

**RESOLUTION NO. 2023- 13**

**RESOLUTION OF THE DIABLO CANYON INDEPENDENT SAFETY COMMITTEE  
APPROVING REPORT ON FACT-FINDING MEETING  
AT DIABLO CANYON POWER PLANT (DCPP)  
ON August 9-10, 2023**

**THE DIABLO CANYON INDEPENDENT SAFETY COMMITTEE HEREBY  
RESOLVES AS FOLLOWS:**

**WHEREAS**, the above-caption draft report having come regularly before the Committee on the agenda for consideration at the Committee's public meeting on September 13, 2023; and

**WHEREAS**, the Committee Members received and discussed the report;  
and

**WHEREAS**, an opportunity was provided for public comment on the report.

**NOW, THEREFORE**, the Diablo Canyon Independent Safety Committee hereby approves that certain report entitled "Report on Fact-Finding Meeting at DCPP on August 9-10, 2023 and Comprehensive Review of Upgrades Necessary to Address Issues of "Deferred Maintenance" That May Have Arisen Due to the Expectation of the Plant Closing Sooner by Peter Lam, Member, and R. Ferman Wardell and Richard D. McWhorter and Consultants," copy on file in the office of the Committee's Legal Counsel, and a copy of the approved report was made available to the public at the public meeting and is attached to this resolution as Exhibit A.

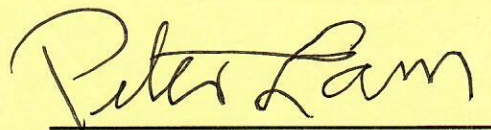
**THE FOREGOING RESOLUTION WAS ADOPTED** at a regular meeting of the Diablo Canyon Independent Safety Committee held on the 13th day of September, 2023, by the following vote:

**AYES:**

**NOES:**

**ABSENT:**

**ABSTAIN:**



**Peter Lam, Chair**

**ATTEST:**



**Robert Rathie, Asst. Legal Counsel**

## Exhibit A

## **DIABLO CANYON INDEPENDENT SAFETY COMMITTEE**

### **Report on**

**Fact-Finding Meeting at DCPD  
on August 9-10, 2023**

**and**

**Comprehensive Review of Upgrades Necessary to Address Issues of “Deferred  
Maintenance” That May Have Arisen Due to the Expectation of the Plant Closing Sooner**

**by**

**Peter Lam, Member, and  
R. Ferman Wardell and Richard D. McWhorter, Consultants**

### **1.0 SUMMARY**

The results of the DCISC August 9-10, 2023, Fact-Finding Meeting for the Diablo Canyon Power Plant (DCPP) in Avila Beach, CA, are presented. The subjects addressed and summarized in Section 3 are as follows:

1. Meet with NRC Senior Resident Inspector
2. Powerblock WiFi and Electronic Work Packages and Procedures
3. Observe Maintenance Work
4. Rod Control and Indication System
5. Employee Concerns Program
6. Nuclear Safety Culture
7. Meet with DCPD Officer, Maureen Zawalick
8. Boric Acid Leak Root Cause Evaluation
9. Comprehensive Review of Equipment Long-Range Planning and Maintenance
10. Radioactive Effluent Release and Environmental Monitoring Reports
11. Reactor Vessel Pressurized Thermal Shock

### **2.0 INTRODUCTION**

This Fact-Finding Meeting for the DCPD 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 Fact-finding Team (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 DCPD on specific areas of interest, etc.

Section 5 – Recommendations, presents specific recommendations to 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 Meet with NRC Senior Resident Inspector

The DCISC FFT met with Mahdi Hayes, Nuclear Regulatory Commission (NRC) Senior Resident Inspector, for an update. The DCISC meets regularly with the NRC Resident Inspectors and last met with a Resident Inspector during its July 2023 Fact-Finding Meeting (Reference 6.1), when it concluded the following:

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

The items discussed in this meeting included the following:

- Recent inspections
- NRC Problem Identification and Resolution Inspection
- Emergency Preparedness Inspection
- Upcoming Outage 1R24 Radiation Protection and Inservice Inspections

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

**Recommendations: None.**

#### 3.2 Powerblock WiFi and Electronic Work Packages and Procedures

The DCISC FFT met with Mariel Apodala, Planning Supervisor; Mike Crigler, Work Planner; Doug Park, Infrastructure and Operations Director; and Mike Kaplan, Network Engineer, to review the extent and use of WiFi in the Powerblock and the historical, current, and future use of electronic work orders and procedures. The DCISC last reviewed these topics in December 2020 (Reference 6.2), when it concluded the following:

*DCPP had begun to utilize Electronic Work Packages in 2014 following industry best practices but has slowed its usage due to less than successful experience and plans to cease electricity generation in 2025. Not expending additional resources for this short remaining term of plant operation appears justified.*

DCPP has WiFi at multiple locations in the Powerblock, primarily in office areas and other regularly staffed work areas. WiFi is temporarily set up inside Containment during refueling outages. It is used most by Radiation Protection for remote radiation level monitoring. There were no current plans for WiFi expansion elsewhere in the Powerblock.

Previous attempts at electronic work packages were not broadly successfully used because of the difficulty of reading and comprehending multiple documents (e.g., procedures, drawings, vendor manuals, etc.) on small tablets and apparently not being user-friendly. However, two Maintenance Groups, Scaffolding and Insulation & Coatings, use them regularly because their work packages are relatively simple documents.

**Conclusion:** DCPP has WiFi throughout office areas and workspaces in the Powerblock, except in Containment where WiFi is temporarily installed during outages. The use of electronic work packages has not been broadly successful at DCPP. However, electronic procedures may be a better fit, and the DCISC should consider reviewing their past, current and future potential use in a future fact-finding meeting.

**Recommendations:** None

### 3.3 Observe Maintenance Work

The DCISC Consultants met with Damon Cooper, Superintendent of Instrumentation and Controls Maintenance, to observe maintenance work in the powerblock. The DCISC last reviewed maintenance in November 2019 (Reference 6.3), when it concluded the following:

*The DCPP 2R21 Refueling Outage was progressing satisfactorily with most outage work completed, except for the long-term Main Generator Stator Rewind Project. The work on this project was proceeding on schedule in an orderly way.*

The FFT toured the 4kV Vital Bus 1-G room and observed Instrument and Controls (I&C) Maintenance Teams performing two different work packages: 1) replacement of toggle switches on the Emergency Diesel Generator (EDG) output breaker panel and 2) testing and adjusting relays on the EDG controls. Maintenance technicians had the proper procedures and instructions, proper personnel protective equipment, and used appropriate human performance tools such as procedure place keeping. The FFT also toured the 1-2 EDG room and observed additional maintenance activities in progress at that location.

**Conclusions:** Maintenance Technicians were performing work on the Emergency Diesel Generator output breaker panel using proper procedures, proper personnel protective equipment, and proper human performance tools.

### 3.4 Rod Control and Indication System

The DCISC FFT met with Mike Sullivan, Senior Advising Engineer and Strategic Engineer, to review the health of the Rod Control and Indication System. The DCISC last reviewed the Rod Control and Indication System in an event description at the October 2020 Public Meeting (Reference 6.4) as follows:

*February 2020 Unit 2 Forced Outage and June 12, 2020 Event to Repair the Rod Control System (Excerpted).*

*Unit 2 was shut down on February 13, 2020, to correct reactor control rod events involving a deviation between the positions of different banks of control rod cluster assemblies which was discovered during routine testing. DCPD stated this was not a safety issue, and the control rod assemblies remained capable of inserting completely into the core to trip the reactor automatically or manually if required. Equipment was replaced but because of the nature of the problem the root cause could not be identified for the initial event. Procedural changes were made that required routine testing be stopped while the control rods were still in their acceptance range if a deviation were to occur during testing. Diagnostic tests were developed for use during the next refueling outage to ascertain the root cause. A root cause evaluation for this first event was performed by DCPD with input from Westinghouse as the vendor for the Rod Control System. The malfunctioning control card was tested in the DCPD rod control training lab and by Westinghouse, but the event could not be re-created.*

*A second similar event occurred on June 12, 2020, but the reactor was not required to be shut down as the control rod assemblies remained within their test acceptance range and did not have a significant deviation between different control rod banks. The actions taken to change procedures and provide additional guidance to Operations staff after the February occurrence assisted in making this determination. Diagnostics were performed and led to discovery of the root cause. Corrective actions to prevent recurrence were established and a root cause evaluation was performed.*

*The final cause evaluation identified an improper crimp on a factory-installed original equipment ring lug made more than 40 years ago, had degraded over time, and this formed the root cause for the events. The improper crimp resulted in a high resistance connection in the jumper between the control card chassis connector and the ground bus and this caused intermittent logic failures on the card resulting in logic timing failures. The corrective actions taken to prevent recurrence included replacement of the ground bus jumper circuit including the degraded ring lug connection.*

The DCISC concluded the corrective actions were satisfactory.

