



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

June 8, 2018

Mr. James M. Welsch  
Vice President, Nuclear Generation  
and Chief Nuclear Officer  
Pacific Gas and Electric Company  
P.O. Box 56  
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Avila Beach, CA 93424

SUBJECT: DIABLO CANYON POWER PLANT, UNITS 1 AND 2 – NRC BIENNIAL  
PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT  
05000275/2018008 and 05000323/2018008

Dear Mr. Welsch:

On May 3, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed a problem identification and resolution inspection at the Diablo Canyon Power Plant, Units 1 and 2. The NRC inspection team discussed the results of this inspection with you and members of your staff. The results of this inspection are documented in the enclosed report.

The NRC inspection team reviewed the station's corrective action program and the station's implementation of the program to evaluate its effectiveness in identifying, prioritizing, evaluating, and correcting problems, and to confirm that the station was complying with NRC regulations and licensee standards for corrective action programs. Based on the samples reviewed, the team determined that your staff's performance in each of these areas adequately supported nuclear safety. However, the team identified some challenges in the area of problem identification in that issues were not always adequately identified by station personnel in a way that they could be promptly and fully addressed.

The team also evaluated the station's processes for use of industry and NRC operating experience information, and the effectiveness of the station's audits and self-assessments. Based on the samples reviewed, the team determined that your staff's performance in each of these areas adequately supported nuclear safety. However, the team noted instances where lessons learned from industry and NRC operating experience had not been incorporated into station programs, processes, and procedures to prevent similar operational events.

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 no evidence of challenges to your organization's safety-conscious work environment. Diablo Canyon Power Plant, Units 1 and 2 employees appeared willing to raise nuclear safety concerns through at least one of the several means available.

NRC inspectors documented two findings of very low safety significance (Green) in this report, both of which involved violations of NRC requirements. Additionally, inspectors documented a licensee-identified violation that was determined to be of very low safety significance. The NRC is treating all of these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest these violations or their significance, 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 the Diablo Canyon Power Plant, Units 1 and 2.

Likewise, 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 the Diablo Canyon Power Plant, Units 1 and 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 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

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Gerond A. George, Team Leader  
Inspection Programs and Assessment Team  
Division of Reactor Safety

Docket Nos. 50-275 and 50-323  
License Nos. DPR-80 and DPR-82

Enclosure:  
Inspection Report 05000275/2018008  
and 05000323/2018008  
w/ Attachments:  
1. Information Request  
2. Supplemental Information Request

cc w/ encl: Electronic Distribution

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

Docket Number(s): 05000275, 05000323

License Number(s): DPR-80, DPR-82

Report Number: 2018008

Enterprise Identifier: I-2018-008-0002

Licensee: Pacific Gas and Electric Company

Facility: Diablo Canyon Power Plant, Units 1 and 2

Location: Avila Beach, California

Inspection Dates: April 16, 2018, to May 3, 2018

Inspectors: E. Ruesch, J.D., Sr. Reactor Inspector (Team Lead)  
J. Braisted, Ph.D., Reactor Inspector  
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Approved By: Gerond A. George, Team Leader  
Inspection Programs and Assessments Team  
Division of Reactor Safety

Enclosure

## SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee’s performance by conducting a biennial problem identification and resolution inspection at Diablo Canyon Power Plant, Units 1 and 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. Findings and violations being considered in the NRC’s assessment are summarized in the table below. A licensee-identified non-cited violation is discussed in report section 71152.

### List of Findings and Violations

<b>Failure to Identify Diesel Generator Air Inlet Boot Seal Critical Characteristics</b>			
Cornerstone	Significance	Cross-cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000275/2018008-02; 05000323/2018008-02 Closed	None	71152—Problem Identification and Resolution
A self-revealed, Green, non-cited violation (NCV) of Title 10, <i>Code of Federal Regulations</i> (CFR) Part 50, Appendix B, Criteria VII and XV, occurred when the licensee failed to ensure materials intended for installation in safety-related applications conformed to procurement requirements or, if they did not, were adequately controlled and evaluated.			

<b>Failure to Promptly Identify and Correct Emergency Diesel Generator 1-1 Cardox System Inoperability</b>			
Cornerstone	Significance	Cross-cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000275/2018008-03 Closed	H.14	71152—Problem Identification and Resolution
An NRC-identified, Green, non-cited violation (NCV) of the licensee’s fire protection license condition occurred when licensee personnel failed to identify a trouble light lit on the Emergency Diesel Generator (DG) 1-1 cardox fire protection system panel. The light, which had been lit for 2 weeks before being identified by the NRC, indicated a condition that would have prevented the automatic fire suppression system from effectively suppressing a fire in the DG 1-1 room.			

### Additional Tracking Items

Type	Issue number	Title	Report Section	Status
URI	05000275/2018008-01; 05000323/2018008-01	Emergency Diesel Generator Mission Time for Operability Evaluations	71152 Inspection Results	Open

## 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 – BASELINE

### 71152—Problem Identification and Resolution

#### Biennial Team Inspection (1 Sample)

The inspectors performed a biennial assessment of the licensee's corrective action program, use of operating experience, self-assessments and audits, and safety-conscious work environment. The assessment is documented below.

- (1) Corrective Action Program Effectiveness: Problem Identification, Problem Prioritization and Evaluation, and Corrective Actions – The inspection team reviewed the station's corrective action program and the station's implementation of the program to evaluate its effectiveness in identifying, prioritizing, evaluating, and correcting problems, and to confirm that the station was complying with NRC regulations and licensee standards for corrective action programs. The sample included review of over 200 notifications ("SAPNs") and associated records, and an in-depth 5-year review of condition reports associated with the auxiliary feedwater (AFW) piping and seismic supports.
- (2) Operating Experience, Self-Assessments, and Audits – The team evaluated the station's processes for use of industry and NRC operating experience. The team also evaluated the effectiveness of the station's audits and self-assessments program. The sample included several industry operating experience communications and associated site evaluations.
- (3) Safety Conscious Work Environment – The team evaluated the station's safety-conscious work environment. The team interviewed 43 station personnel in 5 group interviews. These included personnel from operations, engineering, maintenance, security, fire protection, and radiation protection and chemistry. The team also interviewed employee concerns program personnel, reviewed employee concerns files, and reviewed the results of the most recent safety culture survey.

