



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

February 7, 2022

Mrs. Maria Lacal
Executive Vice President / Chief Nuclear Officer
Arizona Public Service Company
P.O. Box 52034, MS 7602
Phoenix, AZ 85072-2034

SUBJECT: PALO VERDE NUCLEAR GENERATING STATION – INTEGRATED
INSPECTION REPORT 05000528/2021004, 05000529/2021004, AND
05000530/2021004

Dear Mrs. Lacal:

On December 31, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Palo Verde Nuclear Generating Station. On January 20, 2022, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

One finding of very low safety significance (Green) is documented in this report. This finding involved a violation of NRC requirements. We are treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy.

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

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

A handwritten signature in dark ink, appearing to read 'A. Agrawal', with a stylized flourish at the end.

Signed by Agrawal, Ami
on 02/07/22

Ami N. Agrawal, Acting Chief
Reactor Projects Branch D
Division of Reactor Projects

Docket Nos. 05000528 and 05000529
and 05000530
License Nos. NPF-41 and NPF-51
and NPF-74

Enclosure:
As stated




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PALO VERDE NUCLEAR GENERATING STATION – INTEGRATED INSPECTION REPORT
05000528/2021004, 05000529/2021004, AND 05000530/2021004 – DATED JANUARY 7, 2022

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers: 05000528, 05000529 and 05000530

License Numbers: NPF-41, NPF-51 and NPF-74

Report Numbers: 05000528/2021004, 05000529/2021004 and 05000530/2021004

Enterprise Identifier: I-2021-004-0123

Licensee: Arizona Public Service Company

Facility: Palo Verde Nuclear Generating Station

Location: Tonopah, AZ

Inspection Dates: October 1, 2021 to December 31, 2021

Inspectors: L. Merker, Senior Resident Inspector
E. Lantz, Resident Inspector
N. Cuevas, Resident Inspector
J. Drake, Senior Reactor Inspector
N. Greene, Senior Health Physicist
M. Hayes, Operations Engineer
S. Hedger, Sr Emergency Preparedness Inspector
G. Pick, Senior Reactor Inspector
J. O'Donnell, Senior Health Physicist
D. Antonangeli, Health Physicist
J. Lee, Reactor Inspector

Approved By: Ami N. Agrawal, Acting Chief
Reactor Projects Branch D
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at Palo Verde Nuclear Generating Station, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information. A licensee-identified non-cited violation is documented in report section: 71152.

List of Findings and Violations

Failure to Identify and Correct Exposed Rebar in Steam Generator Pedestals in a Timely Manner			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000529/2021004-01 Open/Closed	[H.8] - Procedure Adherence	71111.08P
The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, for the licensee's failure to identify an issue associated with the steam generator pedestals in Unit 2 as a condition adverse to quality and correct the condition. Title 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformance are promptly identified and corrected.			

Additional Tracking Items

None.

PLANT STATUS

Unit 1 operated at or near full power for the duration of the inspection period.

Unit 2 entered the inspection period at approximately 89 percent power during a coastdown for refueling outage 2R23. On October 9, 2021, the unit was shut down for the refueling outage. On November 10, 2021, the unit reached criticality and returned to full power on November 14, 2021. The unit remained at full power for the remainder of the inspection period.

Unit 3 entered the inspection period at or near full power. On December 6, 2021, the unit automatically tripped on low departure from nucleate boiling ratio as a result of control element assembly calculator penalty factors generated due to a dropped control element assembly during control element assembly manipulations. Unit 3 was restarted on December 9, 2021, and returned to full power on December 11, 2021, where it remained for the remainder of the inspection period.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed activities described in IMC 2515, Appendix D, "Plant Status," conducted routine reviews using IP 71152, "Problem Identification and Resolution," observed risk significant activities, and completed on-site portions of IPs. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

Starting on March 20, 2020, in response to the National Emergency declared by the President of the United States on the public health risks of the coronavirus (COVID-19), resident and regional inspectors were directed to begin telework and to remotely access licensee information using available technology. During this time, the resident inspectors performed periodic site visits each week, increasing the amount of time on site as local COVID-19 conditions permitted. As part of their onsite activities, resident inspectors conducted plant status activities as described in IMC 2515, Appendix D; observed risk significant activities; and completed on site portions of IPs. In addition, resident and regional baseline inspections were evaluated to determine if all or a portion of the objectives and requirements stated in the IP could be performed remotely. If the inspections could be performed remotely, they were conducted per the applicable IP. In some cases, portions of an IP were completed remotely and on site. The inspections documented below met the objectives and requirements for completion of the IP.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

External Flooding Sample (IP Section 03.03) (1 Sample)

- (1) The inspectors evaluated readiness to cope with external flooding on December 28, 2021.

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (3 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) Unit 2, fuel pool cooling systems A and B, on October 14, 2021
- (2) Unit 1, auxiliary feedwater system B, on November 23, 2021
- (3) Unit 3, control room essential air handling unit system B, on December 15, 2021

Complete Walkdown Sample (IP Section 03.02) (1 Sample)

- (1) Unit 2, essential spray pond system B, on December 30, 2021

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the implementation of the fire protection program by conducting a walkdown and performing a review to verify program compliance, equipment functionality, material condition, and operational readiness of the following fire areas:

- (1) Unit 2, upper cable spreading room, Fire Zone 20, on November 16, 2021
- (2) Unit 1, auxiliary feedwater pump rooms A and B, Fire Zones 72 and 73, on November 23, 2021
- (3) Unit 1, main turbine bearings and operating deck, Fire Zones TB9 and TB10, on November 23, 2021
- (4) Unit 3, class 1E 4kV switchgear B, Fire Zone 5B, on December 17, 2021
- (5) Unit 2, class 1E 4kV switchgear A and B, Fire Zones 5A and 5B, on December 22, 2021

Fire Brigade Drill Performance Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated fire brigade performance during an annual fire drill on October 5, 2021.

71111.07A - Heat Sink Performance

Annual Review (IP Section 03.01) (2 Samples)

The inspectors evaluated readiness and performance of:

- (1) Unit 2, emergency diesel generator A, lube oil heat exchanger, on October 22, 2021
- (2) Unit 2, emergency diesel generator A, jacket water heat exchanger, on October 22, 2021

71111.08P - Inservice Inspection Activities (PWR)

PWR Inservice Inspection Activities Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors verified that the reactor coolant system boundary, steam generator tubes, reactor vessel internals, risk-significant piping system boundaries, and containment boundary are appropriately monitored for degradation and that repairs and replacements were appropriately fabricated, examined and accepted by reviewing the following activities from October 11, 2021 to October 22, 2021:

03.01.a - Nondestructive Examination and Welding Activities.

- Ultrasonic Examination:
 - Shutdown Cooling Loop 2, Elbow to Pipe Weld 22-5
 - Shutdown Cooling Loop 2, Pipe to Elbow Weld 22-6
 - Shutdown Cooling Loop 2, Elbow to Pipe Weld 22-7
 - Shutdown Cooling Loop 2, Pipe to Pipe Weld 22-31
- Dye Penetrate Examination:
 - Reactor Coolant System, 2PRCEL096, 2A Drain Line pipe to valve
 - Reactor Coolant System, 2PRCEL060, 1A Drain Line pipe to valve
- Visual 1 Examination
 - Fuel Pool Cooling, Attachment Weld PC-5-H-11-W
- Visual 3 Examination:
 - Fuel Pool Cooling, Pipe Support PC-5-H-11
- Welding:
 - Steam Generator 1 Economizer Feedwater Isolation Valve, Weld 5256026-1
 - Steam Generator 1 Economizer Feedwater Isolation Valve, Weld 5256026-2
 - Steam Generator 1 Economizer Feedwater Isolation Valve, Weld 5256026-3
 - Steam Generator 1 Economizer Feedwater Isolation Valve, Weld 5256026-4

03.01.b - Pressurized-Water Reactor Vessel Upper Head Penetration Examination Activities.

- The inspectors reviewed or observed visual inspections for the following reactor head penetrations:
 - RVCH Penetration 2 to 95.

03.01.c – Pressurized-Water Reactor Boric Acid Corrosion Control Activities.

- 21-05923, 21-05972, 21-06081, 21-06098, 21-06152, 21-06185, 21-06258, 21-06388, 21-06905, 21-06906, 21-06908, 21-06910, 21-06912, 21-07945, 21-07965, 21-09517, 21-09519, 21-10276, 21-10548, 21-10552, 21-10576

The inspectors reviewed 32 condition reports associated with inservice inspection activities and concluded that NDE/ISI related issues and operating experience are put into the corrective action program system at low levels to ensure conditions and problems are identified. No findings or violations of more than minor significance were identified.

71111.11A - Licensed Operator Requalification Program and Licensed Operator Performance

Requalification Examination Results (IP Section 03.03) (1 Sample)

- (1) The inspectors reviewed and evaluated the licensed operator examination failure rates for the requalification annual operating exam administered on December 8, 2021.

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

- (1) The inspectors observed and evaluated licensed operator performance in the control room during the following activities:
 - Units 1 and 3 response following a partial loss of offsite power, on October 20, 2021
 - Unit 2 containment spray system A surveillance testing, on December 2, 2021

Licensed Operator Requalification Training/Examinations (IP Section 03.02) (1 Sample)

- (1) The inspectors observed and evaluated licensed operator requalification simulator training activities, on November 17, 2021

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (4 Samples)

The inspectors evaluated the effectiveness of maintenance to ensure the following structures, systems, and components (SSCs) remain capable of performing their intended function:

- (1) Unit 1, troubleshooting and repairs for control element drive mechanism control system, subgroup 13 failure, on October 20, 2021
- (2) Unit 2, essential cooling water pump B breaker failure, on November 12, 2021
- (3) Unit 2, essential chiller system B maintenance during outage, on December 15, 2021
- (4) Unit 3, diverse auxiliary feedwater actuation systems A and B, on December 29, 2021

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (3 Samples)

The inspectors evaluated the accuracy and completeness of risk assessments for the following planned and emergent work activities to ensure configuration changes and appropriate work controls were addressed:

- (1) Unit 2, high risk for emergent replacement of failed power supply to engineered safety features actuation system auxiliary relay cabinet A, on November 17, 2021
- (2) Unit 1, risk assessment for emergent troubleshooting and correcting the cause of a spurious actuation for containment spray actuation signal channel D, on November 18, 2021
- (3) Unit 2, risk assessment for emergent replacement and testing of safety injection tank 2A vent valve reed switch, on November 22, 2021

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (9 Samples)

The inspectors evaluated the licensee's justifications and actions associated with the following operability determinations and functionality assessments:

- (1) Units 1, 2, and 3, emergency diesel generators A and B operability determinations due to air intercooler bolt torque requirement discrepancies, on October 6, 2021
- (2) Unit 2, safety injection tank 1A operability determination due to nitrogen leakage, on November 11, 2021
- (3) Unit 2, essential spray pond system B operability determination after gasket replacement and water hammer event, on November 12, 2021
- (4) Unit 1, auxiliary feedwater systems A and B operability determinations after void discovery in flow transmitter lines, on December 1, 2021
- (5) Unit 2, motor driven auxiliary feedwater pump operability determination after high outboard horizontal bearing vibrations, on December 1, 2021
- (6) Unit 3, safety injection tank 2A fill and drain valve SIB-UV-611 operability determination for valve stroking closed outside of ASME OM Code reference range, on December 13, 2021
- (7) Unit 3, essential chiller B operability determination for low refrigerant level, on December 16, 2021
- (8) Unit 2, containment spray system B suction header valve SIB-V104 operability determination due to a reach rod failure during a surveillance test, on December 28, 2021
- (9) Unit 2, containment sump operability determination for unqualified coating on replacement containment evacuation speakers, on December 28, 2021

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Unit 2, permanent modification 21-11851-004 to remove the regenerative heat exchanger shell vent valves and sight glass, on October 27, 2021

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (8 Samples)

The inspectors evaluated the following post-maintenance test activities to verify system operability and functionality:

- (1) Unit 2, emergency diesel generator A following maintenance outage, on October 3, 2021
- (2) Unit 2, containment spray system B suction header valve SIB-V104 following the replacement of a sheer pin on the reach rod, on October 22, 2021
- (3) Unit 2, essential spray pond system B gasket replacement following inline ultrasonic testing inspections, on October 27, 2021
- (4) Unit 2, control element drive mechanism control system power switch assembly retests following replacements, on November 9, 2021
- (5) Unit 3, high pressure safety injection system A flow control valve SIA-UV-627 following hand switch and circuit breaker contact replacements, on December 10, 2021
- (6) Unit 2, essential chiller system B following oil and refrigerant filter replacement and calibration of indicators and controls, on December 10, 2021
- (7) Unit 1, reactor trip switchgear D following reactor trip circuit breaker replacement, on December 14, 2021
- (8) Unit 2, atmospheric dump valve system B following nitrogen accumulator calibration, on December 22, 2021

71111.20 - Refueling and Other Outage Activities

Refueling/Other Outage Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated the Unit 2 refueling outage 2R23 activities utilizing guidance from operating experience smart sample 2007/03, "Crane and Heavy Lift Inspection, Supplemental Guidance to [Inspection Procedure] 71111.20 and [Inspection Procedure] 71111.13," Revision 3, from October 8 through November 15, 2021.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (3 Samples)

- (1) Unit 3, essential cooling water pump B inservice testing, on November 16, 2021
- (2) Unit 3, essential chilled water pump B inservice testing, on November 16, 2021
- (3) Unit 2, containment spray system A inservice testing, on December 6, 2021

Containment Isolation Valve Testing (IP Section 03.01) (1 Sample)

- (1) Unit 2, containment penetration valves for containment hydrogen concentration system A from recombiner isolation valve HPA-UV-5 and containment post-LOCA hydrogen monitor outlet isolation valve HPV-HV-7B, on October 19, 2021

71114.06 - Drill Evaluation

Drill/Training Evolution Observation (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated an emergency preparedness drill, on November 23, 2021.

RADIATION SAFETY

71124.01 - Radiological Hazard Assessment and Exposure Controls

Radiological Hazard Assessment (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated how the licensee identifies the magnitude and extent of radiation levels and the concentrations and quantities of radioactive materials and how the licensee assesses radiological hazards.

Instructions to Workers (IP Section 03.02) (1 Sample)

- (1) The inspectors reviewed the following:

Radiation Work Packages

- 2-3000-R23, "Control Element Assembly (CEA) Replacement," Revision 0
- 2-3319-R23, "Reactor Coolant Pump Maintenance w/ Motor Replacement," Revision 0
- 2-3502-R23, "Valve, Flange and Pump Maintenance and Inspection," Revision 0
- 2-3518-R23, "High Risk - Minor Maintenance in the 120'/127' Regenerative Heat Exchanger Cubicle," Revision 0

Electronic Alarming Dosimeter Alarms

- CR 2-21-11100, Spurious dose rate alarm while on Unit 2 Turbine Building Roof
- CR 2-21-11774, Unanticipated dose rate alarm during insulation removal for 2A Reactor Coolant Pump (RCP) loop drain in Unit 2
- CR 3-21-04318, Unanticipated dose rate alarm during activities in 2A RCP bay in Unit 3
- CR 3-21-05271, Unanticipated dose rate alarm during activities on 80' level of Unit 3 Containment Building

Labeling of Containers

- Yellow bags at Sea/Van City
- Sea/Van inside the Dry Active Waste Processing System (DAWPS) building
- B-25 Box in the DAWPS yard
- Sea/Van in the DAWPS yard

Contamination and Radioactive Material Control (IP Section 03.03) (2 Samples)

The inspectors observed/evaluated the following licensee processes for monitoring and controlling contamination and radioactive material:

- (1) Observed licensee surveys of potentially contaminated material leaving the Radiologically Controlled Area (RCA)
- (2) Observed workers exiting the Unit 2 Containment Building during a refueling outage

Radiological Hazards Control and Work Coverage (IP Section 03.04) (4 Samples)

The inspectors evaluated in-plant radiological conditions during facility walkdowns and observation of radiological work activities. The inspectors also reviewed the following radiological work packages:

- (1) 2-3000-R23, "Control Element Assembly (CEA) Replacement," Revision 0
- (2) 2-3319-R23, "Reactor Coolant Pump Maintenance w/ Motor Replacement," Revision 0
- (3) 2-3502-R23, "Valve, Flange and Pump Maintenance and Inspection," Revision 0
- (4) 2-3518-R23, "High Risk - Minor Maintenance in the 120'/127' Regenerative Heat Exchanger Cubicle," Revision 0

High Radiation Area and Very High Radiation Area Controls (IP Section 03.05) (5 Samples)

The inspectors evaluated licensee controls of the following High Radiation Areas and Very High Radiation Areas:

- (1) Unit 2 Containment - 80' level, Reactor Drain Tank Access
- (2) Unit 2 Containment - 100' level, In-Core Instrument Access (Very High Radiation Area)
- (3) Unit 2 Containment - 120' level, Regenerative Heat Exchanger Room
- (4) Unit 2 Containment - 140' Deck, Reactor Vessel Closure Head Stand enclosure
- (5) Unit 2 Containment - 140' Deck, Control Element Assembly (CEA) liner containment for CEA disassembly

Radiation Worker Performance and Radiation Protection Technician Proficiency (IP Section 03.06) (1 Sample)

- (1) The inspectors evaluated radiation worker and radiation protection technician performance as it pertains to radiation protection requirements.

71124.02 - Occupational ALARA Planning and Controls

Implementation of ALARA and Radiological Work Controls (IP Section 03.03) (4 Samples)

The inspectors reviewed as low as reasonably achievable practices and radiological work controls. The inspectors reviewed the following activities:

- (1) RWP 2-3504, "R23 Minor Maintenance," Revision 00
- (2) RWP 2-3512, "Install/Remove Temporary Shielding," Revision 00
- (3) RWP 2-3000, "R23 Control Element Assembly (CEA) Replacement," Revision 01
- (4) RWP 2-3002, "Reactor Destack and Restack," Revision 08

Radiation Worker Performance (IP Section 03.04) (1 Sample)

The inspector observed the following activities:

- (1)
 - Cutting up control element assemblies in containment
 - Calibration of a personnel monitor
 - Minor maintenance activities in containment
 - Installation and removal of temporary shielding
 - Surveillance of installed radiation monitoring instrumentation
 - Egress from the containment control area and the primary RCA exit

71124.03 - In-Plant Airborne Radioactivity Control and Mitigation

Permanent Ventilation Systems (IP Section 03.01) (2 Samples)

The inspectors evaluated the configuration of the following permanently installed ventilation systems:

- (1) Unit 3 Control Room Essential Air Ventilation System
- (2) Unit 3 Fuel & Auxiliary Building Essential Air Ventilation System

Temporary Ventilation Systems (IP Section 03.02) (1 Sample)

The inspectors evaluated the configuration of the following temporary ventilation systems:

- (1) High efficiency particulate air filter unit, RP #0081, in service in unit 2 letdown heat exchanger room during welding activities.

Use of Respiratory Protection Devices (IP Section 03.03) (1 Sample)

- (1) The inspectors evaluated the licensee's use of respiratory protection devices.

Self-Contained Breathing Apparatus for Emergency Use (IP Section 03.04) (1 Sample)

- (1) The inspectors evaluated the licensee's use and maintenance of self-contained breathing apparatuses.

71124.05 - Radiation Monitoring Instrumentation

Walkdowns and Observations (IP Section 03.01) (10 Samples)

The inspectors evaluated the following radiation detection instrumentation during plant walkdowns:

- (1) Alpha Beta Sample Counter, #3030P
- (2) RM-20 Ion Chamber Survey Meter, #1367
- (3) Thermo Scientific Small Article Monitor (SAM) 12, #667
- (4) iPCM-12, Personnel Contamination Monitor, #12028
- (5) RO-20AA Ion Chamber Survey Meter, #1404
- (6) Thermo Fisher Multi-Purpose Digital Survey Meter, FH40G-L, #19512
- (7) AMP-100 Monitor, #5006185
- (8) SWENDI Neutron Detector, #110763

- (9) Steam Generator Main Steam Gamma Radiation Detector, 2JSQRE142B, Turbine Building
- (10) Plant Vent Stack Low Range Monitor, 2JSQRE143, Turbine Building

71124.08 - Radioactive Solid Waste Processing & Radioactive Material Handling, Storage, & Transportation

Radioactive Waste System Walkdown (IP Section 03.02) (2 Samples)

Inspectors walked down the following accessible portions of the radioactive waste systems and evaluated system configuration and functionality:

- (1) Dry Active Waste Processing and Storage Facility
- (2) Mobile Radwaste Resin Dewatering and Drying System

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

BI01: Reactor Coolant System (RCS) Specific Activity Sample (IP Section 02.10) (3 Samples)

- (1) Unit 1 (July 1, 2020 through September 30, 2021)
- (2) Unit 2 (July 1, 2020 through September 30, 2021)
- (3) Unit 3 (July 1, 2020 through September 30, 2021)

BI02: RCS Leak Rate Sample (IP Section 02.11) (3 Samples)

- (1) Unit 1 (July 1, 2020 through September 30, 2021)
- (2) Unit 2 (July 1, 2020 through September 30, 2021)
- (3) Unit 3 (July 1, 2020 through September 30, 2021)

OR01: Occupational Exposure Control Effectiveness Sample (IP Section 02.15) (1 Sample)

- (1) Units 1, 2, and 3 (October 1, 2020 through September 30, 2021)

PR01: Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences (RETS/ODCM) Radiological Effluent Occurrences Sample (IP Section 02.16) (1 Sample)

- (1) Units 1, 2, and 3 (October 1, 2020 through September 30, 2021)

71152 - Problem Identification and Resolution (PI&R)

Semiannual Trend Review (IP Section 02.02) (1 Sample)

- (1) The inspectors reviewed the licensee's corrective action program for potential adverse trends that might be indicative of a more significant safety issue. The inspectors performed an in-depth review of the licensee's ability to identify issues regarding operator performance, evaluate each occurrence, and implement corrective

actions. The inspectors determined evidence of an emerging trend in this area, verified the licensee was aware of this trend, and documented one observation and minor violation.

