



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

October 31, 2012

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

**SUBJECT: WATTS BAR NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT
05000390/2012004**

Dear Mr. Shea:

On September 30, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Watts Bar Nuclear Plant, Unit 1. The enclosed inspection report documents the inspection results which were discussed on October 10, 2012, with Mr. D. Gronek and other members of the Watts Bar staff.

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

Two NRC-identified findings of very low safety significance (Green) were identified during this inspection.

These findings were determined to involve violations of NRC requirements. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

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

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

J. Shea

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

Sincerely,

/RA/

Scott M. Shaeffer, Chief
Reactor Projects Branch 6
Division of Reactor Projects

Docket Nos.: 50-390
License No.: NPF-90

Enclosure: NRC Inspection Report 05000390/2012004
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

J. Shea

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J. Shea

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Letter to Joseph Shea from Scott Shaeffer dated October 31, 2012

SUBJECT: WATTS BAR NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT
05000390/2012004

Distribution w/encl:

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RidsNrrPMWattsBar1 Resource

RidsNrrPMWattsBar2 Resource

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 50-390

License No.: NPF-90

Report No.: 05000390/2012004

Licensee: Tennessee Valley Authority (TVA)

Facility: Watts Bar Nuclear Plant, Unit 1

Location: Spring City, TN 37381

Dates: July 1 through September 30, 2012

Inspectors: R. Monk, Senior Resident Inspector
K. Miller, Resident Inspector
M. Coursey, Reactor Inspector, Region II (RII)
R. Hamilton, Senior Health Physicist, RII (Sections 2RS7,
4OA1)
G. Kuzo, Senior Health Physicist, RII (Section 2RS8)
A. Nielsen, Senior Health Physicist, RII (Sections 2RS1,
4OA1)
W. Pursley, Health Physicist, RII, (Section 2RS6)
J. Hamman, Project Engineer, RII, (Sections 4OA1, 4OA3)

Approved by: Scott M. Shaeffer, Chief
Reactor Projects Branch 6
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000390/2012-004; 07/01/2012 – 09/30/2012; Watts Bar, Unit 1; Adverse Weather Protection, and Identification and Resolution of Problems.

The report covered a three-month period of inspection by resident inspectors and announced inspections by regional inspectors. Two Green findings were identified, which involved non-cited violations (NCVs) of NRC requirements. The significance of most findings is identified by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP); the cross-cutting aspect was determined using IMC 0310, "Components Within the Cross-Cutting Areas." Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process" Revision 4, dated December 2006.

A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a NCV of Technical Specification 5.7.1, Procedures, for the licensee's failure to properly implement Maintenance Procedure MMTP-102, Erection of Scaffolds/Temporary Work Platforms and Ladders, Revision 7. Specifically, a temporary scaffold erected in close proximity to an essential raw cooling water (ERCW) pump was not adequately restrained to prevent interaction with the pump motor during a seismic event. The licensee entered the issue into the corrective action program as Problem Evaluation Report (PER) 588895, removed the subject scaffold, and implemented corrective actions to inspect all scaffolding in Seismic Category I areas for similar conditions.

The licensee's failure to erect the scaffold in accordance with procedures in the vicinity of safety-related equipment was a performance deficiency. The inspectors reviewed IMC 0612 and determined that the finding was more than minor because, if left uncorrected, scaffold interaction with the pump motor during a seismic event could render the pump inoperable. The finding was associated with the Mitigating Systems Cornerstone. Using the Phase I screening worksheet of IMC 0609, the inspectors determined that the finding was of very low safety significance (Green) because no actual loss of safety function occurred and the finding did not screen as potentially risk significant due to external events. The cause of the finding had a cross-cutting aspect in the area of effective supervisory/management oversight in the Work Practices component. It was directly related to the licensee not ensuring adequate supervisory and management oversight of work activities, including contractors that erected the scaffold and licensee engineering personnel that reviewed and approved the deficient scaffold installation that could adversely affect nuclear safety. (H.4 (c)). (See Section 1R01).

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- Green. The inspectors identified a NCV of 10 *Code of Federal Regulations* (CFR) 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to correct an identified deficiency in the C-A ERCW pump breaker on July 25, 2012. This uncorrected deficiency led to the inability of the breaker to trip and is a performance deficiency. The inspectors reviewed IMC 0612 and determined that the finding was more than minor because, if left uncorrected, it would have the potential to lead to a more significant safety concern; specifically the failure of the C-A ERCW pump to load shed on a loss of offsite power. Additionally, the finding was associated with the equipment performance attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Using the Phase I screening worksheet of IMC 0609, the inspectors determined that the finding was of very low safety significance (Green) because the associated shutdown board is a Unit 2 board and is lightly loaded. Additionally, the failure of the C-A ERCW pump breaker to trip and thus be immediately loaded onto 2A emergency diesel generator is within the transient capability of the emergency diesel generator. The cause of the finding was directly related to the cross-cutting aspect for appropriate corrective actions to address safety issues in a timely manner commensurate with their safety significance and complexity in the corrective action program component of the cross-cutting area of Problem Identification and Resolution, in that the licensee failed to take adequate corrective actions to repair the C-A ERCW breaker when the initial deficiency was discovered on July 25, 2012. (P.1(d)). (See Section 4OA2)

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

Unit 1 operated at or near 100 percent rated thermal power (RTP) until August 28, 2012, when the unit automatically tripped from 100 percent RTP due to an error in the performance on an instrumentation procedure. The unit was returned to full power operation on August 31, 2012. The unit continued to operate at 100 percent RTP until September 10, 2012, when it was removed from service for a refueling outage.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 External Flood Protection Inspection

a. Inspection Scope

The inspectors reviewed the licensee's readiness to cope with external flooding. External flooding from a probable maximum flood (PMF) or design basis flood (DBF) has the potential for internal flooding of a portion of a number of the plant structures. During this type of external flooding event, the reactor core decay heat will be removed by the flood protection provisions designed to remain operational up to the DBF elevation in accordance with position 2 of Regulatory Guide 1.59. Provisions have also been made to cool the spent fuel pool. Abnormal Operating Instruction (AOI)-7.01 documents the shutdown requirements for the plant during this event. The inspectors reviewed the feasibility of several of these provisions for coping with this type of event to determine if they would achieve the desired results. The inspectors also reviewed the licensee's related corrective action documents (problem evaluation reports) to ensure any nonconforming conditions related to potential flooding were properly addressed. Documents reviewed are listed in the attachment to this report. This inspection satisfied one inspection sample.

b. Findings

- .1 Inspectors identified an unresolved item related to Technical Requirements Manual 3.7.2, Flood Protection Plan. This requirement specifies communications between the licensee and the TVA River Operations organization and time frames for these communications. Based on these communications, which are broken up into Stage I and Stage II, the licensee is required take actions. Stage I activities are essentially preparatory in nature for the plant site to receive flooding levels above plant grade. These include shutting down the reactor and commencing cooldown to 350 degrees and movement of equipment. These Stage I activities are to be complete within 10 hours of the determination that Stage I should be implemented. Based on communications with River Operations, the licensee remains in Stage I until River Operations determines that flood levels may reach plant grade level. At this point, Stage II is entered where significant plant system realignments occur including connecting the essential raw cooling water (ERCW) system to the component cooling system (CCS) system, ERCW to the raw cooling water (RCW) system, the Fire Protection

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system to the auxiliary feedwater (AFW) system and in some plant conditions, spent fuel pool (SFP) cooling to the residual heat removal (RHR) system. These connections are made with spoolpieces that are staged at various locations throughout the plant. Stage II activities are to be completed within 17 hours.

