head is planned to be replaced during the 16th refueling outage beginning October 2010 and the Unit 2 RPV head was replaced during the 15th refueling outage in October 2009. All components penetrating the new reactor vessel closure heads and welded to the inner surfaces of the reactor vessel closure heads including the head vent piping and elbows will be replaced with Alloy 690. Completed. PG&E Letter DCL-10-158.

Commitment # 29 DCPD Unit 1 and 2 CRDM pressure housings, the core exit thermocouple nozzle assemblies (CETNAs), and the thermocouple nozzles will be replaced with the replacement reactor vessel closure heads (RRVCHs). The Unit 2 RPV head was replaced during the fifteenth refueling outage beginning October 2009 and Unit 1 RPV head is planned to be replaced during the sixteenth refueling outage beginning October 2010. The replacement components will be qualified through the period of extended operation. Completed. PG&E Letter DCL-10-158.

Commitment # 30 DCPD will monitor the corrosion of closed cooling water components by inspecting the condition of corrosion coupons installed in the system and perform internal inspections of select components within the systems. These methods will verify that wetted material exposed to the chemistry of the closed cooling water systems are not experiencing corrosion. The corrosion coupons are

strips of metal (i.e. copper, carbon steel, stainless steel, etc.) that are installed in the closed cooling water systems in a manner such that they are exposed to the cooling water. Periodically these coupons are removed and their condition can be evaluated. This inspection will provide DCPD indication if significant corrosion is occurring in the system. The material of these corrosion coupons is representative of most of the materials that are used in the system. For those components that do not have material represented by the corrosion coupons, internal inspections will be performed on those components, or other component with similar material, in order to monitor for corrosion. Estimated Completion U1: 11/02/2024 U2: 8/26/2025

Commitment # 31 The Unit 2 gap repair work will be completed prior to the period of extended operation. Completed. PG&E Letter DCL-11-136

Commitment #32 DCPD plant procedures will be revised to perform concrete inspections per ASME Section XI Subsection IWL within a 5-year interval. Completed. PG&E Letter DCL-14-103

Commitment # 33 The plant procedure on work control will be revised to require that whenever an in-scope pullbox is going to be opened the Structural Monitoring Aging Management Aging Management program personnel be notified to allow them to determine whether an opportunistic inspection of the pull box should be performed. Estimated Completion Prior to the period of extended operation U1: 11/02/2024 U2: 8/26/2025

Commitment # 34 The DCPD work control procedure will be revised to include evaluation of reinforced concrete exposed during excavations Complete. PG&E Letter DCL-15-150.

Commitment # 35 DCPD will revise the test procedure acceptance criteria once without capping or replacing. This will preclude repositioning a tube having chrome plated surfaces from the chrome being moved out of the areas of known wear. Complete. PG&E Letter DCL-11-136.

Commitment # 36 PG&E will revise plant procedures to specify visual inspections for corrosion of structural members of the containment dome service crane and special service hoists, jib cranes, and monorails. Estimated Completion Prior to the period of extended operation
11/02/2024

Commitment # 37 Deleted N/A N/A

Commitment # 38 The actual plant transient cycles related to the SWOL and Model 93A Reactor Coolant Pumps fatigue crack growth analyses will be included in the

existing plant transient monitoring program by January 31, 2011 to ensure that the actual plant transients do not exceed the fatigue analysis limits. Complete. PG&E Letter DCL-11-020.

Commitment # 39 DCPD will volumetrically examine 10%, with a maximum of 25, of the small bore socket welds and 10%, with a maximum of 25, of the butt welds within the population of ASME Class-1 piping NPS less than 4-inches on each unit. Currently, DCPD has 696 socket welds in Unit 1, 841 socket welds in Unit 2, 134 butt welds in Unit 1, and 133 butt welds in Unit 2. Based on the current weld count, this would result in the examination of 25 socket welds for Unit 1, 25 socket welds for Unit 2, 13 butt welds for Unit 1 and 13 butt welds for Unit 2. DCPD may perform opportunistic destructive examination of welds in lieu of volumetric examination with 1 destructive examination being equivalent to 2 volumetric examinations. Expected Completion During the 6 years prior to the period of extended operation U1: 11/02/2024 U2: 8/26/2025

Commitment # 40 Calculation No. 2305C will be revised by November 1, 2010 to be consistent with the latest revision of Procedure NDE VT 3C-1. Complete. PG&E Letter DCL-10-158

