UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

August 1, 2017

Mr. Joseph W. Shea
Vice President, Nuclear Licensing
Tennessee Valley Authority
1101 Market Street, LP 3R-C
Chattanooga, TN 37402-2801

SUBJECT: SEQUOYAH NUCLEAR PLANT – NRC INTEGRATED INSPECTION REPORT 05000327/2017002 AND 05000328/2017002

Dear Mr. Shea:

On June 30, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Sequoyah Nuclear Plant Units 1 and 2. On July 26, 2017, the NRC inspectors discussed the results of this inspection with Mr. Matt Rasmussen and other members of your staff. The results of this inspection are documented in the enclosed report.

No NRC-identified or self-revealing findings were identified during this inspection. However, inspectors documented two licensee-identified violations which were determined to be of very low safety significance in this report. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2.a of the Enforcement Policy. If you contest the violations or significance of the NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement; and the NRC resident inspector at the Sequoyah Nuclear Plant.

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 10 CFR 2.390, “Public Inspections, Exemptions, and Requests for Withholding.”

Sincerely,

/RA/

Alan Blamey, Chief
Reactor Projects Branch 6
Division of Reactor Projects

Docket Nos.: 05000327, 05000328
License Nos.: DPR-77, DPR-79

Enclosure:
IR 05000327/2017002 and 05000328/2017002
w/Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-327, 50-328
License Nos.:	DPR-77, DPR-79
Report Nos.:	05000327/2017002, 05000328/2017002
Licensee:	Tennessee Valley Authority (TVA)
Facility:	Sequoyah Nuclear Plant, Units 1 and 2
Location:	Soddy-Daisy, TN 37379
Dates:	April 1 – June 30, 2017
Inspectors:	G. Smith, Senior Resident Inspector W. Deschaine, Resident Inspector C. Franklin, Reactor Inspector B. Collins, Reactor Inspector A. Nielsen, Senior Health Physicist
Approved by:	Alan Blamey, Chief Reactor Projects Branch 6 Division of Reactor Projects

Enclosure

SUMMARY

IR 05000327/2017002, 05000328/2017002; 4/1-6/30/2017; Sequoyah Nuclear Plant, Units 1 and 2; Integrated Inspection Report

The report covered a three-month period of inspection by resident inspectors and region-based inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 6. Documents reviewed not identified in the Report Details are listed in the Attachment.

Two violations of very low safety significance, identified by the licensee, were reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. The violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 1 operated at essentially 100 percent rated thermal power (RTP) for the entire inspection period.

Unit 2 operated at 100 percent RTP until April 14, 2017, when Unit 2 was shut down for a refueling outage. Following the outage, Unit 2 was restarted on May 31 and reached 30 percent on June 2. However, several secondary side steam leaks were noted and the unit was shut down on June 3. Following repairs, the unit was restarted on June 5 and reached 100 percent RTP on June 9 where it continued to operate for the remainder of the period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Impending Adverse Weather Conditions

a. Inspection Scope

The inspectors observed the licensee's response to a tornado warning on April 5, 2017. The inspectors reviewed licensee procedure AOP-N.02, Tornado Watch/Warning, Revision 35, to assess its effectiveness in limiting the risk of tornado-related initiating events and adequately protecting mitigating systems from the effects of a tornado. The inspectors also verified the licensee's performance of required actions. The inspectors verified that the tornado dampers were cycled and the emergency diesel generators (EDGs) were operated as required by AOP-N.02. This activity constituted one inspection sample, as defined in Inspection Procedure (IP) 71111.01.

b. Findings

No findings were identified.

.2 Summer Readiness of Offsite and Alternate AC Power Systems

The inspectors performed the annual review of the licensee's readiness of offsite and alternate AC power systems prior to the onset of the high grid loading season. The inspectors reviewed procedures affecting these areas and the communications protocols between the transmission system operator and the licensee to verify that appropriate information is exchanged when issues arise that could impact the offsite power system. The inspectors walked down offsite power supply systems in the switchyard and EDGs, reviewed corrective action program (CAP) documents and interviewed appropriate plant personnel to assess deficiencies and plant readiness for summer high grid loading. The inspectors completed one sample, as defined in IP 71111.01.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial System Walkdown

a. Inspection Scope

The inspectors performed partial walkdowns of the following three systems to verify the operability of redundant or diverse trains and components when safety equipment was inoperable. The inspectors focused on identification of discrepancies that could impact the function of the system and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, walked down control system components, and determined whether selected breakers, valves, and support equipment were in the correct position to support system operation. 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 CAP. The inspectors completed three samples, as defined in IP 71111.04.

- Unit 1 'B' centrifugal charging pump (CCP) while 'A' CCP out of service (OOS)
- Unit 2 motor-driven auxiliary feedwater (MDAFW) pumps while the turbine-driven auxiliary feedwater (TDAFW) was OOS
- Spent fuel pool cooling system during Unit 2 outage

b. Findings

No findings were identified.

.2 Complete System Walkdown

a. Inspection Scope

The inspectors performed a complete system walkdown of the essential raw cooling water system (ERCW) and support systems to verify proper equipment alignment, to identify any discrepancies that could impact the function of the system and increase risk, and to verify that the licensee properly identified and resolved equipment alignment problems that could cause events or impact the functional capability of the system.

The inspectors reviewed the updated final safety analysis report (UFSAR), system procedures, system drawings, and system design documents to determine the correct lineup and then examined system components and their configuration to identify any discrepancies between the existing system equipment lineup and the correct lineup. During the walkdown, the inspectors reviewed the following:

Mechanical systems:

- Valves were correctly positioned and did not exhibit leakage that would impact the functions of any given valve.
- Electrical power was available as required.
- Major system components were correctly labeled, lubricated, cooled, ventilated, etc.
- Hangers and supports were correctly installed and functional.
- Essential support systems were operational.
- Ancillary equipment or debris did not interfere with system performance.
- Tagging clearances were appropriate.
- Valves were locked as required by the locked valve program.

Electrical systems:

- Breakers were correctly positioned.
- Electrical power was available as required.
- Major system components were correctly labeled.
- Cabinets, cable trays, and conduits were correctly installed and functional.
- Visible cabling appeared to be in good material condition.
- Essential support systems were operational.
- Ancillary equipment or debris did not interfere with system performance.
- Tagging clearances were appropriate.