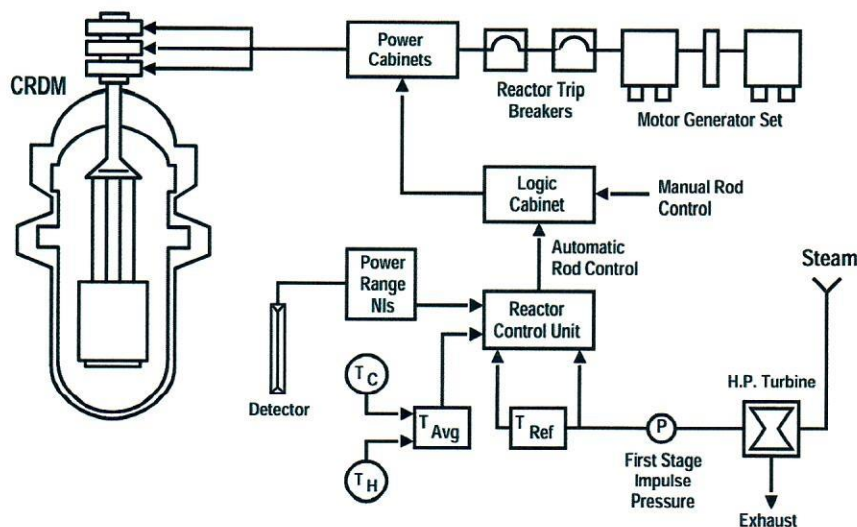
### Rod Control and Indication System Description

The primary purpose of the Rod Control System is the following:

- Move the control rods sequentially in manual or automatic to:
  - Start up the reactor (in manual)
  - Shut down the reactor (in manual)
  - Maintain reactor coolant temperature (in manual or automatic)
- The Rod Control System consists of the following components:
  - Dedicated motor-generator (MG) sets which make three-phase AC power
  - Reactor Trip Breakers which will trip open on various trip signals from the Reactor Protection System, deenergizing the Control Rod Drive Mechanisms (CRDMs) causing the Control Rods to fall into the Core
  - Automatic Reactor Control Unit (RCU)
  - Logic Cabinet
  - Power cabinets where the AC output is converted into pulsed DC power and supplied to each Control Rod Drive Mechanism (CRDM)
- The Rod Control System positions the Control Rods within the Core in response to signals from the:
  - Manual Control Switch or
  - Automatic Reactor Control Unit

In Automatic, the Rod Control System functions to keep  $T_{avg}$  (average Reactor Coolant System temperature) on a program which is proportional to power.

The basic block and flow diagram of the system is as follows:



DCPP considered system health to be Good, although there had been two events in 2022 one of which caused a reactor shutdown. Also, DCPP was considering replacing the motor/generator control cabinets in upcoming outages due to obsolescence and spare parts problems and

unavailability. With these replacements, the system should remain in good health through an extension of power operations.

**Conclusions:** The Rod Control and Indication System is in good health and will be better able to serve DCPD during an extension of power operations with replacement of the system control cabinet, which is being considered.

**Recommendations:** None

### 3.5 Employee Concerns Program

The DCISC FFT met with Donna Wells, Manager of the DCPD Employee Concerns Program (ECP) for an update on the Program. The DCISC last received an update on the ECP from DCPD at the DCISC October 13, 2021 Public Meeting (Reference 6.5) and August 2020 Fact-finding Meeting (Reference 6.6), when it concluded the following:

*The DCPD Employee Concerns Program continued to function well in receiving and investigating employee concerns in a confidential manner. During 2019, as in past years, and to date in 2020, there were no significant concerns regarding nuclear safety. A number of COVID-19 pandemic-related concerns from employees were being thoroughly evaluated by the Employee Concerns Program.*

The ECP is an alternate venue for employees to report concerns; that is, a program independent of line management. The ECP may be used by individuals to report nuclear safety concerns or concerns dealing with harassment, intimidation, retaliation, or discrimination without fear of retribution. The ECP is only one of a number of venues available to plant personnel to report concerns with those other venues being the employee's immediate supervisor, someone higher on the chain of supervision, through the use of a compliance and ethics hotline maintained by DCPD, or directly to the NRC. Employees may submit concerns into the ECP via a 24/7 hotline, drop box, email, mailbox, or by direct contact with ECP personnel.

The ECP staff is presently comprised of three qualified individuals who receive and follow through on the concerns raised by employees by conducting investigations and evaluations which make a recommendation to management as to the validity of the concern and what actions, if any, should be taken in response.

In March 2020 the ECP implemented a remote pulsing plan to seek input from employees within the Nuclear Generation organization using remote methods such as telephone calls and email in an effort to proactively understand the challenges perceived or concerns expressed by the workforce and to evaluate or investigate these as necessary. A total of 254 employees have been contacted to date via pulsing with 100% of those responding indicating their willingness to raise nuclear safety or nuclear quality issues and confirming their understanding of the alternate avenues available to them to do so. They also provided their responses to certain other inquiries including departmental specifics and the general health of the safety culture as perceived by the employees.

The NRC biennial Problem Identification and Resolution Inspection was conducted in December 2022 (Reference 6.7) wherein a team of NRC inspectors reviewed the station's programs to establish and maintain a Safety Conscious Work Environment (SCWE) and an effective ECP. The NRC conducted interviews with station personnel to evaluate the effectiveness of these programs. Based on the NRC team's observations and the results of these interviews, the NRC found a few isolated cases of employee reluctance to raise issues but no evidence of any significant challenges to the station's SCWE. The cases of employee reluctance were added to the DCPD Corrective Action Program for follow-up by management. Overall, NRC concluded the DCPD safety culture was effective.

Historically, the ECP has received the following numbers of concerns:

| <u>Category</u>                             | <u>2022</u>        | <u>2023 (thru Aug.)</u> |
|---------------------------------------------|--------------------|-------------------------|
| Concerns, formal investigation not required | 23                 | 19                      |
| Concerns, formal investigation performed    | 5                  | 2                       |
| Anonymous Notifications                     | 121 (73 thru Aug.) | 38                      |
| NRC Allegations referred to PG&E            | 3                  | 1                       |

**Conclusions:** The DCPD Employee Concerns Program appeared to function effectively in receiving and investigating employee concerns in a confidential manner. During 2022, as in past years, and to-date in 2023, there were no significant concerns regarding nuclear safety.

**Recommendations:** None.

### 3.6 Nuclear Safety Culture

The DCISC FFT met with Jeff Harker, Manager of Maintenance and Technical Training and Chair of the DCPD Nuclear Safety Culture Monitoring Panel (NSCMP), and Karen Karner, Organizational Effectiveness Principal, for an update of DCPD Safety Culture. The DCISC last reviewed DCPD's Nuclear Safety Culture in the DCISC October 2021 Public Meeting (Reference 6.8) with the following concluding statement:

*Mr. Harker, in concluding his presentation, reviewed the results of the latest NRC biennial Problem Identification and Resolution Inspection conducted in September 2020 wherein a team of NRC inspectors reviewed the station's programs to establish and maintain a SCWE and effective ECP and conducted interviews with station personnel to evaluate the effectiveness of these programs. Based on the NRC team's observations and the results of these interviews, the NRC found no evidence of challenges to the station's SCWE nor did the team identify any deficiencies in the ECP. Mr. Harker reported the NRC inspections, as well as recent NSCMP assessments and ECP self-assessments indicate that DCPD continues to exhibit the traits of a healthy Nuclear Safety Culture.*

Nuclear Safety Culture, a Safety Conscious Work Environment (SCWE), and the Employee Concerns Program use some of the same vernacular, all work in tandem, and each needs to be well

aligned with the others. Nuclear Safety Culture is defined by DCPD as being the core values and behaviors which result from a collective commitment from leaders and individuals to emphasize safety over competing goals to ensure the protection of people and the environment. Nuclear Safety Culture is a key element of successful operation at any nuclear facility and as a collective responsibility of everyone on-site and not just a subset of individuals.

SCWE is considered to be a work environment in which employees are encouraged to raise safety concerns and where those concerns are promptly reviewed, given the proper priority based on their potential safety significance, and appropriately resolved with timely feedback to the originator of the concern and to other employees as appropriate. Typically concerns raised in the SCWE come from either a nuclear radiological perspective or a quality, security or regulatory compliance perspective.

The most recent NRC PI&R inspection in December 2022 concluded the following regarding DCPD Safety Culture:

*“Based upon all these interviews, observations, and document reviews, the team found that the station has a safety conscious work environment . . .*

*Finally, the team reviewed the station’s programs to establish and maintain a safety conscious work environment and interviewed station personnel to evaluate the effectiveness of these programs. Based on the team’s observations and the results of these interviews the team found your employees appeared willing to raise nuclear safety concerns through at least one of the several means available.”*

The DCISC, in its monthly fact-finding meetings with DCPD leadership and employees, has frequently observed the traits of a good Safety Conscious Work Environment. Personnel emphasize nuclear safety first as well as “telling it like it is,” e.g., report to the DCISC the strengths and weaknesses of programs and systems.

**Conclusions: The DCPD Nuclear Safety Culture appears healthy and effective in assuring nuclear safety. Additionally, NRC inspections of DCPD’s Safety Culture conclude that DCPD has a Safety Conscious Work Environment and an effective Employee Concerns Program.**

**Recommendations: None.**

### 3.7 Meeting with DCPD Officer Maureen Zawalick

The DCISC Fact-finding Team met with Maureen Zawalick, Vice President, Business and Technical Services, for a discussion of this fact-finding agenda and other areas of mutual interest. The DCISC last met with a DCPD Officer or Director during its July 2023 Fact-Finding Meeting (Reference 6.9), when it concluded the following:

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

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

**Recommendations:** None.

### 3.8 Boric Acid Leak Root Cause Evaluation

The DCISC Fact-finding Team met with Mark Sciacca, Maintenance Support Manager and Workplace Seismic Safety Coordinator, for a review of the Root Cause Evaluation of a recent Reactor Coolant System boric acid leak. The DCISC last reviewed boric acid leaks in April 2021 (Reference 6.10), when it concluded the following:

*DCPD's Boric Acid Corrosion Control Program was being effectively implemented in accordance with the applicable industry guidelines. The number of identified leaks was at an acceptable level, and leaks were being properly monitored and tracked for repairs.*

The event, which occurred during Outage 2R23 stemmed from an inspection at the 91-foot level of Unit 2 Containment by In-service Inspection engineers for boric acid leaks which can cause corrosion. The engineers spotted a white deposit on the overhead. Scaffolding was constructed, the insulation removed, and the presence of boric acid confirmed on a 2" vacuum fill line coming off the Loop 1 Reactor Coolant System cold leg. There was no active leakage when the boric acid was discovered, but there was evidence of past leakage when the plant was operating at full pressure and temperature.

