

DIABLO CANYON INDEPENDENT SAFETY COMMITTEE

Report on

Fact-Finding Meeting at DCP on March 19 and 20, 2025

by

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1.0 SUMMARY

The results of the DCISC March 19 and 20, 2025, Fact-Finding Meeting at the Diablo Canyon Power Plant (DCPP) in Avila Beach, CA, are presented. The subjects addressed and summarized in Section 3 are as follows:

1. Spent Fuel Pool Systems with Plant Tour
2. Configuration Management Programs
3. Station Update
4. Meet with Nuclear Regulatory Commission (NRC) Resident Inspectors
5. Safety-Security Interface
6. Workplace Seismic Safety
7. Meet with DCP Officer
8. New Fuel Procurement
9. Innovation Initiatives
10. Refueling Outage 1R25 Update and Safety Plan
11. Observe Nuclear Safety Oversight Committee Exit Meeting
12. Meeting with San Luis Obispo County Department of Emergency Services

2.0 INTRODUCTION

This Fact-Finding Meeting at the DCP was held to evaluate specific safety matters for the DCISC. The objective of the evaluation was to determine if Pacific Gas and Electric's (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 Fact-Finding Team (FFT) based on items reported in Section 3 – Discussion. These highlights also include the FFT'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 DCP on specific areas of interest, etc.

Section 5 – Recommendations, presents specific recommendations to the DCISC and PG&E proposed by the FFT. These recommendations will be considered by the DCISC. 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 Spent Fuel Pool Systems with Plant Tour

The DCISC FFT met with Brandon Mainini, Primary Systems Strategic Supervisor; Nick Paciano, Spent Fuel Cooling Strategic Engineer; and Chris Ingram, Refueling Equipment Strategic Engineer, for an update on DCP's Spent Fuel Pool (SFP) Cooling System and Refueling Systems. The DCISC last reviewed these systems during its May 2018 Fact-Finding Meeting (Reference 6.1), when it concluded the following:

DCP's Spent Fuel Pool (SFP) Cooling Systems are in good health with no major outstanding issues. Modifications have been completed to comply with NRC orders regarding SFP Level Instrumentation.

Each of the two operating units at DCP has its own SFP which provides an interim storage facility for new fuel assemblies before they are transferred into the reactors and spent fuel assemblies that have completed their useful cycles of producing power. Because spent fuel assemblies in the SFP continue to produce heat and radiation, it is important to maintain the water level in the SFPs and to keep the spent fuel cooled and shielded. The SFP Cooling System maintains water level in the SFP and transfers decay heat from the SFP to the Component Cooling Water (CCW) System. Each SFP Cooling System has two 100 percent capacity cooling water pumps provided with Class 1E electric power and one 100 percent capacity heat exchanger that is cooled by CCW which is then in turn cooled by the Auxiliary Saltwater System and the Pacific Ocean.

Regarding the health of SFP systems, Mr. Paciano reported that SFP systems were considered a Tier 2 system. As such, formal system health reports were no longer prepared on a regular basis, and he reported that the health of the system was monitored primarily through surveillance test trending and routine walkdowns of the system by operations and engineering staff. He provided a copy of the system Performance Monitoring Agreement which provided additional details on the standards and activities for monitoring the health of SFP-related systems. Overall, the system's health was very good with no major issues. Mr. Paciano reported that there was currently one minor issue with the recent identification of a small air leak on the line that supplied sealing air to the inflatable seal on the gate between the Unit 1 SFP and the Transfer Canal. Further investigation and planning for repairs were in progress at the time of the meeting. The FFT inquired regarding how often leak-off piping for the SFP was checked to ensure that there was no leakage from the SFP liner, and Mr. Paciano reported that the checks of the leak-off piping were performed monthly. Additionally, the water level in the SFP was continuously monitored and alarmed in the Control Room.

The FFT also inquired about the current health of Refueling Equipment and the status of plans for upgrades and modifications. Mr. Ingram reported that the health of Refueling Equipment was generally good, and briefly reported the following status of upgrades and modifications:

- SFP Bridge Cranes – A previously proposed project to upgrade software for the Bridge Cranes had not yet been authorized for implementation. The software upgrade was considered an efficiency improvement and not necessary for reliability, which had recently been good for the Bridge Cranes on both units.
- Transfer Systems – Significant upgrades and overhauls were planned for the Transfer Systems on both units over the next two refueling outages. The work included replacing all the cables, wheels, limit switches, and control consoles for the Transfer Carts and Upenders on Both Units.
- Manipulator Cranes (inside Containment) – Currently, plans were moving forward to replace portions of the Manipulator Cranes to improve reliability during future outages after the Transfer System upgrades were completed.