## INSPECTION RESULTS – OBSERVATIONS/ASSESSMENT

Corrective Action Program Assessment	71152—Problem Identification and Resolution
<u>Effectiveness of Problem Identification:</u> Overall, the team found that the licensee's identification and documentation of problems was adequate to support nuclear safety, though	

some challenges were noted. In particular, the team identified several equipment conditions in the plant that had not been identified by station personnel. These are described in observations, findings, and violations below.

Effectiveness of Prioritization and Evaluation of Issues: Overall, the team found that the licensee’s prioritization and evaluation of issues was adequate to support nuclear safety.

Effectiveness of Corrective Actions: Overall, the team found that the licensee’s corrective actions generally supported nuclear safety. However, the team noted some examples where corrective actions had not been timely or were not completed as originally designed. These examples are described in observations, findings, and violations below.

Observations on the Corrective Action Program (CAP)	71152—Problem Identification and Resolution
	<p>The team’s 5-year review of CAP items related to auxiliary feedwater (AFW) piping and seismic supports found that material conditions were generally appropriately identified, adequately evaluated, and appropriately corrected. However, in reviewing the first quarter 2017 system/component walkdown checklist per Diablo Canyon Power Plant (DCPP), Units 1 and 2 system engineering program, dated April 17, 2017, the team noted that walkdown or assessment of the material conditions of piping inside the auxiliary building was not included. Licensee personnel stated that because AFW lines 1 and 2 are complex piping that is exposed to the outside environment, and experience has shown significant thermal movements is experienced, they are walked down. In contrast, AFW lines 3 and 4 are located indoors in the auxiliary building and are shorter non-complex pipe runs; therefore, walkdowns are unnecessary. However, on February 10, 2015, while working on a pipe hanger, maintenance personnel noticed excessive wear (1/16 inch deep) into an AFW pipe wall caused by a misaligned shim plate resulting in excessive vibration. The shim plate was replaced and piping wear was determined not to impact AFW operability. Although the piping wear met the design basis allowable stress limits, this wear had been ongoing for a long time and likely could have been identified sooner if system engineering walkdowns required inspections of piping lines inside the auxiliary building. The licensee documented this observation in SAPN 50978723.</p> <p>The team determined DCPP continued to identify adverse trends in document control timeliness and complete records. DCPP initially identified an issue with timely submittal of quality records into the record management system in December 2015. This issue was identified again in 2017, indicating corrective actions have not yet been effective. The associated cause evaluations point to a lack of knowledge and training. The breadth of document control issues includes security, engineering, maintenance, and operations. There have been several documented instances in which records were missing or not retained. The team reviewed the corrective actions to address document control which include contributing factors that involve human error, lack of training, workload, poor procedures, and lack of supervisory oversight. A review of the immediate and planned corrective actions by the team concluded that appropriate corrective actions have been initiated and the appropriated priority is being placed that will improve this long-standing issue. The licensee documented this observation in SAPN 50978721.</p> <p>The team identified an event associated with changing light bulbs on safety-related electrical panels as another missed opportunity to review past operating experience. In 2009 an operator, while changing a light bulb on a safety-related 4kV panel, inadvertently unscrewed</p>

the light socket, causing an electrical short in the emergency diesel circuit, and resulting in DG inoperability. Corrective actions developed to prevent this event from occurring again included placing warning labels on high risk electrical panels. However, as of April 2018 these tags had not been installed as required by that action. Potentially as a result, on April 10, 2018, while attempting to change a light bulb on the startup transfer breaker on vital bus “G” the light bulb socket came loose in the very same manner as the event in 2009. The operator stopped soon enough to prevent another electrical short event, but extensive troubleshooting and maintenance resources were required to return the light socket to normal condition. The NRC identified this as a near miss of a repeat equipment event. The licensee documented this observation in SAPN 50978496.

Use of Operating Experience Assessment	71152—Problem Identification and Resolution
In general, the team found operating experience (OpE) information was being appropriately used at DCCP, Units 1 and 2, to ensure potential issues were promptly identified and corrected. However, the team noted some indications that screening of OpE information could be improved.	

Observation on the Use of Operating Experience	71152—Problem Identification and Resolution
The team determined that gaps exist in the OpE program associated with the cause evaluation process since guidance requires a review and identification of OpE preventable events, but this process is not being appropriately implemented. Specifically, Procedure OM7.ID3, “Root Cause Evaluation Process,” and Procedure OM7.ID4, “Cause Evaluation,” provide guidance on looking at missed opportunities documentation into whether there were OpE preventable events; the documentation of these processes was inconsistent. In at least one case—which resulted in a performance deficiency that led to a charging pump failure, as described in NRC Inspection Report 2018001—this represented a missed opportunity to identify a vulnerability and take actions to prevent an event. The team concluded that additional guidance or training may be required to ensure the CAP process properly assesses missed opportunities to prevent an event. One example of such a missed opportunity is described in the corrective action program observations above. The licensee documented this observation in SAPN 50978724.	

Self-Assessments and Audits Assessment	71152—Problem Identification and Resolution
Based on the samples reviewed, the team determined that station performance in these areas adequately supported nuclear safety.	

Safety Conscious Work Environment Assessment	71152—Problem Identification and Resolution
The team found no evidence of challenges to the safety-conscious work environment of station work groups. Individuals appeared willing to raise nuclear safety concerns through at least one of the several means available. However, the team found evidence of possible challenges to the safety-conscious work environment within some onsite Pacific Gas and Electric (PG&E) work groups whose reporting lines are outside the nuclear organization.	