This issue was documented in the Corrective Action Program for resolution. The boric acid leak occurred from a socket weld which developed a crack. A Root Cause Evaluation was initiated, headed by Mr. Sciacca, a DCPD welding engineer. A Licensee Event Report (LER) was submitted to the NRC.

Upon observing the weld and reviewing the original weld documentation and quality control inspections, it was determined that the original weld was faulty. The combination of faulty weld and normal vibration in the system from the Reactor Coolant Pumps caused a fatigue failure – a crack – to develop. The faulty weld, exacerbated by normal piping vibration from Reactor Coolant Pumps, was the root cause of the leak. The DCISC should review the RCE when approved.

Expert examination of the weld concluded this was probably the result of an arc strike that occurred during installation of a modification during the 1990s. It was concluded under the mechanical engineering codes that a weld overlay would be appropriate, and an overlay was installed, but the entire weld will likely be replaced during the next refueling outage to assist in the root cause evaluation. The FFT concluded the event had very little safety significance and was a good catch by the in-service inspection engineers.

**Conclusions:** The Unit 2 boric acid leak in the early stages of Outage 2R23 was identified and resolved appropriately. The preliminary root cause was identified as a faulty weld exacerbated by normal vibration of the piping system. DCPD also expanded the review to include other similar welds on both units as an extent of condition review. The corrective action to cut out the weld for examination and apply a weld overlay to rejoin the joint appeared appropriate.

**Recommendations:** None

### 3.9 Comprehensive Review of Equipment Long-Range Planning and Maintenance

The DCISC FFT met with Allen Wilson, Director of Projects, and Michael Jackson, Manager of Project Services and License Renewal, for an update on equipment maintenance and long-range planning following the passage of Senate Bill 846 (SB846) mandating the consideration of extending operations of DCPD beyond 2025. DCPD's program for reviewing equipment maintenance and long-range planning in light of SB846 was referred to as the "Preventive Maintenance Optimization (PMO) ++" Program. The DCISC last reviewed this topic in July 2023 (Reference 6.11.1) when it reached conclusions similar to those described at the end of this section.

#### 3.9.1 Background

Prior to April 2022, PG&E was solely pursuing decommissioning under the Joint Proposal (agreeing to cease power operations at the expiration of the original NRC operating licenses in 2024 and 2025). In April 2022, California Governor Newsom stated support for continued operations of DCPD past 2025. In June 2022, Assembly Bill 180 (AB180) was enacted authorizing \$75,000,000 for immediate action on extending the operation of DCPD through a contract between PG&E and the California's Department of Water Resources (DWR). In September 2022, Senate Bill 846 (SB846) was enacted directing PG&E to take actions necessary to extend the operation of DCPD for another five years beyond the current license expiration dates in 2024 for Unit 1 and 2025 for Unit 2. SB846 also provided permission from the state for DCPD to continue to occupy state property, to continue to operate the plant's once through cooling, and to receive additional funding through the DWR.

Included in SB846 was the following mandate for the CPUC:

*"(B) The commission shall review the reports and recommendations of the Independent Safety Committee for Diablo Canyon described in Section 712.1. If the Independent Safety Committee for Diablo Canyon's reports or recommendations cause the commission to determine, in its discretion, that the costs of any upgrades necessary to address seismic safety or issues of deferred maintenance that may have arisen due to the expectation of the plant closing sooner are too high to justify incurring...."*

In response to this mandate, the CPUC requested that the DCISC review DCP's upgrade plans and maintenance programs to ascertain their sufficiency following the directional change from ceasing power operations in 2025 to continuing power operations through 2030. The DCISC was requested to provide reports of its reviews directly to the CPUC originally by June 30, with an extension later granted to August 31 due to delays in obtaining information from PG&E who desired to complete all internal and external reviews as well as obtaining senior management approvals before providing the information to the DCISC.

This evaluation of DCP's long-range planning for equipment and its maintenance of equipment contained in this report concludes the DCISC review mandated by California Senate Bill 846 regarding "deferred maintenance" and "upgrades to enhance nuclear safety." This review combines and summarizes a series of reviews that began in January 2023 and concluded in this August 2023 Fact-Finding Meeting. It is intended for the California Public Utilities Commission's use in reviewing the proposed extension of operations of the Diablo Canyon Power Plant.

### 3.9.2 Projects and Long-Range Planning

#### a. History and Existing Processes

On June 21, 2016, PG&E announced a Joint Proposal with several other parties which agreed to cease power operations of DCP at the expiration of the current Nuclear Regulatory Commission (NRC) operating licenses. The corresponding application to the California Public Utilities Commission (CPUC) was approved on January 11, 2018, affirming the plan that PG&E would retire Unit 1 in 2024 and Unit 2 in 2025. Following approval of the Joint Proposal by the CPUC, DCP began to reconsider capital projects (plant upgrades) in light of the plan to cease power operations in 2025. During the period from 2018 to 2022, the number of planned capital projects and plant improvements steadily declined in conjunction with the shortening of time remaining until the cessation of power operations.

During the period from 2018 to 2022, the DCISC reviewed DCP's capital project planning process and plans on three specific occasions: 1) during its Fact-Finding Meeting in January 2018 (Reference 6.11.2), 2) during its Public Meeting in June 2018 (Reference 6.11.3), and 3) during its Fact-Finding Meeting in May 2022 (Reference 6.11.4).

During its reviews in January and June of 2018, the DCISC learned that a Project Review Working Group (PRWG) was formed using experienced staff from Operations, Engineering, and Work Control. The PRWG completed a review of the entire portfolio of future capital projects, which was subject to further review by an Executive Oversight Board. The resulting project portfolio was divided into three categories: 1) required by regulatory commitments (must-do projects), 2) recommended and prioritized (should-do projects according to priority), and 3) not recommended (projects that should not be completed). Category 1 (required) included a total of 14 projects such as those related to spent fuel storage, Generic Safety Issue 191 (Containment recirculation sump debris

clogging), and the License Basis Verification Project (a project to update and verify the NRC licensing basis for DCPD). Regarding Category 2 (recommended and prioritized) projects, all projects were funded at the time and the list was envisioned to be used as a tool in decision-making should funding become limited in the future. Examples of projects in Category 2 and with lower priorities included upgrades to the Radioactive Effluent Management System, 230kV bushing replacements, and Diesel Fuel Oil Transfer Pump replacements. Category 3 (not recommended) included projects such as Containment Fan Cooling Unit coil replacements and a new road for the 500kV switchyard. The DCISC reviewed the list of approximately 45 projects cancelled in 2018 and concluded that their cancellation would not have an adverse impact on nuclear safety or plant reliability.

In May 2022, the DCISC learned that DCPD considered the work of the PRWG to be complete with the acceptance of the capital project recommendations and the associated financial impacts as a part of PG&E's 2020 General Rate Case before the CPUC. For the management of capital project approvals and implementations following 2020, DCPD was using its normal process which centered around the work of the Plant Health Prioritization Committee (PHPC). The work of the PHPC was covered by procedure AD7.ID18, "Plant Health Prioritization Committee," which was reviewed by the DCISC. A simplified overview of the capital project management process being used in 2022 was as follows:

- A requesting engineer or other "issue owner" brings a Plant Health Issue Plan to the PHPC for its review. The PHPC reviews the issue and decides upon the funding of a study to investigate details on the issue and provide options for resolution.
- A proposed project study returns to PHPC for review and approval to move forward with authorization of funds to proceed with development of a scope of work for the proposed project (referred to as "Gate 1" in the procedure).
- Proposed project detailed scope of work and cost estimate returns to PHPC for review and approval to move forward with preliminary design and cost estimate ("Gate 2").
- Proposed project preliminary design and cost estimate returns to PHPC for review and approval to move forward with detailed design and implementation ("Gate 3").
- Other PHPC reviews and gates would follow the implementation and closing of the project as needed.
- Meetings of the PHPC would be held on an as-needed basis depending on the level of project activities being considered and managed.

During its May 2022 Fact-Finding Meeting, the DCISC reviewed lists of capital projects brought to the PHPC since 2020 that were cancelled during the PHPC review process. Cancelled capital projects included, among others: 1) upgrades to both units' Main Annunciator Systems, 2) upgrade to the Unit 2 Reactor Coolant Pump Vibration Monitoring System, 3) bellows replacements for the Unit 1 Reactor Vessel Level Indication

System, 4) upgrades to plant data recorders (analog to digital), 5) relocations of chemistry sampling stations, and 6) Unit 2 spare Startup Transformer piping replacement. The DCISC also reviewed a list of projects authorized for implementation between 2018 and 2020. There were 18 Capital Projects authorized since 2020, of which seven were directly related to security. The remaining 11 non-security related Capital Projects authorized and funded for completion included items such as: 1) Containment Polar Crane modifications, 2) emergent Nuclear Instrument replacements, 3) water treatment facility upgrades, 4) condenser expansion joint replacement, 5) Main Generator stator closed cooling water manifold replacements, and 6) Main Turbine high pressure governor valve replacement. The DCISC concluded in 2022 that DCP's process for authorizing or cancelling proposed capital projects was effective. Selections made to delete projects using this process did not appear to compromise plant operational safety.

