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

May 14, 2013

EA-13-024

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 05000528/2013002, 05000529/2013002, AND 05000530/2013002 and NOTICE OF VIOLATION

Dear Mr. Edington:

On March 31, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Palo Verde Nuclear Generating Station Units 1, 2, and 3. The enclosed inspection report documents the inspection results which were discussed on April 11, 2013, with Mr. D. Mims and other members of your staff.

The inspections examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the NRC has determined that a Severity Level IV violation of NRC requirements occurred. The violation was evaluated in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's Web site at (http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html).

The violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it are described in detail in the subject inspection report. The violation is being cited in the Notice because not all of the criteria specified in Section 2.3.2.a of the NRC Enforcement Policy for a noncited violation were satisfied. Specifically, Palo Verde Nuclear Generating Station failed to restore compliance within a reasonable time after the violation examples were first identified in NRC Inspection Reports 05000529/2007012 and 05000528; 529; 530/2009005. You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. If you have additional information that you believe the NRC should consider, you may provide it in your response to the Notice. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

Based on the results of this inspection, the NRC has also identified three NRC identified and two self-revealing findings that were evaluated under the risk significance determination process as having very low safety significance (green). The NRC has also determined that violations are associated with these issues. Further, three licensee-identified violations which were determined to be of very low safety significance are listed in this report. The NRC is treating these violations as non-cited violations (NCV) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest these non-cited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Palo Verde Nuclear Generating Station.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV; and the NRC Resident Inspector at Palo Verde Nuclear Generating Station.

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

Sincerely,

/RA/

Don Allen, Chief
Project Branch E
Division of Reactor Projects

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

Enclosure: 1. Notice of Violation
2. Inspection Report 05000528/2013002, 05000529/2013002, and 05000530/2013002 w/ Attachments:
    1. Supplemental Information
    2. The following items are requested for the Public Radiation Safety Inspection at Palo Verde

cc w/ encl: Electronic Distribution

Electronic distribution by RIV:
Regional Administrator (Art.Howell@nrc.gov)
Acting Deputy Regional Administrator (Robert.Lewis@nrc.gov)
DRP Director (Kriss.Kennedy@nrc.gov)
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DOCUMENT NAME:R:_REACTOR_PV\2013\PV2013002-RPT-MAB.docx
ADAMS:

SUNSI Rev Compl.	☑Yes ☐ No	ADAMS	☑Yes ☐ No	Reviewer Initials	RVA
Publicly Avail.	☑Yes ☐ No	Sensitive	☐Yes ☑No	Sens. Type Initials	RVA

SRI:DRP/E	RI:DRP/E	RI:DRP/E	C:DRS/EB1	C:DRS/EB2	C:DRS/OB
MBrown	MBaquera	DReinert	TFarnholtz	GMiller	VGaddy
/RA/	/RA via Email/	/RA via Email/	/GGeorge for/	/DLoveless for/	/RA/
5/14/13	5/13/13	5/10/13	5/9/13	5/10/13	5/8/13
C:DRS/PSB1	C:DRS/PSB2	C:DRS/TSB	C:ORA/ACES	SPE:DRP/E	BC:DRP/E
MHaire	JDrake	RKellar	HGepford	RAzua	DAllen
/RA/	/LRicketson for/	/RA/	/RA/	/RA/	/RA/
5/8/13	5/9/13	5/8/13	5/9/13	5/6/13	5/14/13

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NOTICE OF VIOLATION

Arizona Public Service Company
Palo Verde Nuclear Generating Station

Docket No.: 05000528/529/530
License No.: NPF-41, -51, -74
EA-13-024

During an NRC inspection conducted from January 14 through 18, 2013, a violation of NRC requirements with two examples was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

> Title 10 CFR 50.71(e) requires, in part, that each person licensed to operate a nuclear power reactor under the provisions of 50.21 or 50.22, shall update periodically the final safety analysis report (FSAR), originally submitted as part of the application for the license, to assure that the information included in the report contains the latest information developed. The submittal shall include the effects of all changes made in the facility or procedures as described in the FSAR and all safety analyses and evaluations performed by the applicant or licensee, either in support of approved license amendments or in support of conclusions, that changes did not require a license amendment in accordance with § 50.59(c)(2). The updated information shall be appropriately located within the update to the FSAR.
>
> Contrary to the above requirement, the licensee did not update periodically the Updated Final Safety Analysis Report, originally submitted as part of the application for the license, to assure that the information included in the report contains the latest information developed. Specifically:
>
> 1. From 1988 to 2013, the licensee did not update Chapter 11.2.2 with a complete description of the liquid radioactive waste system, including pumping of the evaporator concentrates to the high total dissolved solids holdup tanks and a description of the temporary adsorption tanks and their use.
>
> 2. From December 2003 to January 2013, the licensee did not update Chapters 11.4.2.7 and 12.2.1.9 with a complete description of the Old Steam Generator Storage Facility, which was used for long-term storage of radioactive waste on the owner controlled site until decommissioning.

This is a Severity Level IV violation (Section 6.1.d).

Pursuant to the provisions of 10 CFR 2.201, Arizona Public Service is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region IV, and a copy to the NRC Resident Inspector - Palo Verde Nuclear Generating Station, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation; EA-13-024" and should include for each violation: (1) the reason for the violation or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken, and (4) the date when full

compliance will be achieved. Your response may reference or include previous docketed correspondence if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response with the basis for your denial to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html, to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days of receipt.

Dated this 14th day of May, 2013

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	50-528, 50-529, 50-530
License:	NPF-41, NPF-51, NPF-74
Report:	05000528/2013002, 05000529/2013002, 05000530/2013002
Licensee:	Arizona Public Service Company
Facility:	Palo Verde Nuclear Generating Station, Units 1, 2, and 3
Location:	5951 South Wintersburg Road Tonopah, Arizona
Dates:	January 1 through March 31, 2013
Inspectors:	M. Brown, Senior Resident Inspector M. Baquera, Resident Inspector D. Reinert, Resident Inspector J. Melfi, Project Engineer P. Elkmann, Senior Emergency Preparedness Inspector L. Carson II, Senior Health Physicist G. Guerra, CHP, Emergency Preparedness Inspector L. Ricketson, P.E., Senior Health Physicist N. Greene, Ph.D., Health Physicist J. O'Donnell, Health Physicist B. Larson, Senior Operations Engineer J. Laughlin, Emergency Preparedness Inspector, NSIR
Accompanied By:	P. Hernandez, Health Physicist
Approved By:	Don Allen, Chief Project Branch E Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000528, 529, 530/2013002; 01/01/2013 – 03/31/2013; Palo Verde Nuclear Generating Station (PVNGS), Integrated Resident and Regional Report; Op.Evals., Exer.Eval., Radioactive Gaseous & Liquid Effluent Treatment, Radioactive Solid Waste Processing, Event Flwp

The report covered a 3-month period of inspection by resident inspectors, announced baseline inspections by region-based inspectors, and a review by a headquarter's inspector. Five Green non-cited violations of significance were identified and one Severity Level IV violation. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." The cross-cutting aspect is determined using Inspection Manual Chapter 0310, "Components Within the Cross-Cutting Areas." Findings for which the significance determination process (SDP) does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified two examples of a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI "Corrective Action," for the failure of the licensee to promptly identify and correct conditions adverse to quality. Specifically, on July 19, 2012, personnel failed to follow Procedure 01DP-0AP12, "Palo Verde Action Request Processing," and enter into the corrective action process a failure to comply with technical specifications to enter limiting condition for operation 3.0.3 when maintenance activities rendered safety related inverters inoperable. In addition, on May 2, 2011, the licensee also failed to enter an unanalyzed diversion of emergency core cooling system flow into the corrective action process, despite procedural guidance to the contrary. The licensee entered the issues into the corrective action program as Palo Verde Action Request (PVAR) 4347283 and PVAR 4389514 and is assessing corrective actions.

  The inspectors concluded that the failure to promptly identify and correct conditions adverse to quality was a performance deficiency. The inspectors determined the performance deficiency is more than minor, and therefore a finding, because it adversely affected the equipment performance attribute of the Mitigating Systems Cornerstone and its objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined the two issues had similar causal factors and should be documented as one NCV in accordance with NRC enforcement guidance. The inspectors evaluated the significance of each issue under the SDP, as defined in Inspection Manual Chapter 0609.04, "Initial Characterization of Findings," and IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations."

For the issue associated with inoperable safety related inverters, the inspectors determined the finding to be of very low safety significance (Green) because all questions in Exhibit 2.A could be answered no. For the issue associated with an unanalyzed condition of the high pressure safety injection system, the inspectors determined that the finding represented a loss of system function and needed a detailed evaluation. The inspectors used the Palo Verde Standardized Plant Analysis Risk model, Revision 8.20, with a truncation limit of E-11 and performed a bounding significance determination and found the finding to be of very low safety significance (Green). The bounding change to the core damage frequency was 2.4E-9/year. The dominant core damage sequences included: medium break loss of coolant accident, system transient, and steam generator tube rupture. The very short exposure period minimized the significance. A Region IV senior reactor analyst reviewed the results and agreed with the conclustions. This finding has a cross-cutting aspect in the area of human performance associated with the decision making component because the licensee failed to use a systematic process for dealing uncertain conditions adverse to quality [H.1(a)] (Section 1R15).

- Green. The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of operations and engineering personnel to follow station procedures to provide an adequate technical justification for continued operation of a degraded structure, system, or component. After one channel of initiation logic inadvertently tripped for the Unit 3 containment spray actuation signal portion of the engineered safety features actuation system, plant operators declared the channel inoperable and entered Technical Specification 3.3.6, "Engineered Safety Features Actuation System Logic and Manual Trip," Condition B. Before troubleshooting began, operators evaluated the condition, declared the channel operable, and exited the technical specification condition. Plant personnel subsequently restored the channel after troubleshooting. The inspectors concluded that plant personnel did not consider all required functions and design requirements of the system and should not have declared the channel operable before completing troubleshooting and restoring the system to normal operation. This issue is captured in the corrective action program as Condition Report Disposition Request 4350321.

  The inspectors concluded that the failure of plant personnel to adequately evaluate the operability of a safety-related structure, system, or component was a performance deficiency. The inspectors concluded the performance deficiency is more than minor because, if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern. Specifically, a spurious signal or channel failure would have resulted in an inadvertent actuation of containment spray in Unit 3. The inspectors evaluated the significance of the issue under the SDP, as defined in Inspection Manual Chapter 0609.04, "Initial Characterization of Findings," and 0609 Appendix A, "The Significance Determination Process for Findings at-Power." Inspectors concluded that the finding was of very low safety significance (Green) because the finding is not a

design or qualification issue, did not represent an actual loss of safety function of the system or train, did not result in the loss of one or more trains of non-technical specification equipment, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors determined this finding has a cross-cutting aspect in the area of human performance associated with the component of resources because the licensee failed to provide sufficient training to plant personnel to ensure all aspects of the current licensing basis and design requirements are considered when evaluating degraded and non-conforming conditions for operability [H.2(b)] (Section 1R15).

- Green. A self-revealing, Green NCV of Technical Specification (TS) Limiting Condition for Operation (LCO) 3.0.4 was identified after Unit 2 operators entered a mode with a limiting condition for operation not met. Specifically, following maintenance on auxiliary feedwater pump steam supply valve, SGA-UV-138, plant personnel did not ensure the requirements of TS 3.7.5, "Auxiliary Feedwater System," were met prior to entering Mode 3. During subsequent testing, a bonnet steam leak was discovered on the valve, resulting in the valve being declared inoperable and the plant returned to Mode 5 for repairs. The licensee restored the valve to operable status before re-entering Mode 3. The licensee entered the issue into the corrective action program (CAP) as CRDR 4284491 and is evaluating further corrective actions.

  The inspectors concluded that the failure of plant personnel to comply with technical specifications was a performance deficiency. The inspectors concluded the performance deficiency is more than minor because it affected the equipment performance attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the significance of the issue under the SDP, as defined in Inspection Manual Chapter 0609.04, "Initial Characterization of Findings," and 0609 Appendix A, "The SDP for Findings at-Power." Inspectors concluded that the finding was of very low safety significance (Green) because the finding is not a design or qualification issue, did not represent an actual loss of safety function of the system or train, did not result in the loss of one or more trains of non-technical specification equipment, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors determined this finding has a cross-cutting aspect in the area of human performance associated with the component of resources because the licensee failed to provide an adequate work package to ensure the valve was operable prior to entering Mode 3 [H.2(c)] (Section 4OA3).

- Green. A self-revealing, Green NCV of 10 CFR Part 50, Appendix B, Criterion III "Design Control," was identified for the failure of the licensee to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. Specifically, operations personnel altered the piping configuration with an added fitting to a

low pressure safety injection drain line. As a result the pipe failed during shutdown cooling operations, rendering that train inoperable. The licensee repaired the weld in accordance with ASME Code, entered the issue into the licensee's CAP as CRDR 4263357,and revised procedural guidance to return components to their design configuration.

The inspectors concluded that the failure of the licensee to correctly translate the design basis into specifications, drawings, procedures and instructions was a performance deficiency. The performance deficiency was more than minor, therefore a finding, because it adversely affected the equipment performance attribute of the Mitigating Systems Cornerstone and its objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the significance of the issue under the SDP, as defined in Inspection Manual Chapter 0609.04, "Initial Characterization of Findings," and IMC 0609, Appendix G, "Shut Down Operations Significance Determination Process." The inspectors determined that because there was an injection path available, the leak could be isolated prior to depletion of the reactor water tank, and the steam generators were available for heat removal. As a result, the issue was found to be of very low safety significance (Green). The inspectors determined the finding had no cross-cutting issues because it is not indicative of current performance (Section 4OA3).

Cornerstone: Occupational and Public Radiation Safety

- SLIV. The inspectors identified a Severity Level IV violation of 10 CFR 50.71(e), "Maintenance of Records, Making of Reports," with two examples for the failure to restore compliance within a reasonable time after a previous Severity Level IV non-cited violation of 10 CFR 50.71(e) was identified. The violation was identified because the licensee failed to periodically update the Updated Final Safety Analysis Report (UFSAR) with all changes made in the facility or procedures. Specifically,

  Example 1: From 1988 to 2013, the licensee did not update Chapter 11.2.2.3, "Liquid Radwaste System," with a description of the temporary adsorption tanks and their use. The licensee has entered this violation into their corrective action program as PVAR 3075089.