In addition, the inspectors reviewed outstanding maintenance work requests and design issues on the system to determine whether any condition described in those work requests could adversely impact current system operability. The inspectors completed one sample, as defined in IP 71111.04.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Fire Protection Tours

a. Inspection Scope

The inspectors conducted a tour of the four areas important to safety listed below to assess the material condition and operational status of fire protection features. The inspectors evaluated whether: combustibles and ignition sources were controlled in accordance with the licensee's administrative procedures; fire detection and suppression equipment was available for use; passive fire barriers were maintained in good material condition; and compensatory measures for out-of-service, degraded, or inoperable fire protection equipment were implemented in accordance with the licensee's fire plan. The inspectors completed four samples, as defined in IP 71111.05.

- Control Building 732 elevation
- Unit 2 Containment Building
- Auxiliary Building 690 elevation
- Emergency Diesel Generator Building

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (71111.08)

a. Inspection Scope

Non-Destructive Examination Activities and Welding Activities

The inspectors conducted a review of the implementation of the licensee's inservice inspection (ISI) program for Unit 2. The ISI program is designed to monitor degradation of pressure retaining components in vital system boundaries. The scope of this program includes components within the reactor coolant system boundary, risk-significant piping boundaries, and containment system boundaries.

The inspectors directly observed the following non-destructive examination (NDE) activities. These activities were mandated by the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code of Record: 2007 Edition with 2008 Addenda). The inspectors evaluated the NDE activities for compliance with the requirements in Section XI and Section V of the ASME Code. The inspectors also evaluated if any identified indications or defects were dispositioned in accordance with either the ASME Code or an NRC-approved alternative requirement. Additionally, the inspectors reviewed the qualifications of the NDE technicians performing the examinations to determine if they were in compliance with ASME Code requirements.

- Ultrasonic Testing (UT) examination of RFDW-1-IR, ASME Class 1, feedwater system, 16" nozzle inner radius
- Liquid Penetrant (PT) examination of 2-RHRH-437-IA, residual heat removal system, 8" welded attachment

The inspectors directly observed the following welding activities. The inspectors evaluated these activities for compliance with site procedures and the requirements in Section IX and Section XI of the ASME Code. Specifically, the inspectors reviewed the work orders, repair or replacement plans, weld data sheets, welding procedures, procedure qualification records, welder performance qualification records, and NDE reports.

- Work Order (WO) 118722966, 1.5" elbow-to-pipe socket weld 2-SI-1818A, ASME Class 1, safety injection (SI) system

The inspectors reviewed the listing of non-destructive surface and volumetric examinations performed during the previous refueling outage. The inspectors verified that the licensee did not identify any relevant indications that were analytically evaluated and accepted for continued service.

PWR Vessel Upper Head Penetration Inspection Activities

The inspectors performed the following activities to verify that the requirements of the ASME Code and applicable licensee procedures were being met for the Unit 2 reactor vessel upper head:

- Reviewed the effective degradation years and re-inspection years calculations to determine if a volumetric examination or bare metal visual examination of the penetration nozzles was required during the current outage
- Reviewed the results of the visual examination performed under the vessel head insulation.

The inspectors verified that the licensee did not identify any indications that were accepted for continued service. Additionally, the inspectors verified that the licensee did not perform any welding repairs to the upper head penetrations since the last Unit 2 refueling outage.

Boric Acid Corrosion Control Inspection Activities

The inspectors reviewed the licensee's boric acid corrosion control program (BACCP) activities to determine if they were implemented in accordance with program requirements, applicable regulatory requirements, and industry guidance. Specifically, the inspectors performed the following activities:

- Reviewed applicable procedures and the results of the licensee's most recent containment walkdown inspection
- Interviewed the BACCP owner
- Conducted an independent walkdown of accessible areas of the Unit 2 reactor building containment pipe chase
- Verified that degraded or non-conforming conditions, such as boric acid leaks, were properly identified and corrected in accordance with the licensee's BACCP and the CAP
- Reviewed engineering evaluations of components with boric acid leakage which verified that minimum wall thickness of those components was maintained

Steam Generator Tube Inspection Activities

The inspectors reviewed the Unit 2 steam generator maintenance program. The inspectors verified that no steam generator tube inspection activities were required this refueling outage. This inspection schedule was verified with the requirements of the ASME Code, the licensee's technical specifications (TS), and applicable industry guidance.

Identification and Resolution of Problems

The inspectors reviewed a sample of ISI-related issues entered into the CAP. The inspectors evaluated if the licensee had appropriately described the scope of the problem and had initiated corrective actions. The review also included the licensee's consideration and assessment of operating experience events applicable to the plant.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Quarterly Review of Operator Requalification Program

a. Inspection Scope

The inspectors performed one licensed operator requalification program review. The inspectors observed a simulator session on June 15, 2017. The training scenario involved a cold leg resistance temperature detector failure, followed by the 1A and 1B feedwater heater pressure transmitters failing low, and followed by a bus duct cooling failure. After these events a loss of off-site power (LOOP) was simulated concurrent with the 1B-B EDG failing to start and then pressurizer PORV 68-340A failed open. The inspectors observed crew performance in terms of: communications; ability to take timely and proper actions; prioritizing, interpreting, and verifying alarms; correct use and implementation of procedures, including the alarm response procedures; timely control board operation and manipulation, including high risk operator actions; oversight and direction provided by shift manager, including the ability to identify and implement appropriate TS action; and group dynamics involved in crew performance. The inspectors also observed the evaluators' critique and reviewed simulator fidelity to verify that it matched actual plant response. This activity constituted one inspection sample, as defined in IP 71111.11.

b. Findings

No findings were identified.

.2 Quarterly Review of Licensed Operator Performance

a. Inspection Scope

The inspectors observed and assessed licensed operator performance in the main control room during periods of heightened activity or risk. The inspectors reviewed various licensee policies and procedures such as OPDP-1, Conduct of Operations, NPG-SPP-10.0, Plant Operations, and 0-GO-5, Normal Power Operation. The inspectors utilized activities such as post-maintenance testing, surveillance testing, unplanned transients, infrequent plant evolutions, plant startups and shutdowns, reactor power and turbine load changes, and refueling and other outage activities to focus on the following conduct of operations as appropriate:

- operator compliance and use of procedures;
- control board manipulations;
- communication between crew members;
- use and interpretation of plant instruments, indications and alarms;
- use of human error prevention techniques;
- documentation of activities, including initials and sign-offs in procedures;

- supervision of activities, including risk and reactivity management; and
- pre-job briefs.