Annual Follow-up of Selected Issues (IP Section 02.03) (2 Samples)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issues:

- (1) Units 1, 2, and 3, response to failure of seismic monitoring system from August 31 through September 10, 2021
- (2) Units 1, 2, and 3, effectiveness of corrective actions related to the full implementation cyber security program inspection findings as described in NRC Cyber Security Inspection Report 05000528/2020401; 05000529/2020401; and 05000530/2020401 (ML20338A537) dated December 3, 2020

71153 – Follow-Up of Events and Notices of Enforcement Discretion

Personnel Performance (IP Section 03.03) (2 Samples)

- (1) The inspectors evaluated Unit 1 and Unit 3 partial loss of offsite power, and Unit 2 loss of instrument air, due to a loss of the startup transformer NAN-X02, and the licensee's response, on October 20, 2021.
- (2) The inspectors evaluated the Unit 3 automatic reactor trip and licensee's response, on December 9, 2021.

INSPECTION RESULTS

Failure to Identify and Correct Exposed Rebar in Steam Generator Pedestals in a Timely Manner			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000529/2021004-01 Open/Closed	[H.8] - Procedure Adherence	71111.08P
The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, for the licensee's failure to identify an issue associated with the steam generator pedestals in Unit 2 as a condition adverse to quality and correct the condition. Title 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformance are promptly identified and corrected.			
<u>Description:</u> On April 6, 2011, the licensee discovered exposed rebar and uncoated concrete on the SG pedestals for Unit 2 during a civil/structural component monitoring inspection. The condition was documented in condition report (CR) 11-00249. Engineering Evaluation 4450633 was developed to further assess the condition and provide appropriate repair methodology. The condition was determined to not be a structural concern and CMWO 3688852 was generated to complete the repairs and restore the pedestal structures back to as-designed condition. Design Drawing 13-C-ZCS-0300, Rev. 16, Containment Internals Partial Concrete Plan at EL. 80'-0" Areas CAA & CAB, Design Drawing 13-C-ZCS-0301,			

Rev. 17, Containment Internals Partial Concrete Plan at EL. 80'-0", Areas CAC & CAD, and Design Drawing 13-C-ZCS-0361, Rev. 4, Containment Internals Steam Generator Foundation Reinforcing Sections and Details require that a minimum of two inches of concrete shall cover the reinforcing steel material. The initial evaluation failed to identify the nonconformance with design drawings as a condition adverse to quality, and incorrectly identified the exposed # 18 rebar as stirrups rather than as the primary reinforcement component. The evaluation was captured on Evaluation 11-00249-001.

On October 12, 2021, NRC inspectors observed exposed rebar on the concrete pedestals for the steam generators in Unit 2. Following initial discussions, the licensee provided NRC inspectors with the CR initially identifying and evaluating the issue on April 6, 2011, CR 11-00249 and CR 11-00249-001 respectively. The repair work order CMWO 3688852 had not been completed to date. The evaluation again misidentified the exposed rebar as stirrups rather than primary reinforcement members and did not recognize that the exposed rebar was a nonconformance and therefore a condition adverse to quality.

Condition Report 21-11975 was generated following NRC discussions with the licensee and field walkdowns to evaluate the condition of the rebar. Following review by the screening committee the licensee again evaluated the exposed rebar as Not a Condition Adverse to Quality. At the conclusion of field inspections, the condition of the exposed rebar and uncoated concrete on the concrete pedestals was evaluated as having not further degraded and that since there was no concern of structural impact there was no condition adverse to quality. The inspectors challenged this determination and pointed out that Procedure 01DP-0AP12, "Condition Reporting Process", Revision 37, section 3.3, defines Condition Adverse to Quality as "An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items, and non-conformances. At PVNGS this term is applied to: failures, malfunctions, deficiencies, defective items, and non-conformances in items, activities, software, and services that fall within the Current Licensing Basis (CLB) as well as failures to comply with procedures that implement the CLB".

The deviations from Design Drawing 13-C-ZCS-0300, Rev. 16, Containment Internals Partial Concrete Plan at EL. 80'-0" Areas CAA & CAB, Design Drawing 13-C-ZCS-0301, Rev. 17, Containment Internals Partial Concrete Plan at EL. 80'-0", Areas CAC & CAD, and Design Drawing 13-C-ZCS-0361, Rev. 4, Containment Internals Steam Generator Foundation Reinforcing Sections and Details are a nonconformance and a condition adverse to quality. The licensee acknowledged that the exposed rebar was a condition adverse to quality and implemented actions to correct the issue.

Corrective Actions: The licensee's immediate actions were to perform field inspections and issue CR 21-12486.

Corrective Action References: CR 11-00249, CR 21-11975, CR 21-12486

Performance Assessment:

Performance Deficiency: The licensee's failure to characterize a condition adverse to quality related to the steam generator pedestals, provide adequate evaluation, and take prompt corrective actions to resolve was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Design Control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee failure to identify that the exposed rebar in the steam generator pedestals as a condition adverse to quality was a performance deficiency. Failure to correct the condition in over a 10-year period was untimely.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspectors assessed the significance of the finding in accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," dated July 1, 2012. The inspectors determined that the finding was of very low safety significance (Green) because even though the finding (1) was a deficiency affecting the design, it did not impact the qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its allowed outage time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time; and (4) does not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant for greater than 24 hours in accordance with the licensee's maintenance rule program.

Cross-Cutting Aspect: H.8 - Procedure Adherence: Individuals follow processes, procedures, and work instructions. Specifically, Procedure 01DP-0AP12, "Condition Reporting Process", Revision 37, was not followed with regards to screening the missing concrete and exposed rebar as a condition adverse to quality. In the original write up of CR 21-11975, the field evaluation reached the same conclusions as CR 11-000249 write up, and the Conditions Review Group failed to screen the exposed rebar as a condition adverse to quality as defined in the corrective action program

Enforcement:

Violation: Title 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are corrected in a timely manner. Contrary to the above, from initial operations until October 22, 2021, the licensee failed to identify a condition adverse to quality and correct it. Specifically, the licensee failed to identify that the exposed rebar in the steam generator pedestals was a condition adverse to quality and failed to take actions to correct it in a timely manner.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Observation: Operator Performance Trend Review and Minor Violation	71152
<p>The inspectors performed an in-depth review of the licensee's ability to identify issues regarding operator performance, evaluate each occurrence, and implement corrective actions. The inspectors determined evidence of an emerging trend in this area, verified the licensee was aware of this trend, and identified one minor violation.</p> <p>The inspectors reviewed seven condition reports documenting human performance errors by operations personnel. The inspectors noted the human performance errors were evenly distributed across the three units (two events in Unit 1, two events in Unit 2, and three events in Unit 3, respectively), and while four events occurred in the first half of 2021, the remaining three events occurred within a two-month period from September through November. The inspectors determined the licensee adequately followed site procedures to document and correct each human performance error. However, the inspectors questioned the licensee's evaluation of the human performance errors due to the licensee's inconsistent classification of the condition reports. The inspectors identified that five of the seven condition reports were classified as not a condition adverse to quality (NCAQ), whereas two similar condition reports were classified as conditions adverse to quality (CAQs). The inspectors noted the licensee documented the trend in operator performance under an eighth condition report as a condition adverse to quality (CAQ). While reviewing the inspectors' concern, the licensee concluded a condition adverse to quality classification would be more appropriate for three of the condition reports previously classified as not a condition adverse to quality.</p> <p>The inspectors determined the failure to identify three conditions adverse to quality was a performance deficiency and contrary to 10 CFR 50 Appendix B, Criterion XVI, "Corrective Action," which states, in part, that conditions adverse to quality are promptly identified. The performance deficiency was minor because it could not be reasonably viewed as a precursor to a significant event; would not have the potential to lead to a more significant safety concern if left uncorrected; and while it was associated with the human performance attribute of the Mitigating Systems Cornerstone, it did not adversely affect the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences.</p> <p>This failure to comply with 10 CFR 50 Appendix B, Criterion XVI constitutes a minor violation that is not subject to enforcement action in accordance with the NRC's Enforcement Policy. The licensee entered this issue into the corrective action program under CR 22-00399.</p>	