Inspectors observed the licensee simulating installation of the spoolpieces utilized to implement AOI-7.01. Based on the observation of the tools, procedures and manpower requirements, the inspectors questioned if the licensee would be successful at reconfiguring the plant within the 17-hour window, and therefore the total time of Stage I plus Stage II activities may exceed the assumed 27 hours. Initial efforts at integrating these observed maintenance procedures within the master AOI-7.1 Maximum Probable Flood, yielded a time of approximately 39 hours. With input from the field and improved resource loading, sequencing of the support procedures over a three-day effort, the time was reduced to 32 hours and 37 minutes. With additional focus, based on previous field demonstration of one particular supporting procedure, MI-17.021, Installation of Spoolpieces Between ERCW and Component Cooling Systems, the time was reduced to 27 hours and 34 minutes. This was accomplished by assigning two maintenance teams working in parallel on the two largest, heaviest spoolpieces. A further reduction in the time requirements of AOI-7.10, Flood Mode Electrical Systems Alignment, by working parallel teams on the four shutdown boards versus in series yielding a time reduction to 25 hours and 57 minutes.

Excluded from these times was the manpower that would have been required to build a temporary wall protecting the thermal barrier booster pumps (TBBP), which is approximately 4 people for 10 hours. This TBBP modification, although currently installed as of August 2012, would have been required to be built as part of the licensee's flood mitigation strategy. Additionally, the two largest spoolpieces were relocated to make installation faster. The time saved by repositioning these spoolpieces would also be added to the above total times to achieve a realistic estimate of the time needed for the all required flood mode mitigation measures to be implemented.

The Watts Bar Final Safety Analysis Report (FSAR), Section 2.4.14.4.3 says the following:

“The steps needed to prepare the plant for flood mode operation can be accomplished within 24 hours of notification that a flood above plant grade is expected. An additional 3 hours are available for contingency margin.”

Based on NRC observation of the aggregate activities and time frames needed to implement adequate flood protection measures as described in the FSAR, the licensee may not be able to demonstrate an acceptable capability in the required time. The ability of the licensee to perform these activities in the time allotted by the Technical Requirements Manual may not have been assured given the number of days of refinement required by the licensee to reduce the time to 25 hours and 57 minutes. Compounding the issue is the fact that not all of the activities that would have been required, specifically building the TBBP temporary barrier and relocating two of the spoolpieces, were included in the estimated time. Currently, based on the licensee's refinements in their flood protection implementation plan involving more effective

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resource allocation and job planning, installation of the TBBP temporary barrier, and relocation of key spoolpieces, the licensee has calculated their ability to adequately prepare for a flood event.

NRC evaluation of the licensee's ability to implement a successful flood protection plan prior to the refinement in the flood mode protection implementation plan requires further response from the licensee as to how they could have previously met this requirement. Pending additional information from the licensee which can verify the timeliness of the licensee's ability to reconfigure the plant for flood mode operation URI 050000390/2012004-01, Lack of Ability to Execute Flood Mode Configuration within the Time Frame required by the Technical Requirements Manual, Section 3.7.2, Flood Protection Plan, was identified.

- .2 Introduction: During the external flooding inspection, the inspectors identified a non-cited violation (NCV) of Technical Specification (TS) 5.7.1, "Procedures," for the licensee's failure to properly implement Maintenance Procedure MMTP-102, Erection of Scaffolds/Temporary Work Platforms and Ladders, Revision 7.

Description: On July 24, 2012, with the plant in Mode 1 at 100 percent power, the inspectors noted that a temporary scaffold erected in close proximity to an ERCW pump was not adequately restrained to prevent interaction with the pump motor during a seismic event. The B-A ERCW pump is located in the intake pumping station on the 741' elevation. The scaffold (Scaffold 37516) was erected on June 7, 2012, in close proximity to the B-A ERCW pump to the plant east of the pump motor to facilitate work on motor instrumentation. After erection by contract journeymen carpenters, it was inspected the same day by a licensee engineer who signed approval of the installation on MMTP-102, Erection of Scaffolds/Temporary Work Platforms and Ladders, Revision 7, Appendix E, Site Engineering Scaffold/Rigging Frame Evaluation. The engineer recorded on the form that the "scaffold is braced off of 4X4 tube steel" and "This scaffold is rigidly restrained in all directions. The clearance violations have been evaluated and are okay due to the nature of restraints. This scaffold does not degrade nuclear safety".

MMTP-102, Section 3.3.1, requires that the scaffold maintain at least a 4 inch clearance from safety-related equipment during a seismic event. The inspectors closely reviewed the scaffold installation and noted that the lack of physical restraint at the upper portion of the scaffold allowed it to tip over in the direction (plant southwest) of the B-A ERCW pump motor upper bearing sight glass. The inspectors determined that the scaffold was not adequately restrained to prevent interaction with the pump motor during a seismic event. On a previous occasion one year earlier, painters caused accidental damage to a similar upper bearing sight glass on the G-B ERCW pump resulting in the loss of oil from the upper bearing reservoir rendering the pump inoperable (Problem Evaluation Report [PER] 404322). A broken sight glass would result in the loss of approximately 1.5 gallons of the 6 gallons of oil normally required to be contained in upper bearing reservoir. The licensee entered the issue into the corrective action program as PER 588895, removed the subject scaffold, and implemented corrective actions to inspect all scaffolding in Seismic Category I areas for similar conditions.

Analysis: The licensee's failure to erect the scaffold in accordance with procedures in the vicinity of safety-related equipment was a performance deficiency. The inspectors reviewed Inspection Manual Chapter (IMC) 0612 and determined that the finding was more than minor because, if left uncorrected, scaffold interaction with the pump motor during a seismic event could render the pump inoperable. The finding was associated with the Mitigating Systems Cornerstone. Using the Phase I screening worksheet of IMC 0609, the inspectors determined that the finding was of very low safety significance (Green) because no actual loss of safety function occurred and the finding did not screen as potentially risk significant due to external events. The cause of the finding had a cross-cutting aspect in the area of effective supervisory/management oversight in the Work Practices component. It was directly related to the licensee not ensuring adequate supervisory and management oversight of work activities, including contractors that erected the scaffold and licensee engineering personnel that reviewed and approved the deficient scaffold installation that could adversely affect nuclear safety. (H.4 (c)).

Enforcement: Technical Specification 5.7.1, "Procedures," requires that written procedures shall be established, implemented, and maintained as recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Procedure MMTP-102, Section 3.3.1, requires that the scaffold maintain at least a 4 inch clearance from safety-related equipment during a seismic event. Contrary to the above, a temporary scaffold erected in close proximity to an ERCW pump was not adequately restrained to prevent interaction with the pump motor during a seismic event. Because this violation was of very low safety significance and was entered into the licensee's corrective action program as PER 588895, this violation is being treated as an NCV consistent with the NRC Enforcement Policy and is identified as NCV 05000390/2012004-02, Failure to Follow Scaffold Procedure Threatens ERCW Pump Operability.

1R04 Equipment Alignment

.1 Partial System Walkdowns

a. Inspection Scope

The inspectors conducted three equipment alignment partial walkdowns, listed below, to evaluate the operability of selected redundant trains or backup systems with the other train or system inoperable or out of service. The inspectors reviewed the functional system descriptions, Updated Final Safety Analysis Report (UFSAR), system operating procedures, and TS to determine correct system lineups for the current plant conditions. The inspectors performed walkdowns of the systems to verify that critical components were properly aligned and to identify any discrepancies which could affect operability of the redundant train or backup system. Documents reviewed are listed in the Attachment.