## INSPECTION RESULTS – ISSUES/FINDINGS

Minor Violation	71152—Problem Identification and Resolution
<p>Performance Deficiency: Failure to use the site corrective action program to track, trend, correct, and prevent recurrence of failures and deficiencies in the physical protection program, as required by Title 10 of the <i>Code of Federal Regulations</i> § 73.55, “Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage.”</p> <p>On April 17, 2018, during a plant tour, inspectors identified a deficiency associated with the physical protection program and brought it to the attention of control room operators. On May 1, 2018, inspectors asked licensee personnel for a copy of the SAPN documenting the deficiency. None had been initiated. Further, the deficiency had not been logged in the security logs as required. The failure to log the issue was itself a loggable event. The licensee documented the deficiency and the failure to initially document it in SAPN 50978291.</p> <p>Screening: The performance deficiency was minor because it would not have led to a more significant security concern and did not adversely affect the security cornerstone objective.</p> <p>Enforcement: This failure to comply with 10 CFR 73.55 constitutes a minor violation that is not subject to enforcement action in accordance with the NRC’s Enforcement Policy.</p>	

Minor Violation	71152—Problem Identification and Resolution
<p>Performance Deficiency: Failure to install safety-related pressure transmitters (PTs) in accordance with engineering design documents, without documented authorization and prior approval for deviation from that design.</p> <p>Unit 2 Steam Generator pressure transmitters PT-544A and PT-534A were not installed per design. The design called for mounting the PTs on independent unistruts but, contrary to this, the transmitters were installed on a common unistrut. Though the new mounting configurations were documented and analyzed in SAPNs 50881613 and 50881415, Work Order 68039185 which installed the PTs did not record the deviation from originally designed mounting configuration. The licensee attributed the failure to install per original design to human error and initiated SAPN 50976632 to evaluate it.</p> <p>Screening: The performance deficiency is minor in that the current configuration was evaluated not to affect the seismic or structural qualification.</p> <p>Enforcement: This failure to comply with 10 CFR Part 50, “Domestic licensing of production and utilization facilities,” Appendix B, “Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants,” Criterion III, “Design Control,” constitutes a minor violation that is not subject to enforcement action in accordance with the NRC’s Enforcement Policy.</p>	

Licensee-Identified Non-Cited Violation	71152—Problem Identification and Resolution
<p>This violation of very low safety-significant was identified by the licensee and has been entered into the licensee corrective action program. This is being treated as a non-cited violation (NCV), consistent with Section 2.3.2 of the Enforcement Policy.</p>	



Violation: Title 10 CFR Part 50, Appendix B, Criterion III, requires that measures shall include provisions to assure that appropriate quality standards are specified and included in design documents, and that deviations from such standards are controlled.

Contrary to the above, from approximately February 2004 until August 2017, the licensee did not assure that appropriate quality standards were specified and included in design documents, and that deviations from such standards were controlled. Specifically, the licensee had classified the seat o-ring used in Crosby and Lonergan pressure relief valves (e.g., RV-354 and RV-355) servicing safety-related back-up air/nitrogen applications as non-safety related when they should have been classified as safety-related. Consequently, the o-rings were procured as commercial grade (non-safety related), not dedicated as safety-related and installed in safety-related equipment.

Significance/Severity Level: This violation was more than minor because it had the potential to lead to a more significant safety concern if left uncorrected. Specifically, the use of non-qualified seat o-rings had the potential to cause excessive leakage past the seat, adversely affecting the fixed air/nitrogen volume required to operate safety-related equipment during a loss of normal air/nitrogen. Using IMC 0609, Appendix A, dated June 19, 2012, the team determined that this violation was of very low safety significance (Green) because it was a deficiency affecting the design or qualification of a structure, system or component, and operability was maintained.

Corrective Action Reference(s): SAPNs 50935776 and 50970247

Unresolved Item (Open)	Emergency Diesel Generator Mission Time for Operability Evaluations URI 05000275/2018008-01; 05000323/2018008-01	71152—Problem Identification and Resolution
<p><u>Description:</u></p> <p>The team identified an unresolved item (URI) related to diesel generator (DG) mission time for operability evaluations. On December 3, 2016, an operator discovered during rounds that the air inlet boot seal on DG 1-2 had degraded, and subsequently, an inspection of the other diesel generators (DGs) revealed that the DG 2-2 boot seal was also degraded. The licensee performed an operability evaluation and concluded that the DGs were operable based on a mission time of 24 hours. The licensee then performed a past operability evaluation, concluding that the DGs had remained able to perform their safety function for this stated 24-hour mission time despite the deficiency; therefore no licensee event report was required by 10 CFR 50.73.</p> <p>The team requested information related to the basis of the 24-hour mission time. The licensee provided a non-controlled reference document, "Engineered Safety Feature (ESF) Equipment Mission Time," to the licensee's operability determination Procedure OM7.ID12. The document listed the mission time for the DGs as "7 days (24 hours, 6 hours)." The 6 and 24 hour values depend on the particular accident sequence and electrical power recovery time, and were from a letter sent to the NRC related to the licensee's Individual Plant Examination of External Events (IPEEE), which is a plant-specific probabilistic risk assessment (PRA). The 7-day value is related to the required diesel fuel oil storage volume as discussed in Technical Specification Bases 3.8.3. The document also states that the licensee has no defined post-accident operation / mission times because such times are not mandated by regulation or recommended by NRC guidance.</p>		

The team noted, however, that IPEEEs do not typically evaluate accidents past 24 hours, and furthermore, IMC 0326, "Operability Determinations and Functionality," states that the use of PRA or probabilities of occurrence of accidents or external events is not consistent with the assumption that the event occurs, and is not acceptable for making operability decisions. Additionally, Procedure OM7.ID12 defines mission time as the duration of structure, system, or component (SSC) operation that is credited in the current licensing bases for the SSC to perform its specified safety function; however, as documented above by the licensee, there is no design or licensing basis mission time for the DGs. The licensee's definition of mission time is essentially the same as described in IMC 0326.

The inspectors performed a brief review of documents related to mission times. Technical Specification Limiting Condition for Operation 3.8.3, "Diesel Fuel Oil, Lube Oil, Starting Air, and Turbocharger Air Assist," requires verification of diesel fuel oil level to satisfy a 7-day fuel oil storage requirement. Additionally, NUREG-1407 discusses an Electric Power Research Institute approach that defines and evaluates the capacity of those components required to bring the plant to a stable condition (either hot or cold shutdown), and maintain that condition for at least 72 hours. Also, the ESF equipment mission time document referenced several 30-day mission times for SSCs that would require emergency power from either offsite power, if available, or the DGs. The team also performed a search of previous NRC findings at the DCP, Unit 1 and 2, and found one reference to a 7-day mission time for the DGs in NRC Pilot Engineering Inspection Report 2006005.

