



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION IV
1600 E. LAMAR BLVD.
ARLINGTON, TX 76011-4511

August 2, 2016

Mr. Edward D. Halpin
Senior Vice President,
Generation 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 INSPECTION REPORT
05000275/2016002 AND 05000323/2016002

Dear Mr. Halpin:

On June 30, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Diablo Canyon Power Plant, Units 1 and 2. On July 13, 2016, the NRC inspectors discussed the results of this inspection with Mr. J. Welsch and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented one finding of very low safety significance (Green) in this report. This finding involved a violation of NRC requirements. 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 violation or significance of the NCV, 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 U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; and the NRC resident inspector at the Diablo Canyon Power Plant.

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

E. Halpin

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Sincerely,

/RA/

Jeremy R. Groom, Chief
Project Branch A
Division of Reactor Projects

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

Enclosure:
Inspection Report 05000275/2016002 and
05000323/2016002

w/ Attachments:

- 1.) Supplemental Information
- 2.) RFI for Inservice Inspection
- 3.) RFI for Occupational Radiation Safety
Inspection

cc w/ enclosure: Electronic Distribution

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Letter to Edward D. Halpin from Jeremy R. Groom dated August 2, 2016

SUBJECT: DIABLO CANYON POWER PLANT – NRC INSPECTION REPORT
05000275/2016002 and 05000323/2016002

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 05000275; 05000323

License: DPR-80; DPR-82

Report: 05000275/2016002; 05000323/2016002

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: April 1 through June 30, 2016

Inspectors: J. Reynoso, Senior Resident Inspector
M. Stafford, Acting Resident Inspector
J. Choate, Acting Resident Inspector
I. Anchondo, Reactor Inspector
N. Greene, PhD, Health Physicist
J. O'Donnell, CHP, Health Physicist

Approved By: Jeremy Groom
Chief, Project Branch A
Division of Reactor Projects

SUMMARY

IR 05000275/2016002, 05000323/2016002; 04/01/2016 – 06/30/2016; Diablo Canyon Power Plant; Problem Identification and Resolution.

The inspection activities described in this report were performed between April 1 and June 30, 2016, by the resident inspectors at Diablo Canyon Power Plant and inspectors from the NRC's Region IV office. One finding of very low safety significance (Green) is documented in this report. This finding involved a violation of NRC requirements. 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: Barrier Integrity

- Green. The inspectors reviewed a self-revealed, non-cited violation of Technical Specification (TS) 5.4.1.a, "Procedures," for the licensee's failure to place a spent fuel assembly in its correct location in the spent fuel pool (SFP) in accordance with Procedure OP B-8H, "Spent Fuel Pool Work Instructions." Specifically, the fuel handling crew moved spent fuel assembly TT69 to location E-37 rather than its intended location E-27. In response to this error, reactor engineering performed a technical specification verification in order to ensure that fuel assembly TT69 could remain in Cell E-37. The licensee suspended further fuel movements pending corrective action and remediation of the operators. The licensee entered this into the corrective action program as Notifications 50846834 and 50847067.

The licensee's failure to place a spent fuel assembly in its correct location in the SFP was a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because it is associated with the configuration control attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix A, Exhibit 3, "Barrier Integrity Screening Questions," the inspectors determined that the finding was of very low safety significance (Green) because: (1) the finding did not adversely affect decay heat removal capabilities from the spent fuel pool causing the pool temperature to exceed the maximum analyzed temperature limit specified in the site-specific licensing basis, (2) the finding did not result from fuel handling errors, dropped fuel assembly, dropped storage cask, or crane operations over the SFP that caused mechanical damage to fuel clad and a detectable release of radionuclides, (3) the finding did not result in a loss of spent fuel pool water inventory decreasing below the minimum analyzed level limit specified in the site-specific licensing basis, and (4) the finding did not affect the SFP neutron absorber, fuel bundle misplacement (i.e., fuel loading pattern error) or soluble Boron concentration. This finding had a cross-cutting aspect in the area of human performance associated with avoiding complacency. Specifically, individuals failed to recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes and individuals failed to implement appropriate error reduction tools (Section 4OA2). [H.12]

PLANT STATUS

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

On April 22, 2016, Unit 1, reduced power to 88 percent power for planned main turbine testing and returned to full power that same day.

On May 1, 2016, Unit 2, was shut down for a planned refueling outage. On June 2, 2016, Unit 2 returned to operation and began a controlled power ascension; it returned to full power on June 8, 2016.

Units 1 and 2 operated at or near full power for the remainder of this inspection period.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

On April 25, 2016, 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 high winds, and the licensee's 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)

Partial Walk-Down

a. Inspection Scope

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

- April 25, 2016, Unit 2, safety injection pump 2-1
- April 29, 2016, Unit 2, emergency diesel generator 2-1
- May 17, 2016, Unit 2, auxiliary seawater pumps 2-1 and 2-2
- June 3, 2016, Unit 2, component cooling water 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 four partial system walk-down samples 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 five plant areas important to safety:

- April 11, 2016, Unit 1 and 2, 480V Switchgear Rooms and Hot Shutdown Panel; Fire Areas 5-A/B-1, 5-A/B-2, 5-A/B-3, and 5-A/B-4
- May 13, 2016, Unit 1 and 2, , auxiliary building elevation 128 foot; Fire Areas 7A and 7B
- May 16, 2016, Unit 1 and 2, intake structure; Fire Areas 30-A-1 through 30-A-5,
- May 19, 2016, Unit 1 and 2, 12 kV switchgear room and cable spreading rooms; Fire Areas 10 and 20
- June 3, 2016, Unit 2, turbine building 85 foot elevation; Fire Area TB-7

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 five quarterly inspection samples, as defined in Inspection Procedure 71111.05.

b. Findings

No findings were identified.

.2 Annual Inspection

a. Inspection Scope

On April 13, 2016, the inspectors completed their annual evaluation of the licensee's fire brigade performance. This evaluation included observation of an announced fire drill associated with a simulated fire in the Unit 1 turbine generator.

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.