**The DCISC concluded at that time in 2022 that DCP followed an effective, formal process for prioritizing, completing, and cancelling capital (plant upgrade) projects since the approval of the Joint Proposal in 2018. Records for these formal processes were retained in DCP's data management system and were available for subsequent reviews and additional consideration following the passage of SB846 with its mandate to consider the extension of power operations for DCP beyond 2025.**

b. Initiatives to Support Extended Operations

Following the passage of SB846, DCP initiated its current effort to review the long-range maintenance and project plans for station equipment. The new effort was named the PMO++ Program, and it began in December 2022 with initial reviews completed by the end of March 2023. A cross-functional team reviewed a comprehensive list of programs and documents including the following:

- Previously Proposed Modifications and Design Changes (including all capital projects and plant upgrades previously proposed but not approved under the process discussed in Section 3.9.2.a above)
- License Renewal/Aging Management Programs
- Stakeholder Interviews (primarily Engineering, Operations and Maintenance)
- Inventories of Critical Spares and Repair Parts Equivalency Evaluations
- Equipment Performance Trending via SAPNs (Corrective Action Notifications)
- Corrective Maintenance status
- Preventive Maintenance status
- Surveillance Tests results

Regarding plant upgrade projects and other equipment issues that were not covered by Preventive Maintenance (PM) and Corrective Maintenance (CM) plans, the PMO++ Program in early 2023 identified approximately 560 potential projects (upgrades) and plant concerns possibly needing action to support an extension of power operations. The effort to identify potential projects went as far as to review Plant Health Improvement Plans dating back to 1990. During February and March 2023, reviews were performed to prioritize the list of potential projects as a first step to determine which activities should

actually be initiated. DCPD noted that all projects necessary for NRC license renewal were considered 'must-do' and were being initiated outside of the PMO++ Program.

The project ranking process focused upon using risk insights based on evaluations of a potential project's contributions to safety, reliability/efficiency, regulatory compliance, and environmental compliance. The perspective that the reviewers maintained throughout the ranking process was to maintain the current status of DCPD as a safe, efficient, and reliable plant throughout the period of extended operations. One question that was asked throughout the process of ranking the projects was, "What is the risk if that particular project is not completed?" Risk insights were weighted (50% for safety risk, 25% for reliability/efficiency risk, 15% for compliance risk, and 10% for environmental risk) and then combined into a single risk score that was used to inform project prioritization. Risk model inputs also included the likelihood and consequences of a serious injury or fatality, compliance violations, generation losses, and repair costs.

Additionally, the reviewers considered the complexity of project implementation particularly with regards to the time required for project planning and execution along with the possibility of unintended consequences for major changes. Project complexity was factored into the priority rankings using a scale of one to five, with one being the most complex. Factors considered in ranking complexity included amount of effort required, diversity of engineering or maintenance disciplines required, need for a formal engineering design change, number of outside resources required, and whether the project would need to be completed during an outage.

**The DCISC found that DCPD developed an extensive, logical, and formal process for capturing and prioritizing possible plant upgrade projects following the passage of SB846 and considering the possibility of extending power operations through 2030. The process effectively captured and reviewed equipment performance histories, provided strong assurance that nuclear safety would not be compromised by equipment degradation, and effectively considered all applicable risk factors in considering which upgrades were prudent and necessary to support extended operations.**

c. Results

Approximately 250 projects were identified in the PMO++ Program team for consideration of prioritization for implementation during the extension of operations. The 250 projects were ranked with reviews and refinement of the rankings planned to continue through implementation. The project list was envisioned to be a "living document" that would be used in the future to inform outage planning, maintenance planning, and engineering decisions made during the routine project planning meetings such as the PHPC discussed in 3.9.2.a above. The preliminary results called for about 50 projects to be completed within the next three years with about 12 of those 50 to be performed during the upcoming Refueling Outage 1R24 in the fall of 2023.

A copy of the new project list was provided to and reviewed by the DCISC. The new project list included the following possible future activities (excluding security-related activities):

License Renewal Projects:

- Auxiliary Saltwater Discharge Piping Cathodic Protection
- Concrete Inspections/Repairs
- Reactor Vessel Inspections \*
- Firewater and Sprinkler System Inspections
- Piping and Cable Inspections \*
- Internal Coatings and Linings Inspections
- Tank Internal Inspections

Refueling Outage 1R24 Projects (Fall 2023)

- High Voltage Transformer Improvements \*
- Intake Traveling Screen Frame Replacements
- Reactor Vessel Level Indication System Repairs \*
- Main Condenser Waterbox and Tubesheet Coatings \*
- Rod Control Power Supply Upgrade
- Main Condenser to Turbine Expansion Joint Replacement

Refueling Outage 2R24 Projects (Spring 2024)

- High Voltage Transformer Improvements \*
- Spare High Voltage Transformer Relocation
- Intake Traveling Screen Frame Replacements
- Reactor Vessel Level Indication System Repairs \*
- Main Condenser Waterbox and Tubesheet Coatings \*
- Rod Control Power Supply Upgrade
- 230kV/500kV Relay Replacements \*
- Steam Generator Blowdown Tank Replacement
- Radiation Monitor Sampling Enhancements \*
- Paper Chart Recorder Upgrades \*
- Main Condenser to Saltwater Expansion Joint Replacement

Refueling Outage 1R25 Projects (Spring 2025)

- High Voltage Transformer Improvements \*
- Spare High Voltage Transformer Relocation
- Intake Traveling Screen Frame Replacements
- Main Condenser Waterbox and Tubesheet Coatings \*
- Refueling Equipment Upgrades \*
- Cold Reheat Piping Replacements
- 230kV/500kV Relay Replacements
- Radiation Monitor Sampling Enhancements \*
- Auxiliary Building HVAC Controls Upgrade \*

- Main Turbine and Feedwater Controls Upgrades \*
- Various Equipment Controls and Indication Upgrades
- Paper Chart Recorder Upgrades \*
- Main Condenser to Saltwater Expansion Joint Replacement

Refueling Outage 2R25 Projects (Fall 2025)

- Strategic Feedwater Heater Replacements \*
- High Pressure Turbine Replacement \*
- Intake Traveling Screen Frame Replacements
- Main Condenser Waterbox and Tubesheet Coatings \*
- Refueling Equipment Upgrades \*
- Cold Reheat Piping Replacements
- 230kV/500kV Relay Replacements \*
- Auxiliary Building HVAC Controls Upgrade \*
- Main Turbine and Feedwater Controls Upgrades \*
- Various Equipment Controls and Indication Upgrades
- Main Condenser to Saltwater Expansion Joint Replacement

Other Future Outage Projects:

- Unit 1 Strategic Feedwater Heater Replacements \*
- Unit 1 High Pressure Turbine Replacement \*
- Main Annunciator System Replacements \*
- Main Generator Voltage Regulator Replacements \*
- Additional Radiation Monitor Sampling Enhancements \*

Non-outage Projects

- Intake Cove Dredging
- Emergency Diesel Generator Governor Replacements \*
- Diesel Fuel Oil Storage Tank Upgrades
- Spare High Voltage Transformer Reliability Improvements \*
- Replacement of Systems Containing Refrigerant R-22 \*
- Plant Protection System (Eagle 21) Service Contract \*
- Radiation Monitor Lifecycle Management Improvements \*

\* Items of past interest to DCISC

To independently validate the sufficiency of the above results, the DCISC reviewed its past reports (approximately 50 Fact-Finding Meeting reports) since 2016 looking for items where the DCISC observed that upgrades had been suspended due to the decision to cease operations in 2025. The DCISC verified that items important to safety it observed as suspended in the past were appropriately reinstated. [Items of past interest to the DCISC are designated with an asterisk (\*) above.] Also, the DCISC reviewed all items on the review list related to the top ten most risk-significant systems at DCPD as delineated by the plant's most recent Probabilistic Risk Assessment. The selected reviews confirmed that

items which the DCISC considered important to safety were included in the new project list.

During this Fact-Finding Meeting, the DCISC followed up on questions related to other potential projects identified by the DCISC in previous Fact-Finding Meeting reports and by its ongoing reviews of the health of systems important to nuclear safety. Examples of follow-up inquiries about potential projects and their disposition included:

- Containment Cooler Fan Unit Replacements
- Diesel Fuel Oil Transfer Pump Replacements
- 12kV Electrical Relay Replacements
- Pressurizer Heater Replacements
- Walls Around Large Transformers
- Control Rod Guide Tube Thermal Sleeves
- Incore Instrument Sleeves
- Reactor Coolant Pump Turning Vane Bolt Inspections
- Meteorological Tower Upgrades
- Analyses to Support Ultimate Heat Sink Temperature Limits

DCPP reviewed the status of the above items with the FFT. Several of them were covered elsewhere under PM Program activities, several were found elsewhere on the project list with lower priorities, some were already completed, and a small number had been cancelled for what the DCISC confirmed were valid reasons. In the end, the DCISC found that all of its follow-up questions were satisfactorily addressed by the PMO++ Program reviews.

A follow-up item of particular interest to the DCISC was future analyses to support increasing allowable temperature limits for the Ultimate Heat Sink, which was a topic frequently reviewed by the DCISC in the past (most recently in January 2023, Reference 6.11.5). The Ultimate Heat Sink for DCPP is the Pacific Ocean, and the DCISC considered this item important given the possibility of increasingly higher seawater temperatures in the near future. DCPP reported that it had recently obtained the services of an engineering contractor who was performing a feasibility study. Once that study was complete, DCPP planned to move forward with performing the detailed calculation as well as preparing the required regulatory and procedural updates.

