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Project Title:	Nuclear Power Plants
TN #:	206803
Document Title:	Letter to PGE from NRC Regarding NRC Integrated Inspection Report of Diablo Canyon Power Plant Units 1 and 2
Description:	Monitor progress on flaw analysis of pressurizer nozzles
Filer:	Raquel Kravitz
Organization:	U.S. Nuclear Regulatory Commission
Submitter Role:	Public Agency
Submission Date:	12/1/2015 9:24:47 AM
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 E. LAMAR BLVD.
ARLINGTON, TX 76011-4511

January 29, 2015

Mr. Edward D. Halpin
Senior Vice President
and Chief Nuclear Officer
Pacific Gas and Electric Company
Diablo Canyon Power Plant
P.O. Box 56, Mail Code 104/6
Avila Beach, CA 93424

SUBJECT: DIABLO CANYON POWER PLANT – NRC INTEGRATED INSPECTION REPORT 05000275/2014005 and 05000323/2014005

Dear Mr. Halpin:

On December 31, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Diablo Canyon Power Plant Units 1 and 2. On January 8, 2015, the NRC inspectors discussed the results of this inspection with you and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented three findings of very low safety significance (Green) in this report. These three findings involved violations of NRC requirements. Further, inspectors documented a licensee-identified violation which was determined to be of very low safety significance in this report. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2.a of the NRC Enforcement Policy.

If you contest the violations or significance of these NCVs, 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, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC resident inspector at the Diablo Canyon Power Plant.

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 Regional Administrator, Region IV; and the NRC resident inspector at the Diablo Canyon Power Plant.

In accordance with Title 10 of the Code of Federal Regulations (10 CFR) 2.390, “Public Inspections, Exemptions, Requests for Withholding,” a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC’s Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible

from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Wayne C. Walker, Chief
Project Branch A
Division of Reactor Projects

Docket Nos. 05000275, 05000323
License Nos. DPR-80, DPR-82

Enclosure: Inspection Report 05000275/2014005
and 05000323/2014005
w/ Attachments: Supplemental Information

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Letter to Edward D. Halpin from Wayne C. Walker dated January 29, 2015

SUBJECT: DIABLO CANYON POWER PLANT – NRC INTEGRATED INSPECTION REPORT 05000275/2014005 and 05000323/2014005

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	05000275; 05000323
License:	DPR-80; DPR-82
Report:	05000275/2014005; 05000323/2014005
Licensee:	Pacific Gas and Electric Company
Facility:	Diablo Canyon Power Plant, Units 1 and 2
Location:	7 ½ miles NW of Avila Beach Avila Beach, CA
Dates:	September 20 through December 31, 2014
Inspectors:	T. Hipschman, Senior Resident Inspector J. Reynoso, Resident Inspector P. Nizov, Project Engineer C. Smith, Reactor Inspector I. Anchondo, Reactor Inspector P. Kaufman, Senior Reactor Inspector, NRC Region I J. O'Donnell, Health Physicist L. Ricketson, P.E., Senior Health Physicist
Approved By:	Wayne Walker, Chief Chief, Project Branch A Division of Reactor Projects

Enclosure

SUMMARY

IR 05000275/2014005, 05000323/2014005; 09/20/2014 – 12/31/2014; Diablo Canyon Power Plant; Fire Protection, Radiological Hazard Assessment and Exposure Controls, Follow-up of Events and Notices of Enforcement Discretion

The inspection activities described in this report were performed between September 20 and December 31, 2014, by the resident inspectors at Diablo Canyon Power Plant and inspectors from the NRC's Region IV office and other NRC offices. Three findings of very low safety significance (Green) are documented in this report. These findings also involved violations of NRC requirements. Additionally, NRC inspectors documented in this report one licensee-identified violation of very low safety significance. The significance of inspection findings is indicated by their color (Green, White, Yellow, or Red), which is determined using Inspection Manual Chapter 0609, "Significance Determination Process." Their cross-cutting aspects are determined using Inspection Manual Chapter 0310, "Aspects within the Cross-Cutting Areas." Violations of NRC requirements are dispositioned in accordance with the NRC Enforcement Policy. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process."

Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of the licensee's approved fire protection program as defined in Diablo Canyon Unit 2 Facility Operating License Condition 2.C(4) for failure to effectively implement the fire protection program. Specifically, the inspectors identified that maintenance personnel inappropriately disabled a fire hose reel credited for fire protection of the mechanical penetration area. The licensee took actions to re-establish the fire hose reel to an operable status and entered the condition into the corrective action program as Notifications 50663810 and 50663589.

  The failure to effectively implement all fire prevention controls and processes as required in the approved fire protection program was a performance deficiency. The performance deficiency was more than minor because if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern of the ability to protect structures, systems and components from fire, in this case utilizing fixed fire suppression systems.. The inspectors evaluated this finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process." Using Inspection Manual Chapter 0609, Appendix F, Attachment 1 "Fire Protection SDP Phase 1 Worksheet," the deficiency affected a fixed fire suppression system and the finding affected only a manually actuated suppression system for an area which is accessible by the fire brigade; therefore the finding was of very low safety significance (Green). This finding had a cross-cutting aspect in the area of human performance associated with the work management component, because the organization did not implement a process of planning, controlling and executing work activities such that nuclear safety is the overriding priority [H.5]. (Section 1R05)

- Green. The inspectors identified a self-revealing non-cited violation of 10 CFR 50.65(a)(4) for failing to manage risk when a protected train emergency diesel generator was unexpectedly rendered inoperable while another train was being returned to service. Specifically, the installed and administrative operational barriers failed to prevent a loss of safety function to an operable emergency diesel generator resulting in two inoperable emergency diesel generators for a period of two hours. The licensee took immediate

actions to adequately implement the physical and administrative operational barriers, repair the damage to the protected emergency diesel generator, and entered the condition into the corrective action program as Notification 50600810.

The inspectors determined that the licensee's failure to adequately implement risk management actions associated with maintenance on emergency diesel generator EDG 1-2 was a performance deficiency. The performance deficiency was more than minor and therefore a finding because it was associated with the configuration control 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. The inspectors determined the performance deficiency involved the licensee's assessment and management of risk associated with performing maintenance in accordance with 10 CFR 50.65(a)(4). The inspectors reviewed the results of Calculation RA 13-11, "Evaluation for Unit 1, EDG 1-3 Inoperable while EDG 1-2 is in Maintenance," Revision 0, for impact to incremental core damage probability. The inspectors used Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," and determined because the incremental core damage probability deficit (ICDPD) was not greater than 1E -06/year, the finding was determined to be of very low safety significance (Green).

The finding was determined to have a cross-cutting aspect in the area of human performance, associated with the work practices component, in that personnel work practices are used commensurate with the risk of the assigned task, such that work activities are performed safely. Specifically, the operator did not consider potential undesired consequences, such as damage to the fuel line, and perform adequate self or peer checks prior to performance of an inspection of protected equipment to ensure risk management action would provide appropriate protection [H.11]. (Section 4OA3)

Cornerstone: Occupational Radiation Safety

- Green. The inspectors reviewed a self-revealing non-cited violation of Technical Specification 5.7.2 because the licensee failed to control access to a high radiation area with dose rates greater than 1 rem/hour. A radiation protection technician assumed responsibility for guarding the area and reestablished compliance with technical specification requirements. Licensee representatives documented the occurrence in the corrective action program as Notification 50590243 and performed an apparent cause evaluation.

  The failure to control access to a high radiation area with dose rates greater than 1 rem/hour is a performance deficiency. The requirement not met was Technical Specification 5.7.2. The significance of the performance deficiency was more than minor because, if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern if workers had entered an uncontrolled, high radiation area and received unintended radiation dose. The Occupational Radiation Safety Cornerstone was affected; therefore, the inspectors used Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," August 19, 2008, to determine the significance of the violation. The violation had very low safety significance because: (1) It was not an as low as is reasonably achievable (ALARA) finding, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. This violation has a cross-cutting aspect in the human performance area, associated with avoiding complacency, because individuals did not recognize and plan

for the possibility of mistakes, latent issues, and inherent risk and did not implement appropriate error reduction tools [H.12]. (Section 2RS1)

Licensee-Identified Violations

A violation of very low safety significance (Green) that was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and associated corrective action tracking numbers are listed in Section 4OA7 of this report.

PLANT STATUS

Units 1 and 2 began the inspection period at full power.

On October 5, 2014, Unit 2 shut down for a planned refueling outage. The refueling outage ended on November 6, 2014, and Unit 2 returned to full power on November 10, 2014, and remained at full power through the end of the inspection period.

On December 5, 2014, Unit 1 reduced power to 17 percent to replace the lightning arrestors on the 500 kV main transformers. On December 6, 2014, power was raised to 52 percent to complete main circulating water system tunnel cleaning, and returned to full power on December 9, 2014. On December 18, 2014, Unit 1 reduced power to 93 percent due to a tube leak in a feedwater heater. On December 31, 2014, Unit 1 shut down for a planned forced outage to make repairs to the feedwater system.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

On November 26, 2014, the inspectors completed an inspection of the station's readiness for seasonal extreme weather conditions. The inspectors reviewed the licensee's adverse weather procedures for elevated ocean temperatures and evaluated the licensee's implementation of these procedures. The inspectors verified that prior to the elevated ocean temperatures the licensee had taken the appropriate actions to place additional equipment into service.

The inspectors reviewed the licensee's procedures and design information to ensure the auxiliary salt water and component cooling water systems would remain functional when challenged by elevated ocean temperatures. The inspectors verified that operator actions described in the licensee's procedures were adequate to maintain readiness of these systems. The inspectors walked down portions of this system to verify the physical condition of the component cooling water system.

These activities constituted one sample of readiness for seasonal adverse weather, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

.2 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

On October 31, 2014, the inspectors completed an inspection of the station's readiness for impending adverse weather conditions. The inspectors reviewed plant design features, the licensee's procedures to respond to significant onsite rain, and the licensee's planned implementation of these procedures. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant.

These activities constituted one sample of readiness for impending adverse weather conditions, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

The inspectors performed partial system walk-downs of the following risk-significant systems:

- October 8-9, 2014, Unit 2 reactor vessel refueling level indication system alignment
- November 7, 2014, Unit 1, 4 kV ventilation system
- December 12, 2014, Units 1 and 2, 500 kV system

The inspectors reviewed the licensee's procedures and system design information to determine the correct lineup for the systems. They visually verified that critical portions of the systems were correctly aligned for the existing plant configuration.