  Example 2: From December 2003 to January 2013, the licensee made changes to the facility and procedures as described in the UFSAR, and performed safety analyses and evaluations in support of these changes, but failed to update the UFSAR to include these changes. Specifically, the licensee built the old steam generator storage facility used for long-term storage of radioactive waste (six replaced steam generators and three reactor vessel heads) on the owner controlled site until decommissioning. The licensee has entered this violation into their corrective action program as Condition Report (CR) 3398042 and PVAR 4330483.

This violation is more than minor because the NRC relies on licensees to identify and report conditions or events meeting the criteria specified in the regulations in order to perform its regulatory function. Because this issue affected the NRC's ability to perform its regulatory function, it was evaluated using the traditional enforcement process. The issue was characterized as a Severity Level IV violation in accordance with Section 6.1.d.3 of the NRC Enforcement Policy because the erroneous information in the UFSAR was not used to make an unacceptable change to the facility or procedures. A cross-cutting aspect was not assigned because the violation was handled through traditional enforcement (Section 2RS6 and 2RS8).

Cornerstone: Emergency Preparedness

- Green. The inspectors identified a Green NCV of 10 CFR 50.47(b)(14) for the licensee's failure to identify and correct a performance deficiency during an evaluated exercise. Specifically, the licensee failed to identify that the Emergency Director in the Simulator Control Room did not evaluate emergency action level RS-1 when information was available indicating a need to upgrade the emergency classification because of offsite radiation dose.

  The failure to identify a deficiency occurring during a drill and ensure correction is a performance deficiency within the licensee's control. The finding is more than minor because the failure to identify a deficiency and ensure correction impacts the Emergency Preparedness cornerstone objective associated with the emergency response organization performance cornerstone attribute. The finding is a non-cited violation of 10 CFR 50.47(b)(14). The finding was evaluated using the Emergency Preparedness SDP and identified as having very low safety significance because it was a failure to comply with NRC requirements and was not a loss of the planning standard function because the classification deficiency was associated with a successful performance indicator opportunity. The Emergency Director declared the correct emergency classification within fifteen minutes of performing the dose assessment report using an emergency action level for which conditions currently existed, although this was not the first emergency action level that applied. This issue was entered into the CAP as PVAR 4365021. The finding was assigned a cross-cutting aspect of 'Low Threshold,' because the licensee failed to completely and accurately recognize a performance deficiency [P.1.a] (Section 1EP1).

B. Licensee-Identified Violations

Violations of very low safety significance or 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 CAP. These violations and associated corrective action tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 1 operated at essentially full power until March 30, 2013, when the unit shut down and entered refueling outage 1R17. The unit remained shut down for the remainder of the inspection period.

Unit 2 operated at essentially full power during the inspection period.

Unit 3 operated at essentially full power until January 8, 2013, when the unit reduced power to approximately 40 percent to perform planned maintenance to repair main condenser tube leakage. Following the repairs, the unit returned to essentially full power on January 12, 2013. The unit operated at essentially full power until January 17, 2013, when the unit experienced a reactor power cutback to approximately 51 percent as a result of main feedwater pump B trip due to low suction pressure caused by a trip of heater drain pump B. Following repairs to the heater drain pump, the unit returned to essentially full power on January 19, 2013, and remained there for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment (71111.04)

Partial Walkdown

a. Inspection Scope

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

- January 8, 2013, Unit 2, high pressure safety injection train B
- January 24, 2013, Unit 3, essential cooling water train B
- March 13, 2013, Unit 1, emergency diesel generator train A
- March 14, 2013, Unit 1, low pressure safety injection train A

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could affect the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, UFSAR, technical specification requirements, administrative technical specifications, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also inspected accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating

parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four partial system walkdown samples as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

Quarterly Fire Inspection Tours

a. Inspection Scope

The inspectors conducted fire protection walkdowns that were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- January 8, 2013, Unit 2, auxiliary building, 51' 6" elevation
- January 16, 2013, Unit 1, auxiliary building, all elevations
- March 13, 2013, Unit 1, fuel building all elevations
- March 13, 2013, Unit 1, condensate storage pump house and tunnel
- March 14, 2013, Unit 3, spray pond pump house

The inspectors reviewed areas to assess if licensee personnel had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in good material condition; and had implemented adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features, in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to affect equipment that could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's CAP. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of five quarterly fire-protection inspection samples as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors reviewed the UFSAR, the flooding analysis, and plant procedures to assess susceptibilities involving internal flooding; reviewed the corrective action program to determine if licensee personnel identified and corrected flooding problems; inspected underground bunkers/manholes to verify the adequacy of sump pumps, level alarm circuits, cable splices subject to submergence, and drainage for bunkers/manholes; and verified that operator actions for coping with flooding can reasonably achieve the desired outcomes. The inspectors also inspected the areas listed below to verify the adequacy of equipment seals located below the flood line, floor and wall penetration seals, watertight door seals, common drain lines and sumps, sump pumps, level alarms, and control circuits, and temporary or removable flood barriers. Specific documents reviewed during this inspection are listed in the attachment.

- March 14, 2013, Unit 3, spray pond flow transmitter vaults

These activities constitute completion of one flood protection measures inspection sample and 1 bunker/manhole sample as defined in Inspection Procedure 71111.06-05.

b. Findings

No findings were identified.

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

.1 Quarterly Review of Licensed Operator Requalification Program

a. Inspection Scope

On February 6, 2013, the inspectors observed a crew of licensed operators in the plant's simulator during requalification testing. The inspectors assessed the following areas:

- Licensed operator performance
- The ability of the licensee to administer the evaluations
- The modeling and performance of the control room simulator
- The quality of post-scenario critiques

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

b. Findings

No findings were identified.

.2 Quarterly Observation of Licensed Operator Performance

a. Inspection Scope

On January 17, 2013, the inspectors observed the performance of on-shift licensed operators in the Unit 3 main control room. At the time of the observations, the plant was in a period of heightened activity due to a reactor power cut back. In addition, the inspectors assessed the operators' adherence to plant procedures, including conduct of shift operations and other operations department policies.

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

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

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk significant systems:

- February 27, 2013, Unit 1, 2, and 3, emergency safeguard features actuation system
- March 23, 2013, Unit 3, diverse auxiliary feedwater system extended unavailability

The inspectors reviewed events such as where ineffective equipment maintenance has resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- Implementing appropriate work practices
- Identifying and addressing common cause failures

- Scoping of systems in accordance with 10 CFR 50.65(b)
- Characterizing system reliability issues for performance
- Charging unavailability for performance
- Trending key parameters for condition monitoring
- Ensuring proper classification in accordance with 10 CFR 50.65(a)(1) or -(a)(2)
- Verifying appropriate performance criteria for structures, systems, and components classified as having an adequate demonstration of performance through preventive maintenance, as described in 10 CFR 50.65(a)(2), or as requiring the establishment of appropriate and adequate goals and corrective actions for systems classified as not having adequate performance, as described in 10 CFR 50.65(a)(1)

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the CAP with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed licensee personnel's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- January 16, 2013, Unit 1, high pressure safety injection train B removed from service for the performance of preventative maintenance
- February 4, 2013, Units 1, 2, and 3, startup transformer NAN-X02 maintenance
- February 14, 2013, Unit 3, elevated risk during emergency diesel generator B, essential cooling water train B, and essential spray pond pump B planned maintenance,

- February 28, 2013, Unit 1, elevated risk during train A planned maintenance

The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that licensee personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When licensee personnel performed emergent work, the inspectors verified that the licensee personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed the technical specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four maintenance risk assessments and emergent work control inspection sample(s) as defined in Inspection Procedure 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Evaluations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed the following assessments:

- July 19, 2012, Unit 2, entry into TS 3.0.3
- November 29, 2012, Unit 3, atmospheric dump valve steam leakage past seat
- January 6, 2013, Unit 3, engineered safety features actuation system initiation logic channel trip
- January 30, 2013, Unit 2, underground leaks due to domestic service water system water hammer
- February 5, 2013, Unit 2, charging pump A isolation valve failure to close
- February 20, 2013, Unit 1, unaccounted heat loads in the control room envelope
- March 12, 2013, Units 1, 2, and 3, Impact of Power Uprate on Spent Fuel Pool Criticality Analysis

The inspectors selected these operability and functionality assessments based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure technical specification operability was properly justified and to verify the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and UFSAR to the licensee's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. Additionally, the inspectors reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of seven operability evaluations inspection sample(s) as defined in Inspection Procedure 71111.15-05.

b. Findings

1. Introduction. The inspectors identified two examples of a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI "Corrective Action," for the failure of the licensee to promptly identify and correct conditions adverse to quality. Specifically, on July 19, 2012, personnel failed to follow Procedure 01DP-0AP12, "Palo Verde Action Request Processing," and enter into the corrective action process a failure to comply with technical specifications to enter limiting condition for operation 3.0.3 when maintenance activities rendered safety related inverters inoperable. In addition, on May 2, 2011, the licensee also failed to enter an unanalyzed diversion of emergency core cooling system flow in the corrective action process, despite procedural guidance to the contrary.

   Description. The first example occurred on July 19, 2012. During maintenance activities, operations personnel cascaded technical specifications when removing the Unit 2, Train A emergency cooling water pump from service. Cascading technical specifications declares all supported systems inoperable and requires entry into the applicable limiting condition for operation action statement. Emergency cooling water supports emergency chill water system which supports the essential ventilation for Train A and Train C 125VDC inverters. Without essential ventilation these components are inoperable. This condition is not described by technical specification limiting condition for operation and as such, limiting condition for operation 3.0.3 should have been entered. A licensee cannot voluntarily enter this condition for operational convenience. When operations personnel identified this issue, it was not entered into the corrective action program as required by Procedure 01DP-0AP12, "Palo Verde Action Request Processing." Operations personnel decided to determine if it was appropriate to apply the provisions of limiting condition of operation 3.0.6. retroactively. This provision of the technical specifications allows the licensee to not be compelled to enter the limiting conditions of operation for supported equipment provided the safety function can be maintained and verified by the performance of Procedure 40DP-9OP73 "Safety Function Determination Process." However, limiting condition of operation 3.0.6 requires operations personnel to perform Procedure 40DP-9OP73 "Safety Function

Determination Process," prior to using those provisions. Inspectors became aware of the operations personnel failure to resolve a condition adverse to quality using the corrective action process and informed the licensee. The licensee took prompt corrective action, when notified, and documented the issue as PVAR 4246789.

On May 2, 2011 PVAR 3841840 was initiated to gain clarification of the provision of TS 3.5.3 and 3.5.4 in regards to an operable injection header. This review determined that there was a possibility during high pressure safety injection check valve leak testing, a condition could exist that would prevent 100 percent of equivalent emergency core cooling system flow to the reactor coolant system. The licensee requested that computer modeling of flow be performed to validate this concern. Procedure 73ST-9SI05 "HPSI Check Valve Leak Testing," was put on hold despite no assertion that technical specifications were violated and the licensee determined that no condition adverse to quality existed. On October 12, 2012, the computer flow modeling determined there would not be 100 percent equivalent flow of the emergency core cooling system flow to the reactor coolant system given the plant configuration used in Procedure 73ST-9SI05. Inspectors determined at this time the licensee had more than sufficient information to enter this issue into the corrective action program as a condition adverse to quality and represents the second example of a failure to promptly identify a condition adverse to quality. The licensee entered this issue in the corrective action program as PVAR 4389514. The licensee modified the configurations allowed by the leak testing Procedures 73ST-9SI05 and 73ST-9SI03 and has determined that the condition was reportable under 10 CFR 50.73 requirements.

Analysis. The inspectors concluded that the failure to promptly identify and correct conditions adverse to quality was a performance deficiency. The inspectors determined the performance deficiency is more than minor, and therefore a finding, because it adversely affected the equipment performance attribute of the Mitigating Systems Cornerstone and its objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined the two issues had similar causal factors and should be documented as one NCV in accordance with NRC enforcement guidance. The inspectors evaluated the significance of each issue under the SDP, as defined in Inspection Manual Chapter 0609.04, "Initial Characterization of Findings," and IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." For the issue associated with inoperable safety related inverters, the inspectors determined the finding to be of very low safety significance (Green) because all questions in Exhibit 2.A could be answered no. For the issue associated with an unanalyzed condition of the high pressure safety injection system, the inspectors determined that the finding represented a loss of system function and needed a detailed evaluation.

The underlying technical issue involved the failure to recognize that a system alignment utilized for high pressure safety injection check valve leak testing resulted in the system being incapable of supplying required flow to the core in the event of an accident. The significance of this error was bound by using an exposure period composed of the accumulated time that this activity was performed when procedures would have allowed for this configuration. This exposure period was approximately 7 hours. The inspectors

used the "Palo Verde Standardized Plant Analysis Risk (SPAR)" model, Revision 8.20, dated May 31, 2012, with a truncation limit of E-11, to perform simplified calculations. Inspectors considered one train unavailable for high pressure safety injection and only two pathways available for injection on the redundant train, as bounding assumptions for the analysis. The incremental conditional core damage probability, assuming one year of exposure, for these sequences was 3.0E-6. The change to the core damage frequency (delta-CDF) considering the 7 hour exposure period was therefore:

delta-CDF = 3.0E-6 * 7hour/8760 hours per year = 2.4E-9/year

Since the change to the core damage frequency was less than 1.0E-7/year, the inspectors were not required to consider the contribution from external events or calculate the change to the large early release frequency. Since the calculated delta-CDF was less than 1E-6, and the large early release frequency was not a significant contributor, the finding was of very low safety significance (Green). A Region IV senior reactor analyst reviewed the results and agreed with the conclusion. This finding has a cross-cutting aspect in the area of human performance associated with the decision making component because the licensee failed to use a systematic process for dealing with conditions adverse to quality [H.1(a)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion XVI "Corrective Action," requires, in part, measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. Procedure 01DP-0AP12, "Palo Verde Action Request Processing," Revision 19, stated, in part, personnel shall initiate a PVAR for conditions adverse to quality such as technical specification non-compliance and deficiencies in documents that could lead to technical specification non-compliance. Contrary to the above, from July, 2012, to February, 2013, the licensee failed to initiate a PVAR for conditions adverse to quality such as technical specification non-compliance and deficiencies in documents that could lead to technical specification non-compliance. Specifically, on July 19, 2012, operations personnel failed to follow Procedure 01DP-0AP12, "Palo Verde Action Request Processing," Revision 19, and enter a failure to comply with technical specifications in the corrective action process. On October 26, 2012, personnel had sufficient information to identify that a surveillance test performed in the past had the capability to divert enough high pressure safety injection flow to render the system inoperable and did not enter this issue in the CAP. The licensee has entered the issues into the corrective action program and is assessing corrective actions. The licensee took immediate corrective action to address the underlying technical issues of cascading of technical specifications and surveillance testing. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as PVAR 4347283 and PVAR 4389514, this violation is being treated as a NCV in accordance with Section 2.3.2.a of the Enforcement Policy. NCV 05000528; 529; 530/2013002-01 "Multiple Failures to Identify Conditions Adverse to Quality."