- Partial walkdown of alignment for auxiliary control air system B train while A train out of service (OOS) for maintenance
- Partial walkdown of alignment for safety injection (SI) pump 1A-A while SI pump 1B-B OOS for design change (Design Change Notice (DCN) 54912, Stage 40)
- Partial walkdown of emergency diesel generators (EDGs) while D common station service transformer OOS for planned maintenance

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Fire Protection Tours

a. Inspection Scope

The inspectors conducted tours of the five areas important to reactor safety, listed below, to verify the licensee's implementation of fire protection requirements as described in the Fire Protection Program, Nuclear Power Group Standard Programs and Processes (NPG-SPP)-18.4.6, Control of Fire Protection Impairments, NPG-SPP-18.4.7, Control of Transient Combustibles, NPG-SPP-18.4.8, Control of Ignition Sources (Hot Work). The inspectors evaluated, as appropriate, conditions related to: (1) licensee control of transient combustibles and ignition sources; (2) the material condition, operational status, and operational lineup of fire protection systems, equipment, and features; and (3) the fire barriers used to prevent fire damage or fire propagation. This activity constituted six inspection samples.

- 1A-A EDG
- 2A-A EDG
- 1B-B EDG
- 2B-B EDG
- Intake pumping station

.2 Annual Drill Observations

a. Inspection Scope

On September 4, 2012, the inspectors observed an unannounced fire drill for a simulated fire on the 713' elevation on the Unit 2 side of the auxiliary building. The drill was observed to evaluate the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies; openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were: (1) specified number of individuals responding; (2) proper wearing of turnout gear; (3) self-contained breathing apparatus available and properly worn and used; (4) control room personnel followed procedures for initiation and verification of response; (5) fire brigade leader exhibited command and had a copy

of the pre-fire plan; (6) fire brigade leader maintained control starting at the dress-out area; (7) fire brigade response was timely and followed the appropriate access route; (8) command/control set up near the location and communications were established; (9) proper use and layout of fire hoses; (10) fire area entered in a controlled manner; (11) sufficient firefighting equipment brought to the scene; (12) search for victims and propagation of the fire into other plant areas; (13) utilization of pre-planned strategies; (14) adherence to the pre-planned drill scenario and drill objectives acceptance criteria were met; and (15) firefighting equipment returned to a condition of readiness to respond to an actual fire. This activity constituted one inspection sample.

b. Findings

No findings were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors performed two heat sink performance reviews. The inspectors reviewed the licensee's program for maintenance and testing of the 2A-A EDG heat exchangers. Specifically, the review included the performance testing and analysis of the 2A1 (2-HTX-082-720A1-A) and 2A2 (2-HTX-082-720A2-A) EDG jacket water heat exchangers. The inspectors reviewed the ERCW system description, the heat exchanger performance, and the eddy current testing program document as well as completed work orders (WOs) documenting the testing and visual inspection and associated corrective actions to verify that corrosion or fouling did not impact the heat exchanger from achieving its design basis heat removal capacity. The inspectors reviewed periodic test data of ERCW flow rates as well as inlet and outlet temperatures to determine whether potential degradation was being monitored and/or prevented. The inspectors also reviewed eddy current inspection results to determine whether wall loss indications and tube plugging requirements were being identified. The inspectors reviewed the fouling factor calculation. This inspection satisfied two annual inspection samples. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the two performance-based problems listed below. A review was performed to assess the effectiveness of maintenance efforts that apply to scoped structures, systems, or components (SSCs) and to verify that the licensee was following the requirements of TI-119, Maintenance Rule Performance Indicator Monitoring, Trending, and Reporting 10 CFR 50.65, and NPG-SPP-03.4, Maintenance Rule Performance Indicator Monitoring, Trending, and Reporting 10 CFR 50.65. Reviews

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focused, as appropriate, on: (1) appropriate work practices; (2) identification and resolution of common cause failures; (3) scoping in accordance with 10 CFR 50.65; (4) characterization of reliability issues; (5) charging unavailability time; (6) trending key parameters; (7) 10 CFR 50.65 (a)(1) or (a)(2) classification and reclassification; and (8) the appropriateness of performance criteria for SSCs classified as (a)(2) or goals and corrective actions for SSCs classified as (a)(1).

- Reviewed basis of reclassifying the main control room annunciator system from a(1) to a(2)
- Reviewed a(1) Corrective Action Plan, Revision 1, for accumulation of ice on the ice condenser intermediate deck doors

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors evaluated, as appropriate, for the three work activities listed below: (1) the effectiveness of the risk assessments performed before maintenance activities were conducted; (2) the management of risk; (3) that, upon identification of an unforeseen situation, necessary steps were taken to plan and control the resulting emergent work activities; and (4) that maintenance risk assessments and emergent work problems were adequately identified and resolved. The inspectors verified that the licensee was complying with the requirements of 10 CFR 50.65 (a)(4); NPG-SPP-07.0, Work Control and Outage Management; NPG-SPP-07.1, On Line Work Management; and TI-124, Equipment to Plant Risk Matrix. This inspection satisfied five inspection samples for Maintenance Risk Assessment and Emergent Work Control.

- Emergent risk assessment of the failure of A auxiliary air compressor while H-B ERCW pump was OOS for maintenance
- Emergent risk assessment for removal of thermal barrier booster pump temporary alteration control form for reconstruction resulting in a yellow risk window
- Risk assessment of work week 508 with spent fuel cooling pump A OOS for corrective maintenance on C-A ERCW pump OOS for troubleshooting

b. Findings

No findings were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed three operability evaluations affecting risk-significant mitigating systems, listed below, to assess, as appropriate: (1) the technical adequacy of the evaluations; (2) whether continued system operability was warranted; (3) whether the compensatory measures, if involved, were in place, would work as intended, and were appropriately controlled; (4) where continued operability was considered unjustified, the impact on TS Limiting Conditions for Operation (LCOs) and the risk significance in accordance with the significant determination process (SDP). The inspectors verified that the operability evaluations were performed in accordance with NPG-SPP-03.1, Corrective Action Program. Documents reviewed are listed in the Attachment.

- Prompt determination of operability (PDO) for PER 557143, Unexpected degraded heat exchanger performance for 2A emergency diesel generator (EDG) engine #1, Revision 2
- PDO for PER 585266, Install ability of 20-inch essential raw cooling water (ERCW) component cooling system cross-connect spool piece
- Functional evaluation (FE) for PERs 585266 and 592859, 20-inch and 16-inch flood mode spoolpiece installation

b. Findings

No findings were identified.

1R18 Plant Modifications

a. Inspection Scope

The inspectors reviewed one permanent plant modification against the requirements of NPG-SPP-09.3, Plant Modifications and Engineering Change Control, and NPG-SPP-09.4, 10 CFR 50.59 Evaluation of Changes, Tests, and Experiments, and verified that the modification did not affect system operability or availability as described by the TS or the UFSAR. In addition, the inspectors determined whether: (1) the installation of the permanent modification was in accordance with the work package; (2) adequate configuration control was in place; (3) procedures and drawings were updated; and (4) post-installation tests verified operability of the affected systems.