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On October 21, 2021, the inspectors presented the Radiation Safety inspection results to Mr. T. Weber, Director of Nuclear Regulatory Affairs, and other members of the licensee staff.
- On October 22, 2021, the inspectors presented the Unit 2 Inservice inspection results to Mr. B. Rash, Vice President, Nuclear Engineering and Regulatory, and other members of the licensee staff.
- On December 8, 2021, the inspectors presented the Cyber Security Problem Identification and Resolution inspection results to Mr. B. Rash, Vice President, Nuclear Engineering and Regulatory, and other members of the licensee staff.
- On January 4, 2022, the inspectors presented the Seismic Monitoring System Corrective Action Review inspection results to Ms. C. Shields, Emergency Preparedness Manager, and other members of the licensee staff.
- On January 20, 2022, the inspectors presented the integrated inspection results to Mrs. M. Lacal, Executive Vice President, Chief Nuclear Officer, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Corrective Action Documents		21-14428, 21-14642	
71111.01	Drawings	13-C-ZVA-002	Site Drainage General Arrangement Plan	8
71111.01	Drawings	13-C-ZVC-065	Site Rough Grading Plan Area 1	4
71111.01	Drawings	13-C-ZVC-066	Site Rough Grading Plan Area 2	6
71111.01	Drawings	13-C-ZVC-070	Site Rough Grading Plan Area 6	6
71111.01	Drawings	13-C-ZVC-074	Site Rough Grading Plan Area 10	3
71111.01	Drawings	13-C-ZVC-100	Site Storm Drainage Dikes and Channels Sheet 1	6
71111.01	Procedures	40AO-9ZZ21	Acts of Nature	39
71111.01	Work Orders		4541553	
71111.04	Corrective Action Documents		17-06376, 21-15292	
71111.04	Drawings	01-M-AFP-0001	P & I Diagram Auxiliary-Feedwater System	45
71111.04	Drawings	01-M-HJP-001	Control Building HVAC P & I Diagram	27
71111.04	Drawings	02-M-PCP-001	P & I Diagram Fuel Pool Cooling & Cleanup System	
71111.04	Drawings	02-M-SPP-001	Essential Spray Pond System	69
71111.04	Miscellaneous	17-06376-002	Design Equivalent Change Package "SP-1711 Essential Spray Pond Wall Repair"	2
71111.04	Procedures	40OP-9HJ01	Control Building HVAC (HJ)	37
71111.04	Procedures	40OP-9PC01	Fuel Pool Cooling	
71111.04	Procedures	40OP-9SP02	Essential Spray Pond (SP) B	57
71111.04	Procedures	40ST-9AF08	Auxiliary Feedwater Pump AFB-P01 Monthly Valve Alignment	6
71111.04	Procedures	93DP-0LC07-01	10 CFR 50.59 and 72.48 Administrative Guideline	7
71111.05	Corrective Action Documents		21-09919, 21-10986, 21-11524, 20-12846, 21-13457, 5387437, 21-15047, FSCCR 5395659, FSCCR 5398202, FSCCR 5398203, 19-04990, 16-18974	
71111.05	Drawings	01-M-FPP-006	P & I Fire Protection System	16
71111.05	Drawings	13-A-ZYD-022	Fire Protection Containment Building Floor Plan at Elevation 80 ft.	12
71111.05	Miscellaneous		Off Site Fire Chief Fire Drill Observation Report	06/24/2021

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.05	Miscellaneous		PVGS Pre-Fire Strategies Manual	29
71111.05	Miscellaneous		UFSAR, section 9.5.1, Fire Protection System	20C
71111.05	Miscellaneous		UFSAR, Appendix 9B, Fire Protection Evaluation Report	20C
71111.05	Miscellaneous		Design Basis Manual, Fire Protection System, Section 6.3. Cable Spreading Room	15
71111.05	Miscellaneous	NPL37-D-003C-03	Unit 1 Fire Drill Summary	06/23/2021
71111.05	Miscellaneous	NPL38-D-002B-01	Unit 1 Fire Drill Summary	08/20/2021
71111.05	Miscellaneous	NPL41-D-001A-07	Unit 1 Fire Drill Summary	10/05/2021
71111.05	Procedures	14DP-0FP02	Fire System Impairments and Notifications	27
71111.05	Procedures	14DP-0FP33	Control of Transient Combustibles	32
71111.07A	Calculations	13-MC-DG-0411	DG Heat Exchanger Minimum Flow Rate vs. Inlet SP Water Temperature	4
71111.07A	Calculations	13-MC-DG-0411	DG Heat Exchanger Minimum Flow Rate vs. Inlet SP Water Temperature	5
71111.07A	Calculations	13-MC-SP-0307	SP/EW System Thermal Performance Design Bases Analysis	9
71111.07A	Corrective Action Documents		21-11138, 21-11205, 21-11233, 21-11239, 21-11644, 21-11217, 21-11226	
71111.07A	Procedures	73DP-9ZZ11	Heat Exchanger Program	16
71111.07A	Procedures	73DP-9ZZ21	Heat Exchanger Visual Inspection	8
71111.07A	Procedures	73TI-9ZZ28	Eddy Current Examination of Tubing	11
71111.07A	Work Orders		5174679, 5254569, 5254521, 5254522, 5254523, 5254449, 5254450	
71111.08P	Corrective Action Documents		11-00249, 15-02910, 17-17322, 20-03475, 20-16460, 21-05449, 21-05718, 21-05792, 21-05923, 21-05972, 21-06081, 21-06098, 21-06152, 21-06159, 21-06165, 21-06181, 21-06185, 21-06258, 21-06388, 21-06414, 21-06517, 21-06522, 21-06905, 21-06906, 21-06908, 21-06910, 21-06912, 21-07207, 21-07225, 21-07381, 21-07445, 21-07636, 21-07800, 21-07803, 21-07945, 21-07962, 21-07965, 21-09210, 21-09517, 21-09519, 21-	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			09660, 21-09698, 21-09913, 21-10226, 21-10236, 21-10276, 21-10421, 21-10479, 21-10548, 21-10552, 21-10554, 21-10576, 21-11610, 21-11825	
71111.08P	Corrective Action Documents Resulting from Inspection		21-11808, 21-11814, 21-11815, 21-11818, 21-11820, 21-11910, 21-11912, 21-11914, 21-11934, 21-11936, 21-11975, 21-11977, 21-11982, 21-12001, 21-12048, 21-12059, 21-12062, 21-12284, 21-12486, 21-12491, 21-12493	
71111.08P	Drawings	13-C-ZCS-0300	Containment Internals Partial Concrete Plan at EL. 80'-0" Areas CAA & CAB	16
71111.08P	Drawings	13-C-ZCS-0301	Containment Internals Partial Concrete Plan at EL. 80'-0", Areas CAC & CAD	17
71111.08P	Drawings	13-C-ZCS-0361	Containment Internals Steam Generator Foundation Reinforcing Sections and Details	4
71111.08P	Drawings	E 77560 & 77560-1	VALVE ASSY 2 INCH, Y TYPE, 1512 LB, GLOBE, S.W., CRES.	D
71111.08P	Miscellaneous		Relief Request 65 - Unit 2, COVID-19, Request for Relief from Bottom Mounted Instrumentation Nozzles and a Pressurizer Nozzle to Surge Line Weld Overlay Examination	03/27/2020
71111.08P	Miscellaneous		Welder / Brazer Performance Qualification Summary	113
71111.08P	Miscellaneous		Palo Verde Safety Manual	49
71111.08P	Miscellaneous	2-21-00423	Sample Data Sheet - Unit 2 CTMT BLDG 87' ELEV Rm 1A RCP Bay	10/20/2021
71111.08P	Miscellaneous	31MT-9ZZ15	Mechanical Snubber Removal And Reinstallation	32
71111.08P	Miscellaneous	4INT-INCO-06	Units 1, 2 & 3 Alloy 600 Management Program Plan	0
71111.08P	Miscellaneous	4INT-ISI-2	4th Inspection Interval Inservice Inspection Program Summary Manual PVGS Unit 2	1
71111.08P	Miscellaneous	74DP-9ZZ21-01	RCS Deposits Administrative Guideline	1
71111.08P	Miscellaneous	ACI 318-71	Building Code Requirements for Reinforced Concrete	10/01/1974
71111.08P	Miscellaneous	CUP#2899	Nuclear Grade Tape Products	16
71111.08P	Miscellaneous	CUP#3355	Duct Tape, Non-Nuclear Grade	18
71111.08P	Miscellaneous	MRP-058	Materials Reliability Program: Boric Acid Corrosion Guidebook, Revision 2: Managing Boric Acid Corrosion Issues at PWR Power Stations	2
71111.08P	Miscellaneous	SDOC No. 02-	U2 EW Growth Letter	08/29/2012

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.08P	NDE Reports	MN950-A00052 17-VT-2051	Visual Examination for Boric Acid Detection - Closure Head CEDM Penetrations	04/24/2017
71111.08P	NDE Reports	20-VT-2089	Pressure Test Report - RCS PIPING REFUELING OUTAGE: Class 1 and Class 2 pressurized and non pressurized piping inside containment during mode 3 walkdown.	05/21/2020
71111.08P	NDE Reports	21-PT-2001	RC/2PRCEL096, 2A Drain Line	10/12/2021
71111.08P	NDE Reports	21-PT-2002	RC/2PRCEL060	10/12/2021
71111.08P	NDE Reports	21-UT-2021	Shutdown Cooling Loop 2	10/14/2021
71111.08P	NDE Reports	21-UT-2022	Shutdown Cooling Loop 2	10/14/2021
71111.08P	NDE Reports	21-UT-2023	Shutdown Cooling Loop 2	10/14/2021
71111.08P	NDE Reports	21-UT-2024	Shutdown Cooling Loop 2	10/14/2021
71111.08P	NDE Reports	21-VE-2004	VE bare metal examination of Reactor Vessel ICI penetrations (1-31-1 thru 61)	10/11/2021
71111.08P	NDE Reports	21-VE-2065	VE bare metal examination of Reactor Head CEDM penetrations. 2R23 (1 thru 97 including head vent)	10/16/2021
71111.08P	NDE Reports	21-VT-2009	VT2 of Rx head bolted connection	10/12/2021
71111.08P	NDE Reports	21-VT-2034	PC-5-H-11	10/12/2021
71111.08P	NDE Reports	21-VT-2035	PC-5-H-11-W	10/12/2021
71111.08P	Procedures	01DP-0AP12	Condition Reporting Process	37
71111.08P	Procedures	01DP-0AP61	Chemical Control Program	2
71111.08P	Procedures	01DP-0FP01	Control of Flammable/Combustible Storage Cabinets	6
71111.08P	Procedures	01DP-0XX01	Control and Monitoring of Potential Tornado Borne Missiles	6
71111.08P	Procedures	31MT-9SI01	Low Pressure Safety Injection Pump Maintenance	27
71111.08P	Procedures	31MT-9SI02	High Pressure Safety Injection Pump Disassembly, Examination and Assembly	37
71111.08P	Procedures	31MT-9SI03	Containment Spray Pump Disassembly And Assembly	26
71111.08P	Procedures	40OP-9RC03	RCS Leakage Source Determination	6
71111.08P	Procedures	40ST-9RC02	ERFDADS (Preferred) Calculation of RCS Water Inventory	54
71111.08P	Procedures	40ST-9SI09	ECCS Systems Leak Test	59
71111.08P	Procedures	70TI-9ZC01	Boric Acid Walkdown Leak Detection	25
71111.08P	Procedures	73DP-0AP04	Primary Coolant Sources Outside Containment Program	7

