



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION IV
1600 E. LAMAR BLVD.
ARLINGTON, TX 76011-4511

February 12, 2015

Randall K. Edington
Executive Vice President, Nuclear/CNO
Mail Station 7602
Arizona Public Service Company
P.O. Box 52034
Phoenix, AZ 85072-2034

**SUBJECT: PALO VERDE NUCLEAR GENERATING STATION – NRC INTEGRATED
INSPECTION REPORT 05000528/2014005, 05000529/2014005, AND
05000530/2014005**

Dear Mr. Edington:

On December 31, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Palo Verde Nuclear Generating Station Units 1, 2, and 3. On January 6, 2015, the NRC inspectors discussed the results of this inspection with Mr. D. Mims and other members of your staff. The 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. Further, inspectors documented two licensee-identified violations, which were determined to be very low safety significance, in this report. The NRC is treating these violations as non-cited violations (NCVs), 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 inspectors at the Palo Verde Nuclear Generating Station.

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

R. Edington

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Sincerely,

/RA/

Michael C. Hay, Chief
Project Branch D
Division of Reactor Projects

Docket Nos.: 50-528, 50-529, 50-530
License Nos: NPF-41, NPF-51, NPF-74

Enclosure: Inspection Report 05000528/2014005, 05000529/2014005, and 05000530/2014005
w/ Attachments:

1. Supplemental Information
2. Information Request for Inspection Report 05000528/2014005
3. Information Request for Inspection Report 05000528/2014005, 05000529/2014005, and 05000530/2014005
4. Information Request, Notification of Inspection, and Request for Information Palo Verde Generating Station Units 1, 2, and 3 NRC Inspection Report 05000528/2014005, 05000529/2014005, and 05000530/2014005

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Letter to R K. Edington from M C. Hay dated February 12, 2015

SUBJECT: PALO VERDE NUCLEAR GENERATING STATION – NRC INTEGRATED
INSPECTION REPORT 05000528/2014005, 05000529/2014005, AND
05000530/2014005

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 05000528, 05000529, 05000530
License: NPF-41, NPF-51, NPF-74
Report: 05000528/20140005, 05000529/20140005, 05000530/20140005
Licensee: Arizona Public Service Company
Facility: Palo Verde Nuclear Generating Station
Location: 5801 South Wintersburg Road
Tonopah, Arizona 85354
Dates: October 1 through December 31, 2014
Inspectors: D. Reinert, Acting Senior Resident Inspector
D. You, Resident Inspector
B. Parks, Project Engineer
G. Guerra, CHP, Emergency Preparedness Inspector
J. Drake, Senior Reactor Inspector
P. Jayroe, Reactor Inspector
L. Carson II, Senior Health Physicist
N. Greene, PhD, Health Physicist
C. Steely, Senior Operations Engineer
M. Hayes, Operations Engineer
Approved By: Michael C. Hay
Chief, Project Branch D
Division of Reactor Projects

SUMMARY

IR 05000528, 529, 530/2014005; 10/01/2014 – 12/31/2014; Palo Verde Nuclear Generating Station Units 1, 2, and 3; Post Maintenance Testing

The inspection activities described in this report were performed between October 1 and December 31, 2014, by the resident inspectors at Palo Verde Nuclear Generating Station 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. Additionally, NRC inspectors documented in this report two licensee-identified violations 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 reviewed a self-revealing Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to adequately review the suitability of materials of the diesel fuel oil cooler. Specifically, the Unit 2 "A" diesel generator fuel oil cooler design allowed for the interface of two dissimilar metals which promoted galvanic corrosion. This corrosion ultimately affected the structural integrity of the cooler and rendered the "A" Essential Spray Pond inoperable. In response to this, the licensee has replaced all six of the fuel oil cooler covers and initiated a design change to remove the fuel oil cooler from service. The licensee has entered the issue into the corrective action program as Condition Report Disposition Request 4543394.

The failure to verify the adequacy of the design of the diesel fuel oil cooler was a performance deficiency. The performance deficiency is more than minor because it affected the equipment performance attribute of the Mitigating Systems cornerstone to ensure the availability, reliability, capability of systems that respond to initiating events to prevent undesirable consequences. Specifically the Unit 2 "A" diesel fuel oil cooler design allowed for the interface of two dissimilar metals which promoted galvanic corrosion. The corrosion ultimately affected the structural integrity of the cooler and rendered the Unit 2 "A" spray pond inoperable. In accordance with NRC Inspection Manual 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions." The finding screened to a detailed risk evaluation because it involved a potential loss of one train of safety related equipment for longer than the outage time allowed by technical specifications. By performing a detailed risk evaluation, a Region IV senior reactor analyst determined that the associated change to the core damage frequency was 1.5E-7/year (Green). The dominant core damage sequences included loss of offsite power events that lead to station blackout conditions. The gas turbine generators and the auxiliary feedwater system helped to minimize the risk. This finding has no cross-cutting aspect because it is not indicative of current performance (Section 1R19).

Licensee-Identified Violations

Violations of very low safety significance (Severity Level IV) that were identified by the licensee have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. These violations and associated corrective action tracking numbers are listed in Section 4OA7 of this report.

PLANT STATUS

Unit 1 began the inspection period at essentially full power. Operators shut down Unit 1 on October 11, 2014 for refueling outage 1R18. The licensee completed the outage and started up Unit 1 on November 10. Operators returned Unit 1 to essentially full power on November 14.

Unit 2 began the inspection period at essentially full power. On November 6, 2014, operators reduced power and completed a controlled plant shutdown in response to a dropped control element assembly. The licensee completed repairs and returned Unit 2 to essentially full power on November 14. Unit 2 operated at essentially full power for the remainder of the inspection period.

Unit 3 operated at essentially full power during the inspection period.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness to Cope with External Flooding

a. Inspection Scope

On November 10, the inspectors completed an inspection of the station's readiness to cope with external flooding. After reviewing the licensee's flooding analysis, the inspectors chose three plant areas that were susceptible to flooding:

- Units 1, 2, and 3, auxiliary building roofs

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

These activities constituted one sample of readiness to cope with external flooding, 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 walkdowns of the following risk-significant systems:

- October 21, Unit 1, spend fuel pool cooling system, train A
- November 21, Unit 1 auxiliary feedwater system, train A
- November 20, Unit 3, essential cooling water system, train A

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 3, the inspectors performed a complete system walkdown inspection of the Unit 3 essential spray pond 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, in-process design changes, 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 walkdown 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 7, Unit 1, Auxiliary building 100, 120, and 156 feet elevations
- October 16, Unit 1, Containment building, 100 and 140 feet elevations
- November 21, Unit 3, Auxiliary building 70 and 100 feet elevations
- December 23, 2014, Unit 3, Control building, 120 feet elevation

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

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

On December 4, 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 four plant areas containing risk-significant structures, systems, and components that were susceptible to flooding:

- Unit 1, low pressure safety injection system, train A pump room
- Unit 1, high pressure safety injection system, train A pump room
- Unit 1, containment spray system, train A pump room
- Unit 1, train A emergency diesel generator room

The inspectors reviewed plant design features and licensee procedures for coping with internal flooding. The inspectors walked down the selected areas 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.

These activities constitute completion of one flood protection measures sample as defined in Inspection Procedure 71111.06.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

On November 5, the inspectors completed an inspection of the readiness and availability of risk-significant heat exchangers. The inspectors reviewed the data from a performance test for the Unit 1, train B essential cooling water heat exchanger. Additionally, the inspectors walked down the Unit 1, train B essential cooling water heat exchanger to observe its performance and material condition.

These activities constitute completion of a heat sink performance annual review sample, as defined in Inspection Procedure 71111.07.