These activities constituted three partial system walk-down samples as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

.2 Complete Walkdown

a. Inspection Scope

On November 1, 2014, the inspectors performed a complete system walk-down inspection of the safety injection system. The inspectors reviewed the licensee's procedures and system design information to determine the correct system lineup for the

existing plant configuration. The inspectors also reviewed outstanding work orders, open condition reports, and other open items tracked by the licensee's operations and engineering departments. The inspectors then visually verified that the system was correctly aligned for the existing plant configuration.

These activities constituted one complete system walk-down sample, as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Inspection

a. Inspection Scope

The inspectors evaluated the licensee's fire protection program for operational status and material condition. The inspectors focused their inspection on four plant areas important to safety:

- October 8, 2014, Unit 2, turbine elevation 119 foot elevation
- October 13, 2014, Unit 2, mechanical penetration areas, 85, 100 and115 foot elevations
- October 20, 2014, Unit 1 and 2, 85 foot elevation near main and auxiliary transformers
- October 24, 2014, Unit 1, 4 kV electrical equipment rooms

For each area, the inspectors evaluated the fire plan against defined hazards and defense-in-depth features in the licensee's fire protection program. The inspectors evaluated control of transient combustibles and ignition sources, fire detection and suppression systems, manual firefighting equipment and capability, passive fire protection features, and compensatory measures for degraded conditions.

These activities constituted four quarterly inspection samples, as defined in Inspection Procedure 71111.05.

b. Findings

Introduction. The inspectors identified a Green non-cited violation of the licensee's approved fire protection program as defined in Diablo Canyon Unit 2 Facility Operating License Condition 2.C(4) for a failure to effectively implement the fire protection program.

Description. On October 14, 2014, during a plant walkdown, the inspectors identified that a fire hose from the fire hose station on the 115 foot elevation in the Unit 2 mechanical penetration area was being used to drain water from a fire suppression header that was isolated for planned maintenance. Using the fire hose for draining

made the fire hose station unavailable in the event of a fire, and therefore inoperable. Although the work order (60034425) for the maintenance activity to replace valve FP-2-30 properly identified an appropriate compensatory measure to ensure water was available for the fire hose station during draining of the fire suppression header, clearance 2C18 R-18-001A inappropriately instructed workers to use the fire hose on the active fire hose reel on the 115 foot elevation, rendering it inoperable.

When the worker was questioned by the inspectors about using the fire hose to drain the header, the worker immediately stopped the draining activity, obtained an alternate hose, and replaced the fire hose to its reel. The inspectors discussed the issue with fire department personnel, and fire protection engineers. During the draining of the fire header for the replacement of the valve, engineering appropriately placed a compensatory measure in place to ensure fire suppression water would remain available to the affected fire hose stations. The fire protection program credits the fire hose reel as a manual suppression system to protect safety-related equipment on the 115 foot elevation mechanical penetration area. When the hose was used for draining, it was no longer available to be used to fight a fire if it occurred in that area of the mechanical penetration area.

Analysis. The failure to effectively implement all fire prevention controls and processes as required in the approved fire protection program was a performance deficiency. The performance deficiency was more than minor because if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern of the ability to protect structures, systems and components from fire, in this case utilizing fixed fire suppression systems. The inspectors evaluated this finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process." Using Inspection Manual Chapter 0609, Appendix F, Attachment 1 "Fire Protection SDP Phase 1 Worksheet," the deficiency affected a fixed fire suppression system and the finding affected only a manually actuated suppression system for an area which is accessible by the fire brigade; therefore the finding was of very low safety significance (Green). This finding had a cross-cutting aspect in the area of human performance associated with the work management component, because the organization did not implement a process of planning, controlling and executing work activities such that nuclear safety is the overriding priority [H.5].

Enforcement. Diablo Canyon Unit 2 Facility Operating License Condition 2.C(4), "Fire Protection," requires Pacific Gas and Electric to implement and maintain all provisions of the approved fire protection plan as described by the Final Safety Analysis Report Update. Final Safety Analysis Report Update, Appendix 9.5a, "Fire Hazards Analysis," requires that the licensee maintain fire hose stations in accordance with Station Procedure OM8.ID2, "Fire System Impairments," which references the required actions for inoperable hose stations. Contrary to the above, on October 14, 2014, the inspectors identified an inoperable fire hose station. Upon identification, the licensee took actions to re-establish the credited fire hose reel to an operable status and entered the condition into the corrective action program. Because this finding was of very low safety significance and was entered into the corrective action program as Notifications 50663810 and 50663589, this violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000323/2014005-01, "Failure to Implement Fire Protection Program."

.2 Annual Inspection

a. Inspection Scope

On December 16, 2014, the inspectors completed their annual evaluation of the licensee's fire brigade performance. This evaluation included observation of an unannounced fire drill in the radiological control area chemistry laboratory located on the 85 foot elevation.

During this drill, the inspectors evaluated the capability of the fire brigade members, the leadership ability of the brigade leader, the brigade's use of turnout gear and fire-fighting equipment, and the effectiveness of the fire brigade's team operation. The inspectors also reviewed whether the licensee's fire brigade met NRC requirements for training, dedicated size and membership, and equipment.

These activities constituted one annual inspection sample, as defined in Inspection Procedure 71111.05.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

On December 29, 2014, the inspectors completed an inspection of the station's ability to mitigate flooding due to internal causes. After reviewing the licensee's flooding analysis, the inspectors chose one plant area containing risk-significant structures, systems, and components that was susceptible to flooding:

- Unit 1, residual heat removal pump room

The inspectors reviewed plant design features and licensee procedures for coping with internal flooding. The inspectors walked down the selected area to inspect the design features, including the material condition of seals, drains, and flood barriers. The inspectors evaluated whether operator actions credited for flood mitigation could be successfully accomplished.

In addition, on October 15, 2014, the inspectors completed an inspection of underground bunkers susceptible to flooding. The inspectors selected one underground vault that contained risk-significant or multiple-train cables whose failure could disable risk-significant equipment:

- Unit 2, underground conduit and vault inspections of auxiliary saltwater pumps 2-1 and 2-2

The inspectors observed the material condition of the cables and splices contained in the vault and looked for evidence of cable degradation due to water intrusion. The inspectors verified that the cables and vaults met design requirements.

These activities constitute completion of one flood protection measures sample and one bunker/manhole sample, as defined in Inspection Procedure 71111.06.

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (71111.08)

The activities described in subsections 1 through 4 below constitute completion of one inservice inspection sample, as defined in Inspection Procedure 71111.08.

.1 Non-destructive Examination (NDE) Activities and Welding Activities

a. Inspection Scope

The inspectors directly observed the following nondestructive examinations:

SYSTEM	WELD IDENTIFICATION	EXAMINATION TYPE
Pressurizer	WIB-359OL (Safety C)	Ultrasonic Phased Array
Steam Generator	Steam Generator 2-3 Primary Nozzle Inner Radius	Visual (VT-1)
Steam Generator	Steam Generator Primary Manways	Visual (VT-1)
Reactor Coolant System	Bolted Connections of Valves SI-2-8948C and SI-2-8948D	Visual (VT-1)
Pressurizer	WIB-379 (Safety Nozzle to Upper Head)	Ultrasonic

The inspectors reviewed records for the following nondestructive examinations:

SYSTEM	WELD IDENTIFICATION	EXAMINATION TYPE
Pressurizer	WIB-369OL (Safety A)	Ultrasonic Phased Array
Pressurizer	WIB-423OL (Safety B)	Ultrasonic Phased Array
Pressurizer	WIB-345OL (Spray Line)	Ultrasonic Phased Array
Pressurizer	Steam Generator 2-2 Primary Nozzle Inner Radius	Visual (VT-1)
Pressurizer	WIB-358 (Safety Nozzle to Upper Head)	Ultrasonic

During the review and observation of each examination, the inspectors observed whether activities were performed in accordance with the American Society of Mechanical Engineers (ASME) Code requirements and applicable procedures. The inspectors also reviewed the qualifications of all nondestructive examination technicians performing the inspections to determine whether they were current.

The inspectors reviewed records for the following welding activities:

SYSTEM	WELD IDENTIFICATION	TYPE
Chemical and Volume Control System	¾ inch Socket weld on CVCS-2-274 (Welds 1-4)	Gas Tungsten Arc Welding

The inspectors reviewed whether the welding procedure specifications and the welders had been properly qualified in accordance with ASME Code Section IX requirements. The inspectors also determined whether essential variables were identified, recorded in the procedure qualification record, and formed the bases for qualification of the welding procedure specifications.

b. Findings

No findings were identified.

.2 Vessel Upper Head Penetration Inspection Activities

a. Inspection Scope

The inspectors reviewed the results of the licensee's bare metal visual inspection of the Reactor Vessel Upper Head Penetrations to determine whether the licensee identified any evidence of boric acid challenging the structural integrity of the reactor head components and attachments. The inspectors also verified that the required inspection coverage was achieved and limitations were properly recorded. The inspectors reviewed whether the personnel performing the inspection were certified examiners to their respective nondestructive examination method.

b. Findings

No findings were identified.

.3 Boric Acid Corrosion Control Inspection Activities

a. Inspection Scope

The inspectors reviewed the licensee's implementation of its boric acid corrosion control program for monitoring degradation of those systems that could be adversely affected by boric acid corrosion. The inspectors reviewed the documentation associated with the licensee's boric acid corrosion control walk-down as specified in Procedure ER1.ID2, "Boric Acid Corrosion Control Program," Revision 7. The inspectors reviewed whether the visual inspections emphasized locations where boric acid leaks could cause degradation of safety-significant components, and whether engineering evaluations used corrosion rates applicable to the affected components and properly assessed the effects

of corrosion induced wastage on structural or pressure boundary integrity. The inspectors observed whether corrective actions taken were consistent with the ASME Code, and 10 CFR 50, Appendix B requirements.

b. Findings

No findings were identified.

.4 Steam Generator Tube Inspection Activities

a. Inspection Scope

The inspectors reviewed the steam generator tube eddy current (ECT) examination scope and expansion criteria to determine whether these criteria met technical specification requirements, Electric Power Research Institute (EPRI) guidelines, and commitments made to the NRC. The inspectors also reviewed whether the ECT inspection scope included areas of degradations that were known to represent potential eddy current test challenges such as the top of tube sheet, tube support plates, and U-bends. The inspectors confirmed that no repairs were required at the time of the inspection. The scope of the licensee's ECT examinations included:

- 100 percent full length bobbin.