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.08P			Technical Specification 5.5.2	
71111.08P	Procedures	73DP-9WP04	Welding and Brazing Control	21
71111.08P	Procedures	73DP-9WP05	Weld Filler Material Control	12
71111.08P	Procedures	73DP-9ZC01	Boric Acid Corrosion Control Program	10
71111.08P	Procedures	73DP-9ZZ16	Testing and Control of PVGS Snubbers	16
71111.08P	Procedures	73ST-9ZZ10	Hydraulic Snubber Functional Testing	27
71111.08P	Procedures	73ST-9ZZ21	Snubber Visual Examination	18
71111.08P	Procedures	73ST-9ZZ22	Mechanical Snubber Function Test	21
71111.08P	Procedures	73TI-0ZZ02	Ultrasonic Thickness Measurement	14
71111.08P	Procedures	73TI-9RC09	Bare Metal Visual Examination of Reactor Vessel Upper Head	7
71111.08P	Procedures	73TI-9RC10	Bare Metal Visual Examination of Reactor Vessel Bottom Head	5
71111.08P	Procedures	73TI-9SI16	ECCS Sump to RWT Leakage Paths Design Bases Testing	3
71111.08P	Procedures	73TI-9ZZ05	Dry Magnetic Particle Examination	19
71111.08P	Procedures	73TI-9ZZ07	Liquid Penetrant Examination	19
71111.08P	Procedures	73TI-9ZZ10	Ultrasonic Examination of Welds in Ferritic Components	15
71111.08P	Procedures	73TI-9ZZ17	Visual Examination of Welds, Bolting, and Components	14
71111.08P	Procedures	73TI-9ZZ18	Visual Examination of Component Supports	17
71111.08P	Procedures	73TI-9ZZ19	Visual Examination of Pump and Valve Internal Surfaces	16
71111.08P	Procedures	73TI-9ZZ22	Visual Examination For Leakage	13
71111.08P	Procedures	73TI-9ZZ82	Visual Examination of Metal Containment Building Surfaces	8
71111.08P	Procedures	EPRI-PIPE-MPA-1	Procedure for Manual Phased Array Ultrasonic Examination of Austenitic and Ferritic Pipe Welds EPRI-PIPE-MPA-1	2
71111.08P	Procedures	EPRI-PIPE-TWS-MPA-1	Procedure for Manual Phased Array Ultrasonic Through-Wall Sizing In Pipe Welds EPRI-PIPE-TWS-MPA-1	1
71111.08P	Procedures	PDI-UT-1	PDI Generic Procedure for the Ultrasonic Examination of Ferritic Pipe Welds PDI-UT-1	G
71111.08P	Procedures	PDI-UT-10	PDI Generic Procedure for the Ultrasonic Examination of Dissimilar Metal Welds, PDI-UT-10	G
71111.08P	Procedures	PDI-UT-11	PDI Generic Procedure for the Ultrasonic Examination of Reactor Pressure Vessel Nozzle-to-Shell Welds and the Nozzle Inner Corner Radius PDI-UT-11	D

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.08P	Procedures	PDI-UT-2	PDI Generic Procedure for the Ultrasonic Examination of Austenitic Pipe Welds PDI-UT-2	I
71111.08P	Procedures	PDI-UT-3	PDI Generic Procedure for the Ultrasonic Through-Wall Sizing of Planar Flaws in Similar Metal Piping Welds PDI-UT-3	G
71111.08P	Procedures	PDI-UT-5	PDI Generic Procedure for the Straight Beam Ultrasonic Examination of Bolts and Studs PDI-UT-5	G
71111.08P	Procedures	PDI-UT-8	PDI Generic Procedure for the Ultrasonic Examination of Weld Overlay Similar and Dissimilar Metal Welds, PDI-UT-8	I
71111.08P	Self-Assessments	20-04629-001	INPO MRV NDE SIMPLE SELF-ASSESSMENT	06/30/2020
71111.08P	Self-Assessments	SWMS#17-09564	Welding Program Self Assessment	06/30/2017
71111.08P	Self-Assessments	SWMS#18-14430-002	ISI Simple Self Assessment	04/02/2019
71111.08P	Self-Assessments	SWMS#20-04621-002	Alloy 600	07/23/2020
71111.11Q	Miscellaneous	NLR21S050401	Licensed Operator Continuing Training Simulator Scenario: Fire with Spurious Equipment Actuations	11/16/2021
71111.11Q	Miscellaneous	SES-0-05-P-10	Licensed Operator Continuing Training Simulator Evaluation Scenario: SIT 1B Air Leak / Control Channel NI #1 Fails Low / RCP 2A Trip / ATWS / ESD	11/16/2021
71111.11Q	Procedures	40DP-9OPP02	Conduct of Operations	76
71111.11Q	Procedures	73ST-9SI06	Containment Spray Pumps and Check Valves – Inservice Test	45
71111.11Q	Work Orders		5271728	
71111.12	Corrective Action Documents		21-08461, 21-06710, 21-09763, 21-09485, 18-17577, 19-10419, 21-12252, 21-12351, 21-12367, 21-12088, 19-10269, 19-10579, 19-10910, 19-12574, 19-18009, 20-05452, 20-05813, 20-07365, 21-03326	
71111.12	Miscellaneous		Guidance on Overhaul of Magne-Blast Circuit Breakers	12/2000
71111.12	Miscellaneous		Performance Criteria Formulation Bases for SA System (Engineered Safety Features Actuation System)	4
71111.12	Miscellaneous		Vendor Technical Document VTD-C150-0017, Carrier Corporation 19FA Centrifugal Chiller Parts Catalog S/N 26507-26512	N/A

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.12	Miscellaneous		Mrule Performance Monitor Group information for Essential Chilled Water B	
71111.12	Miscellaneous		Unit 2 Control room logs for 09/17/2021-12/16/2021	
71111.12	Miscellaneous		Unit 3 Control Room Logs January 1 – December 28, 2021	12/29/2021
71111.12	Miscellaneous		MRule Manager Data for Unit 3 SA DAFAS A and B	12/29/2021
71111.12	Miscellaneous	13-NS-C025	Risk Informed Performance Criteria	9
71111.12	Miscellaneous	SA-02323	SA – DAFAS A/B Maintenance Rule (a)(1) Issue Tracking Form	0
71111.12	Miscellaneous	SA-02323	SA – DAFAS A/B Maintenance Rule (a)(1) Issue Tracking Form	1
71111.12	Miscellaneous	SAL 361.1	Service Advisory Letter	1
71111.12	Miscellaneous	TR-109641	Guidance on Routine Preventive Maintenance for Magne-Blast Circuit Breakers	10/1998
71111.12	Procedures	01DP-0AP12	Condition Reporting Process	38
71111.12	Procedures	32MT-9ZZ34	Maintenance of AM-4.16-250-9H GE Magne-Blast Circuit Breakers	40
71111.12	Procedures	32MT-9ZZ38	Overhaul of AM-4.16-250-9H GE Magne-Blast Circuit Breakers	26
71111.12	Procedures	33MT-9EC01	Essential Chiller	15
71111.12	Procedures	40OP-9EC02,	Essential Chilled Water Train B	34
71111.12	Procedures	40OP-9SF01	Control Element Drive Mechanism Control System (CEDMCS) Operation	31
71111.12	Procedures	70DP-0MR01	Maintenance Rule	46
71111.12	Work Orders		5152532, 5235964, 5218289, 5218290, 5279220, 5360915, 5380847, 5258452, 5257990	
71111.13	Corrective Action Documents		21-13903, 21-13663, 21-13799	
71111.13	Miscellaneous		Phoenix Risk Monitor – PVGS Unit 1 Current Risk Summary Report as of 11/18/2021	
71111.13	Miscellaneous		U1 PHOENIX RICT November 18, 2021 Operator Screen Risk at 0433	11/18/2021
71111.13	Miscellaneous		Work Week 2146 Schedule Risk Evaluation,	11/15/2021-11/21/2021
71111.13	Miscellaneous		Risk Management and Readiness Plan: U2 A ESFAS PS	0

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71111.13	Miscellaneous		Replacement Work Week 2147 Schedule Risk Evaluation	11/22/2021- 11/28/2021
71111.13	Procedures	02DP-0RS01	Online Integrated Risk	9
71111.13	Procedures	40DP-9RS01	Operations Department Online Nuclear Risk Determination Modes 1 and 2	7
71111.13	Procedures	40DP-9RS04	RICT PRA Functionality Determination	1
71111.13	Procedures	40DP-9RS05	Calculation of RMAT and RICT	0
71111.13	Procedures	73ST-9XI37	Safety Injection Tank Nitrogen Vent Valves-Inservice Test	9
71111.13	Work Orders		5389532, 5388714, 5390168	
71111.15	Calculations	13-CC-ZC-0285	Heat Sink Calculations Containment Building	14
71111.15	Calculations	13-NC-ZC-0237	Maximum Passive Heat Sink for Hydrogen Generation & ECCS Evaluation	7
71111.15	Calculations	N001-1106-00002	Debris Generation Due to LOCA Within Containment for Resolution of GSI-191	3
71111.15	Corrective Action Documents		21-12899, 21-12438, 21-12529, 21-12563, 21-12578, 21-12585, 21-12623, 21-12752, 21-11058, 21-13285, 16-13938, 21-12286, 21-08850, 21-13780, 21-14537, 21-10885, 21-11296, 21-13294, 20-05888, 21-14814, 21-12485, 21-13692, 21-13671, 21-14937, 21-14929, 20-10476, 17-06807	
71111.15	Drawings	02-M-SIP-001	Safety Injection & Shutdown Cooling System	56
71111.15	Drawings	02-P-SPF-701	Diesel Generator BLDG. ISO Essential Pray Pond System Train A & B	3
71111.15	Drawings	02-P-ZYA-0926	Essential Pipe Tunnel piping sections and details	0
71111.15	Drawings	02-P-ZYA-0926	Essential Pipe Tunnel Piping Plan	1
71111.15	Drawings	03-M-SIP-002	P & I Diagram: Safety Injection and Shutdown Cooling System	38
71111.15	Engineering Changes		2018-00492	
71111.15	Miscellaneous		Engineering Evaluation 21-12899-003	
71111.15	Miscellaneous		PVNGS Design Basis Manual, Essential Spray Pond System	23
71111.15	Miscellaneous		Technical Documents 269457, 274560, 274776, 274816,	