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:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Charging	86-3	Liquid Penetrant
Charging	86-5	Liquid Penetrant
Charging	86-10	Liquid Penetrant
Charging	86-12	Liquid Penetrant
Charging	86-14	Liquid Penetrant
Steam Generator	48-11	Ultrasonic
Reactor Vessel	Upper Head	Visual
Steam Generator	48-11	Magnetic Particle
Main Feedwater	1PSGEL008-W-1	Radiographic
Main Feedwater	1PSGEL008-W-6	Radiographic
Charging	4384058-6	Radiographic

The inspectors reviewed records for the following nondestructive examinations:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Safety Injection	FW-1	Ultrasonic
Safety Injection	FW-2	Ultrasonic
Safety Injection	FW-3	Ultrasonic
Reactor Vessel	Bottom Mounted Instrumentation	Visual
Charging	6C1R1	Radiographic
Auxiliary	1PAFB-HC-1	Radiographic

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Feedwater		
Auxiliary Feedwater	1PAFB-W-7	Radiographic

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 directly observed a portion of the following welding activities:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Main Feedwater	1PSGEL008-W-1	Gas Tungsten Arc Weld
Main Feedwater	1PSGEL008-W-6	Gas Tungsten Arc Weld

The inspectors reviewed records for the following welding activities:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Main Feedwater	1PSGEL008-W-1	Gas Tungsten Arc Weld
Main Feedwater	1PSGEL008-W-6	Gas Tungsten Arc Weld
Auxiliary Feedwater	1PAFB HC-1	Gas Tungsten Arc Weld
Auxiliary Feedwater	1PAFB W-7	Gas Tungsten Arc Weld

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 the 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 (BACC) 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 73DP-9ZC01, "Boric Acid Corrosion Control Program," Revision 5, and Procedure 70TI-9ZC01, "Boric Acid Walkdown Leak Detection," Revision 17. 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 Part 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, 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 conclusion of the ECT examinations. The scope of the licensee's ECT examinations included:

- Bobbin coil testing of tube sheet periphery and blowdown line tubes up to first tube support plate

- Rotating pancake coil “boxing” of confirmed potential loose parts and observed loose part wear signals
- Special interest +Point testing of non-resolved free span bobbin signals and foreign object locations identified by foreign object search and retrieval
- Tube sheet periphery and blowdown tube lane foreign object search and retrieval in all steam generators
- In-bundle visual inspection of the top of tube sheet in the low flow kidney regions inclusive of the central cavity region
- Visual inspection in all steam generators channel head primary side hot leg and cold leg

The inspectors reviewed the licensee’s identification of the following tube degradation mechanisms:

- Mechanical wear at tube support structures
- Foreign object/loose parts induced tube wear

The inspectors reviewed the licensee’s actions in response to identified loose parts. All loose parts identified were removed during the foreign object search and retrieval inspection. The licensee inspected the steam generator tubes adjacent to the where the loose parts were located and noted no significant wear on the tubes.

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 adhered to, 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. The inspectors selected a number of degraded tubes and compared them to the previous outage operational assessment to assess the licensee’s prediction capabilities.

The inspectors reviewed the licensee’s actions in response to three foreign objects that were identified in the steam generators. The objects were removed from the steam generators and the tubes in the vicinity of the foreign materials were inspected for wear.

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

b. Findings

No findings were identified.

.5 Identification and Resolution of Problems (71111.08-02.05)

a. Inspection Scope

The inspection procedure requires review of a sample of problems associated with inservice inspections documented by the licensee in the corrective action program for appropriateness of the corrective actions.

The inspectors reviewed 22 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 of significance were identified.

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

.1 Review of Licensed Operator Requalification

a. Inspection Scope

On November 10, the inspectors observed a portion of an annual requalification test for licensed operators. The inspectors assessed the performance of the operators and the evaluators' critique of their performance.

These activities constitute completion of a 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

b. On October 10, 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 Unit 1 conducting a downpower in preparation for their refueling outage. The inspectors observed the operators' performance of the following activities:

- Preparation, control and monitoring of the Unit 1 power reduction, including the pre-job brief

In addition, the inspectors assessed the operators' adherence to plant procedures, including 40DP-9OP02 Conduct of Shift Operations and other operations department policies.

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

b. Findings

No findings were identified.

.3 Biennial Inspection

The licensed operator requalification program involves two training cycles that are conducted over a 2-year period. In the first cycle, the annual cycle, the operators are administered an operating test consisting of job performance measures and simulator scenarios. In the second part of the training cycle, the biennial cycle, operators are administered an operating test and a comprehensive written examination.

a. Inspection Scope

To assess the performance effectiveness of the licensed operator requalification program, the inspectors conducted personnel interviews, reviewed both the operating tests and written examinations, and observed ongoing operating test activities.

The inspectors interviewed five licensee personnel, consisting of three operators and two instructors to determine their understanding of the policies and practices for administering requalification examinations. The inspectors also reviewed operator performance on the written exams and operating tests. These reviews included observations of portions of the operating tests by the inspectors. The operating tests observed included nine job performance measures and four scenarios that were used in the current biennial requalification cycle. These observations allowed the inspectors to assess the licensee's effectiveness in conducting the operating test to ensure operator mastery of the training program content. The inspectors also reviewed medical records of 12 licensed operators for conformance to license conditions and the licensee's system for tracking qualifications and records of license reactivation for four operators.

The results of these examinations were reviewed to determine the effectiveness of the licensee's appraisal of operator performance and to determine if feedback of performance analyses into the requalification training program was being accomplished. The inspectors interviewed members of the training department and reviewed minutes of training review group meetings to assess the responsiveness of the licensed operator requalification program to incorporate the lessons learned from both plant and industry events. Examination results were also assessed to determine if they were consistent with the guidance contained in NUREG 1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1, and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process."

In addition to the above, the inspectors reviewed examination security measures, simulator fidelity and existing logs of simulator deficiencies.

The licensee will complete the required requalification examination on December 20, 2014, but will not have final results in time to meet the reporting requirements for the, 2014005 resident inspectors report. The final results will be reported in January 2015, and will be included in the 2015001 resident inspectors report. The inspectors will compare these results to the Appendix I, "Licensed Operator Requalification Significance Determination Process," values and determine if there are findings based on these results.

The inspectors completed one inspection sample of the biennial licensed operator requalification program.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- December 22, Unit 1, Unit 2, and Unit 3, containment spray valve grease hardening
- December 3, Unit 1, Unit 2, and Unit 3, control element drive mechanism control system
- December 1, Unit 1, Unit 2, and Unit 3, Review of the Maintenance Rule Program a(3) Periodic Evaluation

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 three 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 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 2, Unit 1, emergency diesel generator outage
- December 2, dual station blackout generator outage

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.

These activities constitute completion of two maintenance risk assessment 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 determination and functionality assessments that the licensee performed for degraded or nonconforming structures, systems, or components (SSCs):

- October 1, operability determination associated with Unit 1 motor driven auxiliary feedwater pump oil bubbler
- October 10, functionality assessment associated with spent fuel transportable storage canister quality receipt inspections
- October 30, operability determinations associated with potential tornado-borne missile protection for Units 1, 2, and 3

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

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- November 5, local leak rate test of Unit 1 containment penetration 29 following corrective maintenance
- November 13, post maintenance test of Unit 2 emergency diesel generator A fuel oil cooler
- November 19, post maintenance test of Unit 1 safety injection valve 651 following corrective maintenance
- November 21, functional test of Unit 1 main steam isolation valve 181 following rebuild of hydraulic actuator
- December 2, functional testing of Unit 2 control element assembly following stack replacement
- December 29, functional test of Unit 2 control room essential ventilation damper following electrical relay replacement

The inspectors reviewed licensing-basis 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 six post-maintenance testing inspection samples, as defined in Inspection Procedure 71111.19.

b. Findings

Introduction. The inspectors reviewed a Green self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control" due to the station's failure to adequately review the suitability of materials of the diesel fuel oil cooler. Specifically, the Unit 2 "A" diesel generator fuel oil cooler design allowed for the interface of two dissimilar metals which promoted galvanic corrosion, and this corrosion ultimately affected the structural integrity of the cooler and rendered the "A" Essential Spray Pond system inoperable.

Description. On June 6, 2014, while the licensee was restoring the Unit 2 "A" Emergency Diesel Generator (EDG) to service following planned maintenance, the

licensee discovered that spray pond water was leaking from the EDG's fuel oil cooler. A visual inspection by the operators found the source of the leak to be a crack on the upper fuel oil cooler cover, where stainless steel spray pond system piping is threaded into the cast iron cover. The operators declared the "A" train Essential Spray Pond system inoperable due to the leak. (The Unit 1 "A" EDG was already declared inoperable due to the planned maintenance.)

The licensee began immediate repairs to correct the condition. They replaced the upper cover of the Unit 2 "A" (EDG) fuel oil cooler on June 7, 2014, and thereby restored the cooler to an operable status. After replacement, a visual inspection of the cracked upper cover revealed significant degradation related to corrosion. On June 28 and June 29, 2014, the licensee replaced the upper covers for the other five diesel fuel oil coolers at the station. The licensee also initiated a root cause investigation to determine the cause of the corrosion. As part of their root cause investigation, the licensee sent the cracked upper cover from the Unit 2 "A" EDG and the other five upper covers to an offsite laboratory for metallurgical analysis. That analysis identified significant localized galvanic corrosion in the threaded connection between the stainless steel piping and the cast iron upper cover from the Unit 2 "A" EDG. The laboratory also identified varying degrees of galvanic corrosion in all five of the other upper covers. However, the laboratory report stated that a superficial visual inspection of the other five upper covers did not immediately show any signs of galvanic corrosion at the threaded interface, and that the cast iron corrosion for the other five upper covers was identified only when the covers were sectioned and analyzed by the laboratory.

