DIABLO CANYON INDEPENDENT SAFETY COMMITTEE

Report on

Fact-Finding Meeting at DCPP
on August 27 and September 24-25, 2024

by

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1.0 SUMMARY

The results of the DCISC September 24-25, 2024, Fact-Finding Meeting at the Diablo Canyon Power Plant (DCPP) in Avila Beach, CA, are presented. This report also includes in Section 3.1 the results of a Fact-Finding meeting in PG&E's Oakland CA office on August 27, 2024. Although the Fact-Finding Team (FFT) was on-site at DCPP on September 24-25, portions of the meeting were held remotely. The subjects addressed and summarized in Section 3 are as follows:

1. Meet with PG&E Geosciences Group in Oakland CA on August 27, 2024
2. Meet with DCPP Officer Maureen Zawalick
3. License Renewal Update
4. Unit 1 Capsule B Withdrawal
5. On-Line Maintenance
6. Observe Licensed Operator Training: Reactor Physics
7. Pressurizer Safety Valve Root Cause Evaluation
8. Current Campaign Moving Spent Fuel from Spent Fuel Pool to Independent Spent Fuel Storage Facility
9. Results of July 31, 2024 Evaluated Emergency Preparedness Exercise
10. Meet with Nuclear Regulatory Commission Senior Resident Inspector and New Resident Inspector
11. Fire Protection Update
12. Discussion of the Recent Report by the Independent Peer Review Panel and Its Implications for Site Seismic Hazard
13. Observe Work in Progress: Calibration of Nuclear Instrumentation

2.0 INTRODUCTION

This Fact-Finding Meeting at the DCPP was held to evaluate specific safety matters for the DCISC. The objective of the evaluation was to determine if PG&E's performance is appropriate and whether any areas revealed observations which are important enough to warrant further review, follow-up, or presentation at a public meeting. These safety matters include follow-up and/or continuing review efforts by the Committee, as well as those identified as a result of reviews of various safety-related documents.

Section 4 – Conclusions highlights the conclusions of the FFT based on items reported in Section 3 – Discussion. These highlights also include the team's suggested follow-up items for the DCISC, such as scheduling future Fact-Finding Meetings on the topic, presentations at future public meetings, and requests for future updates or information from DCPP on specific areas of interest, etc.

Section 5 – Recommendations presents specific recommendations to PG&E proposed by the FFT. These recommendations will be considered for approval by the DCISC at its next Public Meeting. After review and approval by the DCISC, this Fact-Finding Report, including its recommendations, will be provided to PG&E. The Fact-Finding Report will also appear in the DCISC Annual Report.

3.0 DISCUSSION

3.1 Meet with PG&E Geosciences Group in Oakland CA on August 27, 2024

Review of seismic hazard information presented by Dr. Peter Bird

On August 27, the DCISC Fact-finding Team (FFT: Robert Budnitz in person and Ferman Wardell remotely) met at PG&E's Oakland CA office with the following PG&E personnel:

- Jeff Bachhuber, Geosciences Director and Engineering Geologist
- Tom Jones, Senior Director
- Albert Kottke, Geosciences Principal Geotechnical Earthquake Engineer
- Jennifer Post, Attorney
- Jearl Strickland, PG&E Consultant
- Maureen Zawalick, Vice-President, Technical and Business Services

The meeting was joined remotely by Chris Madugo (PG&E Geosciences Consultant), Brandy Lopez (PG&E Strategic Initiatives Licensing Principal), and Stephen Thompson (of Lettis Consultants International, a consultant to PG&E), as well as by Richard McWhorter (DCISC consultant.)

The purpose of this meeting was to review a range of technical issues and questions on seismic hazard that have been raised in the last few months by Dr. Peter Bird, who sent the DCISC a letter on May 16, 2024 and then made a presentation to the DCISC during the DCISC public meeting in Avila Beach on June 21,2024. These two recent interactions between Dr. Bird and the DCISC are follow-ons to several different recent technical reports by Dr. Bird, some going back a year or more, that are incorporated in various procedural filings with the NRC and the CPUC.

To facilitate this Fact-Finding meeting, the FFT sent PG&E a list in advance of specific technical questions that became the focus of the meeting. The PG&E staffs addressed each of the questions in turn, generally in the nature of clarifications. The DCISC's questions were directed at obtaining issue-specific information about analyses that PG&E had performed or had knowledge of, or data

that PG&E had gathered or had knowledge of. The FFT's focus was to assure that the clarifications provided by PG&E were sufficient to enable the DCISC to perform a technically sound evaluation of the positions, claims, and conclusions by Dr. Bird in his May 16, 2024 letter to the DCISC, his June 21, 2024 presentation to the DCISC, and his other technical documents incorporated in filings with the NRC and the CPUC.

In this Fact-Finding meeting, seven distinct topics were discussed, in the course of what was also a wider-ranging discussion of the seismic and tectonic environment that affects the seismic hazard at the DCPP site. These seven topics are discussed next in turn as follows:

A. The phenomena associated with the Noto Peninsula earthquake in Japan on January 1, 2024:

The question that the DCISC posed to PG&E was as follows: *"Dr. Bird cites the Noto Peninsula earthquake in Japan on 1 January 2024 as an important piece of new information that bolsters his model of the overall seismic situation near the DCPP site in California. Please explain PG&E's analysis on that topic."*

PG&E's position was that Dr. Bird's claim that the Noto earthquake is directly applicable contained several technical approaches that fall outside of established practice. In particular, PG&E staff stated that the assumption of equivalency of the seismic source and earthquake magnitude are not firmly based technically. This is based on information about the geographical extent of the Noto Peninsula vs. the Irish Hills, marine-terrace uplift patterns that differ, and bathymetry data offshore of the Noto Peninsula. PG&E staff also noted that if Dr. Bird's inferred offshore fault off the DCPP coast was correct, vertical fault scarps should have been observed in the bathymetry information, but they are not.

The PG&E staff provided several other reasons why the assumed applicability of the information from the Noto earthquake is inappropriate. These include the width of the Irish Hills, which constrains the fault width, and the issue of dip ranges and how they constrain the possibility of reverse or thrust faults in compressional tectonic environments.

Overall, as noted above, PG&E's discussion on this topic well supported PG&E's position that Dr. Bird's assessment of direct applicability of the Noto earthquake to DCPP hazard is not within established practices within the body of scientific experts.