Commitment # 41 Calculation No. 2305C acceptance criteria will be consistent with the latest revision of Procedure NDE VT 3C-1. Any long term planning and decisions on potential repair will be made on a case by case basis and based on review of trends in the inspection findings and will be implemented via DCPD Corrective Action Program. Complete. PG&E Letter DCL-10-158

Commitment # 42 Procedure NDE VT 3C-1 acceptance criteria will be revised to be consistent with ACI 349.3R Chapter 5 detailed quantitative acceptance criteria. Complete PG&E Letter DCL-13-119

Commitment # 43 Prior to the period of extended operation, the acceptance criteria for concrete structural elements provided in the implementing procedures for the Structures Monitoring Program for both safety and nonsafety- related structures will be revised to incorporate the quantitative evaluation criteria provided in ACI 349.3R, Evaluation of Existing Nuclear Safety Related Concrete Structures, Chapter 5, Evaluation Criteria Prior to the period of extended operation Estimated Completion 11/02/2024

Commitment # 44 The Structures Monitoring Program inspection interval for safety related and non-safety related concrete structures will be revised to be aligned with the guidance in ACI 349.3R, Evaluation of Existing Nuclear Safety Related Concrete Structures, Chapter 6, Evaluation Frequency. Expected Completion Prior to the period of extended operation 11/02/2024

Commitment # 45 A one-time video inspection of the Unit 2 leak chase will be performed within one year prior to the period of extended operation. Estimated completion Within one year prior to the period of extended operation PG&E will inspect the Unit 2 spent fuel pool leak chase by 8/26/2025

Commitment # 46 The existing Structures Monitoring Program procedure will be revised prior to the period of extended operation to specify a five year maximum interval for inspection of water control structures. Estimated Completion Prior to the period of extended operation 11/02/2024

Commitment # 47 Aluminum tape currently installed on the seems of the Unit 1 RMI insulation panels of the pressurizer loop seals is currently scheduled to be removed during the Unit 1 sixteenth refueling outage (1R16), October 2010. Complete. PG&E Letter DCL-10-158.

Commitment # 48 Deleted

Commitment # 49 DCPD will update the PM basis documents for strainers and screens in the makeup water system that support long term cooling and firewater inventory to require that they are cleaned and inspected on a 24 month frequency prior to the period of extended operation. Estimated Completion Prior to the period of extended operation 11/02/2024

Commitment # 50 Procedures will be enhanced to provide specific valves that need to be repositioned to provide Class I makeup to the spent fuel pool including the correct position of any normally open code break valves. Complete. PG&E Letter DCL-11-020

Commitment # 51 A one time UT examination of the firewater tank bottom will be performed as part of the One-Time Inspection aging management program, LRA Section B2.1.16. Estimated Completion During the 10 years prior to the period of extended operation 11/02/2024

Commitment # 52 The Buried Piping and Tanks Inspection Program will be implemented as described in LRA Section B2.1.18 and will conform to the specific additional guidance provided in LR ISG 2011 03 as discussed in PG&E Letter DCL-14-103, Enclosure 1, Attachment 3; the specific changes provided in draft LR-ISG-2015-01 as discussed in PG&E Letters DCL-15-121, Enclosures 1 and 2, and DCL-16-023; and the specific changes provided in LR ISG 2015 01 as discussed in PG&E Letter DCL-16-032, Enclosure 3. Fire mains will be subject to a periodic flow test in

accordance with NFPA 25 section 7.3 at a frequency of at least one test in each one year period. These flow tests will be performed in lieu of excavating buried portions of Fire Water pipe for visual inspections. Estimated Completion Within 10 years prior to the period of extended operation Program implemented by 11/02/2024; Initial inspections completed by 12/01/2028

Commitment # 53 PG&E will install impressed current cathodic protection for the buried ASW discharge and supply piping in contact with soil as described in PG&E Letter DCL-16-032 and will submit a final report to the NRC to confirm the completed scope. Estimated Completion 12/01/2028