The licensee's root-cause investigation concluded that the design characteristics of the cast-iron diesel fuel oil cooler cover and connecting stainless steel spray pond piping had resulted in an area of an aggressive galvanic corrosion, which indicated that the licensee had failed to consider the possibility for galvanic corrosion when they designed the threaded connections. The licensee's efforts to mitigate general surface corrosion over the years by applying coating on the upper cover further focused the galvanic corrosion in a localized and visually unobservable location. (Visual inspections were not capable of detecting this particular corrosion mechanism due to the location of corrosion in the internal threaded portion of the fuel oil cooler cover.)

Analysis. The failure to verify the adequacy of the design of the diesel fuel oil cooler was a performance deficiency. The performance deficiency is more than minor and is therefore a finding because it affected the equipment performance attribute of the Mitigating Systems cornerstone to ensure the availability, reliability, capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the Unit 2 "A" diesel fuel oil cooler design allowed for the interface of two dissimilar metals which promoted galvanic corrosion, and the corrosion ultimately affected the structural integrity of the cooler and rendered the Unit 2 "A" spray pond inoperable.

To perform the initial significance determination for the Unit 2 train A emergency diesel generator fuel oil cooler degradation, the inspectors used NRC Inspection Manual 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions." The finding screened to a detailed risk evaluation because it involved a potential loss of one train of safety related equipment for longer than the technical specification allowed outage time. A Region IV senior reactor analyst performed the detailed risk evaluation.

To further evaluate this finding, the analyst used the Palo Verde Standardized Plant Analysis Risk Model, Revision 8.20, with a truncation limit of 1E-11.

Seismic events: The cooler failure scenario of interest included a seismically induced loss of offsite power event. During this event, the emergency diesel generator fuel line cooler could structurally fail. At the time of the event, operators would likely assume that the cooler was needed to ensure emergency diesel generator operability and would secure the diesel generator.

The analysts performed simplified calculations to determine the change to the core damage frequency (Δ CDF) for the identified condition. The analyst made the following influential assumptions:

- **Exposure time = 1 year:** The analyst used a bounding exposure period of 1 year. A seismic event could fail the diesel generator fuel oil cooler pressure boundary at any time.
- **Emergency diesel generator A impact:** The fuel line cooler was isolable. Operators could close two valves and limit the potential for area flooding. The licensee had determined that the emergency diesel generator could remain functional if the fuel line cooler was isolated. However, this information was recently determined and there was a significant historical period where operators may have secured the emergency diesel generator if the cooler failed.
- **Offsite power:** The only sequences affected by the performance deficiency included those related to seismic induced loss of offsite power.
- **Flooding limited:** Equipment operators would normally arrive in the emergency diesel generator areas within 30 minutes following a loss of offsite power. The operators could reasonably identify the leaking cooler at this time. At a maximum leakage rate of 150 gallons per minute, approximately 3300 gallons could spill into the room and drain into the sump. The sump pumps did not receive safety related power, but the diesel generator room was very large and the additional water beyond the sump's capacity would be contained within the diesel generator room itself.
- **Emergency diesel generator recoveries:** The train A emergency diesel generator required a repair to return to service, so no recovery of this particular emergency diesel generator was warranted. The train B emergency diesel generator, however, could have failed for other reasons and could be recovered in the failure scenarios.
- **Seismic:** The analyst performed a simplified bounding analysis to address seismic contributors. The analyst referenced the NRC's "Risk Assessment of Operational Events Handbook," Volume 2, "External Events," Revision 1.01 to determine the seismic induced loss of offsite power initiating event frequency. The value was included in Table 1, "Frequencies of Seismically-Induced Loss of Offsite Power Events," which was 5.3E-5/year. Seismic induced loss of offsite power events are not considered recoverable.

Modeling Changes:

1. The analyst adjusted the basic event for the loss of offsite power initiating event to $5.3E-5$ to correspond with the seismically induced loss of offsite power initiating event frequency. This change applied to the nominal and the current case calculations.
2. The analyst assumed that the loss of offsite power was unrecoverable. The analyst set the basic events that address loss of offsite power non-recovery to a value of 1.0. The analyst used this assumption for the nominal and current cases.
3. The analyst set the basic event for the train A emergency diesel generator failure to start to True. Using True (instead of 1.0) allowed the common cause failure probability to increase for the remaining diesel generator. The analyst could not rule out a potential common cause failure mechanism. The train B emergency diesel generator fuel oil cooler was also degraded, but to a lesser extent. Using True also eliminated recovery of the train A emergency diesel generator.
4. The analyst solved only the sequences for the loss of offsite power.

The current-case conditional core damage probability was $1.5E-7$ /year for an entire year of exposure. The nominal-case conditional core damage probability was $4E-9$ /year. The incremental conditional core damage probability for a one year exposure period was $1.5E-7$ /year. Since the actual exposure was 1 year, the Δ CDF was equal to the incremental conditional core damage probability, so:

$$\Delta \text{ CDF} = 1.5E-7/\text{year}$$

The dominant core damage sequences included loss of offsite power events that lead to station blackout conditions. The gas turbine generators and the auxiliary feedwater system helped to minimize the risk.

Large Early Release Frequency: To address the contribution to conditional large early release frequency, the analyst used NRC Inspection Manual Chapter 0609, Appendix H, "Containment Integrity Significance Determination Process," dated May 6, 2004. Since the performance deficiency did not contribute directly to a steam generator tube rupture or an intersystem loss of coolant accident, the condition was not risk significant to the large early release frequency.

The inspectors determined no cross-cutting aspect is associated with this finding because it is not indicative of current licensee performance.

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control", requires, in part, that measures shall be established for the selection and review for suitability of application of materials that are essential to the safety-related functions of the structures, systems, and components. Contrary to the above, prior to June 6, 2014, measures were not established for the selection and review for suitability of application of certain materials that are essential to the safety-related functions of the structures, systems, and components. Specifically, measures established by the licensee did not review for the suitability of application of materials used in the Unit 2 "A" emergency diesel generator fuel oil cooler, in that the interface of cast-iron upper and lower covers with stainless steel piping promoted galvanic corrosion, and the resulting corrosion ultimately affected the structural integrity of the cooler and rendered the Unit 2 "A" essential spray pond

system inoperable. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as CRDR 4543394, this violation is being treated as a non cited violation in accordance with Section 2.3.2 of the Enforcement Policy: NCV 05000528;05000529;05000530/2014005-01, "Failure to Verify the Adequacy of the Design of the Diesel Fuel Oil Cooler."

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

During the station's Unit 1 refueling outage that concluded on November 11, and the Unit 2 short-notice maintenance outage, that concluded on November 14, 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:

- Reviewing the licensee's outage plan prior to the outage
- Monitoring shut-down and cool-down activities
- Verifying that the licensee maintained defense-in-depth during outage activities
- Observing and reviewing fuel handling activities
- Monitoring heat-up and startup activities

These activities constitute completion of one refueling outage sample and one outage activities 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:

In-service tests:

- November 20, Unit 2, containment spray pump, train B
- November 26, Unit 2, atmospheric dump valve 184 stroke timing test

Containment isolation valve surveillance tests:

- October 30, Unit 1, local leak rate test of penetrations 32A and 54A

Other surveillance tests:

- November 25, Unit 1, integrated safeguards test, train A
- November 6, Unit 1, containment integrated leak rate 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

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope

The inspector performed an in-office review of changes to Palo Verde Nuclear Generating Station, Units 1, 2, and 3, Emergency Plan Implementing Procedures EP 0901, "Classifications," Revision 8, and EP-0905, "Protective Actions," Revision 5, submitted by separate letters both dated, October 3, 2014. Revision 8 of EP-0901 effective October 2, 2014, made changes to the document by adding words and definitions from the NRC Safety Evaluation Report dated June 5, 2009, and other editorial changes. Revision 5 of EP-0905 effective October 1, 2014, documents changes regarding exceptions to assembly, evacuation, or activation of the emergency response organization and clarified guidance to when expansion of protective actions is required.

These revisions were compared to their previous revisions, to the criteria of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, and to the standards in 10 CFR 50.47(b) to determine if the revision adequately implemented the requirements of 10 CFR 50.54(q)(3) and 50.54(q)(4). The inspector verified that the revisions did not reduce the effectiveness of the emergency plan. This review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, these revisions are subject to future inspection.

These activities constitute completion of two emergency action level and emergency plan change samples as defined in Inspection Procedure 71114.04.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

.1 Training Evolution Observation

a. Inspection Scope

On November 18, the inspectors observed simulator-based licensed operator requalification training that included implementation of the licensee's emergency plan. 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 evaluators and entered into the corrective action program for resolution.

These activities constitute completion of one training 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

No findings were identified.

