



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

November 6, 2014

Mr. David A. Heacock
President and Chief Nuclear Officer
Virginia Electric and Power Company
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

**SUBJECT: SURRY POWER STATION – NRC INTEGRATED INSPECTION REPORT
05000280/2014004 AND 05000281/2014004**

Dear Mr. Heacock:

On September 30, 2014, the United States Nuclear Regulatory Commission (NRC) completed an inspection at your Surry Power Station Units 1 and 2. On October 21, 2014, the NRC inspectors discussed the results of this inspection with Mr. R. Simmons and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

No NRC-identified or self-revealing findings were identified during this inspection.

In accordance with Title 10 of the Code of Federal Regulations 2.390, "Public Inspections, Exemptions, Requests for Withholding," 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's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Michael F. King, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket Nos.: 50-280, 50-281
License Nos.: DPR-32, DPR-37

Enclosure: Inspection Report 05000280/2014004, 05000281/2014004
w/Attachment: Supplemental Information

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D. Heacock

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Letter to David A. Heacock from Michael F. King dated November 6, 2014.

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05000280/2014004 AND 05000281/2014004

Distribution:

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 50-280, 50-281

License Nos.: DPR-32, DPR-37

Report No: 05000280/2014004, 05000281/2014004

Licensee: Virginia Electric and Power Company (VEPCO)

Facility: Surry Power Station, Units 1 and 2

Location: 5850 Hog Island Road
Surry, VA 23883

Dates: July 1, 2014 through September 30, 2014

Inspectors: P. McKenna, Senior Resident Inspector
J. Nadel, Resident Inspector
C. Jones, Resident Inspector
C. Fontana, Emergency Preparedness Inspector (1EP2,
1EP3, 1EP4)
M. Speck, Senior Emergency Preparedness Inspector (1EP5,
40A1, 40A6)

Approved by: Michael F. King, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Enclosure

SUMMARY

IR 05000280/2014004, 05000281/2014004; 07/01/2014–09/30/2014; Surry Power Station, Units 1 and 2: Routine Integrated Inspection Report

The report covered a three-month period of inspection by resident inspectors and region based inspectors. No NRC-identified or self-revealing findings were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process" Revision 5.

REPORT DETAILS

Summary of Plant Status

Unit 1 operated at or near rated thermal power (RTP) throughout the inspection period.

Unit 2 operated at or near RTP throughout the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment

.1 Partial Walkdown

a. Inspection Scope

The inspectors conducted three equipment alignment partial walkdowns to evaluate the operability of selected redundant trains or backup systems, listed below, with the other train or system inoperable or out of service. The inspectors reviewed the functional systems descriptions, Updated Final Safety Analysis Report (UFSAR), system operating procedures, and Technical Specifications (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.

- Spent Fuel Pit (SFP) Cooling system while "B" SFP Cooling train was protected
- Unit 2 Instrument Air system while Unit 1 Instrument Air compressor was inoperable
- "A", "B", and "C" Emergency Service Water (ESW) pumps while traveling screen 2-FS-S-8B was being repaired

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Quarterly Fire Protection Reviews

a. Inspection Scope

The inspectors conducted tours of the five areas listed below that are important to reactor safety to verify the licensee's implementation of fire protection requirements as described in fleet procedures CM-AA-FPA-100, "Fire Protection/Appendix R (Fire Safe Shutdown) Program," Revision 9, CM-AA-FPA-101, "Control of Combustible and Flammable Materials," Revision 6, and CM-AA-FPA-102, "Fire Protection and Fire Safe Shutdown Review and Preparation Process and Design Change Process," Revision 5. The reviews were performed to evaluate the fire protection program operational status

and material condition and the adequacy of: (1) control of transient combustibles and ignition sources; (2) fire detection and suppression capability; (3) passive fire protection features; (4) compensatory measures established for out-of-service, degraded or inoperable fire protection equipment, systems, or features; and (5) procedures, equipment, fire barriers, and systems so that post-fire capability to safely shutdown the plant is ensured. The inspectors reviewed the corrective action program to verify fire protection deficiencies were being identified and properly resolved.