Commitment # 54 The DCPD XI.E3 program will be revised to include in scope inaccessible underground 480 V power cables or higher power cables, regardless of the percentage of time the loads are energized. The program will require that in scope cable pull boxes will be inspected for water accumulation at least once every year. Detailed internal pull box inspections of cables and cable supports will be included in the structural monitoring program. *Inspection criteria will be included in plant procedures. These are* opportunistic inspections conducted when the pull boxes are opened for maintenance or other reasons. More frequent tests and inspections will be required when the current program identifies adverse trends indicating that in scope power cables insulation resistance is being reduced or the cables are being subjected to submergence or visible indications of cable aging or cable support degradation are observed. The DCPD corrective action program will drive any necessary changes. A corrective action document is required to be written when test or inspection requirements do not meet acceptance requirements or when adverse trends are noted when evaluating results over time. Estimated Completion Prior to the period of extended operation U1: 11/02/2024 U2: 8/26/2025

Commitment # 55 PG&E will conduct a baseline inspection of all safety and non-safety related structure's concrete elements (in the scope of the Structures Monitoring Program) in accordance to ACI 349.3R acceptance criteria prior to entering the period of extended operation. Estimated completion Prior to the period of extended operation U1: 11/02/2024 U2: 8/26/2025

Commitment # 56 Procedures will be implemented for: A. Cable testing and periodic water accumulation inspections of the pull boxes for inscope 480V and higher power cables. B. Pull box sump box and alarm features testing on an annual basis. Estimated Completion Prior to the period of extended operation 11/02/2024

Commitment # 57 In-scope 480V and higher power cables will be tested at

a frequency of at least every 6 years with the first test completed prior to entering the period of extended operation. Estimated Completion Prior to the period of extended operation U1: 11/02/2024 U2: 8/26/2025

Commitment # 58 PG&E will perform a review of design basis ASME Class 1 component fatigue evaluations to determine whether the NUREG/CR-6260-based components that have been evaluated for the effects of the reactor coolant environment on fatigue usage are the limiting components for the DCPD plant configuration. If more limiting components are identified, the most limiting component will be evaluated for the effects of the reactor coolant environment on fatigue usage. The effect of the reactor coolant environment on DCPD fatigue usage will be evaluated using material-specific guidance presented in NUREG/CR-6583 for carbon and low alloy steels, NUREG/CR-5704 for stainless steels, and NUREG/CR-6909 for nickel alloys. This additional evaluation will be performed through the Metal Fatigue of Reactor Coolant Pressure Boundary Program in accordance with 10 CFR 54.21 (c)(1)(iii). Estimated completion Prior to the period of extended operation 11/02/2024

Commitment # 59 PG&E will revise the DCPD FSAR to include the basis for exclusion of unit loading and unloading transients from counting, and the transients and numbers of events related to the leak-before-break analysis, the ASME Section XI fatigue flaw growth analysis for auxiliary feedwater line 567, and the generic fatigue flaw growth analysis in WCAP-13045. Expected completion Prior to the period of extended operation 11/02/2024

Commitment # 60 PG&E will enhance provisions in the HVAC ducting from the 480V switchgear room that allow water to drain from the exhaust ducting so water cannot enter the 480V switchgear room. Complete. PG&E Letter DCL-15-150.

Commitment # 61 PG&E will close the isolation valve upstream of the water traps and drain the traps in the compressed air system. Estimated Completion Prior to the period of extended operation 11/02/2024

Commitment # 62 Implementation for all Unit 2 Diesel Generator Starting Air and Turbocharger Air Compressor upgrades is planned for April, 2011. Complete. PG&E Letter DCL-11-136.

Commitment # 63 PG&E will enhance the operating procedures to provide direction to evaluate and close valve MU-0-881 as appropriate. Estimated Completion Prior to the period of extended operation 11/02/2024

Commitment # 64 PG&E will perform a regularly scheduled ISI ultrasonic inspection of WIC-95 during the upcoming 1R17 refueling outage, scheduled for May 2012, to confirm the absence of service-related flaw growth. Should service related flaw growth

be identified in this inspection, the corrective action program will be entered and appropriate corrective action will be taken in accordance with ASME Section XI Code. In absence of flaw growth, WIC-95 will continue to be inspected at a frequency required by the ISI Program Plan. Complete. PG&E Letter DCL-14-103.

Commitment # 65 PG&E will revise the plant procedure on flux thimble tube inspections to reference this letter and WCAP-12866 to clarify the technical basis for an adequate margin of safety to ensure that the integrity of the reactor coolant system pressure boundary is maintained. This procedure revision is currently scheduled to be completed prior to December 2011, but will be completed prior to the period of extended operation. Complete. PG&E Letter DCL-12-124.