The inspectors also reviewed NEI 97-04, "Design Bases Program Guidelines," Revised Appendix B, "Guidance and Examples for Identifying 10 CFR 50.2 Design Bases." The Appendix describes how the 10 CFR 50.2 design bases of a facility are a subset of the current licensing basis and are required pursuant to 10 CFR 50.34(a)(3)(ii) and (b) and 10 CFR 50.71(e), to be included in the updated Final Safety Analysis Report (FSAR). Title 10 CFR 50.2 design bases consist of design bases functions and design bases values. Design bases values are the values or ranges of values of controlling parameters established as reference bounds for design to meet design bases functional requirements. In other words, the 10 CFR 50.2 design bases include the bounding conditions under which SSCs must perform their design bases functions and may be derived from normal operation, or any accident or events for which SSCs are required to function.

Because 10 CFR 50.71(e), IMC 0326, and Procedure OM7ID.12 indicated that DG mission time should be part of the design and licensing bases, and documented in the FSAR, but a DG mission time design and licensing basis does not appear to exist at DCP, Units 1 and 2, the inspectors could not determine that an appropriate mission time was used for a past operability determination. Therefore, the team could not conclude that the licensee had not missed a 10 CFR 50.73 event report because of a potentially incorrect assumption about DG mission time.

This is applicable to both units.

Planned Closure Action(s): In order to resolve this issue, the NRC needs to determine whether or not the basis for the 24-hour DG mission time is appropriate by determining which standard or standards apply to mission time at DCP, Units 1 and 2.

Licensee Action(s): Because the licensee's position is that the DG mission time is not a part of their current licensing or design basis, they maintain that the 24-hour mission time used in

the past operability determination was adequate to provide reasonable assurance of operability and, therefore, no event report was required. However, prior to this inspection and because of other uncertainties in determining mission times, the licensee generated Notification 50832335 to reassess the mission times associated with the ESF equipment. The intent is to develop the bases for ESF equipment mission time in a controlled document. However, this effort is not yet complete and, as such, the mission time for the DGs has not been evaluated under this notification.

Corrective Action Reference(s): Notifications 50832335, 50882125, 50882140, and 50882498.

**Failure to Identify Diesel Generator Air Inlet Boot Seal Critical Characteristics**

Cornerstone	Significance	Cross-cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000275/2018008-02; 05000323/2018008-02 Closed	None	71152—Problem Identification and Resolution

A self-revealed, Green, non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criteria VII and XV, occurred when the licensee failed to ensure materials intended for installation in safety-related applications conformed to procurement requirements or, if they did not, were adequately controlled and evaluated.

Description:

On December 3, 2016, an operator discovered during rounds that the air inlet boot seal between the air filter intake piping and the inlet to the turbocharger on DG 1-2 had degraded to the point that the boot seal was cracked around the entire perimeter with sections missing. One piece of the boot seal was visible in the inlet of the turbocharger. Subsequently, an inspection of the other DGs revealed that the DG 2-2 boot seal was also torn.

The licensee replaced the degraded boot seals on the date of discovery and performed a material chemical analysis of the boot seals on December 8, 2016. The chemical analysis found the boot seals were not of neoprene as required. The same analysis also indicated a high likelihood that the boot seals were of Styrene-Butadiene Rubber.

The licensee performed an apparent cause evaluation of the issue. The evaluation concluded that the Replacement Part Evaluation (RPE) of the boot seal, RPE 8\*1743, was inadequate since they had failed to detect the improper material during the dedication process of the boot seals purchased as commercial grade. Specifically, the RPE did not list material type as a critical characteristic and, therefore, did not have a requirement to perform material validation testing for neoprene (during dedication activities when the boot seal was procured commercial grade). Boot seals were most recently procured under Work Order 3500988221 and the dedication activities were performed between February 2, 2014, and March 19, 2014.

As stated in 10 CFR Part 21, when applied to nuclear power plants licensed pursuant to 10 CFR Part 50, critical characteristics are those important design, material, and performance characteristics of a commercial grade item that, once verified, will provide reasonable assurance that the item will perform its intended safety function. Furthermore, dedication is an acceptance process undertaken to provide reasonable assurance that a commercial grade

item to be used as a basic component will perform its intended safety function and, in this respect, is deemed equivalent to an item designed and manufactured under a 10 CFR Part 50, Appendix B, quality assurance program.

Corrective Action(s): In response to this issue, the licensee replaced the affected boot seals in operation, removed a nonconforming boot seal from storage, updated RPE 8\*1743 to include material type as a critical characteristic, added a requirement to verify material type during dedication activities, and increased the boot seal inspection frequency.

Corrective Action Reference(s): Notifications 50882125, 50882140, and 50882498.

Performance Assessment:

Performance Deficiency: The failure to identify critical characteristics of the DG air inlet boot seal and verify its acceptability by inspections, tests, or analyses, as required by 10 CFR Part 21, was a performance deficiency.

Screening: The performance deficiency was more than minor because it had the potential to lead to a more significant safety concern if left uncorrected. Specifically, an unacceptable boot seal could degrade to the point that pieces of the boot seal, or other foreign materials, would get ingested into the engine of a DG and adversely affect the availability and reliability of that engine.

Significance: Using IMC 0609, Appendix A, dated June 19, 2012, the team determined that this finding was of very low safety significance (Green) because it was a deficiency affecting the design or qualification of a structure, system, or component, and operability was maintained.

Cross-Cutting Aspect: No cross-cutting aspect was assigned to this finding because the team determined the finding did not reflect present licensee performance.

Enforcement:

Violation: Title 10 CFR Part 50, Appendix B, Criterion VII, "Control of Purchased Material, Equipment, and Services," requires that measures be established to assure that purchased material, equipment, and services conform to the procurement documents. Criterion XV, Nonconforming Materials, Parts, or Components," requires that nonconforming items shall be reviewed and accepted, rejected, repaired, or reworked in accordance with documented procedures.

Contrary to these requirements, prior to approximately March 2014 the licensee failed to ensure purchased material conformed to procurement documents, and failed to review and accept, reject, repair, or rework nonconforming items in accordance with documented procedures. Specifically, the licensee failed to identify that the received DG air inlet boot seals were not made of neoprene as specified in the procurement document and, subsequently, did not review and accept, reject, repair, or rework the nonconforming items. The licensee failed to identify the boot seal was not of neoprene because it did not list material type as a critical characteristic of the item in its commercial grade dedication document and, therefore, the material type was not verified. Consequently, the licensee did not successfully complete the commercial grade dedication process for the boot seals as described in 10 CFR Part 21.