**The DCISC found that DCPP's plans for future plant upgrades to support extended operations were appropriate to ensure nuclear safety and a high standard of equipment reliability.**

d. Independent Reviews

DCPP also initiated two external, independent reviews of its PMO++ Program by industry peer groups. The first was conducted by the STARS Alliance, a group of four nuclear plants of which DCPP is a member. The STARS Alliance review was performed by a six-member team from three other nuclear plants who reviewed the future project list along with other aspects of the PMO++ Program. The second external review was conducted by

the Institute of Nuclear Power Operations (INPO). The INPO review consisted of an INPO representative plus representatives from two nuclear power plants with similar situations to DCPD in that the plants were scheduled for shutdown and then decisions were made to continue operations. DCPD reported that both reviews had similar results in concluding that the overall process was sound with no gaps or deficiencies identified. There were no negative comments made by the reviewers regarding the project review process used by the PMO++ Program. Several minor recommendations were received, including several related to management of the project review and authorization process going forward and on considering the resource constraints in the scheduling of the projects. The external reviews also provided positive comments regarding the amount of effort that DCPD expended to ensure that the PMO++ Program reviews were thorough and complete.

### 3.9.3 Preventive Maintenance

#### a. History and Existing Process

DCPD's Preventive Maintenance (PM) Program has historically been governed by procedure MA 1.ID27, "Preventive Maintenance Program," and the procedure and program have been regularly reviewed by the DCISC. The PM Program's objectives were the following:

- To ensure that safety and non-safety related systems, structures, and components are maintained in a condition such that they will perform their intended functions.
- To optimize the relationship between operating costs and the equipment's contribution to nuclear safety and production.
- To balance system, structure, and component reliability with unavailability by adjusting the PM Program as necessary when Maintenance Rule (MR) performance criteria are exceeded.

PM Program strategies and tasks are based on two categories of equipment components:

- Critical Components – Due to the immediate and severe impact to nuclear safety or generation, all failures that can be reasonably and cost effectively prevented, are prevented. Incipient failures are detected. Strategies are designed to achieve performance at the point of maximum reliability.
- Non-critical Components – Occasional failure may be acceptable. Required levels of performance are determined at the component level based on the function(s) supported. Strategies are designed to achieve required levels of performance for least lifecycle cost. This may be below the point of maximum reliability and may allow for occasional failure. The impact and acceptability of any expected failures is understood and documented in the PM basis.

For many Critical Components, there are additional regulatory requirements for PMs that are used in defining the PM tasks that are necessary to ensure that proper preventive maintenance is performed. These additional regulatory requirements include the plant Technical Specifications, various industry codes and standards (often incorporated into the plant's licensing bases), engineering calculations, environmental requirements, insurance requirements, etc.

Following California Public Utilities Commission approval of the Joint Proposal in 2018 and in conjunction with industry initiatives to improve efficiency, DCPD performed a review of all Preventive Maintenance at the station. This review was labeled as Preventive Maintenance Optimization (PMO) and focused on optimizing PM practices in order to perform the right maintenance at the right time and prevent failures. The 2018 PMO review primarily affected Non-critical Components and only a few changes were made to Critical Components due in part to the large number of regulatory requirements for Critical Components.

During the 2018 PMO review, PM Program changes were processed in accordance with the procedural requirements of MA1.ID27, which included detailed guidance for the process required to make any changes to the PM Program. The procedure required that changes be processed using Preventive Maintenance Change Requests (PMCRs), and PMCRs were completed for all PM Program changes that were made during the 2018 PMO review. Thus, any changes made to the PM Program in the past were performed under the PMCR process and were recorded for any future review as needed.

The DCISC reviewed the 2018 PMO Program during its July and November 2018 Fact-Finding Meetings (References 6.11.6 and 6.11.7). In November 2018, the DCISC concluded, "The DCPD Preventive Maintenance Optimization Project was being performed in accordance with appropriate administrative procedures that controlled changes to Preventive Maintenance Activities. Preventive Maintenance changes affecting Critical Components were being properly evaluated to ensure that the risk of failure of those components was not being adversely affected."

One of the most significant regulations impacting the PM Program is the NRC's Maintenance Rule (10 CFR 50.65). The chief elements of the MR are as follows:

1. Systems, Structures and Components (SSCs) are evaluated according to risk significance determination for incorporation into the program using the guidance of industry document NUMARC 93-01, "Industry Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants."
2. Risk-informed performance criteria are established to discern whether or not preventive maintenance activities are being effectively implemented for the SSC. Performance criteria typically consider both SSC reliability and availability. There are additional performance criteria that are also established at the plant level.

3. SSCs are routinely monitored against the established performance criteria, primarily by System/Strategic Engineers working within the Corrective Action Program (CAP). If the SSC meets all performance criteria, it maintains a normal or “(a)(2) status” under the rule/program. If a problem occurs that results in the performance criteria for an SSC not being met, the problem is reviewed to determine if a Maintenance Preventable Functional Failure (MPFF) has occurred. An MPFF is defined as, “a failure that could have been prevented by the performance of appropriate maintenance.”
4. If an SSC exceeds its performance criteria for unavailability, for the numbers or types of MPFFs, or for a repeat MPFF, then the system is elevated for additional action under section (a)(1) of the rule/program, also referred to as being in “(a)(1) status.”
5. SSCs placed in (a)(1) status are further reviewed for additional corrective actions to improve maintenance, and goals are established to monitor the effectiveness of the additional maintenance actions. Once the additional actions are complete and monitoring goals are met, the system may be returned to (a)(2) status.

The importance of the MR Program to the PM Program is that the MR Program provides an ongoing assessment and validation of the effectiveness of the PM Program. If the PM Program were not effective, MR criteria would be exceeded and corrective actions would be required to improve PM practices. A quick and accurate assessment of effectiveness of the PM Program can be accomplished by reviewing the list of equipment that is in MR category (a)(1) which indicates situations where equipment performance has fallen short of expectations and corrective actions are in progress.

The DCISC has regularly reviewed the status of the MR Program at DCP. During its last review in April of 2022 (prior to SB846), the DCISC concluded, “DCP appeared to have implemented its Maintenance Rule Program effectively. Twelve of thirteen systems in (a)(1) status have completed maintenance corrective actions and were in the monitoring phase with an estimated return to (a)(2) (effective preventive maintenance) status in 2022. One system was undergoing maintenance corrective actions” (Reference 6.11.8).

**The DCISC concluded that DCP’s PM Program has been effective in the past in preventing failures of components important to safety based both on recent programmatic reviews as well as numerous other past reviews on the health of individual systems. Any changes made to the PM Program since 2018 were appropriately recorded and available for later reviews.**

b. Initiatives to Support Extended Operations

Following the passage of SB846 in late 2022, DCP initiated its current effort to review the long-range maintenance and project plans for station equipment. The new effort was named “PMO++.” It is similar to the 2018 PMO Program in reviewing the PM Program

but added the Corrective Maintenance Program and projects (upgrades) (Section 3.9.2.b above) for review as well. The PMO++ Program's objective is the following:

*"In preparation for License Renewal and Extended Operations, we are taking a holistic look at equipment/system's overall health to determine and prioritize outstanding work scope based on Maintenance Plans in grace or Preventive Maintenance Change Requests that were approved with rationale stating end of license is 2024/2025, Corrective Maintenance Orders that have been pushed to beyond 2025, Open SAPNs / cognitive trending done by plant personnel, License Renewal activities, and any other inputs such as Life Cycle Maintenance studies, industry peers, Operating Experience."*

The PMO++ Program began in December 2022 with initial reviews completed by the end of February 2023. Large, cross-functional teams spent a week each on various plant systems reviewing all aspects of health and maintenance practices for those systems. Approximately 22,000 staff hours have been expended in performing the PMO++ reviews (including the two external reviews).

The PMO++ Program team reviewed a comprehensive list of programs and documents (listed in Section 3.9.2.b above) including all PMCRs processed since 2018. There were 526 PMCRs processed during this time frame although the vast majority involved changes to improve the detailed methods and procedures for performing PMs and not broader changes to reduce the scope or periodicity of PM activities. For perspective, DCP's PM Program contains about 12,000 total PM activities (maintenance plans). The PMO++ team specifically focused on finding and evaluating any PMCRs that initiated changes to PM activities based primarily upon the planned cessation of operations.

**The DCISC found that DCP developed an extensive, logical, and formal process for identifying and evaluating PM activities that may have changed since 2018 due to the planned cessation of operations. The process effectively captured and reviewed all PM Program changes since 2018.**

c. Results

The PMO++ team identified 526 PMCRs that could have been previously processed for the purpose of making PM changes based upon the planned cessation of operations. The selection was made easier by the fact that many of the PMCR records of interest to the team were found to contain detailed comments specifically indicating that the PMCR had been processed "for EOL" (End of Life).

The 526 selected PMCRs were further reviewed by the PMO++ team which then generated 88 new PMCRs in accordance with MA1.ID27 as needed. Many of the new PMCRs generated by the team reinstated the original PM activity to its original periodicity. Other new PMCRs generated by the team made new revisions to the previously modified PM activities and, in some cases, the team found that no revisions were needed for the

previously modified PM activities. In the end, approximately 200 maintenance plans were reinstated by the 88 PMCRs generated from the team's review. The majority of these reinstatements were for Non-critical Components. A small number of new PM activities were also added to the PM Program. The DCISC inquired about the timeframe for future operations that was used by the team to evaluate future PM activities, and DCPD reported that the team focused on the goal of achieving reliable operations for an indefinite future period.

In response to related questions from the NRC, the team also performed a high-level effectiveness review of the 2018 PMO Program and found that while the number of PM activities had been reduced, maintenance continued to be effective as demonstrated by high Equipment Reliability metrics and by MR Program data. The DCISC's independent reviews of Equipment Reliability and the MR Program since 2018 also support the conclusion that maintenance has continued to be effective in recent years.