- DCN 55902, Revision A, Provide a replacement for the obsolete temperature indicating controller for the lower containment ventilation coolers.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testinga. Inspection Scope

The inspectors reviewed five post-maintenance test procedures and/or test activities, (listed below) as appropriate, for selected risk-significant mitigating systems to assess whether: (1) the effect of testing on the plant had been adequately addressed by control room and/or engineering personnel; (2) testing was adequate for the maintenance performed; (3) acceptance criteria were clear and adequately demonstrated operational readiness consistent with design and licensing basis documents; (4) test instrumentation had current calibrations, range, and accuracy consistent with the application; (5) tests were performed as written with applicable prerequisites satisfied; (6) jumpers installed or leads lifted were properly controlled; (7) test equipment was removed following testing; and (8) equipment was returned to the status required to perform its safety function. The inspectors verified that these activities were performed in accordance with NPG-SPP-06.9, Testing Programs; NPG-SPP-06.3, Pre-/Post-Maintenance Testing; and NPG-SPP-07.1, On Line Work Management.

- WO 112925948, Replace piping reducer upstream of valve 2-ISV-67-603A
- WO 113737621, Rebuild compressor WBN-O-COM-032-0060, Perform PM 1427V
- WO 113735361, Auxiliary control air system A train found running
- WO 113356110, Clean boron from mechanical seal and perform a boron evaluation on centrifugal charging pump 1B-B
- WO 113293062, Calibration of auxiliary oil pump B-B charging pump 1B-B auto start pressure switch 1-PS-062-0244-B

b. Findings

No findings were identified.

1R20 Refueling and Outage Activitiesa. Inspection Scope

The inspectors reviewed the outage risk control plan for the upcoming Unit 1 Cycle 10 (U1C10) refueling outage (RFO) to assess whether the licensee had appropriately considered risk, industry experience, and previous site-specific problems, and to also confirm that the licensee had mitigation/response strategies for losses of key safety functions. Additional documents reviewed are listed in the Attachment.

The licensee began its U1C11 RFO on September 10, 2012. From that date through the end of this reporting period, the inspectors observed portions of the shutdown, cooldown, defueling, maintenance activities to verify that the licensee maintained defense-in-depth (DID) commensurate with the outage risk plan, and applicable TS.

The inspectors monitored licensee controls over the outage activities listed below. In addition, the inspectors reviewed the licensee's corrective action program to ensure that the licensee was identifying equipment alignment problems and that they were properly addressed for resolution.

- Licensee configuration management, including daily outage reports, to evaluate DID commensurate with the outage safety plan and compliance with the applicable TS when taking equipment OOS
- Installation and configuration of reactor coolant instruments to provide accurate indication and an accounting for instrument error
- Controls over the status and configuration of electrical systems and switchyard to ensure that TS and outage safety plan requirements were met
- Licensee implementation of clearance activities to ensure equipment was appropriately configured to safely support the work or testing
- Decay heat removal processes to verify proper operation and that steam generators, when relied upon, were a viable means of backup cooling
- Controls to ensure that outage work was not impacting the ability to operate the SFP cooling system during and after core offload
- Reactor water inventory controls including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss
- Reactivity controls to verify compliance with TS and to verify that activities which could affect reactivity were reviewed for proper control within the outage risk plan
- Refueling activities for compliance with TS to verify proper tracking of fuel assemblies from the SFP to the core and to verify foreign material exclusion was maintained

b. Findings

No findings were identified

1R22 Surveillance Testing

a. Inspection Scope

The inspectors witnessed 11 surveillance tests and/or reviewed test data of selected risk-significant SSCs, listed below, to assess, as appropriate, whether the SSCs met the requirements of the TS; the UFSAR; NPG-SPP-06.9, Testing Programs; NPG-SPP-06.9.2, Surveillance Test Program; and NPG-SPP-09.1, ASME Section XI. The inspectors also determined whether the testing effectively demonstrated that the SSCs were operationally ready and capable of performing their intended safety functions.

In-Service Test:

- WO 113207551, 1-SI-63-901-B, Safety injection pump 1B-B quarterly performance test

Containment Isolation Valve Test:

- WO 112678373 1-SI-67-701-C, Containment local leak rate test lower compartment ERCW, Penetrations X-62A and X-63A

Ice Condenser

- WO 112673770, 1-SI-61-2, 18 month ice weighing (observed basket weighing in Bay1)
- WO 112673479, 1-SI-61-3, 18 month ice condenser flow passages inspection (inspected ice passages in Bay 3)

Other Surveillances

- WO 113207865, 0-FOR-32-1-A, Quarterly auxiliary air compressor start/load valve exercising position indication verification and check valve test, Train A
- WO 113207485, 1-SI-62-901-A, Centrifugal charging pump 1A-A quarterly performance test
- WO 113207431, 0-SI-82-11-A, Monthly generator start and load test DG 1A-A
- WO 113736803, 0-FOR-32-1-A, Quarterly auxiliary air compressor start/load valve exercising position indication verification and check valve test, Train A
- WO 113739164, 0-SI-32-902-A, Auxiliary air compressor cooling water inlet valve full cycle exercising during normal operation – Train A
- WO 113228591, 0-SI-82-11-B, Monthly diesel generator start and load test DG 1B-B
- WO 113207491, 1-SI-62-901-B, Centrifugal charging pump 1B-B quarterly performance test

b. Findings

No findings were identified.

2. RADIATION SAFETY (RS)

Cornerstone: Occupational Radiation Safety (OS)

2RS1 Radiological Hazard Assessment and Exposure Controlsa. Inspection Scope

Hazard assessment and instructions to workers: During facility tours, the inspectors directly observed labeling of radioactive material and postings for radiation areas, high radiation areas and airborne radioactivity areas established within the radiologically controlled area (RCA) of the auxiliary building and radioactive waste (radwaste) 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 alpha emitters, airborne radioactivity, gamma surveys with a range of dose rate

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gradients, 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. For selected at-power containment entries, 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.

Hazard control and work practices: The inspectors evaluated access barrier effectiveness for selected locked high radiation area (LHRA) locations and discussed changes to procedural guidance for LHRA and very high radiation area (VHRA) controls with health physics (HP) supervisors. The inspectors observed and evaluated controls for the storage of irradiated material within the SFP. Established radiological controls (including airborne controls) were evaluated for selected at-power entries into containment and for SFP purification filter processing. In addition, the inspectors reviewed and discussed licensee controls for areas where dose rates could change significantly as a result of plant shutdown and refueling operations.

Through direct observations and interviews with licensee staff, the inspectors evaluated occupational workers' adherence to selected RWPs and HP technician proficiency in providing job coverage. ED alarm setpoints and worker stay times were evaluated against area radiation survey results for selected at-power entries into containment and for SFP purification filter replacement. The inspectors reviewed the use of personnel dosimetry (extremity dosimetry and multibadging in high dose rate gradients) for transfer canal work during the previous outage. The inspectors also evaluated worker response to dose and dose rate alarms during selected work activities.

Control of radioactive material: The inspectors observed surveys of material and personnel being released from the RCA using small article monitor, personnel contamination monitor, and portal monitor instruments. The inspectors reviewed the last two calibration records for selected release point survey instruments and discussed equipment sensitivity, alarm setpoints, and release program guidance with licensee staff. The inspectors compared recent 10 CFR Part 61 results for the dry active waste radioactive waste stream with radionuclides used in calibration sources to evaluate the appropriateness and accuracy of release survey instrumentation. The inspectors also reviewed records of leak tests on selected sealed sources and discussed nationally tracked source transactions with licensee staff.