Disposition: This violation is being treated as a NCV, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Promptly Identify and Correct Emergency Diesel Generator 1-1 Cardox System Inoperability

Cornerstone	Significance	Cross-cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000275/2018008-03 Closed	H.14	71152—Problem Identification and Resolution

An NRC-identified, Green, Non-cited Violation of the licensee’s fire protection license condition occurred when licensee personnel failed to identify a trouble light lit on the DG 1-1 cardox fire protection system panel. The light, which had been lit for 2 weeks before being identified by the NRC, indicated a condition that would have prevented the automatic fire suppression system from effectively suppressing a fire in the DG 1-1 room.

Description:

On April 18, 2018, during performance of cardox testing for the DG 1-1 room, licensee personnel identified an unexpected light configuration on the test panel. As documented in SAPN 50976405, the “Test Engineer contacted the WCSFM [work control shift foreman] and both agreed that acceptance criteria was [sic] not affected. The WCSFM then authorized the test engineer to complete the test and write a notification.” Later in the test, a step could not be completed because of another light remaining lit unexpectedly. The test engineer described the condition in the SAPN: “When the panel door is closed this light shines through the window labeled “Wiring/Links.” This is likely related to the issue described above. This condition did not impact any of the acceptance criteria. The WCSFM advised the Test Engineer to continue the test. Ultimately, the test was completed with all acceptance criteria met.” Following completion of the test, an on-shift Senior Reactor Operator declared the cardox system functional at 1743 on April 18, 2018.

On May 1, 2018, during a tour of the Unit 1 DGs, inspectors noted the “Wiring/Links” light illuminated on the DG 1-1 room cardox fire suppression system panel. A notification tag was attached to the panel that did not describe the observed condition. The inspectors informed the shift manager, who requested an engineering evaluation.

On May 2, 2018, engineering completed its review of the condition and determined that the illuminated light indicated a configuration in which the fire suppression system would be unable to perform its credited function: “Per Fire Protection, automatic actuation of the west rollup doors is credited for Cardox function. With this light ON, actuation of the west door ETLs [electro-thermal links] is disabled.” The previous functionality determination had been incorrect—the system had been nonfunctional since April 18, 2018.

Corrective Action(s): On May 2, 2018, the licensee’s fix-it-now team reperformed two steps of the test procedure, which reset the condition and restored the system’s functionality. The licensee is conducting an investigation into the conduct of the April 18, 2018, test.

Corrective Action Reference(s): SAPNs 50976405 and 50978342

Performance Assessment:

Performance Deficiency: The failure to promptly identify and correct an adverse fire protection condition as required by the facility operating license and station procedures was a performance deficiency.

Screening: This performance deficiency was more than minor because it was associated with the protection against external factors attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences.

Significance: Using IMC 0609, Appendix F, dated September 20, 2013, the team determined that this finding was of very low safety significance (Green) because the impact of the fire finding would be limited to no more than one train of equipment important to safety.

Cross-Cutting Aspect: This finding had a conservative bias (H.14) cross-cutting aspect in the human performance cross-cutting area because the test engineer and the work control shift foreman failed to use decision making practices that emphasized prudent choices when deciding that the as-left condition of the DG 1-1 cardox system was acceptable.

Enforcement:

Violation: License Condition 2.C.(5) (Unit 2 is 2.C.(4)), Fire Protection states that PG&E shall implement and maintain all provisions of the approved fire protection program that comply with 10 CFR 50.48(a). Title 10 CFR 50.48(a)(4)(b)(1)(i), states that fire protection features proposed or implemented by the licensee have been accepted by the NRC staff as satisfying the provisions of Appendix A to Branch Technical Position (BTP) APCSB 9.5-1 reflected in NRC fire protection safety evaluation reports issued before the effective date of February 19, 1981. In Section 9.5 of DCP, Units 1 and 2, FSAR Update, Appendix 9.5B, Table B-1, "Comparison of DCP, Units 1 and 2, to Appendix A of BTP APCSB 9.5-1," Section C, "Quality Assurance Program," the licensee states the following: Policies governing corrective measures relative to fire protection failures, malfunctions, deficiencies, deviations, defective components, uncontrolled combustible material, and nonconformances are addressed in administrative procedures. Procedure OM5, "Quality Assurance Program," Revision 12, states that the fire protection quality assurance program will meet the requirements of 10 CFR Part 50, Appendix B, Criterion XVI, which requires that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected.

Contrary to this requirement, from April 18, 2018, through May 2, 2018, the licensee's established measures failed to assure that a condition adverse to quality was promptly identified and corrected. Specifically, after performing maintenance on the cardox automatic fire suppression system for the DG 1-1 room, the system was left in a configuration in which it would have failed to achieve the required cardox concentration to suppress a fire. Licensee personnel failed to identify and correct this condition prior to it being identified by NRC inspectors.

Disposition: This violation is being treated as a NCV, consistent with Section 2.3.2. of the Enforcement Policy.

## **EXIT MEETINGS AND DEBRIEFS**

On May 3, 2018, the inspectors presented the inspection results to Mr. J. Welsch, Vice President, Nuclear Generation and Chief Nuclear Officer, and other members of the licensee staff. The inspectors confirmed that any proprietary information reviewed was controlled to protect from public disclosure.