There has also been important recent work by other scientists concerning the Noto earthquake that provides insights to supplement those mentioned above. Two recent papers (Reference 6.1, Reference 6.2) are examples of this work, and in time these are likely to be followed by additional study that can help clarify these issues further.

B. Dr. Bird's emphasis on geodetic-velocity modeling and stress-direction modeling and the applicability of regional and even continent-scale data:

The question that the DCISC posed to PG&E was as follows: *"Please explain PG&E's analysis concerning fault slip-rate analysis, and in particular your view about Dr. Bird's argument in his*

letter to the DCISC about the omission of 'modern deformation modeling' (his words). Dr. Bird emphasizes geodetic-velocity and stress-direction data to support his own interpretation. Among other arguments, he seems to give much more weight to regional as contrasted to more local deformation modeling and data, and wants the local deformation model to be embedded in a 'regional deformation model' (his words) so as to capture the regional influence. He also seems to want more emphasis or contributions from local thrust faulting, and cites crustal shortening in the Irish Hills as evidence."

The PG&E staff's discussion of this issue emphasized that although geodetic data for understanding deformation are useful and have been used in several models (including the Neokinema model that Dr. Bird suggests should be used) they have not replaced nor been shown to be better than geological slip-rate models for fault sources as a means of resolving slip rates on individual faults. PG&E staff stated that although deformation models using geodetic data have been considered in trying to use understand these phenomena, they are now mostly used as weighted branch alternatives in a logic tree along with the more traditional approaches.

PG&E staff also discussed Dr. Bird's assertion that geodesy and geology support a shortening rate across the Irish Hills of about 2 mm/year. They explained that they plan to explore the question as part of their Long-Term Seismic Program (LTSP), but they stated that there is no firm evidence for such shortening, which is contradicted by marine-terrace uplift rates. PG&E staff also reported that the Airy isostatic argument is very much outside of the accepted understanding among the body of seismic experts for calculating fault slip rates from geological data.

C. <u>Dr. Bird's interpretations about seismicity from unexpected or undetected ruptures between known faults</u>:

The question that the DCISC posed to PG&E was as follows: "*Please explain PG&E's analysis about what Dr. Bird cites as '[s]eismicity from unexpected, undetected, and/or subterranean ruptures between the known faults' (his words), which he says 'was modeled based on projection of a few decades of microseismicity, ignoring globally-calibrated relationships between long-term tectonic strain rate and (typically higher) long-term-mean seismicity which includes seismic crises' (again, his words). We know that these topics are treated in the Updated Seismic Assessment report, but what is PG&E's thinking in light of Dr. Bird's rebuttal assertions in his letter to the DCISC? In particular, what is PG&E's analysis of Dr. Bird's arguments concerning off-fault strain rates, including his distinction between 'elastic strain rates and permanent long-term tectonic strain rates' (his words)?"*

The PG&E staff explained to the DCISC that the 2015 Senior Seismic Hazard Analysis Committee (SSHAC) study modeled hazards from unknown or unmapped faults using historic nearby microseismicity rates and other high-quality site-specific data, using what they characterized as the standard approach. PG&E stated that they do not believe that wide-area or global models as suggested by Dr. Bird are applicable for a site-specific analysis, even though such models are sometimes used for approximate analyses when there is little useful local information.

D. <u>Dr. Bird's claims about a thrust fault under the DCPP with slip rate of about 1 mm/year</u>:

The question that the DCISC posed to PG&E was as follows: "*A principal claim in Dr. Bird's analyses and interpretations is that a 'thrust fault under the DCPP with slip-rate of ~1 mm/a' (his words) exists but has been omitted from PG&E's analysis. Please explain PG&E's analysis of this interpretation by Dr. Bird.*

The PG&E staff explained that this issue was addressed in the 2011 Shoreline Fault report, in which offshore bathymetric, geological, and geophysical data were used to assess faulting offshore. They further reported that no evidence was found of significant thrust or reverse faulting in the wave cut platform where Dr. Bird infers that a fault exists between the Shoreline fault and the marine terraces. The PG&E staff cited and further explained an extended treatment of that subject in the 2014 AB-1632 report.

E. Microseismicity under the Irish Hills:

The question that the DCISC posed to PG&E was as follows: *"Another issue is how to deal with the microseismicity under the Irish Hills. Dr. Bird says that his model for the 'modified fault structure fits the microseismicity better' (his words in his letter to the DCISC). He cites his Figure 1 to make his point, and this argument is used to bolster his overall interpretation of the Irish Hills. Please explain PG&E's analysis of this."*

The PG&E staff explained to the DCISC that microseismicity under the Irish Hills is not considered a reliable way to define fault planes. They cited earlier work by J. Hardebeck (US Geological Survey) concerning whether microseismicity could be reliably associated with seismogenic fault planes, relying on hypocenter locations. Except for the Shoreline and Hosgri faults, the observed planes lacked a clear relationship to near-surface faulting. The PG&E staff further explained that the way these sources were captured in the Seismic Source Characterization model was by using the local background source approach, and that this remains the best approach.

F. Applicability of information going back a few million years in supporting the understanding of today's DCPP seismic environment:

The question that the DCISC posed to PG&E was as follows:" One *issue is the assertion in the Updated Seismic Assessment report that going back several million years for averaging throw rates is inappropriate for understanding DCPP seismicity today. Dr. Bird's rebuttal says that '5 Ma is a very appropriate start-time' (his words) for such averaging. Please explain PG&E's analysis of this."*

The PG&E staff explained that much research cited in the 2015 SSHAC report as well as later research both support the conclusion that there has been extensive evolution and changes in the local tectonic environment over the past several million years. This implies that information from those early times (pre-Quaternary and early Quaternary) generally are thought to have low applicability to today's seismic hazard at the DCPP site.