Specifically, the inspectors observed licensed operator performance during the following activities:

- Unit 2 shutdown
- Unit 2 refueling and other outage activities, including reduced inventory operations
- Unit 2 startup, including Mode changes

This activity constituted one inspection sample as defined in IP 71111.11.

b. Findings

No findings were identified

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Maintenance Rule

a. Inspection Scope

The inspectors reviewed the maintenance activities, issues, and/or systems listed below to verify the effectiveness of the licensee's activities in terms of: appropriate work practices; identifying and addressing common cause failures; scoping in accordance with 10 *Code of Federal Regulations* (CFR) 50.65(b); characterizing reliability issues for performance; trending key parameters for condition monitoring; charging unavailability for performance; classification in accordance with 10 CFR 50.65(a)(1) or (a)(2); appropriateness of performance criteria for structure, system, or components (SSCs) and functions classified as (a)(2); and appropriateness of goals and corrective actions for SSCs and functions classified as (a)(1). The inspectors completed one sample, as defined in IP 71111.12.

- CDE #2951 – Maintenance Rule Functional Failure of Steam Generator Blowdown Radiation Recorder, 2-RFR-90-120

b. Findings

No findings were identified.

.2 Quality Control (QC)

a. Inspection Scope

The inspectors performed a review of three QC verifications to ensure that maintenance activities were performed in accordance with the quality assurance program. This review included a review of the WO performed during the forced Unit 2 outage in June 2017. All of the activities involved observations of QC verifications in the field. As part of this activity, the inspectors evaluated the execution of three dye penetrant tests

performed on various sections of pipe off of the # 3 main steam header. The inspectors completed one QC sample, as defined in IP 71111.12.

- WO 118780080, Steam Leak on Unit 2 (U2)Turbine Drain Line

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed the following activities to determine whether appropriate risk assessments were performed prior to removing equipment from service for maintenance. The inspectors evaluated whether risk assessments were performed as required by 10 CFR 50.65(a)(4), and were accurate and complete. When emergent work was performed, the inspectors reviewed whether plant risk was promptly reassessed and managed. The inspectors also assessed whether the licensee's risk assessment tool use and risk categories were in accordance with Standard Programs and Processes Procedure NPG-SPP-07.1, On-Line Work Management, Revision 18. The inspectors completed five samples, as defined in IP 71111.13.

- Unit 2 LCP rack #1 emergent failure
- Elevated risk due to swapping from #V battery to #IV battery
- Unit 1 Yellow risk due to 2A shutdown board cleaning
- Emergent failure of A CSST
- Unit 2 risk due to TDAFW outage

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments

a. Inspection Scope

For the five operability evaluations described in the condition reports (CRs) listed below, the inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available, such that no unrecognized increase in risk occurred. The inspectors compared the operability evaluations to UFSAR descriptions to determine if the system or component's intended function(s) were adversely impacted. In addition, the inspectors reviewed compensatory measures implemented to determine whether the compensatory measures worked as stated and the measures were adequately controlled. The inspectors also reviewed a sampling of CRs to assess whether the licensee was identifying and correcting any deficiencies associated with operability evaluations. The inspectors completed five samples, as defined in IP 71111.15.

- CR 1252323: Turbine building lighting board #1 on alternate power supply since 1/16/16 (offsite power impact)
- CR 1290359: Canopy seal weld leak
- CR 1270956: Non-qualified tornado damper was connected to the 1-II Vital Instrument Power Board. Both units entered an 8 hour LCO condition for 1 hr 43 minutes until the breaker supplying the motor could be opened.
- CR 1259279: Containment pressure > TS limit – POE
- CR 1251868: 1B safety injection pump casing void

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the post-maintenance tests associated with the three WOs listed below to assess whether procedures and test activities ensured system operability and functional capability. The inspectors reviewed the licensee's test procedure to evaluate whether: the procedure adequately tested the safety function(s) that may have been affected by the maintenance activity; the acceptance criteria in the procedure were consistent with information in the applicable licensing basis and/or design basis documents; and the procedure had been properly reviewed and approved. The inspectors also witnessed the test or reviewed the test data to determine whether test results adequately demonstrated restoration of the affected safety function(s). The inspectors completed three sample**s,** as defined in IP 71111.19.

- WO 117150991, Auxiliary feedwater turbine A-S speed calibration
- WO 115858332, Pressurizer liquid sample valve leak
- WO 118229785, Unit 2 remove and replace PORV

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20)

.1 Unit 2 Refueling Outage (Cycle 21)

a. Inspection Scope

For the Unit 2 refueling outage that began on April 27, 2017, the inspectors evaluated licensee activities to verify that the licensee considered risk in developing outage schedules, followed risk reduction methods developed to control plant configuration, developed mitigation strategies for the loss of key safety functions, and adhered to operating license and TS requirements that ensure defense-in-depth. The inspectors also walked down portions of Unit 2 not normally accessible during at-power operations to verify that safety-related and risk-significant structures, systems, or components (SSCs) were maintained in an operable condition. Between April 27 and June 3, 2017,

the inspectors performed inspections and reviews of the outage activities listed below. This inspection satisfied one inspection sample for Refueling Activities, as defined in IP 71111.20.

- Reviewed the outage safety plan and contingency plans to confirm that the licensee had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth.

- Observed the shutdown in the control room to verify that TS cooldown restrictions were followed. The inspectors also toured the lower containment as soon as practicable after reactor shutdown to observe the general condition of the reactor coolant system (RCS) and emergency core cooling system components and to look for indications of previously unidentified leakage inside the polar crane wall.

- Attended daily licensee outage turnover meeting, reviewed CRs, and reviewed the defense-in-depth status sheets to verify that status control was commensurate with the outage safety plan and in compliance with the applicable TS when taking equipment out of service.

- Toured the main control room and areas of the plant daily to ensure that key safety functions were maintained in accordance with the outage safety plan and TS. Observed tag-out of the reactor coolant pumps 1 and 4 to verify that the equipment was appropriately configured to safely support the work or testing.

- Reviewed the installation of the Mansell reactor water level monitoring system and verified proper overlapped with pressurizer level instruments during pressurizer drain down and that the system consistently tracked RCS level. Observed operators compare the Mansell indications with locally-installed ultrasonic level indicators during entry into mid-loop conditions.

