



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

July 03, 2024

Paula Gerfen, Senior Vice President
Generation and Chief Nuclear Officer
Pacific Gas and Electric Company
P.O. Box 56
Mail Code 104/6
Avila Beach, CA 93424

**SUBJECT: DIABLO CANYON NUCLEAR POWER PLANT, UNIT 2 – LICENSE RENEWAL
PHASE 1 REPORT 05000323/2024011**

Dear Paula Gerfen:

On May 23, 2024, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Diablo Canyon Nuclear Power Plant, Unit 2 and discussed the results of this inspection with Maureen Zawalick, Vice President Business and Technical Services and other members of your staff. The results of this inspection are documented in the enclosed report.

One finding of very low safety significance (Green) is documented in this report. This finding involved a violation of NRC requirements. We are treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violation or the significance or severity of the violation documented in this inspection report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement; and the NRC Resident Inspector at Diablo Canyon Nuclear Power Plant, Unit 2.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; and the NRC Resident Inspector at Diablo Canyon Nuclear Power Plant, Unit 2.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,



Signed by Taylor, Nicholas
on 07/03/24

Nicholas H. Taylor, Chief
Engineering Branch 2
Division of Operating Reactor Safety

Docket No. 05000323
License No. DPR-82

Enclosure:
As stated

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DIABLO CANYON NUCLEAR POWER PLANT, UNIT 2 – LICENSE RENEWAL PHASE 1
 REPORT 05000323/2024011 – DATED JULY 03, 2024

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**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket No. 05000323

License No. DPR-82

Report No. 05000323/2024011

Enterprise Identifier: I-2024-011-0007

Licensee: Pacific Gas and Electric Company

Facility: Diablo Canyon Nuclear Power Plant, Unit 2

Location: Avila Beach, CA

Inspection Dates: April 08, 2024 to May 23, 2024

Inspectors: P. Cooper, Senior Reactor Inspector
A. Siwy, Senior Project Manager
C. Smith, Senior Reactor Inspector

Approved By: Nicholas H. Taylor, Chief
Engineering Branch 2
Division of Operating Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a license renewal Phase 1 at Diablo Canyon Nuclear Power Plant, Unit 2, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

List of Findings and Violations

Failure to Scope Weatherproofing Roof Seals into Maintenance Rule Program			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000323/2024011-01 Open/Closed	[P.2] - Evaluation	71013
The inspectors identified a Green non-cited violation of Title 10 of the Code of Federal Regulations (10 CFR) 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for the licensee's failure to include non-safety-related structures in the scope of their maintenance rule monitoring program. Specifically, the licensee failed to include waterproofing roof seals, which met the requirements of 10 CFR 50.65(b)(2)(ii) as components whose failure could prevent safety-related structures, systems, and components from fulfilling their safety-related function.			

Additional Tracking Items

None.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

71013 - Site Inspection for Plants with a Timely Renewal Application

The inspectors performed Phase 1 of inspection procedure 71013 of Diablo Canyon Power Plant, Unit 2 the week of April 8, 2024, while the plant was shut down for refueling outage 2RF24. This allowed the inspectors to evaluate the material condition of inaccessible areas prior to entry into the period of extended operation and perform inspections associated with aging management programs as described in their license renewal application.

This was the last outage before the expiration date of the Unit 2 original license on August 26, 2025.

Plant Condition Monitoring Walkdowns

The inspectors walked down normally inaccessible areas of the facility looking at the structures, systems, and components for signs of aging, such as corrosion on piping, component supports, and cable trays, water intrusion, structural cracking, and spalling of concrete.

Specific structures, systems, areas, and components walked down and evaluated during this inspection included:

- Refueling water storage tank
- Condensate storage tank
- Intake structure and auxiliary saltwater pump vaults
- Circulating water intake tunnel
- Circulating water discharge canal
- Auxiliary building auxiliary feedwater pipe leakage detection drain line
- 480V switchgear
- Electrical switchgear rooms
- 140' elevation auxiliary building roof "sundeck"
- Containment – multiple elevations
 - Containment liner
 - Sump
 - Let down orifice room
 - Reactor vessel head
 - Steam generator platforms