G. Airy isostacy as an appropriate model for the Irish Hills:

The question that the DCISC posed to PG&E was as follows: "*Dr. Bird's arguments about Airy isostacy as an appropriate model for under the Irish Hills differs from the USA analysis, but we are not clear as to how important this difference in interpretations is -- that is, what difference it makes. Do the differences in the crustal thickening estimates matter a lot? Dr. Bird seems to claim that the 'amount of Neogene crustal thickening under DCPP' (his words) is not only greater than earlier thought, but an important missing piece of information. Please explain PG&E's analysis on this subject."*

In the discussion, the PG&E staff pointed out that the Airy isostacy model for Irish Hills uplift is not consistent with the broadly accepted understanding of the origin and development over the eons of the Irish Hills. In particular, they showed evidence that the crustal-thickening hypothesis of Dr. Bird is not consistent with current site-specific gravity data on the crust beneath those hills, or how it developed. PG&E's conclusion here is that the "floating" phenomenon seems not to be supported, or at least not to be supported as an important phenomenon.

Conclusion: The discussion with PG&E experts during this Fact-Finding meeting provided valuable additional information and clarifications that has substantially aided the DCISC in performing its own evaluation of the positions, claims, and conclusions of Dr. Peter Bird concerning the seismic hazard at the DCPP site. The DCISC will use this information to perform its own evaluation *but has not yet found any reasons to question the adequacy of seismic safety at DCPP.* However, because some of the technical topics covered in this Fact-Finding meeting are still being actively pursued by experts, will be the subject of an upcoming Independent Peer Review Panel (IPRP) report, and will be covered as a part of an ongoing NRC staff review of the technical issues, it is premature for the DCISC to reach any definitive conclusions at this time. That is, the DCISC's ultimate evaluation of the technical issues raised and any conclusions arising from it will necessarily need to await the further work now under way, including by the NRC staff, the IPRP, and PG&E. The DCISC also expects to receive a presentation by PG&E at its upcoming Public Meeting in Avila Beach on October 9-10 2024.

Recommendations: None

3.2 Meet with DCPP Officer Maureen Zawalick

The DCISC FFT met with Maureen Zawalick, Vice President, Technical and Financial Services, for an update. The DCISC last met with a DCPP officer in July 2024 (Reference 6.3) when it concluded the following:

> *The regular meetings between DCISC and DCPP Officers and Directors continue to be beneficial for both organizations.*

The group discussed the fact-finding agenda items and other items of mutual interest.

<u>Conclusion</u>: The regular meetings between the DCISC and DCPP Officers and Directors continue to be beneficial for both organizations.

<u>Recommendations</u>: None

3.3 <u>License Renewal Update</u>

The DCISC FFT, along with the following individuals (remotely), met with Philippe Soenen, Strategic Initiatives Director, and Brandy Lopez, DCPP Liaison to the DCISC: DWR (CA Department of Water Resources) Representatives Eric Blocher, Delphine Hou, Dauphine Luchsinger, Eric Wulff, Christian Arechavaleta, and Consultant Jerry Bishoff. (DWR is the state agency charged with overseeing state funds allocated to facilitate the extension of DCPP power operations under Senate Bill 846.) The DCISC last reviewed DCPP license renewal in August 2024 (Reference 6.4), when it concluded the following:

> *DCPP's License Renewal Application continued to be processed by the NRC. Aging management inspections completed to date have not discovered any significant issues, and NRC reviews of the aging management inspections have not identified any problems. PG&E satisfactorily provided answers to two DCISC questions related to Reactor Vessel embrittlement calculation uncertainties and to Reactor Vessel performance monitoring.*

The DCPP LRA consisted of the following:

- Chapter 1, Administrative Information
- Chapter 2, Scoping and Screening Methodology
- Chapter 3, Aging Management Review Results
- Chapter 4, Time-Limited Aging Analyses
- Appendix A, Final Safety Analysis Report Supplement
- Appendix B, Aging Management Programs

The following is a history of the DCPP License Renewal process:

- Application for License Renewal (LR) submitted to the NRC)on November 7, 2023
- NRC determined the LRA sufficient for review on December 19, 2023
- NRC held oral arguments on contentions admissibility in Bethesda MD headquarters on May 22, 2024
- Determination by July 6, 2024
- The U.S. Nuclear Regulatory Commission's (NRC's) federal licensing action is subject to permitting and review by State and Federal agencies
- Communication
- PG&E remains in communication with involved agency staff and is working through the

regulatory permitting processes and consultation

Federal Agencies Status

- PG&E has coordinated with the NRC, U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), and U.S. Army Corps of Engineers (USACE) regarding the federal Endangered Species Act (ESA) Section 7 Consultation required for License Renewal and Decommissioning
- Section 7 Consultation is a process where federal agency actions are reviewed by the USFWS/NMFS to ensure compliance with the Endangered Species Act
- Next steps for the NRC's Section 7 Consultation with USFWS and NMFS, PG&E submitted a draft USACE permit application package to the agencies on May 29, 2024

State Agencies Status

- In June 2023, the California State Lands Commission amended Lease PRC 9347.1 to extend the lease term through October 2030, consistent with Senate Bill 846
- In December 2023, the California Public Utilities Commission voted to extend operations of DCPP through October 2030, consistent with Senate Bill 846
- PG&E has corresponded with the Central Coast Regional Water Quality Control Board regarding (RWQCB) the Clean Water Act Section 401 Certification and National Pollutant Discharge Elimination System (NPDES) permit
- RWQCB is coordinating internally and will be in communication with PG&E regarding permitting processes
- PG&E submitted a Coastal Zone Management Act Certification request to the California Coastal Commission (CCC) concurrently with the NRC LRA submittal
- CCC deemed initial certification request incomplete in December 2023 and sent PG&E additional correspondence on May 2, 2024
- PG&E provided detailed response and supplemental information to CCC on May 21, 2024
- PG&E will work with CCC to resolve application status
- PG&E remains in compliance with SLO County permitting agencies with active permits including SLO County Air Pollution Control District and the Environmental Health Services Division (County CUPA)

In October 2024 DCPP will be submitting Supplement 1 to its license renewal application to provide updated information on inspection results and other updates. They will also submit answers to NRC Requests for Additional Information on October 7, 2024.

Additionally, the NRC is drafting its environmental Impact Statement which they will present locally in a public meeting.

Conclusions: DCPP has done an acceptable job in preparing its License Renewal Application and responding to the Nuclear Regulatory Commission requests for additional

information. DCPP has performed its aging management inspections regularly and has performed all required inspections to-date.

