

DIABLO CANYON INDEPENDENT SAFETY COMMITTEE

Report on

**Fact-Finding Meeting at DCP
on July 21 and 22, 2025**

by

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1.0 SUMMARY

The results of the DCISC July 21 and 22 2025, Fact-Finding Meeting at the Diablo Canyon Power Plant (DCPP) in Avila Beach, CA, are presented. The subjects addressed and summarized in Section 3 are as follows:

1. Reactivity Management Program Update
2. Operating Experience Program Update
3. Maintenance Rule Functional Failures
4. Meeting with Nuclear Regulatory Commission Senior Resident Inspector
5. Auxiliary Building Ventilation System
6. Electronic Procedures
7. Reports on 2024 Radiation Releases and Radioactive Environmental Monitoring
8. Workplace Seismic Safety Tour
9. Artificial Intelligence Update
10. Plant Operating Update
11. Independent Spent Fuel Storage Installation (ISFSI) Update

2.0 INTRODUCTION

This Fact-Finding Meeting at the DCP was held to evaluate specific safety matters for the DCISC. The objective of the evaluation was to determine if 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 DCP on specific areas of interest, etc.

Section 5 – Recommendations, presents specific recommendations to PG&E and/or to the DCISC proposed by the FFT. These recommendations will be considered by the entire DCISC. After review and approval by the entire 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 Reactivity Management Program Update

The DCISC Fact-finding Team (FFT) met with Santash Patel, Reactor Engineer, and Jerry O’Hare, Reactor Engineering Supervisor, for an update on the DCPD Reactivity Management Program. Dauphine Hou, Deb Luchsinger, Christian Arechavaleta, and Jerry Bischof from the California Department of Water Resources (DWR) participated remotely in the meeting. (DWR is the state agency charged with overseeing state funds allocated to facilitate the extension of DCPD power operations under Senate Bill 846.) The DCISC last reviewed the DCPD Reactivity Management Program (RMP) in April 2024 (Reference 6.1) when it concluded the following:

DCPD has an effective Reactivity Management Program, which ensures conservative reactivity management by promoting a reactivity-conscious culture. Program Performance Indicators showed a low occurrence and significance of Reactivity Management events for the past 12 months.

Reactivity is defined in DCPD’s controlling Procedure OP1.ID3, Revision 19, “Reactivity Management Program,” as “the fractional change in neutron population from one neutron generation cycle to the next, or the measure of departure from criticality.” In general, it is a measure of the potential for a nuclear core to increase or decrease in its chain reaction rate or power level. It is important to control reactivity in order to maintain safe control of the nuclear reactor itself. The procedure defines the roles, responsibilities and actions associated with the control of reactivity to ensure safe and reliable operation. It provides guidance to ensure that all plant evolutions affecting reactivity will be controlled, safe, and conservative. The goal of the RMP is to prevent reactivity-related events.

The Operations Manager is responsible for plant reactivity management, including the direct control of reactivity, and for ensuring conservative actions with regard to nuclear fuel integrity during power operations, shutdown conditions, fuel handling, and storage. Reactor Operators (ROs) and Senior Reactor Operators (SROs) are responsible for fulfilling the requirements of the RMP, including: (1) ensuring that expected responses to a reactivity change are identified and fully understood prior to initiating any action that affects reactivity, (2) closely monitoring appropriate indications for reactivity changes to verify the expected magnitude, direction, and effects, (3) remaining alert for situations that could affect reactivity, and initiating appropriate conservative corrective actions, (4) reducing reactor power or tripping the reactor without the need for concurrence of the unit Shift Foreman or SRO when the RO deems that the action is immediately necessary to protect the reactor core, and (5) maintaining the reactor core parameters within established limits.

The Reactivity Management Leadership Team (RMLT) is a team of individuals representing Operations Services, Maintenance Services, Engineering Services, Learning Services, and the Corrective Action Program. The team reviews reactivity events and adverse trends to identify needed corrective actions and recommend additional training or qualification for groups that can affect reactivity. RMLT activities include implementing reactivity management performance indicators; reviewing Notifications and industry events for reactivity events, adverse trends, and needed corrective actions; and classifying reactivity events.

The DCPD Team provided the FFT with copies of the following RMLT Quarterly Meeting Minutes:

- July 17, 2024
- October 16, 2024
- January 15, 2025
- June 5, 2025

The FFT found that these meetings followed the applicable procedure and focused closely on reactivity-related events, none of which were significant. The meetings appeared to meet all objectives.