The licensee performed +Point rotating probe inspection of the following:

- 100 percent of bobbin "I" codes including absolute drift indication, distorted support indication, and non-quantifiable indication.
- 100 percent bobbin of possible loose part indications.
- 100 percent bobbin of dings in freespan and dent at structure indications greater or equal to one volt.
- 100 percent of tube U-bend regions with proximity indications.
- 100 percent of tube U-bend regions that were impacted during manufacturing.

The following tube degradation mechanisms were identified:

- tube support plate wear.

The inspectors observed portions of the eddy current testing being performed to determine whether: (1) the appropriate probes were used for identifying the expected types of degradation, (2) calibration requirements were followed, and (3) probe travel speed was in accordance with procedural requirements. The inspectors performed a review of the site-specific qualifications for the techniques being used and reviewed whether eddy current test data analyses were adequately performed per EPRI and site specific guidelines.

Sludge lancing and foreign object search and retrieval (FOSAR) activities were conducted during Refueling Outage 2R18. Sludge lancing activities removed a total of 13 pounds of sludge for all four steam generators. FOSAR examination included an

in-bundle inspection of the center 10 columns of the hot leg and cold leg top-of-tube support region, and columns 20, 40, 60, 80, and 100 in both hot and cold legs. The examination also included 100 percent of the trough and outer periphery tubes.

Finally, the inspectors reviewed selected eddy current test data to verify that the analytical techniques used were adequate.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11)

.1 Review of Licensed Operator Requalification

a. Inspection Scope

On November 18, 2014, the inspectors observed an evaluated simulator scenario performed by an operating crew. The inspectors assessed the performance of the operators and the evaluators' critique of their performance.

These activities constitute completion of one quarterly licensed operator requalification program sample, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

.2 Review of Licensed Operator Performance

a. Inspection Scope

On November 5-7, 2014, the inspectors observed the performance of on-shift licensed operators in the plant's main control room. At the time of the observations, the plant was in a period of heightened activity due to reactor startup and power ascension.

In addition, the inspectors assessed the operators' adherence to plant procedures, including the conduct of operations procedure and other operations department policies.

These activities constitute completion of one quarterly licensed operator performance sample, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed one instance of degraded performance or condition of safety-related structures, systems, and components (SSCs):

- November 3, 2014, Units 1 and 2 loss of 230 kV due to flashover

The inspectors reviewed the extent of condition of possible common cause SSC failures and evaluated the adequacy of the licensee's corrective actions. The inspectors reviewed the licensee's work practices to evaluate whether these may have played a role in the degradation of the SSCs. The inspectors assessed the licensee's characterization of the degradation in accordance with 10 CFR 50.65 (the Maintenance Rule), and verified that the licensee was appropriately tracking degraded performance and conditions in accordance with the Maintenance Rule.

These activities constituted completion of one maintenance effectiveness sample, as defined in Inspection Procedure 71111.12.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors reviewed two risk assessments performed by the licensee prior to changes in plant configuration and the risk management actions taken by the licensee in response to elevated risk:

- October 21, 2014, Unit 2, refueling outage risk control and safety assessment
- December 29, 2014, Unit 1, forced outage risk control and safety assessment

The inspectors verified that these risk assessments were performed timely and in accordance with the requirements of 10 CFR 50.65 (the Maintenance Rule) and plant procedures. The inspectors reviewed the accuracy and completeness of the licensee's risk assessment and verified that the licensee implemented appropriate risk management actions based on the result of the assessment.

The inspectors also observed portions of two emergent work activities that had the potential to cause an initiating event and to affect the functional capability of mitigating systems:

- October 20, 2014, Unit 1 and 2, emergent work activity inside 500 kV switchyard during 230 kV maintenance window

- November 24-25, 2014, Unit 2, seal injection heat exchanger relief valve, CVCS-RV-8123, replacement

The inspectors verified that the licensee appropriately developed and followed a work plan for these activities. The inspectors verified that the licensee took precautions to minimize the impact of the work activities on unaffected structures, systems, and components.

These activities constitute completion of four maintenance risk assessments and emergent work control inspection samples, as defined in Inspection Procedure 71111.13.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed three operability determinations that the licensee performed for degraded or nonconforming structures, systems, or components (SSCs):

- October 1-2, 2014, Unit 1 operability determination of emergency diesel generator 1-3, when containment cooling unit fan CFCU 1-2 breaker failed to open
- November 4, 2014, Units 1 and 2 operability determination following a flashover of the offsite 230 kV electrical system
- November 20-21, 2014, Unit 1 and 2, ultimate heat sink operability determination of ocean temperature exceeding 64 degrees

The inspectors reviewed the timeliness and technical adequacy of the licensee's evaluations. Where the licensee determined the degraded SSC to be operable, the inspectors verified that the licensee's compensatory measures were appropriate to provide reasonable assurance of operability. The inspectors verified that the licensee had considered the effect of other degraded conditions on the operability of the degraded SSC.

These activities constitute completion of three operability and functionality review samples, as defined in Inspection Procedure 71111.15.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

a. Inspection Scope

On November 21, 2014, the inspectors reviewed a temporary modification for a maintenance activity to replace a seal injection heat exchanger relief valve, 2-CVCS-RV-8123.

The inspectors verified that the licensee had installed the temporary modification in accordance with technically adequate design documents. The inspectors verified that this modification did not adversely impact the operability or availability of affected SSCs. The inspectors reviewed design documentation and plant procedures affected by the modification to verify the licensee maintained configuration control.

These activities constitute completion of one sample of temporary modifications, as defined in Inspection Procedure 71111.18.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed seven post-maintenance testing activities that affected risk-significant structures, systems, or components (SSCs):

- October 22-23, 2014, Unit 2, atmospheric steam dump backup air bottle leakage
- October 24, 2014, Unit 2, pressurizer power operated relief valve PCV-455C backup nitrogen accumulator test
- October 30-31, 2014, Unit 2, containment fan cooler unit comprehensive flow testing following maintenance
- November 7, 2014, Unit 1, emergency diesel generator 1-3, following maintenance
- November 11-12, 2014, Unit 2, auxiliary building supply fan S-33, following maintenance
- December 29, 2014, Unit 1, containment spray pump 1-2 following maintenance
- December 30, 2014, Unit 2, auxiliary feedwater pump 1-2 following maintenance.

The inspectors reviewed licensing- and design-basis documents for the SSCs and the maintenance and post-maintenance test procedures. The inspectors observed the performance of the post-maintenance tests to verify that the licensee performed the tests in accordance with approved procedures, satisfied the established acceptance criteria, and restored the operability of the affected SSCs.

These activities constitute completion of seven post-maintenance testing inspection samples, as defined in Inspection Procedure 71111.19.

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

During the station's Unit 2 refueling outage that concluded on November 7, 2014, and the Unit 1 forced outage that began on December 31, 2014, the inspectors evaluated the licensee's outage activities. The inspectors verified that the licensee considered risk in developing and implementing the outage plan, appropriately managed personnel fatigue, and developed mitigation strategies for losses of key safety functions. This verification included the following during one or both of the outages:

- Review of the licensee's outage plan prior to the outage
- Monitoring of shut-down and cool-down activities
- Verification that the licensee maintained defense-in-depth during outage activities
- Observation and review of reduced-inventory and mid-loop activities
- Observation and review of fuel handling activities
- Monitoring of heat-up and startup activities

These activities constitute completion of one refueling outage and one forced outage sample, as defined in Inspection Procedure 71111.20.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed five risk-significant surveillance tests and reviewed test results to verify that these tests adequately demonstrated that the structures, systems, and components (SSCs) were capable of performing their safety functions:

Routine tests:

- November 11, 2014, Unit 2, 4 kV vital bus underfrequency and undervoltage testing.
- November 12, 2014, Unit 2, integrated test of engineered safeguards and diesel generators.
- November 12, 2014, Unit 2, Penetration 61 containment isolation valve leak test
- December 30, 2014, Unit 2, auxiliary feedwater pump 2-2

Containment isolation valve surveillance tests:

- November 12, 2014, Unit 2, Penetration 62 containment isolation valve leak test

The inspectors verified that these tests met technical specification requirements, that the licensee performed the tests in accordance with their procedures, and that the results of

the test satisfied appropriate acceptance criteria. The inspectors verified that the licensee restored the operability of the affected SSCs following testing.

These activities constitute completion of five surveillance testing inspection samples, as defined in Inspection Procedure 71111.22.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors observed an emergency preparedness drill on November 18, 2014, to verify the adequacy and capability of the licensee's assessment of drill performance. The inspectors reviewed the drill scenario, observed the drill from the simulator, and attended the post-drill critique. The inspectors verified that the licensee's emergency classifications, off-site notifications, and protective action recommendations were appropriate and timely. The inspectors verified that any emergency preparedness weaknesses were appropriately identified by the licensee in the post-drill critique and entered into the corrective action program for resolution.

These activities constitute completion of one emergency preparedness drill observation sample, as defined in Inspection Procedure 71114.06.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Public Radiation Safety and Occupational Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

a. Inspection Scope

The inspectors assessed the licensee's performance in assessing the radiological hazards in the workplace associated with licensed activities. The inspectors assessed the licensee's implementation of appropriate radiation monitoring and exposure control measures for both individual and collective exposures. The inspectors walked down various portions of the plant and performed independent radiation dose rate measurements. The inspectors interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspectors reviewed licensee performance in the following areas:

- The hazard assessment program, including a review of the licensee's evaluations of changes in plant operations and radiological surveys to detect dose rates, airborne radioactivity, and surface contamination levels

- Instructions and notices to workers, including labeling or marking containers of radioactive material, radiation work permits, actions for electronic dosimeter alarms, and changes to radiological conditions

- Programs and processes for control of sealed sources and release of potentially contaminated material from the radiologically controlled area, including survey performance, instrument sensitivity, release criteria, procedural guidance, and sealed source accountability

- Radiological hazards control and work coverage, including the adequacy of surveys, radiation protection job coverage and contamination controls, the use of electronic dosimeters in high noise areas, dosimetry placement, airborne radioactivity monitoring, controls for highly activated or contaminated materials (non-fuel) stored within spent fuel and other storage pools, and posting and physical controls for high radiation areas and very high radiation areas

- Radiation worker and radiation protection technician performance with respect to radiation protection work requirements

- Audits, self-assessments, and corrective action documents related to radiological hazard assessment and exposure controls since the last inspection

These activities constitute completion of one sample of radiological hazard assessment and exposure controls as defined in Inspection Procedure 71124.01.

b. Findings

Introduction. The inspectors reviewed a self-revealing, Green, non-cited violation of Technical Specification 5.7.2 because the licensee failed to control access to a high radiation area with dose rates greater than 1 rem/hour.