Recommendations: None

3.4 Unit 1 Reactor Vessel Capsule B Withdrawal

The DCISC FFT met with Philippe Soenen, Strategic Initiatives Director, for an update on DCPP plans to remove the Reactor Vessel Weld Specimen in Capsule B from the vessel for analysis for vessel embrittlement. The DCISC last reviewed this item at its February 2024 Public Meeting (Reference 6.5) DCPP has made two unsuccessful attempts to remove the capsule in previous refueling outages. There is an NRC requirement to remove the capsule by 2028 to support the DCPP license renewal application. In the two previous attempts problems were experienced with an improperly sized long-handle removal tool grip and a stuck access door both of which were complicated by the Reactor Vessel Core Barrel being left in place, which created an interference.

DCPP is doing the following to assure successful removal of Capsule B in Outage 1R25 in spring 2025:

- Removal of the core barrel for better access
- Re-sizing of the removal tool for proper fit
- Having a contingency plan to cut the capsule out, if necessary

DCPP believes these measures will result in successful removal of Capsule B. The DCISC FFT agrees.

Conclusions: DCPP's updated plans to successfully remove Capsule B from the Unit 1 Reactor Vessel appear to be appropriate.

Recommendations: None

3.5 Online Maintenance

The DCISC FFT met with David Johnson, Superintendent of Work Management, and Bryan Bradley, Supervisor, Daily Work Control and Daily Work Review Team, for an update on DCPP's Online Maintenance Program. The DCISC last reviewed DCPP Online Maintenance in May 2022 (Reference 6.6), when it concluded the following:

> *DCPP had satisfactory procedures and programs in place for managing the risks of performing maintenance activities online.*

Corrective Maintenance activities are initiated through the reporting of equipment deficiencies into the Corrective Action System as Notifications. Notifications are reviewed for significance by the Shift Supervisor every shift and further reviewed daily by the Notification Review Team (NRT)s

Daily Review Team (DRT; also called Notification Review Team). (Daily Review Team meetings are periodically observed by the DCISC.) The DRT classifies and prioritizes Corrective Maintenance activities based upon the importance of the system or component and the significance of the deficiency. The DRZT process is governed by procedure AD7.ID2, "Daily Review Team," Revision 39, a copy of which was provided to the FFT. Urgent deficiencies are assigned to the Fix-it-Now (FIN) Team for repairs, and all other deficiencies are entered into the routine work management process. Also, the highest priority deficiencies are entered into a priority work list on the station Plan of the Day to ensure close monitoring and tracking through resolution.

Corrective Maintenance activities that are not assigned to the FIN Team are entered into DCPP's 12-week rolling matrix for maintenance activities. The 12-week rolling matrix, developed in advance to cover DCPP's pre-planned online maintenance for all the major Systems, Structures, and Components, was organized primarily upon the Surveillance Tests that were required to be performed at regular frequencies during Technical Specifications MODE 1, Power Operation. By knowing which equipment is planned to be taken out of service 12 weeks ahead of time, DCPP can manage the scheduling of online maintenance to minimize any increases in risk due to maintenance activities. This process is governed by procedure AC7.DC6, "Online Maintenance Risk Management," Revision 28, a copy of which was also provided to the FFT. This process for managing online maintenance also ensures compliance with the NRC Maintenance Rule, 10 CFR 50.65, Section (a)(3), which requires facilities to ensure that the amount of time that equipment is unavailable due to maintenance is balanced against the reliability improvements achieved by performing maintenance. The 12-week matrix process ensures this is the case by bundling all maintenance activities for a particular component into the same window of unavailability, and thereby minimizing the amount of equipment unavailability required to perform online maintenance activities.

At the T-6 point in the 12-week process (six weeks prior to the scheduled maintenance), several specific risk reviews occur. First, each maintenance supervisor examines the proposed work activities and identifies execution risk (trip risk, schedule risk, industrial safety risk, etc.) for the activities. If an activity is found to have a high execution risk, then a detailed plan must be prepared to manage the execution risk. Additionally at the T-6 point, the proposed maintenance activities are reviewed by the Integrated Risk Review Team (IRRT). The IRRT is composed of representatives from Operations (a Senior Reactor Operator), Instrumentation and Controls Maintenance, Mechanical Maintenance, Electrical Maintenance, Radiation Protection, Chemistry and Environmental Services, Safety, Security, Engineering Services, Emergency Planning, and Work Planning. Normally, DCPP's Work Week Manager or Outage Manager serves as chairperson for the IRRT meeting. Procedure AD7.ID14, "Assessment of Integrated Risk," Revision 30, governs the work of the IRRT and specifies the various ways in which the IRRT should assess the overall risk of the proposed work activities to ensure the safety of the plant and personnel. The FFT reviewed this procedure and concluded that it was satisfactory.

DCPP also continues to use the Electric Power Research Institute (EPRI)-developed Phoenix Risk Model, which incorporates the plant configuration and DCPP's updated Probabilistic Risk Assessment model. To evaluate specific risks for proposed work activities, Operations Planning performs Phoenix runs at the T-9, T-6, T-3 points ("T" being the time in weeks prior to the subject activity) and prior to the start of the work. The Phoenix Risk Model provides a quantitative

analysis of risk (i.e., changes in reactor Core Damage Frequency) presented by taking specific equipment out of service as well as that resulting from removing a number of different pieces of equipment from service at the same time. The computer program displays the aggregate risk presented by the postulated work plan in a color context of Green, Yellow, Orange, or Red, with Red being the greatest risk. The FFT concluded that DCPP had satisfactory procedures and programs in place for managing online maintenance activities.

Conclusion: The DCPP Online Maintenance Program had appropriate procedural controls in place to successfully accomplish maintenance during plant operation while minimizing risk.

Recommendations:

None

3.6 Observe Licensed Operator Training: Reactor Physics

The DCISC Fact-finding Team met with a Licensed Operator Class to observe their continuing training on the subject of Reactor Physics, or the dynamics of reactor core behavior. The DCISC last observed operator training in April 2023 (Reference 6.7), when it concluded the following:

> *A Licensed Operator Continuing Training simulator session was well prepared, contained appropriate objectives, and was professionally conducted by the Training staff. Operators performed well in responding to the simulated off-normal events.*

The specific purpose of this meeting was to observe this segment of continuing operator training on reactor (neutron) core physics. More specifically, the particular subject was the approach to criticality upon reactor startup using the 1/N plot procedure.

Conclusions: The observed September 24, 2024 licensed operator continuing training class on Reactor Physics was satisfactorily carried out in that the teacher was knowledgeable and clear in his presentation with good class involvement, the training materials were good, and the classroom and environment were conducive to learning.