The Fact-finding Team then toured the following areas with Messrs. Paciano and Ingram to observe the general condition of the SFP, SFP Cooling Systems, and SFP-side Refueling Systems:

- Unit 2 Turbine Deck
- Entrance to the Radiologically Controlled Area
- Unit 1 SFP Main Deck (140' Level)
- Unit 1 SFP Pump Room (100' Level)
- Unit 1 Spent Fuel Cooling Heat Exchanger (100' Level)
- Unit 1 Cask Washdown Area (115' Level)



DCISC Member Peterson and Mr. Ingram at the Unit 1 SFP Cooling Pumps



Mr. McWhorter and Dr. Peterson at the Unit 1 SFP

The FFT found that all observed equipment and areas of the facility appeared to be clean, well maintained, and in good material condition.

Conclusions: DCP's Spent Fuel Pool Cooling Systems were in good health with no major issues.

Recommendations to the DCISC or PG&E: None.

3.2 Configuration Management Program

The DCISC FFT met with Michael Jackson, Engineering Services Director; Dillon Ross, Interim Design Engineering Manager; and Steve Hamilton, Configuration Management Program Manager, for an update on the status of Configuration Management Programs at DCP. The DCISC last reviewed this program during its April 2022 Fact-Finding Meeting (Reference 6.2), when it concluded the following:

The DCP Configuration Management Program (CMP) appeared healthy and currently had a zero backlog, which meant that DCP's drawings and procedures were up to date, reflecting as-built plant conditions. DCP's Self-Assessment of its CMP for determining readiness for a June 2022 NRC inspection appeared satisfactory.

The FFT received and reviewed Program Directive CF1, "Configuration Management," Revision 3A, dated October 31, 2023, which defined the overall objective of the Configuration Management Program as, "to ensure that the design bases requirements are correct, current, and documented, and that the physical plant structures, systems, and components and operational activities conform to the design bases requirements and licensing commitments at all times." Additionally, the FFT received and reviewed implementing procedure CF1.ID1, "Configuration Management," Revision 2, dated February 15, 2023, which established requirements to promote consistent application of Configuration Management objectives and principles by all plant personnel.

At the core of the Configuration Management program are the requirements for implementation of changes made to the physical plant or operating procedures at DCP. Mr. Hamilton explained the three primary methods by which DCP controls changes at the station as follows:

- Major Design Changes, which are developed per procedure CF3.ID9, "Design Change Development," Revision 61, dated January 9, 2025.
- Minor Design Changes, which are developed per procedure CF3.ID22, "Minor Modification Process," Revision 8A, dated April 21, 2024.
- Non-Design Modifications (N-MODs), which are developed per procedure CF4.ID10, "Non-Design Modifications (N-MOD)," Revision 29A, dated June 6, 2023.

Copies of all the above procedures were provided to and reviewed by the FFT. These procedures are updated based upon experience at the plant, and the procedures list notifications in the Corrective Action Program where corrective actions drove changes to these procedures. The FFT observed that there may be opportunities, in the longer term, to use Artificial Intelligence (AI) tools to search these records for additional information that could be relevant to design change decisions and assist engineers in developing design changes (see also Section 3.9 below).

Mr. Hamilton provided a brief explanation regarding how risk and the level of complexity for a proposed modification were considered when deciding which modification method was appropriate for a proposed change. Also key to that decision were required evaluations of whether a proposed change would affect the approved licensing basis for the plant design. To facilitate these types of reviews, DCPD completed its Licensing Basis Verification Project several years ago. That project reviewed all available design and licensing basis information, resolved any identified inconsistencies or missing information, converted all the information to digital format, and organized the information into a central document database that was searchable by engineers and other staff. He noted that this was one area where the use of AI could be helpful in the future to reduce the time and effort needed to search and review licensing basis information as a part of the design change process.

The FFT inquired about recent program performance, and Mr. Hamilton reported that there had been no major issues with the preparation or implementation of recent design changes at DCPD. He noted that with the recent decision to extend operations, the number of changes had increased significantly, and the number of staff and contractors preparing changes had also increased proportionally. This expansion in the number of staff working on changes has driven a much larger need for training personnel in change preparation changes and for mitigating proficiency shortfalls that had developed during the years of reduced activity prior to the decision to extend operations. Most of this work centered around the training on the proper use of documentation and methods for efficiently performing design change activities.

Conclusion: DCPD's Configuration Management Program was healthy with no major recent problems identified. The Fact-Finding Team identified potential opportunities to apply artificial intelligence tools to search records for additional information that could be relevant to design change development.

Recommendation to the DCISC or PG&E: None.

3.3 Station Update

The DCISC FFT met with Justin Rogers, Station Senior Director, for a Station Update. This was the first Station Update performed during a Fact-Finding Meeting although Station Updates have been frequently provided in the past as a part of the DCISC's Public Meetings.