To further independently verify the above results, the DCISC also requested and were provided with the full list of 526 PMCRs identified by the PMO++ Team as possibly having made changes to the PM Program based upon the planned cessation of operations. During this Fact-Finding Meeting, the DCISC reviewed the PMCR list and discussed selected items on the list in detail with DCPD. The DCISC concluded that the PMO++ Team's review of PMCRs processed since 2018 was comprehensive.

DCPD also provided the DCISC with a copy of the list of all 200 maintenance plans reinstated as a result of the PMO++ Team's review. The DCISC reviewed the list and verified that most of the PMCR's reinstatements involved systems and components that were not important to nuclear safety or reliability. Additionally, the PM activity descriptions indicated activities that were not of direct importance to maintaining system reliability (calibrations, cleanings, inspections, relief valve replacements, etc.).

**The DCISC found that DCPD properly reviewed all PM Program changes made since 2018 and appropriately reinstated or otherwise modified the previous changes in order to support extended operations. The DCISC found that the majority of previous changes to the PM Program were made for equipment that was not important to safety or reliability. The results of DCPD's PM Program review were prudent and would ensure that nuclear safety and equipment reliability were appropriately maintained during a period of extended operations.**

d. Independent Reviews

DCPD's two external, independent reviews of its PMO++ Process by STARS and INPO (discussed in 3.9.2.d above) also included reviews of the PM Program and changes made since 2018. DCPD reported that both reviews had similar results in concluding that the overall process was sound with no gaps or deficiencies identified. Also, there were no negative comments made by the reviewers regarding the PM Program review process used by the PMO++ Program.

### 3.9.4 Corrective Maintenance

#### a. History and Existing Process

Emergent equipment deficiencies at DCPD have for many years been reported using a Notification (SAPN) as a part of the Corrective Action Program. Notifications are promptly reviewed by Operations personnel to ascertain if there is any immediate impact to safety at the station. Following the Operations review, Notifications are reviewed and categorized daily by the Notification Review Team and further reviewed by other groups and managers at DCPD. This process has been regularly reviewed and found acceptable by the DCISC during multiple past Fact-Finding Meetings, most recently in April 2023 (Reference 6.11.9).

DCPD's Corrective Maintenance (CM) Program has historically been governed in part by procedure AD7.ID2, "Daily Notification Review Team and Standard Plant Priority Assignment Scheme." If a Notification describes an equipment deficiency, then that deficiency is further reviewed, tracked and scheduled for repair/resolution by the work management group. Procedure AD7.ID2 provides guidance for the work management group to review and assign priorities for repair/resolution of equipment deficiencies at DCPD. This work management review is primarily performed by a multi-discipline group called the Daily Review Team (DRT). The DRT is responsible for meeting daily to review equipment-related Notifications and create a work order with appropriate prioritization and time frame for resolution. The procedure requires that the DRT meeting include an Operations staff member holding a Senior Reactor Operator license. Standard prioritizations and time frames for resolution are used based on industry guidelines published by INPO and are generally as follows:

- Priority 1 – Critical work that requires scheduling or plant coordination. Repair work is to be started immediately and will be worked 24 hours/day until completed.
- Priority 2 – High priority work that requires scheduling or plant coordination. Repairs work is to be started based on the understanding of the condition and the ability to complete the work within seven days.
- Priority 3 – Emergent work that warrants scheduling outside of the normal work-week scheduling process based on the understanding of the condition and the ability to complete the work within 45 days.
- Priority 4 – Routine work that requires scheduling or coordination. Repair work will be entered into the normal 12-week rolling work schedule and/or into the next available maintenance outage window.
- Priority 5 – Routine work that is scheduled or worked as time permits in deference to other higher priority items.

Procedure AD7.ID2 provides detailed guidance for establishing the above priorities based on the importance of the equipment to safety and reliability at the plant. For example, any significant nuclear, radiological, or industrial safety equipment deficiencies that involve non-functional/inoperable equipment would be classified as Priority 1 work orders. Work orders for equipment deficiencies on risk-significant equipment would typically be classified as Priority 2 work orders. Equipment deficiencies involving regulatory requirements would be classified as Priority 3 work orders. All other deficiencies involving equipment that is quality related (covered by the station Quality Assurance program) would be classified as Priority 4 work orders and scheduled for repair. Deficiencies regarding equipment that was not quality related and for which the DRT selected to schedule for repair would also be classified as Priority 4 work orders.

Only equipment deficiencies that were not safety or quality related and not desired to be scheduled for near-term repair would be classified as Priority 5 work orders. Typically, the non-quality related Priority 4 and Priority 5 work orders would be further classified as "Deferred Maintenance with Monitoring" or "Unscheduled." For work orders classified as under monitoring, DCPD would flag the work order as such and take additional action to schedule the work only if further degradation was reported. An example of a monitored work order would be corrosion on an outside structure. For work orders classified as unscheduled, maintenance shops would check the list periodically and perform the work when additional resources were available outside of the normal work scheduling process. Also, all unscheduled work orders were reviewed annually to ensure that the classification remained appropriate. An example of an unscheduled work order would be a broken water fountain in a remote area of the plant.

DCPD reported that during the period from 2018 until 2022, it regularly worked to resolve all equipment deficiencies classified as Priority 1, 2 and 3 items. No Priority 1, 2 or 3 items were deferred or cancelled due to the plan to cease power operations in 2025. The DCISC believed that this history was accurate based upon its regular reviews of system health, the Corrective Action Program, and the Maintenance Rule Program over the same period of time.

Regarding Priority 4 and 5 work orders, DCPD reported that it continued to regularly schedule repair work for all Priority 4 work orders involving equipment that was quality related and some Priority 5 work orders. For Priority 4 and Priority 5 work orders on non-quality related equipment which were not scheduled for repair, the categories of monitored and unscheduled work orders had naturally tended to grow in number over the last two years given the planned cessation of operations.

It was noteworthy that DCPD reported that it has always maintained a position of never cancelling a work order. Instead, work orders would remain in a monitoring or unscheduled status indefinitely. As a result, there were approximately 2200 unscheduled or monitored work orders in the system in late 2022. The DCISC considers this approach to be more conservative than typical of other nuclear power plants. It was also fortunate in that it allowed confidence that all equipment deficiencies reviewed since 2018 were still

available in the plant work management system for additional review with regards to a future extension of power operations.

**The DCISC concluded that DCP's Corrective Maintenance Program has been effective in the past in the reporting, scheduling, and repairing of equipment deficiencies. Since 2018, DCP has not deferred any corrective maintenance of components important to safety or reliability. Records of all corrective maintenance activities not performed on systems other than those important to safety or reliability were retained in DCP's work management system and available for later review and reconsideration.**

b. Initiatives to Support Extended Operations

The PMO++ Program Team (discussed in Sections 3.9.2.b and 3.9.3.b above) reviewed the entire list of Priority 4 and Priority 5 work orders on non-quality related equipment which were not scheduled for repair or in a monitoring status (approximately 2200 work orders). The team captured a number of work orders that the team believed warranted reconsideration. The team's list was then referred through the existing DRT review process for reconsideration and initiating additional repair actions as appropriate.

**The DCISC found that DCP developed an extensive, logical, and formal process for identifying and evaluating all Corrective Maintenance activities on non-quality related equipment that DCP chose not to perform over the last few years given the planned cessation of power operations.**

c. Results

The DRT's review of the PMO++ Program Team's list of CMs that should be considered resulted in approximately 160 Priority 4 and Priority 5 work orders that were reinstated. For perspective, DCP's typical backlog of open Priority 4 and Priority 5 work orders is about 3,000 items with an average of about 55 work orders being worked per day. Additionally, DCP reported that as a large number of other unscheduled Priority 5 work orders involved corrosion and painting, a special work group had been assembled to work on reducing the number of open corrosion and painting work orders at DCP in light of extended operations. The numerous corrosion and painting work orders that were currently being worked in light of extended operations were in addition to the 160 reinstated work orders discussed above.

At the DCISC's request, DCP provided a copy of the list of about 160 Priority 4 and 5 work orders that were reinstated as a result of the PMO++ team and DRT reviews. The DCISC reviewed the list and verified that most of the work order reinstatements involved systems and components that were not important to nuclear safety.

**The DCISC found that DCP properly reviewed all open CM work orders and appropriately reinstated any unscheduled work orders that were not previously planned to be worked in light of the cessation of power operations but were now**

**appropriate to be worked in order to support extended operations. The DCISC found that the majority of previously unscheduled work orders in the CM Program were for equipment that was not important to safety or reliability. The results of DCP's CM Program reviews were prudent and would ensure nuclear safety and equipment reliability were appropriately maintained during a period of extended operations.**

**d. Independent Reviews**

DCP's two external, independent reviews of its PMO++ Process by STARS and INPO (discussed in 3.9.2.d and 3.9.3.d above) also included reviews of the CM Program and the backlog of unscheduled work orders. DCP reported that both reviews had similar results in concluding that the overall process was sound with no gaps or deficiencies identified. Also, there were no negative comments made by the reviewers regarding the CM Program review process used by the PMO++ Program.

**3.9.5 Future Independent Review**

Included in SB846 was the following mandate for PG&E:

*"(14) A covenant that the operator [PG&E] shall commission a study by independent consultants to catalog and evaluate any deferred maintenance at the Diablo Canyon powerplant and to provide recommendations as to any risk posed by the deferred maintenance, potential remedies, and cost estimates of those remedies, and a timeline for undertaking those remedies."*

Regarding the independent review of maintenance required by SB846, DCP reported that consultants had been selected to perform the work and they began their review in June 2023. DCP expected that the SB846 independent review would be completed by October 2023. The DCISC should review the results of the SB846 independent review of maintenance following its completion.