Recommendations: None

3.7 Pressurizer Safety Valve Root Cause Evaluation

The DCISC FFT met with Erin Bowe, Root Cause Analyst, and Eric Brackeen, Manager, Dry Fuel Storage and Decommissioning, for an update on the Root Cause Evaluation (RCE) of the Pressurizer Safety Valve-caused Planned Outage 1X25 following Refueling Outage 1R24. This was the first DCISC review of this item. Consistent with CPUC decisions, RCEs are treated as

confidential documents. This report presents only factual information due to the confidential nature of the RCE.

Following Refueling Outage 1R24, one of the three Pressurizer Safety Valves (PSVs) exhibited minor leak-by past the seat, which procedurally required operators to reduce pressure to reseat the valve and eliminate the leakage; however, the condition remained following performance of procedural actions. The valve was replaced in 1X25, but again exhibited indication of a minor leak-by upon restart. The system was depressurized in accordance with procedures, which eliminated the leak. The unit continued to operate through the cycle with no recurrences.

Due to the need to replace the valve during 1X25, an RCE Team was put in place to determine the root cause. The root cause was determined to be physical interference between the valve body and an associated seismic support upon heatup and pressurization of the unit. The extent of condition review showed that Unit 2 has a different support design and is not similarly affected.

As a corrective action, the Unit 1 seismic support is in the process of being redesigned and will be modified to be similar to Unit 2 during the next refueling outage, which will eliminate the potential for interference between the valve and the support, and thus the identified root cause. The valve will be monitored during return to service following the next refueling outage to ensure effectiveness of the corrective action. The DCISC should follow up at that time.

Conclusions: The root cause of the leaking Pressurizer safety valve was determined to be contact and interference with its seismic support upon heatup of the unit. The support is in the process of being modified during an upcoming refueling outage to eliminate the contact, and the valve will be monitored for leakage to assess the effectiveness of the corrective action.

Recommendations: None

3.8 Current Campaign Moving Spent Fuel from Spent Fuel Pool to Independent Spent Fuel Storage Facility

The DCISC FFT met with Philippe Soenen, Strategic Initiatives Director; Eric Bracken, Manager of Dry Fuel Storage and Decommissioning; and Jearl Strickland, DCPP Consultant, for an update on the current campaign of transferring spent nuclear fuel from the Spent Fuel Pool within the plant up to the Independent Spent Fuel Storage Installation (ISFSI). The DCISC last reviewed this item at the June 2024 Public Meeting (Reference 6.8).

The ISFSI is designed to hold the entire inventory of spent fuel produced during 40 years of operation with an additional 20 years of capacity provided within the two spent fuel pools. The ISFSI presently accommodates 1,856 fuel assemblies placed within multipurpose canisters (MPC) with each MPC stored in one of a total of 58 storage casks. DCPP has completed seven spent fuel loading campaigns with the last having taken place in 2019. DCPP now plans to load 12 more casks, 6 for each unit containing a total of 192 assemblies from each unit, to support continued operation and thereby ensure that each spent fuel pool has the capacity for a full core offload and will have additional new fuel in the pool to support a refueling outage.

The current fuel loading campaign to load 12 more casks began on June 22, 2024, and should conclude on October 18, 2024, with work going on 24-hours a day for thirteen weeks with one week off over the Labor Day holiday at the half-way point. In order to support safe and successful execution of the campaign DCPP utilizes the following:

- Robust procedures govern all work activities – to ensure all activities are performed per approved guidance

- PG&E management oversight of all work activities – including by the Quality Verification (QV) organization and by senior management and the manager and director levels.

- Contract partners (the Holtec and Bragg firms) – providing experienced crew members. Many of the same people who worked on the 2018 campaign have returned. The Bragg firm acts as the heavy lifts contractor and has extensive experience with DCPP's systems.

- Pre-campaign training and dry runs – including tabletop exercises to review procedures and refresh knowledge, as well as dry runs at the site to include the use of the vertical cask transporter to simulate the downloading and uploading of the HI STORM Holtec system using a dummy MPC on the transfer pad at the ISFSI. DCPP has considerable immediate experience in moving fuel assemblies from the spent fuel pools into the MPCs and recent and relevant experience in handling the HI TRAC shielding container which shields the MPC, including operation of the HI TRAC in the Fuel Handling Building together with the crane to be used. DCPP is able to simulate almost all the actions required outside of the spent fuel pools.

- External subject matter expert readiness reviews - relative to performance, equipment readiness and procedure adherence. Two subject matter experts with immediate and relevant experience from San Onofre Nuclear Generating Station have been engaged to perform an outside review of procedures, training and regulatory aspects such as the Final Safety Analysis Report and the site-specific 10 CFR 72.212 regulations.

- DCPP readiness challenge boards – with the entire DCPP leadership team's involvement to challenge every aspect of the campaign.

- As Low As Reasonably Achievable (ALARA) reviews- to monitor and reduce the dose rate received by workers.

The current status of the 2024 Spent Fuel Loading Campaign was as follows:

- All HI-STORM casks have been received and are ready to be filled with dense concrete with hematite additive to ensure there are no voids.

- All MPCs have been received together with their lids.

- Equipment including the vertical cask transporter and the HI TRAC have been refurbished and tested.

- A total of 192 fuel assembles in Unit 1 and 192 in Unit 2 identified and inspected to ensure correct heat load and mix of radiation levels in terms of how recently these assemblies were discharged from the reactor core.

- Procedures updated to latest standards. Standards for procedures have not changed but some standards for performing certain tasks associated with spent fuel storge have and these, as well as industry lessons learned have been embodied in DCPP's new standards.

- ALARA goals established

- Schedule established and crews identified

- Training and dry runs in progress or schedule

- External subject matter experts are performing a readiness review.

- DCPP readiness challenge boards scheduled

Regarding the ISFSI license renewal efforts, PG&E submitted the License Renewal Application for the ISFSI on March 9, 2022, and the NRC formally accepted the Application on September 8, 2022. Revision 1 to the Application was submitted on August 10, 2023, to remove statements within the Application related to DCPP ceasing operations by the end of its current operating licenses. A single contention submitted was subsequently withdrawn and then dismissed which contention concerned the statements concerning the date of cessation of operations by 2025. DCPP has responded to two sets of requests for additional information from the NRC and expects to complete the technical review process for relicensing the ISFSI in November 2024.