- Unit 1 Emergency Switchgear Room (ESGR)
- #3 Emergency Diesel Generator (EDG) Room
- 2A Battery Room
- Unit 1 Reactor Protection System (RPS) Relay Room
- Mechanical Equipment Room (MER) #5

b. Findings

No findings were identified.

1R07 Heat Sink Performance

Triennial Review of Heat Sink Performance

This inspection was still in progress at the end of the inspection report period and the results of this inspection will be documented in the integrated inspection report 2014-005.

1R11 Licensed Operator Regualification Program

.1 Resident Inspector Quarterly Review

a. Inspection Scope

The inspectors observed and evaluated a licensed operator simulator exercise given on September 30, 2014. The scenario involved a loss of one feedwater pump and associated reactor trip followed by a loss of all feedwater and auxiliary feedwater (AFW); and a steam generator (SG) tube rupture with a stuck open SG safety valve. This scenario was intended to exercise the entire operations crew and assess the ability of the operators to react correctly to multiple failures. The inspectors observed the crew's performance to determine whether the crew met the scenario objectives; accomplished the critical tasks; demonstrated the ability to take timely action in a safe direction and to prioritize, interpret, and verify alarms; demonstrated proper use of alarm response, abnormal, and emergency operating procedures; demonstrated proper command and control; communicated effectively; and appropriately classified events per the emergency plan. The inspectors observed the post training critique to determine that weaknesses or improvement areas revealed by the training were captured by the instructor and reviewed with the operators.

b. Findings

No findings were identified.

.2 Resident Inspector Observation of Control Room Operations

a. Inspection Scope

During the inspection period, the inspectors conducted observations of licensed reactor operator activities to ensure consistency with licensee procedures and regulatory requirements. For the following activities, the inspectors observed the following elements of operator performance: 1) operator compliance and use of plant procedures including technical specifications; 2) control board component manipulations; 3) use and interpretation of plant instrumentation and alarms; 4) documentation of activities; 5) management and supervision of activities; and 6) control room communications.

- Unit 1 control rod assembly quarterly operability test
- Unit 2 containment spray valve stroke test
- Unit 2 blender troubleshooting by makeup to the SFP
- Unit 2 starting the "B" charging (CH) Pump and securing the "C" CH Pump

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

For the one equipment issue described in the condition report listed below, the inspectors evaluated the effectiveness of the corresponding licensee's preventive and corrective maintenance. The inspectors performed a detailed review of the problem history and associated circumstances, evaluated the extent of condition reviews, as required, and reviewed the generic implications of the equipment and/or work practice problems. Inspectors performed walkdowns of the accessible portions of the system, performed in-office reviews of procedures and evaluations, and held discussions with system engineers. The inspectors also reviewed the licensee's (a)(3) periodic evaluation which was completed and approved this inspection period. The inspectors compared the licensee's actions with the requirements of the Maintenance Rule (10 CFR 50.65), station procedures ER-AA-MRL-10, "Maintenance Rule Program," Revision 5, and ER-AA-MRL-100, "Implementing the Maintenance Rule," Revision 6.

- CR 550559, Alternate AC (AAC) Diesel breaker will not close in test
- Maintenance rule (a)(3) periodic evaluation for time period June 30, 2012 to December 31, 2013

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors evaluated, as appropriate, the five activities listed below for the following: (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) and the data output from the licensee's safety monitor associated with the risk profile of Units 1 and 2. The inspectors reviewed the corrective action program to verify deficiencies in risk assessments were being identified and properly resolved.

- On July 3, Unit 1 and 2 risk due to approaching Tropical Storm Arthur.
- On July 11, Unit 1 and 2 risk with an "A" reserve station service transformer (RSST) load tap changer failure.
- On July 28, Unit 1 and 2 risk with the AAC Diesel out for planned maintenance
- On September 3, Unit 2 risk with "B" CH pump out of service for planned maintenance and RPS and safety injection (SI) logic testing in-progress
- On September 25, Unit 1 and 2 risk with the "C" CH pump and "B" CH/Service Water (SW) pump out of service for planned maintenance and buried piping inspections planned on SW piping.

b. Findings

No findings were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the five operability evaluations listed below, affecting risk-significant mitigating systems, to assess as appropriate: (1) the technical adequacy of the evaluations; (2) whether continued system operability was warranted; (3) whether other existing degraded conditions were considered; (4) if compensatory measures were involved, whether the compensatory measures were in place, would work as intended, and were appropriately controlled; and (5) where continued operability was considered unjustified, the impact on TS Limiting Conditions for Operation and the risk significance. The inspectors' review included verification that operability determinations were made as specified in OP-AA-102, "Operability Determination," Revision 12. The inspectors

reviewed the licensee's corrective action program to verify deficiencies in operability determinations were being identified and corrected.