A Reactivity Management Issue is any plant issue or event that does not meet expectations of the RMP. There are six different Significance Levels, based on plant impact, as follows:

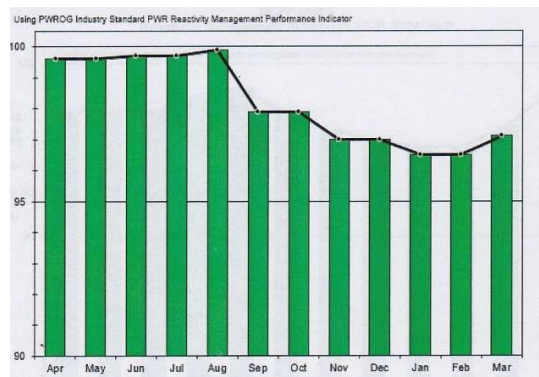
<u>Significance Level</u>	<u>Plant Impact</u>	<u>Description</u>
1	Highest	Fundamental Organizational Breakdown
2		Violation of Design or Licensing Basis
3		Violation of Process/Procedural Requirements
4		Precursor
5	Lowest	Concern
6	None	No impact. Trending purposes only

Typical DCPD Reactivity Management Issues and their Significance Levels (Classification Codes) are those shown in the table below. It should be noted that most Issues are the lowest level (6s), No Impact. And no high-level issues (1s or 2s).

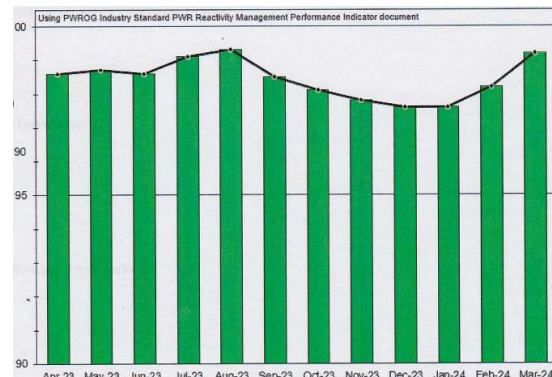
Issue #	Date	DN Notification	Description	Classification Code*	Revised Code
1	4/7/2024	51231966	N35 rod stop lit at 10%pwr (Related 51232414)	5-4	6.6
2	4/7/2024	51231953	Suspected #2 seal failure on 2-2 RCP	5-2	6.4
3	4/7/2024	51231971	FCV-41 Failed to close	6.4	
4	4/8/2024	51232105	PPC Calorimetric affected by DST	6.4	
5	4/8/2024	51232212	Isolation of Blowdown to the Flasketank	5-6	6.14
6	4/8/2024	51232133	Ramp: OP L-4 ramp for 2R24 (critique)	6-3	NA
7	4/18/2024	51234274	Work Package Documentation Issue	NA	
8	4/23/2024	51235343	Org. Effect. Event Crit: 2R24 Ramp Plan	NA	
9	5/8/2024	51238297	Seal Table Thimble Tube E-9 is Bent	6.4	
10	5/18/2024	51239860	U2 NR Oper RCS RTD TE-411A/C Coeff	6.4	
11	5/20/2024	51240280	U2 MIDS DET A, B, F DO NOT WITHDRAW	6.4	
12	5/23/2024	51240656	XS-2-797 Steam Leak (DA 51240648)	3.9	
13	5/25/2024	51240787	Stm leak between LCV-171 and XS-797 (Related to 51240656)	3.9	
14	5/26/2024	51241137	Ramp: Unit 2 48% to 20% (XS-2-797 leak)	NA	
15	5/28/2024	51240879	Unit 2 PPC Heat Balance not working	6.4	
16	5/28/2024	51241241	Cond Pp Cat Con Indicates Salt Leak	6-0	NA
17	5/30/2024	51241478	U2 STP R-41 Acceptance Criteria Not Met	6.4	
18	6/1/2024	51241555	Unit 2 PRT in-leakage	6.4	
19	6/12/2024	51242857	TMS-A Computer Continuous Rebooting	6.4	
20	6/20/2024	51243743	U2 MIDS Drive D position indication	6.4	
21	6/28/2024	51244710	Incore Thermocouple TT-20 Failed Hi	6.4	
22	5/23/2024	51240783	Continued Power OPS while separated (see 51240656)	NA	
23	5/24/2024	51240756	2R24 Ramp Critique: Start-up to 2%	NA	
24	5/26/2024	51241127	2X25 Ramp Critique from 2% to 100%	NA	

* Significance Level

The Reactivity Management Performance Indicators are shown below (up is good):



Unit 1 RM Performance Indicators



Unit 2 RM Performance Indicators

Conclusions: DCP's Reactivity Management Program, which ensures conservative reactivity management by promoting a reactivity-conscious culture, appears effective. Program Performance Indicators are good and improving. They show a low occurrence rate and significance of Reactivity Management events for the past 12 months.