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 Activities and Welding Activities

a. Inspection Scope

The inspectors directly observed the following nondestructive examinations:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Residual Heat Removal	Hot Leg Recirculation Before V-8702 Weld No. WIB-245	Ultrasonic
Residual Heat Removal	Hot Leg Recirculation Before V-8702 Weld No. WIB-246	Ultrasonic
Reactor Vessel	Radial Support Keys	Visual (VT-3)
Steam Generator	Steam Generator 2-1 Top Head/Shell Weld	Ultrasonic
Pressurizer	WIB-359OL (Safety C)	Ultrasonic Phased Array

The inspectors reviewed records for the following nondestructive examinations:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Safety Injection	Accumulator 2-2, Nozzle C-1A	Liquid Penetrant

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Safety Injection	Accumulator 2-2, Nozzle C-1A (Refueling Outages 2R10, 2R12, 2R14, 2R16, 2R18 and 2R19)	Ultrasonic
Residual Heat Removal	Valve RHR-2-1028 Weld No. FW-3	Liquid Penetrant
Residual Heat Removal	Hot Leg Recirculation Before V-8702 Weld No. WIB-245 (PSI and Second 10-year ISI)	Ultrasonic
Residual Heat Removal	Hot Leg Recirculation Before V-8702 Weld No. WIB-245 (Construction)	Radiograph

During the review and observation of each examination, the inspectors observed whether activities were performed in accordance with the ASME Code requirements and applicable procedures. The inspectors reviewed two indications that were previously examined and observed whether the licensee evaluated and accepted the indications in accordance with the ASME Code and/or an NRC approved alternative. The inspectors also reviewed the qualifications of all nondestructive examination technicians performing the inspections to determine whether they were current.

The inspectors performed a focused review of a flaw found on weld WIB-245 noted in the table above, and documented in Notification 50852155. The flaw was identified during a scheduled ultrasonic examination in the residual heat removal system on a pipe-to-elbow weld. The licensee sized the flaw and found it to be unacceptable per ASME Code, Section XI, Table IWB 3514-2, "Allowable Planar Flaws." Subsequently, the licensee completed an evaluation of the flaw using the criteria in IWB-3640, "Evaluation Procedure and Acceptance Criteria for Flaws in Austenitic and Ferritic Piping," and Section XI, Appendix C, "Evaluation of Flaws in Piping." At the time of the inspection, the inspectors verified that the flaw analysis was acceptable per ASME Code requirements. Specifically, the inspectors verified that the analysis took into consideration the most limiting degradation mechanism and that the crack growth analysis bounded those conditions.

The inspectors directly observed a portion of the following welding activities:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>WELDING TYPE</u>
Residual Heat Removal	Valve RHR-2-1028 Weld No. FW-3	Gas Tungsten Arc Welding

The inspectors reviewed records for the following welding activities:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>WELDING TYPE</u>
Safety Injection	Accumulator 2-2 Nozzle C-1A Weld No. 1 and 2	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 that 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

No inspection of the reactor vessel upper head penetration was performed.

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 evaluation 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 (Secondary Side Inspections)

Steam Generator eddy current examinations were not performed. The inspectors reviewed secondary side inspection results and verified the licensee did not have to take corrective actions in response to the examination results.

b. Findings

No findings were identified.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed six condition reports which dealt with inservice inspection activities and found the corrective actions for inservice inspection issues were appropriate. From this review, the inspectors concluded that the licensee has an appropriate threshold for entering inservice inspection issues into the corrective action program and has procedures that direct a root cause evaluation when necessary. The licensee also has an effective program for applying industry inservice inspection operating experience. Specific documents reviewed during this inspection are listed in the attachment.

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 June 21, 2016, 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. The inspectors also assessed the modeling and performance of the simulator during the simulator training scenario.

These activities constituted 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

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. The inspectors observed the operators' performance of the following activities:

- April 4-5, 2016, Unit 1, air side AC seal oil pump replacement and adjustment of seal oil regulating valves, associated with the main turbine hydrogen seal oil system, due to the high risk of a turbine trip, including the pre-job brief
- April 22, 2016, Unit 1, power descent and main turbine valve testing due to the high risk of a turbine trip

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

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

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- March 8, 2016, Unit 2, emergency diesel generator lube oil system leakage, Notification 50679028
- June 29, 2016, 480 V ac switchgear room ventilation system performance criteria review, Notification 50684617

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 two maintenance effectiveness samples, 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 four 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:

- May 1, 2016, elevated risk during Unit 2, 4160 volt bus G auto-transfer testing, Surveillance Test Procedure STP M-13G
- May 3, 2016, elevated risk during Unit 2, performance of integrated plant testing, Surveillance Test Procedure STP M-15

- June 6, 2016, elevated risk during Unit 2, ATWS [Anticipated Transient Without Scram] mitigation actuation system inoperability, Notification 50856997
- June 9, 2016, elevated risk during Unit 1, 480 volt switchgear cooling fans online maintenance, Notification 50818501

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 assessments and verified that the licensee implemented appropriate risk management actions based on the result of the assessments.

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 SSCs.

These activities constituted 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 SSCs:

- May 10, 2016, operability determination of Unit 1, containment structure sump level detector, LT-61, Notification 50843404
- May 16-17, 2016, operability determination of failure of safety injection recirculation interlock for residual heat removal (RHR 2-2) pump suction, Plant Engineering Procedure PEP V-7B
- June 27, 2016, operability evaluation of degraded condition identified during inspections of reactor vessel baffle former bolting as reported in event reports and industry experience, Notification 50848011

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 constituted 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 May 27, 2016, the inspectors reviewed a Unit 2, temporary plant modification that installed, temporary temperature monitoring thermocouples around residual heat removal piping per TMOD 60090550.