Commitment # 66 PG&E will revise its plant procedure to include a 5.1 percent allowance for predictability and a 10 percent allowance to account for instrument and wear scar uncertainty. This procedure will also be revised to include an 80 percent through wall acceptance criterion based upon its plant-specific FTT data wear and NRC acceptance of this 80 percent criterion. In conclusion, based on the WCAP-12866 80 percent acceptance criterion, including 5.1 percent predictability uncertainty and 10 percent for eddy current testing instrument and wear scar uncertainty, PG&E will use a net acceptance criterion of 64.9 percent. This procedure revision is currently scheduled to be completed prior to December 2011, but will be completed prior to the period of extended operation. Complete. PG&E Letter DCL-12-124. Commitment modified and completed per PG&E Letter DCL-14-103.

Commitment # 67 PG&E will update the FSAR in accordance with 10 CFR 50.71(e) to include the flux thimble tube acceptance criterion. This update is currently scheduled to be included in the next FSAR update, but will be completed prior to the period of extended operation. Complete. PG&E Letter DCL-12-124.

Commitment # 68 PG&E will revise its plant procedure to require the actual plant FTT specific wear data versus wear projections be evaluated every refueling outage to ensure it remains consistent with a maximum non-conservative wear projection of 5.1 percent for wear above 40 percent. If the wear projection for a tube is determined to exceed the 5.1 percent under-prediction and has over 40 percent wear the previous cycle, PG&E will enter it into the corrective action program for evaluation and disposition. This procedure revision is currently scheduled to be completed prior to December 2011, but will be completed prior to the period of extended operation. Complete. PG&E Letter DCL-12-124. Commitment modified and completed per PG&E Letter DCL-14-103.

Commitment # 69 Marine growth removal and subsequent inspection of all required areas of the Unit 2 discharge conduit will be completed prior to the period of extended

operation. The Unit 2 discharge conduit is currently scheduled to be completed during 2R17 (2013). Reference PG&E Letter DCL-12-124 for Unit 1. Complete. PG&E Letter DCL-13-119.

Commitment # 70 The requirements for future discharge conduit inspections including those to be performed during the period of extended operation will be developed based on the findings from the 1R17 / 2R17 inspections. These requirements will address the following: (1) inspection interval (not to exceed 5 years); (2) extent and frequency of marine growth removal; and (3) inspection extent (100 percent vs. sampling).

Estimated Completion Prior to the period of extended operation U1: 11/02/2024 U2: 8/26/2025

Commitment # 71 The Intake Structure will be returned to (a)(2) status prior to the period of extended operation. The Intake Structure is currently scheduled to be returned to (a)(2) status by the end of 2011 Complete. PG&E Letter DCL-11-136.

Commitment # 72 Implement the PWR Vessel Internals Program to conform to LR-ISG-2011-04 as discussed in PG&E Letter DCL-14-103, Enclosure 1, Attachment 4, including the plant-specific action items, conditions, and limitations identified in the NRC Safety Evaluation, Revision 1, for MRP-227. Estimated Completion Prior to the period of extended operation Program is implemented by 11/02/2024

Commitment # 73 The NRC SE for MRP-227 contains eight action items for applicants/licensees to consider. Responses to the applicable aging management program plant-specific action items, conditions, and limitations identified in the NRC SE, Revision 1, on MRP-227 will be submitted to the NRC by December 2015. Reference DCL-14-103, Enclosure 1, Attachment 4. Complete. PG&E Letter DCL-15-150.

Commitment # 74 Implement the Internal Coatings/Linings for In-Scope Piping, Piping Components, Heat Exchangers, and Tanks program in conformance with LR-ISG-2013-01 as discussed in PG&E Letters DCL-15-027, Enclosure 1, DCL-15-121, and DCL-16-023. Estimated Completion No later than six months before the period of extended operation and inspections begin no later than the last refueling outage before the period of extended operation. Estimated Completion Program implemented by 11/02/2024; Initial inspections completed by 12/01/2028 Attachment 2 PG&E Letter DCL-23-020
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Commitment # 75 For copper alloy piping portions of the domestic water system that are in the scope of license renewal, PG&E will replace the piping with a material that is more corrosion-resistant, or install pipe shielding to ensure that no adverse a (2) spatial

interactions could occur. Estimated Completion Prior to the period of extended operation 12/01/2028