## DOCUMENTS REVIEWED

### Notifications (SAPNs)

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50276617	50672807	50860769	50868530	50882377	50915907	50959757
50286030	50672808	50860840	50869181	50882498	50926817	50960226
50478663	50678944	50861002	50869475	50882634	50934271	50961430
50543796	50687004	50861050	50871484	50886666	50934650	50962228
50543797	50710432	50861097	50872056	50886703	50934855	50962275
50595631	50710790	50861161	50872133	50887238	50935077	50962645
50634825	50809593	50861200	50872733	50888276	50935776	50964666
50634990	50813807	50861706	50874462	50888383	50939069	50976326
50652094	50813849	50862239	50874890	50888976	50939087	50976395
50660171	50817678	50862530	50875802	50890598	50939302	50976632
50662101	50818595	50862531	50876600	50891169	50939305	50977343
50663322	50820956	50862731	50876610	50893239	50939391	50977345
50663604	50823081	50862811	50876729	50903456	50939394	50977676
50672438	50824398	50863138	50878466	50904953	50939582	50978179
50672439	50825789	50863710	50881414	50905315	50939608	50978308
50672490	50828441	50864453	50881415	50906259	50940114	50978338
50672491	50830829	50864563	50881612	50906321	50943781	50978496
50672492	50832335	50864636	50881613	50907166	50945776	
50672804	50847067	50864895	50881653	50907301	50945777	
50672805	50856300	50868502	50882125	50907664	50945779	
50672806	50857023	50868506	50882140	50913334	50945780	

### Work Orders

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60027837	60082568	60097574	60110300	64121123	64170447	68039185
60076901	60093023	60098162	60110505	64128758	68030083	68039186
60082567	60096050	60102679	64103044	64130174	68037723	

### Procedures

Number	Title	Revisions
AD1.ID2	Procedure Process Control	48B
AD2.ID1	Procedure and Work Plan Use and Adherence	26
AD7.ID2	Daily Notification Review Team and Standard Plant Priority Assignment Scheme	29
AD9.ID7	Receipt Inspection and Acceptance Testing	8
B-5	Operation Section Policy	6
CF2.ID12	Cyber Security Assessment Team	0
CF3.ID13	Replacement Part Evaluation and CITE	30
CF4.ID7	Temporary Alteration	28
ER1.ID1	Equipment Reliability Process	7
MA1.DC54	Conduct of Maintenance	15



Procedures Number	Title	Revisions
MA1.ID17	Maintenance Rule Monitoring Program	31
MA1.ID27	Preventive Maintenance Program	4
MP M-21.14	Fuel Control Linkage Assembly Routine Minor Maintenance	4
MP M-21.40	Mechanical Maintenance Procedure	4-6
OM15.ID10	Performance Monitoring Program	0A
OM15.ID4	"Self-Assessment and Benchmarking"	14A
OM15.ID5	DCPP, Units 1 and 2, Performance Improvement Program	9F
OM4.ID13	Nuclear Power Generation Internal Auditing	27
OM4.ID14	Notification Review Team	30, 30A
OM4.ID3	Operating Experience Program	27A, 28B, 29
OM6.ID12	Electrical Safety Program	27A
OM7.ID1	Problem Identification and Resolution	51
OM7.ID11	10 CFR Part 21, Reportability Review Process	4
OM7.ID12	Operability Determination	36
OM7.ID13	Technical Evaluations	7
OM7.ID3	Root Cause Evaluation	46A
OM7.ID4	Cause Evaluations	36A
OM7.ID7	Emerging Issue and Event Investigation	19
OM7-ID12	Operability Determination	37
OP1.DC3	Operator Routine Plant Equipment Inspections	14
OP1.DC40	Operations Equipment Deficiency and Adverse Condition Monitoring	10
QCP 10.1	Receipt Inspection Program	17
STP M-78A	Snubber Visual Inspection	23
STP M-9A3	Diesel Engine Generator 1-3 Routine Surveillance Test	10A
STP M-9A3	Diesel Engine Generator 2-3 Routine Surveillance Test	11B
STP P-AFW-FF23	Full Flow Exercise of Motor Driven Auxiliary Feedwater Pump 2-3 Check Valve	1
TS5.ID1	Aging Management/System Walkdown Standard	23
TS5.ID1	System Engineering Program	27, 29

Drawings Number	Title	Revision(s)
SK-H-017-07	Auxiliary Feedwater lines 1-4	6
System 3B	Auxiliary Feedwater Maintenance Rule Scope	5
2-K16-568-6	Data Z-Snubber	2
054174, Sheet 22B	Optional Transmitter Mounting Plate Detail	65
054174, Sheet 22B	Fig 919B Optional Transmitter Mounting Plate Detail (Typical All Makes)	66
054174, Sheet 22J	Fig 919H, Mounting Details for Rosemount Transmitters PT-534A and PT-544A (Unit 2 Only)	1
59549	Unit 1 Area Drawing	29
102021, Sheet 5	Combustion Air and Exhaust System	58
106703	Unit 1 Auxiliary Feedwater Piping	81
108004	Auxiliary Feedwater Steam Supply Unit 2	86
433151, Sheet 1	Electrical Schematic Diagram, Control Room Pressurization System	16
437529, Sheet 1	Electrical Single line Meter and Relay Diagram, Generation Excitation Main and Auxiliary Transformer	48
437530, Sheet 1	Electrical Single Line Meter and Relay Diagram 12KV Start-up System	39
437548	Electrical Schematic Diagram, Generator and Main Transformer	45
437592, Sheet 1	Schematic Diagram, Residual Heat Removal Flow Control Valves	38
441228	Single Line Meter and Relay Diagram 4160V System Bus Section "D" and "E"	16
441229, Sheet 1	Single Line Meter and Relay Diagram 4160V System Bus Section "F" DG 23	20
441308, Sheet 1	Schematic Diagram, Containment Spray System Motor Operated Valves	1B
441309, Sheet 1	Schematic Diagram, Residual Heat Removal Pumps	24
441310, Sheet 1	Schematic Diagram, Residual Heat Removal Motor Operated Valves	32
441317, Sheet 1	Schematic Diagram, Safety Injection System Motor Operated Valves	20
441570, Sheet 1	Electrical Wiring Diagram, 4KV Switchgear Bus Section "F" Cell 12	19