Mr. Rogers provided an update on the following recent activities at DCPD as follows:

- Power Production – Both units were at 100% at the time of the meetings. Circulating Water tunnel cleaning, which required a power reduction to about 50%, had been recently completed on Unit 2. Several opportunities for efficiency improvements to the tunnel cleaning process were identified and being researched.
- Emergency Diesel Generators (EDGs) – Maintenance Outage Windows were successfully completed on EDGs 1-1 and 1-2.
- Leadership Changes – No new leadership changes had been implemented since the DCISC’s last meetings.
- NRC Performance – The station successfully completed its Force-on-Force inspection and Phase 2 License Renewal Inspections with no major issues.
- Major Projects – The station continued to work on spare transformer relocations and Intake Structure upgrades as well as preparations for additional projects to be completed during the upcoming Refueling Outage 1R25.
- Human Performance (HU) – Two HU events recently occurred at the station. One occurred when a worker removed an incorrect fire sprinkler resulting in a water discharge, and a second occurred when an operator used a handheld radio in an area where radio use was prohibited (near Main Steam pressure instrumentation). Cause Evaluations were in progress for both events. The FFT noted that the DCISC should soon receive and be able to review the Cause Evaluations as a part of the monthly documents regularly provided by PG&E to the DCISC.

Conclusion: DCP’s update on recent station activities was informative, and no new major issues were identified.

Recommendation to the DCISC or PG&E: None.

3.4 Meet with NRC Resident Inspectors

The DCISC FFT met with Mahdi Hayes, NRC Senior Resident Inspector, and Eli Garcia, NRC Resident Inspector, for an update. The DCISC meets regularly with the NRC Resident Inspectors and last met with them during its January 2025 Fact-Finding Meeting (Reference 6.3), 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 Human Performance issues at DCP
- NRC’s recent issuance of its Annual Assessment Letter

- A proposal for the NRC to present its End of Cycle Performance Assessment as a part of the DCISC’s June Public Meeting
- Recent federal government-wide directives and their impact on NRC personnel and activities

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

Recommendations to the DCISC or PG&E: None.

3.5 Safety-Security Interface

The DCISC FFT met with Sam Williams, Security and Emergency Services Director, for an update on the Safety-Security Interface Program. The DCISC last reviewed this program during its December 2022 Fact-Finding Meeting (Reference 6.4), when it concluded the following:

The DCPD Safety-Security Interface appeared healthy and has been designed and implemented satisfactorily.

The purpose of the Safety-Security Interface Process is to assess and manage changes to safety and security activities to prevent or mitigate potential adverse effects that could negatively impact either plant safety or security. The Fact-Finding Team received and reviewed the DCPD Procedure OM11.ID7, “Safety/Security Interface Program,” Revision 4, dated January 15, 2025, which identified management controls and processes used to establish and maintain an effective interface between nuclear safety and site security, addressing the following:

- Plant Modifications
- Procedure Changes and Emergency Plan Changes
- Emergent Operational Conditions and Maintenance Activities
- Changes to Security Plans
- Safety/Security Programmatic Reviews

Mr. Williams reported that a key element of the process was the involvement of security leadership in daily operations meetings and periodic work planning meetings at the station. He described examples of actual safety/security interface activities, which had been effective in preventing problems in coordinating safety and security activities. One recent example occurred when Security and Operations interactions at a station meeting identified the need for operators to continue roving fire watches during Force-on-Force security drills when plant staff were typically restricted from movement around the station. The exception was authorized, and the roving watches were continued during the drills.

The FFT also inquired about the status of staffing in the Security Department and Mr. Williams reported that the department was running higher than desired in the use of overtime to cover vacancies. To help address this shortcoming, 16 new security officers were currently in training. Also, the station was working with industry working groups to review security requirements and

initiate efficiency improvements where opportunities allowed improvements to be made without compromising security standards.

Conclusion: The Safety-Security Interface Program at DCPD was properly designed and being implemented satisfactorily.

Recommendations to the DCISC or PG&E: None.

3.6 Workplace Seismic Safety

The DCISC FFT met with Mike Brass, Maintenance Services Director, to receive an update on the status of workplace seismic safety activities at DCPD. The DCISC last reviewed workplace seismic safety during its December 2024 Fact-Finding Meeting (Reference 6.5), when it concluded the following:

The DCISC July 20, 2024, walkdown of seismic workplace safety in the Administration Building with the Director of Maintenance revealed one unbraced cabinet (which had been recently added to a conference room in the Administration Building). The problem was immediately added by Mr. Brass to the Corrective Action Program and was properly corrected. An extent of condition review revealed no additional problems. This December 11, 2024, Fact-finding Meeting follow-up to the July 20, 2024, revealed no new problems via a new walkdown of the Training Building, however, on December 12, 2024, the FFT found a tall, unbraced cabinet in the office of the DCPD Chief Nuclear Officer, which she advised would soon be moved to the other side of the room in a recent request. A Corrective Action Program Notification was quickly initiated for corrective action.