Commitment # 76 Pressurizer Spray Line Pipe Weld WIB-378 will be reexamined for the next three in service inspection (ISI) periods as described in PG&E Letter DCL-16-043. If during the successive-inspection monitoring time frame the flaw has reached 50 percent through wall depth, PG&E will reanalyze the current acceptability and projected flaw growth rate for the remainder of the period of extended operation and continue monitoring it on a periodic basis. Estimated Completion Prior to the period of extended operation 11/02/2024

Appendix # 2

APPENDIX H
PACIFIC GAS AND ELECTRIC COMPANY
2020 GENERALRATECASE
DIABLO CANYON POWER PLANT
CANCELLED CAPITAL PROJECTS AND AMORTIZATION SCHEDULE

APPENDIX
PACIFIC GAS AND ELECTRIC COMPANY
20.20 GENERAL RATE CASE
DIABLO CANYON POMRPLANCANCELLED CAPITAL PROJECTS AND AMORTIZATION SCHEDULE

Line No.	Plant/Order	Description	Total Costs to 06/30/16	Total Costs Post 06/30/16	Total Costs	Costs Excluding AFUDC to 06/30/16	Costs Excluding AFUDC Post 06/30/16	Total Costs Excluding AFUDC
1	5727860	U1: Rpl Process Protection System (PPS)	\$23,280,917	\$1,893,889	\$25,174,806	\$19,221,366	\$6,008,844	\$20,030,210
2	5727861	U2: Rpl Process Protection System (PPS)	\$11,876,018	\$54,294	\$12,417,311	\$9,670,456	\$0	\$9,670,456
3	5730278	U1: Repl Main Gen Voltage Regulator	\$105,808	\$55	\$114,881	\$88,092	\$0	\$88,092
4	5731878	U1: Repl FHB Supply Fans	\$79,553	\$3,411	\$79,884	\$49,202	\$0	\$49,202
5	5731879	U1: Repl Aux Bldg Supply Fans	\$102,270	\$0	\$102,270	\$70,361	\$0	\$70,361
6	5732159	U2: Uw Air Partic&Gaa Montr RM-11 & 12	\$42,028	\$312	\$45,640	\$27,266	\$0	\$27,266
7	5733424	U2: Control Room Condenser Replacement	\$509,558	\$725,684	\$1,235,240	\$484,255	\$881,481	\$1,145,736
8	5733432	U2: Repl Main Gen Voltage Regulator	\$124,689	\$10,721	\$135,410	\$81,165	\$0	\$81,165
9	5733439	U2: Repl FHB Supply Fans	\$1,302,010	\$0	\$1,302,010	\$1,084,194	\$0	\$1,084,194
10	5733440	U2: Repl Aux Bldg Supply Fans	\$418,319	\$0	\$418,319	\$295,049	\$0	\$295,049
11	5733691	COM: Repl Turbine Building HELB Louvers	\$158,591	\$13,654	\$172,244	\$73,053	\$0	\$73,053
12	5733720	COM: Hst Take Bar Rack Raking System	\$2,528,067	\$0	\$2,528,067	\$1,719,041	\$0	\$1,719,041
13	5735024	U1: Repl Manipulator Control Center	\$50,865	\$10,112	\$80,978	\$35,593	\$3,882	\$39,475
14	5735026	U2: Upgrade Fuel Transfer Cart & Controls	\$210,398	\$124,540	\$334,938	\$188,377	\$92,804	\$281,181
15	5735027	U2: Repl Manipulator Control Center	\$80,804	\$388	\$70,170	\$48,815	\$2,172	\$50,787
18	5735028	U1: Upgrade Fuel Transfer Cart & Conrail	\$28,389	\$14,281	\$40,869	\$19,815	\$10,622	\$30,437
17	5735677	U1: Replace 12Kv Bus E Relays	\$1,077,513	\$0	\$1,077,513	\$964,871	\$0	\$964,871
18	5735678	U2: Replace 12Kv Bus E Relays	\$69,066	\$0	\$75,917	\$47,178	\$0	\$47,178
19	5735886	U1-U2: Replace DFO Transfer Pumps	\$1,004,692	\$0	\$1,004,692	\$780,176	\$0	\$780,176
20	5735894	COM: Rem Abandoned Caustic/Acid Tanks	\$100,721	\$0	\$100,721	\$100,721	\$0	\$100,721
21	5736879	U2: Repl 18 FLUR/SLUR Relays	\$1,938,310	\$0	\$1,938,310	\$1,490,088	\$0	\$1,490,088
22	5738000	U1: Upgr Air Partic & Gas Montr RM-11 & 12	\$472,580	\$185,249	\$657,809	\$353,732	\$138,748	\$492,480
23	5736129	U1: Replace Extr.ore Thermocouples	\$570,852	\$22,818	\$593,670	\$440,542	\$0	\$440,542
24	5736141	Turb Bldg Sump Pmps & Lvl Controll Mod	\$10,878	\$612	\$105,890	\$65,273	\$0	\$65,273
25	5738238	U1: Add Ilo Vlv Sl Test Hdr Phase II R19	\$1,184,362	\$0	\$1,184,362	\$915,783	\$0	\$915,783
26	5739859	U1: Inst Redundant Vapor Exmtor	\$135,874	\$932	\$141,806	\$101,858	\$0	\$101,858
27	5740839	U1: Repl 18 FLUR/SLUR Relays	\$3,370,444	\$0	\$3,370,444	\$2,852,670	\$0	\$2,852,670
28	5740883	u1: Inst SEW Head Tmk N2 Cover System	\$1,175,074	\$118,648	\$1,293,720	\$1,042,753	\$83,294	\$1,106,047