- CRs 553421 and 553422, Unit 1 ESGR Air Handlers 1-VS-AC-6 and 1-VS-AC-7 higher than expected cooling coil DP
- CR 549283, Unit 1 and Unit 2 Reactor Cooling Pump Turning Vane Bolt defects
- CR 555750, Unit 2 "A" and "D" RSHX SW Supply Header leakage
- CR 550023, Unit 2 Blender boric acid flow less than calculated value
- CR 558985, MER #5 floor drain backflow preventer incorrect size

b. Findings:

No findings were identified.

1R18 Plant Modifications

.1 Temporary Modifications

a. Inspection Scope

The inspectors reviewed a temporary modification associated with design change package (DCP) SU-07-046 which installed a portable diesel driven fire pump taking suction from a distillate tank while the permanent station diesel fire pump was being replaced. This review was conducted to verify that the modification did not affect system operability or availability as described by the TS and UFSAR. In addition, the inspectors verified that the temporary modification was in accordance with CM-AA-TCC-204, "Temporary Configuration Changes," Revision 2, and for the related work package, that adequate controls were in place, procedures and drawings were updated, and post-installation tests verified the operability of the affected systems.

b. Findings:

No findings were identified.

.2 Permanent Modifications

a. Inspection Scope

The inspectors reviewed the completed permanent plant modification DCP SU-11-01064, "EDG Ambient Temperature Monitoring." The inspectors verified that the design bases, licensing bases, and performance capability of the affected system was not degraded by the modification. The inspectors reviewed the 10 CFR 50.59 Safety Review/Regulatory Screening, technical drawings, test plans and the modification package to assess the TS implications. The inspectors also verified that the permanent modification was in accordance with licensee procedure CM-AA-DDC-201, "Design Changes," Revision 14. In addition, the inspectors reviewed calculations and conducted interviews with licensee personnel.

b. Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed six post-maintenance test procedures and/or test activities for selected risk-significant mitigating systems listed below, 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 in accordance with VPAP-2003, "Post Maintenance Testing Program," Revision 14.

- 0-OPT-SW-003, Emergency Service Water (ESW) Pump 1-SW-P-1C Periodic Test, Revision 51, after resetting the ESW pump flow gage
- 0-OSP-AAC-003, Automatic Start Test of AAC Diesel Generator, Revision 10, following AAC Diesel planned maintenance outage
- 1-OPT-FW-001, Motor Driven AFW Pump 1-FW-P-3A Periodic Test, Revision 33, following repair of the outboard motor bearing thermocouple lead
- 0-OPT-FP-009, Fire Pump Flow Rate Test, Revision 19, following replacement of the diesel driven fire pump
- 0-NSP-CW-001, High Level Intake Structure Canal Level Probes Inspection, Revision 15, after biological fouling of a probe
- 1-PT-18.8, Charging Pump Service Water Performance Test, Revision 36, after check valve maintenance

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the five surveillance tests listed below, the inspectors examined the test procedures, witnessed testing, or reviewed test records and data packages, to determine whether the scope of testing adequately demonstrated that the affected equipment was functional and operable, and that the surveillance requirements of TS were met. The inspectors

also determined whether the testing effectively demonstrated that the systems or components were operationally ready and capable of performing their intended safety functions.