Recommendations to PG&E or to the DCISC: None

3.2 Operating Experience Program Update

The DCISC FFT met with the following DCPD individuals for an update on the DCPD Operating Experience (OE) Program:

Bill Lalone	Performance Improvement Manager
Dustin Yancey	OE/IRIS Coordinator
Colt Wells	Corrective Action Program/Performance Improvement Supervisor

The DCISC last reviewed the DCPD OE Program in July-August 2024 (Reference 6.2), when it concluded the following:

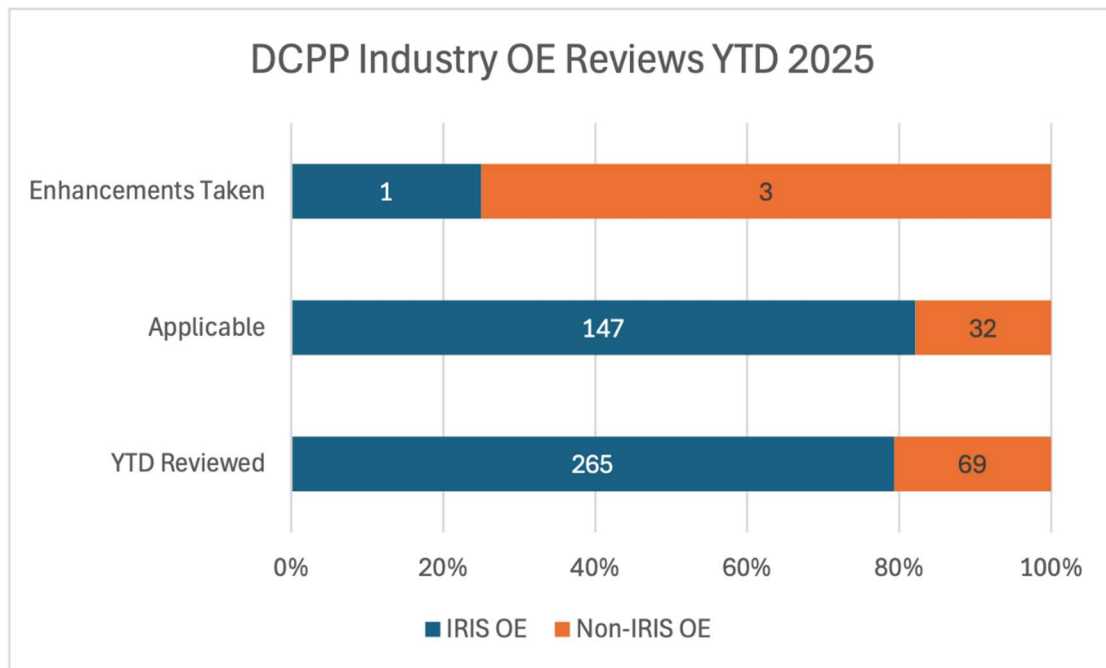
The DCPD Operating Experience Program was healthy and appeared to be implemented effectively.

DCPD's OE Program is governed by procedure OM4.ID3, "Operating Experience Program," a copy of which was provided to the Fact-finding Team. The program is managed by two persons, the station OE Coordinator and the OE Coordinator's Backup. Industry OE information comes from two primary sources: 1) the Institute of Nuclear Power Operations (INPO) Industry Reporting and Information System (IRIS) (formerly ICES, Industry Consolidated Event System), and 2) other sources, including NRC, industry vendors, international databases, peer committees, engineering news, etc. From these sources the plant receives 15 to 20 OE event reports per week. These OE Reports are entered into an OE Database for tracking, and the information considered to be relevant to DCPD is transmitted to DCPD department Subject Matter Experts (SMEs) typically, from Operations, Maintenance, or Engineering) who review the material for specific applicability to their areas and determine if action is required. Their reviews are formally documented and retained in the OE Database. In addition to receiving industry OE Reports, DCPD also transmits its own OE Reports both to the NRC and to others in the industry via its own entries into the IRIS system. Typically, DCPD reports three to five OE events per month to the industry.

If the OE event is determined to be applicable to DCPD, the SME creates a Corrective Action Program Notification (SAPN) in DCPD's SAP information management system to initiate and track further actions. (SAPN comes from the SAP name brand database system used by DCPD.) Some higher categories of OE events, such as Level 1 and Level 2 Industry Event Reports from IRIS, bypass the screening process and go automatically into SAP. Once entered into the SAP system as a Notification, the OE event must be fully reviewed for applicability and any corrective actions for DCPD must be developed and assigned within 60 days. The 60-day standard is closely tracked. Notification closure quality and timeliness are also monitored through the OE Program Health indicator in the monthly Plant Performance Improvement Report. The indicator has remained "Green" (Healthy) for the last year.

Since the beginning of 2025, the OE Coordinator has received and processed 224 OE reports. Of these, 144 were determined to be applicable to DCPD, and were processed as described above. Of the 144 the table below shows the results of applicability required additional analysis or changes to the plant or procedures.

The graphic below has been updated with YTD reference numbers through the beginning of September (September 5, 2024) to provide an updated perspective:



Additionally, in response to the FFT’s questions on DCPD actions:

For the IRIS report population outlined above, five of the items reviewed resulted in additional action by DCPD. None were considered “significant,” and range from daily brief review / discussion to procedure / program enhancements.

For the Non-IRIS (all other OE) items, ten of the items reviewed resulted in additional action. One item is currently open and under further evaluation (DA SAPN 51248482, “DA-AST: Potential Unanalyzed Dose Path”) which was initiated in response to a review of an Inspection Report documenting a violation at Waterford station (Refer to OE Evaluation SAPN 51241930).

The remaining items all seem similar to the above IRIS review, actions related to potential program / procedure enhancements.