INSPECTION RESULTS

Failure to Scope Weatherproofing Roof Seals into Maintenance Rule Program			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000323/2024011-01 Open/Closed	[P.2] - Evaluation	71013
<p>The inspectors identified a Green non-cited violation of Title 10 of the Code of Federal Regulations (10 CFR) 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for the licensee's failure to include non-safety-related structures in the scope of their maintenance rule monitoring program. Specifically, the licensee failed to include waterproofing roof seals, which met the requirements of 10 CFR 50.65(b)(2)(ii) as components whose failure could prevent safety-related structures, systems, and components from fulfilling their safety-related function.</p>			
<p><u>Description:</u> During the inspection, the inspectors became aware of rainwater intrusion affecting safety-related components and structures.</p> <p>During preparations for the inspection, on March 6, 2024, the NRC inspectors observed rainwater leaking onto containment penetrations. The rainwater entered the auxiliary building through a mechanical neoprene "boot seal" that fills the gap between the roof of the auxiliary building and the side of the containment building. The inspectors reviewed the licensee's corrective action program and found several instances, dating back to 1996, where rainwater entered the building through the roof seals and came into contact with safety-related electrical junction boxes. On at least two occasions, water entered one of the boxes which affected RM-30, a containment high-range radiation monitors and caused it to fail.</p> <p>In December 2014, RM-30 exhibited large spikes, later determined to be invalid false alarms. The licensee found approximately four inches of standing water (approximately 2.5 gallons) inside the junction box containing cabling for RM-30. The licensee installed a heater and tent around the junction box to dry the cables inside the box with the junction box cover removed (SAPN 50680384). The licensee reinstalled the cover after the cables were dried and applied sealant between the cover and the box. The license recognized the need to repair the neoprene boot seal and sheet metal cap on the roof to prevent rainwater intrusion into the building but had not completed repairs at the time of the inspection (SAPN 50839640). The inspectors found that there were at least 5 separate condition reports documenting rainwater intrusion (SAPNs 51033218, 51031705, 51030358, 50675134, and 50680384).</p> <p>In May 2019, RM-30 was exhibiting large invalid spikes, and eventually failed. The licensee found approximately 2 gallons of water inside the junction box. The licensee dried the junction box and cables, and applied sealant in multiple places on the junction box. The licensee used temporary rain tarps until repairs could be made to prevent rainwater from entering the auxiliary building (SAPN 51033218).</p> <p>During the NRC observation of non-destructive examinations of the refueling water storage tank (RWST) and condensate storage tank, the inspectors identified evidence of corrosion on the pipe restraints and piping associated with the RWST and auxiliary feedwater (AFW) exhaust lines in the fuel handling building. These piping segments, and associated restraints, are directly below the roof penetration. The inspectors concluded the seals for the piping</p>			

penetrations in the fuel building roof were ineffective at preventing rainwater intrusion, which resulted in corrosion on the RWST, AFW piping segments, and pipe supports.

Corrective Actions: The licensee entered this issue into their corrective action program for the weatherproofing roof seals to be scoped within the maintenance rule program. Additionally, the licensee-initiated action to inspect and repair the weatherproofing seals.

Corrective Action References: SAPN 51232792, 51232793, 51232612, and 51235532.

Performance Assessment:

Performance Deficiency: The failure to scope the weatherproofing roof seals into the maintenance rule program was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, absent NRC's intervention, the licensee's failure to establish and perform appropriate preventive maintenance on weatherproofing roof seals can lead to additional failures of RM-30 and other important to safety components.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Using exhibit 2, "Mitigating Systems," the inspectors determined that the finding was of very low safety significance (Green) because the finding was not a deficiency affecting the design or qualification of the system, did not represent a loss of the PRA function of a single train TS system for greater than its TS-allowed outage time, did not represent a loss of PRA function of two separate TS systems for greater than 24 hours, did not represent a loss of a PRA system and/or function as defined in the PRIB or licensee's PRA for greater than 24 hours, and did not represent a loss of the PRA function of one or more non-TS trains of equipment designated as risk-significant in accordance with the licensee's maintenance rule program for more than 3 days.

Cross-Cutting Aspect: P.2 - Evaluation: The organization thoroughly evaluates issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. The licensee did not thoroughly evaluate the rainwater intrusion into the building to ensure that resolutions address cause and extent of conditions commensurate with their safety significance. Specifically, the licensee observed rainwater intrusion on several occasions, and as recently as March 6, 2024, but did not evaluate the issue thoroughly to determine if the degraded weather sealant should be scoped into the maintenance rule.

Enforcement:

Violation: 10 CFR 50.65 (b)(2) requires, in part, that the scope of the monitoring program specified in paragraph (a)(1) include non-safety related structures, systems, and components (SSCs) whose failure could prevent safety-related SSCs from fulfilling their safety-related function.