In-Service Testing:

- 2-OPT-CS-006, Containment Spray System MOV Stroke Test, Revision 15
- 2-OPT-CS-002, Containment Spray System Test, Revision 17
- 1-OPT-CH-001, Charging Pump Operability and Performance Test for 1-CH-P-1A, Revision 57

Surveillance Testing:

- 2-OPT-EG-001, EDG 2 Monthly Start Exercise, Revision 71
- 0-EPT-0104-01, Semi-Annual Station Battery Test, Revision 16

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP2 Alert and Notification System Evaluation

a. Inspection Scope

The inspectors evaluated the adequacy of the licensee's methods for testing the alert and notification system in accordance with NRC Inspection Procedure 71114, Attachment 02, Alert and Notification System (ANS) Testing. The applicable planning standard, 10 CFR Part 50.47(b)(5) and its related 10 CFR Part 50, Appendix E, Section IV.D requirements were used as reference criteria. The criteria contained in NUREG-0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, Revision 1, were also used as a reference.

The inspectors reviewed various documents which are listed in the Attachment. Inspectors interviewed personnel involved with siren system maintenance, observed a silent test of the siren system, and observed the condition of a sample of siren installations. This inspection activity satisfied one inspection sample for the alert and notification system on a biennial basis.

b. Findings

No findings were identified.

1EP3 Emergency Preparedness Organization Staffing and Augmentation System

a. Inspection Scope

The inspectors reviewed the licensee's Emergency Response Organization (ERO) augmentation staffing requirements and process for notifying the ERO to ensure the readiness of key staff for responding to an event and timely facility activation. The qualification records of key position ERO personnel were reviewed to ensure all ERO qualifications were current. A sample of problems identified from augmentation drills or system tests performed since the last inspection was reviewed to assess the effectiveness of corrective actions.

The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 03, Emergency Preparedness Organization Staffing and Augmentation System. The applicable planning standard, 10 CFR 50.47(b)(2), and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

The inspectors reviewed various documents which are listed in the Attachment. This inspection activity satisfied one inspection sample for the ERO staffing and augmentation system on a biennial basis.

b. Findings

No findings were identified.

1EP4 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

Since the last NRC inspection of this program area, changes were made to the Radiological Emergency Plan and Emergency Action Levels. The licensee determined that, in accordance with 10 CFR 50.54(q), the changes made in these revisions resulted in no reduction in the effectiveness of the Plan, and that the Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The inspectors conducted a review of these changes and sampled implementing procedure changes made between September 2013, and July 2014, to evaluate for potential reductions in the effectiveness of the Plan. However, this review was not documented in a Safety Evaluation Report and does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety.

The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 04, Emergency Action Level and Emergency Plan Changes. The applicable planning standards of 10 CFR 50.47(b), and its related requirements in 10 CFR 50, Appendix E, were used as reference criteria.

The inspectors reviewed various documents that are listed in the Attachment to this report. This inspection activity satisfied one inspection sample for the emergency action level and emergency plan changes on an annual basis.

b. Findings

No findings were identified.

1EP5 Maintenance of Emergency Preparedness

a. Inspection Scope

The inspectors reviewed the corrective actions identified through the Emergency Preparedness program to determine the significance of the issues, the completeness and effectiveness of corrective actions, and to determine if issues were recurring. The licensee's post-event action reports, self-assessments, and audits were reviewed to assess the licensee's ability to be self-critical, thus avoiding complacency and degradation of their emergency preparedness program. Inspectors reviewed the licensee's 10 CFR 50.54(q) change process, personnel training, and selected screenings and evaluations to assess adequacy. The inspectors toured facilities and reviewed equipment and facility maintenance records to assess licensee's adequacy in maintaining them. The inspectors evaluated the capabilities of selected radiation monitoring instrumentation to adequately support Emergency Action Level (EAL) declarations.

The inspection was conducted in accordance with NRC Inspection Procedure 71114.05, Maintenance of Emergency Preparedness. The applicable planning standards, related 10 CFR 50, Appendix E requirements, and 10 CFR 50.54(q) and (t) were used as reference criteria.

The inspectors reviewed various documents which are listed in the Attachment. This inspection activity satisfied one inspection sample for the maintenance of emergency preparedness on a biennial basis.

b. Findings

No findings were identified.