Drawings Number	Title	Revision(s)
445096	Electrical Schematic Diagram, Control Room Ventilation System	3
445097	Diagram of Connections Control Room Ventilation Panel	1
449299	Auxiliary Feedwater Hanger Supports	15
460131	Unit 2 Pipe Restraint Modifications	3
500623	Diagram of Connections, Safeguard Relay Board Bus Section "H"	12
501166, Sheet 1	Electrical Diagram of Connections Control Room Pressurization Panel train "F" Auxiliary Relay	10
663312, Sheet 187	Mechanical Pressure Relief Valve RV-353, 355, 356, 358, 359, and 360	2
663312, Sheet 197	Mechanical Pressure Relief Valve OMNI 900-Valve Outline Model 951280ME	2
Miscellaneous Documents Number	Title	Revision or Date
	Diablo Canyon Power Plant, Units 1 and 2, Backup Air/Nitrogen System Health Reports	April 1, 2017 – June 30, 2017
0322-0041-RPT-001	Estimation of Minimum Installation Torque for DEG Fuel Pump Inlet to Fuel Header Cap Screws	0
110000000053	Design Specification for Anderson-Greenwood/Crosby Safety Relief and Relief Valves	9
8000000772	DCI, Relief Valves, OMNI 900 Series, Systems 14 and 25, Anderson-Greenwood/Crosby	0, 8, 9
AFW-03B	Maintenance Rule Scoping Functions Map	17
C21 D-23-126	Clearance for 1-23-E-S-EJPA Unit 1, train "A" Cont. Room Press System, Xfer Switch	April 30, 2018
CE Manual	Cause Determination Manual	May 18, 2017
Commitment T35567	Review of Newly Initiated ARs for POA Determination	July 26, 2012
DCP-1-25418	Remove Emergency Core Cooling System Motor Operated Valve External Limit Switch Interlock	0
Efficiency Bulletin 16-33	System Health Reporting Efficiencies	December 2, 2016

Miscellaneous Documents Number	Title	Revision or Date
FCT 7*3930	Field Correction Transmittal for PT-534A/PT 544A Mounting As-Built	0
IB 7.4.1.7-2	ABB Instructions Manual for Three Phase Under Voltage and Phase Sequence Relays	E
IL.41-766.5B	Westinghouse Instruction Manual for Type SSV-T and SSV-T Relays for Class IE Application	B
MI-11188	ALCO, Engine Air Filter	
MI-11209A	ALCO, Turbocharger, Type 165	May 1973
MISC-TP16-1-112	Recommendation to Resolve Flowserve 10 CFR Part 21, Anchor Darling Disc Gate Wedge Pin Failures	4
SAQH – ETR 2016	2016 Maintenance Rule Periodic Assessment	January 3, 2017
SAQH- Maint 2016	2016 Maintenance Self-Assessment	March 16, 2016
T-161010	Valve Test Results, Anderson Greenwood Crosby	May 13, 2016
TU164R1	2016 ESP Continuing Training –Extent of Condition	0

# INFORMATION REQUESTS

**Information Request  
Biennial Problem Identification and Resolution Inspection  
Diablo Canyon Power Plant  
January 16, 2018**

**Inspection Report:** 50-275 & -323/2018008  
**On-site Inspection Dates:** April 16-20 and April 30-May 4, 2018

This inspection will cover the period from July 14, 2016, through May 3, 2018. Your response to this request should be limited to information associated with activities performed during this period unless otherwise specified. To the extent possible, the requested information should be provided electronically in word-searchable Adobe PDF or Microsoft Office format. Any sensitive information should be provided in hard copy during the team's first week on site.

Lists of documents ("summary lists") should be provided in Microsoft Excel or a similar sortable format. Please provide updates during the first week of on-site inspection. As used in this request, "corrective action documents" refers to condition reports, notifications, action requests, cause evaluations, and/or other similar documents, as applicable to the station.

Please provide the following information no later than March 21, 2018:

1. Document Lists

Note: For these summary lists, please include the document/reference number, the document title, initiation date, current status, and long-text description of the issue.

- a. Summary list of all corrective action documents related to significant conditions adverse to quality that were opened, closed, or evaluated during the period
- b. Summary list of all corrective action documents related to conditions adverse to quality that were opened, closed, or evaluated during the period
- c. Summary list of all apparent cause evaluations (or equivalent) performed during the period; if fewer than approximately 20, provide full documents
- d. Summary list of all currently open corrective action documents associated with conditions first identified any time prior to January 1, 2017, including prior to the beginning of the inspection period
- e. Summary lists of all corrective action documents that were upgraded or downgraded in priority/significance during the period (these may be limited to those downgraded from, or upgraded to, apparent-cause level or higher)
- f. Summary list of all corrective action documents initiated during the period that identify an adverse or potentially adverse trend in safety-related or risk-significant equipment performance or in any aspect of the station's safety culture
- g. Summary lists of operator workarounds, operator burdens, temporary modifications, and control room deficiencies (1) currently open and (2) that were evaluated and/or closed during the period; this list should include the date that each item was opened and/or closed

- h. Summary list of all prompt operability determinations or other engineering evaluations performed to provide reasonable assurance of operability
  - i. Summary list of plant safety issues raised or addressed by the Employee Concerns Program (or equivalent) (sensitive information should be made available during the team's first week on site—do not provide electronically)
2. Full Documents with Attachments
- a. Root cause evaluations completed during the period; include a list of any planned or in progress
  - b. Quality Assurance audits performed during the period
  - c. Audits/surveillances performed during the period on the Corrective Action Program, of individual corrective actions, or of cause evaluations
  - d. Functional area self-assessments and non-NRC third-party assessments (e.g., peer assessments performed as part of routine or focused station self- and independent assessment activities; do not include INPO assessments) that were performed or completed during the period; include a list of those that are currently in progress
  - e. Assessments of the safety-conscious work environment at Diablo Canyon, including any safety culture survey results; if none performed during the inspection period, provide the most recent
  - f. Corrective action documents generated during the period associated with the following:
    - i. NRC findings and/or violations issued to Diablo Canyon
    - ii. Licensee Event Reports issued by Diablo Canyon
  - g. Corrective action documents generated for the following, if they were determined to be applicable to Diablo Canyon (for those that were evaluated but determined not to be applicable, provide a summary list):
    - i. NRC Information Notices, Bulletins, and Generic Letters issued or evaluated during the period
    - ii. Part 21 reports issued or evaluated during the period
    - iii. Vendor safety information letters (or equivalent) issued or evaluated during the period
    - iv. Other external events and/or Operating Experience evaluated for applicability during the period
  - h. Corrective action documents generated for the following:

- i. Maintenance-preventable functional failures that occurred or were evaluated during the period
- ii. Action items generated or addressed by offsite review committees during the period
- iii. Comments, observations, or minor performance deficiencies documented in the 2016 NRC PI&R inspection report or generated due to inspector comments during the inspection (include any initiated prior to the period)

3. Logs and Reports

- a. Corrective action performance trending/tracking information generated during the period and broken down by functional organization (if this information is fully included in item 3.b, it need not be provided separately)
- b. Current system health reports, Management Review Meeting package, or similar information; provide past reports as necessary to include ≥12 months of metric/trending data
- c. Radiation protection event logs during the period
- d. Security event logs and security incidents during the period (sensitive information should be made available during the team's first week on site—do not provide electronically)
- e. List of training deficiencies, requests for training improvements, and simulator deficiencies for the period

Note: For items 3.c and 3.d, if there is no log or report maintained separate from the corrective action program, please provide a summary list of corrective action program items for the category described.