The inspectors verified that the licensee had installed this 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 constituted 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 four post-maintenance testing activities that affected risk-significant SSCs:

- April 12-13, 2016, Unit 2, battery charger 2-1, post maintenance testing, Work Order 64098910
- May 2, 2016, Unit 2, component cooling water pump 2-2 functional testing of relay 2 FS267 following replacement, Maintenance Procedure MP E-60.2HG12
- May 25-26, 2016, Unit 2, auxiliary feedwater level control valve replacement and post maintenance testing, Work Order 64150035
- May 31, 2016, Unit 2, post maintenance testing following replacement of rod control fuses, Work Order 64104543

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 constituted completion of four 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 refueling outage that concluded on June 2, 2016, 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:

- Review of the licensee's outage plan prior to the outage
- Review and verification of the licensee's fatigue management activities
- 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
- Monitoring of heat-up and startup activities

These activities constituted completion of one refueling 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 six risk-significant surveillance tests and reviewed test results to verify that these tests adequately demonstrated that the SSCs were capable of performing their safety functions:

In-service tests:

- April 8, 2016, Unit 1, safety injection pump 1-1 surveillance test, per Procedure STP P-SIP-11

Containment isolation valve surveillance tests:

- May 8, 2016, Unit 1, penetration 82 containment isolation valve leak test, per Procedure STP V-682B
- May 19, 2016, Unit 2, penetration 30 containment isolation valve leak test, per Procedure STP V-630B

Reactor coolant system leak detection tests:

- May 6, 2016, Unit 1, reactor coolant system leak detection system test, per STP I-19-L61

Other surveillance tests:

- April 22, 2016, Unit 1, main turbine stop, governor and intercept valve test, per Procedure STP M-21C
- May 30-31, 2016, Unit 2, digital rod position indication functional test, per Procedure STP R-1C

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 constituted completion of six surveillance testing inspection samples, as defined in Inspection Procedure 71111.22.

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 evaluated 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. During the inspection, the inspectors interviewed licensee personnel, walked down various areas in the plant, performed independent radiation dose rate measurements, and observed postings and physical controls. The inspectors reviewed licensee performance in the following areas:

- Radiological hazard assessment, including a review of the plant's radiological source terms and associated radiological hazards. The inspectors also reviewed the licensee's radiological survey program to determine whether radiological hazards were properly identified for routine and non-routine activities and assessed for changes in plant operations.
- Instructions to workers including radiation work permit requirements and restrictions, actions for electronic dosimeter alarms, changing radiological conditions, and radioactive material container labeling.
- Contamination and radioactive material control, including release of potentially contaminated material from the radiologically controlled area, radiological survey performance, radiation instrument sensitivities, material control and release criteria, procedural guidance, and control and accountability of sealed radioactive sources.

- Radiological hazards control and work coverage. During walk-downs of the facility and job performance observations, the inspectors evaluated ambient radiological conditions, radiological postings, adequacy of radiological controls, radiation protection job coverage, and contamination controls. The inspectors also evaluated dosimetry selection and placement as well as the use of dosimetry in areas with significant dose rate gradients. The inspectors examined the licensee's controls for items stored in the spent fuel pool and evaluated airborne radioactivity controls and monitoring.
- High radiation area and very high radiation area controls. During plant walk-downs, the inspectors verified the adequacy of posting and physical controls, including areas of the plant with the potential to become risk-significant high radiation areas.
- Radiation worker performance and radiation protection technician proficiency with respect to radiation protection work requirements. The inspectors determined if workers were aware of significant radiological conditions in their workplace, radiation work permit controls/limits in place, and electronic dosimeter dose and dose rate set points. The inspectors observed radiation protection technician job performance, including the performance of radiation surveys.
- Problem identification and resolution for radiological hazard assessment and exposure controls. The inspectors reviewed audits, self-assessments, and corrective action program documents to verify problems were being identified and properly addressed for resolution.

These activities constituted completion of the seven required samples of radiological hazard assessment and exposure control program, as defined in Inspection Procedure 71124.01.

b. Findings

No findings were identified.

2RS2 Occupational ALARA Planning and Controls (71124.02)

a. Inspection Scope

The inspectors assessed licensee performance with respect to maintaining individual and collective radiation exposures as low as is reasonably achievable (ALARA). The inspectors performed this portion of the attachment during the refueling outage, in order to directly observe the licensee's ALARA process activities including planning, implementation of radiological work controls, execution of work activities, and ALARA review of work-in-progress. During the inspection the inspectors interviewed licensee personnel, reviewed licensee documents, and evaluated licensee performance in the following areas:

- Implementation of ALARA and radiological work controls, including a review of the planned radiological administrative, operational, and engineering controls, compared to results achieved in the field.

- Radiation worker performance, including radiation protection technician performance during work activities performed in radiation areas, airborne radioactivity areas, or high radiation areas.
- Problem identification and resolution for ALARA and radiological work controls. The inspectors reviewed audits, self-assessments, and corrective action program documents to verify problems were being identified and properly addressed for resolution.

These activities constituted completion of two of the five required samples of occupational ALARA planning and controls program, 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 Safety System Functional Failures (MS05)

a. Inspection Scope

For the period of April 1, 2015 through March 31, 2016, the inspectors reviewed licensee event reports (LERs), maintenance rule evaluations, and other records that could indicate whether safety system functional failures had occurred. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, and NUREG-1022, "Event Reporting Guidelines: 10 CFR 50.72 and 50.73," Revision 3, to determine the accuracy of the data reported.

These activities constituted verification of the safety system functional failures performance indicator Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index: Emergency AC Power Systems (MS06)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of April 1, 2015 through March 31, 2016, 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 mitigating system performance index for emergency ac power systems for Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index: High Pressure Injection Systems (MS07)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of April 1, 2015 through March 31, 2016, 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 mitigating system performance index for high pressure injection systems for Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.4 Occupational Exposure Control Effectiveness (OR01)

a. Inspection Scope

The inspectors verified that there were no unplanned exposures or losses of radiological control over locked high radiation areas and very high radiation areas during the period of October 1, 2015, to March 31, 2016. The inspectors reviewed a sample of radiologically controlled area exit transactions showing exposures greater than 100 mrem. 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.

.5 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 October 1, 2015, and March 31, 2016, and were reported to the NRC to verify 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 and periodically attended the licensee's condition report screening meetings. 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, performance indicators, system health reports, and other documentation to identify trends that might indicate the existence of a more significant safety issue. The inspectors reviewed the corrective action program emergent issue process to assess the licensee integrated response to events impacting equipment performance and requiring enhanced station support.