2. Introduction. The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of operations and engineering personnel to follow station procedures to provide an adequate technical justification for continued operation of a degraded structure, system, or component.

Specifically, after one channel of the Unit 3 containment spray actuation signal (CSAS) initiation logic tripped, plant personnel did not consider all required functions and design requirements of the system and should not have declared the channel operable before completing troubleshooting and restoring the system to normal operation.

Description. CSAS is a portion of the engineered safety features actuation system (ESFAS) and is designed to initiate containment spray to reduce containment pressure and temperature during accident conditions. On January 6, Unit 3 operators received alarms and indications of a CSAS half-leg trip as a result of an inadvertent trip of the B channel of initiation logic. Operators immediately declared the B channel inoperable and entered Technical Specification 3.3.6, "Engineered Safety Features Actuation System (ESFAS) Logic and Manual Trip," Condition B, which requires four channels of initiation logic to be operable. Plant operators subsequently evaluated the condition, declared the channel operable and exited the technical specification condition, before technicians began troubleshooting. After troubleshooting concluded the trip was a random occurrence, technicians reset the initiation logic channel and restored it to its normal condition.

The inspectors challenged the licensee's conclusion that ESFAS was operable with one channel of initiation logic tripped. ESFAS is designed to ensure a valid condition results in system actuation and also ensures a spurious signal will not result in unwarranted system actuation. In a half-leg trip, one spurious signal would have resulted in inadvertent actuation of containment spray in Unit 3. Additionally, Technical Specification Surveillance Requirement 3.3.6.1 requires channel functional tests be performed on each ESFAS logic channel. This surveillance requirement could not be met for the given condition. As such, the condition did not meet the definition of operable as defined in Procedure 40DP-9OP26, "Operations PVAR Processing and Operability Determination/Functional Assessment." Per the procedure, an SSC that does not meet a surveillance requirement must be declared inoperable. Also, the procedure states that a system is expected to perform as designed, tested, and maintained. In this condition, the B channel of initiation logic is not performing as designed, tested, and maintained.

Based on the available licensing basis information, the inspectors concluded that the licensee did not provide adequate technical justification for declaring the CSAS portion of ESFAS operable before restoring it to its normal configuration.

While investigating this issue, the inspectors identified a similar example that occurred in Unit 1 on December 28, 2011. At 02:18, during surveillance testing, operators declared the channel C manual trip function for the containment isolation actuation system (CIAS) inoperable and entered TS LCO 3.3.6, Condition B after a half-leg trip occurred while performing the manual trip function of the test. Operators subsequently declared the channel operable at 12:41 and exited the TS LCO because subsequent troubleshooting did not identify a failure of the handswitch, even though the channel and half-leg trips could not be reset. The system was able to be reset at 14:48. At 14:55, during troubleshooting, another channel C CIAS half-leg trip occurred. The trip was caused by tapping on the handswitch. However, operators concluded that the handswitch remained operable and no entry into TS LCO 3.3.6 Condition B was required since "the

handswitch is failing to the actuated safety position." The inspectors determined that this condition also does not meet the requirements of Procedure 40DP-9OP26.

The inspectors determined that the most significant contributor to this issue was insufficient training provided to plant personnel on the operability determination process and the requirement that systems must perform as designed, tested, and maintained to be considered operable. The licensee entered this issue into their corrective action program as CRDR 4350321, and initiated action to provide additional training to plant personnel.

Analysis. The inspectors concluded that the failure of plant personnel to adequately evaluate the operability of a safety-related structure, system, or component was a performance deficiency. The inspectors concluded the performance deficiency is more than minor because, if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern. Specifically, a spurious signal or channel failure would have resulted in an inadvertent actuation of containment spray in Unit 3. The inspectors evaluated the significance of the issue under the SDP, as defined in Inspection Manual Chapter 0609.04, "Initial Characterization of Findings," and 0609 Appendix A, "The Significance Determination Process for Findings at-Power." Inspectors concluded that the finding affected the Mitigating System cornerstone and was of very low safety significance (Green) because the finding is not a design or qualification issue, did not represent an actual loss of safety function of the system or train, did not result in the loss of one or more trains of non-technical specification equipment, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors determined this finding has a cross-cutting aspect in the area of human performance associated with the component of resources because the licensee failed to provide sufficient training to plant personnel to ensure all aspects of the current licensing basis and design requirements are considered when evaluating degraded and non-conforming conditions for operability [H.2(b)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and be accomplished in accordance with these instructions, procedures, or drawings. Procedure 40DP-9OP26, "Operations PVAR Processing and Operability Determination/Functional Assessment," Revision 33, provided guidelines and instructions for evaluating the operability of safety-related structures, systems, or components, when degraded conditions were identified. Contrary to the above, on January 6, 2013, plant personnel failed to accomplish an activity affecting quality in accordance with the prescribed instructions, procedures, and drawings. Specifically, plant personnel did not provide adequate technical justification for operability following an inadvertent trip of one channel of Unit 3 engineered safety features actuation system initiation logic. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as CRDR 4350321, this violation is being treated as a NCV in accordance with Section 2.3.2 of the Enforcement Policy: NCV 05000530/2013002-02, "Failure to Provide Adequate Technical Justification for Operability."

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the following post-maintenance activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- January 16, 2013,Unit 1, containment sump to train B safety injection isolation valve testing
- January 16, 2013, Unit 1, high pressure safety injection closure stud retorque
- January 17, 2013, Unit 2, emergency diesel generator B instantaneous pre-position circuit board replacement
- February 7, 2013, Unit 3, reactor trip switchgear A testing following breaker replacement
- February 15, 2013, Unit 3, emergency diesel generator B

The inspectors selected these activities based upon the structure, system, or component's ability to affect risk. The inspectors evaluated these activities for the following (as applicable):

- The effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed
- Acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate

The inspectors evaluated the activities against the technical specifications, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the corrective action program and that the problems were being corrected commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of five post-maintenance testing inspection sample(s) as defined in Inspection Procedure 71111.19-05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the UFSAR, procedure requirements, and technical specifications to ensure that the surveillance activities listed below demonstrated that the systems, structures, and/or components tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the significant surveillance test attributes were adequate to address the following:

- Preconditioning
- Evaluation of testing impact on the plant
- Acceptance criteria
- Test equipment
- Procedures
- Jumper/lifted lead controls
- Test data
- Testing frequency and method demonstrated technical specification operability
- Test equipment removal
- Restoration of plant systems
- Fulfillment of ASME Code requirements
- Updating of performance indicator data
- Engineering evaluations, root causes, and bases for returning tested systems, structures, and components not meeting the test acceptance criteria were correct
- Reference setting data
- Annunciators and alarms setpoints

The inspectors also verified that licensee personnel identified and implemented any needed corrective actions associated with the surveillance testing.

- January 18, 2013, Unit 2, control element assembly operability surveillance test,

- January 16, 2013, Unit 1, high pressure safety injection pump, train B inservice test
- January 31, 2013, Unit 3, containment spray, train A, inservice test
- February 21, 2013, Unit 3, reactor coolant system leakage testing
- February 25, 2013, Unit 3, train A engineered safety features actuation system subgroup relay testing

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of five surveillance testing inspection samples as defined in Inspection Procedure 71111.22-05.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP1 Exercise Evaluation (71114.01)

a. Inspection Scope

The inspectors observed the 2013 biennial emergency plan exercise to determine if the exercise acceptably tested major elements of the emergency plan, provided opportunities to demonstrate key emergency response organization skills, and avoided participant preconditioning. The scenario simulated,

- A series of significant seismic events affecting the plant site
- A loss of offsite power because of earthquake damage to switchyard components and offsite power lines
- An injured and contaminated plant employee
- Damage to plant equipment
- Failure of a Diesel Generator on Unit 3
- A steam generator tube rupture on Unit 1 with an unisolable steam leak to the environment through a steam system safety valve

To demonstrate the licensee personnel's capability to implement their emergency plan.

The inspectors evaluated exercise performance by focusing on the risk-significant activities of event classification, offsite notification, recognition of offsite dose consequences, and development of protective action recommendations, in the Control Room Simulator and the following dedicated emergency response facilities:

- Technical Support Center
- Operations Support Center
- Emergency Operations Facility; and
- Joint Information Center

The inspectors assessed recognition of, and response to, abnormal and emergency plant conditions, the transfer of decision-making authority and emergency function responsibilities between facilities, onsite and offsite communications, protection of emergency workers, emergency repair evaluation and capability, and the overall implementation of the emergency plan to protect public health and safety and the environment. The inspectors compared the observed exercise performance with the requirements in the facility emergency plan, 10 CFR 50.47(b), 10 CFR Part 50, Appendix E to 10 CFR Part 50, and with the guidance in the emergency plan implementing procedures and other federal guidance.

The inspectors attended the post-exercise critiques in each emergency response facility to evaluate the initial licensee self-assessment of exercise performance. The inspectors also attended a subsequent formal presentation of critique items to plant management.

The inspectors reviewed fifteen drill and exercise evaluation reports and summaries of 286 CAP entries initiated between April 2011 and March 2013, to identify trends in emergency response organization performance. The inspectors also reviewed the current facility emergency plan revision, emergency response facility implementing procedures, and procedures for the performance of associated emergency functions. The specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.01-06.

b. Findings

Introduction. The inspectors identified a Green NCV of 10 CFR 50.47(b)(14) for the licensee's failure to identify a deficiency during an evaluated exercise.

Description. The NRC identified that the licensee failed to identify a performance deficiency in recognizing entry conditions to an emergency classification that occurred during an evaluated exercise and the deficiency was not corrected.
The inspectors observed emergency response organization performance in the licensee's Simulator Control Room during an exercise conducted March 6, 2013.
The inspectors reviewed a dose assessment forecast generated at 8:11 a.m. having Thyroid CDE results of 620.9 mrem at the site boundary for the projected release

duration, a value that exceeded the 500 mrem Thyroid CDE threshold of emergency action level RS-1. The dose assessment report included a computer-generated warning that stated, “Recommend Upgrading Emergency Classification.” The inspectors also identified an 8:16 a.m. entry in the Shift Technical Advisor’s log that recorded the 620 mrem site boundary Thyroid CDE value; therefore, the inspectors concluded the dose assessor had appropriately shared dose assessment results with the command-and-control position.

The operating crew initiated a manual safety injection at 8:18 a.m. meeting the threshold for emergency action level FS-1. The Emergency Director subsequently classified a Site Area Emergency based on FS-1 at 8:24 a.m., 13 minutes after the RS-1 threshold was met. The licensee appropriately identified that the Emergency Director incorrectly recorded and announced the classification time as 8:28 a.m., 17 minutes after meeting the RS-1 threshold. The inspectors concluded the performance indicator classification opportunity associated with the Site Area Emergency declaration was successful because conditions for FS-1 did exist when the classification was made, and classification was made within 15 minutes of initially meeting the Site Area Emergency threshold.

The inspectors concluded the failure of the Emergency Director and Shift Technical Advisor to evaluate emergency action level RS-1 could have affected implementation of the emergency plan had the manual safety injection happened at 8:26 a.m. or later and, therefore, this performance constituted a weakness requiring corrective action. The inspectors subsequently observed the emergency preparedness department report to management concerning exercise performance. The inspectors noted that licensee evaluators did not identify that dose assessment results indicating a Site Area Emergency had been provided the Emergency Director prior to the manual safety injection, and that the Emergency Director had failed to evaluate emergency action level RS-1.

Analysis. The failure to identify a deficiency occurring during a drill and ensure correction is a performance deficiency within the licensee’s ability to control. Manual Chapter 0609, Appendix B, Section 2, defines a weakness (deficiency) as performance which would have prevented the effective implementation of the licensee’s emergency plan had it occurred during an actual event. The failure to recognize that an upgrade in emergency classification was required based on dose assessment results could have prevented the effective implementation of offsite emergency plans under different circumstances. The finding is more than minor because the failure to identify a deficiency and ensure correction impacts the Emergency Preparedness cornerstone objective. The performance weakness was associated with the emergency response organization performance and offsite emergency preparedness cornerstone attributes. The finding was associated with a violation of NRC requirements. The finding was evaluated using the Emergency Preparedness SDP and was identified as having very low safety significance (Green) because it was a failure to comply with NRC requirements and was not a loss of the planning standard function. The planning standard function was not lost because the failure to identify conditions requiring an upgrade in emergency classification was associated with a successful performance

indicator opportunity during an evaluated exercise. Specifically, the emergency response organization upgraded to the correct emergency classification within fifteen minutes of performing the dose assessment report using an emergency action level for which conditions currently existed, although this was not the first emergency action level that applied. This issue was entered into corrective action program as PVAR 4365021. The finding was assigned a cross-cutting aspect of 'Low Threshold,' because the licensee failed to completely and accurately recognize a performance deficiency [P.1.a].

Enforcement. Title 10 of the Code of Federal Regulations, 50.47(b)(14), states in part, that deficiencies identified in drills and exercises are (will be) corrected. Contrary to the above, PVNGS failed to identify a deficiency during an exercise conducted March 6, 2013 and ensure that it will be corrected. Specifically, the licensee failed to recognize that an upgrade to the emergency classification was required based on dose assessment results. Corrective actions were not implemented because the licensee did not identify the performance as a deficiency requiring correction. Because this failure is of very low safety significance and has been entered into the licensee's corrective action system, this violation is being treated as an NCV, consistent with Section 2.3.2.a of the NRC Enforcement Policy: NCV 05000538, 05000529, 05000530/2013002-03, "Failure to identify weak performance during an exercise."

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

a. Inspection Scope

The NSIR headquarters staff performed an in-office review of the latest revisions of various Emergency Plan Implementing Procedures (EPIPs) and the Emergency Plan located under ADAMS accession numbers ML13018A005 and ML123550784 as listed in the attachment.

The licensee determined that in accordance with 10 CFR 50.54(q), the changes made in the revisions resulted in no reduction in the effectiveness of the plan, and that the revised plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The NRC review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspection. The specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two samples as defined in Inspection Procedure 71114.04-05.

Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on February 6, 2013, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the technical support center to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.06-05.

b. Findings

No findings were identified.