Also as a result of the December 2024 review, the DCISC made the following recommendation to PG&E:

PG&E should review why an extent of condition for an unbraced cabinet found by the DCISC in July 2024 did not prevent the identification of a similar condition by the DCISC in December 2024. (P12/24FF-3.6)

Following the identification of an unbraced cabinet during the DCISC's July 2024 review and upon entering the issue into the Corrective Action Program, corrective actions were made. These included adding proper bracing to the cabinet, improved training/awareness for personnel on workplace seismic safety, and reviewing other installations for extent of condition. However, in December 2024 during a DCISC Fact-Finding meeting with the DCPD Senior Vice-President and Chief Nuclear Officer, an unbraced cabinet was found in her office which had not been found in previous inspections. This new discovery of unbraced cabinet was entered into the Corrective Action Program.

The purpose of this meeting was to inquire about the status of corrective actions taken in response to the December 2024 issue and the subsequent recommendation made to PG&E by the DCISC.

Mr. Brass reported that actions taken in response to the July 2024 review appeared to be ineffective in this particular case probably because workers performing workplace seismic inspections skipped completing the inspection of the CNO's office when they found it locked after hours. In response to the December 2024 issue, the site Construction Manager had been tasked to prepare a definitive list of all rooms on site that should be inspected for compliance with workplace seismic safety standards. Once that list was complete, owners for each area would be identified and required to perform and document inspections of all the areas. Similar inspections would also be required to be performed on a periodic basis in the future. Lastly, the event was being considered an Organizational Learning Opportunity and the lessons learned would be distributed to station personnel for their information. Mr. Brass expected that all of these actions should be completed by early May 2025. The FFT considered this to be acceptable progress and an additional DCISC review should be performed following the completion of all corrective actions.

Conclusions: DCPD provided an update on corrective actions being taken in response to the DCISC's identification of an unbraced cabinet in December 2024. Corrective actions are expected to be completed in May 2025, and the DCISC should review the issue again after that date.

Recommendations to the DCISC: None

Recommendations to PG&E: The following previous recommendation to PG&E was reviewed in this report and remains open: PG&E should review why an extent of condition for an unbraced cabinet found by the DCISC in July 2024 did not prevent the identification of a similar condition by the DCISC in December 2024 (P12/24FF-3.6).

3.7 Meet with DCPD Officer

The DCISC FFT met with Maureen Zawalick, Vice President, Business and Technical Services, for an update. The DCISC last met with a DCPD officer during its Fact-Finding Meeting during its January 2025 Fact-Finding Meeting (Reference 6.6) when it concluded the following:

The regular meetings between the DCISC and DCPD Officers and Directors continue to be beneficial for both organizations. Discussions regarding the status of the current Nuclear Safety Culture at the corporate level were generally positive.

The participants discussed the current meeting agenda items and other items of mutual interest.

Conclusions: The regular meetings with DCPD Officers and Directors continue to be beneficial for both organizations.

Recommendations to PG&E or DCISC: None.

3.8 New Fuel Procurement

The DCISC FFT met with Jay O'Hare, Reactor Engineering Supervisor, and Shannon Conner, Nuclear Fuels Purchasing Manager, for an update on the procurement of new nuclear fuel for DCP. Al Bates, Director Nuclear Fuels and Decommissioning, along with Dauphine Hou, Harpreet Bhalla, and Jerry Bischof from the California Department of Water Resources (DWR) participated remotely in the meeting. The DCISC last reviewed new fuel-related activities during its August 2022 Fact-Finding Meeting (Reference 6.7), when it concluded the following:

The receipt, unloading and inspection of new fuel assemblies for Outage 2R23 were performed professionally and carefully as observed by the DCISC Fact-Finding Team.

Mr. O'Hare provided an update on the recent procurement of new fuel assemblies to support the upcoming Cycle 25 and Cycle 26. Fuel for the two upcoming cycles on each unit was being procured with several new features under the Westinghouse "Prime" Fuel Package. For Cycle 25, improvements in bottom and top nozzle designs had been incorporated, and for Cycle 26, improvements in dashpot area geometry, optimized Zirconium cladding, and an improved grid design would be included. Also for Cycle 26, the Advanced Doped Pellet Technology (ADOPT) fuel would be incorporated into the fuel assemblies. The ADOPT fuel pellets include doping with small amounts of chromia (Cr_2O_3) and alumina (Al_2O_3) which improve accident tolerance (lower peak centerline temperature) while enabling an increased density of fissile material and higher fuel burnups. He also reported that all 84 new fuel assemblies needed for the upcoming Refueling Outage 1R25 had been received and successfully inspected in preparation for loading into the reactor during the outage.

The FFT inquired regarding current enrichment levels and Mr. O'Hare reported that enrichments slightly under 5% were typical with variance between fuel cycles and lower enrichment levels in the top and bottom six-inch regions of each fuel assembly. The current Technical Specification limit for enrichment was 5%. The FFT asked about the possibility of increasing the length of refueling cycles at DCP from 18 to 24 months, and Mr. O'Hare responded that a change to 24-month cycles was not currently practical given the planned extension of operations to 2030. Should DCP operations be further extended, 24-month cycles could be considered but the required changes were significant and would include increasing the Technical Specification enrichment limit, modifying accident analyses, changes at the fuel fabrication facility, and changes to shipping methods.