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

b. Observations and Assessments

The emerging issue and event investigation process supplements the corrective action program and is controlled by quality-related procedures. The process is used to identify and resolve emergent problems to ensure rigorous and timely responses to conditions that require integrated and enhance station support beyond normal operations. Since January 2016, there have been over fifty emergent issues documented. The inspectors

reviewed several emerging issue summaries to determine if proper work control processes were followed and appropriate corrective actions were taken.

The inspector reviewed the following emerging issue final summaries:

- May 12, 2016, component cooling water 2-2 damaged wire, Notification 50848143
- May 16, 2016, RHR-2-8700B broken stem mounted position switch, Notification 50852180
- May 17, 2016, ultrasonic testing (UT) indication on weld WIB-245, Notification 50852155
- June 3, 2016, Unit 2, main generator hydrogen leakage, Notification 50856272

The inspectors observed that licensee use of the procedure was well documented including a detailed problem statement, extent of condition, bridging strategies, and documentation of the decision-making processes. The inspectors determined the use of the emergent issues process was well coordinated and implemented in accordance to procedure guidance.

c. Findings

No findings were identified.

.3 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors selected the following issue for an in-depth follow-up:

- On April 20, 2016, Notifications 50846834 and 50847067 documenting a misplaced fuel assembly in the spent fuel pool.

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 planned corrective actions and that these actions were adequate to correct the condition.

These activities constituted completion of one annual follow-up sample as defined in Inspection Procedure 71152.

b. Findings

Introduction. The inspectors reviewed a Green, self-revealed, non-cited violation of Technical Specification (TS) 5.4.1.a, "Procedures," for the licensee's failure to place a spent fuel assembly in its correct location in the spent fuel pool (SFP) in accordance with Procedure OP B-8H, "Spent Fuel Pool Work Instructions." Specifically, the fuel handling crew moved spent fuel assembly TT69 to location E-37 rather than to its intended location E-27.

Description. On April 20, 2016, as part of the preparations for the 2016 Unit 2 refueling outage (2R19), the licensee performed fuel movements per procedure OP B-8H, "Spent Fuel Pool Work Instructions." Procedure OP B-8H directs fuel movements per the tracking sheets developed in procedure PEP R-8H, "Spent Fuel Pool Fuel Assembly Movement Planning," Attachment 9.1, "SFP Fuel or Insert Movement Authorization and Instructions." Step 57 of Attachment 9.1 was to move fuel assembly TT69 from "Initial" location Z-26 to "Final" location E-27. The fuel handlers inadvertently moved this fuel assembly to location E-37. The fuel handlers continued moving fuel until Step 63 of Attachment 9.1, when they discovered their mistake. This step required operators to move fuel assembly TT57 to location E-37. When the fuel handlers attempted to place fuel assembly TT57 in its "Final" location, they discovered that there was already an assembly located in cell E-37. Upon discovery of the error, the fuel handlers stopped fuel handling operations, returned fuel assembly TT57 to its "Initial" location and notified site management.

Subsequent review determined that, as part of the process for moving fuel in the SFP, operators use a white board to track the planned fuel moves. Procedure OP B-8H, Step 4.3.11, allows the use of a white board as an external visual aid: "Ensure an external visual aid is available to allow the fuel handlers a quick reference to SFP location (e.g. a white board or electronic display)." The "Final" location used in Step 56 of the move plan was Y-37. As operators prepared to move assembly TT69, the SRO did not fully erase the "Y-37." Instead, the operator changed the "Y" to "E" and mistakenly left the "37." The fuel handlers failed to recognize the discrepancy between the white board and the procedure, and continued with moving fuel assembly TT69 to the incorrect "Final" location.

In response to this error, reactor engineering performed a technical specification verification in order to ensure that fuel assembly TT69 could remain in Cell E-37. The licensee suspended further fuel movements pending corrective action and remediation of the operators involved in the error. The licensee entered this issue into the corrective action program as Notifications 50846834 and 50847067 in order to determine the cause of this error.

Analysis. The licensee's failure to place a spent fuel assembly in its correct location in the SFP was a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because it is associated with the configuration control attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix A, Exhibit 3, "Barrier Integrity Screening Questions," the inspectors determined that the finding was of very low safety significance (Green) because: (1) the finding did not adversely affect decay heat removal capabilities from the spent fuel pool causing the pool temperature to exceed the maximum analyzed temperature limit specified in the site-specific licensing basis, (2) the finding did not result from fuel handling errors, dropped fuel assembly, dropped storage cask, or crane operations over the SFP that caused mechanical damage to fuel clad AND a detectable release of radionuclides, (3) the finding did not result in a loss of spent fuel pool water inventory decreasing below the minimum analyzed level limit specified in the site-specific licensing basis, and (4) the finding did not affect the SFP neutron absorber, fuel bundle misplacement (i.e., fuel loading pattern error) or soluble Boron

concentration. This finding had a cross-cutting aspect in the area of human performance associated with avoid complacency. Specifically, individuals failed to recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes, and individuals failed to implement appropriate error reduction tools [H.12].

Enforcement. Technical Specification 5.4.1(a), "Procedures," requires, in part, that written procedures shall be established, implemented and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Appendix A, February 1978, "Quality Assurance Program Requirements." Regulatory Guide 1.33, Appendix A, Section 2.k, "Preparation for Refueling and Refueling Equipment Operation," requires specific procedures for preparation for refueling and refueling equipment operation. The licensee established procedure OP B-8H, "Spent Fuel Pool Work Instructions," Revision 45A, for preparation for refueling and refueling equipment operation to meet the Regulatory Guide 1.33 requirement. Step 6.2.9 of OP B-8H requires operators to, "move assembly to 'final' location AND obtain peer check." Contrary to the above, on April 20, 2016, the licensee failed to move an assembly to its final location and obtain a peer check. Specifically, the licensee failed to move fuel assembly TT69 to location E-27 as required. This violation is being treated as a non-cited violation, consistent with Section 2.3.2.a of the Enforcement Policy, because it was of very low safety significance (Green) and was entered into the licensee's corrective action program as Notifications 50846834 and 50847067. NCV 05000323/2016002-01, "Misplaced Spent Fuel Assembly in the Spent Fuel Pool"