1EP8 Exercise Evaluation – Scenario Review (71114.08)

a. Inspection Scope

The inspectors performed an in-office review of the licensee's preliminary scenario for the March 6, 2013, biennial emergency preparedness exercise, submitted December 21, 2012. The inspectors reviewed the preliminary scenario to determine whether the scenario would acceptably test the major elements of the licensee emergency plan, provide opportunities to maintain key emergency preparedness skills, and avoid participant preconditioning. The specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.08-06.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Public Radiation Safety and Occupational Radiation Safety

2RS5 Radiation Monitoring Instrumentation (71124.05)

a. Inspection Scope

This area was inspected to verify the licensee is assuring the accuracy and operability of radiation monitoring instruments that are used to: (1) monitor areas, materials, and workers to ensure a radiologically safe work environment; and (2) detect and quantify radioactive process streams and effluent releases. The inspectors used the requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspectors interviewed licensee personnel, performed walkdowns of various portions of the plant, and reviewed the following items:

- Selected plant configurations and alignments of process, post accident, and effluent monitors with descriptions in the Final Safety Analysis Report and the offsite dose calculation manual

- Select instrumentation, including effluent monitoring instrument, portable survey instruments, area radiation monitors, continuous air monitors, personnel contamination monitors, portal monitors, and small article monitors to examine their configurations and source checks

- Calibration and testing of process and effluent monitors, laboratory instrumentation, whole body counters, post accident monitoring instrumentation, portal monitors, personnel contamination monitors, small article monitors, portable survey instruments, area radiation monitors, electronic dosimetry, air samplers, continuous air monitors

- Audits, self-assessments, and corrective action documents related to radiation monitoring instrumentation since the last inspection

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.05-05.

b. Findings

No findings were identified.

2RS6 Radioactive Gaseous and Liquid Effluent Treatment (71124.06)

a. Inspection Scope

This area was inspected to: (1) ensure the gaseous and liquid effluent processing systems are maintained so radiological discharges are properly mitigated, monitored, and evaluated with respect to public exposure; (2) ensure abnormal radioactive gaseous or liquid discharges and conditions, when effluent radiation monitors are out-of-service, are controlled in accordance with the applicable regulatory requirements and licensee procedures; (3) verify the licensee's quality control program ensures the radioactive effluent sampling and analysis requirements are satisfied so discharges of radioactive materials are adequately quantified and evaluated; and (4) verify the adequacy of public dose projections resulting from radioactive effluent discharges. The inspectors used the requirements in 10 CFR Part 20; 10 CFR Part 50, Appendices A and I; 40 CFR Part 190; the Offsite Dose Calculation Manual, and licensee procedures required by the Technical Specifications as criteria for determining compliance. The inspectors interviewed licensee personnel and reviewed and/or observed the following items:

- Radiological effluent release reports since the previous inspection and reports related to the effluent program issued since the previous inspection
- Effluent program implementing procedures, including sampling, monitor set point determinations and dose calculations
- Equipment configuration and flow paths of selected gaseous and liquid discharge system components, filtered ventilation system material condition, and significant changes to their effluent release points, and associated 10 CFR 50.59 reviews
- Selected portions of the routine processing and discharge of radioactive gaseous and liquid effluents (including sample collection and analysis)
- Controls used to ensure representative sampling and appropriate compensatory sampling
- Results of the inter-laboratory comparison program
- Effluent stack flow rates
- Surveillance test results of technical specification-required ventilation effluent discharge systems since the previous inspection
- Significant changes in reported dose values
- A selection of radioactive liquid and gaseous waste discharge permits
- Part 61 analyses and methods used to determine which isotopes are included in the source term

- Offsite dose calculation manual changes
- Meteorological dispersion and deposition factors
- Latest land use census
- Records of abnormal gaseous or liquid tank discharges
- Groundwater monitoring results
- Changes to the licensee's written program for indentifying and controlling contaminated spills/leaks to groundwater
- Identified leakage or spill events and entries made into 10 CFR 50.75 (g) records, if any, and associated evaluations of the extent of the contamination and the radiological source term
- Offsite notifications and reports of events associated with spills, leaks, or groundwater monitoring results
- Audits, self-assessments, reports, and corrective action documents related to radioactive gaseous and liquid effluent treatment since the last inspection

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of the one required sample, as defined in Inspection Procedure 71124.06-05.

b. Findings

Failure to Maintain the Updated Final Safety Analysis Report - Liquid Waste

Introduction. Example 1 of 2: The inspectors identified a Severity Level IV violation of 10 CFR 50.71(e), "Maintenance of Records, Making of Reports," for the failure to periodically update the UFSAR with all changes made in the facility or procedures, associated with the liquid radioactive waste system. Between 1988 and 2013, the licensee did not update Chapter 11.2.2.3, "Liquid Radwaste System" with a description of the temporary adsorption tanks and their use. This issue has been categorized as a cited Severity Level IV violation in accordance with the NRC Enforcement Policy because the licensee failed to restore compliance within a reasonable period of time after a previous Severity Level IV NCV of 10 CFR 50.71(e) was identified in 2007.

Description. During a plant walkdown in Unit 2 on January 15, 2013, the inspectors reviewed components of the liquid radioactive waste system. Inspectors asked licensee representatives about the identification and function of a component observed on the 120-foot elevation of the radioactive waste building. Licensee representatives referred to the component as a temporary adsorption vessel (TAV) and explained the function of

the component was to remove organic solids. The inspectors had not seen a description of the component in the UFSAR and asked how long the component had been used. Licensee representatives stated that similar components were used in all three units and were installed in approximately 1990 and used until the current date. Inspectors asked for assistance in finding a description for the TAVs in the UFSAR. However, licensee representatives acknowledged that a description of the vessels or their function was not included in the UFSAR. Licensee representatives stated that the failure to include a description of the TAVs in the UFSAR was identified during the determination of the extent of condition, following the NRC's identification of NCV 05000529/2007012-18, "Failure to Periodically Update the Updated Final Safety Analysis Report." Specifically, the NRC found the licensee operating the Unit 2 liquid radiological waste system in a manner different than that specified by the UFSAR. The licensee pumped evaporator concentrates to the high total dissolved solids holdup tanks rather than the concentrate monitor tanks as specified in UFSAR Section 11.2.2.

During the 95003 inspection in 2007, the NRC identified that the licensee was using an alternate flow path for the evaporator concentrate in the Unit 2 liquid radiological waste system, from what was described in the UFSAR. The violation was treated as a NCV consistent with the NRC Enforcement Policy and documented in NRC Inspection Report 05000529/2007012, dated February 1, 2008 (ML08032562). As a result of this NRC-identified violation, the licensee reviewed the extent of the condition and found that the TAV was not described in the UFSAR, as well. The licensee initiated Condition Report/Disposition Request (CRDR) 3212405, dated August 20, 2008, to address the extent of conditions. The CRDR 3212405 documented that the TAV had been in use since 1988.

During the current inspection in January 2013, the inspectors observed that the licensee continued to operate the Unit 2 liquid radiological waste system in a manner different from that specified in the UFSAR. Specifically, the licensee continued to pump evaporator concentrates to the high total dissolved solids holdup tanks rather than the concentrate monitor tanks, as specified in the UFSAR, Section 11.2.2, and other components used by the system, such as the TAV, were not described in the UFSAR. Therefore, at least one aspect of the original condition was not corrected and the licensee failed to periodically update the UFSAR with other changes made to the liquid radioactive waste system.

Further reviews of CRDR 3212405 revealed the licensee had determined the TAVs were not shown on plant drawings and did not have equipment-identification assigned. The inspectors also noted a number of corrective actions were assigned in CRDR 3212405 and asked for additional information to verify the corrective actions had been completed. Licensee representatives reviewed the status of the assigned corrective actions and acknowledged the actions had not been completed.

Analysis. The failure to update the UFSAR to reflect changes made to the facility was a violation of regulatory requirements. This issue was evaluated using traditional enforcement because it had the potential to impact the NRC's ability to perform its regulatory function. The issue was characterized as a Severity Level IV violation in

accordance with Section 6.1.d.3 of the NRC Enforcement Policy because the erroneous information in the UFSAR was not used to make an unacceptable change to the facility or procedures. A cross-cutting aspect was not assigned because the violation was handled through traditional enforcement.

Enforcement. Title 10 CFR 50.71(e) requires in part, that each person licensed to operate a nuclear power reactor shall update periodically the UFSAR to assure that the information included in the report contains the latest information developed. This submittal shall include the effects of all changes made in the facility or procedures as described in the UFSAR. Contrary to the above, since 1988, the licensee failed to assure that the information included in the UFSAR contains the latest information developed to include the effects of all changes made in the facility or procedures. Specifically, the licensee had been operating the Unit 2 liquid radwaste system in a manner different than that specified by UFSAR. The changes made to the facility and procedures, which were not updated to the UFSAR, include pumping evaporator concentrate to the high total dissolved solids holdup tanks starting in 2002, rather than the concentrate monitor tanks as specified in UFSAR Chapter 11.2.2, and utilizing the TAV to remove organic solids, since 1988. This issue is being cited as a Severity Level IV violation consistent with Section 6.1.d.3 of the NRC Enforcement Policy. The licensee failed to update the UFSAR and fully restore compliance within a reasonable period of time after the original violation was identified. Therefore, a notice of violation will be issued, NOV 05000528; 529; 530/2013002-04, "Failure to Maintain the Updated Final Safety Analysis Report for Radwaste Systems and Processes."

2RS7 Radiological Environmental Monitoring Program (71124.07)

a. Inspection Scope

This area was inspected to: (1) ensure that the radiological environmental monitoring program verifies the impact of radioactive effluent releases to the environment and sufficiently validates the integrity of the radioactive gaseous and liquid effluent release program; (2) verify that the radiological environmental monitoring program is implemented consistent with the licensee's technical specifications and/or offsite dose calculation manual and validate that the radioactive effluent release program meets the design objective contained in Appendix I to 10 CFR Part 50; and (3) ensure that the radiological environmental monitoring program monitors non-effluent exposure pathways, is based on sound principles and assumptions, and validates that doses to members of the public are within the dose limits of 10 CFR Part 20 and 40 CFR Part 190, as applicable. The inspectors reviewed and/or observed the following items:

- Annual environmental monitoring reports and offsite dose calculation manual
- Selected air sampling and thermoluminescence dosimeter monitoring stations
- Collection and preparation of environmental samples

- Operability, calibration, and maintenance of meteorological instruments
- Selected events documented in the annual environmental monitoring report which involved a missed sample, inoperable sampler, lost thermoluminescence dosimeter, or anomalous measurement
- Selected structures, systems, or components that may contain licensed material and has a credible mechanism for licensed material to reach ground water
- Records required by 10 CFR 50.75(g)
- Significant changes made by the licensee to the offsite dose calculation manual as the result of changes to the land census or sampler station modifications since the last inspection
- Calibration and maintenance records for selected air samplers, composite water samplers, and environmental sample radiation measurement instrumentation
- Interlaboratory comparison program results
- Audits, self-assessments, reports, and corrective action documents related to the radiological environmental monitoring program since the last inspection

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.07-05.

b. Findings

No findings were identified.

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation (71124.08)

a. Inspection Scope

This area was inspected to verify the effectiveness of the licensee's programs for processing, handling, storage, and transportation of radioactive material. The inspectors used the requirements of 10 CFR Parts 20, 61, and 71 and Department of Transportation regulations contained in 49 CFR Parts 171-180 for determining compliance. The inspectors interviewed licensee personnel and reviewed the following items:

- The solid radioactive waste system description, process control program, and the scope of the licensee's audit program

- Control of radioactive waste storage areas including container labeling/marking and monitoring containers for deformation or signs of waste decomposition

- Changes to the liquid and solid waste processing system configuration including a review of waste processing equipment that is not operational or abandoned in place

- Radio-chemical sample analysis results for radioactive waste streams and use of scaling factors and calculations to account for difficult-to-measure radionuclide's

- Processes for waste classification including use of scaling factors and 10 CFR Part 61 analysis

- Shipment packaging, surveying, labeling, marking, placarding, vehicle checking, driver instructing, and preparation of the disposal manifest

- Audits, self-assessments, reports, and corrective action reports radioactive solid waste processing, and radioactive material handling, storage, and transportation performed since the last inspection

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.08-05.

b. Findings

Failure to Maintain the Updated Final Safety Analysis Report - Solid Waste

Introduction. Example 2 of 2: The inspectors identified a Severity Level IV violation of 10 CFR 50.71(e), "Maintenance of Records, Making of Reports", for failure to properly update the UFSAR with all changes made in the facility or procedures, associated with the Old Steam Generator Storage Facility (OSGSF) that was constructed in 2002 for long-term storage of large decommissioned components. This issue has been categorized as a cited Severity Level IV violation in accordance with the NRC Enforcement Policy because the licensee failed to restore compliance, within a reasonable period of time after a previous Severity Level IV NCV of 10 CFR 50.71(e) was identified in 2010.

Description. In 2003, the licensee built the OSGSF for long-term solid radioactive waste storage of the two Unit 2 old steam generators. In 2005, the licensee added space for Units 1 and 3 old steam generators. In 2009, the licensee added storage capacity for the three old reactor vessel heads. The amount of radioactivity stored in the OSGSF was calculated to be in excess of 250 curies of Cobalt-60. However, this significant source of radioactivity and the detailed information for the OSGSF was not described in the licensee's UFSAR. On February 9, 2010, the NRC identified a Severity Level IV non-cited violation for the failure to update the UFSAR as required by 10 CFR 50.71(e),

and documented the NCV in NRC Inspection Report 05000528; 529; 530/2009005 (ML100400070). During the January 2013 radiation protection inspection, the inspectors reviewed the licensee's implementation of corrective actions associated with the 2010 NCV. The licensee's corrective actions were initially addressed in CRDR 3398042, which included an apparent cause evaluation. The licensee's apparent cause for the violation stated, in part, that "Without clear procedural guidance, applicable regulations were evaluated with a narrow point of view resulting in Chapters 11 and/or 12 not being updated to reflect the OSGSF."

The licensee submitted a revision of the UFSAR to the NRC adding Chapters 11.4.2.7 and 12.2.1.9; both titled "Old Steam Generator/Old Reactor Vessel Closure Head Storage Facility (OSG/ORVCHSF)." In this revision submittal, dated June 2011, Chapter 11.4.2.7 of the USAR merely stated that the OSG/ORVCHSF provides long-term storage of large contaminated equipment, specifically six steam generators and three reactor vessel heads. Chapter 12.2.1.9 stated what the facility was designed to do and that it satisfies all the design requirements and criteria for temporary storage of the radioactive materials contained. The UFSAR description stated the radiological design provides adequate shielding from the component source term assumed to consist solely of Cobalt-60. This chapter ends with a description of the maximum dose rates at the surface of the facility and access controls.