Contrary to the above, from at least July 10, 1996, to present, the weatherproofing roof seals on Units 1 and 2 were not included in the scope of the monitoring program specified in 10 CFR 50.65 (a)(1). The inclusion of the weatherproofing roof seals in the scope of the monitoring program was necessary because the failure of that component could prevent RM-30, a safety-related system, from fulfilling its safety-related function.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On May 23, 2024, the inspectors presented the license renewal phase 1 results to Maureen Zawalick, Vice President Business and Technical Services and other members of the licensee staff.
- On April 11, 2024, the inspectors presented the Technical Debrief inspection results to Philippe Soenen, Director of Strategic Initiatives, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71013	Calculations	9000042639	Evaluate pipe thickness below manufacturer's tolerance at 2x1/2" swage reducer on line 2599	1/17/2024
	Corrective Action Documents	SAPN 50384677	SI-2-8808C: BA Leakage Packing	01/10/2022
		SAPN 50675134	RM-30 Spiking and alarming	04/10/2024
		SAPN 50675134	RM-30 Spiking and alarming	01/10/2017
		SAPN 50682100	Spurious RM-30 Hi-Rad Alarm	01/28/2015
		SAPN 50964062	CVCS-2-8148 BA AOV Packing	01/10/2022
		SAPN 51030701	DA-U-1 RE-30 Failed	10/12/2019
		SAPN 51031705	U-1, BTG-28E found with water in bottom	04/10/2024
		SAPN 51033218	Wtr.Leaks: Cntmt Annular Seal to 115' GW	04/10/2024
		SAPN 51048317	CVCS-2-8148 BA at B/B bolting	4/10/2024
		SAPN 51110755	CVCS-2-8148: Boric Acid Leak B-t-B	04/10/2024
		SAPN 51209720	Line-2599: Below Manufacturer's Tolerance	4/10/2024
		SAPN 51210176	Corroded Pipe Inlet Discharge Cond. 1-1	04/10/2024
		SAPN 51210177	Corroded Pipe in Discharge Conduit 1-1	04/10/2024
		SAPN 51217321	2024 NRC Insp Trk 2R24 LR Inspection	12/06/2024
		SAPN 51223508	GSC-1-477: Selective Leaching Observed	04/10/2024
		SAPN 51224719	LR SA Issue: Pull Box BPO16/16A Debris	02/06/2024
		SAPN 51224720	LR SA Issue: Pull Box BPO19/19A Debris	02/06/2024
		SAPN 51224760	LR SA Issue: Pull Box BPO13 Debris	02/06/2024
		SAPN 51224762	LR SA Issue: DWG (438168-1) TB Pullboxes	02/06/2024
		SAPN 51232489	Tracking Update to LRA Table 3.5.2-3	04/10/2024
		SAPN 51232556	Perform White Residue Smpg U2 Bioshield	04/10/2024
		SAPN 51232736	2R24 IWE: Inspect caulking	04/11/2024
		SAPN 51232903	Corroded Pipe Inlet 2093 Disch Cond. 2-2	04/12/2024
		SAPN 51232904	Corroded Pipe in Disch Conduit 2-2	04/12/2024
	Corrective Action Documents Resulting from Inspection	SAPN 51232575	2R24 LR Insp: NRC Id missing bolt BTG33E	04/10/2024
		SAPN 51232576	2R24 LR Insp NRC Id missing screw BTG20E	04/10/2024
		SAPN 51232578	2R24 LR Insp: NRC Id loose screw BTG25E	04/10/2024
		SAPN 51232621	2R24 LR Insp: NRC ID Annular Seal delam	04/10/2024
		SAPN 51232627	2R24 LR Insp: NRC ID U1 Annular seal	04/10/2024

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		SAPN 51232716	Evaluate if U1 Boot Seal in CMR Scope	04/11/2024
		SAPN 51232717	Evaluate if U2 Boot Seal in CMR Scope	04/11/2024
		SAPN 51232810	2R24 LR Insp: NRC ID AFW Exhaust coating	04/11/2024
		SAPN 51232813	2R24 LR Insp: NRC ID corrosion on 36-56R	04/11/2024
		SAPN 51232817	2R24 LR Insp: NRC ID corrosion on 36-15R	04/11/2024
		SAPN 51232915	LR - Update IWE plan: moisture barrier	04/12/2024
	Drawings	107714-6	Header "C" Components	69
		443251 SH 1	Interior Concrete Outline Plan Containment Structure Areas	12
		443251-1-0	Civil Interior Concrete Outline Plan at El. 91' -0" & Below Containment Structure Areas "G & F"	12
		443301-1-0	Civil Reactor Support Containment Structure Area F & G	2
		501026-1-0	Details of Embedded Pipe and Fittings	7
		59574-1-0	Architectural Plan Area "F" & "L" Elev. 140' -0" and Details	24
		59575-1-0	Architectural Plan Area "G" & "GW" E.I. 140' -0"	25
		59576-1-0	Architectural Plan Area "G" & "GE" Elev. 140' -0" and Details	27
		663201-7-4	Reactor Vessel Support Hardware Details	4
		683859-70-1	Containment Structure Unit #2 Lift J-32	1
	Engineering Changes	DCM T-26	Pipe Support Analysis	9
		N-MOD 4000000411	Install Caulking at the Junction of the Containment Liner Plate to the El. 91' Concrete Floor	0
	Miscellaneous		DCPP LRA Commitment Status Table	
			ISI Program Plan Unit 2, 4th Interval	1
			2R24 Outage Schedule	
		Line-2477 UT Report 2R24	Ultrasonic Thickness Measurement Datasheet	04/10/2024
		Systems Training Guide A2A	Major Components: Rx Vessel Support	18
	Procedures	AWP E-016	Inspection Guide - Maintenance Rule Structural Monitoring Programs - Civil	12
		AWP E-016	Inspection Guide - Maintenance Rule Structural Monitoring Programs - Civil	12
		MP M 55.5	Fabrication, Installation, and Modification of Pipe Supports	16
		NDE UT-2	Ultrasonic Thickness Measurement Examination	1

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Procedure	
		TS1.DC3	One-Time Inspection Program	1
	Self-Assessments		Diablo Canyon Power Plant License Renewal Project Quick Hit Self-Assessment Report - NRC License Renewal Inspection 2R24	