The FF team also discussed how the DCPD’s new Artificial Intelligence System, Atomic Canyon’s Neutron Enterprise holds promise for further improved OE searches.

Conclusions: The DCPD Operating Experience Program was healthy and appeared to be implemented effectively.

Recommendations to PG&E or to the DCISC: None

3.3 Maintenance Rule Functional Failures

The DCISC FFT met with Mike Betts, Senior Nuclear Engineer; Mark Baker, Supervising Nuclear Engineer; and Jim Morris, Regulatory Services Engineer, for an update on DCPD Maintenance Rule Functional Failures (MRFF). The DCISC last reviewed DCPD MRFFs in November 2023 (Reference 6.3), when it concluded the following:

The DCPD Maintenance Rule Program appears to be implemented appropriately and effectively based on the trends of systems in good status and numbers of Maintenance Rule Preventable Functional Failures as well as the DCPD internal assessment and NRC inspection results.

DCPD's Maintenance Rule (MR) Program is governed by procedure MA1.ID17, "Maintenance Rule Monitoring Program," Revision 34. This procedure describes how the plant program complies with the NRC regulation 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," (referred to as the NRC's "Maintenance Rule") using the guidance provided in industry (Nuclear Energy Institute) document NUMARC 93-01, "Industry Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." The major areas of implementing the program are aligned with NRC Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," which endorses NUMARC 93-01 and provides additional provisions and clarifications for complying with 10 CFR 50.65. The DCPD procedure appeared satisfactory.

DCPD's MR Program follows the industry guidance closely and defines major parts of the rule as follows:

- (a)(1) – Defines when a Structure, System or Component (SSC) requires the establishment of additional goals and monitoring to assess that preventative maintenance performance is adequate.
- (a)(2) – Defines when an SSC's performance or condition is being effectively controlled through the performance of appropriate preventative maintenance.
- (a)(3) – Requires that performance and condition monitoring activities and associated goals and preventive maintenance activities shall be evaluated at least every refueling cycle.
- (a)(4) – Establishes the requirements for plants to assess and manage the potential increase in risk resulting from online maintenance activities. (Not covered in this meeting; risk-based scheduling of online maintenance is regularly reviewed by the DCISC as a separate topic.)

The chief elements of the MR Program are as follows:

1. SSCs are evaluated according to risk significance determination for incorporation into the program using the guidance of NUMARC 93-01.

2. Risk-informed performance criteria are established to discern whether or not preventative 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. According to part (a)(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.

In addition to the role that System/Strategic Engineers play in implementing the MR Program, DCPD has a Maintenance Rule Expert Panel made up of representatives from Operations, Engineering, Maintenance, and the Probabilistic Risk Assessment Group. The Expert Panel reviews any changes to the program, changes to performance criteria, and transfers of SSCs between (a)(2) and (a)(1) status, and the Panel also ensures that a periodic assessment of the program is performed at least every two years. The DCPD Maintenance Rule Program is overseen by the Plant Health Committee (PHC). The FFT reviewed the latest Maintenance Rule Program presentation to PHC, which appeared informative and comprehensive. There were no action items coming from the PHC meeting.

The following is a list of the systems in (a)(1) status as of the date of the FFT’s meeting:

<u>Systems in (a)(1) Status</u>	<u>Corrective Action (CA)</u>	<u>Status</u>
Unit 1 Turbine Steam Supply	April 2024	CA Open
Unit 1 Fire Detection	Complete	Monitoring
Unit 1 Liquid Radwaste	No CA	Closed
Unit 1 AMSAC*	Complete	Monitoring
Unit 2 Chemical and Volume Control System	Complete	Monitoring
Unit 2 Turbine Generator	Complete	Monitoring
Unit 2 Misc. Aux. Bldg HVAC	Complete	Monitoring
Unit 2 125&250VDC (Non-Vital)	Complete	Monitoring

*AMSAC = ATWS Mitigation System Actuation Circuitry, where ATWS = Anticipated Transients Without Scram

Conclusions: DCPD appears to have implemented the Maintenance Rule appropriately and effectively.

Recommendations to PG&E or to the DCISC: None

3.4 Meeting with Nuclear Regulatory Commission Senior Resident Inspector

The DCISC FFT met with NRC Senior Resident Inspector Mahdi Hayes for an update and to compare DCPD items of interest. The DCISC last met with the NRC resident inspectors in April 2025 (Reference 6.4), when it concluded the following:

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

The participants discussed the following items:

1. DCPD operating history since the last fact-finding meeting in May 2025.
2. Upcoming refueling outages
3. Workplace seismic safety
4. Recent NRC inspections
5. July 4, 2025 down-power due to offsite fires
6. Upcoming NRC inspections

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

Recommendations to PG&E or to the DCISC: None.