Mr. Conner then provided an update on the supply of uranium for use in nuclear fuel at DCP. In general, the nuclear fuel uranium supply consists of three steps – the mining of raw ore (yellowcake), conversion to UF_6 and/or UO_2 , and enrichment of the percentage of U^{235} (versus U^{238}) from about 0.72% in naturally-occurring uranium to the percent enrichment discussed above. Mr. Conner reported that DCP has contracted for the purchase and processing of all new fuel needed through 2030. Noting that the U.S. does not have the capacity to supply all the materials and processing needed for such fuel, DCP's contracts include international sources, and these sources currently meet all legal requirements for use in the U.S. and specifically exclude Russia

and China. He added that some of the countries providing supply or processing (such as Canada) may be subject to future tariffs and that the potential impact of tariffs on current contracts was unknown at the time of the meeting. He also reported that DCP's contracts include maintaining an inventory of a full cycle's load of material at the fuel fabrication facility as a strategic backup supply. Lastly, the FFT inquired what lead time would be necessary for procurement of new fuel to support operations beyond 2025, and Mr. Conner reported that the total lead time to procure new fuel was typically three years which included time to negotiate contracts, mine, convert, enrich, fabricate, and ship the new fuel to the site.

Conclusion: The procurement and processing of new fuel for DCP was being well managed, and contracts were in place to supply all the new fuel needed to support operations through the end of the period of extended operations in 2030.

Recommendations to PG&E or DCISC: None.

3.9 Innovation Initiatives

The DCISC FFT met with Jordan Tyman, Risk and Compliance Director, for an update on DCP's innovation initiatives including plans regarding the potential application of Artificial Intelligence (AI). The DCISC last reviewed this topic during its January 2025 Fact-Finding Meeting (Reference 6.8), when it concluded the following:

DCP's initiative to study and use an Artificial Intelligence platform developed by Atomic Canyon for document and data search, retrieval, and reporting is positive. There were no safety concerns associated with DCP's current plans for the possible use of Artificial Intelligence at the station.

In response to the FFT's request, Mr. Tyman briefed the FFT with regards to providing additional clarity to the DCISC's previous understandings and written summaries on the planned use of AI at the station. He explained that Atomic Canyon is the name of the local company that has developed an AI tool named "Neutron Enterprise," commonly just referred to as "Neutron." Neutron is an information search tool that uses a specific type of AI process called Retrieval Augmented Generation. Neutron generates new information in that it creates intelligent summaries of stored information via its process for taking user inquiries, searching within its predetermined search database, and stitching together factual conclusionary statements from the search information. The Neutron software provides links to the documents that provided the source information and is not capable of generating any new information beyond that provided to it from the predetermined search database. In short, it generates new summaries from old information. Mr. Tyman noted that an advantage of Neutron over common AI search tools is that Neutron would be able to search fully across all available information including proprietary and confidential sources. He noted that common open-source AI search tools can search a wide range of information across the internet but are not allowed to access or use proprietary or other confidential information.

Regarding the schedule for implementation of the Neutron system, Mr. Tyman reported that setup of the system hardware and software on site had been completed, and testing was in progress. Connections had been configured to the station's document repositories and the NRC's Agency-wide Document Access and Management System (ADAMS), and AI training was in progress for those repositories. The station planned to add future connections to industry databases such as the Industry Reporting and Information System (IRIS) maintained by the Institute of Nuclear Power Operations (INPO). The station planned to have the system available for initial use by employees station wide by June 2025.

The FFT inquired about other possible uses of AI at the station and Mr. Tyman responded that the current focus was on successfully implementing the use of AI in document search and retrieval discussed above. Other uses might be considered later and any future uses would only be pursued considering current NRC guidance which limits the use of AI in licensed activities (such as plant controls). He agreed with the FFT's observations that there were several AI tools which could be of future value in assisting in and possibly improving the safety of operations at the station; however, he noted that the current five-year limit on the extended operating period was not conducive to the initiation of major initiatives in this area.

The FFT recommends that the DCISC create a list under item PI-3 on its Open Items List for potential future AI applications that could enhance safety. At this time, the FFT suggests including the Design Change Process (see Section 3.2 above), procedure generation, and the Corrective Action Program in that list.

Conclusions: DCP's initiative to implement the use of an Artificial Intelligence platform named Neutron Enterprise for document and data search, retrieval, and reporting continued to be positive. There were no safety concerns associated with DCP's current plans for the possible use of Artificial Intelligence at the station.

Recommendations to the DCISC: The following previous recommendation to the DCISC was reviewed in this report and remains open: the DCISC should frequently review the use of Artificial Intelligence (D12/24FF-3.4). Also, the FFT recommends that the DCISC create a list of potential future Artificial Intelligence applications that could enhance safety under item PI-3 on its Open Items List.