**Conclusions:**

**DCP developed an extensive, logical, and formal process for effectively and positively capturing and prioritizing possible plant upgrade projects following the passage of SB846 and considering the possibility of extending power operations through 2030. The DCISC found that DCP's resulting plans for future plant upgrades to support extended operations were appropriate to ensure nuclear safety and a high standard of equipment reliability. The DCISC recommends that California state authorities support the funding of the plant upgrade projects recommended by DCP. The DCISC did not find any upgrades necessary to ensure nuclear safety that were not already being planned by DCP.**

**DCP's Preventive Maintenance Program has been effective in the past in preventing failures of components important to safety based both on recent programmatic reviews as well as many other past reviews on the health of individual systems. All changes made to the**

Preventive Maintenance Program since 2018 were appropriately recorded and available for later reviews. The DCISC found that the majority of previous changes to the PM Program were made for equipment that was not important to safety or reliability. DCPD properly reviewed all Preventive Maintenance Program changes made since 2018 and appropriately reinstated or otherwise modified the previous changes in order to support extended operations. The results of DCPD's Preventive Maintenance Program review were prudent and would ensure that nuclear safety and equipment reliability were appropriately maintained during a period of extended operations.

The DCISC concluded that DCPD's Corrective Maintenance Program has been effective in the past in the reporting, scheduling, and repairing of equipment deficiencies. Since 2018, DCPD has not deferred any corrective maintenance of components important to safety or reliability due to the previous plan to cease power operations in 2025. The DCISC found that DCPD developed an extensive, logical, and formal process for identifying and evaluating all Corrective Maintenance activities on non-quality related equipment that DCPD chose not to perform over the last few years given the planned cessation of power operations. DCPD properly reviewed all open Corrective Maintenance work orders and appropriately reinstated any unscheduled work orders that were not previously planned to be worked in light of the cessation of power operations but were now appropriate to be worked in order to support extended operations. The results of DCPD's Corrective Maintenance Program reviews were prudent and would ensure nuclear safety and equipment reliability were appropriately maintained during a period of extended operations.

The independent review of maintenance required by SB846 is in progress and planned to be completed by October 2023. The DCISC should review the results of the independent review of maintenance following its completion.

This concludes the DCISC Comprehensive Review of Upgrades Necessary to Address Issues of "Deferred Maintenance" That May Have Arisen Due to the Expectation of the Plant Closing Sooner.

**Recommendations:** None.

### 3.10 Annual Radioactive Effluent Release and Radiological Environmental Monitoring Reports

The DCISC FFT met in-person with Dave Valentine, Chemistry Engineering Supervisor, and Lance Million, Radiation Protection Engineering and Technical Staff Supervisor, to review the 2022 Annual Radioactive Effluent Release Report (ARERR) and the 2022 Annual Radiological Environmental Monitoring Report (REMP). The DCISC reviews these two reports each year and last reviewed this topic during its July 2022 Fact-Finding Meeting (Reference 6.12), when it concluded the following:

*The DCPD Radioactive Effluent Release Program and the Radiological Environmental Monitoring Program appeared satisfactory in calculating, monitoring and measuring radioactivity in the environment surrounding DCPD.*

*During 2020, there were no abnormal releases of radioactivity or abnormal levels of radioactivity detected. DCPD site operations had no significant radiological impact on the health and safety of the public or the environment, and radioactive releases were far below regulatory limits.*

### 2022 Annual Radioactive Effluent Release Report

DCPD submitted its 2022 ARERR to NRC on May 1, 2023. This report described the measured/calculated quantities of radioactive gaseous effluents, liquid effluents, and direct radiation released from the plant in 2022. The descriptions below represent selected, representative excerpts from the report.

The 2022 ARERR summarized gaseous and liquid radiological effluent releases from DCPD Units 1 and 2. The report included the dose to hypothetical representative offsite receptors due to the release of radioactive liquid and gaseous effluents and summarized solid radwaste shipments. The report contained information required by Units 1 and 2 Technical Specification 5.6.3 and was presented in the general format of Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water Nuclear Power Plants," Revision 1, 1974, Appendix B, "Effluent and Waste Disposal Report." In all cases, the doses associated with plant effluent releases during the report period were much less than the respective Technical Specification, Offsite Dose Calculation Manual (ODCM), and NRC limits. Results of the monitoring program reflected continued effort to maintain the release of radioactive effluents to the environment as low as reasonably achievable. The results were calculated (based on measured data) in accordance with the ODCM.

Overall, the liquid and gaseous radioactivity releases from DCPD were well-controlled and maintained as low as reasonably achievable. The 2022 results from DCPD were well below all applicable limits for liquid and gaseous releases, and there were no abnormal or uncontrolled releases during 2022. Due to the terrain surrounding the plant, DCPD has no offsite direct radiation receptors with significant occupancy. Therefore, a bounding value for dose from direct radiation has been calculated for a receptor location that is onsite and close to both the sources and the nearest site boundary. Calculated doses from direct radiation have all been well below the 40 CFR 190 limit of 25 mrem/year.

Based on records of 2022 radioactive liquid and gaseous releases, the following off-site radiation doses to the total body of a hypothetical individual at the closest point on the northwest site boundary full-time and the corresponding percent of ODCM limits for the year 2022 were reported in the ARERR as:

| <u>Effluent Type</u> | <u>Calculated Radiation Dose</u> | <u>Percent of ODCM Limit</u> |
|----------------------|----------------------------------|------------------------------|
| Liquid               | 0.000275 millirem                | 0.092%                       |
| Gaseous              | 0.00220 millirem                 | 0.022%                       |

The results of the 2022 ARERR showed that the doses associated with plant effluent releases were much less than the respective DCPD Technical Specification and NRC limits. Overall, the liquid

and gaseous radioactivity releases from DCPD were well-controlled and maintained as low as reasonably achievable.

#### 2022 Annual Radiological Environmental Monitoring Program Report

This report (submitted to NRC on May 1, 2023) described the results of the Radiological Environmental Monitoring Program (REMP), which measures and assesses the levels of radiation or radioactivity in the environment related to operation of DCPD and verifies that DCPD operated within its design parameters. The descriptions below represent selected, representative excerpts from the report.

Approximately 275 solid and liquid environmental samples, 884 air samples, and 1440 Thermo-Luminescent Dosimeter (TLD) radiation detectors were collected over the course of the 2022 REMP monitoring period. Approximately 1800 radionuclide analyses were performed on environmental samples. The types of environmental samples collected for this monitoring period included:

- Air, Particulate
- Air, Iodine-131
- Air, Carbon-14
- Direct Radiation
- Milk
- Meat
- Vegetation
- Drinking Water
- Groundwater
- Monitor Well
- Surface Water
- Aquatic Vegetation
- Fish
- Mussels
- Ocean Sediment

The ambient direct radiation levels in the DCPD offsite environs did not change and were within the pre-operational background range. An evaluation of direct radiation measurements indicated that all U.S. Environmental Protection Agency criteria were met by a large margin. The ambient onsite direct radiation levels within the DCPD plant site boundary near the Independent Spent Fuel Storage Installation (ISFSI) were slightly elevated due to dry cask spent fuel storage. The measurements at the remaining onsite REMP environmental TLD locations were not affected by the ISFSI due to ISFSI topographical elevation and placement within an onsite hillside which provided shielding to the rest of the site. An evaluation of direct radiation measurements and member-of-public occupancy times within the site boundary indicated that all Federal criteria for member-of-public dose limits were met by a large margin.

Groundwater isotopic monitoring was conducted in accordance with the Nuclear Energy Institute guidance document NEI 07-07, Revision 1, "Groundwater Protection Initiative." Concentrations

of tritium were detected in two shallow monitoring wells (stations DY1 and OW1) near the power block. The levels of tritium detected in groundwater were approximately 4% of federal standards for the allowable maximum concentrations of tritium in drinking water. This tritium was evaluated and attributed to rain-washout of gaseous tritium exiting the plant vent system via an approved and monitored isotopic-effluents discharge path. No groundwater tritium was attributed to DCPD system leaks or spills. It was also noted that studies of the DCPD site groundwater gradient indicated that any subsurface groundwater flow beneath the DCPD power block was not used as a source of drinking water. Due to topography and site characteristics, this groundwater gradient flows naturally into the Pacific Ocean which is approximately 100 yards from the power block.

An Old Steam Generator Storage Facility (OSGSF) long term storage vault was constructed within the DCPD site boundary in 2007 for storage of eight retired DCPD steam generators and two retired DCPD reactor heads. This OSGSF did not cause any changes to the ambient direct radiation levels within the DCPD environs during 2022. The OSGSF in-building sumps were inspected quarterly by REMP personnel and only small amounts of water were found and collected for processing via the site's liquid radwaste system.

The results of the 2022 REMP showed no unusual environmental isotopic findings from DCPD site operations. These results were compared to DCPD preoperational isotopic data and showed no unusual trends. The REMP reported that operation of DCPD continued to have no detectable offsite radiological impact. Samples analyzed from the offsite sampling stations continued to show that DCPD site operations had no significant impact on the health and safety of the public or the environment. The annual offsite radiological dose received by the general public from plant operations was less than one millirem which is insignificant when compared to the 620 millirem average annual radiation exposure to people in the United States from natural and man-made background radiation sources (cosmic, terrestrial, radon, medical, etc.).

**Conclusions:** The DCPD Radioactive Effluent Release Program and the Radiological Environmental Monitoring Program appeared satisfactory in calculating, monitoring, and measuring radioactivity in the environment. During 2022 there were no abnormal releases of radioactivity nor were there any abnormal levels of radioactivity detected in the environment surrounding DCPD. DCPD site operations had no significant radiological impact on the health and safety of the public or the environment, and radioactive releases were far below regulatory limits.