- Observed fuel movement at the spent fuel pool and at the refueling cavity to verify compliance with TS and independently reviewed the recording of the licensee's final core verification. Verified proper licensee control of foreign material.

- Verified that plant configuration was in accordance with Generic Letter 88-17 commitments and that distractions from unexpected conditions or emergent work did not affect operator ability to maintain the required reactor vessel level before entering reduced inventory conditions. While in mid-loop conditions, verified that licensee was available to close containment penetrations if needed.

- Toured containment to verify that debris that could affect the performance of the containment sump had not been left in containment. Reviewed the licensee's mode-change checklists to verify that appropriate prerequisites were met. Reviewed the licensee's RCS leakage calculations and containment isolation valve lineups to verify RCS and containment integrity.

- Observed portions of the low power physics testing, including reactor criticality, to verify that core operating limit parameters were consistent with core design.

b. Findings

No findings were identified.

.2 Unit 2 Forced Outage

a. Inspection Scope

Following the completion of the Unit 2 spring refueling outage, a leak in the turbine drain system resulted in the removal of the unit from service on June 2, 2017. The plant was placed in Mode 3 and maintained there until conditions to support restart were established on June 5, 2017. The inspectors reviewed the licensee's mode change checklists to verify that appropriate prerequisites were met prior to changing TS modes. The inspectors observed portions of the plant startup including power ascension. This inspection satisfied one inspection sample for Outage Activities, as defined in IP 71111.20.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

For the nine surveillance tests identified below, the inspectors assessed whether the SSCs involved in these tests satisfied the requirements described in the TS surveillance requirements, the UFSAR, applicable licensee procedures, and whether the tests demonstrated that the SSCs were capable of performing their intended safety functions. This was accomplished by witnessing testing and/or reviewing the test data. The inspectors completed nine samples, as defined in IP 71111.22.

In-Service Tests:
- 1-SI-SXP-072-201.A, Containment Spray Pump 1A Performance Test, Revision 18
- 2-SI-SXP-062-203.0, Centrifugal Charging Pumps 2A-A and 2B-B Comprehensive Pump Test and Check Valve Test, Revision 7
- 2-SI-SXP-063-202.0, Safety Injection Pumps 2A-A and 2B-B Comprehensive and Check Valve Test, Revision 18
- 0-SI-SXV-001-859.0, Testing and Setting of Main Steam Safety Valves, Revision 17

Routine Surveillance Tests:
- 2-SI-OPS-003-118.0, Auxiliary Feedwater Pump and Valve Automatic Actuation, Revision 29
- 2-SI-OPS-082-026.A, Loss of Offsite Power with Safety Injection – D/G 2A-A Test, Revision 53

Ice Condenser Surveillance Test:
- 0-SI-MIN-061-107.0, Ice Condenser Floor Drains, Revision 3
- 0-SI-MIN-061-106.0, Ice Condenser – Flow Passage Inspection, Revision 8

Containment Isolation Valve (CIV) Surveillance Tests:
- 0-SI-SLT-081-258.1, Containment Isolation Valve Local Leak Rate Test Primary Water System, Revision 9

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

Resident inspectors evaluated the conduct of the licensee during a training evolution on June 15, 2017, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the simulated control room to verify that event classification and notifications were done in accordance with EPIP-1, Emergency Plan Classification Matrix, Revision 52. The inspectors also attended the licensee critique of the training evolution to compare any inspector observed weakness with those identified by the licensee in order to verify whether the licensee was properly identifying deficiencies. The inspectors completed one sample as defined in IP 71114.06.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstones: Occupational Radiation Safety and Public Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls

a. Inspection Scope

Hazard Assessment and Instructions to Workers: During facility tours, the inspectors directly observed radiological postings and container labeling for areas established within the radiologically controlled area (RCA) of the auxiliary building, U2 containment building, and radioactive waste processing and storage locations. The inspectors independently measured radiation dose rates or directly observed conduct of licensee radiation surveys for selected RCA areas. The inspectors reviewed survey records for several plant areas including surveys for airborne radioactivity, gamma surveys with a range of dose rate gradients, surveys for alpha-emitters and other hard-to-detect radionuclides, and pre-job surveys for upcoming tasks. The inspectors also discussed changes to plant operations that could contribute to changing radiological conditions since the last inspection. The inspectors attended pre-job briefings and reviewed

radiation work permit (RWP) details to assess communication of radiological control requirements and current radiological conditions to workers.

Control of Radioactive Material: The inspectors observed surveys of material and personnel being released from the RCA using gamma and beta sensitive detection instruments. The inspectors discussed equipment sensitivity, alarm setpoints, and release program guidance with licensee staff. The inspectors also reviewed records of leak tests on selected sealed sources and discussed nationally tracked source transactions with licensee staff.

Hazard Control: The inspectors evaluated access controls and barrier effectiveness for selected High Radiation Area, Locked High Radiation Area (LHRA), and Very High Radiation Area (VHRA) locations and discussed changes to procedural guidance for LHRA and VHRA controls with Radiation Protection (RP) supervisors. The inspectors reviewed implementation of controls for the storage of irradiated material within the spent fuel pool. Established radiological controls, including airborne controls and electronic dosimeter (ED) alarm setpoints, were evaluated for selected U2 Refueling Outage 21 (U2R21) tasks. In addition, the inspectors reviewed licensee controls for areas where dose rates could change significantly as a result of plant shutdown and refueling operations. The inspectors reviewed the use of personnel dosimetry during routine U2R21 activities but noted that there were no opportunities to observe the application of dosimetry in areas with significant dose rate gradients during the week of inspection.

Radiation Worker Performance and RP Technician Proficiency: Occupational workers' adherence to selected RWPs and RP technician proficiency in providing job coverage were evaluated through direct observations and interviews with licensee staff. Outage jobs observed included reactor head lift, fuel movement, and refuel floor activities. The inspectors also evaluated worker responses to dose and dose rate alarms during selected work activities.

Problem Identification and Resolution: The inspectors reviewed and assessed CRs associated with radiological hazard assessment and control. The inspectors evaluated the licensee's ability to identify and resolve the issues. The inspectors also reviewed recent self-assessment results.

Inspection Criteria: Radiation protection activities were evaluated against the requirements of TS Section 5, Final Safety Analysis Report Chapter 12, 10 CFR Parts 19 and 20, and approved licensee procedures. Licensee programs for monitoring materials and personnel released from the RCA were evaluated against 10 CFR Part 20 and IE Circular 81-07, "Control of Radioactively Contaminated Material".