The inspectors reviewed the UFSAR and compared the information to Regulatory Guide 1.70, "Standard, Format, and Content of a Safety Analysis Report," Revision 3, to which the licensee had committed in Section 1.8 of the UFSAR. Regulatory Guide 1.70 describes the content of the UFSAR Chapter 11, Section 11.4, "Solid Waste Management System," and Chapter 12, Section 12.2.1, "Radiation Contained Sources." The inspectors determined that the information added in the June 2011 revision of the UFSAR inadequately addressed the 2010 non-cited violation. Specifically, significant sources of radioactivity and radioactive waste stored in the OSG/ORVCHSF were not adequately described in Chapter 11 or 12 of the licensee's UFSAR. Some of the information missing about this storage facility includes, but is not limited to, the design basis (maximum and expected volume of waste and quantity of stored radioactivity), the system description (method for packaging, waste storage capacity, and expected onsite storage time), the basis for the radiation protection design (described for input into shielding design calculations), the source location (specified for locating on plant layout drawings), and the source description of sources exceeding 100 millicuries (quantity, form, and use).

As of January 17, 2013, the inspectors concluded that the corrective actions implemented by CRDR 3398042 for the 2010 NCV were still inadequate to demonstrate compliance with 10 CFR 50.71(e), based on the amount of detailed information missing from the UFSAR. This issue was re-entered into the licensee's CAP as PVAR 4330483.

Analysis. Failure to properly update the UFSAR as required by 10 CFR 50.71(e) with a detailed description of the OSGSF was a violation of regulatory requirements. This issue was evaluated using traditional enforcement because it had the potential to impact the NRC's ability to perform its regulatory function. The issue was characterized as a

Severity Level IV violation in accordance with Section 6.1.d.3 of the NRC Enforcement Policy, in that, the erroneous [incomplete] information in the Final Safety Analysis Report Updated was not used to make an unacceptable change to the facility or procedures. A cross-cutting aspect was not assigned because the violation was handled through traditional enforcement.

Enforcement. Title 10 CFR 50.71(e), "Maintenance of Records, Making of Reports," states, in part, that each person licensed to operate a nuclear power reactor shall update periodically the Final Safety Analysis Report originally submitted as part of the application for the license, to assure that the information included in the report contains the latest information developed. This submittal shall include the effects of all changes made in the facility or procedures as described in the UFSAR. Contrary to the above, from December 2003 to January 2013, the licensee failed to assure that the information included in the UFSAR contains the latest information developed to include the effects of all changes made in the facility or procedures. Specifically, the licensee built the OSGSF for long-term storage of storage of radwaste, which includes six replaced steam generators and three reactor vessel heads, on the owner controlled site until decommissioning of the facility as part of license termination. The licensee made changes to the facility and procedures as described in the UFSAR, performed safety analyses and evaluations in support of these changes; however, failed to update the UFSAR with the specific, detailed information required by these changes. This issue is being cited as a Severity Level IV violation consistent with Section 6.1.d.3 of the NRC Enforcement Policy. The licensee failed to update the UFSAR and fully restore compliance within a reasonable period of time after the original violation was identified. Therefore, a notice of violation will be issued, NOV 05000528; 529; 530/2013002-04, "Failure to Maintain the Updated Final Safety Analysis Report for Radwaste Systems and Processes."

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the performance indicator data submitted by the licensee for the fourth quarter 2012 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, "Performance Indicator Program."

This review was performed as part of the inspectors' normal plant status activities and, as such, did not constitute a separate inspection sample.

b. Findings

No findings were identified.

.2 Unplanned Scrams per 7000 Critical Hours (IE01)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams per 7,000 critical hours performance indicator for Palo Verde Units 1, 2 and 3 for the period from the first quarter 2012 through the fourth quarter 2012. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, and NRC integrated inspection reports for the period of January 2012 through December 2012, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of three unplanned scrams per 7,000 critical hours samples as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.3 Unplanned Scrams with Complications (IE02)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams with complications performance indicator for Palo Verde Units 1, 2 and 3 for the period from the first quarter 2012 through the fourth quarter 2012. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, and NRC integrated inspection reports for the period of January 2012 through December 2012, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of three unplanned scrams with complications samples as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.4 Unplanned Power Changes per 7000 Critical Hours (IE03)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned power changes per 7,000 critical hours performance indicator for Palo Verde Units 1, 2 and 3 for the period from the first quarter 2012 through the fourth quarter 2012. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, maintenance rule records, event reports, and NRC integrated inspection reports for the period of January 2012 through December 2012, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of three unplanned transients per 7,000 critical hours samples as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.5 Drill/Exercise Performance (EP01)

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill and Exercise Performance, performance indicator for the period January through December 2012. The inspectors used the performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 6, to determine the accuracy of the performance indicator data reported during the assessment period. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator; assessments of performance indicator opportunities during predesignated control room simulator training sessions, and performance during other drills. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the drill/exercise performance sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.6 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspectors sampled licensee submittals for the Emergency Response Organization Drill Participation performance indicator for the period January through December 2012. The inspectors used the performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 6, to determine the accuracy of the performance indicator data reported during the assessment period. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator, rosters of personnel assigned to key emergency response organization positions, and exercise participation records. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the emergency response organization drill participation sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.7 Alert and Notification System (EP03)

a. Inspection Scope

The inspectors sampled licensee submittals for the Alert and Notification System performance indicator for the period January through December 2012. The inspectors used the performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 6, to determine the accuracy of the performance indicator data reported during the assessment period. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator and the results of periodic alert notification system operability tests. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the alert and notification system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

4OA3 Followup of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) Licensee Event Report 05000528/2011-002-00 and Licensee Event Report 05000528/2011-002-01, Nonconforming Condition Renders the Qualified Safety Parameter Display System Inoperable

On July 1, 2011, both trains of Unit 1 Qualified Safety Parameter Display System (QSPDS) were declared inoperable when the licensee discovered that the 120 volt class power supply cables to the A and B train QSPDS display modems did not meet the physical separation criteria per Regulatory Guide 1.75 and PVNGS Specification 13-EN-0306, "Installation Specification for Cable Splicing and Termination." Operators entered TS LCO 3.3.10, "Post Accident Monitoring Instrumentation." On July 3, plant personnel restored the cabling to the meet the design requirement and operators exited TS 3.3.10. The licensee issued the LER as a condition prohibited by Technical Specifications.

The licensee issued the LER supplement to provide additional information on the cause and corrective actions for the condition. The licensee concluded the root cause of this event was inadequate adherence to cable separation criteria during modification and maintenance activities which led to the installation of power cables with less than six inches of separation. To prevent recurrence, the maintenance work order writer's guide was revised to require that cable separation criteria be incorporated into main control board work instructions.

The inspectors dispositioned this issue as a licensee-identified violation in Section 4OA7 of this report. The inspectors reviewed the LERs and did not identify any additional concerns.

Both LERs are closed.

.2 (Closed) Licensee Event Report 05000528/2011-005-00 and Licensee Event Report 05000528/2011-005-01, Unit 1 Manual Reactor Trip due to Slipped Control Element Assemblies

On November 22, 2011, during the performance of low power physics testing, the reactor was manually tripped as required by the control element assembly (CEA) malfunction abnormal operating procedure after a subgroup of four CEAs slipped greater than 6.6 inches. An intermittent failure of a power switch assembly which provides electrical power to the control element drive mechanisms resulted in CEA slippage. After troubleshooting was completed, the power switch assembly was replaced and retesting was completed on November 24, 2011. The licensee issued the LER to report a manual actuation of the reactor protection system that occurred while the reactor was critical.

The licensee issued the LER supplement to provide additional information on the cause and corrective actions for the condition. The licensee concluded the root cause of this event was latent organizational weaknesses with the modification processes that delayed installation of automatic CEDM timer modules (ACTMs) which would minimize the occurrence of dropped or slipped CEAs. To prevent recurrence, the licensee began installation of the ACTM modification in all three units.

The inspectors reviewed the LERs and did not identify any concerns. Both LERs are closed.

.3 (Closed) Licensee Event Report 05000530/2012-001-00 and Licensee Event Report 05000530/2012-001-01, Unit 3 Manual Reactor Trip During Low Power Physics Testing

On April 15, 2012, Unit 3 operator manually tripped the reactor during low power physics testing. An automatic control element drive mechanism timer module (ACTM) was installed on each control element drive mechanism (CEDM) during the refueling outage to minimize the occurrence of slipped or dropped control element assemblies (CEAs). Regulating CEA group 1 was being inserted during an RCS boron dilution during the testing. The ACTM for CEA 57 stopped movement for the CEA and actuated related alarms. Operations stopped insertion of regulating CEA group 1 and RCS dilution. Power increased and operators manually tripped the reactor to comply with procedural power limits. The licensee issued the LER to report a manual actuation of the reactor protection system that occurred while the reactor was critical.

The licensee issued the LER supplement to provide additional information on the cause and corrective actions for the condition. The licensee concluded the root cause of this event was the low power physics testing procedure did not provide contingency direction to insert other CEA groups to compensate for RCS dilution. To prevent recurrence, the licensee incorporated appropriate contingencies in the test procedure to stabilize reactor power during reactivity manipulations if abnormal conditions with CEAs are encountered. The licensee concluded the cause was latent organizational weaknesses with the modification processes that delayed installation of automatic CEDM timer modules (ACTMs) which would minimize the occurrence of dropped or slipped CEAs. To prevent recurrence, the licensee began installation of the ACTM modification in all three units.

The inspectors dispositioned this issue as a licensee-identified violation in Section 4OA7 of this report. The inspectors reviewed the LERs and did not identify any additional concerns.

Both LERs are closed.

.4 (Closed) Licensee Event Report 05000529/2012-003-00, Entry into Mode 3 with one Auxiliary Feedwater Train Inoperable

a. Inspection Scope

On November 2, 2012, with Unit 2 in Mode 3 following refueling activities, operations personnel entered TS LCO 3.7.5, Condition A, when the turbine driven auxiliary

feedwater pump was declared inoperable to support surveillance testing. During the test, a steam leak was identified on the steam supply valve, SGA-UV-138. Operators stopped the test, declared the valve inoperable and placed Unit 2 in Mode 5 to complete repairs. Since TS LCO 3.7.5 requires three auxiliary feedwater trains to be operable in Modes 1, 2, and 3, and one of the steam supply valves was inoperable, TS LCO 3.0.4 was not met when Unit 2 entered Mode 3 on November 2, 2012. The licensee issued the LER to report a condition prohibited by TS LCO 3.0.4.

The licensee performed maintenance on SGA-UV-138 during the refueling outage. The licensee concluded the cause of this event was inadequate work instructions for valve reassembly. To prevent recurrence, work instructions will be revised to provide detailed guidance for valve reassembly and to require verifications of proper reassembly.

The inspectors reviewed the LERs and did not identify any additional concerns.

This LER is closed.

b. Findings

. Introduction. A self-revealing, Green NCV of TS LCO 3.0.4 was identified after Unit 2 operators entered a mode with a limiting condition for operation not met. Specifically, following maintenance on auxiliary feedwater pump steam supply valve, SGA-UV-138, plant personnel did not ensure the requirements of TS 3.7.5, "Auxiliary Feedwater System," were met prior to entering Mode 3. During subsequent testing, a bonnet steam leak was discovered on the valve, resulting in the valve being declared inoperable and the plant returned to Mode 5 for repairs.

Description. On November 2, 2012, in Mode 3 following a refueling outage, plant personnel noticed a bonnet steam leak from steam supply valve, SGA-UV-138. Operators declared the valve inoperable and returned the unit to Mode 5 to repair the valve.

The licensee had performed maintenance on the valve during the outage. The licensee's investigation concluded that the valve failure was a result of inadequate reassembly following maintenance. The inspectors concluded that the licensee failed to ensure that the valve was operable following maintenance as required by TS 3.7.5. The inspectors noted that no post-maintenance testing was performed prior to entering Mode 3. Additionally, the inspectors noted that the inservice leak test credited in the work package as having been completed was actually performed prior to the refueling outage as a routine surveillance test. The licensee's investigation failed to identify this error.

The inspectors concluded the most significant contributor to this issue was an inadequate work package that did not provide detailed guidance on reassembling this valve and did not prescribe adequate post-maintenance testing to verify the valve was operable prior to entering Mode 3. The licensee entered this issue into the CAP as CRDR 4284491 and is evaluating further actions.

Analysis. The inspectors concluded that the failure of plant personnel to comply with technical specifications was a performance deficiency. The inspectors concluded the performance deficiency is more than minor because it affected the equipment performance attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the significance of the issue under the SDP, as defined in Inspection Manual Chapter 0609.04, "Initial Characterization of Findings," and 0609 Appendix A, "The Significance Determination Process (SDP) for Findings at-Power." Inspectors concluded that the finding was of very low safety significance (Green) because the finding is not a design or qualification issue, did not represent an actual loss of safety function of the system or train, did not result in the loss of one or more trains of non-technical specification equipment, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors determined this finding has a cross-cutting aspect in the area of human performance associated with the component of resources because the licensee failed to provide an adequate work package to ensure the valve was operable prior to entering Mode 3 [H.2(c)].

Enforcement. TS 3.0.4 requires, in part, that when an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made when the associate actions in the mode permit continued operation; a risk assessment is performed and accepted for the inoperable components; or when an allowance is stated. TS 3.7.5, "Auxiliary Feedwater System," requires two steam supply valves be operable in Modes 1, 2 and 3 and does not provide allowances or allow a risk assessment as defined in TS 3.0.4. Contrary to the above, on November 2, 2012, Unit 2 operators entered a mode with an LCO not met. Specifically, one auxiliary feedwater system steam supply valve was not operable as required by TS 3.7.5. Upon discovery of the inoperable valve, operators returned the unit to Mode 5, completed repairs, and restored the valve to operable status before re-entering Mode 3. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as CRDR 4284491, this violation is being treated as a NCV in accordance with Section 2.3.2 of the Enforcement Policy: NCV 05000529/2013002-05, "Failure to Comply with Technical Specifications."

.5 (Closed) Licensee Event Report 05000529/2012-002-00, Condition Prohibited by Technical Specification Due to Low Pressure Safety Injection System Drain Pipe Leak

a. Inspection Scope

On October 8, 2012, Unit 2 was in Mode 5 during refueling outage 2R17, shutdown cooling Train A was declared inoperable in accordance with TS 3.4.7 due to a leak on a low pressure safety injection Train A drain pipe during operation. The leakage source was a weld defect on the low pressure safety injection pipe drain connection upstream of drain Valve SIA-V908. The leakage was first discovered on October 7, 2012, when water on the floor adjacent to the pipe was first found, but not identified as leakage through the drain pipe weld until insulation was removed on October 8, 2012.