Recommendations to PG&E: None

3.10 Refueling Outage 1R25 Update and Safety Plan

The DCISC FFT met with Erik Werner, Outage Director, and Philippe Soenen, Strategic Initiatives Director, for an update on preparations for the upcoming Refueling Outage 1R25. Dauphine Hou, Harpreet Bhalla, and Jerry Bischof from the California Department of Water Resources (DWR) participated remotely in the meeting. The DCISC last reviewed outage preparations during its January 2025 Fact-Finding Meeting (Reference 6.9), when it concluded the following:

DCPP's preparations for Refueling Outage 1R25 appeared to be progressing satisfactorily.

Refueling Outage 1R25 was planned to begin in mid-April 2025 with a planned duration of 40 days. Mr. Soenen began the update by reviewing the preparations for removing Reactor Vessel embrittlement specimen Capsule B during the outage. He reported that modifications had been completed to both units' specimen tube plug removal tools to ensure they would work with a smaller diameter plug opening on the top of the specimen tube (which prevented capsule retrieval during the previous outage). Additionally, the tools had been modified, tested, and certified to allow for their use of up to about 16,000 pounds of pulling force for plug removal, which was approximately twice the previous maximum allowed value. Lastly, Electrical Discharge Machining (EDM) equipment had been prepared and tested to cut the plug from the top of the specimen tube should an alternative approach be needed to open the tube. If the alternative approach is used, Mr. Soenen reported that the tube would be left unplugged following capsule removal and that the effect of the unplugged tube on vessel flow had been analyzed and found to be acceptable.

The FFT asked about the schedule for capsule removal, and Mr. Soenen reported that the initial attempt at plug removal using the specimen plug removal tool was planned to be completed on about day 9 of the outage. If the alternative approach was required, the EDM cutting activity was planned following core barrel removal on about day 11 of the outage. In the latter case, the capsule would not actually be removed until after the core barrel was reinstalled in the Reactor Vessel on about day 18 of the outage. The capsule could not be removed while the core barrel was out of the Reactor Vessel due to the inadequate water level available for radiation shielding when the core barrel is stored in the transfer canal. Following removal, the capsule would be placed in a shielded container and shipped to a laboratory facility in Pennsylvania.

Mr. Werner then provided an overview of outage preparations. He reported that preparations were generally on track, and there had been no major changes to the outage scope or schedule. Onboarding was beginning for the approximately 1000 supplemental staff expected to work at DCPP during the outage. The outage schedule showed significantly less overall duration than the goal of 40 days, and the critical path of the schedule ran through the primary side work including the Reactor Vessel internals inspections. Goals for the outage were as follows:

<u>Performance Measure</u>	<u>Goal</u>
Recordable Injuries	0
Serious Injury or Fatality Events	0
Nuclear Safety Events	0
Site Human Performance Clock Resets	0
Foreign Material Exclusion Events	0
Outage Duration (Days)	< 40
Radiation Dose (Person-Rem)	< 31.325
Power Ascension (Days)	< 5
Reliability (Days Following Outage)	> 90

At the FFT's request, Mr. Werner provided an overview of the Refueling Outage 1R25 Outage Safety Plan and Safety Schedule and provided copies of the draft plan and schedule to the FFT. The preparation and use of the Outage Safety Plan and Safety Schedule were governed by DCPD procedure AD8.DC50, "Outage Safety Management," Revision 5A, dated July 7, 2022, and AD8.DC55, "Outage Safety Scheduling," Revision 50, dated March 3, 2025, copies of which were provided to the FFT. The purpose of the plan and schedule was to provide information on outage safety requirements and highlight potential higher risk activities to plant staff. A key element of the Outage Safety Plan was the Defense-in-Depth Chart. DCPD uses "Phoenix," a computer-based tool used online to analyze changes in risk using the Probabilistic Risk Assessment (PRA) model when equipment is removed from service for maintenance. As the PRA model does not extend to shutdown conditions, Phoenix is used during outages via the loading of deterministic fault trees for shutdown conditions based on the Outage Safety Checklists and generating a set of color-coded status indicators for shutdown conditions. An "N+1" Defense in Depth (DID) approach, where N generally represents the minimum number of equipment sets needed to maintain a key safety function, is then utilized by Phoenix to evaluate the availability of the key safety functions. DCPD considers a status of Green or Yellow as acceptable for planned outage activities because key safety functions are fully supported with at least N+1 DID. Contingency plans provide an additional approach to DID, because they provide a backup safety function should a minimum safety function become unavailable. The draft Refueling Outage 1R25 Safety Schedule contained no Orange or Red (less than N+1 DID) conditions and three individual Yellow ones. The three planned Yellow conditions included those that were typical of any refueling outage, and there were no significant concerns identified in the Safety Plan or Safety Schedule.