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

(Closed) LER 05000275/1-2015-001-00 and -01: Both Trains of Residual Heat Removal Inoperable Due to Circumferential Crack on a Socket Weld

On December 31, 2014, the licensee identified a through-wall leak associated with a socket weld for the Unit 1, residual heat removal system relief valve inside containment. The event was reportable in accordance to 10 CFR 50.73(a)(2)(v)(B), "any event or condition that could have prevented the fulfillment of the safety function of structures or systems, that are needed to; remove residual heat and mitigate the consequences of an accident." The licensee determined the root cause of the cracked socket weld was due to cyclic stress as a result of resonant vibration. Corrective actions included replacing two socket welds, modifying pipe supports, and correcting the condition causing the resonant vibrations.

This issue was reviewed by the NRC, and, as documented in NRC Inspection Report 05000275/2015004, 05000323/2015004 (ML16035A481), the inspectors identified one non-cited violation, NCV 05000275/2015004-02, "Failure to Identify a Cause and Implement Actions to Prevent Recurrence of a Significant Condition Adverse to Quality." All corrective actions and required responses have been completed.

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

This licensee event report is closed.

These activities constituted completion of one event follow-up sample, as defined in Inspection Procedure 71153.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On May 13, 2016, the inspectors presented the radiation safety inspection results to Mr. E. Halpin, Senior Vice President, Generation and Chief Nuclear Officer, 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 May 23, 2016, the 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.

On July 13, 2016, 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.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

T. Baldwin, Director, Nuclear Site Services
E. Brackeen, System Engineer
D. Evans, Director, Security & Emergency Services
M. Franenheim, Manager, Performance Improvement
R. Gagne, Foreman, Radiation Protection
P. Gerfen, Senior Director Plant Manager
M. Ginn, Manager, Emergency Planning
D. Gonzalez, Supervisor, Nuclear Engineering
E. Halpin, Sr. Vice President, Chief Nuclear Officer Generation
H. Hamzehee, Manager, Regulatory Services
M. Hayes, General Foreman, Radiation Protection
A. Heffner, NRC Interface, Regulatory Services
J. Hill, Nuclear Lead ISI, NDE Specialist
J. Hinds, Director, Quality Verification
L. Hopson, Director Maintenance Services
T. Irving, Manager, Radiation Protection
K. Johnston, Director of Operations
J. Loya, Manager, Quality Verification
J. MacIntyre, Director of Equipment Reliability
M. McCoy, NRC Interface, Regulatory Services
C. Miller, Radioactive Waste Engineer, Radiation Protection
J. Morris, Senior Advising Engineer
C. Murry, Director Nuclear Work Management
J. Nimick, Senior Director Nuclear Services
P. Nugent, Director, Quality Verification
A. Peck, Director, Nuclear Engineering
L. Pulley, Manager, Nuclear Projects
R. Rogers, General Foreman, Radiation Protection
M. Sarantos, Foreman, Radiation Protection
L. Sewell, Principle Health Physicist, Radiation Protection
A. Warwick, Supervisor, Emergency Planning
J. Welsch, Site Vice President

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000323/2016002-01	NCV	Misplaced Spent Fuel Assembly in the Spent Fuel Pool (Section 4OA2.3)
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Closed

05000275/1-2015-001-01	LER	Both Trains of Residual Heat Removal Inoperable Due to Circumferential Crack on a Socket Weld (Section 4OA3)
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Section 1R01: Adverse Weather Protection

Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
CP M-16	Severe Weather	9

Notifications

50847527 50847529

Section 1R04: Equipment Alignment

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OP J-6B:I-A	Unit 2; Diesel Generator 2-1 – Alignment Checklist	0
MA1.ID9	Compressed Gas Cylinder Control	5
OP B-3A:II	Safety Injection System Alignment Verification for Plant Startup	23B
OP K-10A12	Sealed Component Checklist for Safety Injection Pump 2-1	3
OP E-5:I-A	Auxiliary Saltwater – Alignment Verification	1
DCM S-14	Component Cooling Water System	28

Notifications

50846801 50847096 50847135 50847138 50831942
50850323

Work Order

64076822

Drawings

<u>Number</u>	<u>Description</u>	<u>Revision</u>
108010	Residual Heat Removal System	30
57724	Equipment Location Plan @ Elev. 85'-0" Auxiliary & Containment Buildings	31
57725	Equipment Location Plan @ Elev. 91'-0" & 100'-0" Aux., Containment & Fuel Handling Bldgs.	33
107714	Component Cooling Water System	65

441311	Component Cooling Water Pumps	28
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Section 1R05: Fire Protection

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OM8.ID2	Fire Systems Impairment	19
TQ1.DC12	Fire Brigade and Emergency Response Training	14
Appendix 9.5H FSAR Update	Inspection and Testing Requirements and Program Administration	21

Notifications

50708845	50797482	50704617	50804445	50804409
50852808				

Work Orders

68041060	68040600
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Drawings

<u>Number</u>	<u>Description</u>	<u>Revision</u>
111906	Unit 1&2, Auxiliary Building Elev. 115 foot	8
111906	Fire Protection Auxiliary Building 128 foot Elevation	3
4002030	Type Penetration and Door AREA H-Auxiliary Building	4
TB-3	Turbine Building Elevation 85' Unit 1	6
TB-4	Turbine Building Elevation 76'	3
TB-5	Turbine Building EV. 85' & 76' Unit 1	4
TB-14	Turbine Building Elevation 85' Unit 2	8
TB-16	Turbine Building EV. 85' & 76' Unit 2	5
111906 sheet 9	Unit 1-140 foot Elev. Pre-fire Plans TB10/TB11	6
PA-1	Intake Structure Unit 1&2	5
PA-2	Intake Structure Unit 1&2	2
111906-32	Intake Structure 18'	5
111906, Sheet 11	Turbine Building Elevation 85' Unit 2	8
106718, Sheet 9	Operating Valve ID – Fire Protection	166