With the current plans to conduct incremental loading campaigns approximately every three years, with another campaign with eight casks planned for 2027 it has proven more efficient to continue to use the Holtec firm's system to meet DCPP's continued operational dry storage needs. This has allowed the plant's focus to remain on ISFSI and plant license renewals and to keep options open for the future.

Conclusion: DCPP has begun its current spent fuel campaign of movement from the Spent Fuel Pool to the Independent Spent Fuel Storage Installation using more prescriptive procedures, improved training, and more rigorous controls. There have been no problems in the two months of activity.

Recommendations: None

3.9 Results of the July 31, 2024 Evaluated Emergency Preparedness Exercise

The DCISC FFT met with Jordan Tyman, Director of Risk and Compliance, and Andy Warwick, Manager, Emergency Preparedness, for a report on the results of the July 31, 2004 NRC-Evaluated Ingestion Pathway Emergency Exercise. The DCISC observed this exercise (Reference 6.9), and it concluded the following:

> *The July 31, 2024 DCPP NRC-Evaluated Emergency Exercise appeared well-designed and -implemented and challenging. All exercise objectives were met. The NRC evaluation was not yet available, and the DCISC will review its evaluation when released. The DCISC should review the DCPP drill critique and NRC evaluation in a future fact-finding meeting when they are completed.*

The PG&E staff reported that theyconcluded the following about their performance in the exercise:

> *PG&E Emergency Response Organization (ERO) personnel adequately demonstrated reasonable assurance to protect the health and safety of plant employees and the public.*

This was based on the following performance criteria:

- 60 of 60 overall objectives
- 163 of 164 facility objectives
- 707 of 724 demonstration criteria

There was one weakness identified, which was a lack of urgency in getting Containment spray started following the simulated Loss of Coolant Accident (LOCA), which included a gap source term with high iodine concentrations. The LOCA occurred at 1005 and an attempt to start Containment spray did not occur until 1247. The spray pump failed to start per the scenario, however, the ERO did not know the pump would fail. Containment spray was the primary mitigative action the ERO could have taken for this event to reduce the consequences of the radiological release based on the release being an unisolable penetration failure. This weakness was carried forward in the Corrective Action Program, along with other items, for improvement in future exercises.

The following facilities involved in the exercise performed satisfactorily:

- Control Room Simulator
- Technical Support Center
- Operational Support Center
- Emergency Operations Facility
- Unified Dose Assessment Center
- Joint Information Center

The following Classifications, Notifications & Protective Action Recommendations (PARs) were made correctly in a timely manner:

- Classifications (3/3) correctly
- Notifications (3/3) timely

- PARS (3/3) correctly
- PAR Notifications (3/3) timely
- Overall Performance (12/12) correct/timely

Conclusions: The DCPP July 31, 2024 NRC-Evaluated Emergency Exercise was performed successfully based on DCISC observation and PG&E critique measures.

3.10 Meeting with the NRC Senior Resident Inspector and New Resident Inspector

The DCISC FFT met with Mahdi Hayes, NRC Senior Resident Inspector, and the new Resident Inspector, Eli Garcia, for an update. The DCISC meets regularly with the NRC Resident Inspectors and last met with the Resident Inspector during its August 2024 Fact-Finding Meeting (Reference 6.10), when it concluded the following:

> *The meeting with the NRC Resident Inspectors was beneficial, and the DCISC should continue the meetings.*

The items discussed in this meeting included the following:

- Recent and Future NRC Inspection Activities
- Three Significant Issues the DCISC is following:
  - Deferred Maintenance
  - Unit 1 Reactor Vessel Embrittlement
  - Updated Seismic Assessment
- The current NRC Problem Identification and Resolution Inspection
- Upcoming presentation by Mr. Hayes at the DCISC October 10, 2024 Public Meeting

Conclusions: The meeting with the NRC Senior Resident Inspector and New Resident Inspector was beneficial, and the DCISC should continue the meetings.

Recommendations: None

3.11 Fire Protection Update

The DCISC FFT met with Dallas Adams, Fire Protection Program Manager, and John Cole, Fire Protection Engineer and Fire Protection Program Owner, for an update on the status of the DCPP Fire Protection Program. The DCISC last reviewed fire protection in April 2023 (Reference 6.11) when it concluded the following:

> *DCPP's Fire Protection Program and Fire Protection Systems were in good health overall. Minor equipment issues were being appropriately tracked for resolution.*

According to DCPP, the scope of fire protection includes all aspects of the defense-in-depth model of protection, namely programmatic elements focused on fire prevention, as well as fire protection

systems and features installed for detection, suppression, and separation of nuclear safety structures, systems and components.

The health of the DCPP Fire Protection Program is reported as follows:

Cornerstone	Weight (%)	Color
Program Personnel	20	Green
Program Infrastructure	20	Green
Program Implementation	30	Green
Program Equipment Performance	30	Yellow*

* Equipment performance is yellow for the following reasons:

- A total of 120 maintenance fire protection work orders greater than 120 days old
- Three impairments over 180 days old
- Incipient fire detection reliability not meeting risk targets

DCPP has a plan to return each impairment to Green. Each fire protection impairment has a plan for resolution. The current target for resolution of all long-term fire protection impairments is February 2025. Unit 1Iincipient Fire Detection System was being monitored under the Maintenance Rule goal setting and returned to (a)(2) status in July 2024. The quantity of backlog work orders is expected to remain at White levels for the near term. This does not have a significant adverse effect on overall fire protection effectiveness at DCPP.

Conclusions: The DCPP Fire Protection health is Green (Good) overall, and any outstanding fire protection impairments which are less than Green are under a plan to return to Green by February 2025. The overall Fire Protection Program was considered to be effective.

Recommendations: None

3.12 Discussion of the Recent Report by the IPRP and its implications for Site Seismic Hazard

The DCISC Fact-finding Team met with the following PG&E personnel to discuss PG&E's reaction to and review a recent report (Reference 6.12) received from the Independent Peer Review Panel (IPRP) established under the California Public Utilities Commission to review seismic safety issues at DCPP:

- Jeff Bachhuber, Geosciences Director and Engineering Geologist
- Albert Kottke, Geosciences Principal Geotechnical Earthquake Engineer
- Brandy Lopez, Strategic Initiatives Licensing Principal
- Chris Madugo, Geosciences Consultant
- Jearl Strickland, PG&E Consultant

All of the PG&E participants except Ms. Lopez and Mr. Strickland (who were present in person) joined the meeting remotely. The meeting was also joined remotely by Deb Luchsinger, Hardeep Bhalla, and Jerry Bischof representing the California Department of Water Resources.