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification (71151)

a. Inspection Scope

Cornerstone: Initiating Events

The inspectors sampled licensee submittals for the three PIs listed below for the period from April 2016 through March 2017 for both Unit 1 and Unit 2. Definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Indicator Guideline, Revision 6, were used to determine the reporting basis for each data element in order to verify the accuracy of the PI data reported during that period.

- Unplanned Scrams per 7000 Critical Hours
- Unplanned Scrams with Complications
- Unplanned Power Changes per 7000 Critical Hours

The inspectors reviewed selected licensee event reports and portions of operator logs to verify whether the licensee had accurately identified the number of scrams and unplanned power changes that occurred during the previous four quarters for both units. The inspectors also reviewed the accuracy of the number of critical hours reported and the licensee's basis for addressing the criteria for complications for each of the reported scrams.

Cornerstone: Occupational Radiation

The inspectors evaluated Occupational Exposure Control Effectiveness PI data from December 2016 through March 2017 and reviewed recent PI results. For the assessment period, the inspectors reviewed ED alarm logs and CRs related to controls for exposure significant areas.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Daily Review

As required by Inspection Procedure 71152, Identification and Resolution of Problems, and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's CAP. This was accomplished by reviewing the description of each new CR and attending daily management review committee meetings.

.2 Semi-Annual Trend Review

a. Inspection Scope

As required by IP 71152, the inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors review was focused on repetitive equipment issues but also included licensee trending efforts and licensee human performance results. The inspectors review nominally considered the 12-month period of July 2016 through June 2017, although some examples expanded beyond those dates when the scope of the trend warranted. Specifically, the inspectors considered the results of daily inspector screening discussed in Section 4OA2.1 and reviewed licensee trend reports for the period in order to determine the existence of any adverse trends that the licensee may not have previously identified. This inspection satisfied one inspection sample for Semi-annual Trend Review, as defined in IP 71152.

b. Findings and Observations

No findings were identified. In general, the licensee had identified trends and appropriately addressed them in their CAP. The inspectors evaluated the licensee trending methodology and observed that the licensee had performed a detailed review. The licensee routinely reviewed cause codes, involved organizations, key words, and system links to identify potential trends in their data. The inspectors compared the licensee process results with the results of the inspectors' daily screening. No previously unidentified trends of significance were identified.

.3 Annual Sample Review of Unanalyzed Conditions on Equipment in the Emergency Diesel Generator Building during Tornadic Events

a. Inspection Scope

The inspectors selected CRs 117054, 1178891, and 1181710 to review in detail as to evaluate the effectiveness of the licensee's corrective action for important safety issues. The inspectors assessed whether the issue was properly identified, documented accurately and completely, properly classified and prioritized, adequately considered extent of condition, generic implications, common cause, and identified appropriate and timely corrective actions. Also, the inspector verified the issues were processed in accordance with procedure NPG-SPP-22.300, Corrective Action Program, Revision 9.

b. Findings and Observations

No findings were identified. On May 12, 2016, the licensee initiated CR 1181710 following the discovery of an unanalyzed condition of the EDG building fans and ductwork resulting from the high wind speed and pressure drop across the building caused by a tornado. The licensee declared the EDG building ventilation operable.

On June 6, 2016, the licensee initiated CR 1178891 following the discovery of condition where the differential pressure from a tornado could cause the crankcase pressure trip to lock in preventing the EDGs from starting in both normal and emergency mode without resetting the trip locally. The licensee declared the EDGs operable but degraded with interim action to start all four diesels upon declaration of a tornado warning.

The inspectors determined that the licensee's apparent cause evaluation associated with CR 1181710 was thorough and appeared to be adequate to identify causes. The licensee's investigation determined that the cause of the misevaluation for the tornadic events to the EDG building were a result of historical industry practices in which only the ductwork and a limited population of the dampers were evaluated in response to RIS 2006-23. This resulted in an error while transitioning the licensing basis requirements into design basis requirements.

The inspectors reviewed the licensee's interim and long-term actions taken by the licensee. Specifically the inspectors reviewed temporary modification SQN-0-2016-30-001 and subsequent design change package (DCN) 23716 which modified the dampers to withstand the higher differential pressure. Additional inspectors reviewed changes to Abnormal Operating Procedure AOP-N.02, Tornado Watch / Warning, and DCN 23733 which addressed the EDG crankcase pressure issue. The corrective actions appeared to be adequate to address the design issues associated with the EDG building.

4OA3 Follow-up of Events and Notices of Enforcement Discretion

.1 (Closed) Licensee Event Report (LER) 05000327, 328/2016-008-00, Closed Fire Damper Renders Both Trains of the Control Room Emergency Ventilation System (CREVS) Inoperable

On August 10, 2016, the licensee began a functional test of the fire detection system associated with the main control room ventilation. This test had the possibility to directly affect the CREVS. At 1400, the test was completed and all acceptance criteria were satisfied. On the following day, while conducting other work in the relay room, the licensee noted that ventilation was not normal in that room. A fire damper which provided ventilation flow to the relay room and the technical support center was discovered closed which deviated from the normal position. Operations declared both trains of CREVS out of service and entered limiting condition for operation (LCO) 3.7.10, Conditions A and G, and LCO 3.0.3 which required both units to be placed in Mode 3 within seven hours. At 1159 the damper was blocked open and both units exited LCO 3.7.10, Conditions A and G, and LCO 3.0.3. This issue was deemed a condition prohibited by TS which required an LER pursuant to 10 CFR 50.73 (a)(2)(i)(B). The licensee documented the issue in CR 1201905.

The inspectors discussed the event with licensee personnel to gain an understanding of the conditions leading up to the event and assess licensee actions taken following the event. Additionally, the inspectors reviewed the apparent cause evaluation report to assess the detail and thoroughness of the evaluation and the adequacy of the proposed corrective actions. The inspectors reviewed CR 1201905 to verify that the cause of the failed closed fire damper was identified and whether corrective actions were appropriate. The enforcement aspects are described in Section 4OA7.