Section 1R08: Inservice Inspection ActivitiesProcedures

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
NDE PT-1	Visible Dye Liquid Penetrant Examination Procedure	5
ISI X-1	Visual Examination of the Reactor Vessel Interior	7
ISI X-3	Core Plate and Core Support Structure Examination for Foreign Objects	1
PCR-93-086	Diablo Canyon Unit 2 Accumulator Nozzle Replacement Analysis and Technical Support	April 16, 1993
M000004	Accumulator Nozzle Replacement	2 and 3
OM8.ID1	Fire Loss Prevention	26
WDI-STD-088	Underwater Remote Visual Examination of Reactor Vessel Internals	13
DCL-93-266	Accumulator Nozzle Cracking Due to Intergranular Stress Corrosion	November 24, 1993
ISI ADD SUCCESS	Additional, Supplemental and Successive Inspections	6
NDE UT ACC NOZ	Ultrasonic Examination of Accumulator Tank Nozzle and Similar Fittings	0
NDE UT-WOL- PA1	Manual Phased Array Ultrasonic Examination of Weld Overlaid Similar and Dissimilar Metal Welds	1
OM7.ID12	Operability Determination	34
OM7.ID1	Problem Identification and Resolution	48A
	Steam Generator Degradation Assessment Refueling Outage 2R19	0

Notifications

50849012	50662092	50836915	50824452	50848555
50848522				

Work Orders

60089765	64072507	68039802	64077050	64002431
R0266133	R0222784			

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
108009	Safety Injection System	55
226421	Safety Injection System Accumulator Tank 2-2	5
663216	Accumulator Tanks 2-1 & 2-2 Details of Nozzles	7

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

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OP J-4B:II	Hydrogen Seal Oil - Shutdown and Drain	17
OP1.DC10	Conduct of Operations	45
OP1.DC10	Conduct of Operations	46
OP B-1A:VII	CVCS – Makeup Control System Operation	57
OP L-4	Normal Operation at Power	89A
STP M-21C	Main Turbine Valve Testing	46

Notifications

50821148 50847167

Drawing

<u>Number</u>	<u>Title</u>	<u>Revision</u>
106722-4	Seal Oil System One Line Diagram	22

Section 1R12: Maintenance Effectiveness

Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AD7.ID11	Fluid Leak Management Program	4

Notifications

50679028 50684617 50691277

Miscellaneous

<u>Number</u>	<u>Description</u>	<u>Date</u>
M-Rule S-43/E-43	Maintenance Rule Goal/Status Record	March 19, 2015

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STP M-13G	4 kV Bus G Non-SI Auto-Transfer Test	51
STP I-33A	Reactor Trip and ESF Response Time Testing	35
AD7.ID14	Assessment of Integrated Risk	7
AD8.ID1	Outage Planning and Management	24A
STP M-15	Integrated Test of Engineered Safeguards and Diesel Generators	66
AD7.DC6	On-Line Maintenance Risk Management	23
AD7.ID14	Assessment of Integrated Risk	7
AD8.DC55	Outage Safety Scheduling	38

Notifications

50838301	50341974	50818501	50818131	50856997
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Work Orders

64004855	64102294
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Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Date</u>
	Unit 1 Operator's logs, Night Shift	November 7, 2015
	Unit 1 Operator's logs, Day Shift	November 8, 2015
PRA07-04	AMSAC Allowed Outage Time Extension	September 12, 2007

Section 1R15: Operability Determinations and Functionality Assessments

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STP I-19-L61	Containment Structure Sump 1-2 Level Channel LT-61 Calibration	11

STP I-19-L61	Containment Structure Sump 2-2 Level Channel LT-61 Calibration	11
OM4.ID3	Operational Experience Program	27
PEP V-7B	Test of ECCS Valve Interlocks	9

Notifications

50843404	50845141	50845746	50848966	50850712
50850715	50850717	50851485	50851561	50848011
50465474				

Section 1R18: Plant Modifications

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
CF4.ID7	Temporary Alterations	29
CF4.ID3	Modification Implementation	29

Notifications

50852155	50854126	50429891	50854511
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Maintenance Orders

60090550	60090551
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Section 1R19: Post-Maintenance Testing

Procedures

<u>NUMBER</u>	<u>TITLE</u>	<u>Revision</u>
MP E-60.2HG12	Circuit Function Test – 4 kV Cubicle HG12 (CCWP22)`	5
STP M-12B	Battery Charger Performance Test	17
STP V-3P6A	Exercising Valves LCV-111 AFW pump Discharge	26
STP R-1B	Rod Drop Measurement	37
STP V-630	Penetration 30 containment isolation valve leak testing	25

Notifications

50848143	50708845	50835185	50854003	50849539
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Work Orders

64098910	64098978	64150035	64112280	64104543
64163441	64071257			

Section 1R20: Refueling and Other Outage Activities

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OP A-2:II	Reactor Vessel – Draining the RCS to the Vessel Flange – With Fuel in Vessel	48
OP L-4	Normal Operation at Power	73A
OP L-5	Plant Cooledown From Minimum Load to Cold Shutdown	84
OP A-2:II	RCS Draining to Half Loop operations with Fuel in the Vessel	51
O A-2:IX	Vacuum Refill of the RCS	28

Notifications

50848106	50851420	50852155	50851640	50852155
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Clearances/Tagouts

<u>Number</u>	<u>Description</u>	<u>Revision / Date</u>
2C19 R-64-001	480V Transformer Clearance	1
2C19 R-23-003	Cable Spreading Room Clearance	3
2C19 R-12-003B	Containment Spray Header Supply	May 18, 2016

Other Document

<u>Number</u>	<u>Title</u>	<u>Revision</u>
	2R19 Outage Safety Plan	0

Section 1R22: Surveillance Testing

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STP I-19-L61	Containment Structure Sump 1-1 Channel LT-61 Calibration	11
STP M-21C	Main Turbine Valve Testing	46
STP P-SIP-11	Routine Surveillance Test of Safety Injection Pump 1-1	24