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71111.15			274835, 274865, 274922, 274962, 424156	
71111.15	Miscellaneous		Updated Final Safety Analysis Report	21
71111.15	Miscellaneous		Design Basis Manual: Essential Chilled Water System	18
71111.15	Miscellaneous		PVNGS Technical Specification Bases	72
71111.15	Miscellaneous		UFSAR Section 9.2.9.2, Essential Chilled Water Systems	21
71111.15	Miscellaneous		PVGNS Design Basis Manual, Auxiliary Feedwater System	26
71111.15	Miscellaneous		Design Basis Manual: Safety Injection System	41
71111.15	Miscellaneous		PVNGS Technical Specification Bases	72
71111.15	Miscellaneous		UFSAR Section 15.6.5, Loss-Of-Coolant Accidents	21
71111.15	Miscellaneous		UFSAR Section 6.3.3a, LOCA Analysis – CE16STD Fuel	21
71111.15	Miscellaneous		Unit 2 Operator Logs, December 20-28, 2021	12/28/2021
71111.15	Miscellaneous		Unit 2 Operator Logs, November 11-18, 2021	12/28/2021
71111.15	Miscellaneous	13-MS-A137	Engineering Study, Development of AF System Pipe Arc Length Acceptance Criteria Associated with Calculated Max Void Volumes	1
71111.15	Miscellaneous	21-11296-003	MRFF (Maintenance Rule Functional Failure) Evaluation	
71111.15	Miscellaneous	21-13294-004	Engineering Evaluation	
71111.15	Miscellaneous	EER 90-DG-030	Engineering Evaluation Request	04/16/1990
71111.15	Miscellaneous	Study 13-NS-C088	Mission time for Operability Determinations	1
71111.15	Procedures	36ST-9AF02	Train B Auxiliary Feedwater Flow Instrumentation Calibration	9
71111.15	Procedures	40DP-9OP19	Locked Valve, Breaker, and Component Tracking	140
71111.15	Procedures	40DP-9OP26	Operations Condition Reporting Process and Operability Determination/Functional Assessment	47
71111.15	Procedures	40DP-9OPA4	Control Building Watch Station Rounds	125
71111.15	Procedures	40ST-9SI09	ECCS Systems Leak Test	60
71111.15	Procedures	73ST-9AF05	Auxiliary Feedwater Pump B – Comprehensive Pump Test	19
71111.15	Procedures	73ST-9XI04	SI Train B Valves – Inservice Test	40
71111.15	Procedures	73ST-9XI04	SI Train B Valves – Inservice Test	41
71111.15	Work Orders		4922485, 4922486, 5061531, 5057504, 5373506, 5241560, 5263109, 5216987, 5191806, 5395606, 5388830, 5388912, 5275397, 5273625, 5267591	
71111.18	Corrective Action		21-11851, 21-11695	

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	Documents			
71111.18	Drawings	02-M-CHP-0001	P&I Diagram Chemical and Volume Control System	38
71111.18	Drawings	02-M-RDP-0001	P&I Diagram Radioactive Waste Drain System (Containment Building)	16
71111.18	Miscellaneous		PVNGS UFSAR	21
71111.18	Miscellaneous	21-F014	Licensing Document Change Request	0
71111.18	Miscellaneous	PVNGS DBM	Chemical and Volume Control System	26
71111.18	Miscellaneous	S-21-0043	10CFR50.59 Screening/Evaluation	0
71111.18	Work Orders		5380370	
71111.19	Corrective Action Documents		21-07164, 21-11226, 21-14350, 21-14377, 21-13545, 21-13557, 21-12088, 21-12485, 21-15116	
71111.19	Miscellaneous		Unit 1 Control room logs	10/01/2021-10/03/2021
71111.19	Miscellaneous		Unit 2 control room logs for October 2021	
71111.19	Miscellaneous	TD 276657	Operations Technical Document to Comply with Tech Spec 3.6.3 for SIA-UV-627 Inoperability	12/02/2021
71111.19	Miscellaneous	TD 276657	Operations Technical Document to Comply with Tech Spec 3.6.3 for SIA-UV-627 Inoperability	12/04/2021
71111.19	Procedures	32MT-9PE01	Cleaning, Inspecting, and Testing of the Class 1E Diesel Generator	47
71111.19	Procedures	32MT-9ZZ74	Molded Case Circuit Breaker Test	53
71111.19	Procedures	32ST-9SB02	18 Month Surveillance Test for Westinghouse Type DS-416 Reactor Trip Breakers	8
71111.19	Procedures	33MT-9EC01	Essential Chiller	15
71111.19	Procedures	36ST-9SB44	RPS Matrix Relays to Reactor Trip Response Time Test	25
71111.19	Procedures	36ST-9SB52	RTSG Shunt and Undervoltage Trip Functional Test	12
71111.19	Procedures	40DP-9OP18	Motor Operated Valves Operating Guidelines	24
71111.19	Procedures	40DP-9OP19	Locked Valve, Breaker, and Component Tracking	140
71111.19	Procedures	40OP-9PH01	Train A 480V Class 1E MCC	16
71111.19	Procedures	40ST-9DG01	Diesel Generator A Test	51
71111.19	Procedures	40ST-9SI09	ECCS Systems Leak Test	60
71111.19	Procedures	73DP-9ZZ05	Lubrication of Plant Equipment	37
71111.19	Procedures	73ST-9XI20	ADV's – Inservice Test	57

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71111.19	Procedures	77ST-9SB22	CEA Drop Time Test	15
71111.19	Work Orders		5256867, 5224848, 5254445, 5136175, 5254471, 5256018, 5303866, 5258250, 5270389, 5320369, 5393374, 5258452, 5257990, 5382122, 5277571, 5277252, 5282209, 5250921, 5249295, 5250944, 5250885	
71111.20	Corrective Action Documents		21-03767, 21-09919, 21-11334, 21-11665, 21-11674, 21-11680, 21-11681, 21-11682, 21-11685, 21-11686, 21-11688, 21-11691, 21-11693, 21-11695, 21-11874, 21-12436, 21-12457, 21-12545, 21-12546	
71111.20	Miscellaneous		Unit 2 Cycle 23 Specific Maneuver Plan: EOC Coastdown	0
71111.20	Miscellaneous		Unit 2 Cycle 23 Standard Maneuver Plan: EOC Shutdown 81.93% to 20%	0
71111.20	Miscellaneous		Unit Two 23rd Refueling Outage Shutdown Risk Assessment Team Review Report	0
71111.20	Miscellaneous		CN390-A00183, Safety Analysis Report for Single Failure Proof Trolley (NUREG 0554)	0
71111.20	Miscellaneous		Fatigue Assessment for Technician Following Arc Flash Event	10/23/2021
71111.20	Miscellaneous	21-009	2R23 Refueling Outage Restart PRB Package	0
71111.20	Miscellaneous	MN725-A00935	RSB 5-1 Natural Circulation Cooldown Analysis for Power Uprate and SG Replacement at Palo Verde Nuclear Generating Station Units 1, 2, and 3	4
71111.20	Procedures	30DP-0MP13	PVGS Rigging Control	27
71111.20	Procedures	30DP-9MP11	Field Use of Rigging	44
71111.20	Procedures	31MT-9RC30	Reactor Vessel Head Removal and Installation	60
71111.20	Procedures	40DP-9RS02	Shutdown Risk Management	6
71111.20	Procedures	40OP-9PC05	Augmentation of Fuel Pool Cooling with Shutdown Cooling	39
71111.20	Procedures	40OP-9SI01	Shutdown Cooling Initiation	58
71111.20	Procedures	40OP-9ZZ03	Initial Reactor Startup Following Refuelings	61
71111.20	Procedures	40OP-9ZZ04	Weekly Shutdown Electrical Distribution Checks	25
71111.20	Procedures	40OP-9ZZ05	Power Operations	151
71111.20	Procedures	40OP-9ZZ11	Mode Change Checklist	104
71111.20	Procedures	40OP-9ZZ23	Outage GOP	85
71111.20	Procedures	40OP-9ZZ26	Tracking Containment Penetrations	29

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71111.20	Procedures	40ST-9RC01	RCS and Pressurizer Heatup and Cooldown Rates	21
71111.20	Procedures	40ST-9ZZ01	Locked Valve Monthly Surveillance	7
71111.20	Procedures	40ST-9ZZM1	Operations Mode 1 Surveillance Logs	74
71111.20	Procedures	40ST-9ZZM13	Containment Isolation Valves	17
71111.20	Procedures	51DP-9OPM09	Outage Planning and Implementation	20
71111.20	Procedures	70DP-0RA01	Shutdown Risk Assessments	62
71111.20	Procedures	72PY-9RX06	Low Power Physics Testing Using STAR	10
71111.20	Work Orders		5257823	
71111.22	Calculations	13-JC-SI-0215	Containment Spray Pump Discharge Flow Indication Loops (SIA-F-338 & SIB-F-348) Uncertainty Calculation	18
71111.22	Corrective Action Documents		18-14867, 17-11850, 21-13811, 21-12417, 21-12422	
71111.22	Drawings	02-M-SIP-001	P & I Diagram: Safety Injection & Shutdown Cooling System	56
71111.22	Miscellaneous		Unit 3 Operator logs: November 16, 2021	11/16/2021
71111.22	Procedures	30DP-9MP01	Conduct of Maintenance	84
71111.22	Procedures	40OP-9OP43	M&TE Gage Installation	2
71111.22	Procedures	73DP-9XI01	Pump and Valve Inservice Testing Program	41
71111.22	Procedures	73ST-9CL01	Containment Leakage Type B and C Testing	49
71111.22	Procedures	73ST-9EC01	Essential Chilled Water Pumps – Inservice test	29
71111.22	Procedures	73ST-9EW01	Essential Cooling Water Pumps – Inservice test	35
71111.22	Procedures	73ST-9SI06	Containment Spray Pumps and Check Valves – Inservice Test	45
71111.22	Procedures	73ST-9SI06	Containment Spray Pumps and Check Valves – Inservice	45a
71111.22	Work Orders		5266875, 5266874, 5271728	
71114.06	Corrective Action Documents		21-14084, 21-14076	
71114.06	Procedures	EP-0900-011	ERO Positions Emergency Operations Director (EOF)	1
71114.06	Procedures	EP-0902	Notifications	18
71114.06	Procedures	EP-0904	ERO/ERF Activation and Operation	13
71114.06	Procedures	EP-0905	Protective Actions	13
71124.01	Corrective Action Documents		20-13969, 20-14285, 20-14744, 20-14974, 20-15826, 21-01194, 21-02640, 21-03646, 21-03835, 21-04318, 21-04730, 21-05021, 21-05093, 21-05120, 21-05271, 21-	