.2 (Closed) Licensee Event Report (LER) 050000327/2016-007-00, Unanalyzed Condition Due to Emergency Gas Treatment System Not Meeting Single Failure Criteria

On August 2, 2016, engineering personnel noted that failure mode in the emergency gas treatment system (EGTS) that could cause a premature swap from the 'A' controller to the standby controller during a design basis event. The licensee realized that this failure

mode was not consistent with single failure criteria. Following completion of an operability evaluation, operations declared one train of EGTS inoperable. Subsequently, the licensee performed a modification to eliminate the auto swap-over feature. Concurrently the licensee began a past operability evaluation and noted that the configuration of the EGTS flow controllers was an unanalyzed condition that significantly affected plant safety. On August 17, 2016, the licensee made a 50.72 notification pursuant to 10 CFR 50.72 (b)(3)(ii)(B)

The issue was entered into the CAP as CRs 1198440 and 1200028. The inspectors reviewed the LER, CRs, and causal evaluation to verify that the cause of the condition was identified and that corrective actions were appropriate. The inspectors discussed the issue with operations, engineering, and licensee management personnel to gain an understanding of the event and assess follow-up actions.

The inspectors reviewed operator actions taken to determine whether they were in accordance with licensee procedures and TS, and reviewed unit and system indications to verify whether actions and system responses were as expected and designed. The inspectors concluded that the licensee's corrective actions were appropriate, including the modification of the EGTS control system. The inspectors verified that timely notifications were made in accordance with 10 CFR 50.72, that licensee staff properly implemented the appropriate plant procedures, and that plant equipment performed as required. The enforcement aspects are described in Section 4OA7.

.3 (Closed) Licensee Event Report (LER) 05000327, 328/2016-004-00,01, Emergency Diesel Generator Fire Dampers and Crankcase Pressure Switches Not Analyzed for Withstanding the Effects of a Tornado

On May 16, 2016, at 2015 Eastern Daylight Time (EDT) the licensee identified a nonconforming condition involving the EDG and fire dampers installed for Units 1 and 2. Specifically, it had been identified that if a tornado caused a differential pressure across the east and west sides of the EDG building, this could create a high airflow rate through the EDG building ventilation path. The fire dampers for each EDG bay have not been analyzed to withstand high air flows resulting from a tornado and could possibly fail in a way that impedes airflow for EDG cooling. This is an unanalyzed condition that could potentially prevent all EDGs from supplying electrical power as designed during a tornado or other similar weather events. This was documented in the licensee CAP as CRs 1170545 and 1181710 which included an apparent cause evaluation.

On June 8, 2016, at 1526 EDT, another issue was identified involving the potential impact of a tornado on the EDGs .The EDGs are designed with a crankcase pressure trip, which is bypassed during an emergency start. A tornado could potentially cause actuation crankcase pressure trip due to a low barometric condition. If an emergency start signal has not previously occurred, then during a tornado, action of the crankcase pressure trip would energize the shutdown relay causing an EDG lockout condition. The EDG lockout condition prevents subsequent EDG starts (normal or emergency) until operators manually reset the lockout condition locally at the EDG. This condition places both units in an unanalyzed condition that could potentially affect all four EDGs simultaneously. This was documented in the licensee CAP as CR 1178891.

The inspectors discussed the event with operations, maintenance, engineering, and licensee management personnel to gain an understanding of the conditions leading up to the event and assess licensee actions taken following the event. The inspectors independently verified the adequacy of the compensatory measures to ensure the capability of the EDGs during a tornado.

The inspectors reviewed the LER and CRs to verify that the cause of the unanalyzed condition was identified and whether corrective actions were appropriate. The apparent cause of this event was determined to be a misjudgment regarding the intent of the regulatory issue summaries (RIS) 2006-23. Specifically, the decision to analyze the ductwork and dampers only, as opposed to all components of the ventilation system, lead to inadequate scope. This apparent cause analysis stemmed from NCV 05000327, 328/2016007-02, "Failure to Install Safety-Related Components that Are Designed to Withstand the Effects of a Design Basis Tornado." The inspectors concluded that the licensee's corrective actions to this event were appropriate which included: fully evaluating the components of the EDG building ventilation system; fully evaluate the SSCs in the EDG building that are subject to the effects of a tornado that could impact the operation of the diesel generators (e.g., the crankcase pressure switch); and establish the bounding criteria for evaluation of other SSCs that are subject to the effects of a tornado that could impact the safe operation of safety related equipment in Category I structures.

4OA5 Other Activities

.1 Institute of Nuclear Power Operations (INPO) Plant Assessment Report Review

The inspectors reviewed the final report for the INPO plant assessment report of Sequoyah conducted in the fall of 2016. The inspectors reviewed the report to ensure that issues identified were consistent with the NRC perspectives of licensee performance and if any significant safety issues were identified that required further NRC follow-up.

4OA6 Meetings, Including Exit

.1 Exit Meeting Summary

On July 26, 2017, the resident inspectors presented the inspection results to Mr. Matt Rasmussen and other members of his staff, who acknowledged the findings. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee-identified Violations

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

- Unit 1 and Unit 2 technical specifications LCO 3.7.10 required that if both trains of CREVS become inoperable than LCO 3.0.3 shall be immediately entered. Additionally, LCO 3.0.3 requires both units to be placed in Mode 3 within seven hours if the condition was not rectified. Contrary to the above, on August 10, with

both trains of CREVS rendered inoperable, both units remained in Mode 1 for a period of approximately 24 hours. The finding was entered into the licensee's CAP as CR 1201905. This finding was assessed using NRC Inspection Manual Chapter (IMC) 0609, Attachment 4, and was determined to be of very low safety significance (Green) due to the finding only representing a degradation of the radiological barrier function provided for the control room.