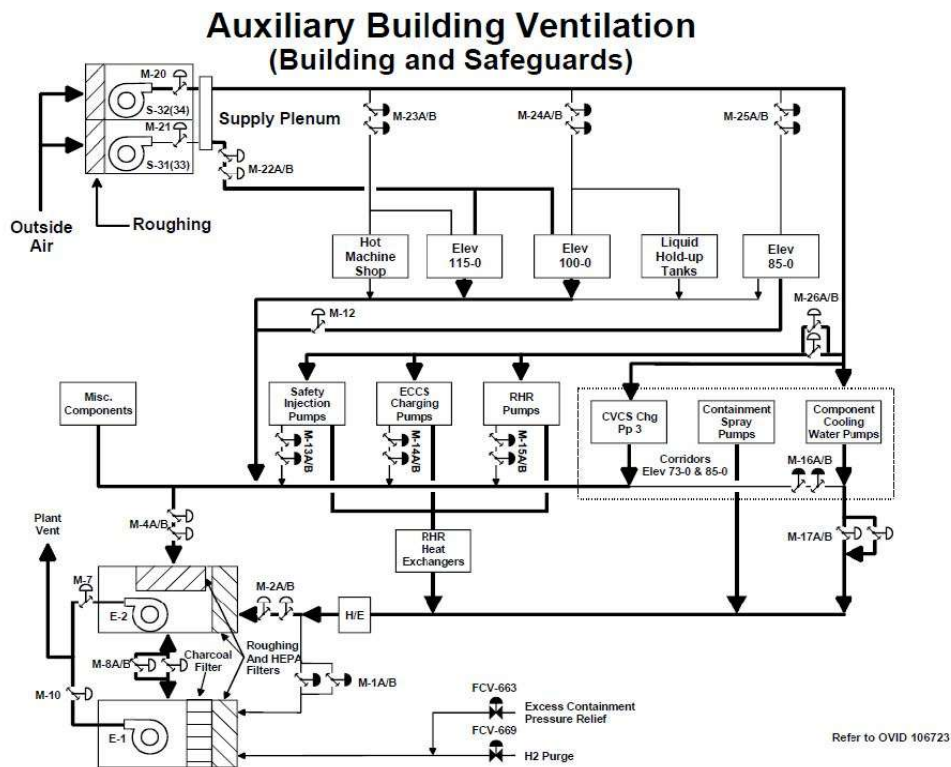
3.5 Auxiliary Building Ventilation System

The DCISC Fact-finding Team met with Rob Igel and Chris Ingram, Strategic Engineers, for an update on the health of the DCPD Auxiliary Building Ventilation System (ABVS). The DCISC last reviewed the health of the ABVS in July 2023 (Reference 6.5), when it concluded the following:

DCPD's Control Room Ventilation and Auxiliary Building Ventilation Systems were in good health and performing well. Past issues with system dampers in the Auxiliary Building appear to have been effectively resolved.

The ABVS consists of fans, dampers, ducting, and filters whose function is to supply, heat and/or cool, filter, and discharge air for the Auxiliary Building. The ABVS provides cooling and/or heating for both personnel and equipment, including several components of the Engineered Safety Feature System. The ABVS consists of two 100% supply fan units with roughing filters and two

discharge fan/filter units with roughing, HEPA filters, and charcoal filters, along with extensive ducting throughout the building. DCPD currently swaps trains every two weeks to reduce wear and tear on the components. Instrumentation and controls include flow instruments (elements, indicators, and switches), pressure instruments (indicators and switches), temperature instruments (controllers and switches), position switches, solenoid valves, vibration transmitters, dampers with actuators, and pressure regulating valves. Because there is potential for radioactive particulates and gases to enter the ABVS, the system is equipped with radiation monitors to preclude inadvertent releases via the Plant Vent. A simplified system diagram is shown below:



Although formal system health monitoring was no longer required for the ABVS, the system was generally in good health with minor issues and problems. Major flow balancing tests and HEPA filter efficiency tests were recently completed on the system with no major issues identified. Previous issues with the reliability of dampers in the ABVS system had been resolved through improved maintenance practices, and the dampers were no longer in Maintenance Rule category (a)(1). Currently, the primary problems affecting the ABVS system were intermittent problems occurring on the digital control panel in the Control Room, a non-safety related monitoring panel. Damper position (false) alarms would be received on the control panel but checks in the field would find that the dampers had not moved and were in the correct position. Digital engineers and Instrumentation and Controls Technicians were working to try to find the cause of the intermittent false alarms. It was believed that the problem was related to intermittent hardware (circuit card) failures, but investigations were still ongoing.

Conclusions: DCP's Auxiliary Building Ventilation System was in good health and performing well. Past issues with system dampers in the Auxiliary Building appear to have been effectively resolved.

Recommendations to PG&E or to the DCISC: None

3.6 Electronic Procedures

The DCISC FFT met with Bryan Galvan, Operations Manager, for an update and plans for DCP electronic procedure. The DCISC last reviewed electronic procedures in December 2024 Reference 6.6), when it concluded the following:

The DCISC FFT endorses DCP's decision to pursue electronic procedures. Electronic procedures provide many benefits in improving human reliability and documenting work, thereby creating substantial opportunities to improve the plant's operational safety.