Problem identification and resolution: The inspectors reviewed corrective action program (CAP) documents associated with radiological hazard assessment and exposure control. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with procedure NPG-SPP-03.1, Corrective Action Program, Revision 4. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results.

The inspectors evaluated radiation protection activities against the requirements and guidance of UFSAR, Section 12; TS Section 5.11; 10 CFR Parts 19 and 20; Regulatory Guide 8.38, "Control of Access to High and Very High Radiation Areas in Nuclear Power Plants"; and approved licensee procedures. Licensee programs for monitoring materials

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and personnel released from the RCA were evaluated against 10 CFR Part 20 and IE Circular 81-07, "Control of Radioactively Contaminated Material". Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

Cornerstone: Public Radiation

2RS6 Radioactive Gaseous and Liquid Effluent Treatment

a. Inspection Scope

The inspectors reviewed the radiological control effluent release occurrences PI results for the Public Radiation Safety cornerstone from June 6, 2011, through July 30, 2012. For the assessment period, the inspectors reviewed cumulative and projected doses to the public and PER documents related to radiological effluent technical specifications/offsite dose calculation manual issues. Documents reviewed are listed in the Attachment.

Program Reviews: The inspectors reviewed the 2010 and 2011 Annual Radiological Effluent Release Report documents for consistency with the requirements in the offsite dose calculation manual (ODCM) and TS details. Routine and abnormal radioactive effluent release results and reports as applicable as well as licensee's implementation of C-14 production and release estimates, were reviewed and discussed with responsible licensee representatives. Detailed reviews of liquid releases and potential reporting requirements for abnormal releases from the turbine building system sump vent to an onsite location as a result of a degraded check valve were reviewed and discussed to evaluate licensee actions. Status of radioactive gaseous and liquid effluent processing and monitoring equipment and activities, and changes thereto, as applicable, as described in the UFSAR were reviewed. In addition, quality assurance program activities, including inter-laboratory comparison analysis results, were reviewed and discussed with responsible licensee representatives.

Equipment walkdowns: The inspectors walked down selected components of the gaseous and liquid waste processing and discharge systems to ascertain material condition, configuration and alignment. To the extent practical, the inspector observed the material condition in-place liquid waste processing equipment for indications of degradation or leakage that could constitute a possible release pathway to the environment. The walkdowns conducted with operations and systems engineering personnel included discussion and evaluation of observed leaks, material condition, work order status, and configuration control with selected tanks, piping, and valves. The inspectors toured gaseous waste processing valve gallery and discussed pressure test surveillance tests conducted and associated results.

Instruments and equipment: The inspectors discussed and verified flow rates for the auxiliary building plant vent system and sampling system. For the subject system, sampling and processing of the weekly effluent release permit was observed and discussed with responsible chemistry staff. In addition, the inspectors reviewed recent ventilation surveillance test results for the auxiliary building gas treatment system filter trains A and B, emergency gas treatment system filter trains A and B, and containment purge air cleanup system trains A and B and discussed with accountable engineer.

Effluents: The inspectors reviewed selected liquid and gaseous release permits and verified monthly gaseous and liquid effluent dose calculation summaries. The site's 10 CFR 61 analyses were reviewed for expected nuclide distribution from the aspects of quantifying effluents, the treatment of hard-to-detect nuclides, determining appropriate calibration nuclides for instruments, and whole body counting libraries. The inspectors reviewed the licensee's follow-up on three abnormal releases that were documented in the annual effluent reports. The inspectors reviewed and discussed estimated radionuclide types, quantities, and potential dose impacts for these releases with licensee staff.

Ground water protection: The licensee's implementation of the industry ground water protection initiative was reviewed for changes since the last inspection. This review included review of documentation of onsite monitoring in wells, electrical vaults, manholes, and surface water bodies. The inspectors noted that the licensee's interpretation of the guidance in Nuclear Energy Institute (NEI) 07-07 was inconsistent with the NRC's interpretation in that the licensee's procedure stipulates that reporting will occur when the activity in the leakage or spill is greater than the ODCM-required minimum sensitivity. The NRC's interpretation is that any statistically valid positive activity result should be reported even if the sensitivity of the counting instrumentation is much higher than the minimum required. The licensee agreed to change the procedure to reflect the interpretation of the voluntary ground water initiative as understood by NEI and NRC inspectors. PER 634318 was entered in the licensee's corrective action program to address the issue.

Problem identification and resolution: Selected corrective action program (CAP) documents associated with radiation monitoring instruments, including PER documents, licensee audits, and required reports were reviewed, assessed, and resolved in accordance with NPG-SPP-03.1, Corrective Action Program, Revision 4.

Effluent process and monitoring activities were evaluated against details and requirements documented in the UFSAR, Sections 11 and 12; TS Sections 5.7.1 Procedures, 5.7.2.3, ODCM, 5.7.2.7, Radioactive Effluents Control Program, 5.7.2.14, Ventilation Filter Testing Program, and 5.9.3, Reporting Requirements; ODCM; 10 CFR Part 20; 10 CFR, Appendix I to Part 50; and approved licensee procedures. In addition, ODCM and UFSAR changes since the last onsite inspection were reviewed against the guidance in NUREG-1301 and RG 1.109, RG 1.21, and RG 4.1.

Documents reviewed are listed in the Attachment. The inspectors completed the specified line-item samples detailed in IP 71124.06.

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b. Findings

No findings were identified.

2RS7 Radiological Environmental Monitoring Program (REMP)

a. Inspection Scope

REMP implementation: The inspectors observed routine sample collection and surveillance activities as required by the licensee's REMP. The inspectors noted the material condition and operability of airborne particulate filter sample stations at selected monitoring locations. Selected environmental thermoluminescent dosimeters (TLDs) were checked for material condition and appropriate identification. In addition, automatic water samplers were inspected for material condition at selected river water locations and onsite groundwater locations. Land use census results, changes to the ODCM, and sample collection/processing activities were discussed with environmental technicians. Inspectors observed the collection environmental samples from surface water using techniques in accordance with licensee procedures. The samples observed were representative of release pathways as specified in the ODCM.

The inspectors reviewed calibration records for selected environmental air samplers. The inspectors also reviewed the 2010 and 2011 radiological environmental operating reports, results of the 2010 and 2011 interlaboratory cross-check program, and a procedure for environmental sample collection and processing. Selected environmental measurements were reviewed for consistency with licensee effluent data, evaluated for radionuclide concentration trends, and compared with detection level sensitivity requirements.

The inspectors reviewed records, as required by 10 CFR 50.75(g), of leaks, spills and remediation and verified the records were retained in a retrievable manner.

Procedural guidance, program implementation, and environmental monitoring results were reviewed against: 10 CFR Part 20; Appendix I to 10 CFR Part 50; TS Section 5.7.2.3; ODCM; Regulatory Guide (RG) 4.15, Quality Assurance (QA) for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment; and the Branch Technical Position, An Acceptable Radiological Environmental Monitoring Program - 1979.

Meteorological monitoring program: The inspectors observed the physical condition of the meteorological tower and discussed equipment operability and maintenance history with licensee representatives. The inspectors discussed the reliability and data fidelity of the fiber optic data transmission. For selected meteorological measurements of wind speed, wind direction, and temperature, the inspectors reviewed calibration records for applicable tower instrumentation and evaluated measurement data recovery for 2011 and 2012.

Inspectors verified that missed environmental samples were identified and reported in the 2010 and 2011 annual environmental monitoring report. The licensee identified the missed samples in their CAP.