As noted, the purpose of this meeting was to discuss with PG&E staff the recent IPRP report that has reviewed the PG&E Updated Seismic Assessment (USA) report. However, some sections of the IPRP report mainly recommend more technical work in the future (data gathering, data analysis, evaluations, etc.), and for those recommendations, the DCISC concurs but sees little in the nature of implications for its own needs in terms of our evaluation. The DCISC sought PG&E's reaction to three specific issues raised in the IPRP report, to wit:

(i) The IPRP recommendations concerning the model for the Hosgri slip rate;
(ii) the implications for overall DCPP site hazard related to IPRP comments concerning the estimated uplift for the Irish Hills and the fault-geometry models for the faults that bound the Irish Hills;
(iii) PG&E's views on the implications for overall DCPP site hazard of the IPRP comments on using the Casmalia Hills area as an analog and/or also in terms of possible direct connections to the Hosgri or other faults closer to DCPP.

To facilitate this Fact-Finding meeting, the FFT sent PG&E these three topics in advance, and they they were the focus of the meeting. The PG&E counterparts addressed each of the questions in turn, generally in the nature of clarifications. The FFT's questions were directed at obtaining issue-specific information about analyses that PG&E had performed or had knowledge of, or data that PG&E had gathered or had knowledge of. The FFT's focus was to assure that the clarifications provided by PG&E were sufficient to enable the DCISC to perform a technically sound evaluation of the IPRP report itself.

A. The IPRP recommendations concerning the model for the Hosgri slip rate

Both the PG&E 2015 SSHAC study and the Updated Seismic Assessment in spring 2024 utilized several different measurements in the field as a basis for developing an up-to-date Hosgri Fault slip rate. The IPRP report recommends using only one of those sets of measurements (with 100% weight), rather than incorporating all of them with weights based on judgment. The IPRP basis is that the one recommended for use is the most recent one and that the others, all older in time, are not representative of today's tectonic environment near the Hosgri Fault. PG&E's position in this Fact-Finding meeting was that it is inappropriate to totally discard the information derived from the other measurements; it is better to give them appropriately lower weights (but not zero.) The difference in overall Hosgri Fault hazard resulting from using the IPRP's position, compared to using the PG&E position in the USA, would be to increase the site hazard's frequency arising from the Hosgri fault by about 25%.

The FFT believes that in assessing the overall seismic safety of the DCPP plant, the DCISC need not take a position on this difference. This is because whether PG&E is correct or the IPRP is correct, the implications for seismic safety at DCPP fall well within (and well under) the safety level that the DCISC would consider to be of concern. Either way the DCISC believes that the plant's overall seismic safety level is adequate with significant margins.

B. The implications for overall DCPP site hazard related to IPRP comments concerning the estimated uplift for the Irish Hills and the fault-geometry models for the faults that bound the Irish Hills

The IPRP report explains that there is considerable uncertainty concerning which model, among several, is the most appropriate way to characterize the Irish hills and how they came to be. The report itself, as well as the PG&E USA report, grapple with how best to weigh the various models given that the underlying data are not sufficient to support firm conclusions. This, in turn, means that the ultimate "result" of the hazard analysis will have significant uncertainties, first in the geometry of the source(s) and second in the mechanism(s) that could produce seismic motions.

In the Fact-finding meeting the PG&E experts explained their understanding of the sources of this uncertainty and also their preferred approach(es) for gathering the needed data, using a set of planned projects within the PG&E Long-Term Seismic Program (LTSP) supplemented by work being done elsewhere.

C. PG&E's views on the implications for overall DCPP site hazard of the IPRP comments on using the Casmalia Hills area as an analog

The Casmalia Hills area is south of the DCPP station by tens of miles. PG&E discussed this topic in terms of how similar the Casmalia Hills are compared to the DCPP plant site and the nearby Irish Hills as they were created over the eons long ago. What emerged is that PG&E believes that this issue, similarities vs. differences, is still an area of active research that ultimately might help everyone to understand the Irish Hills better. However, PG&E seems to think that at the present time this work is still too premature to provide useful enough information to support a modification to the current best model of the Irish Hills. The DCISC believes that this is a reasonable position at this time.

Conclusions: The discussion with PG&E experts during this Fact-Finding meeting provided valuable insights into the usefulness and applicability of the recent IPRP report. The DCISC concludes that, on balance, nothing in the IPRP report would lead the DCISC to modify substantively its current broad conclusions about the site seismic hazard. Further study is under way in several areas that could provide more information in the future, and could decrease our uncertainties, and the DCISC fully agrees that that work is important to pursue. On the main technical topics, the DCISC also expects to receive a presentation by both PG&E and the IPRP at its upcoming Public Meeting in Avila Beach on October 9-10 2024.

3.13 Observe Work in Progress: Calibration of Nuclear Instrumentation

The DCISC FFT met with Michael Pelypec, Nuclear Maintenance Supervisor, to enter the Protected Area to observe Instrumentation and Controls (I&C) calibrations on the Nuclear Instrumentation in the Control Room. The DCISC last observed work-in-progress in May 2022 (Reference 6.13), when it concluded the following:

DCPP had satisfactory procedures and programs in place for managing the risks of performing maintenance activities online.

With both units at 100% power Maintenance I&C technicians were performing online calibrations of the ex-core Nuclear Instrumentation Detectors in the Control Room. The technicians were following the correct procedure and using proper human error prevention techniques: procedure "circle and slash" to keep their place, three-way communication, phonetic alphabet, and independent verification. They were using the proper tools for the job and wearing proper personnel protection equipment.

Conclusions: The maintenance work observed by the DCISC FFT was performed properly with correct human error prevention practices, correct procedures, and with proper personnel protective equipment.