29	5740884	u2: Inst 11 SEW Head Tmk N2 Cover System	\$15,858	\$75,600	\$226,958	\$109,702	\$67,520	\$177,222
30	5740886	U2: Inst ICW Head Tank N2 Cover System	\$56,069	\$2,562	\$58,631	\$40,606	\$0	\$40,606
31	5742281	COM: Add Equip to Inj PAA to FWSys	\$668,788	\$84,699	\$729,465	\$612,079	\$29,174	\$841,253
32	5742339	U1: Replace Main Generator Output Breaker	\$2,283,120	\$194,959	\$2,478,079	\$1,922,702	(\$2,259)	\$1,920,443
33	5743121	COM: Upgrade Primary Chemistry Lab	\$8,022	\$858	\$8,878	\$5,925	\$0	\$5,925
5743876	U1: Repl 18 EH Vacuum Dehydrator	\$128,854	\$535	\$134,369	\$101,446	\$0	\$101,446	
35	5745078	Replace Gaseous Radwaste Monitoring Sys	\$513,954	\$144,792	\$658,747	\$477,856	\$117,866	\$595,722
36	5745278	U1: Replace Instr Panels PM-177&179	\$0	\$7,047	\$7,047	\$0	\$6,820	\$6,820
37	5745442	COM: Inst SWRO Discharge Modifications	\$463,345	\$2,744	\$488,088	\$435,607	(\$16,972)	\$418,635
38	5748098	u1: Add Thermal Relief Vlv to SEW HX	\$33,120	\$8,181	\$41,300	\$32,330	\$8,390	\$38,720
39	5746099	u2: Add Thermal Relief Vlv to SEW HX	\$4,990	\$2,730	\$38,720	\$14,847	\$20,265	\$34,912
40	5746172	COM: Replace D CPP Pwr Block Lighting	\$149,402	\$322	\$155,924	\$137,813	\$0	\$137,813
41	5746724	U1: REPL CFU COOLING COILS 1-2	\$0	\$631,141	\$631,141	\$0	\$629,423	\$629,123
42	5749719	U2: Replace Pres Heaters	\$864,198	\$0	\$864,198	\$796,611	\$0	\$796,611
43	5749764	COM: Ins U Diesel to Suppt Security Upgr	\$70,958	\$6,138	\$77,096	\$58,791	\$0	\$58,791
44	5750041	U1: Upgrade DEG (Margin Deficiency)	\$89,592	\$4,108	\$93,700	\$69,484	\$0	\$69,484
45	57527eB	COM: TSS Ujtr: rCaes Rev & Reloc Pli:lj (CAP)	\$3,855,873	\$1,289,005	\$5,137,778	\$3,401,376	\$929,052	\$4,330,427
46	5752819	U1: Repl Main Generator Protection	\$55,638	\$159,933	\$225,571	\$55,203	\$161,762	\$216,965
47	5752820	U2: Repl Main Gen Protection	\$58,863	\$126,379	\$185,242	\$54,364	\$113,395	\$167,759
48	5753458	U2: Repl PPC Server	(\$646)	\$0	(\$646)	(\$667)	\$0	(\$667)
49	5753459	U1: Repl PPC Servers	\$459,859	\$2,083	\$480,942	\$383,983	\$0	\$383,983
50	5755714	U1: Control Room Condenser Replacement	\$653,415	\$1,284,305	\$1,937,720	\$623,701	\$1,178,979	\$1,800,680
51	5758524	U2: Inst ASW Cathodic Protection	\$942,560	\$288,620	\$1,211,200	\$909,956	\$185,450	\$1,095,408
52	5759418	COM: MSL Bmpacton 4KV vital SWGRs	\$1,329,955	\$304,723	\$1,634,678	\$1,169,341	\$156,853	\$1,325,993
53	5761274	U2: UPGRADE DEG 2-2 LOADING MARGIN	\$735,404	\$39,576	\$774,980	\$653,693	\$5,717	\$659,410
54	5761286	U1: Refurbish RCP Rotor RS	\$267,210	\$35,188	\$302,398	\$254,870	\$22,929	\$277,800
55	5762786	Install Wreleas Comm Sysh 3 & 4	\$296,190	\$558,582	\$854,752	\$292,116	\$499,597	\$917,173
58	5764036	Purchase and Install CWP Mir Rtr CWP 2-1	\$0	\$101,196	\$101,198	\$0	\$93,281	\$93,281
57	5769888	COM: Upgrd 230 Kv Switchyard CIXMII"tion	\$0	\$432,334	\$432,334	\$0	\$405,992	\$405,992
58	5789887	COM: Upgrd 230 Kv Tie Lines	\$0	\$9,803	\$91,803	\$0	\$86,129	\$86,129
59	5770218	U1: Repl Penetration 9E	\$0	\$175,766	\$175,766	\$0	\$166,379	\$166,379
60	5770362	COM: Ins UPAC G-7 Encioau Al	\$0	\$116,573	\$116,573	\$0	\$111,311	\$111,311
61	5771398	U1: EOG Turbocharger Support Upgrade	\$0	\$44,234	\$44,234	\$0	\$40,898	\$40,898
62	5771399	U2: EOG Turbocharger Support Upgrade	\$0	\$130,680	\$130,680	\$0	\$121,798	\$121,798
83	5771802	U1: Inst Condenser Sodium Analyzers	\$0	\$133,831	\$133,831	\$0	\$129,808	\$129,808
64	5772189	COM: SEPARATE 12KV YRD LOOP FROM PWR	\$0	\$8,291	\$8,291	\$0	\$8,149	\$8,149
65	5773058	COM: Instal 480V Switchgear Protection	\$0	\$272,640	\$272,640	\$0	\$260,275	\$260,275
66	Grand Total		\$662,19351	\$1,047,4822	\$76,694,174	\$54,905,088	\$73,131,127	\$62,218,215
67		Factor				100%	25%	
70		Amount Recoverable from Customers - Over 9 Years				\$4,303,068	\$1,428,282	\$6,073,370