A configuration control problem in the early 1990s allowed contact between the drain pipe and a pipe hanger when the shutdown cooling was in operation. This resulted in a weld defect being introduced due to the high cyclic stresses from the contact. The configuration control problem was corrected in May 1993; but, the weld defect propagated slowly during periods of shutdown cooling operations until the leak occurred in the 2R17 outage. The licensee determined the cause was inadequate guidance to ensure temporary fittings on safety-related fluid systems were removed prior to placing the system in service. To prevent recurrence, procedures will be revised to provide adequate guidance.

The inspectors reviewed the LERs and did not identify any additional concerns. This LER is closed.

b. Findings

Introduction. A self-revealing, Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III "Design Control," was identified for the failure of the licensee to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. Specifically, operations personnel altered the piping configuration with an added fitting to a low pressure safety injection drain line. As a result the pipe failed during shutdown cooling operations, rendering that train inoperable.

Description. On October 6, 2012, shutdown cooling Train A was placed into service for refueling outage 2R17. On October 7, 2012 water had accumulated on the floor near shutdown cooling, Train A drain valve 2PSIAV908 and resulted in a worker becoming contaminated. The leak, at this time, was thought to be coming from the valve packing. When the insulation was removed to investigate the leakage, the licensee discovered a through-wall leak in the weld on the drain pipe associated with valve 2PSIAV908. Operators declared shutdown cooling Train A inoperable, isolated the leak path, and placed Train B in service. During this time in the outage the steam generators were available as a heat removal source. The failed pipe was removed and metallurgicaly examined. From the failure evidence, the licensee determined that the pipe failed due to high cycle fatigue. Inspectors reviewed the evidence and agreed with the licensee's assessment. The licensee's investigation looked in the area and saw evidence of scraping near the drain pipe, leading to a review of work performed on the valve. In reviewing the work history of valve 2PSIAV908, it was discovered that the piping segment had been modified and shortened to address interference problems. During the modification process the original weld remained which subsequently failed. In November, 1991, the drain pipe section was so long that is was difficult to install a fitting to allow the attachment of hoses for draining of the system. Operators installed a fitting on this piping section for maintenance, using Procedure 40AC-9OP15, "Station Tagging and Clearance," Revision 0. This modified the configuration of the system and the procedure did not have guidance for restoring the configuration to design prior to placing the system in service. While the fitting remained attached, it allowed for contact with a pipe hanger below due to thermal expansion of the system while in operation. This created an elevated stress condition, initiating a crack in the weld which was then propagated due to system operation.

Analysis. The inspectors concluded that the failure of the licensee to correctly translate the design basis into specifications, drawings, procedures and instruction was a performance deficiency. The performance deficiency was more than minor, therefore a finding, because it adversely affected the equipment performance attribute of the Mitigating Systems Cornerstone and its objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the significance of the issue under the SDP, as defined in Inspection Manual Chapter 0609.04, "Initial Characterization of Findings," and IMC 0609, Appendix G, "Shut Down Operations Significance Determination Process." The inspectors determined that because there was an injection path available, the leak could be isolated prior to depletion of the reactor water tank, plus the steam generators were available for heat removal. As a result, the issue was found to be of very low safety significance (Green). The inspectors determined the finding had no cross-cutting issues because it is not indicative of current performance

Enforcement. Title 10 CFR Part 50, Appendix B Criterion III "Design Control," requires, in part, that measures are established to assure applicable regulatory requirements and the design basis are correctly translated into procedures and instructions. Procedure 40AC-9OP15, "Station Tagging and Clearance," Revision 0, provided guidance for alteration and restoration of systems for maintenance. Contrary to the above, from December 1991 to October 8, 2012, applicable regulatory requirements and the design basis were not correctly translated into procedures and instructions. Specifically, operations personnel used Procedure 40AC-9OP15, "Station Tagging and Clearance," Revision 0 to install a temporary fitting on the drain line for shut down cooling Train A drain valve 2PSIAV908 and left the altered configuration when the train was returned to service. Thermal expansion of the system drove the pipe into an adjacent component cracking the weld. High cycle fatigue then propagated the crack and resulted in the subsequent failure. The licensee has repaired the weld in accordance with ASME Code and revised procedural guidance to return components to their design configuration. Because this finding is of very low safety significance and has been entered into the licensee's CAP as CRDR 4263357, this violation is being treated as a NCV in accordance with Section 2.3.2.a of the Enforcement Policy.
NCV 05000529/2013002-06 "Shutdown Cooling Piping Failure."

.6 (Closed) Licensee Event Report 05000528/2012-004-00, "Essential Spray Pond Pump Actuation Due to a Control Room Essential Filtration Actuation Signal"

On August 29, 2012, the Unit 1 control room received a fuel building ventilation exhaust radiation monitor 1JSQBRU0145 (RU-145) high radioactivity alarm. This resulted in actuation of trains A and B fuel building essential ventilation actuation signals (FBEVAS) and control room essential filtration actuation signals (CREFAS). The CREFAS started trains A and B control room essential air filtration units, essential chilled water systems, essential cooling water systems, and essential spray pond systems. Subsequent alternate sampling and radiation monitor comparisons determined the RU-145 high radioactivity alarm to be a result of a power supply zener diode failure and resultant loss of the 24 VDC low voltage power supply. The loss of the 24 VDC supply activated the check source feature which raised the radiation monitor output to above the high alarm set point value. As corrective action, the faulty power supply was replaced and RU-145

was declared operable within 72 hours. There are existing preventive maintenance requirements to replace the power supply board every 7.5 years. The licensee confirmed that zener diodes are reliable in voltage regulation applications for the radiation monitoring system at PVNGS. In fact, this was the first failure of this type at PVNGS.

On October 29, 2012, the licensee generated LER-2012-004-00, pursuant to 10 CFR 50.73(a)(2)(iv)(A). This requirement states that the licensee shall submit an LER for any event of the type described in this regulation within 60 days after the discovery of the event. Specifically, the licensee shall report any event or condition that resulted in manual or automatic actuation of any system listed in Section (B) of this regulation. Section (B)(9) requires such a report for the valid actuation of emergency service water systems that do not normally run and that serve as ultimate heat sinks. The licensee's trains A and B essential spray ponds are emergency cooling water systems and serve as the ultimate heat sink.

The inspector reviewed LER 2012-004-00, the Apparent Cause Evaluation Condition Report 4238169, and event logs, which documented this event and its causes. The inspectors verified that the cause of the event was identified, radiological consequences were assessed, and that corrective actions were reasonable. The inspector identified no violation of regulatory requirements, licensee requirements, or standards.

As a result, this LER is closed.

.7 Reactor Power Cutback Due to Heater Drain Pump Trip

On January 17, 2013, Unit 3 experienced a reactor power cutback to approximately 51 percent as a result of main feedwater pump B trip due to low suction pressure caused by a trip of heater drain pump B. No personnel injuries or equipment damage occurred. The inspectors responded to the control room and reviewed the licensee actions. The inspectors did not identify any issues or findings associated with this event.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On January 18, 2013, the team presented the results of the radiation safety inspections to Mr. R. Bement, Vice President, Nuclear Operations, and other members of his staff who acknowledged the findings. The team confirmed that proprietary information was not provided or examined during the inspection.

On February 4, 2013, the inspectors discussed the results of the in-office review of the preliminary exercise scenario submitted December 21, 2012, during a conference call with Ms. M. Ray, Director, Emergency Preparedness and Security, and other members of the licensee's staff. The licensee acknowledged the issues presented.
On March 8, 2013, the inspectors presented the results of the onsite inspection of the licensee's biennial emergency preparedness exercise to Mr. R. Bement, Senior Vice President, Site Operations, and other members of the licensee's staff. The licensee acknowledged the issues

presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified

On April 11, 2013, the inspectors presented the resident inspection results to Mr. D Mims, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee-Identified Violations

The following violations of very low safety significance (Green) were identified by the licensee and are violations of NRC requirements which meet the criteria of the NRC Enforcement Policy for being dispositioned as a NCV.

.1 Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and be accomplished in accordance with these instructions, procedures, or drawings. Contrary to the above, prior to November 8, 2012, the licensee failed to prescribe heat exchanger visual inspection procedures of a type appropriate to the circumstances.

Specifically, on November 8, 2012, during a scheduled occupational safety area walkdown, the licensee identified through-wall leakage on the outside of a Unit 3 spray pond system drain line on the train A essential cooling water heat exchanger. The licensee declared the Unit 3 train A spray pond system inoperable and began actions to make immediate repairs. The licensee's subsequent apparent cause investigation determined that pre-existing coating defects were likely present and the corrosion process had begun prior to the most recent visual inspection. The investigation also concluded that procedures for visual inspection of heat exchangers were inadequate in that they did not explicitly mentioned the need to inspect nozzles as potential areas subject to localized corrosion. Therefore, the pre-existing flaw in the Unit 3 drain nozzle had gone undetected during previous visual inspections. The licensee revised their heat exchanger visual inspection procedure to identify small heat exchanger nozzles as an area requiring additional emphasis and requiring documentation of nozzle inspection results. The inspectors concluded that the finding is of very low safety-significance (Green) because the as-found nozzle wall flaw would not have prevented the spray pond system from performing its safety function and the issue has been entered into the licensee's corrective action program as PVAR 4285944

.2 Title 10 CFR Part 50, Appendix B, Criteria V, "Procedures," requires, in part, that activities affecting quality shall be prescribed by documented procedures of a type appropriate to the circumstances. Contrary to the above, prior to April 15, 2012, the licensee failed to prescribe documented procedures for activities affecting quality of a type appropriate to the circumstances.

Specifically, during low power physics testing in Unit 3, one control element assembly (CEA) stopped moving while its associated group was being inserted, concurrent with a boron dilution of the reactor coolant system. Operators stopped the control element

assembly movement, but were forced to manually trip the reactor because reactor power increased above the test band limits. The licensee's investigation determined that the low power physics testing procedure, 72PY-9RX04, did not effectively communicate or provide contingencies for stabilizing power during additions of positive or negative reactivity when selected CEAs are not available to stabilize power. The licensee implemented corrective actions to revise the procedure to include appropriate contingencies and to determine acceptable power limits requiring a manual reactor trip during low power physics testing. The inspectors concluded that the finding is of very low safety-significance (Green) because it did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition, and has been entered into the licensee's corrective action program as CRDR 4173029.

.3 Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires in part, that measures shall be established to assure that applicable regulatory requirements and the design basis, for those structures, systems, and components to which this appendix applies, are correctly translated into specifications, drawings, procedures, and instructions. Contrary to the above, prior to June 29, 2011, the licensee failed to establish measures to assure that applicable regulatory requirements and the design basis, for those structures, systems, and components to which this appendix applies, were correctly translated into specifications, drawings, procedures, and instructions.

Specifically, the licensee identified that the Unit 1 Qualified Safety Parameter Display System (QSPDS) did not meet the cable separation criteria of Regulatory Guide 1.75, "Physical Independence of Electrical Systems." Both trains of power supply cables were found wrapped around each other. The licensee's investigation concluded that PVNGS Specification 13-EN-306, "Installation Specification for Cable Splicing and Terminations," had not been adequately implemented into modification and maintenance instructions. The licensee implemented corrective actions to restore the required cable separation and revise Procedure 30DP-0AP01, "Maintenance Work Order Writer's Guide," to require that cable separation criterion be incorporated into main control board work instructions. The inspectors concluded that the finding is of very low safety-significance (Green) because the inadequate power supply cable separation would only result in the loss of power to the modems that feed the QSPDS plasma displays on the main control board, and the train A Post Accident Monitoring recorders, fed directly from the QSPDS chassis rack, would still be available to plant operators. Additionally, the licensee entered the issue into the corrective action program as CRDR 3802732.

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SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

A. Krank, Department Leader, Operations
B. Berryman, Plant Manager, Plant Operations
B. Routolo, Effluents Superintendant, Radiation Protection
C. Tubman, Section Leader, Radiation Protection Operations
C. Moeller, Manager, Radiation Protection
D. Arbuckle, Manager, Operations
D. Hansen, Senior Consultant Engineer
D. Jennings, Supervisor, Radiation Protection
D. Mims, Senior Vice President, Regulatory and Oversight
D. Wheeler, Department Leader, Performance Improvement
E. Dutton, Director, Nuclear Assurance Department
E. Fernandez, Senior Engineer
E. Kirkland, Program Advisor, Maintenance
F. Oreshack, Consultant, Regulatory Affairs
F. Puleo, Peer Evaluator, STARS/South Texas Project
G. Jones, Team Leader, Radiation Protection
G. Andrews, Manager, Operations Support
J. Bettencourt, Technical Advisor, Radiation Protection
J. Bungard, Supervisor, Radiological Engineering
J. Cadogan, Vice President, Nuclear Engineering
J. Cox, Engineer, Program Engineering
J. McDonnell, Department Leader, Radiation Protection
K. Foster, Department Leader, Fire Department
K. House, Director, Nuclear Design Engineering
M. Brannin, Senior Engineer, Program Engineering
M. Debolt, Team Leader, Nuclear Maintenance
M. Lacal, Vice President, Operations Support
M. McGhee, Manager, Regulatory Affairs
M. McLaughlin, Director, Technical Services
M. Radspinner, Department Leader, System Engineering
M. Ray, Director, Emergency Preparedness/Security
M. Shea, Director, Safety Culture
N. Nelson, Senior Technician, Radiation Protection
P. Anderson, Engineer, Program Engineering
P. McSpaman, Director, Nuclear Training
R. Barnes, Director, Regulatory Affairs
R. Bethke, Department Leader, Emergency Preparedness
R. Bement, Senior Vice President, Site Operations
R. Folley, Engineer, Engineer Inspections
R. Routolo, Operations Department Leader, Radiation Services
R. Sims, Instrumentation Technician, Radiation Protection

R. Witzak, Operations Superintendant, Radiation Protection
S. Lantz, Section Leader, Radiation Protection Technical Services
S. Pobst, Section Leader, Engineering
T. Gray, Department Leader, Radiation Protection
T. Mitchell, Component Engineer, Engineering
T. Mock, Director, Operations
T. Weber, Department Leader, Regulatory Affairs
W. Blaxton, Radiation Monitoring Technician, Radiation Protection

NRC Personnel

T. Brown, Senior Resident Inspector
B. Larson, Senior Operations Engineer
C. Speer, Reactor Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000528; 529; 530; 2013002-04	NOV	Failure to Maintain the Updated Final Safety Analysis Report for Radwaste Systems and Processes (Section 2RS6 and 2RS8)