Description. On October 17, 2013, licensee representatives placed radioactively contaminated spent resin into a disposal liner inside a rail car and controlled the area around the rail car as a locked high radiation area. A locked high radiation area contains a radiation dose rate greater than 1 rem/hour at 30 centimeters from the source of radiation and requires special controls, in accordance with the licensee's technical specifications. Licensee representatives measured a dose rate of 11 rem/hour at the plane of the liner opening and 8 rem/hour at 30 centimeters from the source of radiation, according to radiation survey record number 30931. The workers used a ladder to gain access to the top of the rail car. The ladder was kept within the area. The licensee used temporary chain-link fence sections with concrete bases to form a barricade around the rail car, which was located in the 115-foot yard area. The fence sections weighed approximately 4,400 pounds each and were moved with a forklift.

On October 21, 2013, the licensee radwaste crew removed the water from the disposal liner. On October 22, 2013, the crew began work to solidify the contents of the liner, and at 12:10 p.m., the crew placed the fence sections around the rail car and left the area to have lunch. At 12:25 p.m., a maintenance crew entered the yard area to remove and

reinstall security barrier delay fencing in another part of the yard. The maintenance crew needed a forklift to move the security delay fencing, saw the forklift which had been used by the radwaste crew, and decided to use it. The forklift was sitting with the forks under one of the temporary fence sections. Although the maintenance crew did not notice any movement of the fence section when the maintenance forklift driver backed out, licensee representatives later concluded the forks must have moved the fence section slightly. When the radwaste crew returned from lunch, it was readily apparent access to the locked high radiation area was no longer controlled. The lock was still engaged in the hasp, but the hasp was not secured to the post in the fence section. Because of the change in configuration, the temporary fencing no longer formed a barricade which prevented unauthorized access to the high radiation area.

At 1:45 p.m., a radiation protection technician supporting the radwaste crew assumed responsibility for guarding the area and re-established compliance with the technical specification requirements. No one was in the area around the rail car when the radwaste crew returned and no worker received an electronic dosimeter dose rate alarm, indicating there had been no actual entry into the area. Licensee representatives documented the occurrence in the corrective action program and performed an apparent cause evaluation. Licensee representatives concluded the radiation protection personnel did not have a questioning attitude, which caused them to improperly evaluate the possibility of mistakes, latent problems, and inherit risks associated with administrative controls of the locked high radiation area boundary.

Analysis. The failure to control access to a high radiation area with dose rates greater than 1 rem/hour is a performance deficiency. The requirement not met was Technical Specification 5.7.2. The significance of the performance deficiency was more than minor because, if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern if workers had entered an uncontrolled high radiation area and received unintended radiation dose. The Occupational Radiation Safety Cornerstone was affected; therefore, the inspectors used Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," August 19, 2008, to determine the significance of the violation. The violation had very low safety significance (Green) because: (1) It was not an as low as is reasonably achievable (ALARA) finding because the final collective dose for the work activity did not exceed the planned dose by 50 percent and did not exceed 5 person-rem, (2) there was no overexposure because no individual worker's dose exceeded 10 CFR Part 20 dose limits, (3) there was no substantial potential for an overexposure because the inspectors reviewed the facts and concluded, because no one entered the area around the rail car, it was not possible to construct a reasonable scenario in which a minor alteration of circumstances would have resulted in a violation of the 10 CFR Part 20 limits, (4) the ability to assess dose was not compromised because the workers wore passive dosimetry certified by the National Voluntary Laboratory Accreditation Program and electronic dosimetry calibrated periodically by the licensee's personnel.

The performance deficiency was self-revealing. Self-revealing findings or violations become self-evident and require no active and deliberate observation by the licensee or NRC inspectors to determine whether a change in process or equipment capability or function has occurred. In this case, radiation protection representatives acknowledged the change in barricade capability or function was obvious to them when they returned from lunch, and the problem was not identified as part of a deliberate observation, such as a periodic check of locked high radiation area controls.

Radiation protection personnel did not have a questioning attitude, which caused them to improperly evaluate the possibility of mistakes, latent problems, and inherit risks associated with administrative controls of the locked high radiation area boundary. Referring to NUREG-2165, "Safety Culture Common Language," the inspectors determined these characteristics were similar to the trait of "Questioning Attitude," and the attribute, "QA.4, Avoid Complacency." Using Manual Chapter 0310, "Aspects Within the Cross-Cutting Areas," January 1, 2014, Exhibit 1, the inspectors determined the attribute QA.4 aligned with the cross-cutting aspect H.12. Therefore, this violation has a cross-cutting aspect in the human performance area, associated with avoiding complacency because individuals did not recognize and plan for the possibility of mistakes, latent issues, and inherent risk and did not implement appropriate error reduction tools [H.12].

Enforcement. Technical Specification 5.7.2 requires high radiation areas with dose rates greater than 1.0 rem/hour at 30 centimeters from the radiation source be provided with a locked or continuously guarded door or gate. Contrary to the above, the licensee did not provide a high radiation area with dose rates than 1.0 rem/hour at 30 centimeters from the radiation source with a locked or continuously guarded door or gate. Specifically, on October 22, 2013, licensee representatives failed to maintain a locked gate and fence around a rail car containing radioactively contaminated spent resin which had a dose rate of 8 rem/hour at 30 centimeters from the radiation source. Upon identification, a radiation protection technician assumed responsibility for guarding the area, reestablished compliance with technical specification requirements, and entered the condition into the corrective action program. Because this violation was of very low safety significance (Green) and was entered into the licensee's corrective action program as Notification 50590243, it is being treated as a non-cited violation, consistent with Section 2.3.2.a of the Enforcement Policy: NCV 05000275/2014005-02; 05000323/2014005-02, "Failure to control access to a high radiation area with dose rates greater than 1 rem/hour."

2RS2 Occupational ALARA Planning and Controls (71124.02)

a. Inspection Scope

The inspectors assessed licensee performance with respect to maintaining occupational individual and collective radiation exposures as low as is reasonably achievable (ALARA). During the inspection, the inspectors interviewed licensee personnel and reviewed licensee performance in the following areas:

- Site-specific ALARA procedures and collective exposure history, including the current 3-year rolling average, site-specific trends in collective exposures, and source-term measurements

- ALARA work activity evaluations/post-job reviews, exposure estimates, and exposure mitigation requirements

- The methodology for estimating work activity exposures, the intended dose outcome, the accuracy of dose rate and man-hour estimates, and intended versus actual work activity doses and the reasons for any inconsistencies

- Records detailing the historical trends and current status of tracked plant source terms and contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry

- Radiation worker and radiation protection technician performance during work activities in radiation areas, airborne radioactivity areas, or high radiation areas

- Audits, self-assessments, and corrective action documents related to ALARA planning and controls since the last inspection

These activities constitute completion of one sample of occupational ALARA planning and controls as defined in Inspection Procedure 71124.02.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Security

4OA1 Performance Indicator Verification (71151)

.1 Reactor Coolant System Specific Activity (BI01)

a. Inspection Scope

The inspectors reviewed the licensee's reactor coolant system chemistry sample analyses for the period of October 2013 through October 2014 to verify the accuracy and completeness of the reported data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the reactor coolant system specific activity performance indicator for Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Reactor Coolant System Identified Leakage (BI02)

a. Inspection Scope

The inspectors reviewed the licensee's records of reactor coolant system (RCS) identified leakage for the period of October 2013 through October 2014 to verify the accuracy and completeness of the reported data. The inspectors reviewed the performance of RCS leakage surveillance procedure on December 1, 2014. The inspectors used definitions and guidance contained in Nuclear Energy Institute

Document 99-02, “Regulatory Assessment Performance Indicator Guideline,” Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the reactor coolant system specific activity performance indicator for Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.3 Occupational Exposure Control Effectiveness (OR01)

a. Inspection Scope

The inspectors verified that there were no unreported unplanned exposures or losses of radiological control over locked high radiation areas and very high radiation areas during the period of January 1, 2013, to June 30, 2014. The inspectors reviewed a sample of radiologically controlled area exit transactions showing exposures greater than 100 mrem and corrective action documents related to radiological controls. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, “Regulatory Assessment Performance Indicator Guideline,” Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the occupational exposure control effectiveness performance indicator as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.4 Radiological Effluent Technical Specifications (RETS)/Offsite Dose Calculation Manual (ODCM) Radiological Effluent Occurrences (PR01)

a. Inspection Scope

The inspectors reviewed corrective action program records for liquid or gaseous effluent releases that occurred between January 1, 2013, and June 30, 2014, and verified the performance indicator data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, “Regulatory Assessment Performance Indicator Guideline,” Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the radiological effluent technical specifications (RETS)/offsite dose calculation manual (ODCM) radiological effluent occurrences performance indicator as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review

a. Inspection Scope

Throughout the inspection period, the inspectors performed daily reviews of items entered into the licensee's corrective action program. The inspectors verified that licensee personnel were identifying problems at an appropriate threshold and entering these problems into the corrective action program for resolution. The inspectors verified that the licensee developed and implemented corrective actions commensurate with the significance of the problems identified. The inspectors also reviewed the licensee's problem identification and resolution activities during the performance of the other inspection activities documented in this report.

b. Findings

No findings were identified.

.2 Semiannual Trend Review

a. Inspection Scope

The inspectors reviewed the licensee's corrective action program and other documentation to identify trends that might indicate the existence of a more significant safety issue. The inspectors verified that the licensee was taking corrective actions to address identified adverse trends. Specifically, the inspectors noted that during periods of cold or hot weather, the station lacked procedures to proactively prepare for extreme temperatures, rather than reacting to equipment alarms as they were received. Additionally, the station lacked a comprehensive plan for adverse weather to ensure consistent preparation.

These activities constitute completion of one semiannual trend review sample, as defined in Inspection Procedure 71152.

b. Observations and Assessments

The inspectors observed the licensee's implementation of adverse weather procedures during 2014. Following several observations by the inspectors, and a weather-related finding (documented in NRC Integrated Inspection Report 05000275/2014004 and 05000323/2014004, Section 1R15), the licensee implemented an adverse weather policy (CP-M-16, Severe Weather) on July 21, 2014. The inspectors observed that the initial use of the procedure was not well implemented, but did not result in any more than minor observations. The licensee's subsequent use of the procedure during periods of high winds, heavy rains, and high swells was well coordinated, and implemented in advance of severe weather.

c. Findings

No findings were identified.

.3 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors selected two issues for an in-depth follow-up:

- On November 24, 2015, the inspectors reviewed several instances of emergency diesel generator turbo support plate cracking. The inspectors assessed the licensee's problem identification threshold, cause analyses, extent of condition reviews, and compensatory actions. The inspectors verified that the licensee appropriately prioritized the corrective actions and that these actions were adequate to correct the condition.