Regarding electronic procedures and work packages, DCP had tried implementing both in 2023. Less complex procedures and work packages were worked acceptably in the new system; however, there were enough implementation issues that DCP paused or temporarily dropped the effort. Now, after recent benchmarking, DCP will again begin implementation starting with its Operations Procedures in 2025 using an electronic procedure platform from Next Axion, one used by several other plants (Prairie Island, Wolf Creek, and the Constellation Fleet). This platform integrates well with SAP, the software platform DCP currently uses for data management, and has proven itself well enough for DCP to begin its use. The platform is used with Apple iPads.

The FFT is pleased with DCP's decision to implement electronic procedures and will monitor their progress. Electronic procedures have the capability to record more information as procedures are performed, such as the entry and exit times for procedure steps. The FFT believes the use of electronic procedures (and possibly work packages) will result in a more efficient operation as well as in improved human performance due to built-in human performance features such as place-keeping, assurance of working on the correct unit and/or component, ability to document additional information using photographs, automatic independent verification, and automatic record-keeping. The additional data collected using electronic procedures can also enable more effective root cause analysis when problems occur. Because operations and maintenance staff can easily switch to different hand-held devices, the need to transfer paper records into and out of radiation control areas is eliminated. As experience is gained, more sophisticated capabilities can be implemented, such as hand-free procedures using voice recognition.

Conclusions: As it concluded in the December 2024 Fact-finding Meetings, the DCISC endorses DCP's decision to pursue electronic procedures. Electronic procedures provide many benefits in improving human reliability and documenting work, thereby creating substantial opportunities to improve the plant's operational safety.

Recommendation to the DCISC: The following previous recommendation to the DCISC was

reviewed in this Fact-Finding Meeting and remains open: *Because expanded use of electronic procedures can enhance plant operational safety, the DCISC should review this topic regularly. (D12/24FF-1-3.2)*

Recommendation to PG&E: The following previous recommendation to PG&E was reviewed in this Fact-Finding Meeting and remains open: *The DCISC recommends that PG&E expand their use of electronic-procedure-type applications, subject to proper human systems integration, because the improved human performance and documentation of work can directly improve the safety of DCPD operation. (P12/24FF-3.2)*

3.7 Reports on 2024 Radiation Releases and Radioactive Environmental Monitoring

The FFT met with David Cortina, Chemistry Manager; Matthew Hoey, Chemistry Engineer (Radiological Effluent Releases); Austin Luedtke (Radiological Environmental Monitoring Program); and Laurie Millieu, Radiation Protection Engineering Supervisor to review the 2024 Annual Radiological Effluent Release Report and the 2024 Annual Radiological Environmental Operating Report, which had been submitted to the Nuclear Regulatory Commission (NRC). The DCISC last reviewed similar reports in July 2024 (Reference 6.7), 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. During 2023 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.

2024 Annual Radioactive Effluent Release Report (ARERR)

The ARERR described the measured/calculated quantities of radioactive gaseous effluents, liquid effluents, and direct radiation released from the plant in 2024. The descriptions below represent selected, representative excerpts from the report.

The 2024 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. The three-year summary of radioactive releases is shown below.

Gaseous Effluents:

Three-year summary of all radioactive gaseous releases to the environment

Gaseous Waste	2024	2023	2022	Comments
Tritium (Ci)	39.9	51.1	55.1	1
C-14 (Ci)	21.9	21.7	21.4	2
Fission and Activation Gases (Ci)	6.07	0.83	8.61	3,6
Total Particulates with half-lives >8 days (Ci)	4.35E-05	1.28E-05	2.82E-05	
Gross Alpha (Ci)	N/D	N/D	2.56E-07	
Iodine (Ci)	N/D	N/D	N/D	
Calculated Gamma Air Dose (mRad)	1.76E-03	1.03E-03	9.80E-04	4
Calculated Beta Air Dose (mRad)	2.07E-03	4.25E-04	1.83E-03	4
Total Body Dose (mRem)	3.11E-03	2.22E-03	2.20E-03	5
Number of Refueling Outages	1	1	2	
Unit 1 Capacity Factor	98.6 %	83.0 %	90.4 %	
Unit 2 Capacity Factor	86.6 %	98.1 %	88.5 %	

Liquid Effluents:

Three-year summary of radioactive liquid releases to the environment

Liquid Waste	2024	2023	2022	Comments
Total Activity Excluding Tritium (Ci)	2.30E-02	1.70E-02	1.66E-02	1
Tritium Activity (Ci)	1582	2530	2590	2
Total Body Dose (mRem)	2.17E-4	5.71E-04	2.75E-04	3
Total Volume of Primary Liquid Waste Released (liters)	6.09E+06	7.10E+06	8.35E+06	

Solid Waste

Three-year summary of solid waste production:

Total Solid Waste	2024	2023	2022
Shipped (m ³)	116	105	75
Shipped (Ci)	130	135	5.3

Overall, the liquid and gaseous radioactivity releases from DCPD were well-controlled and maintained as low as reasonably achievable. The 2024 results from DCPD were well below all applicable limits for liquid and gaseous releases, and there were no abnormal or uncontrolled releases during 2024. 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 2024 radioactive liquid and gaseous releases, the following off-site radiation doses to the total body of a hypothetical individual at the closest residence on the northwest site boundary full-time and the corresponding percent of ODCM limits for the year 2024 were reported in the ARERR as:

<u>Effluent Type</u>	<u>Calculated Radiation Dose</u>	<u>Percent of ODCM Limit</u>
Liquid	0.000285 millirem	0.0095%
Gaseous	0.000549 millirem	0.000366%

The results of the 2024 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.