Opened and Closed

05000528; 529; 530/2013002-01	NCV	Multiple Failures to Identify Conditions Adverse to Quality (Section 1R15)
05000530/2013002-02	NCV	Failure to Provide Adequate Technical Justification for Operability (Section 1R15)
05000528; 529; 530/2013002-03	NCV	Failure to identify weak performance during an exercise (Section 1EP1)
05000529/2013002-05	NCV	Failure to Comply with Technical Specifications (Section 4OA3)
05000529/2013002-06	NCV	Shutdown Cooling Piping Failure (Section 4OA3)

Closed

05000528/2011-002-00; 05000528/2011-002-01	LER	Nonconforming Condition Renders the Qualified Safety Parameter Display System Inoperable (Section 4OA3)
05000528/2011-005-00; 05000528/2011-005-01	LER	Unit 1 Manual Reactor Trip due to Slipped Control Element Assemblies (Section 4OA3)
05000530/2012-001-00; 05000530/2012-001-01	LER	Unit 3 Manual Reactor Trip During Low Power Physics Testing (Section 4OA3)
05000529/2012-002-00	LER	Condition Prohibited by Technical Specification Due to Low Pressure Safety Injection System Drain Pipe Leak (Section 4OA3)
05000529/2012-003-00	LER	Entry into Mode 3 with one Auxiliary Feedwater Train Inoperable (Section 4OA3)
05000528/2012-004-00	LER	Essential Spray Pond Pump Actuation Due to a Control Room Essential Filtration Actuation Signal (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

PROCEDURES

NUMBER	TITLE	REVISION
73ST-9ZZ20	IST Program Off-Line Set Pressure Verification	34
40OP-9EW02	Essential Cooling Water System 9EW train B	18

WORK ORDERS

4227939 4241944

Section 1R05: Fire Protection

MISCELLANEOUS

NUMBER	TITLE	REVISION
	Pre- Fire Strategies Manual	23

Section 1R06: Flood Protection Measures

WORK ORDERS

4004924 3966169

Section 1R11: Licensed Operator Requalification Program

PROCEDURES

NUMBER	TITLE	REVISION
40DP-9OP02	Conduct of Shift Operations	58
40AO-9ZZ09	Reactor Power Cut Back	24
40OP-9SF04	Operation of the Reactor Power Cutback System	8

Section 1R12: Maintenance Effectiveness

PROCEDURE

NUMBER	TITLE	REVISION
70DP-0MR01	Maintenance Rule	34

PALO VERDE ACTION REQUESTS

4276692 4072804 4222752 4308887

CONDITION REPORTS / DISPOSITION REQUESTS

4278817 4036719 4325456

CONDITION REPORT ACTION ITEMS

4278818 3044837

MISCELLANEOUS

NUMBER	TITLE	DATE
MRule–PMG Details	SA-ESFAS Subgroup Relays	February 28, 2013

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

PROCEDURES

NUMBER	TITLE	REVISION
40DP-9AP21	Protected Equipment	5
70DP-0RA05	Assessment and Management of Risk When Performing Maintenance in Modes 1 and 2	19
41ST-1ZZ02	Inoperable Power Sources Action Statement	44
40DP-9RS01	Online Nuclear Risk Management Mode 1 and 2	1

PALO VERDE ACTION REQUEST

4357899

WORK ORDER

4128351

MISCELLANEOUS

NUMBER	TITLE	DATE
	Start Up XFRMR X02 Maint Iso 1306 FRAG	January 30, 2013
	Scheduler's Evaluation for PV Units 1, 2, and 3	February 2, 2013
	Work week risk evaluation	January 14, 2013

Section 1R15: Operability Evaluations

PROCEDURES

NUMBER	TITLE	REVISION
40DP-9OP26	Operations PVAR Processing and Operability Determination/Functional Assessment	31
40DP-9OP26	PVAR Processing and Operability Determination/Functional Assessment	34
40DP-9OP26	Operations PVAR Processing and Operability Determination/Functional Assessment	33
33ST-9HJ04	Testing of the Control Room Emergency Air Temperature	12

	Control System	
33ST-9HJ01	Control Room AFU Cirflow Capacity and Pressurization Test	16
40ST-9CH03	Boron Injection Flowpaths – Operating	3
40EP-9EO10	Standard Appendices	74

PALO VERDE ACTION REQUESTS

3490418	3634802	3830077	4081961	4106329
4141931	4341323	4343895	4312471	4277199
4149429	3291939	4363316	4358787	4321482
4288950	4261369	4252159	4226972	4298882
4321482	4345754	3134640	3134641	3279253

CONDITION REPORTS / DISPOSTION REQUESTS

4294805	4236395	4323388

WORK ORDERS

3528200	4343723	4291057	4290313	4291056
4277899	4284803	4260364	4321483	4321504

CACULATIONS

NUMBER	TITLE	REVISION
13-MC-HJ-0003	HJ System Heal Load and Equipment Selection Calculation	7

MISCELLANEOUS

NUMBER	TITLE	REVISION
48814	Event Notification	

Section 1R19: Post-Maintenance Testing

PROCEDURES

NUMBER	TITLE	REVISION
40ST-9DG02	Diesel Generator B Test	45

MISCELLANEOUS

NUMBER	TITLE	REVISION
36ST-9SB52	RTSG Shunt and Undervoltage Trip Functional Test	8
36ST-9SB44	RPS Matrix Relays to Reactor Trip Response Time Test	20
31MT-9SI02	High Pressure Safety Injection Pump Disassembly and Assembly	25
73ST-9SI10	HPSI Inservice Test	47
73DP-9ZZ26	MOV testing with Quicklook	2
39MT-9ZZ07	Disassembly/Assembly of Limitorque Type SMB/SB-0 through 3 Actuators	15

PALO VERDE ACTIO REQUESTS

4328403 4244615

CONDITION REPORTS / DISPOSITION REQUEST

3621333

WORK ORDERS

4329583	4330282	3863579	3863585	4128351
3923058	4031523	3859752	3863494	4251255
3774525				

CONDITION ACTION REPORT ITEM

3821489

Section 1R22: Surveillance Testing

PROCEDURES

NUMBER	TITLE	REVISION
40ST-9SF01	CEA Operability Checks	30
73ST-9SI10	HPSI Pumps Miniflow – Inservice Test	47
73ST 9SI06	Containment Spray and Check Valves- Inservice Test	35
36ST-9SA01	ESFAS Train A Subgroup Relay Functional Test	44

Section 1R22: Surveillance Testing

PROCEDURES

NUMBER	TITLE	REVISION
40ST-9RC02	ERFDADS (Preferred) Calculation of RCS Water Inventory	53

PALO VERDE ACTION REQUESTS

4356323 4332603

CONDITION REPORT / DISPOSTION REQUEST

4333509

WORK ORDER

3859881 3790049

Section 1EP1: Exercise Evaluation

PROCEDURES

NUMBER	TITLE	REVISION / DATE
EP-0900	Emergency Response Organization Position Checklists	4
EP-0901	Classifications	2
EP-0902	Notifications	3
EP-0903	Accident Assessment	2
EP-0904	Emergency Response Organization/Emergency Response Facility Activation and Operations	3
EP-0905	Protective Actions	4
240-02701-MZR/TBW	Evaluation Report for the March 4, 2009, Exercise	March 11, 2009
240-02770-SS/TBW	Evaluation Report for the February 9, 2011, Exercise	March 9, 2011
240-02701-SS/TBW	Evaluation Report for the March 1, 2011, Drill	March 31, 2011
240-02773-SS/TBW	Evaluation Report for ERO Tabletop Drill	March 12, 2011

PROCEDURES

NUMBER	TITLE	REVISION / DATE
240-02778-SS/TBW	Evaluation Report for the May 11, 2011, Drill	May 25, 2011
240-02781-SS/TBW	Evaluation Report for ERO Tabletop Drill	June 17, 2011
240-02782-SS/TBW	Evaluation Report for ERO Tabletop Drill	June 17, 2011
090-05026-SS/TBW	Evaluation Report for the 2011 Contamined Injured Drill	August 19, 2011
090-05029-SS/TBW	Evaluation Report for ERO Tabletop Drill	September 2, 2011
090-05031-SS/TBW	Evaluation Report for Third Quarter 2011 Tabletop Drill	September 15, 2011
090-05044-SS/TBW	Evaluation Report for the First Quarter 2012 Tabletop Drill	March 27, 2012
090-05045-SS/TBW	Evaluation Report for the 2012 Full Scale Exercise	April 10, 2012
090-05051-SS/TBW	Evaluation Report for the 2012 Contaminated Injured Drill	May 31, 2012
090-05055-SS/TW	Evaluation Report for the 2012 Augmentation Drill	June 22, 2012
090-05056-SS/TBW	Evaluation Report for the Second Quarter 2012 Tabletop Drill	August 8, 2012

PALO VERDE ACTION REQUESTS

3693235	3748119	3853653	3869426	3880295
4072515	4083162	3853653	4275543	4295285
4349186	4362338	4362408	4362410	4362468
4362605	4362607	4362608	4362610	4362615
4362630	4362632	4362633	4362635	4365021
4062289	4334465	4362479	4362622	

Section 1EP4: Emergency Action Level and Emergency Plan Changes

PROCEDURES

NUMBER	TITLE	REVISION
	Emergency Plan	49
	Evacuation Time Estimate Study Update	

PALO VERDE ACTION REQUESTS

4344918	4344779	4344557	4345102

Section 2RS5: Radiation Monitoring Instrumentation

PROCEDURES

NUMBER	TITLE	REVISION
74RM-9EF41	Radiation Monitoring System Alarm Response	22
74RM-9EF42	Radiation Monitor Alarm Setpoint Determination	27
75RP-9EQ04	Calibration of the Eberline PNR-4 Neutron Dose Rate Instrument	8
75RP-9EQ13	Canberra Whole Body Counting System Calibration	5
75RP-9EQ26	Operation and Verification of the Merlin Gerin Model CDM-21 Calibrator	9
75RP-9EQ31	Calibration, Response Check and Operation of the SAM-12 Small Article Monitor	2
75RP-9EQ45	Calibration of the Thermo Eberline Model FH 40 GL	1
75RP-9EQ46	Calibration o the AMS-4	0
75RP-9EQ57	Calibration of the Eberline Model E-520 Portable Geiger Counter	0
75RP-9EQ64	Calibration and Response Check of the Thermo Fisher Scientific Contamination Monitor Type iPCM-12	3
75RP-9EQ65	Calibration and Response Check of the Thermo Fisher Scientific Contamination Monitor Type PM12	2
74ST-9SQ10	Train “A” Radiation Monitoring Quarterly Functional Test Procedure	0
74ST-9SQ11	Train “B” Radiation Monitoring Quarterly Functional Test Procedure	10

PROCEDURES

NUMBER	TITLE	REVISION
74ST-9SQ23	Radiation Monitoring Calibration Test For New Scope Area Monitors	12
74ST-9SQ26	Radiation Monitoring Calibration Test for RU-143	14
74ST-9SQ27	Radiation Monitoring Calibration Test for RU-144	14
74ST-9SQ28	Radiation Monitoring Calibration Test for RU-145	13
74ST-9SQ29	Radiation Monitoring Calibration Test for RU-146	12
NRY26-C-0001	RMS Overview Continuing Training	4

AUDITS, SELF-ASSESSMENTS AND SURVEILLANCE

NUMBER	TITLE	DATE
2012-009	PVNGS Nuclear Assurance Department Audit Plan and Report	September 14, 2012

CONDITION REPORTS / ACTION REQUESTS

3547650	3548056	3573128	3574733	3743605
3448897	3556064	3919054	3928224	3969239
4313126	4026695	4215565	4184800	4241533
4280849				

PALO VERDE ACTION REQUESTS

4325164	4269473	3584824	3638992	3531019

CALIBRATION RECORDS

NUMBER	TITLE	DATE
Unit 1 RU-143	Plant Vent Radiation Monitor – Normal	October 12, 2012
Unit 2 RU-145	Fuel Building Ventilation Exhaust Monitor – Normal	September 7, 2012
Unit 3 RU-146	Fuel Building Ventilation Exhaust Monitor – High	September 2, 2011
Unit 3 RU-19	New Fuel Area Radiation Monitor	August 3,

		2011
Unit 3 RU-31	Fuel Pool Area Radiation Monitor	August 3, 2011
Unit 2 RU-142	Main Steam Line N-16 Monitor	October 26, 2011
Unit 2 RU-148	In-Containment Area	October 26, 2012
Unit 1 RU-150	Primary Coolant Radiation Monitor	November 2, 2011
Fastscan 1	Whole Body Counter	May 22, 2012
Fastscan 2	Whole Body Counter	May 15, 2012
1213	Thermo Fisher PM-12	February 22, 2012
1213	Thermo Fisher PM-12	January 16, 2013
22942	Thermo Eberline Model FH 40GL	June 14, 2012
3955	Eberline Model E-520 Portable Geiger Counter	August 22, 2012
4447	Eberline PNR-4 Neutron Dose Rate Instrument	August 9, 2012
1114	AMS-4	July 25, 2012
12022	iPCM-12	July 27, 2012
12024	iPCM-12	December 18, 2012
6700	SAM-12	July 27, 2012
1547	RM-20 Count Rate Meter	December 21, 2011
245372	MGM CDM-21 Calibrator	October 31, 2012

MISCELLANEOUS

NUMBER	TITLE	DATE
	PVNGS Units 1,2, and 3 Offsite Dose Calculation Manual	September 30, 2011
	PVNGS Technical Requirements Manual – Units 1,2,3	November

		17, 2011
	System Health Report: SQ – Radiation Monitoring	June 30, 2011
	System Health Report: SQ – Radiation Monitoring	January 31, 2012
3-SR-2010-001-00	Fuel Building Ventilation System High Range Radioactive Gaseous Effluent Monitor Inoperable	November 22, 2010
2012-004-00	Licensee Event Report – Essential Spray Pond Pump Actuation Due to a Control Room Essential Filtration Actuation Signal	October 29, 2012

Section 2RS06: Radioactive Gaseous and Liquid Effluent Treatment

PROCEDURES

NUMBER	TITLE	REVISION
74DP-9CY08	Radiological Monitoring Program	23
74RM-9EF20	Gaseous Radioactive Release Permits and Offsite Dose Assessment	15
74RM-9EF40	Radiation Monitoring System Operations	9
74RM-9EF41	Radiation Monitoring System Alarm Response	22
74RM-9EF42	Radiation Monitor Alarm Setpoint Determination	27a
74ST-9SQ04	Effluent Monitoring System Monthly Source Check	6
74RM-9EF60	RMS Sample Collection	29
75PR-9AP01	Ground Water Protection Program	4