- On December 22, 2014, the inspectors reviewed the licensee's corrective actions to update seismic analyses for the reactor coolant system.

  In 2011, the licensee identified that modifications to the reactor coolant system did not include all of the design loads as required by the Final Safety Analysis Report Update (FSARU). Specifically, the licensee's seismic analysis of the reactor coolant system equipment and supports did not consider the combination of loads from a loss-of-coolant-accident (LOCA) and an earthquake from the Hosgri fault occurring at the same time. The licensee documented the non-conforming conditions in Notifications 50403188 and 50404966.

  The inspectors assessed the licensee's problem identification threshold, cause analyses, extent of condition reviews, operability assessment, and compensatory actions. The inspectors verified that the licensee appropriately prioritized the planned corrective actions and that these actions were adequate to correct the condition.

  Specifically, the inspectors reviewed the prompt operability assessment for the non-conforming condition of the reactor coolant system equipment and supports. The inspectors determined that new seismic information did not affect the results of the operability assessment.

These activities constitute completion of two annual follow-up samples, as defined in Inspection Procedure 71152.

b. Findings

The licensee reviewed the Final Safety Analysis Report Update and discovered the requirement to design the reactor coolant system to withstand the loads from a loss-of-coolant-accident (LOCA) occurring at the same time as an earthquake from the Hosgri fault. When the replacement steam generators and reactor head were designed and installed in 2008, the licensee failed to consider the required loading combination. In 2011, the licensee discovered the error and identified that the failure to consider the LOCA and earthquake loading combination, which constitutes a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." The enforcement aspects of this violation are discussed in Section 4OA7 of this report.

4OA3 Follow-up of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) LER 05000275; 05000323/1-2014-003-01: Unanalyzed Condition Affecting Unit 1 and 2 Emergency Diesel Generators, Tornado Missiles

On March 6, 2014, as part of the Licensing Basis Verification Project (LBVP), Diablo Canyon Power Plant (DCPP) identified an unanalyzed condition where the emergency diesel generator (EDG) exhaust plenums and exhaust piping were not adequately protected from tornado missiles. This is a nonconforming condition with DCPP licensing basis requirements. DCPP reported this unanalyzed condition to the NRC in Event Notification Number 49879. Subsequent questions from the NRC resident inspector prompted an evaluation of the DCPP licensing basis for tornado missiles. This evaluation identified that the licensing basis requirements for EDG ventilation systems and exhaust pipes require protection from tornado missiles.

The inspectors dispositioned the unanalyzed condition as a Green finding in Section 1R15 of NRC Integrated Inspection Report 05000275/2014002 and 05000323/2014002.

No additional deficiencies were identified during the review of this licensee event report.

This licensee event report is closed.

.2 (Closed) LER 05000275; 05000323/1-2013-003-01: Actuation of Six Emergency Diesel Generators due to Loss of Offsite Power

On June 23, 2013, Pacific Gas and Electric Company (PG&E) lost its 230 kV offsite power source at the Diablo Canyon Power Plant when an offsite transmission system relay actuated. This resulted in the valid start of all Unit 1 and 2 emergency diesel generators (EDGs), three per unit. All EDGs successfully started but did not load since all associated buses remained energized by auxiliary power. All systems operated as designed with no problems observed. The 230 kV offsite power source is the only offsite power system designed to be immediately available following an accident; however, the safety-related, onsite EDGs would have provided power to mitigate the consequences of an accident while the 230 kV system was unavailable. PG&E completed a root cause evaluation and determined that insulation, contamination, and weather issues at a grid substation located 11 miles north of the plant caused the event.

No additional deficiencies were identified during the review of this licensee event report.

This licensee event report is closed.

3. (Closed) LER 05000275/1-2013-010-00: Two Emergency Diesel Generators Inoperable Due to Operator Error

a. Inspection Scope

On December 19, 2013, while conducting post-maintenance testing on Emergency Diesel Generator (EDG) 1-2, the protected train EDG 1-3 was damaged when an operator inadvertently stepped on a fuel oil line while performing an inspection. As a result, two of the three Unit 1 emergency diesel generators were inoperable.

b. Findings

Introduction. The inspectors identified a self-revealing non-cited violation of 10 CFR 50.65(a)(4) for failing to manage risk when a protected train emergency diesel generator was unexpectedly rendered inoperable while another train was being returned to service. Specifically, the installed and administrative operational barriers failed to prevent a loss of safety function to an operable emergency diesel generator resulting in two inoperable emergency diesel generators for a period of two hours.

Description. On December 8, 2013, Unit 1 operators entered a planned, 14-day, extended maintenance outage window on EDG 1-2. The licensee implemented risk management actions on the remaining two other unit diesel generators which included, in part, posting the generators as protected equipment in accordance with OP O-36, "Protected Equipment Postings," Revision 7.

The licensee's risk management actions included administrative actions and physical barriers. The administrative actions incorporated pre-job briefs to operators on the protected equipment. The licensee placed physical barriers across the other two EDG room entrances to prevent unauthorized entry for other than routine rounds or inspections. On December 19, 2013, a nuclear operator assigned to perform a post-shutdown inspection of EDG 1-2, to familiarize himself with the equipment, entered the posted protected equipment room for EDG 1-3 in order to do a comparison. While inside the EDG 1-3 equipment room, the nuclear operator climbed on top of a portion of the engine in order to get a better look at the equipment he was going to inspect on EDG 1-2 and inadvertently damaged the protected EDG 1-3 fuel oil line. The resulting damage rendered the EDG 1-3 inoperable.

The licensee cause evaluation identified a weakness in operators' understanding of risk characterization and preventative measures to manage risk. In addition, the licensee determined operations staff routinely crossed protected equipment boundaries without authorization due to a misunderstanding of the requirements in OP O-36. Corrective actions following this event included: (1) issuing of operations standing orders and Shift Orders clarifying expectations on what equipment must be protected when an emergency diesel generator become unavailable, (2) additional guidance as to who may cross a protected equipment barrier, and (3) requiring management authorization to pass a protected equipment barrier. In addition, a site-wide communication was published to discuss the event, operational risk, procedural requirements, and causes.

Analysis. The inspectors determined that the licensee's failure to adequately implement risk management actions associated with maintenance on emergency diesel generator EDG 1-2 was a performance deficiency. The performance deficiency was more than minor and therefore a finding because it was associated with the configuration control 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.

The inspectors determined the performance deficiency involved the licensee's assessment and management of risk associated with performing maintenance in accordance with 10 CFR 50.65(a)(4). The inspectors reviewed the results of Calculation RA 13-11, "Evaluation for Unit 1 EDG 1-3 Inoperable while EDG 1-2 is in Maintenance," Revision 0, for impact to incremental core damage probability. The inspectors used Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings,"

and Appendix K, “Maintenance Risk Assessment and Risk Management Significance Determination Process,” and determined because the incremental core damage probability deficit (ICDPD) was not greater than 1E -06/year, the finding was determined to be of very low safety significance (Green).

The finding was determined to have a cross-cutting aspect in the area of human performance, associated with the work practices component, in that personnel work practices are used commensurate with the risk of the assigned task, such that work activities are performed safely. Specifically, the operator did not consider potential undesired consequences, such as damage to the fuel line, and perform adequate self or peer checks prior to performance of an inspection of protected equipment to ensure risk management action would provide appropriate protection [H.11].

Enforcement. Title 10 of the Code of Federal Regulation (10 CFR) 50.65(a)(4), requires, in part, that before performing maintenance activities (including but not limited to surveillance testing, post-maintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activity.

Contrary to the above, on February 18, 2013, the license failed to effectively manage risk associated with surveillance testing for Unit 1, emergency diesel generator EDG 1-2 to prevent a loss of safety function. Specifically, risk management actions taken were not effective to prevent an operator from entering the protected room and causing damage to the protected emergency diesel generator EDG 1-3. Although, a risk assessment had been performed for the planned maintenance outage window, including installation of physical barriers to prevent entry into protected diesel generator rooms, the implementation of the barriers and administrative measures were inadequate. Consequently, the damaged fuel line, caused by the operator action, resulted in a loss of safety function of the emergency power supply for 2 hours, until the diesel generator EDG 1-2 could be restored to operable status. Because this violation is of very low safety significance and was entered into the Corrective Action Program as Notification 50600810, this violation is being treated as a non-cited violation consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000275/2014005-03, “Failure to Effectively Implement Risk Management Actions Associated with Safety-Related Emergency Diesel Generators.”

This licensee event report is closed.

These activities constitute completion of three event follow-up samples, as defined in Inspection Procedure 71153.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On October 10, 2014, the inspectors presented the radiation safety inspection results to Mr. J. Welsch, Site Director, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

On October 17, 2014, the inspectors presented the inservice inspection results to Barry Allen, Site Vice President, and other members of the licensee staff. The licensee acknowledged the

issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

On January 8, 2015, the resident inspectors presented the inspection results to Mr. J. Welsch, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy for being dispositioned as a non-cited violation.