STP V-682B	Penetration 82B and 82C Containment Isolation Valve Leak Testing	13
STP R-1C	Digital Rod Position Functional Testing	21
STP R-1B	Rod Drop Measurement	37

Notifications

50848966	50847182	50561599	50561646	50547286
50032499	50844530	50850358	50855643	50855659
50856133	50849539			

Work Orders

64147458	64101598	64101609
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Drawings

<u>Number</u>	<u>Description</u>	<u>Revision</u>
106709	Operating Valve ID – Safety Injection System	69
102009 Sheet 5	Safety Injection System Piping Diagram	76

Section 2RS1: Radiological Hazard Assessment and Exposure Controls

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
RCP D-220	Control of Access to High, Locked High, and Very High Radiation Areas	49
RCP D-240	Radiological Posting	23
RCP D-310	RCA Access Control	26
RCP D-500	Routine and Job Coverage Surveys	42
RCP D-620	Radioactive Source Control Program	11, 12
RP1	Radiation Protection	7
RP1.DC6	Radiation Protection Code of Conduct	2A
RP1.ID10	Embryo/Fetus Protection Program	8
RP1.ID16	Radiation Worker Expectations	7A
RP1.ID6	Personnel Dose Limits and Monitoring Requirements	14

Notifications

50813035	50814660	50815794	50816107	50820370
50820879	50842634	50842635	50848062	

Audits and Self-Assessments

<u>Number</u>	<u>Title</u>	<u>Date</u>
152930028	2016 Radiation Protection Audit Report	February 16, 2016
153060061	Quality Verification: Personal Electronic Dosimeter Alerts	November 5, 2015
50839149	Quick Hit Self-Assessment Report: 2016 2R19 NRC Inspection 71151-OR1	April 11, 2016
152660002	Quality Verification: Radiological Survey Documentation	September 15, 2015
50839147	Quick Hit Self-Assessment Report: NRC Pre-Inspection on Radiological Hazard Assessment and Exposure Controls	April 12, 2016
50839230	Quick Hit Self-Assessment Report: Pre-Inspection of NRC Performance Indicator PR01 "RETS/ODCM Occurrences"	April 8, 2015

Radiation Work Permits

<u>Number</u>	<u>Title</u>	<u>Revision</u>
15-1014B	1R19 Lower Reactor Cavity Decontamination	0
15-1021	1R19 CETNA Maintenance	0
15-1030	1R19 NI and Excore Annulus Work	1
15-1042	1R19 Primary Steam Generator Nozzle Dam Work	0
15-1082	1R19 Entry into Cavity for Rx Head Set and Inspection	0
16-2002	2R19 Scaffolding in Containment	0
16-2006	2R19 Decontamination Activities in Containment	0
16-2015	2R19 Minor Work in Posted HRA/LHRA/VHRA in Containment	0
16-2020	2R19 Reactor Disassembly	1
16-2023	2R19 Fuel Movement and Underwater Work in Containment	0
16-2027	2R19 Reactor Reassembly	1
16-2032	2R19 Seal Table and MIDS Work	0
16-2037	2R19 RCDT, Rx Cavity Sump, & Under Vessel Work	0

16-2065	2R19 High Dose Valves	0
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Radiation Surveys

<u>Number</u>	<u>Title</u>	<u>Date</u>
47947	HCV-111 Flange Adapter Install	May 1, 2016
44308	CVCS-1-9 Valve Replacement (Cutout and Weld)	October 14, 2015
44365	RHR-1-8727A Valve Removal and Replacement	October 14, 2015
47474	U-2 140 SFP Transfer Canal	April 11, 2016
48364	TSC Calibration Facility	May 7, 2016

Miscellaneous Documents

<u>Title</u>	<u>Date</u>
Source Inventory (969 sources)	April 13, 2016
NSTS Annual Inventory Reconciliation Report	January 11, 2016
JL Shepherd Maintenance Logs	2014-2015
Unit 1 Spent Fuel Pool Map	February 17, 2016
Unit 2 Spent Fuel Pool Map	April 6, 2016

Section 2RS2: Occupational ALARA Planning and Controls

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
RCP D-200	Writing RWPs and ALARA Processes	54
RCP D-202	RWP Work Instructions	12
RP1.ID1	ALARA Program	9
RP1.ID9	Radiation Work Permits	13
RP1.ID15	Radiological Risk Assessment	4

Notifications

50663602	50669239	50808462	50811370	50811698
50813275	50813719	50815003	50815627	50824304
50833148	50833156	50848791	50848792	

Audits and Self-Assessments

<u>Number</u>	<u>Title</u>	<u>Date</u>
152930028	2016 Radiation Protection Program Audit Report	February 8, 2016
153500021	Quality Verification: Station ALARA Ownership	February 10, 2016

Radiation Work Permits

<u>Number</u>	<u>Title</u>	<u>Revision</u>
15-1044	1R19 Primary Steam Generator Eddy Current Testing and Tube Work	0
15-1065	1R19 High Dose Valves	0
16-0035B	Radiography inside the PA, Outside in the RCA	0
16-2050	2R19 RCP Pump Maintenance	0
16-2085	2R19 Core Barrel Movement	0

Temporary Shielding Requests

<u>Number</u>	<u>Title</u>	<u>Date</u>
16-202	RHR Lines 508,509, 927	April 30, 2016
16-219	U-2 CTMT 115' RCP 2-3 Line 255 & RR's (Mode 5)	May 1, 2016
16-228	Unit 2 CTMT 115' LCV 459-460 Actuator Work	May 2, 2016
16-271	Handrail Shielding for Core Barrel Work	May 10, 2016

Miscellaneous Documents

<u>Title</u>	<u>Date</u>
Outage 2R19 ALARA Review Committee Meeting Notes	May 11, 2016
2R19 Outage ALARA Report	May 9–13, 2016

Section 4OA1: Performance Indicator Verification

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Date</u>
1-TS-16-0042	Technical Specification Tracking Containment Spray Pump 1-2 outage sheet	February 1, 2016
CD-Entry 4.0	Unit 1 & 2, Consolidated Data Entry 4.0 MSPI Derivation Report High Pressure Injection System	March 31, 2016