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			05625, 21-05694, 21-06192, 21-10277, 21-11100, 21-11774, 21-12245	
71124.01	Miscellaneous		Radiological Safety Trends	08/31/2021
71124.01	Procedures	75DP-0RP01	RP Program Overview	12
71124.01	Procedures	75DP-9RP01	Radiation Exposure and Access Control	23
71124.01	Procedures	75DP-9RP01	Radiation Exposure and Access Control	23
71124.01	Procedures	75RP-0RP01	Radiological Posting and Labeling	36
71124.01	Procedures	75RP-9ME23	Exposure Evaluation for Lost, Damaged, or Abnormally Indicating Dosimetry	14
71124.01	Procedures	75RP-9OP02	Control of High Radiation Areas, Locked High Radiation Areas, and Very High Radiation Areas	32
71124.01	Procedures	75RP-9RP02	Radiation Work Permits	32
71124.01	Procedures	75RP-9RP15	Control and Storage of Radioactive Material and Radioactive Wastes	31
71124.01	Procedures	75RP-9RP18	Medical Uptakes of Radioisotopes	9
71124.01	Procedures	75RP-9RP29	Radiological Job Coverage	13
71124.01	Procedures	NISP-RP-102	Access for Visitors, Escorted Workers and SRD Only Workers	0
71124.01	Radiation Surveys	2-M-20211017-12	140' E cavity CEA cut up area	10/17/2021
71124.01	Radiation Surveys	3-M-20210412-27	CNTMT South Pump Bay 87' (RCP 2a and 2B)	04/12/2021
71124.01	Radiation Surveys	3-M-20210426-21	80' Cntmt New HRA, RPHP posting	04/26/2021
71124.01	Radiation Surveys	3-M-20210427-31	Investigation of dose rate alarm	04/27/2021
71124.01	Radiation Surveys	3-M-20210721-2	120' Evap Dose Rate Alarm Investigation	07/21/2021
71124.01	Radiation Work Permits (RWPs)	2-3000-R23	Control Element Assembly (CEA) Replacement	0
71124.01	Radiation Work Permits (RWPs)	2-3319-R23	Reactor Coolant Pump Maintenance w/ Motor Replacement	0
71124.01	Radiation Work Permits (RWPs)	2-3502-R23	Valve, Flange and Pump Maintenance and Inspection	0

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71124.01	Radiation Work Permits (RWPs)	2-3518-R23	High Risk - Minor Maintenance in the 120'/127' Regenerative Heat Exchanger Cubicle	0
71124.01	Radiation Work Permits (RWPs)	3-3504	Minor Maintenance	9
71124.01	Radiation Work Permits (RWPs)	9-1009	Minor Maintenance	5
71124.01	Radiation Work Permits (RWPs)	9-1020	Visitor and Escort Tours, Visual Inspections, and Work on Non-Plant Systems or Components	0
71124.01	Self-Assessments	302-03863	September 2020 Offsite Safety Review Committee Meeting 20-002, Operations, Chemistry and Radiation Protection Subcommittee Report	10/01/2020
71124.01	Self-Assessments	302-03876 RJA/RJA	March 2021 Offsite Safety Review Committee (OSRC) Meeting 21-001, Operations, Chemistry and Radiation Protection Subcommittee Report	03/25/2021
71124.01	Self-Assessments	Audit 2020-004	Radiation Safety	08/06/2021
71124.02	Corrective Action Documents		20-03640, 20-10685, 20-10881, 20-13950, 20-16029, 21-01305, 21-03030, 21-04127, 21-04934, 21-07369, 21-08226, 21-08725, 21-09027	
71124.02	Miscellaneous		PVGS Radiological Safety Trends	09/06/2021
71124.02	Miscellaneous		Palo Verde Generating Station ALARA 5-Year Plan 2018-2022	10/25/2018
71124.02	Miscellaneous		Draft Palo Verde Generating Station ALARA 5-Year Plan 2021-2025	10/2021
71124.02	Miscellaneous	218-04731	2020 Annual Radiation Protection Program Summary Report	08/25/2021
71124.02	Procedures	75DP-0RP01	RP Program Overview	12
71124.02	Procedures	75DP-0RP03	ALARA Program Overview	6
71124.02	Procedures	75DP-0RP06	ALARA Committee	9
71124.02	Procedures	75DP-0RP08	Managing Radiological Risk	3
71124.02	Procedures	75RP-0RP04	Radiation Protection Periodic Review Program	6
71124.02	Procedures	75RP-9RP02	Radiation Work Permits	32
71124.02	Procedures	75RP-9RP12	ALARA Reports	6
71124.02	Procedures	75RP-9RP16	Special Dosimetry	26
71124.02	Procedures	75RP-9RP26	Radioactive Source Control	17
71124.02	Procedures	75TD-9RP02	ALARA Work Planning	13

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71124.02	Radiation Surveys	2-M-20211009-5	C100 Elevation Overview Containment	10/09/2021
71124.02	Radiation Surveys	2-M-20211009-8	C140 Elevation Overview Containment	10/09/2021
71124.02	Radiation Surveys	2-M-20211014-11	Refueling Pool (Enlarged) 140'	10/14/2021
71124.02	Radiation Surveys	2-M-20211017-12	140' East Cavity CEA Cut Up Area	10/17/2021
71124.02	Radiation Surveys	2-O-20211016-2	Free Release a PZR Fan Impellor Shaft	10/16/2021
71124.02	Radiation Surveys	3-M-20210423-1	Unit 3 117' 2A RCP Bay / SIEV227 - Removal of Internals	04/23/2021
71124.02	Radiation Surveys	3-M-20210526-4	3PSIEV227 Internals of Unit 3	05/26/2021
71124.02	Radiation Work Permits (RWPs)	2-3000-R23	Control Element Assembly (CEA) Replacement	0
71124.02	Radiation Work Permits (RWPs)	2-3002-R23	Reactor Destack and Restack	8
71124.02	Radiation Work Permits (RWPs)	2-3503	General Tours, Inspections and Job Planning Walkdowns	0
71124.02	Radiation Work Permits (RWPs)	2-3504-R23	Minor Maintenance	0
71124.02	Radiation Work Permits (RWPs)	2-3512-R23	Install / Remove Temporary Shielding	0
71124.02	Radiation Work Permits (RWPs)	3-3521-03	3R22 High Risk Inboard Loop Discharge Check Valve Work	3
71124.02	Self-Assessments	20-10685-001	PVGS Integrated Performance Assessment Report: Radiation Protection 1st Half 2020	07/24/2020
71124.02	Self-Assessments	2020-004	Nuclear Assurance Department (NAD) Audit Report: Radiation Safety	08/06/2021
71124.02	Self-Assessments	218-04716	PVGS 2020 Annual ALARA/Management Evaluations Report	06/29/2021
71124.03	Corrective Action Documents		20-15807, 21-04915, 21-07758, 21-09097	

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71124.03	Drawings		Control Building HVAC System (HJ)	
71124.03	Drawings		Auxiliary Building HVAC System (HA)	
71124.03	Drawings		Fuel Building HVAC System (HF)	
71124.03	Miscellaneous		5 Year Hydrostatic Cylinder Report	10/19/2021
71124.03	Miscellaneous		Unit 2 control room - self contained breathing apparatus October 2021 inspection report	
71124.03	Miscellaneous		Self-Contained Breathing Apparatus (SCBA) test report for SCBA # LAC-240-936	04/13/2021
71124.03	Miscellaneous		SCBA test report for SCBA # LAC-240-932	04/13/2021
71124.03	Miscellaneous		Process Change Package # 5265776	10/11/2020
71124.03	Procedures	01DP-0EM20	Respirator Fit Test	2
71124.03	Procedures	01DP-0IS08	PVGS Respiratory Protection Equipment Usage	24
71124.03	Procedures	01DP-0IS10	PVGS Respiratory Protection Program	14
71124.03	Procedures	14DP-0FP42	Respiratory Equipment Inspection and Repair Documentation	1
71124.03	Procedures	33DP-0AP03	Ventilation Filter Testing Program (VTFP)	8
71124.03	Procedures	33ST-9HF01	Surveillance Testing for the Aux/Fuel Building Nuclear Air Treatment System	23
71124.03	Procedures	33ST-9HJ02	Surveillance Testing of the Control Room Nuclear Air Treatment System	22
71124.03	Procedures	33ST-9HJ03	Carbon Analysis for the Control Room Essential Nuclear Air Treatment System	14
71124.03	Procedures	40ST-9HF01	Train ESF Pump Room and Fuel Building Ventilation System Operability/Functionality Test	20
71124.03	Procedures	40ST-9HJ01	Control Room Essential Filtration System Operability Test	21
71124.03	Procedures	75RP-9EE07	Operation of the AMS-4 CAM	24
71124.03	Procedures	75RP-9RP08	Radiological Air Sampling	1
71124.03	Procedures	75RP-9RP20	Use of control of HEPA Filtration and Vacuum Equipment	5
71124.03	Work Orders	STWO #4915279	Surveillance test package for unit 2 control room nuclear air treatment system	05/18/2020
71124.03	Work Orders	STWO #4986418	Surveillance test package for unit 1 control room essential air treatment system	06/10/2019
71124.05	Procedures	74RM-9EF43	Actions for Non-Functional Radiation Monitors: Preplanned	18

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71124.05	Procedures	75RP-9EQ65	Alternate Sampling Program	4
71151	Miscellaneous		Calibration and Response Check of the Thermo Fisher Scientific Contamination Monitor Type PM12	09/21/2021
71151	Miscellaneous		RCA Entries Greater than 80 millirem	11/05/2021
71151	Miscellaneous		Units 1, 2, and 3 RCS Leakage Data	11/05/2021
71151	Miscellaneous	Unit 1	Units 1, 2, and 3 RCS Dose Equivalent Iodine-131 Data	10/21/2021
71151	Miscellaneous	Unit 2	PVNGS Radioactive Effluent Release Permit Summary Report	10/21/2021
71151	Miscellaneous	Unit 3	PVNGS Radioactive Effluent Release Permit Summary Report	10/21/2021
71151	Procedures	40DP-9LC01	Performance Indicator – Barrier Integrity Cornerstone: RCS Leak Rate	4
71151	Procedures	40ST-9RC02	ERFDADS (Preferred) Calculation for RCS Water Inventory	54
71151	Procedures	74CH-9ZZ15	Dose Equivalent Xe-133 and Dose Equivalent I-131 Determination	8
71151	Procedures	74DP-0LC01	RCS Activity Performance Indicator	7
71151	Procedures	74ST-9RC02	Reactor Coolant System Specific Activity Surveillance Test	17
71151	Procedures	75RP-0LC01	Performance Indicator Occupational Radiation Safety Cornerstone	5
71151	Procedures	75RP-0LC02	Performance Indicator Public Radiation Safety Cornerstone	5
71152	Corrective Action Documents		21-00423, 21-01559, 21-01940, 21-03483, 21-03485, 21-06035, 21-07093, 21-00942, 21-07326, 21-11051, 21-11154, 21-13953, 21-14269, 21-14595, 18-02605, 18-02668, 19-09910, 21-00963, 21-10262, 21-11121	
71152	Corrective Action Documents	Condition Reports	19-15831, 20-04589, 20-11549, 20-11613, 20-11830, 20-12157, 20-12213, 20-12214, 20 12253, 20-12282, 20-13187, 20-14092, 20-14172, 20-14272, 20-14470, 20-14522, 20 14525, 20-14601, 20-14606, 20-14609, 21-04020	
71152	Corrective Action Documents	Condition Reports (Non)	21-04020, 21-05447, 21 08513, 21-12356, 21-13833	
71152	Corrective Action Documents	Level 4 Evaluation Report	Evaluate the Current Alternate Methods/Compensatory Actions for Emergency Planning Classifications When the	10/01/2021