AUDITS, SELF-ASSESSMENTS AND SURVEILLANCES

NUMBER	TITLE	DATE
2012-009	Nuclear Assurance Department Radiation Protection Audit	August 7-14, 2012
SWMS 3438018	Central and Lube Laboratory Instrument Quality Control Self-Assessment	March 23-26, 2010

CONDITION REPORTS / ACTION REQUESTS

3807734	3996791	4154988	4241533	4032508

PALO VERDE ACTION REQUESTS

3611470	3770903	3861328	4143069	4182866
4209739	4269473			

10 CFR 50.75 g CONDITION REPORTS

3562522	3750972	3788156	4202671	4219097
4230266	4236579	4131933	4257929	4272074

RELEASE PERMITS

20122054R2	20133005R0	20133005R1

IN-PLACE FILTER TESTING RECORDS

UNIT	SYSTEM	TRAIN	TEST	DATE
3	Aux/Fuel Building	B	Carbon Analysis	June 1, 2012
2	Control Room	A	HEPA/Charcoal	November 13, 2012
2	Control Room	A	Carbon Analysis	July 30, 2012
3	Control Room	A	HEPA/Charcoal	May 31, 2012
1	Aux/Fuel Building	B	HEPA/Charcoal	May 25, 2012
2	Aux/Fuel Building	A	HEPA/Charcoal	April 17, 2012
3	Aux/Fuel Building	A	HEPA/Charcoal	May 15, 2012
3	Control Room	A	Carbon Analysis	February 21, 2012
3	Control Room	B	Carbon Analysis	March 9, 2012
1	Aux/Fuel Building	A	HEPA/Charcoal	April 16, 2012
2	Control Room	B	HEPA/Charcoal	April 17, 2012
3	Aux/Fuel Building	A	Carbon Analysis	August 13, 2012
2	Control Room	B	Carbon Analysis	March 8, 2012
1	Aux/Fuel Building	A	Carbon Analysis	March 7, 2012

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
	Report on Potential Ground Water Impacts From the Operation of A Slurry Pit in Evaporation Pond 2B at the Palo Verde Nuclear Generating Station	April 22, 2011
	2010 Annual Radioactive Effluent Release Report	
	2011 Annual Radioactive Effluent Release Report	
	Offsite Dose Calculation Manual Palo Verde Nuclear Generating Station, Units 1, 2, and 3	26

Section 2RS7: Radiological Environmental Monitoring Program

PROCEDURES

NUMBER	TITLE	REVISION
74DP-9CY08	Radiological Monitoring Program	23
74RM-0EN02	Radiological Environmental Air Sampling Program	20
74RM-0EN03	Radiological Environmental Sampling Program	31
74RM-0EN05	Environmental TLD Exchange/Reporting	15A
74RM-0EN07	Land Use Census	14
75RP-9RP09	Release of Vehicles, Equipment, and Material from Radiological Controlled Areas	36
77ST-9RG02	Meteorological System Calibration Redundant System	
77ST-9RG03	Meteorological System Calibration Primary System	

AUDITS, SELF-ASSESSMENTS AND SURVEILLANCE

NUMBER	TITLE	DATE
NAD Audit 2012-009	Nuclear Assurance Department Audit Plan and Report	September 14, 2012

CONDITION REPORTS / ACTION REQUESTS

3574902	3618566	3739206	3812184	3824797
4051062	4055595	4280849	4166560	4172123

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	REVISION / DATE
	Offsite Dose Calculation Manual - Units 1 & 2	26
2010	Radiological Environmental Operating Report	April 11, 2011
2011	Radiological Environmental Operating Report	April 6, 2012

Section 2RS8: Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

PROCEDURES

NUMBER	TITLE	REVISION
76RP-0RW07	Shipping Radioactive Material	10
76RP-0RW06	Packaging of Radioactive Material	2
76DP-0RP01	Radwaste Management Program Overview	5
76DP-0RP03	Radwaste Process Control Program	7
76RP-0RW03	Waste Stream Sampling and Database Maintenance	1
76DP-0RP04	Receipt and Shipment of Radioactive Material	5
75RP-9RP15	Control and Storage of Radioactive Material and Radioactive Wastes	25
76RP-0RW04	Receipt of Radioactive Material	3
76RP-0RW05	Packaging and Classification of Radioactive Waste	3
75DP-0RP04	Radiological Reports	9

AUDITS, SELF-ASSESSMENTS AND SURVEILLANCES

NUMBER	TITLE	DATE
NAD Audit 2012-009	Nuclear Assurance Department Audit Plan and Report	September 14, 2012

CONDITION REPORTS / ACTION REQUESTS

3398042	4121038	4136342	4201007	4211655
4221571	4229382	4236455	4279523	4284230

PALO VERDE ACTION REQUESTS

4234709	4239099	4329114	4330483

RADIOACTIVE MATERIAL SHIPMENTS

NUMBER	TITLE	DATE
11-SH-038	Detectors	May 27, 2011
11-SH-054	Moveable In-core Detectors (2)	August 8, 2011
11-SH-060	Fission Chamber Detectors (2)	August 16, 2011
12 RW-002	Fission Chamber Detectors (2)	March 7, 2012
12-SH-031	40’ SeaLand of Orex	May 29, 2012

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	REVISION / DATE
Chapters 11.4 and 12.1	Updated Final Safety Analysis Report	Revision 16 June 2011
	Training Qualification Records	December 7, 2012
NBA19C000107	Radiation Protection Technician Training Program Shipping Radioactive Material	October 10, 2012
NBA19C000109	Radiation Protection Technician Training Program Packaging Radioactive Material	August 8, 2012
	Waste Stream Sample Reports	November 16, 2012
95-0293	10 CFR 50.59 Screening and Evaluation: Design, Licensing, and Operation of the Low-Level Radioactive Material Storage Facility (LLRMSF)	October 22, 1995
A0-NC-ZL-0203	Old Steam Generator Storage Facility Dose Evaluations	November 3, 2006

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	REVISION / DATE
CRDR 3398042	Apparent Cause Report, Revision 2 NCV for Failure to update the UFSAR in accordance with 10 CFR 50.71(e)	April 27, 2010
09-F038, Rev. 1	Licensing Document Change Request	May 28, 2009

Section 4OA1: Performance Indicator Verification

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	REVISION / DATE
	Palo Verde 24 Month Power History	December 2010 to December 2012
	Palo Verde Nuclear Generating Station Monthly Trend Report	January 2013
16DP-0EP19	Performance Indicator, Emergency Preparedness Cornerstone	15
16DP-0EP37	Prompt Notification System	4
	Siren System Operating Manual	December 2011

Section 4OA3: Event Follow-up and Notices of Enforcement Discretion(71153)

PROCEDURES

NUMBER	TITLE	REVISION
73ST-9XI34 AFA-P01	Steam Supply Valves – Inservice Test	7
40AO-9ZZ09	Reactor Power Cutback (Loss of Feedpump)	24

PALO VERDE ACTION REQUEST

4330262

CONDITION REPORTS / DISPOSTION REQUESTS

4173029	3802732	3983465	4150142	4284491
4330879				

WORK ORDERS

3844985	4281226	3762641	3844042

The following items are requested for the
Public Radiation Safety Inspection
at Palo Verde
January 14 – 18, 2013
Integrated Report 2013002

Inspection areas are listed in the attachments below.

Please provide the requested information on or before December 31, 2012.

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 or Louis.Carson@nrc.gov.

PAPERWORK REDUCTION ACT STATEMENT

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

5. Radiation Monitoring Instrumentation (71124.05)
Date of Last Inspection: February 1, 2010

A. List of contacts and telephone numbers for the following areas:
1. Effluent monitor calibration
2. Radiation protection instrument calibration
3. Installed instrument calibrations
4. Count room and Laboratory instrument calibrations

B. Applicable organization charts

C. Copies of audits, self-assessments, vendor or NUPIC audits for contractor support and LERs, written since date of last inspection, related to:
1. Area radiation monitors, continuous air monitors, criticality monitors, portable survey instruments, electronic dosimeters, teledosimetry, personnel contamination monitors, or whole body counters
2. Installed radiation monitors

D. Procedure index for:
1. Calibration, use and operation of continuous air monitors, criticality monitors, portable survey instruments, temporary area radiation monitors, electronic dosimeters, teledosimetry, personnel contamination monitors, and whole body counters
2. Calibration of installed radiation monitors

E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures will be requested by number after the inspector reviews the procedure indexes:
1. Calibration of portable radiation detection instruments (for portable ion chambers)
2. Whole body counter calibration
3. Laboratory instrumentation quality control

F. A summary list of corrective action documents (including corporate and subtiered systems) written since date of last inspection, related to the following programs:
1. Area radiation monitors, continuous air monitors, criticality monitors, portable survey instruments, electronic dosimeters, teledosimetry, personnel contamination monitors, whole body counters
2. Installed radiation monitors
3. Effluent radiation monitors
4. Count room radiation instruments

NOTE: The lists should indicate the significance level of each issue and the search criteria used.

G. Offsite dose calculation manual, technical requirements manual, or licensee controlled specifications which lists the effluent monitors and calibration requirements

H. Current calibration data for the whole body counter's

I. Primary to secondary source calibration correlation for effluent monitors

J. A list of the point of discharge effluent monitors with the two most recent calibration dates and the work order numbers associated with the calibrations

6. Radioactive Gaseous And Liquid Effluent Treatment (71124.06)
Date of Last Inspection: January 24, 2011

A. List of contacts and telephone numbers for the following areas:
1. Radiological effluent control
2. Engineered safety feature air cleaning systems

B. Applicable organization charts

C. Audits, self-assessments, vendor or NUPIC audits of contractor support, and LERs written since date of last inspection, related to:
1. Radioactive effluents
2. Engineered Safety Feature Air cleaning systems

D. Procedure indexes for the following areas:
1. Radioactive effluents
2. Engineered Safety Feature Air cleaning systems

E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures will be requested by number after the inspector reviews the procedure indexes:
1. Sampling of radioactive effluents
2. Sample analysis
3. Generating radioactive effluent release permits
4. Laboratory instrumentation quality control
5. In-place testing of HEPA filters and charcoal absorbers
6. New or applicable procedures for effluent programs (e.g., including ground water monitoring programs)

F. List of corrective action documents (including corporate and subtiered systems) written since date of last inspection, associated with:
1. Radioactive effluents
2. Effluent radiation monitors
3. Engineered Safety Feature Air cleaning systems

NOTE: The lists should indicate the significance level of each issue and the search criteria used.

G. 2010 and 2011 Annual Radioactive Effluent Release Report

H. Current Copy of the Offsite Dose Calculation Manual

I. Copy of the 2010 and 2011 interlaboratory comparison results for laboratory quality control performance of effluent sample analysis

J. Effluent sampling schedule for the week of the inspection

K. New entries into 10 CFR 50.75(g) files since date of last inspection

L. Operations Dept (or other responsible dept) log records for effluent monitors removed from service or out of service

M. Listing or log of liquid and gaseous release permits since date of last inspection

N. For technical specification-required air cleaning systems, the most recent surveillance test results of in-place filter testing (of HEPA filters and charcoal absorbers) and laboratory testing (of charcoal efficiency)

O. Health report for effluent monitors for the previous two years

7. Radiological Environmental Monitoring Program (71124.07)
Date of Last Inspection: January 24, 2011

A. List of contacts and telephone numbers for the following areas:
1. Radiological environmental monitoring
2. Meteorological monitoring

B. Applicable organization charts

C. Audits, self assessments, vendor or NUPIC audits of contractor support, and LERs written since date of last inspection, related to:
1. Radiological environmental monitoring program (including contractor environmental laboratory audits, if used to perform environmental program functions)
2. Environmental TLD processing facility
3. Meteorological monitoring program

D. Procedure index for the following areas:
1. Radiological environmental monitoring program
2. Meteorological monitoring program

E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures will be requested by number after the inspector reviews the procedure indexes:
1. Environmental Program Description
2. Sampling, collection and preparation of environmental samples
3. Sample analysis (if applicable)
4. Laboratory instrumentation quality control
5. Procedures associated with the Offsite Dose Calculation Manual
6. Appropriate QA Audit and program procedures, and/or sections of the station's QA manual (which pertain to the REMP)

F. A summary list of corrective action documents (including corporate and subtiered systems) written since date of last inspection, related to the following programs:
1. Radiological environmental monitoring
2. Meteorological monitoring
NOTE: The lists should indicate the significance level of each issue and the search criteria used

G. Wind Rose data and evaluations used for establishing environmental sampling locations

H. Copies of the 2 most recent calibration packages for the meteorological tower instruments

I. Copy of the 2010 and 2011 Annual Radiological Environmental Operating Report and Land Use Census, and current revision of the Offsite Dose Calculation Manual

J. Copy of the environmental laboratory's interlaboratory comparison program results for 2010 and 2011, if not included in the annual radiological environmental operating report

K. Data from the environmental laboratory documenting the analytical detection sensitivities for the various environmental sample media (i.e., air, water, soil, vegetation, and milk)

L. Quality Assurance audits (e.g., NUPIC) for contracted services

M. Current NEI Groundwater Initiative Plan and status

8. Radioactive Solid Waste Processing, and Radioactive Material Handling, Storage, and Transportation (71124.08)

Date of Last Inspection: January 24, 2011

A. List of contacts and telephone numbers for the following areas:
1. Solid Radioactive waste processing
2. Transportation of radioactive material/waste

B. Applicable organization charts (and list of personnel involved in solid radwaste processing, transferring, and transportation of radioactive waste/materials)

C. Copies of audits, department self-assessments, and LERs written since date of last inspection related to:
1. Solid radioactive waste management
2. Radioactive material/waste transportation program

D. Procedure index for the following areas:
1. Solid radioactive waste management
2. Radioactive material/waste transportation

E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures will be requested by number after the inspector reviews the procedure indexes:
1. Process control program
2. Solid and liquid radioactive waste processing
3. Radioactive material/waste shipping
4. Methodology used for waste concentration averaging, if applicable
5. Waste stream sampling and analysis

F. A summary list of corrective action documents (including corporate and subtiered systems) written since date of last inspection related to:
1. Solid radioactive waste
2. Transportation of radioactive material/waste

NOTE: The lists should indicate the significance level of each issue and the search criteria used

G. Copies of training lesson plans for 49CFR172 subpart H, for radwaste processing, packaging, and shipping

H. A summary of radioactive material and radioactive waste shipments made from date of last inspection to present

I. Waste stream sample analyses results and resulting scaling factors for 2011 and 2012

J. Waste classification reports if performed by vendors (such as for irradiated hardware)

Although it is not necessary to compile the following information, the inspector will also review:

K. Training, and qualifications records of personnel responsible for the conduct of radioactive waste processing, package preparation, and shipping