Conclusion: DCPD's preparations for Refueling Outage 1R25 and the retrieval of Reactor Vessel neutron embrittlement sample Capsule B appeared to be progressing satisfactorily.

Recommendations to the DCISC or PG&E: None.

3.11 Observe Nuclear Safety Oversight Committee Meeting

(Because of its privacy agreement with DCPD, the DCISC cannot share information regarding the details of the NSOC evaluation or subsequent corrective actions.)

The DCISC FFT observed the March 20, 2025, Nuclear Safety Oversight Committee (NSOC) exit meeting. The DCISC last observed an NSOC exit meeting during its November 2024 Fact-Finding Meeting (Reference 6.10), when it concluded the following:

The DCPD Nuclear Safety Oversight Committee appeared to be thorough and comprehensive in their evaluations and candid in their reports.

The NSOC is a committee of five executive-level, external industry peers who are selected and appointed by DCPD's Chief Nuclear Officer and have sufficient expertise to satisfy the applicable requirements of American Standards Institute/American Nuclear Society Standard 3.1, "Selection, Qualification and Training of Personnel for Nuclear Power Plants." Its purpose is to advise the Chief Nuclear Officer and the site leadership team on nuclear safety policy and to provide an

independent perspective on plant performance. The NSOC typically visits DCPD three times per year for four days each. The first three days are usually spent in the plant interviewing personnel, observing activities, and reviewing records. The exit meeting is then typically held on NSOC's fourth day of meetings for the purpose of reporting the NSOC's conclusions to the Chief Nuclear Officer and the site leadership team. The FFT observed that the NSOC members appeared thorough in their evaluations and candid in their reports, and DCPD responded to all comments with acceptance and consideration of future actions. Some of the NSOC's observations were consistent with those of the DCISC, and a few observations provided more unique and valuable perspectives on station performance.

Conclusion: The DCPD Nuclear Safety Oversight Committee appeared to be thorough and comprehensive in their evaluations and candid in their reports.

Recommendations for the DCISC or PG&E: None.

3.12 Meeting with San Luis Obispo County Department of Emergency Services

The DCISC Fact-Finding Team met with Kelly Van Buren, Emergency Services and Nuclear Power Plant Program Manager, of the San Luis Obispo County Department of Emergency Services, at her offices in San Luis Obispo, CA, to discuss the roles of her department and the DCISC in responding to DCPD emergencies. The DCISC last met with the Department of Emergency Services during its November 2022 Fact-Finding Meeting (Reference 6.11), when it concluded the following:

The DCISC Fact-finding Team's visit with Scott Jalbert, the San Luis Obispo County Emergency Services Director, was beneficial to meet and learn about him and the status of the county's emergency preparedness programs and to describe the role of the DCISC. The DCISC should follow up on the issue of adequate future funding for Mr. Jalbert's group. The DCISC should also follow up with Mr. Jalbert and invite him to speak at a DCISC Public Meeting during 2023.

Ms. Van Buren provided the team with a brief description of her background and a description of the current responsibilities of her office related to the operation of Diablo Canyon Power Plant during an emergency. She reported that since the DCISC's last visit, the Department Director, Mr. Scott Jalbert, had reorganized the group to place the five staff members working on nuclear preparedness under her as a manager. The remaining staff who supported other, non-nuclear emergency preparedness activities continued to report directly to Mr. Jalbert. Overall, the staff of eight individuals worked together to ensure that the county was prepared to respond and recover from emergencies and disasters, focusing on emergency mitigation, preparedness, response, and recovery.

Ms. Van Buren reported that the county's relationship with DCPD was good and that there were no major concerns with nuclear emergency preparedness activities. She noted that the previous decision for DCPD to cease operations in 2025 had led to a lack of change initiatives, but with the advent of extended operations the department was working to make improvements in several areas.

These initiatives included incorporating the use of IPAWS (Integrated Public Alert and Warning System; a mobile phone text messaging system used for emergency notifications) into response plans as a backup alerting mechanism. Later, plans may be revised to use IPAWS as a primary alerting system; however, she envisioned the current siren system would likely remain as an alternative alerting system as it is particularly useful in areas of outdoor recreational activities. The FFT also discussed some of the lessons learned from recent emergency events across the state including the Camp Fire, the Moss Landing battery facility fire, and the Los Angeles area fires.

Lastly, the FFT discussed with Ms. Van Buren the purpose and status of the drafting of a DCISC policy for responding to emergencies at DCP. She provided several points of valuable input that the FFT agreed should be considered in the policy, and the FFT agreed it would be prudent to include her office in reviewing future drafts of the DCISC's emergency response policy.

Conclusions: The DCISC Fact-finding Team's visit with the San Luis Obispo County Department of Emergency Services Nuclear Program Manager was beneficial to learn about the status of the county's emergency preparedness programs and to discuss the role of the DCISC.

Recommendations for the DCISC: The DCISC should continue its effort to develop a committee policy for responding to an emergency declaration at DCP (D3/25FF-3.12).