- Unit 1 and Unit 2 facility technical specifications LCO 3.6.10 required two operable EGTS systems in Modes 1 through 4. Contrary to the above, on August 2, 2016, during a system review, plant engineers noted a design flaw that could have resulted in one train of EGTS being rendered inoperable since initial plant operation. This problem was entered into the licensee's CAP as CR 1198440 and CR 1200028. The TVA probabilistic risk assessment model does not consider the EGTS in core damage and large early release frequencies. The EGTS system is designed to maintain the shield building at a negative pressure and filter any leakage past the steel liner during a design basis event. With the EGTS inoperable, dose would still remain below 10 CFR 100 limits. The finding was screened using IMC 0609, Appendix A – At Power Operation, and was determined to be of very low safety significance (Green). According to Exhibit 3, an issue related to degradation of the radiological barrier function of the reactor building is considered to be of very low safety significance.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel
D. Dimopoulos, Director Plant Support
M. Brown, Superintendent, Radiation Protection
G. Garner, Director Training
M. Henderson, Manager Engineering Programs
H. Hill, Rad Waste Superintendent
H. Howle, Superintendent Nuclear Operations
J. Johnson, Program Manager Licensing
R. Joplin, Corporate Program Manager Operations Support
M. Leenerts, Shift Manager
K. Loomis, Boric Acid Corrosion Control Program
M. Lovitt, Chemistry Manager
T. Marshall, Director Operations
J. Mayo, Steam Generator ISI
M. McBrearty, Licensing Manager
M. McMullin, Manager Operations Training
C. Owens, Rad Waste HP
W. Pierce, Director Engineering
M. Rasmussen, Plant Manager
J. Rolph, Radiation Protection Technical Support Superintendent
D. Selph, Operations Training
S. Smith, Operations Instructor (lead)
D. Spears, BACCP
C. Taylor, ISI
S. Thomas, Supervisor Operations Training (LOR)
R. Travis, Licensing Engineer
A. Williams, Site Vice President

NRC personnel
A. Hon, Project Manager, Office of Nuclear Reactor Regulation

LIST OF REPORT ITEMS

Closed

LER 05000327, 328/2016-008-00	Closed Fire Damper Renders Both Trains of the Control Room Emergency Ventilation System Inoperable
LER 050000327/2016-007-00	Unanalyzed Condition Due to Emergency Gas Treatment System Not Meeting Single Failure Criteria
LER 05000327, 328/2016-004-00, 01	Emergency Diesel Generator Fire Dampers and Crankcase Pressure Switches Not Analyzed for Withstanding the Effects of a Tornado

LIST OF DOCUMENTS REVIEWED

Section R01: Adverse Weather Protection

Procedures

AOP-N.02, Tornado Watch/Warning, Revision 35

Section R05: Fire Protection

Procedures

FPDP-1, Conduct of Fire Protection, Revision 7
0-PI-FPU-317-299.W, Att. 8, Shift Check List, Revision 42
NPG-SPP-18.4.7, Control of Transient Combustibles, Rev. 7
0-SI-FPU-410-703.0, Inspection of FPR Required Fire Doors, Rev. 6
SQN- FPR-Part-II, SQN Fire Protection Report Part II – Fire Protection Plan, Revision 35

Other documents

AUX-0-690-00, Fire Protection Pre-Fire Plans Auxiliary Building - El. 690, Revision 2
DGB-0-740.5-00, Fire Protection Pre-Fire Plans Diesel Generator Building - El. 740, Revision 5
DGB-0-722-00, Fire Protection Pre-Fire Plans Diesel Generator Building - El. 722, Revision 6
CRs 1312857, 1312822, 1312828

Section R08: Inservice Inspection Activities

Procedures

N-PT-9, Liquid Penetrant Examination of ASME and ANSI Code Components and Welds, Rev. 0039
N-UT-55, Ultrasonic Examination of Nozzle Inner Radius Sections from the Blend Radius, Rev. 0016
N-VT-4, System Pressure Test Visual Examination Procedure, Rev. 0028

Drawings

CHM-2403-C-01, Sequoyah Nuclear Plant Unit 2 Feedwater Loops 1 & 4 Weld Locations, Rev. 12
ISI-0049-C-36, Sequoyah Nuclear Plant Unit 2 High Pressure Safety Injection System Support Locations (RHR), Rev. 1

NDE Examiner Qualifications

IHI Southwest Technologies, Inc. Certificate of Qualification: PT (Maclean), dated 1/10/17
IHI Southwest Technologies, Inc. Certificate of Qualification: UT II (Hoover), dated 5 Feb 2016
IHI Southwest Technologies, Inc. Certificate of Qualification: UT II (Kleinjan), dated 01/17/17
IHI Southwest Technologies, Inc. Visual Acuity Examination Record (Hoover), dated 1/9/2017
IHI Southwest Technologies, Inc. Visual Acuity Examination Record (Maclean), dated 1/9/2017
IHI Southwest Technologies, Inc. Visual Acuity Examination Record (Kleinjan), dated 1/12/2017

Miscellaneous Documents

Aerotech Transducer Certification (S/N E19874), dated 08-11-1988
Evaluation of Boric Acid Corrosion Damage (2-FCV-063-0152-A), dated 07/14/2016
Evaluation of Boric Acid Corrosion Damage (2-FCV-068-0303), dated 6/1/14
Evaluation of Boric Acid Corrosion Damage (2-FCV-074-0021-B), dated 07/14/2016
Evaluation of Boric Acid Corrosion Damage (2-FT-043-1557), dated 07/14/2016
Evaluation of Boric Acid Corrosion Damage (2-PCV-068-0301), dated 6/1/14

MAGNAFLUX Certificate of Certification: Couplant, Ultragel II (batch #15A057), dated 01/16/2015
MAGNAFLUX Certificate of Certification: Spotcheck Developer, SKD-S2 (batch #13A03K), dated 1/16/13
MAGNAFLUX Certificate of Certification: Spotcheck Penetrant, SKL-SP2 (batch #15F09K), dated 06/09/2015
MAGNAFLUX Certificate of Certification: Spotcheck, SKC-S (batch #15D02K), dated 04/20/2015
R-0061, ASME Section XI VT-2 Visual Examination Report, Parts 1 & 2 (Under-Insulation RPV Head), dated 5/10/17
R-0091, Liquid Penetrant Examination Report (2-RHRH-437-IA), dated 05/10/2017
R-0094, UT Calibration/Examination Report (RFDW-1-IR), dated 05/10/2017
Report of Calibration: Digital Thermometer (S/N 140202625), dated 02/22/2017
Report of Calibration: Infrared Thermometer (S/N 11107476), dated 06/13/2016
Report of Calibration: Ultrasonic Flaw Detector (S/N 022Y65), dated 01/26/2017
Tennessee Valley Authority Welder/Welding Operator Performance Qualification Record (Smith), dated 8/14/15
WO118722966, Repair/Replacement of Safety Injection Socket Weld SI-1818A, dated 5/8/2017

Section R12: Maintenance Effectiveness

TI-4, Maintenance Rule Performance Indicator Monitoring, Trending, and Reporting 10CFR50.65, Revision 28

Section R13: Maintenance Risk Assessments and Emergent Work Evaluation

NPG-SPP-07.3, Work Activity Risk Management Process, Revision 19
NPG-SPP-07.2.4, Forced Outage or Short Duration Planned Outage Management, Revision 6
NPG-SPP-07.2, Outage Management, Revision 5
GOI-6, Apparatus Operations, Revision 172