2024 Annual Radiological Environmental Operating Report (AREOR)

The AREOR report 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 2023 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 in 2024 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.

The 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 2024. 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 2024 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.).

DCPD concluded that during 2024, the radioactive effluent monitoring program has been conducted in an appropriate manner to ensure the activity released and associated dose to the public has been maintained as low as reasonably achievable (ALARA).

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 2024 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 to PG&E or to the DCISC: None

3.8 Workplace Seismic Safety Tour

The DCISC FFT met with Ron Layugan, Facility Maintenance Supervisor and Eric Mahoney, Facilities Projects Supervisor, to perform a workspace seismic safety tour of the Training Building. The DCISC last reviewed workplace seismic safety in May 2025 (Reference 6.8), when it concluded the following and added a concern:

DCPP provided an update on corrective actions being taken in response to the DCISC's identification of an unbraced cabinet in December 2024. Corrective actions appeared appropriate and should prevent the recurrence of similar issues in the future. The DCISC will continue to regularly review the status of this program under its Open Items List item number SC-12.

Following the identification of the unbraced cabinet and upon entering the issue into the Corrective Action Program, corrective actions were made. These included adding proper bracing to the cabinet, improved training/awareness for personnel on workplace seismic safety and reviewing other installations for extent of condition.

However, in the December 12, 2024, meeting with the DCPD Senior Vice-President and Chief Nuclear Officer, a tall, unbraced cabinet was found in her office, that had not been found in previous inspections or extent of condition reviews. This unbraced cabinet was quickly entered into the Corrective Action Program. Ms. Gerfen advised the FFT that this cabinet would soon be moved to the other side of her office per a previous request that her office be rearranged. A Corrective Action Program Notification was quickly initiated for corrective action.

Conclusions: The DCISC Fact-finding Team, accompanied by two DCPD employees, found no furniture or shelving unbraced or unweighted which would cause a hazard to personnel during or following an earthquake.

Recommendations to the DCISC or PG&E: None

3.9 Artificial Intelligence Update

The DCISC FFT met with Maureen Zawalick, Vice-President Financial and Technical Services and Erin Bowe, Performance Improvement Supervisor, for a review of DCPD plans for its new Artificial Intelligence (AI) Program. The DCISC last reviewed DCPD AI in January 2025 (Reference 6.9), when it concluded the following:

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

DCPP has put together a cross section of employees from various functions to implement their new AI System, Atomic Canyon's Neutron.

Atomic Canyon's Neutron is a powerful, sophisticated document data search and retrieval engine, which is aimed at significant cost savings and improved operational efficiency. Regulatory agencies require reactor operators to manage huge amounts of technical documentation contained in multiple systems. Plant personnel spend large amounts of time and resources retrieving, sorting and organizing data accurately and reliably such that they are understandable and useful.

After describing Atomic Canyon and its capabilities, Ms. Bowe provided a demonstration of its functionalities with an example search. The search demonstrated the speed and thoroughness of the new tool.

Conclusion: The new DCPP artificial intelligence search system by Atomic Canyon to be used for high speed, very accurate data/document searches appear to have good potential for reducing human error and for more efficient searches.

Recommendation to the DCISC: The following previous recommendation to PG&E was reviewed in this Fact-Finding Meeting and remains open: *Because the application of Artificial Intelligence tools has significant potential to change and to improve DCPP's operational safety, the DCISC should review this topic frequently. (D12/24-3.4)*

Recommendations to PG&E: None

3.10 Plant Operating Update

The DCISC FFT met with Justin Rogers, Plant Manager, for an update of activities and operations since the last DCISC fact-finding meeting in May 2025 (Reference 6.10). The update included results of the just-completed successful Unit 1 refueling outage and plans for the similar upcoming Unit 2 refueling outage. It reported on the operating status during the last month, significant activities during June, and INPO and NRC visits coming up.

Conclusions: The plant status and operating update since the previous DCISC Fact-finding meeting was informative and useful.

Recommendations to PG&E or to the DCISC: None

3.11 Independent Spent Fuel Storage Installation Update

The DCISC FFT met with Tom Jones, Senior Director and Repurposing Manager and Kyle Duke, Dry Fuel Management Program Supervisor, for information for DCISC to respond to a member of the public's concern regarding Independent Spent Fuel Storage Installation (ISFSI) internal stainless steel stress corrosion cracking. The DCISC had provided the set of concerns two weeks earlier, and DCPP had provided the first draft of responses in this fact-finding meeting.

DCPP will provide the final version of the responses at the DCISC September Fact-finding meeting.

Conclusions: DCPP developed the first draft of responses to concerns by a member of the public at the July 2025 DCISC Fact-finding meeting and will provide final responses at the September 2025 DCISC Fact-finding Meeting.