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Amount Recoverable from

Resume of Robert Sarvey

Academic Background

BA Business Administration Accounting California State University Hayward, 1975
MBA Tax Law California State University Hayward, 1985

Experience

San Joaquin Valley Air Pollution Control District Citizens Advisory Board Industry Representative: Analyzed proposed air quality regulations and made recommendations to the Governing Board for approval.

CPUC Proceeding C. 07-03-006: Negotiated a settlement with PG&E to voluntarily revoke Resolution SU-58 which was the first pipeline safety waiver of GO112-E granted in the State of California. Provided risk assessment information that was critical in the adoption of the Settlement Agreement with PG&E which, amongst other issues, resulted in PG&E agreeing to withdraw its waiver application and agreeing to replace the 36-inch pipeline under the sports park parcel after construction.

CPUC proceeding 08-07-018: Tesla Generating Station CPCN participated in proceeding which was dismissed due to motion by IEP. Reviewed all filings, filed protest, signed confidentiality agreement and reviewed all confidential testimony.

Tesla Power Project 01- AFC-04: Participated as an Intervenor and provided air quality testimony on local land use and air quality impacts. Participated in the development of the air quality mitigation for the project. I was the only party in that proceeding that opposed the Tesla Power Plant construction extension. Provided testimony and briefing which resulted in denial of the PG&E's construction extension request.