**Recommendations:** None.

### 3.11 Reactor Vessel Pressurized Thermal Shock

The DCISC FFT met with Philippe Soenen, Manager of DCPD Regulatory Services, to review a report from a member of the public about Reactor Vessel Pressurized Thermal Shock (PTS). The DCISC last reviewed this topic in the June 28-29, 2023 Public Meeting (Reference 6.13). At that meeting Mr. G. Bruce Severance presented oral comments and a written document ("Comment to the Diablo Canyon Independent Safety Committee Regarding Discrepancies in Reported Fracture Toughness Test Results for DCPD Unit 1") to the DCISC on Reactor Vessel

Unit 1 Pressurized Thermal Shock (PTS). The purpose of this fact-finding meeting was to obtain DCPD's responses to the Mr. Severance's document.

Mr. Soenen responded verbally to several points in Mr. Severance's document and related questions that the DCISC sent to DCPD prior to the meeting. He also promised to provide follow-up information in writing to the DCISC that could be used to further evaluate the information contained in Mr. Severance's document. Currently, the DCISC is planning to provide this and all related information to an independent consultant it plans to hire in September who will perform an overall review of the PTS issue for DCPD Unit 1. It is currently planned that this independent review will be completed and discussed at the DCISC's February 21-22, 2024 Public Meeting.

**Conclusions:** The DCISC received additional information on the DCPD Unit 1 Reactor Vessel Pressurized Thermal Shock issue and is planning an independent review of the information by an expert consultant. This independent review is planned to be completed and discussed at the DCISC's February 21-22, 2024 Public Meeting.

#### **4.0 CONCLUSIONS**

- 4.1 The meeting with the NRC Senior Resident Inspector was beneficial, and the DCISC should continue the meetings.**
- 4.2 DCPD has WiFi throughout the office and workspaces in the Powerblock, except in Containment where WiFi is temporarily installed during outages. Although electronic work packages were not successful at DCPD, electronic procedures may be a better fit, so the DCISC should consider reviewing their past, current and future potential use in a future fact-finding meeting.**
- 4.3 Maintenance Technicians were performing work on the Emergency Diesel Generator controls using proper procedures, proper personnel protective equipment, and proper human performance tools.**
- 4.4 The regular meetings between DCISC Members and DCPD Officers and Directors continue to be beneficial for both organizations.**
- 4.5 The DCPD Employee Concerns Program appeared to function effectively in receiving and investigating employee concerns in a confidential manner. During 2022, as in past years, and to-date in 2023, there were no significant concerns regarding nuclear safety.**
- 4.6 The DCPD Safety Culture appears healthy and effective in assuring nuclear safety. Additionally, NRC inspections of DCPD Safety Culture conclude that DCPD has a Safety Conscious Work Environment and an effective Employee Concerns Program, key elements of good Safety Culture.**

- 4.7 The regular meetings between DCISC and DCPD Officers and Directors continue to be beneficial for both organizations.
- 4.8 The Unit 2 boric acid leak in the early stages of Outage 2R23 was identified and resolved appropriately. The root cause analysis was identified as a faulty weld exacerbated by normal vibration of the piping system. The root cause evaluation was appropriate in identifying the root cause and expanding the review to other similar welds on both units as an extent of condition review. The corrective action to cut out the weld for examination and apply a weld overlay to rejoin the joint appeared appropriate.
- 4.9 DCPD developed an extensive, logical, and formal process for effectively and positively capturing and prioritizing possible plant upgrade projects following the passage of SB846 and considering the possibility of extending power operations through 2030. The DCISC found that DCPD's resulting plans for future plant upgrades to support extended operations were appropriate to ensure nuclear safety and a high standard of equipment reliability. The DCISC recommends that California state authorities support the funding of the plant upgrade projects recommended by DCPD. The DCISC did not find any upgrades necessary to ensure nuclear safety that were not already being planned by DCPD.

DCPD's Preventive Maintenance Program has been effective in the past in preventing failures of components important to safety based both on recent programmatic reviews as well as many other past reviews on the health of individual systems. All changes made to the Preventive Maintenance Program since 2018 were appropriately recorded and available for later reviews. The DCISC found that the majority of previous changes to the PM Program were made for equipment that was not important to safety or reliability. DCPD properly reviewed all Preventive Maintenance Program changes made since 2018 and appropriately reinstated or otherwise modified the previous changes in order to support extended operations. The results of DCPD's Preventive Maintenance Program review were prudent and would ensure nuclear safety and equipment reliability were appropriately maintained during a period of extended operations.

The DCISC concluded that DCPD's Corrective Maintenance Program has been effective in the past in the reporting, scheduling, and repairing of equipment deficiencies. Since 2018, DCPD has not deferred any corrective maintenance of components important to safety or reliability due to the previous plan to cease power operations in 2025. The DCISC found that DCPD developed an extensive, logical, and formal process for identifying and evaluating all Corrective Maintenance activities on non-quality related equipment that DCPD chose not to perform over the last few years given the planned cessation of power operations. DCPD properly reviewed all open Corrective Maintenance work orders and appropriately reinstated any unscheduled work orders that were not previously planned to be worked in light of the cessation of power operations but were now appropriate to be worked in order to support extended operations. The results of DCPD's Corrective Maintenance

**Program reviews were prudent and would ensure nuclear safety and equipment reliability were appropriately maintained during a period of extended operations.**

**This concludes the DCISC Comprehensive Review of Upgrades Necessary to Address Issues of “Deferred Maintenance” That May Have Arisen Due to the Expectation of the Plant Closing Sooner.**

**The independent review of maintenance required by SB846 is in progress and planned to be completed by October 2023. The DCISC should review the results of the independent review of maintenance following its completion.**

- 4.10 The DCPD Radioactive Effluent Release Program and the Radiological Environmental Monitoring Program appeared satisfactory in calculating, monitoring, and measuring radioactivity in the environment. During 2022 there were no abnormal releases of radioactivity nor were there any abnormal levels of radioactivity detected in the environment surrounding DCPD. DCPD site operations had no significant radiological impact on the health and safety of the public or the environment, and radioactive releases were far below regulatory limits.**
- 4.11 The DCISC has received several inputs on the DCPD Unit 1 Reactor Vessel Pressurized Thermal Shock issue and is planning its independent review of the information by a expert consultant. This independent review will be completed and approved for presentation and discussion at the DCISC February 21-22, 2024 Public Meeting.**

## **5.0 RECOMMENDATIONS**

**None**

## **6.0 REFERENCES**

- 6.1 “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,” To Be Approved September 13, 2023, Volume II, Exhibit D.1, Section 3.6, “Meet with Nuclear Regulatory Commission (NRC) Senior Resident Inspector.”**
- 6.2 “Diablo Canyon Independent Safety Committee Thirty-First Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2020 – June 30, 2021,” Approved October 20, 2021, Volume II, Exhibit D.5, Section 3.3, “Electronic Work Packages.”**
- 6.3 “Diablo Canyon Independent Safety Committee Thirtieth Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2019 – June 30, 2020,” Approved**

- October 18, 2020, Volume II, Exhibit D.4, Section 3.8, “Plant Tour: 2R21 outage activities and observe work in progress.”
- 6.4 “Diablo Canyon Independent Safety Committee Thirty-First Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2020 – June 30, 2021,” Approved October 20, 2021, Volume II, Exhibit B.3, “Rod Control System Event.”
- 6.5 “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 October 19, 2022, Volume II, Exhibit B.3, “Employee Concerns Program.”
- 6.6 Ibid., Exhibit D.2, Section 3.9, “Employee Concerns Program.”
- 6.7 NRC Inspection Report 2022010, January 27, 2023: DCPD Biennial Problem Identification and Resolution Inspection.
- 6.8 “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 October 19, 2022, Volume II, Exhibit B.3, “Nuclear Safety Culture.”
- 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,” To Be Approved XXX, 2024, Volume II, Exhibit D.1, Section 3.10, “Meet with DCPD Officer.”
- 6.10 “Diablo Canyon Independent Safety Committee Thirty-First Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2020 – June 30, 2021,” Approved October 20, 2021, Volume II, Exhibit D.8, Section 3.7, “Boric Acid Corrosion Control Program.”
- 6.11.1 “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,” To Be Approved September 13, 2024, Volume II, Exhibit D.1, Section 3.9, “Review of Equipment Maintenance and Long-Range Planning.”
- 6.11.2 “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.7, Section 3.9, “Capital Project Review Status.”
- 6.11.3 Ibid., Exhibit B.9, “Update on Capital Project Planning.”
- 6.11.4 “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 October 19, 2022, Volume II, Exhibit D.9, Section 3.10, “Capital Project Planning.”

- 6.11.5 “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,” To Be Approved September 13, 2023, Volume II, Exhibit D.7, Section 3.2, “Plans for Reviewing and Restarting Capital Projects.”
- 6.11.6 “Diablo Canyon Independent Safety Committee Twenty-Ninth Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2018 – June 30, 2019,” Approved October 23, 2019, Volume II, Exhibit D.1, Section 3.9, “Preventive Maintenance Optimization Initiative.”
- 6.11.7 Ibid., Exhibit D.4, Section 3.11, “Preventative Maintenance Optimization Project.”
- 6.11.8 “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 October 19, 2022, Volume II, Exhibit D.8, Section 3.3, “Maintenance Rule Program Status.”
- 6.11.9 “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,” To Be Approved September 13, 2023, Volume II, Exhibit D.9, Section 3.3, “Equipment Long Range Plan Reviews (PMO++).”
- 6.12 Ibid., Exhibit D.1, Section 3.3, “Annual Radioactive Effluent Release and Radiological Environmental Operating Reports.”
- 6.13 “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,” To Be Approved September 13, 2024, Volume II, Exhibit B.9, “Reactor Vessel Pressurized Thermal Shock.”