Recommendations to PG&E or to the DCISC: None.

4.0 CONCLUSIONS

- 4.1 DCPP's Reactivity Management Program, which ensures conservative reactivity management by promoting a reactivity-conscious culture, appears effective. Program Performance Indicators are good and improving. They show a low occurrence rate and significance of Reactivity Management events for the past 12 months.**
- 4.2 The DCPP Operating Experience Program was healthy and appeared to be implemented effectively.**
- 4.3 DCPP appears to have implemented the Maintenance Rule appropriately and effectively.**
- 4.4 The meeting with the NRC Resident Inspectors was beneficial, and the DCISC should continue the meetings.**
- 4.5 DCPP's Auxiliary Building Ventilation System was in good health and performing well. Past issues with system dampers in the Auxiliary Building appear to have been effectively resolved.**
- 4.6 As it concluded in the December 2024 Fact-finding Meetings DCISC FFT endorses DCPP's decision to pursue electronic procedures. Electronic procedures provide many benefits in improving human reliability and documenting work, thereby creating substantial opportunities to improve the plant's operational safety.**
- 4.7 The DCPP Radioactive Effluent Release Program and the Radiological Environmental Monitoring Program appeared satisfactory in calculating, monitoring, and measuring radioactivity in the environment. During 2024 there were no abnormal releases of radioactivity nor were there any abnormal levels of radioactivity detected in the environment surrounding DCPP. DCPP 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.**

- 4.8 The DCISC Fact-finding Team, accompanied by two DCPD employees, found no furniture or shelving unbraced or unweighted which would cause a hazard to personnel during or following an earthquake.
- 4.9 The new DCPD artificial intelligence search system by Atomic Canyon to be used for high speed, very accurate data/document searches appears to have good potential for reducing human error and for more efficient searches.
- 4.10 The plant status and operating update since the previous DCISC Fact-finding meeting was informative and useful.
- 4.11 DCPD developed the first draft of responses to concerns by a member of the public at the July 2025 DCISC Fact-finding meeting and will provide final responses at the September 2025 DCISC Fact-finding Meeting.

5.0 RECOMMENDATIONS

Recommendations to the DCISC:

- 5.1 The following previous recommendation to the DCISC was reviewed in this Fact-Finding Meeting (Section 3.6) and remains open: *Because expanded use of electronic procedures can enhance plant operational safety subject to proper human systems integration, the DCISC should review this topic regularly. (D12/24FF-3.2)*
- 5.2 The following previous recommendation to the DCISC was reviewed in this Fact-Finding Meeting (Section 3.9) and remains open: *Because the application of Artificial Intelligence tools has significant potential to change and to improve DCPD's operational safety, the DCISC should review this topic frequently. (D12/24-3.4)*

Recommendation to PG&E:

- 5.3 The following previous recommendation to PG&E was reviewed in this Fact-Finding Meeting (Section 3.6) and remains open: *PG&E should expand their use of electronic procedures because the improved human performance and documentation of work can directly improve the safety of operations. (P12/24FF-3.2)*

6.0 REFERENCES

- 6.1 "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," Approved October 18, 2024, Volume II, Exhibit D.8, Section 3.2, "Reactivity Management Update."
- 6.2 "Diablo Canyon Independent Safety Committee Thirty-Fifth Annual Report on the Safety

of Diablo Canyon Nuclear Power Plant Operations, July 1, 2024 – June 30, 2025,” to be Approved October 22, 2025, Volume II, Exhibit D.1, Section 3.4, “Operational Experience Program Update.”

- 6.3 “Diablo Canyon Independent Safety Committee Thirty-Fourth Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2023– June 30, 2024,” Approved October 14, 2024, Volume II, Exhibit D.4, Section 3.3, “Maintenance Rule Update.”
- 6.4 “Diablo Canyon Independent Safety Committee Thirty-Fifth Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2024 – June 30, 2025,” to be Approved October 22, 2025, Volume II, Exhibit D.9, Section 3.8, “Meet with NRC Senior Resident Inspector.”
- 6.5 “Diablo Canyon Independent Safety Committee Thirty-Fourth Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2023– June 30, 2024,” Approved October 14, 2024, Volume II, Exhibit D.1, Section 3.5, “Auxiliary Building Ventilation System.”
- 6.6 “Diablo Canyon Independent Safety Committee Thirty-Fifth Annual Report on the Safety of Diablo Canyon Nuclear Power Plant Operations, July 1, 2024 – June 30, 2025,” to be Approved October 22, 2025, Volume II, Exhibit D.5, Section 3.2, “Electronic Procedures and WiFi Expansion.”
- 6.7 Ibid., Exhibit D.1, Section 3.3, “Annual Radiological Reports.”
- 6.8 Ibid., Exhibit D.10, 3.1, “Workplace Seismic Safety.”
- 6.9 Ibid., Exhibit D.5, Section 3.4 “Plans for a New Artificial Intelligence Process (Atomic Canyon).”
- 6.10 Ibid., Exhibit D.10, Section 3.9 “Station Update.”