2RS3 In-Plant Airborne Radioactivity Control and Mitigation (71124.03)

a. Inspection Scope

The inspectors verified that the licensee controlled in-plant airborne radioactivity concentrations consistent with ALARA principles and that the use of respiratory protection devices did not pose an undue risk to the wearer. During the inspection, the inspectors interviewed licensee personnel, walked down various portions of the plant, and reviewed licensee performance in the following areas:

- The licensee's use, when applicable, of ventilation systems as part of its engineering controls
- The licensee's respiratory protection program for use, storage, maintenance, and quality assurance of National Institute for Occupational Safety and Health-certified equipment, qualification and training of personnel, and user performance
- The licensee's capability for refilling and transporting self-contained breathing apparatuses (SCBAs) air bottles to and from the control room and operations support center during emergency conditions, status of SCBA staged and ready for use in the plant and associated surveillance records, and personnel qualification and training
- Audits, self-assessments, and corrective action documents related to in-plant airborne radioactivity control and mitigation since the last inspection

These activities constitute completion of one sample of in-plant airborne radioactivity control and mitigation as defined in Inspection Procedure 71124.03.

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 Mitigating Systems Performance Index: Heat Removal Systems (MS08)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of fourth quarter 2013 through third quarter 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 mitigating system performance index for heat removal systems as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index: Residual Heat Removal Systems (MS09)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of fourth quarter 2013 through third quarter 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 mitigating system performance index for residual heat removal systems as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index: Cooling Water Support Systems (MS10)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of fourth quarter 2013 through third quarter 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 mitigating system performance index for cooling water support systems 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, 2013, to September 30, 2014. 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, 2013, and September 30, 2014, 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.

40A2 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 and corrective action review board 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 identified the following trend that might indicate the existence of a more significant safety issue:

Corrective actions initiated to address self-assessments were not always effective. During the biennial problem identification and resolution inspection completed March 29, 2014, the inspectors noted that over the course of the inspection period, audits had repeat findings and required third parties to identify issues that resulted in effective corrective actions.

Because the licensee had not identified this trend, the inspectors examined it further by reviewing a sample of internal audits conducted by the licensee's Nuclear Assurance Department during 2014. Of the nine internal audits completed by the licensee, the inspectors selected and reviewed the three described below. The specific documents reviewed during this trend review are listed in the Attachment.

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

b. Observations and Assessments

The inspectors' review of the selected audits produced the following observations and assessments:

- For the correction action program audit, 2014-008, the licensee identified that a corrective action to prevent recurrence had not been fully implemented. Specifically, corrective action item 2825483 had developed checklists to use for performing high-tiered industry operating experience evaluations, but the licensee did not have procedural guidance directing use of those checklists. The licensee evaluated this

audit finding under CRDR 4574474. and generated a procedure change request to add verbiage to clearly describe when the checklists are to be applied. The inspectors considered that this action should be effective in addressing the audit finding.

- For the radiation protection audit, 2014-007, the licensee identified a repeat programmatic deficiency in the accountability, inventory, and control of radioactive sources. The auditors identified that similar findings had been identified in earlier audits in 2010 and 2013. The licensee had reviewed historical radioactive source control events dating back to 2009 and initiated a common-cause evaluation under CRDR 4573459 to address programmatic weakness associated with the lack of required second party verification, the storage of non-radioactive items with radioactive storage, and the absence of transfer records for two sources. The licensee's evaluation prescribed corrective actions to improve the material control and accountability weaknesses. These actions involved procedure changes including: 1) directing that the licensee's source tracking database be updated prior to source transfers; 2) an added specific second party verification requirement prior to the next issuance of sources from a location, and; 3) specific procedural guidance defining items allowed in source storage lockers. The inspectors concluded that these actions should be effective to address the audit findings. The inspectors noted, however, that the licensee's evaluation did not assess why the previous corrective actions performed in 2010 and 2013 had been ineffective.
- For the emergency preparedness audit, 2014-009, the licensee identified that department personnel had been ineffective in identifying and correcting conditions adverse to quality in a timely and effective manner. (Audit 2013-010 had identified a similar issue.) Specifically, in the 2014 audit, the licensee noted that corrective actions from Audit 2013-010 had been ineffective, and that someone in emergency preparedness had closed the evaluation associated with Audit 2013-010 without correcting all of the issues. To address the specific issues from the 2014 audit and to also reassess the 2013 corrective actions, the licensee initiated CRDR evaluation 4582857. In that CRDR, the licensee developed and implemented corrective actions to address eleven observations from the 2013 evaluation that been inappropriately closed. Those corrective actions included performing a briefing for emergency preparedness personnel on the importance of properly closing corrective action program evaluation with appropriate documentation of actions taken. The inspectors concluded that in this case, the licensee had taken appropriate corrective actions to not only address the 2013 audit results, but also to address the reason why that audit had been inappropriately closed.

In summary, in the three audits reviewed by the inspectors, the licensee took corrective actions that appeared to effectively address audit findings, including findings from earlier audits that had not been effectively addressed in the past. In one of those audits, the licensee did not address the reason(s) why the previous corrective actions had been ineffective.

c. Findings

No findings were identified.

40A3 Follow-up of Events and Notices of Enforcement Discretion (71153)

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

- .1 (Closed) Licensee Event Report 05000529/2014-004-01, "Inoperable Essential Spray Pond Train Due to Corrosion on the Diesel Generator Fuel Oil Cooler Cover"

- a. Inspection Scope

On June 6, 2014, following planned maintenance on the train "A" Emergency Diesel Generator Fuel Oil Cooler, Essential Spray Pond system water leakage was found on the fuel oil upper cover. A visual inspection of the removed cover identified corrosion related degradation of the cast iron cover. On June 11, 2014, an engineering analysis determined that the measurements of the FO cooler upper cover wall thickness were found to be below the minimum wall thickness needed to maintain structural integrity for the full range of its design basis requirements. Consequently, it was determined the train A ESP system had been inoperable in excess of the completion time allowed by TS LCO 3.7.8. On June 28 and 29, 2014 the remaining five FO cooler upper covers were replace with new covers.

The licensee had concluded that the root cause of this event was due to the latent design characteristics of the diesel fuel oil cooler. The interface between the cast iron diesel fuel oil upper cover and the stainless steel piping of the spray pond piping promoted a localized galvanic corrosion. The corrosion eventually affected the structural integrity of the diesel fuel oil cooler rendering the Essential Spray Pond and the Emergency Diesel inoperable. The licensee has initiated a corrective action to abandon the use of the diesel fuel oil coolers since engineering evaluations has shown that the fuel oil coolers are not needed in order for the Emergency Diesel Generators to perform their safety function.

The licensee issued this LER supplement to provide additional information from the completed root cause evaluation, including the results of the laboratory analysis and corrective actions.

Inspectors previously reviewed the original LER and dispositioned this issue as a self-revealing non cited violation in Section 1R19 of NRC Integrated Inspection Report 05000528;529;530/2014005. This LER is closed.

40A5 Other Activities

Temporary Instruction 2515/189: Inspection to Determine Compliance of Dynamic Restraint (Snubber) Program with 10 CFR 50.55a Regulatory Requirements for Inservice Examination and Testing of Snubbers

- a. Inspection Scope

The inspectors reviewed the licensee's snubber program against the requirements for the inservice examination and testing of snubbers under 10 CFR 50.55a, "Codes and Standards," and paragraph 03.02 of the Temporary Instruction.

The inspectors reviewed licensee documents detailing the snubber program, including licensee-controlled documents/procedures and any relief requests approved by the NRC for the snubber program. The inspectors reviewed corrective action documents involving snubbers for the current 10-year interval, including any actions taken to address Regulatory Issue Summary 2010-06. In addition, the inspectors observed snubber testing and conducted independent inspections of various snubber types.

b. Observations

The inspectors determined that the licensee's snubber program complies with 10 CFR 50.55a regulatory requirements for inservice examination and testing of snubbers. In accordance with the Temporary Instruction, responses to specific questions were submitted to the NRC headquarters staff. Based upon the scope of the review described above, TI-2515/189 was completed.

c. Findings

No findings were identified.

40A6 Meetings, Including Exit

Exit Meeting Summary

On October 24, 2014, the inspectors presented the inspection results to Mr. J. Cadogan, Vice President, Nuclear Engineering, 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 31, 2014, the inspectors presented the radiation safety inspection results to Mr. D. Mims, Senior 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 November 20, 2014, the inspectors debriefed Mr. T. Mock, Director, Operations, and other members of the licensee's staff of the results of the licensed operator requalification program inspection. An exit will be conducted telephonically with members of the licensee staff once results of the operating tests and written exams are submitted in January. The licensee representative acknowledged the findings presented. The inspectors did not review any proprietary information during this inspection.

On December 18, 2014, an inspector presented the Temporary Instruction 2515/189 inspection results to Mr. G. Andrews, Director, Regulatory Affairs, 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 December 31, 2014, an inspector conducted an exit meeting to present the results of the in-office inspection of changes to the licensee's emergency plan and implementing procedures to Mr. R. Davis, Director, Nuclear Security and Emergency Preparedness, and other members of the licensee staff. The licensee acknowledged the issues presented

On January 6, 2015, the inspectors presented the inspection results to D. Mims 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.