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71152	Corrective Action Documents Resulting from Inspection	21-10262-003 Condition Report	Seismic Monitor is Nonfunctional 21-13938, 21-14096, 21-14281	
71152	Drawings		Palo Verde Topology	0
71152	Engineering Evaluations	13-JS-B005	Critical System Determination	4
71152	Engineering Evaluations	OMA-SB-01	Ongoing Monitoring and Assessment (OM&A) Report Reactor Protection System (SB) Group 1 & 2, Core Protection Calculator	0
71152	Engineering Evaluations	OMA-SB-04	Ongoing Monitoring and Assessment (OM&A) Report Reactor Protection (SB) Units 1,2,3, Group 4, CPC Communication Devices	0
71152	Engineering Evaluations	OMA-SB-05	Ongoing Monitoring and Assessment (OM&A) Report Reactor Protection (SB) Units 1,2,3 Group 5, Converters	0
71152	Miscellaneous		Common Controls Spreadsheet	09/07/2021
71152	Miscellaneous		Cyber Security Excellence Plan	10/28/2021
71152	Miscellaneous		Palo Verde Nuclear Generation Station Cyber Security Plan (CSP)	3
71152	Miscellaneous		Palo Verde Nuclear Generating Station, Alert December 15, 2016 Event Summary Report	01/12/2017
71152	Miscellaneous		Unit 1, 2, 3 Night Order, Seismic Monitor Non-Functional	09/02/2021
71152	Miscellaneous		Unit 1, 2, 3 Night Order, Seismic Monitor Non-Functional	09/03/2021
71152	Miscellaneous		Licensed Operator Continuing Training 2019-2024 6 Year Long Range Training Plan	4
71152	Miscellaneous		Actual Event Investigation, Seismic Occurrence on 7/4/2019 - 19-09910-002	07/19/2019
71152	Miscellaneous		Temporary Approved Procedure Action (TAPA), Procedure Number 79IS-9SM01, Revision Number 27, TAPA Letter: A	09/02/2021
71152	Miscellaneous		Level 3 Evaluation Report 18-02668-002	03/22/2018
71152	Miscellaneous	01DP-0AP59-07	Trend Analysis Administrative Guideline	0
71152	Miscellaneous	102-06866-AKK	Palo Verde Nuclear Generation Station (PVNGS) Units 1, 2, and 3 and Independent Spent Fuel Storage Installation;	04/10/2014

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Docket Nos. 50-528, 50-529, 50-530, and 72044; License Nos. NPF-41, NPF-51 and NPF-74; Revision 5 to EP-0901, Classifications, and Revision 52 to the PVNGS Emergency Plan	
71152	Miscellaneous	102-07135-MLL/TNW/DCE	Palo Verde Nuclear Generating Station (PVNGS) Units 1, 2, and 3 and Independent Spent Fuel Storage Installation; Docket Nos. 50-528, 50-529, 50-530 and 72-44; License Nos. NPF-41, NPF-51 and NPF-74; Request for NRC Approval of Proposed Changes to PVNGS Emergency Action Levels	10/09/2015
71152	Miscellaneous	102-07255-MLL/JF/DCE	Palo Verde Nuclear Generating Station (PVNGS) Units 1, 2, and 3 and Independent Spent Fuel Storage Installation; Docket Nos. 50-528, 50-529, 50-530 and 72-44; License Nos. NPF-41, NPF-51 and NPF-74; Response to Request for Additional Information Regarding Proposed Changes to PVNGS Emergency Action Levels	05/12/2016
71152	Miscellaneous	CVE-2020-1350	Windows DNS Server Vulnerability	0
71152	Miscellaneous	Form 2212	Digital Asset Data Sheet	
71152	Miscellaneous	Form PV-E0046	Contract Personnel Exit Checklist	27
71152	Miscellaneous	Form PV-E0059	Leader Checklist for Exiting Employees	39
71152	Miscellaneous	Lesson Plan Number: NKASMC032104	Acts of Nature	02/05/2019
71152	Miscellaneous	Lesson Plan Number: NKASYC015904	Seismic Monitoring System	9/27/2013
71152	Miscellaneous	Lesson Plan Number: NKASYC015907	Seismic Monitoring System Lesson Plan	04/06/2020
71152	Miscellaneous	Lesson Plan Number: NNR18C060500	Deliberate Acts and Acts of Nature	11/06/2018
71152	Miscellaneous	ODP-1	Operations Principles and Standards	44
71152	Miscellaneous	ODP-31	Operations Emergency Plan Implementation	5

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71152	Miscellaneous	Repetitive Tasks	199478, 204678, 205318, 205319, 205459, 205460, 205461	
71152	Miscellaneous	Wireless Walkdown Results	March, July, & September 2021	
71152	Miscellaneous	Work Authorization 210174	Work Scope Excerpt	
71152	Miscellaneous	Work Scope Library (WSL)	5153648, 5321051, 5321491, 5342806, 5348690, 5348691, 5348692, 5369985	
71152	Procedures	01DP-0AP09	Procedure and Work Instruction Use and Adherence	19
71152	Procedures	01DP-0AP12	Condition Reporting Process	38
71152	Procedures	01DP-0AP16	Conduct of Organizational Effectiveness	12
71152	Procedures	01DP-0AP59	Conduct of Organizational Effectiveness	7
71152	Procedures	12DP-0MC08	Control of Purchasing Material and Equipment	37
71152	Procedures	12DP-0MC25	Stores	40
71152	Procedures	16DP-0EP31	Emergency Preparedness Equipment Out of Service	13
71152	Procedures	20DO-0SK39	Palo Verde Badging Procedure	41
71152	Procedures	20DP-0SK40	Access Authorization	46
71152	Procedures	22DP-0AC01	Vulnerability Assessments and Scans	2
71152	Procedures	22DP-0AC04	Cyber Security Incident Response	4
71152	Procedures	22DP-0AC05	Cyber Security Alerts and Advisories	4
71152	Procedures	22DP-0AC06	PVGS Critical Digital Asset (CDA) Management	9
71152	Procedures	22DP-0AC08	Ongoing Monitoring and Assessment	3
71152	Procedures	22DP-0AC10	Palo Verde Cyber Security Defensive Strategy	0
71152	Procedures	22DP-0SK03	Management of Cyber Security Security-Related Keys and Accounts/Passwords	1
71152	Procedures	40AL-9RK7C	Panel B07C Alarm Responses	15, 17, 18
71152	Procedures	40AO-9ZZ21	Acts of Nature	37, 39
71152	Procedures	40DP-9OP02	Conduct of Operations	72, 76
71152	Procedures	40DP-9OP33	Shift Turnover	36
71152	Procedures	79IS-9SM01	Analysis of Seismic Event	27
71152	Procedures	EP-0901	Classifications	12
71152	Work Orders		5321491	

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71153	Corrective Action Documents		21-12450, 21-12443, 21-12479, 21-12478, 21-12511, 21-12436, 21-14531, 21-14464, 21-14465, 21-14478, 21-14480, 21-14488	
71153	Miscellaneous		Unit 1 Operator logs: October 20-22, 2021	10/22/2021
71153	Miscellaneous		Unit 2 Operator logs: October 20-21, 2021	10/21/2021
71153	Miscellaneous		Unit 3 Operator logs: October 20-22, 2021	10/22/2021
71153	Miscellaneous		CPC CEAC Trip Buffers	12/06/2021
71153	Miscellaneous		ERFDADS PTARS Data	12/06/2021
71153	Miscellaneous		Plant Performance Evaluation Unit 3	12/06/2021
71153	Miscellaneous		PC Rod Drop Times	12/06/2021
71153	Miscellaneous		Ronan Sequence of Events	12/06/2021
71153	Miscellaneous		PC Alarm Sequence of Events	12/06/2021
71153	Miscellaneous	162-16575-JEG	Safety Limit Evaluation for Unit 3 Cycle 23 Reactor Trip on December 6, 2021	12/06/2021
71153	Miscellaneous	EN 55626	Event Report for Unit 3 Reactor Trip on December 6, 2021	12/06/2021
71153	Miscellaneous	PVE0647	Plant Transient Review Assessment: Reactor Trip While Repositioning CEAs to UEL-1 Position	12/06/2021
71153	Procedures	02DP-0AO01	Plant Review Board	25
71153	Procedures	36MT-9SB08	PPS Variable Over Power Setpoint Adjustment for Power Ascension After Refueling	5
71153	Procedures	40AO-9ZZ06	Loss of Instrument Air	45
71153	Procedures	40AO-9ZZ12	Degraded Electrical Power	76
71153	Procedures	40DP-9OP02	Conduct of Operations	75
71153	Procedures	40DP-9OP02	Conduct of Operations	76
71153	Procedures	40OP-9ZZ05	Power Operations	151
71153	Procedures	90DP-0IP06	Reactor Trip Investigation	27
71153	Work Orders		5253920	

PALO VERDE NUCLEAR GENERATING STATION – INTEGRATED INSPECTION REPORT 05000528
/2021004, 05000529/2021004, AND 05000530/2021004 DATE February 7, 2022

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RStuart, R-IV/DRP

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NAME	JEvans <i>JE</i>	MHaire <i>MH</i>	ASiwy <i>AS</i>	NCuevas <i>NC</i>
DATE	Jan 25, 2022	Jan 24, 2022	Jan 28, 2022	Jan 25, 2022
OFFICE	R-IV/DRS/EB1	R-IV/DRP/RPB-A /CGS	R-IV/DRP/RPB-A /STP	R-IV/DRP/RPB-D
NAME	VGaddy <i>VG</i>	LMerker <i>LM</i>	ASanchez <i>AS</i>	ELantz <i>EL</i>
DATE	Jan 24, 2022	Feb 3, 2022	Feb 4, 2022	Jan 24, 2022
OFFICE	R-IV/DNMS/MLDB	R-IV/DRP/RPB-D /WAT-3	R-IV/DRS/IPAT	
NAME	HGepford <i>HG</i>	FRamirez <i>FR</i>	AAgrawal <i>AA</i>	
DATE	Jan 25, 2022	Jan 24, 2022	Feb 7, 2022	

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