4.0 CONCLUSIONS:

4.1 The discussion with PG&E experts during this Fact-Finding meeting provided valuable additional information and clarifications that has substantially aided the DCISC in performing its own evaluation of the positions, claims, and conclusions of Dr. Peter Bird concerning the seismic hazard at the DCPP site. The DCISC will use this information to perform its own evaluation *but has not yet found any reasons to question the adequacy of seismic safety at DCPP.* However, because some of the technical topics covered in this Fact-Finding meeting are still being actively pursued by experts, will be the subject of an upcoming Independent Peer Review Panel (IPRP) report, and will be covered as a part of an ongoing NRC staff review of the technical issues, it is premature for the DCISC to reach any definitive conclusions at this time. That is, the DCISC's ultimate evaluation of the technical issues raised and any conclusions arising from it will necessarily need to await the further work now under way, including by the NRC staff, the IPRP, and PG&E. The DCISC also expects to receive a presentation by PG&E at its upcoming Public Meeting in Avila Beach on October 9-10 2024.

4.2 The regular meetings between DCISC and DCPP Officers and Directors continue to be beneficial for both organizations.

4.3 DCPP has done a good job in preparing its License Renewal Application and responding to the Nuclear Regulatory Commission requests for additional information. DCPP has performed its aging management inspections regularly and has performed all required inspections to-date.

4.4 DCPP's updated measures to successfully remove Capsule B from the Unit 1 Reactor Vessel appear to be appropriate.

4.5 The DCPP Online Maintenance Program had appropriate procedural controls in place to successfully accomplish maintenance during plant operation while minimizing risk.

4.6 The observed September 24, 2024 licensed operator continuing training class on Reactor Physics was satisfactorily carried out in that the teacher was knowledgeable and clear in his presentation with good class involvement, the training materials were good, and the classroom and environment was conducive to learning.

4.7 DCPP's root cause evaluation and corrective action of a chronically leaking Pressurizer safety valve and corrective action appeared satisfactory.

4.8 DCPP has begun its current spent fuel campaign of movement from the Spent Fuel Pool to the Independent Spent Fuel Storage Installation using more prescriptive procedures, improved training, and more rigorous controls. There have been no problems in the two months of activity.

4.9 The DCPP July 31, 2024 NRC-Evaluated Emergency Exercise was performed successfully based on DCISC observation and PG&E critique measures.

4.10 The meeting with the NRC Senior Resident Inspector and New Resident Inspector was beneficial, and the DCISC should continue the meetings.

4.11 The DCPP Fire Protection health is Green (Good) overall, and any outstanding fire protection impairments which are less than Green are under a plan to return to Green by February 2025. The overall Fire Protection Program and Systems are considered to be effective.

4.12 The discussion with PG&E experts during this Fact-Finding meeting provided valuable insights into the usefulness and applicability of the recent IPRP report. The DCISC concludes that, on balance, nothing in the IPRP report would lead the DCISC to modify substantively its current broad conclusions about the site seismic hazard. Further study is under way in several areas that could provide more information in the future, and could decrease our uncertainties, and the DCISC fully agrees that that work is important to pursue. On the main technical topics, the DCISC also expects to receive a presentation by both PG&E and the IPRP at its upcoming Public Meeting in Avila Beach on October 9-10 2024.

4.13 The maintenance work observed by the DCISC FFT was performed properly with correct human error prevention practices, correct procedures, and with proper personnel protective equipment.

5.0 RECOMMENDATIONS:

None

6.0 REFERENCES

6.1 Z. Ma et al., "Slow Rupture in a fluid-rich fault zone initiated the 2024 Mw 7.5 Noto earthquake," SCIENCE 385, pp. 866-871 (August 23, 2024)

6.2 L.Xu et al., "Dual-initiation ruptures in the 2024 Noto earthquake encircling a fault asperity at a swarm edge," SCIENCE 385, pp. 871-876 (August 23, 2024)

6.3 Diablo Canyon Independent Safety Committee Thirty-Fourth Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2023 – June 30, 2024," Approved October 9, 2024, Volume II, Exhibit D.3, Section 3.3, "Observe Plant Health Prioritization Committee Meeting."

6.4 Ibid., Exhibit D.5, Section 3.1, "Refueling Outage 1R24 Results."."

6.5 Ibid., Exhibit D.5, Section 3.15, "Meet with Nuclear Regulatory Commission (NRC) Senior Resident Inspector."

6.4 Diablo Canyon Independent Safety Committee Thirty-Second Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2022 – June 30, 2023," Approved September 13, 2023, Volume II, Exhibit B.6, "DCPP 2022 Operating Plan Results and 2023 Operating Plan."

6.5 Diablo Canyon Independent Safety Committee Thirty-Fourth Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2023 – June 30, 2024," Approved October 9, 2024, Volume II, Exhibit D.5, Section 3.6, "Unit 1 Reactor Vessel Embrittlement and Attempts to Remove Specimen B."

6.6 Ibid, Exhibit D.3, Section 3.1, "Spent Fuel Management."

6.7 Ibid., Exhibit B.3, "Update on the Status of NRC Performance Indicators, Licensee Event Reports, NRC Inspection Reports, NRC Current Issues."

6.8 Diablo Canyon Independent Safety Committee Thirty-Third Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2006 – June 30, 2007," Approved October 13, 2007, Volume II, Exhibit D.3, Section 3.1, "New Control Rod Worth Tests."

6.9 Diablo Canyon Independent Safety Committee Thirty-Fourth Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2023 – June 30, 2024," Approved October 9, 2024, Volume II, Exhibit D.5, Section 3.5, "Intake Cove Maintenance and Dredging Project Update."

6.10 Diablo Canyon Independent Safety Committee Thirty-Second Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2022 – June 30, 2023,"

Approved September 13, 2023, Volume II, Exhibit D.9, Section 3.4, "Licensed Operator Continuing Training Observation."

6.11 Diablo Canyon Independent Safety Committee Thirty-Fourth Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2020 – June 30, 2021," Approved October 15, 2021, Volume II, Exhibit D.5, Section 3.2, "Motor- and Air-Operated Valve Testing Programs."

6.12 Diablo Canyon Independent Safety Committee Thirty-Second Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2022 – June 30, 2023," Approved September 13, 2023, Volume II, Exhibit D.5, Section 3.5, "Emergency Diesel Generators."

6.13 Independent Peer Review Panel, IPRP Report No. 16, "Initial Review of the PG&E 'Updated Seismic Assessment, February 2024', August 26 2024"