40A7 Licensee-Identified Violations

The following violations of very low safety significance (Green) and Severity Level IV were identified by the licensee and are violations of NRC requirements which meets the criteria of the NRC Enforcement Policy, for being dispositioned as a Non-Cited Violation.

1. Title 10 CFR 55.49, "Integrity of Examinations and Tests," requires, in part, that facility licensees shall not engage in any activity that compromises the integrity of any application, test, or examination required by this part. Contrary to the above, during the week of November 12, 2013, the licensee caused a compromise to examination integrity by exceeding, 50 percent overlap on exam items during the same examination cycle. Specifically, the licensee repeated three of the required five job performance measures from one week to the next. The failure to meet 10 CFR 55.49 was evaluated through the traditional enforcement process because it impacted the ability of the NRC to perform its regulatory oversight function. This resulted in assignment of a Severity Level IV violation because it involved a nonwillful compromise of examination integrity and is consistent with Section 6.4.d of the NRC Enforcement Policy.

The associated performance deficiency was screened as Green because there was not an actual effect on the equitable and consistent administration of any examination required by 10 CFR 55.59, "Requalification." The licensee entered this issue into their corrective action program as Condition Report 4578169.

2. Title 10 CFR 50.59(d)(1) requires, in part, that the licensee shall maintain records of changes in the facility, of changes in procedures, and of tests and experiments made pursuant to paragraph (c) of this section. These records must include a written evaluation which provides the bases for the determination that the change, test, or experiment does not require a license amendment pursuant to paragraph (c)(2) of this section. Contrary to the above, prior to August 28, 2014, the licensee failed to perform an evaluation against the criteria in 10 CFR 50.59(c)(2) for a change to the facility.

Specifically, the licensee identified that Licensing Document Change Request 04-F020, performed on March 4, 2005, had changed the FSAR description of the auxiliary feedwater system. The new revision stated that portions of the auxiliary feedwater system, which are not contained within a Seismic Category I structure or installed underground, have been analyzed to show that the probability of being struck by a tornado missile is sufficiently low and do not require tornado missile protection. Previously, the FSAR described that all components of the auxiliary feedwater system were either enclosed by a Seismic Category I structure or are installed underground. This change had been inappropriately screened out of the 50.59 process in 2005. The licensee's 50.59 screening did not recognize that this change to the FSAR description constituted a de facto change to the design of the facility. Consequently, the licensee failed to perform an evaluation against the criteria in 10 CFR 50.59(c)(2).

On August 28, 2014, the licensee recognized the auxiliary feedwater recirculation lines do not meet the original FSAR criteria of being protected from tornado missiles. The

licensee initiated PVAR 4568732 to document the lack of tornado missile protection for the auxiliary feedwater minimum flow recirculation lines. The licensee performed an immediate operability determination on August 29, 2014 and determined that there was a reasonable expectation that the auxiliary feedwater system would provide adequate decay heat removal following a tornado. The inspectors reviewed the licensee's operability determination and verified that the licensee intends to submit a license amendment request for acceptance of the as-built configuration of the auxiliary feedwater system. Because the failure to implement the requirements of 10 CFR 50.59 had the potential to impact the NRC's ability to perform its regulatory function, the team evaluated the performance deficiency using traditional enforcement. In accordance with Section 2.1.3.E.6 of the NRC Enforcement Manual, the inspectors evaluated this finding using the significance determination process to assess its significance. The finding required a detailed risk evaluation because it involved the failure of two or more trains in a multi-train system. A Region IV senior reactor analyst performed a bounding detailed risk evaluation and determined that the bounding delta-CDF was less than $3.5E-8$ /year. In accordance with Section 6.1.d of the NRC Enforcement Policy, this violation is categorized as Severity Level IV violation because the resulting change was evaluated by the SDP as having very low safety significance (i.e., Green finding). This issue has been entered into the licensee's corrective action program as CRDR 4570021.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

N. Aarons-Cooke, Engineer, Nuclear Regulatory Affairs
J. Allison, Exam and Simulator Support Supervisor
G. Andrews, Director, Nuclear Regulatory Affairs
G. Andrews, Director, Regulatory Affairs
S. Banks, License Operator Training Supervisor
M. Brannin, ISI Program Owner, Engineering Programs
D. Crozier, Senior Coordinator, Emergency Preparedness
R. Davis, Director, Nuclear Security and Emergency Preparedness
T. Dickinson, Technical Advisor, Radiation Protection
M. DiLorenzo, Department Leader, Engineering Programs
J. Fearn, Manager, Emergency Preparedness
T. Gray, Support Services Department Leader, Radiation Protection
G. Haught, Technician, Radiation Protection
D. Heckman, Senior Consultant, Regulatory Affairs
K. Jackson, Snubber Program Owner
G. Jones, Supervisor, Radiation Protection
R. Lange, Operations Training Manager
F. Liu, HVAC Component Engineer, Engineering
M. McGhee, Department Leader, Nuclear Regulatory Affair
D. Mims, Site Vice President
C. Moeller, Manager, Radiation Protection
F. Oreshack, Compliance Consultant
C. Radke, Senior Program Advisor of Respiratory Maintenance, Fire Department
K. Schrecker, Section Leader, Program Engineering
J. Schrock, Systems Engineer, Engineering
B. Trimble, Section Leader, Program Engineering
T. Williams, Supervisor Emergency Preparedness

NRC Personnel

H. Gepford, F., Chief, Region IV, Division of Reactor Safety, Plant Support Branch 2

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000528; 529; 530/2014005-01 NCV Failure to Verify the Adequacy of the Design of the Diesel Fuel Oil Cooler

Closed

05000529/2014-004-01 LER Inoperable Essential Spray Pond Train Due to Corrosion on the Diesel Generator Fuel Oil Cooler Cover (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Condition Report Disposition Requests

4594955 3952605 3958463

Work Orders

3956860

Drawing

<u>Number</u>	<u>Title</u>	<u>Revision</u>
13-A-ZYD-008	General Roof Plan and Details	17

Calculations

<u>Number</u>	<u>Title</u>	<u>Revision</u>
13-CC-ZV-0149	Seismic Category I Building Roof Ponding	0
13-CC-ZV-060	Site Drainage Outside Power Block	7
13-CC-ZV-061	Power Block Area Drainage	

Section 1R04: Equipment Alignment

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
40OP-9SP01	Essential Spray Pond (SP) Train A	52
40AO-9ZZ21	Acts of Nature	32
01DP-0XX01	Control and Monitoring of Potential Tornado Borne Missiles	3
73ST-9SP02	Essential Spray Pond Pumps – Comprehensive Pump Test	12
40AO-9ZZ21	Acts of Nature	33
40ST-9AF08	Auxiliary Feedwater Pump AFB-P01 Monthly Valve Alignment	5
40OP-9AF01	Essential Auxiliary Feedwater System	60
40OP-9EW01	Essential Cooling Water System (EW) Train A	24

Palo Verde Action Requests

4579050 4572738 4595446 4597135

Condition Report Disposition Request

4574432

Calculations

<u>Number</u>	<u>Title</u>	<u>Revision</u>
13-MC-HS-0008	Spray Pond Ventilation and Equipment Adequacy Calculation	5
13-NC-SP-0206	Engineering Calculation	5
13-MC-EW-0305	EW System Hydraulic Calculation	4

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
40OP-9PC01	Fuel Pond Cooling	13
4576304	Engineering Evaluation	9/26/2014
S-14-0107	10 CFR 50.59 Screening/Evaluation	0

Section 1R05: Fire Protection

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
	PVNGS Pre-Fire Strategies Manual	7
	PVNGS Pre-Fire Strategies Manual	24

Palo Verde Action Requests

4581984 4592026

Condition Report Disposition Request

3897596

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision</u>
	Pre-Fire Strategies Manual	24

Section 1R06: Flood Protection Measures

Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
40DP-9ZZ17	Control of Doors, Hatches, and Floor Plugs	57

Palo Verde Action Requests

4461634	4460917	4492302
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Calculations

<u>Number</u>	<u>Title</u>	<u>Revision</u>
13-MC-ZA-0809	As Built Auxiliary Building Flooding Calculation	7
13-MC-DG-0204	Diesel Generator Building Flooding Analysis	6

Section 1R07: Heat Sink Performance

Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
70TI-9EW03	EW Heat Exchanger Improved Test Performance	1

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Date</u>
	Essential Cooling Water Heat Exchanger Thermal Performance Test Report	10/13/2014

Section 1R08: Inservice Inspection Activities

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
01PR-0AP04	Corrective Action Program	8
30DP-9MP03	System Cleanliness and Foreign Material Exclusion Controls	20