- Title 10 of the Code of Federal Regulations (10 CFR), Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures shall be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. The reactor coolant system is a safety-related system, and therefore requires measures to assure the design basis is correctly translated into specifications, drawings, procedures, and instructions. Contrary to this requirement, on March 28, 2008, the reactor coolant system design basis was not correctly translated into specifications, drawings, procedures, and instructions because it did not combine the loads from a loss-of-coolant-accident (LOCA) and an earthquake. This finding was identified by the licensee and entered into the corrective action as Notifications 50403188 and 50404966. The finding was determined to be of very low safety significance because the reactor coolant system maintained its operability.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

B. Allen, Vice President, Nuclear Services
J. Arhar, (Nuc) Advising Engineer, Senior
T. Baldwin, Director, Nuclear Site Services
A. Bates, Director, Engineering Services
E. Davidson, Nuclear Instructor, Senior
D. Evans, Director, Nuclear Security & Emergency Services
R. Gagne, Supervisor, Nuclear Radiation Transportation
P. Gerfen, Senior Manager, Station Director Support
M. Ginn, Manager, Nuclear Emergency Planning
D. Gonzalez, Supervisor, Nuclear Engineering
D. Gouveia, Manager, Nuclear Shift Operations
E. Halpin, Sr. Vice President, Chief Nuclear Officer
A. Heffner, Nuclear Engineer
J. Hill, Nuclear Lead ISI, NDE Specialist
J. Hinds, Director, Quality Verification
L. Hopson, Assistant Director, Nuclear Maintenance
M. Huszarik, Supervisor, Nuclear Radiation Protection
T. Irving, Manager, Radiation Protection
T. King, Director, Station Support
J. Loya, Supervisor, Regulatory Services
J. MacIntyre, Director, Maintenance Services
J. Morris, Senior Advising Engineer
C. Murry, Nuclear Work Management Director
C. Neary, Nuclear Advising Engineer, Senior
J. Nimick, Station Director
R. Rogers, General Foreman, Radiation Protection
L. Sewell, Nuclear Radiation Protection Engineer
R. Simmons, Manager, Nuclear Maintenance
P. Soenen, Manager, Nuclear Regulatory Services
J. Summy, Senior Director, Technical Services
S. Terek, Employee Concerns Investigator
J. Welsch, Site Vice President
R. West, Manager, Nuclear Engineering
R. Waltos, Manager, Nuclear Engineering
D. Wilson, Lead ISI Inspector / NDE Specialist
M. Wright, Nuclear Engineering, Manager

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000323/2014005-01	NCV	Failure to Implement Fire Protection Program (Section 1R05)
05000275/2014005-02; 05000323/2014005-02	NCV	Failure to Control Access to a High Radiation Area With Dose Rates Greater Than 1 Rem/Hour (Section 2RS1)
05000275/2014005-003	NCV	Failure to Effectively Implement Risk Management Actions Associated with Safety-Related Emergency Diesel Generators (Section 4OA3.3)

Closed

05000275; 05000323/1-2014-003-01	LER	Unanalyzed Condition Affecting Unit 1 and 2 Emergency Diesel Generators, Tornado Missiles (Section 4OA3.1)
05000275; 05000323/1-2013-003-01	LER	Actuation of Six Emergency Diesel Generators due to Loss of Offsite Power (Section 4OA3.2)
05000275/1-2013-010-00	LER	Two Emergency Diesel Generators Inoperable Due to Operator Error (Section 4OA3.3)

Section 1R01: Adverse Weather Protection

Procedure

Number	Title	Revision
CP-M-16	Severe Weather	1

Notifications

50688301 50632554

Section 1R04: Equipment Alignment

Procedures

Number	Title	Revision
OP A-2:X	RVRLIS Alignment for Refueling Outages	7
OP H-11	Turbine Building Ventilation	0
OP J-2-V	Offfsite Power Sources	15
OP B-3A	Safety Injection System	3

Work Order

64075840

Drawing

Number	Title	Revision
F-VIII-A-2-2	RVLIS Flowpath Diagram	29

Section 1R05: Fire Protection

Procedures

Number	Title	Revision
OP K-2A:II	Fire Water – Remove from Service	12
STP M-66A	Fire Deluge Testing	9
EP M-1	Non Radiological personnel injury and rescue	23
CP M-6	Fire Emergency	34
RA-5	RCA and H Block Elevation 85 foot Unit 1 and Common Pre-fire Plans	5

Notifications

5662646 50665469 50658303

Work Order

68032466

Section 1R06: Flood Protection Measures

Procedures

Number	Title	Revision
OP AP-14	Malfunction of RHR	13A
ECG 17.3	Flood Protection	3

Notification

50663765

Work Order

60067523

Section 1R08: Inservice Inspection Activities

Procedures

Number	Title	Revision Date
NDE ET-7	Eddy Current Examination of Steam Generator Tubing	15
51-9118042	Diablo Canyon EPRI Appendix H Eddy Current Site Validation	3
DCL-89-280	Thimble Tube Thinning in Westinghouse Reactors	November 10, 1989
NDE VT 1-1	Visual Examination of Component Surfaces	1
STP M-SGTI	Steam Generator Tube Inspection	18
TSI.NE3	Steam Generator Secondary Side Integrity Program	7
NDE PDI-UT-11	Ultrasonic Detection and Sizing of Reactor Pressure Vessel Nozzle to Shell Welds and Nozzle Inner Radius	1
NDE UT-4	Ultrasonic Examination of Pressure Vessel Welds Other than Reactor Vessels	3
NDE UT-WOL-PA1	Manual Phased Array Ultrasonic Examination of Welds Overlaid Similar and Dissimilar Metal Welds	0

Miscellaneous

Title	Revision
2R15 Steam Generator Condition Monitoring and Operational Assessment	0
2R18 Steam Generator Degradation Assessment	0
2R18 Steam Generator Condition Monitoring and Operational Assessment	0

Notifications

50664238	50553834	50612250	50561154	50560201
50542953	50561988			

Work Order

60053953

Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance

Procedures

Number	Title	Revision
E0P E-0.1	Reactor Trip Response	40
EP G-1	Emergency Classification and Emergency Plan Activation	43
OP L-2	Hot Standby to Startup Mode	42

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

Number	Title	Revision
AD7.ID14	Assessment of Integrated Risk	1
OM1.ID4	Interface Requirements for Transmission & Distribution Facilities	6A
MP M-54.3	Freeze Sealing of Piping	19
AD7.DC6	On-Line Maintenance Risk Management	21A
AD8.DC55	Outage Safety Scheduling	38

Notifications

50665460	50665485	50670445	50657755	50652328

Work Order

60064956

Drawing

Number	Title	Revision
107708	Chemical Volume and Control System	124

Other

Number	Title	Revision
AD7.ID14 attachment	Risk Management Plan - Freeze Seal to Replace 2RV8123	1

Section 1R15: Operability Determinations and Functionality Assessments

Procedure

Number	Title	Revision
OM7.ID12	Operability Determination	29

Notifications

50658301	50654488	50651964	50660584	50688301

Drawings

Number	Title	Revision Date
DCL-11-038	License Amendment Request 11-03, Revision to Technical Specification 3.8.1	February 5, 2012
CF3.ID4	Maximum ASW Temperature Design Calculation	0

Section 1R18: Plant Modifications

Notification

50670445

Drawing

Number	Title	Revision
107708	Chemical and Volume Control System	122

Work Orders

60074369	60074370

Section 1R19: Post-Maintenance Testing

Procedures

NUMBER	TITLE	Revision
STP M-105	Test of Backup Nitrogen Accumulator System	24A
STP M-93A	Refueling Interval Surveillance Containment Fan Cooler System	34
AD13.ID4	Post Maintenance Testing	22

Notifications

50671458	50671513	50541942	50541943	50662609
50665493	50663866			

Work Orders

64113472	60073579	64103628

Section 1R20: Refueling and Other Outage Activities

Procedures

Number	Title	Revision Date
OM14.ID1	Fatigue Management Rule Program	23
OP.DC37	Control Operator Core Alterations Checklist	May 6, 2014
OP L-0	Mode Transition Checklists	75A
OP L-6	Cold Shutdown/Refueling	18
PEP R-8DS2	Core Loading Sequence (Engineering)	10
OP B-8DS2	Core Loading	54
OP B-8DS4	Post-Core Reload Gap Inspections	1
OP A-2:II	Reactor Vessel – Draining the RCS to the Vessel Flange- With Fuel in Vessel	46
OP A-2:V	Draining to Half-Loop with the Reactor Defueled & Reactor Vessel Cover Installed	7
OP A-2:X	RVRLIS Alignments for Refueling Outages	7
OP B-8D	Refueling Prerequisites	60
OP B-8G	Fuel Handling Operating Instructions	7
AD8.DC50	Outage Safety Management	3
OP AP SD-2	Loss of RCS Inventory	18
OP A-2:IX	Reactor Vessel – Vacuum Refill of RCS	27
OP A-2:III	Reactor Vessel – Draining to Half Loop with Fuel in the Vessel	50
MA1.ID14	Plant Crane Operating Restrictions	23
DCM T-11	Control of Heavy Loads	18

Notifications

50661508	50661698	50660869,	50661164	50662168
50662297	50663321	50664262	50663875	50664052
50664229	50664115	50664473	50664760	50664841
50664953	50664695	50665009	50664961	50662923
50662876	50480775	50670122		

Other

Title	Date
Diablo Canyon Letter DCL-87-233, “Response to Generic Letter 87-12, Loss of Residual Heat Removal While the RCS is Partially Filled”	September 18, 1987
Commitment Report T36645, “Actions Prior to Maneuvering RCS to lowered Inventory”	September 06, 2010
Commitment Report T32830, “Mid-Loop Oper-Emer. EQPT. S.G. Manways and Nozzle Dam”	July 14, 2009
Commitment Report T32545, “Precaution and Restrictions on Use of Nozzle Dams”	July 14, 2009

Clearances/Tagouts

Number	Title	Revision
019 D-68-005	SAPN 50661160, Clearance Hanging	0
2C18 D-17-176	SAPN 50661183 Clearance Red Tag Off	0
2C18-00-8426	Fire Water Supply to Hose Reel 18	0

Section 1R22: Surveillance Testing

Procedures

Number	Title	Revision
STP M-15	Integrated Test of Engineered Safeguards and Diesel Generators	60
STP V-661	Penetration 61 Containment Isolation Valve Leak Testing	9
STP V-662	Penetration 62 Containment Isolation Valve Leak Testing	9

Section 1EP6: Drill Evaluation

Procedures

Number	Title	Revision
E0P E-0.1	Reactor Trip Response	40
EP G-1	Emergency Classification and Emergency Plan Activation	43

Section 2RS1: Radiological Hazard Assessment and Exposure Controls

Procedures

Number	Title	Revision
RCP D-220	Control of Access to High, Locked High, and Very High Radiation Areas	43
RCP D-240	Radiological Posting	21
RCP D-500	Routine and Job Coverage Surveys	38
RCP D-620	Radioactive Source Control Program	9
RP1.ID16	Radiation Worker Expectations	1A

Notifications

50541754	50544473	50545224	50545563	50553493
50559687	50559796	50578092	50590243	50614775
50577179	50628625	50662105	50601460	50652121
50662233	50662471	50662215	50662216	50662476
50662462				

Radiation Surveys

Number	Title	Date
30869	Movement of Resin from SRST 0-1 to Vendor Liner	October 17, 2013
30906	Post Dewatering Survey of Vendor Liner	October 21, 2013
30931	Rail Car Dose Rate Profile with Liner 13-R-001 Inside	October 23,2013
37020	Containment 140-foot Elevation	October 8, 2014
37021	Containment 140-foot Elevation, U2 Upender Cable Replacement	October 8, 2014

36709	RMA Monthly Map 6 of 11 - Instrument Calibration Facility 119-foot Elevation Map 8 of 11 - TSC Calibration Facility 104-foot Elevation	October 1, 2014
7.1.11	Lapel Sampling Results for Internal Alpha Dose Tracking Transfer Cart Cable Work	October 8, 2014
7.1.24	Lapel Sampling Results for Internal Alpha Dose Tracking Transfer Cart Cable Work	October 8, 2014