Section R15: Operability Evaluations

NEDP-22, Operability Determinations and Functional Evaluations, Rev. 17
OPDP-8, Operability Determination Process/Limiting Conditions for Operation Tracking, Rev. 21
NPG-SPP-03.5, Regulatory Reporting Requirements, Revision 13

Section R19: Post Maintenance Testing

MMDP-1, Maintenance Management System, Revision 31
NPG-SPP-06.5, Foreign Material Control, Revision 9
NPG-SPP-06.1, Work Order Process Initiation, Revision 5
NPG-SPP-06.3, Pre-/Post-Maintenance Testing, Revision 1
NPG-SPP-06.9, Testing Programs, Revision 1
NPG-SPP-06.9.1, Conduct of Testing, Revision 10
NPG-SPP-06.9.3, Post-Modification Testing, Revision 6

Section R20: Refueling and Outage Activities

FHI-3, Movement of Fuel, Revision 77
0-GO-15, Containment Closure Control, Revision 40
0-GO-13, Reactor Coolant System Drain and Fill Operations, Revision 87
NPG-SPP-08.1, Nuclear Fuel Management, Revision 13
0-PI-OPS-000-011.0, “Containment Access Control During Modes 1-4, Revision 16

Section R22: Surveillance Testing

1-SI-SXP-072-201.A, Containment Spray Pump 1A Performance Test, Rev. 18
0-SI-SLT-081-258.1, Containment Isolation Valve Local Leak Rate Test Primary Water System
0-SI-MIN-061-107.0, Ice Condenser Floor Drains, Revision 3
0-SI-MIN-061-106.0, Ice Condenser – Flow Passage Inspection, Revision 8
2-SI-OPS-082-026.A, Loss of Offsite Power with Safety Injection – D/G 2A-A Test, Revision 53
2-SI-SXP-062-203.0, Centrifugal Charging Pumps 2A-A and 2B-B Comprehensive Pump Test and Check Valve Test, Revision 7
2-SI-OPS-003-118.0, Auxiliary Feedwater Pump and Valve Automatic Actuation, Revision 29

Section 1EP6: Drill Evaluation

EPIP-1, Emergency Plan Classification Matrix, Revision 52
EPIP-2, Notification of Unusual Event, Revision 35
EPIP-3, Alert, Revision 37
EPIP-4, Site Area Emergency, Revision 38
EPIP-5, General Emergency, Revision 47

Section 2RS1: Radiological Hazard Assessment and Exposure Controls

Procedures, Guidance Documents, and Manuals

NPG-SPP-05.1, Radiological Controls, Rev. 0007
NPG-SPP-05.1.1, Alpha Radiation Monitoring Program, Rev. 5
RCDP-17, Radiological Postings, Rev. 0000
RCI-24, Control of Very High Radiation Areas, Rev. 15
RCI-28, Control of Locked High Radiation Areas, Rev. 16
RCI-101, Radiation Operations Routines, Rev. 3
RCI-201, Radiation and Contamination Surveys, Rev. 22
RCI-209, Radiological Surveys of Personnel Leaving the RCA or Protected Area, Rev. 5
RCI-412, Radiation Protection Surveys during Initial Spent Fuel Assembly Movement, Rev. 3
0-TI-NUC-000-002.0, Storing Material in Spent Fuel Pool or New Fuel Vault, Rev. 28
NPG-SPP-22.300, Corrective Action Program, Rev. 8

Records and Data

National Source Tracking System Annual Inventory Reconciliation Report, 1/17/17
Work Order 117667232, Byproduct Material Inventory and Sealed Source Leak Test, 11/18/16
Nuclide Distribution Report, Dry Active Waste, 5/15/15
RWP 17221403, U2 Lower Containment LHRAs RP Surveys, Rev. 0
RWP 17241102, U2 Upper Containment All Areas, Rev. 0
RWP 17222603, U2 Lower Containment LHRAs, General Mechanical Work, Rev. 0
RWP 17225012, U2 Lower Containment high radiation areas, Management Walkdown, Rev. 1
RWP 16141903, U1 Upper Containment High Radiological Risk, Rev. 0
Radiological Survey SQN-M-20170430-13, U2 Rx Cavity Post-decon, 4/30/17
Radiological Survey SQN-M-20170426-6, U2 Equipment Pit, 4/26/17
Radiological Survey SQN-M-20170417-3, U2R21 Pre-outage Equipment Pit Entry, 4/17/17
Radiological Survey SQN-M-20151116-3, U2 Excess Letdown HX Room, 11/16/15
Radiological Survey SQN-M-20170428-31, U2 Keyway, 4/28/17
Radiological Survey SQN-M-20170501-3, U2 Inside Polar Crane Wall, 5/1/17
Radiological Survey SQN-M-20170428-2, U2 Raceway, 4/28/17
Air Sample Log, 4/28/17 – 5/3/17

CAP Documents
Self-Assessment SQN-RP-SSA-16-005, 71124.01 Radiological Hazard Assessment and Exposure Controls, March 2016
CRs 1291613, 1244141, 1263615, 1270878

Section 4OA1: Performance Indicator Verification
Procedures
NPG-SPP-02.2, Performance Indicator Program, Revision 7
NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 7
NPG-SPP-02.2, Performance Indicator Program, Rev. 10

Other Documents
List of Dose and Dose Rate alarms, 12/17/2016 through 3/29/2017
CR 1257064

Section 4OA2: Identification and Resolution of Problems
NPG-SPP-03.1, Corrective Action Program, Revision 7

Other Documents
DCN 23716, Enhance the EDG Intake & Exhaust Dampers by installing Steel Jumper Brackets
DCN 23733, Remove the Trip Function from the Crankcase Pressure Switch

Section 4OA3: Event Follow-up
CRs 1170545, 1178891, 1181710, 1201905: Fire damper found closed
Licensee Event Report (LER) 05000327, 328/2016-008-00, Closed Fire Damper Renders Both Trains of the Control Room Emergency Ventilation System (CREVS) Inoperable, dated 10/7/2016
Licensee Event Report (LER) 05000327, 328/2016-004-00, 01, Emergency Diesel Generator Fire Dampers and Crankcase Pressure Switches Not Analyzed for Withstanding the Effects of a Tornado