Notifications

50809622 50807757 50807756

Section 40A2: Problem Identification and Resolution

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OM7.ID7	Emerging Issue and Event Investigations	18

Notifications

50848143 50852066 50852345 50852180

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 31500011. 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

March 17, 2016

Notification of Inspection and Request for Information

Diablo Canyon Nuclear Power Plant, Unit 2

NRC Inspection Report 05000323/2016002

INSERVICE INSPECTION DOCUMENT REQUEST

Inspection Dates: May 9-20, 2016

Inspector: Isaac Anchondo

A. Information Requested for the In-Office Preparation Week

The following information should be sent to the Region IV office in hard copy or electronic format (ims.certrec.com preferred), in care of Isaac Anchondo, by April 25, 2016, to facilitate the selection of specific items that will be reviewed during the onsite inspection week. The inspector will select specific items from the information requested below and then request from your staff additional documents needed during the onsite inspection week (Section B of this enclosure). We ask that the specific items selected from the lists be available and ready for review on the first day of inspection. Please provide requested documentation electronically if possible. If requested documents are large and only hard copy formats are available, please inform the inspector(s), and provide subject documentation during the first day of the onsite inspection.

If you have any questions regarding this information request, please call the inspector as soon as possible.

On May 9, 2016, reactor inspectors from the Nuclear Regulatory Commission's (NRC) Region IV office will perform the baseline inservice inspection at Diablo Canyon Nuclear Power Plant, 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. The date of this inspection may change dependent on the outage schedule you provide. 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. Mike McCoy of your licensing organization. The tentative inspection schedule is as follows:

Preparation week: April 25, 2016

Onsite weeks: May 9-20, 2016

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 or e-mail Isaac.Anchondo@nrc.gov.

A.1 ISI/Welding Programs and Schedule Information

1. A detailed schedule (including preliminary dates) of:
 - 1.1. 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.

Please include the ASME Examination Category (i.e., B-A) and Item Number (i.e., B1.10) of each component within the format that this information will be provided.
 - 1.2. Examinations planned for Alloy 82/182/600 components that are not included in the Section XI scope (If applicable)
 - 1.3. Examinations planned as part of your boric acid corrosion control program (Mode 3 walkdowns, bolted connection walkdowns, etc.)
 - 1.4. Welding activities that are scheduled to be completed during the upcoming outage (ASME Class 1, 2, or 3 structures, systems, or components)
2. A copy of ASME Section XI Code Relief Requests and associated NRC safety evaluations applicable to the examinations identified above.
 - 2.1. A list of ASME Code Cases currently being used to include the system and/or component the Code Case is being applied to.
3. 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.

4. 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.
5. 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.
6. 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.
7. A list of any temporary noncode repairs in service (e.g., pinhole leaks).
8. Please provide copies of the most recent self-assessments for the inservice inspection, welding, and Alloy 600 programs.
9. Copy of the procedures for welding techniques and NDE that will be used during the outage.

A.2 Boric Acid Corrosion Control Program

1. 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.
2. 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.3 Steam Generator Tube Inspections

1. A detailed schedule of:
 - Steam generator secondary side inspection activities for the upcoming outage
2. Copy of SG history documentation given to vendors performing secondary side examinations of the SGs during the upcoming outage (If applicable)
3. Copy of previous outage SG tube operational assessment
4. 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.

5. 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.).

A.4 Additional Information Related to All Inservice Inspection Activities

1. A list with a brief description of inservice inspection and boric acid corrosion control program-related issues (e.g., CRs) 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.
2. Provide training (e.g., Scaffolding, Fall Protection, FME, Confined Space) if they are required for the activities described in A.1 through A.3.
3. Please provide names and phone numbers for the following program leads:

Inservice inspection (examination, planning)
Containment exams
Reactor pressure vessel head examinations
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 On-site to the Inspector(s) at the Entrance Meeting (May 9, 2016):

B.1 Inservice Inspection/Welding Programs and Schedule Information

1. Updated schedules for inservice inspection/nondestructive examination activities, including planned welding activities, and schedule showing contingency repair plans, if available
2. 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:
 - Weld data sheet (traveler)
 - Weld configuration and system location
 - Applicable Code Edition and Addenda for weldment
 - Applicable Code Edition and Addenda for welding procedures
 - Applicable welding procedures used to fabricate the welds

- Copies of procedure qualification records (PQRs) supporting the weld procedures from B.1.b.v
 - Copies of welder's performance qualification records (WPQ)
 - Copies of the nonconformance reports for the selected welds (If applicable)
 - Radiographs of the selected welds and access to equipment to allow viewing radiographs (if radiographic testing was performed)
 - Copies of the preservice examination records for the selected welds
 - Readily accessible copies of nondestructive examination personnel qualifications records for reviewing.
3. 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.
 4. 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.
 5. A copy of (or ready access to) most current revision of the inservice inspection program manual and plan for the current interval
 6. 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 Boric Acid Corrosion Control Program

1. 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.
2. 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.3 Steam Generator Tube Inspections

1. Copy of the guidance to be followed in order to perform FOSAR inspections

2. Copy of the guidance to be followed if a loose part or foreign material is identified in the steam generators during FOSAR inspections
3. List of corrective action documents generated by the vendor and/or site with respect to steam generator inspection activities

B.4 Codes and Standards

1. 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):
 - Applicable Editions of the ASME Code (Sections V, IX, and XI) for the inservice inspection program and the repair/replacement program.
2. Copy of NDE procedures (i.e., UT, MT, PT examinations) to be used on ASME Code required examinations during this outage.
3. Boric Acid Corrosion Guidebook Revision 1 – EPRI Technical Report 1000975.

**The following items are requested for the
Occupational Radiation Safety Inspection
at Diablo Canyon
May 9 – 13, 2016
Integrated Report 2016002**

Inspection areas are listed in the attachments below.

Please provide the requested information on or before **April 19, 2016**.

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 John O'Donnell at (817) 200-1441 or John.ODonnell@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: **October 12, 2015**

- 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 mrem 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: **July 27, 2015**

- 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.