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
73DP-9WP01	Welder and Procedure Qualification	6
73DP-9WP04	Welding and Brazing Control	15
73DP-9ZC01	Boric Acid Corrosion Control Program	5
70TI-9ZC01	Boric Acid Walkdown Leak Detection	17
73DP-9ZZ17	Repair And Replacement - ASME Section XI	23
73DP-9XI03	ASME Section XI Inservice Inspection	16a
73TI-0ZZ13	Radiographic Examination	17
73TI-9RC01	Steam Generator Eddy Current Examinations	29
73TI-9RC10	Bare Metal Visual Examination of Reactor Vessel Bottom Head	2
73TI-9RC10	Bare Metal Visual Examination of Reactor Vessel Bottom Head	2
73TI-9ZZ05	Dry Magnetic Particle Examination	15
73TI-9ZZ07	Liquid Penetrant Examination	14
73TI-9ZZ22	Visual Examination for Leakage - Interval 3	7
73WP-0ZZ07	Welding of Stainless and Nickel Alloys	16
73WP-0ZZ04	Welding Of Carbon And Low Alloy Steels To Stainless And Nickel Alloys	16
73WP-0ZZ20	Visual Inspection of Code Welds	8
81DP-9RC01	PVNGS Steam Generator Management Program	14

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
30-DP-9WP11	Scaffolding Instructions	25
MN756-A00001	PDI-UT-1 Generic Procedure for the Ultrasonic Examination of Ferritic Pipe Welds	0
MN756-A00002	PDI-UT-2 Generic EPRI Procedure for the Ultrasonic Examination of Austenitic Pipe Welds	0
SG-SGMP-14-2	Palo Verde U1R18 Steam Generator Degradation Assessment	0
01-MS-C035	Steam Generator Condition Monitoring Evaluation, Unit 1, Cycle 17	0
73TI-9RC09	Bare Metal Visual Examination of Reactor Vessel Upper Head	2
73ST-9SI03	Leak Test of SI / RCS Pressure Isolation Valves	50

Palo Verde Action Requests

4241536	4242528	4242659	4242660	4391985
4396759	4378813	4379635	4379629	4384242
4413328	4438235	4447876	4587957	4586454
4586212	4585221	4584594	4583997	4583410
4586244	4586540	4579422	4579428	4587579
4584126	4583403	4583401	4583399	4583397
4579875	4579821	4579815	4588268	4587606
4587604	4588279	4587957	4587017	4587632
4587614	4587609	4587180	4587003	4586920
4586540	4586454	4586212	4585221	4583410
4584594	4583997	4586244		

Condition Report Disposition Requests

4459614	4459242	4397589	4385427	2600546
2638613	4242528			

Condition Report Action Items

4396759	4391985	4242660	4527674	4389648
4527666	4580342	4474306	4651565	4242659

Other Documents

<u>Number</u>	<u>Title</u>	<u>Revision Date</u>
N/A	Formal Self-Assessment of the Inservice Inspection Program	7/26/2013
3INT-ISI-1	3 rd Inspection Interval Inservice Inspection Program Summary Manual PVNGS Unit 1	3
01-MS-A141	U1R18 Steam Generator Degradation Assessment	10/10/2014

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

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
40DP-9OP02	Conduct of Shift Operations	65
15DP-0OT05	NRC Examination Security	4
	License Operator Continuing Training Program Description	64
15DP-0OT03	LOCT Biennial Written Exam Development and Sample Plan	3
40DP-0OP09	Operator Licensing and Requalification Process	1
01DP-0EM13	Licensed Operator Medical Examinations	24
15DP-0OT04	LOCT Annual and Biennial Exam Administration	4
15DP-0OT03	LOCT Biennial Written Exam Development and Sample Plan	3
15DP-0OT02	LOCT Annual and Biennial Operating Examination Sample Plan Development	3
15DP-0TR70	Simulator Configuration	3
15DP-0CC04	Simulator Performance Testing	2
15DP-0OT06	LOCT Scenario and JPM Development	2
40DP-9OP02	Conduct of Shift Operations	65
15DP-0OT05	NRC Examination Security	4
	License Operator Continuing Training Program Description	64
15DP-0OT03	LOCT Biennial Written Exam Development and Sample Plan	3
40DP-0OP09	Operator Licensing and Requalification Process	1
01DP-0EM13	Licensed Operator Medical Examinations	24
15DP-0OT04	LOCT Annual and Biennial Exam Administration	4
15DP-0OT03	LOCT Biennial Written Exam Development and Sample Plan	3
15DP-0OT02	LOCT Annual and Biennial Operating Examination Sample Plan Development	3
40DP-9OP02	Conduct of Shift Operations	64
40OP-9ZZ05	Power Operations	140
	Emergency Plan	53

Condition Report Disposition Requests

4256323	4378792	4572981	4578169	4597614
4598524	4598527			

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision Date</u>
	Specific Maneuver Plan: EOC Shutdown 97.7% to 20%	0
	Specific Maneuver Plan: EOC Coastdown	0
	U1 Cycle 18 EOC Shutdown Plan	
SES-0-03-X-03	Licensed Operator Continuing Training: Simulator Evaluation Scenario	8/26/14
SES-0-09-AS-06	Licensed Operator Continuing Training: Simulator Evaluation Scenario	8/26/14
	Week 1 RO Exam	11/14
	Week 1 SRO Exam	11/14
	Week 0 RO Exam	11/14
	Week 0 SRO Exam	11/14
	Week 1 Operations Test	11/14
	Week 0 Operations Test	11/14
	71111.11 Pre-Inspection Self-Assessment	
	Simulator Discrepancy Report	
	Operator License Activation/Reactivation Card	4/18/14
	Palo Verde Nuclear Generating Station License Operator Continuing Training	64
	Operations Training Department Critical Task List	10/15/14
	UFSAR Time Critical Actions	
	Plant Events and Industry Operating Experience Incorporated into LOCT	

Section 1R12: Maintenance Effectiveness

Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
40ST-96F01	CEA Operability Checks	34

Palo Verde Action Requests

4480592 4593908 4594709 4586047 2995397

Condition Report Disposition Requests

4481512 4594327 4260256

Condition Report Action Items

4545875 4488583 4523780

Work Orders

4270598 2826879 4430967 3537026

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Date</u>
	Maintenance Rule (a)(1) Issue Tracking Form 1164	5/6/2014
	Maintenance Rule (a)(3) Periodic Assessment SWMS No. 4542262 Performed 7/8/14 to 9/10/14 System Health Report Period: Q1-2014, Qw2-2014, Q3-2014, Q4-2014	11/20/2014

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
40DP-9AP21	Protected Equipment	5
40DP-9AP21	Protected Equipment	6
14DP-OFP33	Control of Transient Combustibles	26

Palo Verde Action Requests

4581839

Section 1R15: Operability Determinations and Functionality Assessments

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
93DP-0LC07	10 CFR 50.59 and 72.48 Screenings and Evaluations	7

Palo Verde Action Requests

4579175	4557293	4586516	4581316	4580373
4581751	4580371	4568732		

Work Orders

4096962	4583220
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Condition Report Disposition Requests

4558044	4570021	2721947
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Calculations

<u>Number</u>	<u>Title</u>	<u>Revision</u>
13-NC-CT-200	CST Tornado Damage Analysis-Availability of non-safety portion of CST inventory	0

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Date</u>
04-F020	Licensing Document Change Request	2/15/2005

Section 1R19: Post-Maintenance Testing

Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
73ST-9CL01	Containment Leakage Type "B" and "C" Testing	41
73ST-9SI03	Leak Test of SI/RCS Pressure Isolation Valves	50
73ST-9SG01	MSIVs – Inservice Test	38
72ST-9RX14	Shutdown Margin-Modes 3,4,5	17
32MT-9SF03	Control Element Drive Mechanism Coil Stack Test/Replacement	12
73DP-9ZZ21	Heat Exchanger Visual Inspection	4
14DP-0FP02	Fire System Impairments and Notifications	20
14FD-0FP31	Fire System Impairment	15

Palo Verde Action Requests

4585573	4585563	4588914	4585563	4585508
4586138	4398843	4555009	4594661	4595750

4593834

Condition Report Disposition Requests

4403259 4287151 4543394

Work Orders

4290739 4555023 4430587 4573353 4427019

4595115 4593847 2922271 4296099 4467685

2574506

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Date</u>
DEC-00614	Reroute MSIV Actuator Hydraulic Tubing to Increase Hydraulic Reservoir Separation	10/26/2014
	Control Room Logs – Unit 2	11/6/2014- 11/15/2014
	Revised Response to NRC Generic Letter 89-13	10/1/1993