Recommendations for PG&E: None.

4.0 CONCLUSIONS

4.1 DCP's Spent Fuel Pool Cooling Systems were in good health with no major issues.

4.2 DCP's Configuration Management Program was healthy with no major recent problems identified. The Fact-Finding Team identified potential opportunities to apply artificial intelligence tools to search records for additional information that could be relevant to design change development.

4.3 DCP's update on recent station activities was informative, and no new major issues were identified.

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

4.5 The Safety-Security Interface Program at DCP was properly designed and being implemented satisfactorily.

4.6 DCP provided an update on corrective actions being taken in response to the DCISC's identification of an unbraced cabinet in December 2024. Corrective actions are expected to be completed in May 2025, and the DCISC should review the issue again after that date.

- 4.7 The regular meetings with DCPD Officers and Directors continue to be beneficial for both organizations.
- 4.8 The procurement and processing of new fuel for DCPD was being well managed, and contracts were in place to supply all the new fuel needed to support operations through the end of the period of extended operations in 2030.
- 4.9 DCPD's initiative to implement the use of an Artificial Intelligence platform named Neutron Enterprise for document and data search, retrieval, and reporting continued to be positive. There were no safety concerns associated with DCPD's current plans for the possible use of Artificial Intelligence at the station.
- 4.10 DCPD's preparations for Refueling Outage 1R25 and the retrieval of Reactor Vessel neutron embrittlement sample Capsule B appeared to be progressing satisfactorily.
- 4.11 The DCPD Nuclear Safety Oversight Committee appeared to be thorough and comprehensive in their evaluations and candid in their reports.
- 4.12 The DCISC Fact-finding Team's visit with the San Luis Obispo County Department of Emergency Services Nuclear Program Manager was beneficial to learn about the status of the county's emergency preparedness programs and to discuss the role of the DCISC.

5.0 RECOMMENDATIONS

Recommendations to the DCISC:

- 5.1 The following previous recommendation to the DCISC was reviewed in this report (Section 3.9) and remains open: the DCISC should frequently review the use of Artificial Intelligence (D12/24FF-3.4). Also, the Fact-Finding Team recommends that the DCISC create a list of potential future Artificial Intelligence applications that could enhance safety under item PI-3 on its Open Items List.
- 5.2 The DCISC should continue its effort to develop a committee policy for responding to an emergency declaration at DCPD (D3/25FF-3.12).

Recommendations to PG&E:

- 5.3 The following previous recommendation to PG&E was reviewed in this report (Section 3.6) and remains open: PG&E should review why an extent of condition for an unbraced cabinet found by the DCISC in July 2024 did not prevent the identification of a similar condition by the DCISC in December 2024 (P12/24FF-3.6).

6.0 REFERENCES

- 6.1 “Diablo Canyon Independent Safety Committee Twenty-Eighth Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2017 – June 30, 2018”, Approved October 24, 2018, Volume II, Exhibit D.10, Section 3.8, “Spent Fuel Pool Systems.”
- 6.2 “Diablo Canyon Independent Safety Committee Thirty-Second Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2021 – June 30, 2022”, Approved September 28, 2022, Volume II, Exhibit D.8, Section 3.9, “Configuration Management Program.”
- 6.3 “Diablo Canyon Independent Safety Committee Thirty-Fifth Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2024 – June 30, 2025,” Scheduled for approval at the October 2025 DCISC Public Meeting, Volume II, Exhibit D.6, Section 3.7, “Meet with NRC Resident Inspectors.”
- 6.4 Diablo Canyon Independent Safety Committee Thirty-Third 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.6, Section 3.7, “Safety-Security Interface Update.”
- 6.5 “Diablo Canyon Independent Safety Committee Thirty-Fifth Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2024 – June 30, 2025,” Scheduled for approval at the October 2025 DCISC Public Meeting, Volume II, Exhibit D.5, Section 3.6, “Workplace Seismic Safety Tour.”
- 6.6 Ibid., Exhibit D.6, Section 3.8, “Meet with DCPD Officer.”
- 6.7 Diablo Canyon Independent Safety Committee Thirty-Third 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.2, Section 3.14, “Observe Receipt and Inspection of New Fuel.”
- 6.8 “Diablo Canyon Independent Safety Committee Thirty-Fifth Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2024 – June 30, 2025,” Scheduled for approval at the October 2025 DCISC Public Meeting, Volume II, Exhibit D.6, Section 3.6, “Plans for a New Artificial Intelligence Process (Atomic Canyon).”
- 6.9 Ibid., Exhibit D.6, Section 3.13, “Refueling Outage 1R25 Preparations.”
- 6.10 Ibid., Exhibit D.4, Section 3.1, “Observe Nuclear Safety Oversight Committee Meeting.”
- 6.11 Diablo Canyon Independent Safety Committee Thirty-Third 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 3.2, “Meet with San Luis Obispo County Emergency Services Staff.”