Licensee procedures and activities related to meteorological monitoring were evaluated against: ODCM; UFSAR Section 2.3; ANSI/ANS-2.5-1984, Standard for Determining Meteorological Information at Nuclear Power Sites; and Safety Guide 23, Onsite Meteorological Programs. Documents reviewed are listed in the Attachment.

Problem identification and resolution: The inspectors reviewed selected PERs and audits in the areas of environmental monitoring, meteorological monitoring, and release of materials. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with procedure NPG-SPP-03.1, Corrective Action Program, Revision 4. Documents reviewed are listed in the Attachment.

The inspectors completed the one specified line-item samples detailed in Inspection Procedure (IP) 71124.07.

b. Findings

No findings were identified.

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

a. Inspection Scope

Waste processing system program review: The inspectors reviewed and discussed the status and proposed changes to the radioactive waste processing systems relative to the current UFSAR and process control program documents. The inspectors discussed component function, processing system changes, and radioactive waste (radwaste) program implementation with licensee staff. Design changes and 10 CFR 50.59 screening reviews for the initial construction and installation of a tritiated water storage tank as part of the liquid radioactive waste processing system were reviewed and discussed.

For primary resin, filters, and dry active waste the inspectors evaluated analyses for hard-to-detect nuclides, reviewed the use of scaling factors, and examined quality assurance comparison results between licensee waste stream characterizations and outside laboratory data. Waste stream sampling methodologies for resins, filters, and dry active waste were evaluated and discussed with responsible radwaste staff.

Radioactive material storage: During walkdowns of radioactive material and radioactive waste storage areas, the inspectors observed the physical condition and labeling of storage containers and the posting of radioactive material areas. The inspectors also reviewed licensee procedural guidance for storage and monitoring of radioactive material. RCA storage areas evaluated included select Unit 1 auxiliary building locations

and remote facilities within owner controlled area including the steam generator mausoleum and decontamination building.

Radioactive waste system and radioactive material storage area walkdowns: During inspector walkdowns, accessible sections of the liquid and solid radwaste processing systems were assessed for material condition and conformance with system design diagrams. Inspected equipment included radwaste processing and holdup tanks; radwaste system transfer piping, resin and filter components; and dewatering system equipment.

Transportation: During the onsite inspection, training provided to radioactive waste staff responsible for preparing shipments to meet Department of Transportation (DOT) regulations was evaluated.

Selected shipping records were reviewed for consistency with licensee procedures and compliance with NRC and DOT regulations. The inspectors reviewed emergency response information, DOT shipping package classification, waste classification, radiation survey results. Licensee procedures for opening and closing shipping containers were compared to package manufacturer's requirements. In addition, status of training for selected individuals currently qualified to ship radioactive material was reviewed.

Problem identification and resolution: The inspectors reviewed selected CAP documentation in the areas of radwaste processing and radwaste/rad material shipping. The inspectors evaluated the licensee's ability to identify and resolve identified issues in accordance with procedure NPG-SPP-03.1, Corrective Action Program, and NPG-SPP-03.1.7, PER Analysis, Actions, Closures and Approvals. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results.

Radwaste processing activities and equipment configuration were reviewed for compliance with the licensee's PCP, UFSAR Chapter 11; TS 5.7, Procedures, Programs and Manuals, and approved procedures. Waste stream characterization analyses were reviewed against regulations detailed in 10 CFR Part 20, 10 CFR Part 61, and guidance provided in the Branch Technical Position on Waste Classification (1983). Transportation program implementation was reviewed against regulations detailed in 10 CFR Part 20, 10 CFR Part 71, 49 CFR Parts 172-178, as well as the guidance provided in NUREG-1608. Training activities were assessed against 49 CFR Part 172 Subpart H. Documents reviewed during the inspection are listed in the Attachment

The inspectors completed one sample as required by IP 71124.08.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verificationa. Inspection Scope

The inspectors sampled licensee submittals for the seven PIs listed below. To verify the accuracy of the PI data reported during the periods listed, PI definitions and guidance contained in NEI 99-02, Regulatory Assessment Indicator Guideline, Revision 5, were used to verify the basis in reporting for each data element.

- Mitigating System Performance Index (MSPI) – High pressure injection system
- MSPI - Cooling water systems
- MSPI - Heat removal system
- MSPI – RHR system
- MSPI - Emergency AC power

Occupational Radiation Safety Cornerstone: The inspectors reviewed the occupational exposure control effectiveness PI results for the Occupational Radiation Safety Cornerstone from April 2011 through June 2012. For the assessment period, the inspectors reviewed ED alarm logs and PERs related to controls for exposure significant areas. Documents reviewed are listed in the Attachment.

Public Radiation Safety Cornerstone: The inspectors reviewed the radiological control effluent release occurrences PI results for the Public Radiation Safety Cornerstone from June 6, 2011, through July 30, 2012. For the assessment period, the inspectors reviewed cumulative and projected doses to the public and PER documents related to radiological effluent TS/ODCM issues. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA2 Identification & Resolution of Problems.1 Review of Items Entered into the Corrective Action Program (CAP)

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 review was accomplished by reviewing daily PER summary reports and attending daily PER review meetings.

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.2 Annual Sample: Failure to Correct an Identified Deficiency in the C ERCW Pump Breaker

Introduction: A Green, NRC-identified NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the licensee's failure to correct an identified deficiency in the C-A ERCW pump breaker on July 25, 2012. This uncorrected deficiency led to the inability of the breaker to trip.

Description: In the daily review of corrective action documents on July 26, 2012, inspectors noted Service Request (SR) 585098 which was written by an operator that documented metal parts including a bolt and washer found in the bottom of the switchgear housing the 6.9kV breaker for the C-A ERCW pump, a safety-related component. Inspectors followed up on the immediate actions taken by the licensee which was a determination by the electrical maintenance organization that, based upon direct inspection of the breaker, the parts did not come from the breaker currently occupying the cubicle, but apparently from a previous breaker. SR 585098 was converted to PER 586096 with a corrective action to determine which of the previous breakers in this cubicle was the source of these parts.

On August 21, 2012, during review of the previous day's main control room logs (August 20 at 1127), inspectors noted that the operators were unable to trip the C-A ERCW pump with the main control board hand switch. This resulted in corrective action document PER 597836. Inspectors followed up on the troubleshooting activities. The last component examined in the troubleshooting activities was the breaker. When four small screws were removed from the front cover plate, the trip coil was found visually loose with only one of the two mounting bolts present. The missing mounting bolt was discovered some three weeks earlier in the bottom of the breaker cubicle.

Analysis: The licensee's failure to correct the deficiencies of the C-A ERCW pump breaker when the problem was initially discovered is a performance deficiency. The inspectors reviewed IMC 0612 and determined that the finding was more than minor because, if left uncorrected, it would have the potential to lead to a more significant safety concern; specifically the failure of the C-A ERCW pump to load shed on a loss of offsite power. Additionally, the finding was associated with the equipment performance attribute of the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Using the Phase I screening worksheet of IMC 0609, the inspectors determined that the finding was of very low safety significance (Green) because the associated shutdown board is a Unit 2 board and is lightly loaded. Additionally, the failure of the C-A ERCW pump breaker to trip and thus be immediately loaded onto 2A EDG is within the transient ability of the EDG. The cause of the finding was directly related to the cross-cutting aspect for appropriate corrective actions to address safety issues in a timely manner commensurate with their safety significance and complexity in the Corrective Action Program component of the cross-cutting area of Problem Identification and Resolution, in that the licensee failed to take adequate corrective actions to repair the C-A ERCW breaker when the initial deficiency was discovered on July 25, 2012. (P.1(d)).