Section 1R20: Refueling and Other Outage Activities

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
40ST-9ZZ09	Containment cleanliness Inspection	23
40OP-9ZZ23	Outage GOP	68
40ST-9RC01	RCS Pressurizer Heatup and Cooldown Rates	17
40OP-9ZZ11	Mode Change Checklist	91
73ST-9CL02	Integrated Leakage Rate Test	10
40OP-9ZZ02	Initial Reactor Startup Following Refuelings	57
40OP-9ZZ04	Plant Startup Mode 2 to Mode 1	60

Palo Verde Action Request

4583401 4583403 4583397 4583399 4591567

4589407 4593541 4588953 4594661 4593110

4593519

Work Orders

4570513 4383449

Miscellaneous

<u>Title</u>	<u>Revision</u>
1R18 Overview Schedule	S

Section 1R22: Surveillance Testing

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
73TI-9ZZ37	Pre-ILRT Local Leak Rate Tests	5
73ST-9SI06	Containment Spray Pumps and Technical Manual	39
73ST-9DG01	Class 1E Diesel Generator and Integrated Safeguards Test Train A	26
73ST-9XI20	ADVs – Inservice Test	38
73DP-9ZZ14	Surveillance Testing	22
73ST-9CL02	Integrated Leakage Rate Test	10
73ST-9CL02	Containment Leakage Type “B” and “C” Testing	41

Palo Verde Action Request

4600716

Work Orders

4563338 4428031 2458541

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
	1R18 LLRT Schedule	10/15/2014
	Safety Injection System Design Basis Manual	37
	Palo Verde Unit 1 2014 Containment ILRT Test Results	11/6/2014

Section 1EP4: Emergency Action Level and Emergency Plan Changes

Procedures and Other Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
102-06952-JF	Revision 8 to EP-0901, Classifications	October 3, 2014
102-06953-JF	Revision 5 to EP-0905, Protective Actions	October 3, 2014

Procedures and Other Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
102-06964-JF	Emergency Plan Implementing Procedures	November 14, 2014

Section 1EP6: Drill Evaluation

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EP-0904	ERO/ERF Activation and Operation	4
	Emergency Plan	53

Section 4OA1: Performance Indicator Verification

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
71DP-0AP01	Mitigating Systems Performance Index Program	3
93DP-0LC09	Data Collection and Submittal Using INPO's consolidated Data Entry System	11
13-NS-C075	MSPI Bases Document	9
70DP-0PI01	Performance Index Data Mitigating Systems Cornerstone	7

Section 2RS1: Radiological Hazard Assessment and Exposure Controls

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
75DP-0RP01	RP Program Overview	10
75DP-0RP02	Radioactive Contamination Control	21
75DP-9RP01	Radiation Exposure and Access Control	20
75RP-0RP01	Radiological Posting and Labeling	32
75RP-9OP02	Control of High Radiation Areas, Locked High Radiation Areas and Very High Radiation Areas	26
75RP-9RP02	Radiation Exposure Permits	29
75RP-9RP07	Radiological Surveys and Air Sampling	25
75RP-9RP09	Release of Vehicles, Equipment, and Material from Radiological Control Areas	40
75RP-9RP26	Radioactive Source Control	15

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
75RP-9RP30	Radiation Protection Oversight of Radiography	01
75ST-9ZZ02	Radioactive Source Leak Test Surveillance	07

Audits, Self-Assessments, and Surveillances

<u>Number</u>	<u>Title</u>	<u>Date</u>
SWMS 4474416	Simple Self-Assessment: Containment Access Tent	11/7/2013
SWMS 4450788	Simple Self-Assessment: Radioactive Source Control	7/2/2014
2014007	NAD Audit Plan and Report: Radiation Protection	10/3/2014

Palo Verde Action Requests

4465965	4468208	4469292	4469901	4476907
4477100	4491473	4494849	4501369	4505923
4505927	4506459	4529464	4532861	4557671
4579657				

Radiation Exposure Permits

<u>Number</u>	<u>Title</u>	<u>Revision</u>
1-3002	Reactor Destack and Restack	04
1-3003	Reactor Vessel Head (RVH) O-Ring Maintenance and Flange Inspection	03
1-3015	Refuel Cavity Decontamination	03
1-3306	Primary Side Steam Generator Maintenance	02
9-1035	Radiography Within the PVNGS OCA	02
9-1218	Load Filter HIC(s) in HLSA	02

Radiation Survey Records

<u>Number</u>	<u>Title</u>	<u>Date</u>
1-M-20140624-1	140' R/W Neutron Source Room – Quarterly	6/24/2014
1-M-20140903-3	Storage of Filter PCNF04 into HIC Shield #4 Slot 186	9/3/2014
1-M-20140923-3	U1 70' Ops Hose Cage – Weekly	9/3/2014
1-M-20140925-2	100' RCA Mid Yard RWT Vault Base Cutout Pre-Job	9/25/2014
1-M-20141001-5	Transfer HIC to LLRMSF	10/1/2014

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
	Radioactive Source Inventory (Source TRAX)	2/19/2014
	Part 37 Location Inventory and Evaluation	10/17/2014

Section 2RS3: In-Plant Airborne Radioactivity Control and Mitigation

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
01DP-01S08	PVNGS Respiratory Protection Equipment Usage	19
01DP-01S10	PVNGS Respiratory Protection Program	12
14FT-9FP78	Respiratory Equipment Inspection and Repair	0
33ST-9HF01	Surveillance Testing for the Aux/Fuel Building Nuclear Air Treatment System	21
33ST-9HF03	Carbon Analysis for the Aux/Fuel Building Nuclear Air Treatment System	07
33ST-9HJ02	Surveillance Testing for the Control Room Nuclear Air Treatment System	19
33ST-9HJ03	Carbon Analysis for the Control Room Essential Nuclear Air Treatment System	11
74RM-9EF42	Radiation Monitor Setpoint Determination	28a
75DP-0RP05	Control of Portable Air Filtration Systems	06
75RP-9RP07	Radiological Surveys and Air Sampling	25
75TD-9RP02	ALARA Work Planning	07

Audits, Self-Assessments, and Surveillances

<u>Number</u>	<u>Title</u>	<u>Date</u>
2013004	NAD Audit Plan and Report: Fire Protection	6/20/2013
2014007	NAD Audit Plan and Report: Radiation Protection	10/3/2014
SWMS 4499035	Simple Self-Assessment: Alpha Monitoring and Control	1/31/2014

Palo Verde Action Requests

4170474	4170978	4172791	4361067	4398803
4467687	4474995	4560395	4572281	

Radiation Survey Records/Air Samples P-I-G

<u>Number</u>	<u>Title</u>	<u>Date</u>
3-14-00215	U3 Radwaste 112' HLSA	8/8/2014

Radiation Survey Records/Air Samples P-I-G

<u>Number</u>	<u>Title</u>	<u>Date</u>
3-14-00220	U3 Radwaste 100' Truck Bay Swap Resin Dewatering Spool	9/3/2014
3-14-00221	U3 Radwaste 88' Sump	9/3/2014
3-14-00222	U3 Aux 100' West WRAP	9/4/2014
3-14-00226	U3 Radwaste 88' Sump	9/26/2014
3-14-00228	U3 Aux 100' West WRAP	10/2/2014
3-14-00229	U3 Aux 100' West WRAP Containment Air	10/21/2014

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
	PVNGS Updated FSAR: Ch. 6.4.2.2; 11.5; 12.5	17
14FT-9FP78, App. C	Respiratory Equipment Inventory	10/21/2014
232465-0	Laboratory Report Compressed Air/Gas Quality Testing: Grade D	9/18/2014
232465-1	Laboratory Report Compressed Air/Gas Quality Testing: Grade E	9/18/2014

Section 40A2: Problem Identification and Resolution

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
60DP-0QQ19	Internal Audits	25
01DP-0AP12	Palo Verde Action Request Processing	22

Palo Verde Action Requests

4572728	4572204	4580857	4579575	4579589	4579580
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Condition Report Disposition Requests

4573459	4579304	4574474
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Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
2014-001	Nuclear Assurance Department Audit Pland and Report - Chemistry	4/2/2014
2014-003	Nuclear Assurance Department Audit Plan and Report – Outage and Maintenance Activities	7/3/2014
2014-007	Nuclear Assurance Department Audit Plan and Report – Radiation Protection	10/03/2014

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
2014-008	Nuclear Assurance Department Audit Plan and Report – Corrective Action	10/2/2014
2014-009	Nuclear Assurance Department Audit Plan and Report – Radiation Protection	10/20/2014

Section 40A5: Inspection to Determine Compliance of Dynamic Restraint (Snubber) Program With 10 CFR 50.55a Regulatory Requirements for Inservice Examination and Testing of Snubbers (2515/189)