Radiation Work Permits

Number	Title
14-2026	Transfer Cart – Lower Cavity
14-2041	2R18 Primary Steam Generator Manway Work
14-2044	2R18 Primary Steam Generator Eddy Current Testing

Miscellaneous Documents

Number	Title	Date
	Leak Test Results	November 18, 2013
	Leak Test Results	May 8, 2014
RP# 6.10.1	BC-4 Daily QC Check Data Sheet	November 2013
RP# 6.11.3	SAC 4 Daily QC Check Data Sheet	November 2013
1608	Job History Comment	March 3, 2014
1623	Job History Comment	March 6, 2014

Section 2RS2: Occupational ALARA Planning and Controls

Procedures

Number	Title	Revision
RP1.ID1	ALARA Program	8
RP1.ID9	Radiation Work Permits	12
RP1.ID15	Radiological Risk Assessment	3
RCP D-200	Writing RWPs and ALARA Processes	51
RCP D-202	RWP Work Instructions	9

Audits and Self-Assessments

Number	Title	Date
50575337	Quick Hit Self-Assessment: NRC Inspection Procedure 71124.02 – Occupational ALARA Planning and Controls	August 11, 2013
140370017	2014 Radiation Protection Programs Audit	May 6, 2014

Notifications

50577178	50578697	50578967	50590113	50591258
50591259	50592682	50604349	50608976	50622299
50636164	50655763			

Radiation Work Permits

Number	Title	Revision
1002	1R18 Scaffolding in Containment	0
1004	1R18 Radiation Protection in Containment	0
1014	1R18 Reactor Cavity Decontamination	0
1018	1R18 Containment Coord., Riggers and FME	0
1051	1R18 RCP Motor Maintenance	0
2002	2R18 Scaffolding in Containment	0
2014	2R18 Reactor Cavity Decontamination	0
2044	2R18 Primary Steam Generator Eddy Current Testing and Tube Work	0
2051	2R18 RCP Motor Maintenance	0
2081	2R18 CET Replacement	0

ALARA Planning Packages, In-Progress and Post-Job Reviews

RWP Number	Title	Date
1002	ALARA Plan	January 22, 2014
1002	In Progress Review	February 16, 2014
1002	ALARA Post Job Review	March 12, 2014
1004	ALARA Plan	January 15, 2014
1004	ALARA Post Job Review	March 17, 2014

1014	ALARA Plan 1014-A/B	January 24, 2014
1018	ALARA Plan	January 22, 2014
1018	In Progress Review	February 18, 2014
1018	ALARA Post Job Review	March 18, 2014
1051	ALARA Plan	January 17, 2014
1051	ALARA Post Job Review	March 14, 2014
2002	ALARA Plan	September 19, 2014
2014	ALARA Plan	September 26, 2014
2044	ALARA Plan	September 19, 2014
2051	ALARA Plan	September 19, 2014
2081	ALARA Plan	September 26, 2014

Miscellaneous Documents

Number	Title	Date
	1R18 ALARA Review Committee Meeting Minutes	March 10, 2014
	2R18 ALARA Review Committee Meeting Minutes	October 8, 2014
1000000397	ALARA Design Review (Hatch RCDT)	October 15, 2008
	Radiation Protection Section Quarterly Review - Fourth Quarter 2013	May 5, 2014
	Radiation Protection Section Quarterly Review - First Quarter 2014	May 5, 2014
	1R18 Outage ALARA Report (Draft)	October 9, 2014
	Five Year Dose Reduction Plan	May 2013
	Performing Dose Estimates	October 9, 2014

Section 4OA1: Performance Indicator Verification

Procedures

Number	Title	Revision
STP R-10C	Unit 2, Reactor Coolant System Water Inventory Balance	10
STP R-10C	Unit 1, Reactor Coolant System Water Inventory Balance	44

Notifications

50586084 50526855

Section 4OA2: Problem Identification and Resolution

Procedures

Number	Title	Revision
LBIE 2007-013	RSG Component Modification	
LBIE 2013-029	Incorporate SRSSS/ABSUM for seismic and LOCA loads	
X13.ID12	Current licensing basis determination	9

Notifications

50404966	50403188	50403189	50403377	50409893
50410005	50403339	50667010	50417666	
50688301	50629940	50632554		

Section 4OA5: Other Activities

Procedure

Number	Title	Revision
RA 13-11	Design Engineering Probabilistic Risk Assessment Calculation	0

PAPERWORK REDUCTION ACT STATEMENT

This letter 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. The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid Office of Management and Budget control number.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Information Request

September 1, 2014

Notification of Inspection and Request for Information

Diablo Canyon Nuclear Power Plant

NRC Inspection Report 05000323/2014005

On October 6, 2014, reactor inspectors from the Nuclear Regulatory Commission's (NRC) Region IV office will perform the baseline inservice inspection at Diablo Canyon, Unit 2, using NRC Inspection Procedure 71111.08, "Inservice Inspection Activities." Experience has shown that this inspection is a resource intensive inspection both for the NRC inspectors and your staff. In order to minimize the impact to your onsite resources and to ensure a productive inspection, we have enclosed a request for documents needed for this inspection. These documents have been divided into two groups. The first group (Section A of the enclosure) identified information to be provided prior to the inspection to ensure that the inspectors are adequately prepared. The second group (Section B of the enclosure) identifies the information the inspectors will need upon arrival at the site. It is important that all of these documents are up to date and complete in order to minimize the number of additional documents requested during the preparation and/or the onsite portions of the inspection.

We have discussed the schedule for these inspection activities with your staff and understand that our regulatory contact for this inspection will be Mr. Andrew Heffner of your licensing organization. The tentative inspection schedule is as follows:

Preparation week: September 29, 2014

Onsite weeks: October 6 through October 17, 2014

Our inspection dates are subject to change based on your updated schedule of outage activities. If there are any questions about this inspection or the material requested, please contact the lead inspector Isaac Anchondo at (817) 200-1152 (isaac.anchondo@nrc.gov).

A.1 ISI/Welding Programs and Schedule Information

a) A detailed schedule (including preliminary dates) of:

   i. Nondestructive examinations planned for ASME Code Class Components performed as part of your ASME Section XI, risk informed (if applicable), and augmented inservice inspection programs during the upcoming outage.

   ii. Examinations planned for Alloy 82/182/600 components that are not included in the Section XI scope (If applicable)

   iii. Examinations planned as part of your boric acid corrosion control program (Mode 3 walkdowns, bolted connection walkdowns, etc.)

   iv. Welding activities that are scheduled to be completed during the upcoming outage (ASME Class 1, 2, or 3 structures, systems, or components)

b) A copy of ASME Section XI Code Relief Requests and associated NRC safety evaluations applicable to the examinations identified above.

   i. A list of ASME Code Cases currently being used to include the system and/or component the Code Case is being applied to.

c) A list of nondestructive examination reports which have identified recordable or rejectable indications on any ASME Code Class components since the beginning of the last refueling outage. This should include the previous Section XI pressure test(s) conducted during start up and any evaluations associated with the results of the pressure tests.

d) A list including a brief description (e.g., system, code class, weld category, nondestructive examination performed) associated with the repair/replacement activities of any ASME Code Class component since the beginning of the last outage and/or planned this refueling outage.

e) If reactor vessel weld examinations required by the ASME Code are scheduled to occur during the upcoming outage, provide a detailed description of the welds to be examined and the extent of the planned examination. Please also provide reference numbers for applicable procedures that will be used to conduct these examinations.

f) Copy of any 10 CFR Part 21 reports applicable to structures, systems, or components within the scope of Section XI of the ASME Code that have been identified since the beginning of the last refueling outage.

g) A list of any temporary noncode repairs in service (e.g., pinhole leaks).

h) Please provide copies of the most recent self-assessments for the inservice inspection, welding, and Alloy 600 programs

A.2 Reactor Pressure Vessel Head

a) Provide a detailed scope of the planned bare metal visual examinations (e.g., volume coverage, limitations, etc.) of the vessel upper head penetrations and/or any

nonvisual nondestructive examination of the reactor vessel head including the examination procedures to be used.

i. Provide the records recording the extent of inspection for each penetration nozzle including documents which resolved interference or masking issues that confirm that the extent of examination meets 10 CFR 50.55a(g)(6)(ii)(D).

ii. Provide records that demonstrate that a volumetric or surface leakage path examination assessment was performed.

Copy of current calculations for EDY, and RIY as defined in Code Case N-729-1 that establish the volumetric and visual inspection frequency for the reactor vessel head and J-groove welds.

A.3 Boric Acid Corrosion Control Program

a) Copy of the procedures that govern the scope, equipment and implementation of the inspections required to identify boric acid leakage and the procedures for boric acid leakage/corrosion evaluation.

b) Please provide a list of leaks (including code class of the components) that have been identified since the last refueling outage and associated corrective action documentation. If during the last cycle, the unit was shutdown, please provide documentation of containment walkdown inspections performed as part of the boric acid corrosion control program.

A.4 Steam Generator Tube Inspections

a) A detailed schedule of:

i. Steam generator tube inspection, data analyses, and repair activities for the upcoming outage (if occurring).

ii. Steam generator secondary side inspection activities for the upcoming outage (if occurring).

b) Copy of SG history documentation given to vendors performing eddy current (ET) testing of the SGs during the upcoming outage.

c) Copy of procedure containing screening criteria used for selecting tubes for in-situ pressure testing and the procedure to be used for in-situ pressure testing.

d) Copy of previous outage SG tube operational assessment. Also include a copy of the following documents as they become available:

i. Degradation assessment

ii. Condition monitoring assessment

e) Copy of the document defining the planned SG ET scope (e.g., 100 percent of unrepaired tubes with bobbin probe and 20 percent sample of hot leg expansion transition regions with rotating probe) and identify the scope explanation criteria,

which will be applied. Also identify and describe any deviations in this scope or expansion criteria from the EPRI Guidelines.

f) Copy of the document describing the ET acquisition equipment to be applied including ET probe types. Also identify the extent of planned tube examination coverage with each probe type (e.g. rotating probe -0.080 inches, 0.115 inches pancake coils and mid-range +point coil applied at the top-of-tube-sheet plus 3 inches to minus 12 inches).

g) Identify and quantify any SG tube leakage experienced during the previous operating cycle. Also provide documentation identifying which SG was leaking and corrective actions completed and planned for this condition.

h) Copy of steam generator eddy current data analyst guidelines and site validated eddy current technique specification sheets. Additionally, please provide a copy of EPRI Appendix H, "Examination Technique Specification Sheets," qualification records.

i) Provide past history of the condition and issues pertaining to the secondary side of the steam generators (including items such as loose parts, fouling, top of tube sheet condition, crud removal amounts, etc.).