4. Procedures

Note: For these procedures, please include all revisions that were in effect at any time during the period.

- a. Corrective action program procedures, to include initiation and evaluation procedures, operability determination procedures, cause evaluation procedures, and any other procedures that implement the corrective action program
- b. Quality Assurance program procedures (exclude specific audit procedures)
- c. Employee Concerns Program (or equivalent) procedures
- d. Procedures that implement/maintain a Safety Conscious Work Environment
- e. Conduct of Operations procedure (or equivalent) and any other procedures or policies governing control room conduct, operator burdens and workarounds, etc.

- f. Operating Experience (OpE) program procedures and any other procedures or guidance documents that describe the site's use of OpE information

5. Other

- a. List of risk-significant components and systems, ranked by risk worth; if the list uses system designators, provide a list of the associated noun names
- b. List of structures, systems, and components and/or functions that were in maintenance rule (a)(1) status or evaluated for (a)(1) status at any time during the inspection period; include dates and results of expert panel reviews and dates of status changes
- c. Organization charts (searchable) for plant staff and long-term/permanent contractors
- d. Electronic copies of the UFSAR (or equivalent), technical specifications, and technical specification bases, if available
- e. Table showing the number of corrective action documents (or equivalent) initiated during each month of the inspection period, by screened significance
- f. For each day the team is on site,
  - i. Planned work/maintenance schedule for the station
  - ii. Schedule of management or corrective action review meetings (e.g. operations focus meetings, condition report screening meetings, CARBs, MRMs, challenge meetings for cause evaluations, etc.)
  - iii. Agendas and materials for these meetings

Note: The items listed in 5.f may be provided on a weekly or daily basis while the team is on site.

All requested documents should be provided electronically where possible. Regardless of whether they are uploaded to an internet-based file library (e.g., Certrec's IMS), please provide copies on CD or DVD. One copy of the CD or DVD should be provided to the resident inspector at Diablo Canyon; three additional copies should be provided to the team lead at or prior to his scheduled site visit on March 21, 2018:

Eric Ruesch  
U.S. NRC Region IV  
1600 E. Lamar  
Arlington, TX 76011

**PAPERWORK REDUCTION ACT STATEMENT**

This request does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, control number 3150-0011.



**Supplemental Information Request  
Biennial Problem Identification and Resolution Inspection  
Diablo Canyon Power Plant  
April 10, 2018**

**Inspection Report:** 50-275 & -323/2018008  
**On-site Inspection Dates:** April 16-20 and April 30-May 4, 2018

This request supplements the original information request. Where possible, the information should be available to the inspection team immediately following the entrance meeting. This inspection will cover the period from July 14, 2016, through May 3, 2018. The scope of the requested information is limited to this period unless otherwise noted.

Please provide the following:

1. As part of the inspection, the team will do a five-year in-depth review of issues and corrective actions related to AFW valves and AFW seismic supports. The following documents are to support this review:
  - a. Copies of all root and apparent cause evaluations related to these components performed within the last 5 years, including root cause evaluations not already provided (specify any that were provided)
  - b. Summary list of all condition reports written on these components in the last 5 years
  - c. List of all tests or surveillances performed on these components within the last five years (include LLRT, if applicable, IST, and any NDT), sortable by component if possible, and including acceptance criteria; provide CRs for any acceptance criteria not met
  - d. List of all corrective maintenance work orders performed on these components within the last 5 years
  - e. List of all temporary modifications or operator burdens associated with these components that have been in place at any time during the last 5 years
  - f. List of maintenance rule functional failure assessments—regardless of the result—performed on these components (or the system/function into which the component is scoped) within the last 5 years; include a description of how these systems/components are scoped for maintenance rule
  - g. Engineering forms/logs (including the engineer's notes), if any, from the last two engineering walk-downs/inspections that included these components; if these logs and notes are not in controlled documents, please provide governing procedures and arrange an interview with the engineer(s)
  - h. List of ECs associated with these components that were developed or implemented within the last 5 years; include any currently open ECs
  - i. P&IDs for associated systems showing process piping and components fulfilling primary safety functions
2. Full copies of the following condition reports, including operability evaluations, cause evaluations, and other attachments where applicable:

50286030	50823081	50836557	50860738	50863138	50864834
50595631	50836374	50836572	50861706	50864413	50866481
50659257	50836376	50842765	50862261	50864636	50869475

50872133	50882634	50912407	50930117	50940458	50962232
50876610	50882635	50912408	50931403	50940459	50962275
50878466	50883852	50916625	50934650	50950179	50965877
50881414	50888976	50917669	50934899	50952120	50966193
50881415	50889651	50920539	50935071	50954321	50973178
50881815	50890598	50923422	50935077	50958837	
50882498	50907301	50924934	50940456	50958997	

In addition to the list above, please provide any additional updates to the information previously provided in response to the January 16, 2018, information request.

**PAPERWORK REDUCTION ACT STATEMENT**

This request does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, control number 3150-0011.

DIABLO CANYON POWER PLANT, UNITS 1 AND 2 – NRC BIENNIAL PROBLEM  
 IDENTIFICATION AND RESOLUTION INSPECTION REPORT 05000275/2018008 and  
 05000323/2018008– JUNE 8, 2018

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SIGNATURE	/RA-e/	/RA-e/	/RA-e/	/RA/	/RA/	/RA/
DATE	6/1/2018	6/1/2018	6/1/2018	6/4/2018	6/5/2018	6/8/2018

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