CPUC Proceeding 09-09-021: Provided Testimony that demonstrated PG&E failed to follow its environmental protocol in the LTPP. Provided testimony and evidence that PG&E's need had fallen since 2007 and that the Commission should limit PG&E's procurement to the 950-1000 MW Range.

CPUC Proceeding A. 09-04-001: Demonstrated PG&E had violated terms of Mariposa Settlement Agreement. PG&E was fined \$25,000 for breach of settlement.

CPUC Proceeding A. 09-10-022: Provided Testimony on behalf of Californians for Renewable Energy. Provided confidential evaluation of PPA value. Provided testimony and evidence that PG&E had violated the Mariposa Settlement. Provided testimony that demonstrated PG&E's demand had fallen sharply since the issuance of D. 07-12-052.

CPUC Proceeding A.11-12-003: Was credited by the decision for demonstrating that an additional 5 MW of firm capacity was not needed from the Thermal Energy Biomass Plant. Decision led to the plants closure.

GWF Peaker Plant 01-AFC-16: Participated as an Intervenor in the project and helped negotiate and implement a 1.3-million-dollar community benefits program. Successfully negotiated for the use of local emission reduction credits with GWF to offset local air quality impacts.

Modesto Irrigation District 03-SPEE-01: Participated as an Intervenor and helped negotiate a \$300,000 air quality mitigation agreement between MID and the City of Ripon.

Los Esteros: 03-AFC-2 Participated as an Intervenor and also participated in air quality permitting with the BAAQMD. Responsible for lowering the projects permit limit for PM-10 emissions by 20%.

SFERP 4-AFC-01: Participated as an Intervenor and also participated in the FDOC evaluation. My comments to the BAAQMD resulted in the projects PM -10 emission rate to be reduced from 3.0 pounds per hour to 2.5 pounds per hour by the District. Provided testimony on the air quality impacts of the project.

Long Beach Project: Provided the air quality analysis which was the basis for a settlement agreement reducing the projects NOx emissions from 3.5ppm to 2.5ppm.

ATC Explosive Testing at Site 300: Filed challenge to Authority to Construct for a permit to increase explosive testing at Site 300 a DOE facility above Tracy. The permit was to allow the DOE to increase outdoor explosions at the site from 100 pounds per charge to 300 pounds per charge and also grant an increased annual limit on explosions from 1,000 pounds of explosive to 8,000 pounds of explosives per year. Contested the permit and succeeded in getting the ATC revoked.

Colusa Generating Station: 06-AFC-9: Participated as air quality consultant for Emerald Farms. Filed challenge to the PSD Permit.

GWF Tracy Combined Cycle 08-AFC-07: Participated in negotiation of the Air Quality Mitigation Agreement with the San Joaquin Valley Air Pollution Control District and GWF.

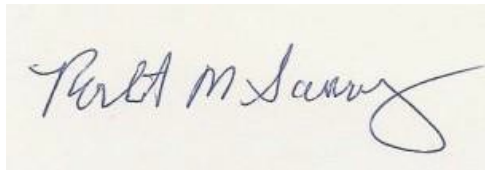
Oakley Generating Station 09-AFC-04: Participated as an intervenor. Provided testimony in Alternatives, Air Quality, Environmental Justice, and Water Quality. Negotiated settlement with CCGS to not use ERC's and instead exclusively use 2.5 million dollars to create real time emission reductions through BAAQMD real time emission reduction programs.

Pio Pico PSD Permit: Participated in the Pio Pico PSD permit. Comments resulted in a remand to the air district and a lowering of particulate matter emission limits by 10 %.

Declaration of Robert Sarvey

I Robert Sarvey Declare as Follows:

1. I prepared the attached opening testimony for Phase1 Track 2 for the, “Order Instituting Rulemaking Implementing Senate Bill 846 Concerning Potential Expansion of Diablo Canyon Operations”.
2. A copy of my professional qualifications and experience is included with this Testimony and is incorporated by reference in this Declaration.
3. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed in Los Osos, California on June 30, 2023.

A handwritten signature in blue ink on a light-colored background. The signature is cursive and reads "Robert M. Sarvey".

Robert M. Sarvey
501 W. Grant Line Rd.
Tracy, CA. 95376
209 835