Indicate where the primary, secondary, and resolution analyses are scheduled to take place.

A.5 Additional Information Related to all Inservice Inspection Activities

a) A list with a brief description of inservice inspection, and boric acid corrosion control program related issues (e.g., Condition Reports) entered into your corrective action program since the beginning of the last refueling outage. For example, a list based upon data base searches using key words related to piping such as: inservice inspection, ASME Code, Section XI, NDE, cracks, wear, thinning, leakage, rust, corrosion, boric acid, or errors in piping examinations.

b) Provide training (e.g. Scaffolding, Fall Protection, FME, Confined Space) if they are required for the activities described in A.1 through A.4.

c) Please provide names and phone numbers for the following program leads:

Inservice inspection (examination, planning)

Containment exams

Reactor pressure vessel head exams

Snubbers and supports

Repair and replacement program

Licensing

Site welding engineer

Boric acid corrosion control program

Steam generator inspection activities (site lead and vendor contact)

B. Information to be Provided Onsite to the Inspector(s) at the Entrance Meeting (February 10, 2014):

B.1 Inservice Inspection / Welding Programs and Schedule Information

a) Updated schedules for inservice inspection/nondestructive examination activities, including planned welding activities, and schedule showing contingency repair plans, if available.

b) For ASME Code Class welds selected by the inspector from the lists provided from section A of this enclosure, please provide copies of the following documentation for each subject weld:

i. Weld data sheet (traveler).

ii. Weld configuration and system location.

iii. Applicable Code Edition and Addenda for weldment.

iv. Applicable Code Edition and Addenda for welding procedures.

v. Applicable welding procedures used to fabricate the welds.

vi. Copies of procedure qualification records (PQRs) supporting the weld procedures from B.1.b.v.

vii. Copies of welder's performance qualification records (WPQ).

viii. Copies of the nonconformance reports for the selected welds (If applicable).

ix. Radiographs of the selected welds and access to equipment to allow viewing radiographs (if radiographic testing was performed).

x. Copies of the preservice examination records for the selected welds.

xi. Readily accessible copies of nondestructive examination personnel qualifications records for reviewing.

c) For the inservice inspection related corrective action issues selected by the inspectors from section A of this enclosure, provide a copy of the corrective actions and supporting documentation.

d) For the nondestructive examination reports with relevant conditions on ASME Code Class components selected by the inspectors from Section A above, provide a copy of the examination records, examiner qualification records, and associated corrective action documents.

e) A copy of (or ready access to) most current revision of the inservice inspection program manual and plan for the current interval.

f) For the nondestructive examinations selected by the inspectors from section A of this enclosure, provide a copy of the nondestructive examination procedures used to perform the examinations (including calibration and flaw characterization/sizing procedures). For ultrasonic examination procedures qualified in accordance with ASME Code, Section XI, Appendix VIII, provide documentation supporting the procedure qualification (e.g. the EPRI performance demonstration qualification summary sheets). Also, include qualification documentation of the specific equipment to be used (e.g., ultrasonic unit, cables, and transducers including serial numbers) and nondestructive examination personnel qualification records.

B.2 Reactor Pressure Vessel Head (RPVH)

a) Provide drawings showing the following (if performing any RPVH inspection activities):

i. RPVH and control rod drive mechanism nozzle configurations.

ii. RPVH insulation configuration.

Note: The drawings listed above should include fabrication drawings for the nozzle attachment welds as applicable.

b) Copy of the documents which demonstrate that the procedures to be used for volumetric examination of the reactor vessel head penetration J-groove welds were qualified by a blind demonstration test in accordance with 10 CFR 50.55a(g)(6)(ii)(D).

c) Copy of volumetric, surface and visual examination records for the prior inspection of the reactor vessel head and head penetration J-groove welds.

B.3 Boric Acid Corrosion Control Program

a) Please provide boric acid walk down inspection results, an updated list of boric acid leaks identified so far this outage, associated corrective action documentation, and overall status of planned boric acid inspections.

b) Please provide any engineering evaluations completed for boric acid leaks identified since the end of the last refueling outage. Please include a status of corrective actions to repair and/or clean these boric acid leaks. Please identify specifically which known leaks, if any, have remained in service or will remain in service as active leaks.

B.4 Steam Generator Tube Inspections

a) Copies of the Examination Technique Specification Sheets and associated justification for any revisions.

b) Please provide a copy of the eddy current testing procedures used to perform the steam generator tube inspections (specifically calibration and flaw characterization/sizing procedures, etc.).

c) Copy of the guidance to be followed if a loose part or foreign material is identified in the steam generators.

d) Identify the types of SG tube repair processes which will be implemented for defective SG tubes (including any NRC reviews/evaluations/approvals of this repair process). Provide the flaw depth sizing criteria to be applied for ET indications identified in the SG tubes.

e) Copy of documents describing actions to be taken if a new SG tube degradation mechanism is identified.

f) Provide procedures with guidance/instructions for identifying (e.g. physically locating the tubes that require plugging) and plugging SG tubes.

g) List of corrective action documents generated by the vendor and/or site with respect to steam generator inspection activities.

B.5 Codes and Standards

a) Ready access to (i.e., copies provided to the inspector(s) for use during the inspection at the onsite inspection location, or room number and location where available):

    i. Applicable Editions of the ASME Code (Sections V, IX, and XI) for the inservice inspection program and the repair/replacement program.

b) Copy of the performance demonstration initiative (PDI) generic procedures with the latest applicable revisions that support site qualified ultrasonic examinations of piping welds and components (e.g., PDI-UT-1, PDI-UT-2, PDI-UT-3, PDI-UT-10, etc.).

c) Boric Acid Corrosion Guidebook Revision 1 – EPRI Technical Report 1000975.

The following items are requested for the
Occupational Radiation Safety Inspection
at Diablo Canyon, Units 1 and 2
October 6-10, 2014
Integrated Report 2014005

Inspection areas are listed in the attachments below.

Please provide the requested information on or before September 8, 2014.

Please submit this information using the same lettering system as below. For example, all contacts and phone numbers for Inspection Procedure 71124.01 should be in a file/folder titled "1- A," applicable organization charts in file/folder "1- B," etc.

If information is placed on ims.certrec.com, please ensure the inspection exit date entered is at least 30 days later than the onsite inspection dates, so the inspectors will have access to the information while writing the report.

In addition to the corrective action document lists provided for each inspection procedure listed below, please provide updated lists of corrective action documents at the entrance meeting. The dates for these lists should range from the end dates of the original lists to the day of the entrance meeting.

If more than one inspection procedure is to be conducted and the information requests appear to be redundant, there is no need to provide duplicate copies. Enter a note explaining in which file the information can be found.

If you have any questions or comments, please contact Larry Ricketson at (817) 200-1165 or Larry.Ricketson@nrc.gov.

PAPERWORK REDUCTION ACT STATEMENT

This letter 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.

1. Radiological Hazard Assessment and Exposure Controls (71124.01) and Performance Indicator Verification (71151)

Date of Last Inspection: February 11, 2013

A. List of contacts and telephone numbers for the Radiation Protection Organization Staff and Technicians

B. Applicable organization charts

C. Audits, self-assessments, and LERs written since date of last inspection, related to this inspection area

D. Procedure indexes for the radiation protection procedures

E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.

1. Radiation Protection Program Description
2. Radiation Protection Conduct of Operations
3. Personnel Dosimetry Program
4. Posting of Radiological Areas
5. High Radiation Area Controls
6. RCA Access Controls and Radworker Instructions
7. Conduct of Radiological Surveys
8. Radioactive Source Inventory and Control
9. Declared Pregnant Worker Program

F. List of corrective action documents (including corporate and subtiered systems) since date of last inspection

a. Initiated by the radiation protection organization
b. Assigned to the radiation protection organization

NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide in document formats which are "searchable" so that the inspector can perform word searches.

If not covered above, a summary of corrective action documents since date of last inspection involving unmonitored releases, unplanned releases, or releases in which any dose limit or administrative dose limit was exceeded (for Public Radiation Safety Performance Indicator verification in accordance with IP 71151)

G. List of radiologically significant work activities scheduled to be conducted during the inspection period (If the inspection is scheduled during an outage, please also include a list of work activities greater than 1 rem, scheduled during the outage with the dose estimate for the work activity.)

H. List of active radiation work permits

I. Radioactive source inventory list

a. All radioactive sources that are required to be leak tested
b. All radioactive sources that meet the 10 CFR Part 20, Appendix E, Category 2 and above threshold (Please indicate the radioisotope, initial and current activity (w/assay date) and storage location for each applicable source.)

J. The last two leak test results for the radioactive sources inventoried and required to be leak tested (If applicable, specifically provide a list of all radioactive source(s) that have failed its leak test within the last two years.)

K. A current listing of any non-fuel items stored within your pools, and if available, their appropriate dose rates (Contact / @ 30cm)

L. Computer printout of radiological controlled area entries greater than 100 millirems since the previous inspection to the current inspection entrance date (The printout should include the date of entry, some form of worker identification, the radiation work permit used by the worker, dose accrued by the worker, and the electronic dosimeter dose alarm setpoint used during the entry (for Occupational Radiation Safety Performance Indicator verification in accordance with IP 71151).)

2. Occupational ALARA Planning and Controls (71124.02)
Date of Last Inspection: August 5, 2013

A. List of contacts and telephone numbers for ALARA program personnel

B. Applicable organization charts

C. Copies of audits, self-assessments, and LERs, written since date of last inspection, focusing on ALARA

D. Procedure index for ALARA Program

E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.
1. ALARA Program
2. ALARA Committee
3. Radiation Work Permit Preparation

F. A summary list of corrective action documents (including corporate and subtiered systems) written since date of last inspection, related to the ALARA program. In addition to ALARA, the summary should also address Radiation Work Permit violations, Electronic Dosimeter Alarms, and RWP Dose Estimates

NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide in document formats which are "searchable" so that the inspector can perform word searches.

G. List of work activities greater than 1 rem, since date of last inspection
Include original dose estimate and actual dose.

H. Site dose totals and 3-year rolling averages for the past 3 years (based on dose of record)

I. Outline of source term reduction strategy

J. If available, provide a copy of the ALARA outage report for the most recently completed outages for each unit

K. Please provide your most recent Annual ALARA Report.