Enforcement: 10 CFR 50 Appendix B, Criterion XVI, "Corrective Action," states, in part, that conditions adverse to quality be promptly identified and corrected. Contrary to the above requirement, the corrective actions taken by the licensee to correct the deficiency found in the C-A ERCW breaker on the July 25, 2012, were inadequate. Because this violation was of very low safety significance and was entered into the licensee's corrective action program as PER 606039, this violation is being treated as an NCV consistent with the NRC Enforcement Policy and is identified as NCV 05000390/2012004-03, Inadequate Corrective Actions for the C-A ERCW Pump Breaker.

4OA3 Event Followup

Unit 1 Reactor Trip – August 28, 2012

a. Inspection Scope

The inspectors responded to a Unit 1 manual scram that occurred on August 28, 2012. The inspectors discussed the preliminary cause of the scram with licensee management, operations, and engineering. The inspectors reviewed unit parameters and system response to verify that equipment responded to the scram as designed. The inspectors also reviewed parts of the licensee's post-scram review. The inspectors reviewed the initial licensee event notification to verify that it met regulatory requirements.

b. Findings

No findings were identified

4OA5 Other Activities

.1 (Discussed) NRC Temporary Instruction (TI) 2515/187, Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns, and NRC TI 2515/188, Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns

a. Inspection Scope

Inspectors accompanied the licensee on a sampling basis, during their flooding and seismic walkdowns, to verify that the licensee's walkdown activities were conducted using the methodology endorsed by the NRC. These walkdowns are being performed at all sites in response to a letter from the NRC to licensees, entitled "Request for Information Pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated March 12, 2012 (ADAMS Accession No. ML12053A340).

Enclosure 3 of the March 12, 2012, letter requested licensees to perform seismic walkdowns using an NRC-endorsed walkdown methodology. Electric Power Research Institute (EPRI) document 1025286 titled, "Seismic Walkdown Guidance," (ADAMS Accession No. ML12188A031) provided the NRC-endorsed methodology for performing

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seismic walkdowns to verify that plant features, credited in the current licensing basis (CLB) for seismic events, are available, functional, and properly maintained.

Enclosure 4 of the letter requested licensees to perform external flooding walkdowns using an NRC-endorsed walkdown methodology (ADAMS Accession No. ML12056A050). NEI document 12-07 titled, "Guidelines for Performing Verification Walkdowns of Plant Protection Features," (ADAMS Accession No. ML12173A215) provided the NRC-endorsed methodology for assessing external flood protection and mitigation capabilities to verify that plant features, credited in the CLB for protection and mitigation from external flood events, are available, functional, and properly maintained.

b. Findings

Findings or violations associated with the flooding and seismic walkdowns, if any, will be documented in future reports.

4OA6 Meetings, including Exit

Exit Meeting Summary

On August 17, 2012, the inspectors discussed the results of the onsite radiation protection inspection with Mr. D. Grissette, Site Vice President, and other responsible staff. The inspectors noted that no personally identifiable information was reviewed. The inspectors noted that proprietary information had been provided but would not be included in the inspection report and would be properly destroyed.

On October 10, 2012, the resident inspectors presented the quarterly inspection results to Mr. Don Grissette, Site Vice President, and other members of the licensee staff. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

4OA7 Licensee Identified Violations

None.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

T. Detchemende, Emergency Preparedness Manager
K. Dutton, Engineering Director
D. Gronek, Plant Manager
D. Grissette, Site Vice President
D. Guinn, Licensing Manager
E. Higgins, Mechanical/Civil Design Manager
W. Hooks, Radiation Protection Manager
D. Hughes, Training Supervisor
B. Hunt, Operations Support Superintendent
D. Jacques, Security Manager
A. Jenkins, Chemistry Manager
R. Kirkpatrick, Design Engineering Manager
D. Murphy, Maintenance Manager
A. Phillips, Operations Support
W. Prevatt, Operations Manager
A. Scales, Work Control Manager
S. Sweet, Licensing Engineer

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000390/2012004-01	URI	Lack of ability to execute Flood Mode configuration within the time frame required by the Technical Requirements Manual, section 3.7.2, Flood Protection Plan (Section 1R01.1)
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Opened and Closed

05000390/2012004-02	NCV	Failure to Follow Scaffold Procedure Threatens ERCW Pump Operability (Section 1R01.2)
05000390/2012004-03	NCV	Inadequate Corrective Actions for the C ERCW Pump Breaker (Section 4OA2.1)

Closed

None.

Discussed

None.

LIST OF DOCUMENTS REVIEWED

Section 1R01: External Flood Protection Inspection

Updated Final Safety Analysis Report (UFSAR) Sections 2.4.14, 3.4
Technical Requirements Manual 3.7.2 Flood Protection Plan
AOI-7.1, Maximum Probable Flood
MI-17.021, Installation of Spoolpieces Between ERCW and Component Cooling Systems

Section 1R04: Equipment Alignment

SOI-32.02 ATT 1P, Auxiliary Air System Power Alignment Checklist 32.02-1P
SOI-32.02 ATT 2V, Auxiliary Air System Train B Valve Alignment Checklist 32.02-2V
SOI-63.01 ATT 1P, Safety Injection System Power Checklist 63.01-1P
SOI-63.01 ATT 1V, Safety Injection System Valve Checklist 63.01-1V
SOI-82.01 ATT 1P, Diesel Generator (DG) 1A-A Power Checklist 82.01-1P
SOI-82.01 ATT 1V, Diesel Generator (DG) 1A-A Valve Checklist 82.01-1V
SOI-82.02 ATT 1P, Diesel Generator (DG) 1B-B Power Checklist 82.02-1P
SOI-82.02 ATT 1V, Diesel Generator (DG) 1B-B Valve Checklist 82.02-1V
SOI-82.03 ATT 1P, Diesel Generator (DG) 2A-A Power Checklist 82.03-1P
SOI-82.03 ATT 1V, Diesel Generator (DG) 2A-A Valve Checklist 82.03-1V
SOI-82.04 ATT 1P, Diesel Generator (DG) 2B-B Power Checklist 82.04-1P
SOI-82.04 ATT 1V, Diesel Generator (DG) 2B-B Valve Checklist 82.04-1V

Section 1R07: Heat Sink Performance

TI-79.823 Diesel Generator 2A-A Jacket Water Cooler Performance Test (WO 113536577)
TI-79.823 Diesel Generator 2A-A Jacket Water Cooler Performance Test to Retest DG HX 2A1
(WO 113617659)
WO 112939076 Diesel Cooling Water Heat Exchanger 2A1 Cleaning and Inspection
WO 113537511 Diesel Cooling Water Heat Exchanger 2A1 Cleaning and Inspection
WO 113617677 Diesel Cooling Water Heat Exchanger 2A1 Hydrolaser Cleaning
WO 112939160 Diesel Cooling Water Heat Exchanger 2A2 Cleaning and Inspection
0-PI-OPS-28A, Train A ERCW and RCW Flow Verification During Chemical Additions
(performed 8/21/2012)
TI-79.000 Program for Implementing NRC Generic Letter 89.13, Rev. 11
Calculation MDQ00008220030077 – Emergency Diesel Generator Jacket Water Heat
Exchanger Evaluation, Rev. 3
N-ET-6 Eddy Current Examination of Tubing In Balance Of Plant Components, Rev. 6
NETP-108 Heat Exchanger Testing and Maintenance Program, Rev. 3
Eddy Current Inspection Results-Diesel Generator Water Jacket Cooler 2A1, dated 5/21/2012
Eddy Current Inspection Results-Diesel Generator Water Jacket Cooler 2A2, dated 5/21/2012
WBN-SDD-N3-82-4002, Standby Diesel Generator System, System Description Document
EDC 59790, Rev. A – Revise System Description N3-82-4002
PER 557143 and associated Prompt Determination of Operability (PDO)
PER 558233