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
01PR-0AP04	Corrective Action Program	8
31MT-9ZZ15	Mechanical Snubber Removal And Reinstallation	27/27a
73DP-9ZZ16	Testing and Control of PVNGS Snubbers	1/12/12a
73ST-9ZZ10	Hydraulic Snubber Functional Testing	6/22/22a
73ST-9ZZ21	Snubber Visual Examination	6/15/15a
73ST-9ZZ22	Mechanical Snubber Functional Test	8/15/15a
73ST-9ZZ23	Service Life Monitoring for Snubbers	5/12/12a

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision</u>
1R13 73ST-9ZZ10	Hydraulic Snubber test and visual	
1R13 73ST-9ZZ21	Accessible Mechanical Snubber visual	
1R13 73ST-9ZZ21	Inaccessible Mechanical Snubber visual	
1R13 73ST-9ZZ22	Mechanical Snubber	
1R13 73ST-9ZZ23	5 Year Oil Analysis and 10 Year Service Life Replacements	
	1R13 Scope	

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision</u>
1R14 73ST-9ZZ10	Hydraulic Snubber test and visual	
1R14 73ST-9ZZ21	Accessible Mechanical Snubber visual	
1R14 73ST-9ZZ21	Inaccessible Mechanical Snubber visual	
1R14 73ST-9ZZ22	Mechanical Snubber	
1R14 73ST-9ZZ23	10 Year Service Life Replacements	
	1R14 Scope	
1R15 73ST-9ZZ10	Hydraulic Snubber test and visual	
1R15 73ST-9ZZ21	Accessible Mechanical Snubber visual	
1R15 73ST-9ZZ21	Inaccessible Mechanical Snubber visual	
1R15 73ST-9ZZ22	Mechanical Snubber	
	1R15 Scope	1
1R16 73ST-9ZZ10	Hydraulic Snubber test and visual	
1R16 73ST-9ZZ21	Accessible Mechanical Snubber visual	
1R16 3ST-9ZZ21	Inaccessible Mechanical Snubber visual	
1R16 73ST-9ZZ22	Mechanical Snubber	
	1R16 Scope	
1R17 73ST-9ZZ10	Hydraulic Snubber test and visual	
1R17 73ST-9ZZ21	Accessible Mechanical Snubber visual	
1R17 73ST-9ZZ21	Inaccessible Mechanical Snubber visual	
1R17 73ST-9ZZ22	Mechanical Snubber	
	1R17 Scope	
	1R18 Expansion Snubber Scope SCR	3
	1R18 Snubber Scope	

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision</u>
	ASME OMb CODE-2003 ADDENDA to ASME OM CODE-2001 CODE For Operation and Maintenance of Nuclear Power Plants	
	ASME OM CODE-2001 TABLE ISTD-4252-1 VISUAL EXAMINATION TABLE	

Palo Verde Action Requests

CRAI 3489342	CRAI 3489344	CRAI 3489342	CRAI 3489344	CRAI 3523549
CRAI 3525398	CRAI 3804050	CRDR 3454966	CRDR 3466063	CRDR 3468381
CRDR 3482726	CRDR 3436633	CRDR 4180340	CRDR 3529091	PVAR 3602712
CRDR 3693666	CRDR 4181713	CRDR 4460528	CRDR 4429713	PVAR 4482040
PVAR 3492485	PVAR 4049977	PVAR 4441845	PVAR 3822143	PVAR 4201090
PVAR 3347349	PVAR 4328088	PVAR 3482103	PVAR 4530145	EWR 3824378
EWR 4268590	EWR 4328362	EWR 4475780	EWR 4454897	EWR 4482347
EWR 3917890	EWR 4531298	EWR 4572435	EWR 3814110	EWR 3516465

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Information Request

September 3, 2014

Notification of Inspection and Request for Information

Palo Verde Nuclear Generating Station Unit 1

NRC Inspection Report 05000528/2014005

On October 20, 2014, reactor inspectors from the Nuclear Regulatory Commission's (NRC) Region IV office will perform the baseline inservice inspection at Palo Verde Nuclear Generating Station Unit 1, 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 for 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 is to be provided prior to the inspection (NLT September 29, 2014) 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 Ms. Nawaporn AaronsCooke of your licensing organization. The tentative inspection schedule is as follows:

Preparation week: September 29, 2014

Onsite weeks: October 20 through October 31, 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 Jim Drake at (817) 200-1558 (James.Drake@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.

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

- 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 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 shut down, please provide documentation of containment walkdown inspections performed as part of the boric acid corrosion control program.

A.3 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. Please contact the lead inspector if training will be required.
- 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 (October 20, 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 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.3 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 Palo Verde Nuclear Station
(October 27 – 31, 2014)
Integrated Report 2014005**

Inspection areas are listed in the attachments below.

Please provide the requested information on or before October 17, 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 Louis Carson at (817) 200-1221, Louis.Carson@nrc.gov or Natasha Greene at (817)200-1154, Natasha.Greene@nrc.gov

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1. **Radiological Hazard Assessment and Exposure Controls (71124.01) and Performance Indicator Verification (71151)**
Date of Last Inspection: **October 4, 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).

3. In-Plant Airborne Radioactivity Control and Mitigation (71124.03)

Date of Last Inspection: **April 13, 2012**

- A. List of contacts and telephone numbers for the following areas:
 - 1. Respiratory Protection Program
 - 2. Self-contained breathing apparatus
- B. Applicable organization charts
- C. Copies of audits, self-assessments, vendor or NUPIC audits for contractor support (SCBA), and LERs, written since date of last inspection related to:
 - 1. Installed air filtration systems
 - 2. Self-contained breathing apparatuses
- D. Procedure index for:
 - 1. Use and operation of continuous air monitors
 - 2. Use and operation of temporary air filtration units
 - 3. Respiratory protection
- 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. Respiratory protection program
 - 2. Use of self-contained breathing apparatuses
 - 3. Air quality testing for SCBAs
 - 4. Use of installed plant systems, such as containment purge, spent fuel pool ventilation, and auxiliary building ventilation
- F. A summary list of corrective action documents (including corporate and subtiered systems) written since date of last inspection, related to the Airborne Monitoring program including:
 - 1. Continuous air monitors
 - 2. Self-contained breathing apparatuses
 - 3. Respiratory protection program

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 SCBA qualified personnel - reactor operators and emergency response personnel
- H. Inspection records for self-contained breathing apparatuses (SCBAs) staged in the plant for use since date of last inspection.
- I. SCBA training and qualification records for control room operators, shift supervisors, STAs, and OSC personnel for the last year.

A selection of personnel may be asked to demonstrate proficiency in donning, doffing, and performance of functionality check for respiratory devices
- J. List of respirators (available for use) by type (APR, SCBA, PAPR, etc.), manufacturer, and model.

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Information Request
Notification of Inspection and Request for Information
Palo Verde Nuclear Generating Station Units 1, 2, and 3
NRC Inspection Report 05000528/2014005, 05000529/2014005, and 05000530/2014005

During the Unit 1 Inservice Inspection currently scheduled commence on October 13, 2014, reactor inspectors from the Nuclear Regulatory Commission's (NRC) Region IV office will perform Temporary Inspection 2515/189 at Palo Verde Nuclear Generating Station, using NRC Temporary Inspection Procedure 2515/189, "Inspection To Determine Compliance Of Dynamic Restraint (Snubber) Program With 10 CFR 50.55a Regulatory Requirements For Inservice Examination And Testing Of Snubbers." This inspection is a resource intensive inspection both for the NRC inspectors and for your staff. In order to minimize the impact to your on-site resources and to ensure a productive inspection, we have enclosed a request for documents needed for this inspection. 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 on-site 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 Ms. Natalie Mosher of your licensing organization. The tentative inspection schedule is as follows:

Preparation week: October 6, 2014

On-site weeks: October 13 through October 24, 2014

In-office completion of record review to be determined

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 Peter Jayroe at (817) 200-1431 (Peter.Jayroe@nrc.gov).

Request the following documents be provided to facilitate the inspection:

1. A copy of the document(s) which contain(s) the current snubber program.
2. The "Code of Record" for the current 10 year snubber program.
3. A copy of any alternatives or relief requests approved by the NRC for the snubber program.
4. Copies of any corrective action documents involving snubbers for the current 10 year interval, including any actions taken to address EGM 10-001 and RIS 2010-06.
5. A copy of the snubber program based on the Technical Specifications—if the program was relocated from the Technical Specifications to the Technical Requirements Manual or any other licensee-controlled documents during current 10-year interval.
6. A copy of the previous snubber program based on Section XI of the ASME BP&V Code—if the program was converted from Section XI of the ASME BP&V Code to Subsection ISTD of the ASME OM Code during the current 10 year interval.
7. A copy of Table ISTD 4252 1, "Visual Examination Table," from Subsection ISTD of the ASME OM Code if the program is using the ASME OM Code for snubber examination and testing of snubbers. If not, provide an alternative table which is being used for extension of snubber visual examination.