Section 1R18: Plant Modifications

DCN 55902
PER 552247
PER 521624
SOI-30.03, Containment HVAC and Pressure Control, Rev. 45

WO 08-812558-000
 WO 111428503

Section 1R20: Refueling and Outage Activities

Clearance 1-TO-RF11-2012, Section 1-63-0449A-RF, 1-FCV-63-94 RHR to CL 1&4 injection isolation valve
 O&SSDM-4.0, Operational Defense-In-Depth Assessment
 Unit 1 Cycle 11 Outage Safety Plan
 Timesheets for randomly selected individuals
 Violation Reports for Fatigue Rule Compliance
 Randomly selected individual Time Sheets for Fatigue Rule Compliance
 TI-68.002, Containment Penetrations and Closure Control

Section 2RS1: Radiological Hazard Assessment and Exposure Controls

Procedures, Guidance Documents, and Manuals

RCI-152, "Radiological Postings", Rev. 9
 RCI-103, "Radioactive Material Control", Rev. 32
 RCI-138, "Alpha Surveillance and Periodic Radionuclide Assessment Program", Rev. 5
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 RCI-100, "Control of Radiological Work", Rev. 39
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 Radiological Survey WBN-M-20120724-24, U1 Upper Containment G/A 802'
 Radiological Survey WBN-M-20120718-24, U1 Upper Containment G/A 802'
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 PER 401603
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 PER 477548
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Section 2RS6: Radioactive Gases and Liquid Effluent Treatment

Procedures, Guidance Documents, and Manuals

0-Offsite-Dose Instruction (ODI) 090-1, Liquid Radwaste Tank Release, Rev. 0037
 0-ODI-90-22, Weekly Auxiliary Building Exhaust Release, Rev. 0031
 Chemistry Manual (CM)-9.7.101, Auxiliary Building Exhaust Effluent Monitor Grab Sampling and Filter Replacement, Rev. 0000
 Chemistry Manual (CM)-9.7.106, Gaseous Lower Containment Sampling, Rev. 0005
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 Drawing 1-47W611-2, Emergency Gas Treatment, Rev. 9
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 NPG-SPP-05.15, Fleet Ground Water Protection Program, Rev. 0002

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 2010 Annual Radioactive Effluent Release Report
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 0-ODI-90-22, Weekly Auxiliary Building Exhaust Release, Rev. 0031, Completed Data Sheet, 08/14/12
 0-ODI-90-22, Lower Containment Noble Gas, Rev. 0031, Completed Data Sheet 08/14/12
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WO 08-820827-000, Containment Purge Air Cleanup System Train-A Test, Dated 12/18/09

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CAP Documents

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PER 246953

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PER 415191

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Section 2RS7: Radioactive Environmental Monitoring Program and Radioactive Material Control

Procedures, Instructions, Guidance Documents, and Operating Manuals

0-ODI-10-22, 6 Month Channel Calibration Meteorological Monitoring Instrumentation, Rev. 6

0-PI-CEM-12.0, Collection of Radiological Environmental Monitoring Samples, Rev. 9

EMSTD-1, Environmental Radiological Monitoring Program, Rev. 25

EPFS-2, Control Room Notification, Rev. 6

EPFS-3, Servicing of Meteorological Equipment at Environmental Data Stations, Rev. 15

EPFS-4, Environmental Data Station Meteorological Sensor Exchange, Rev. 19

EPFS-5, Calibration of Wind Direction Sensor, Rev. 3

EPFS-6, Calibration of Environmental Data Station Data Logger and Sonic Channels, Rev. 16

EPFS-7, Radio and Meteorological Tower Inspection, Rev. 4

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Watts Bar Nuclear Plant (WBNP), Offsite Dose Calculation Manual (ODCM), Rev. 23
WBNP Unit 1, Annual Radiological Environmental Operating Reports – 2010 and 2011
Spreadsheet: System, Structures and Components –Risk Assessment in Relation to Groundwater.

Corrective Action Program (CAP) Documents

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PER457413

PER457414

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

Procedures and Guidance Documents

Process Control Program (PCP), Revision 0002

Radiological Control Instruction (RCI) -103, Radioactive Material Control, Revision (Rev.) 0032

RCI-116, Bead Resin/Activated Carbon Dewatering Procedure for CNS-14-215 or Smaller

Liners Prior to Shipment, Rev. 0009

RCI-125, Operation of Mobile Demineralizers, Rev. 0011

Radioactive Waste Technical Procedure (RWTP) – 100, Radioactive Material/Waste Shipments, Rev. 0007

RWTP – 101, 10 CFR Waste Characterization, Rev. 0002

Unit 0 Technical Instruction (0-TI-7.005, Storage of Material in the Spent Fuel Pool, Cask Pit, Transfer Canal & New Fuel Vault, Revision (Rev) 0002

NSD-SVS-TOP-759, Rev. 0, Heavy Load and Rigging Plan for Control Rod Drive Shaft (CRDS) Exchange Equipment for Watts Bar Unit 1

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Change Request Form, DCN 59397, Tritiated Water Storage Tank Design and Construction, 08/01/12

2011 Shipping Logs for: Exempt Quantity Shipments; Laundry Shipments; Waste to Processors Shipments; Radioactive Material Shipments;

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 Waste Stream Report, February 2012 Dry Active Waste, 2/22/2012
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Section 40A1: Performance Indicator Verification

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 0-ODI-90-22, Weekly Auxiliary Building Exhaust Release, Rev. 0031, Completed Data Sheet, 08/14/12
 0-ODI-90-22, Lower Containment Noble Gas, Rev. 0031, Completed Data Sheet 08/14/12
 2010, 2011 and 2012 TVA Fleet Metrics

LIST OF ACRONYMS

AFW	auxiliary feedwater
AOI	abnormal operating instruction
CAP	corrective action program
CCS	component cooling system
CFR	<i>Code of Federal Regulations</i>
CLD	current licensing basis
DBF	design basis flood
DOT	Department of Transportation
DCN	design change notice
EDG	emergency diesel generator
ED	electronic dosimeter
ERCW	essential raw cooling water
FSAR	Final Safety Analysis Report
FPR	fire protection
IMC	Inspection Manual Chapter
IP	inspection procedure
HRA	high radiation area
MSPI	mitigating system performance index
NCV	non-cited violation
NEI	Nuclear Energy Institute
NPG-SPP	nuclear power group standard programs and processes
NRC	Nuclear Regulatory Commission
ODCM	offsite dose calculation manual
OOS	out of service
PER	problem evaluation report
PI	performance indicator
PMF	probably maximum flood
RCA	radiologically controlled area
RCW	raw cooling water
REMP	radiologically environmental monitoring program
RFO	refueling outage
RHR	residual heat removal
RS	radiation safety
RTP	rated thermal power
SDP	Significance Determination Process
SI	safety injection
SFP	spent fuel pool
SR	service request
TBBP	thermal barrier booster pump
TS	technical specifications
TVA	Tennessee Valley Authority
URI	unresolved item
WO	work order