1EP6 Drill Evaluation

Emergency Preparedness (EP) Drill

a. Inspection Scope

On September 30, 2014, the inspectors reviewed and observed a licensee EP drill involving a total loss of feedwater and auxiliary feedwater after a reactor trip, a steam generator tube leak, and a failed open steam generator safety valve. The inspectors assessed the licensee emergency procedure usage, emergency plan classifications, notifications, and protective actions recommendation development. The inspectors evaluated the adequacy of the licensee's conduct of the drill and post-drill critique performance. The inspectors verified that the drill critique identified drill performance weaknesses and entered these items into the licensee's CAP.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, and Occupational Radiation Safety

4OA1 Performance Indicator (PI) Verification

.1 Mitigating System Cornerstone

a. Inspection Scope

The inspectors performed a periodic review of the following four Unit 1 and Unit 2 PIs to assess the accuracy and completeness of the submitted data and whether the performance indicators were calculated in accordance with the guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7. The inspection was conducted in accordance with NRC Inspection Procedure 71151, "Performance Indicator Verification." Specifically, the inspectors reviewed the Unit 1 and Unit 2 data reported to the NRC for the period July 1, 2013 through June 30, 2014. Documents reviewed included applicable NRC inspection reports, licensee event reports, operator logs, station performance indicators, and related CRs.

- Unit 1 Auxiliary Feedwater MSPI
- Unit 2 Auxiliary Feedwater MSPI
- Unit 1 Emergency AC Power MSPI
- Unit 2 Emergency AC Power MSPI

b. Findings

No findings were identified.

.2 Emergency Preparedness Cornerstone

a. Inspection Scope

The inspectors sampled licensee submittals relative to the PIs listed below for the period April 1, 2013, through June 30, 2014. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, was used to confirm the reporting basis for each data element.

Emergency Preparedness Cornerstone

- Emergency Response Organization (ERO) Drill/Exercise Performance

- ERO Drill Participation
- Alert and Notification System Reliability

For the specified review period, the inspectors examined data reported to the NRC, procedural guidance for reporting PI information, and records used by the licensee to identify potential PI occurrences. The inspectors verified the accuracy of the PI for ERO drill and exercise performance through review of a sample of drill and event records. The inspectors reviewed selected training records to verify the accuracy of the PI for ERO drill participation for personnel assigned to key positions in the ERO. The inspectors verified the accuracy of the PI for alert and notification system reliability through review of a sample of the licensee's records of periodic system tests. The inspectors also interviewed the licensee personnel who were responsible for collecting and evaluating the PI data. Licensee procedures, records, and other documents reviewed within this inspection area are listed in the Attachment. This inspection satisfied three inspection samples for PI verification on an annual basis.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems

.1 Daily Reviews of items Entered into the Corrective Action Program:

a. Inspection Scope

As required by NRC 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 CR report summaries and periodically attending daily CR Review Team meetings.

b. Findings

No findings were identified.

.2 Annual Sample: Review of CR553239, "1-SW-P-1C Inoperable Due to Low Maximum Obtainable RPM"

a. Inspection Scope

The inspectors performed an in-depth review of the licensee's apparent cause evaluation and corrective actions associated with CR553239, "Inoperability of ESW Pump 1-SW-P-1C Due to Low Maximum Obtainable RPM." The inspectors assessed the licensee's problem identification threshold, cause analyses, extent of condition reviews, compensatory actions, and the prioritization and timeliness of the licensee's corrective actions to determine whether the licensee was appropriately identifying, characterizing, and correcting problems associated with this issue and whether the

planned or completed corrective actions were appropriate. The inspectors also evaluated the CR against the requirements of the licensee's corrective action program (CAP) as specified in procedure, PI-AA-200, "Corrective Action Program," Revision 21 and 10 CFR 50, Appendix B. In addition, the inspectors reviewed the CAP for similar issues, and interviewed engineering personnel to assess the effectiveness of the implemented corrective actions.

a. Findings and observations

No findings were identified.

Surry determined the apparent cause was that the improved replacement ESW pump installed in 2013 required more horsepower to obtain the same pump speeds when additional marine growth occurring during warmer weather. Subsequent defouling of marine life returned the RPM of the pump into the acceptable band. The flow requirements of the pump were in the satisfactory range for low RPM test due to the higher flow output of the improved pump. The licensee's corrective actions centered on re-baselining the pump to determine new performance test acceptance criteria which takes into account the new higher flow rate. The inspectors reviewed all CRs and previous corrective actions associated with the ESW pump low RPM. The inspectors did not identify any additional issues from this review. The inspectors determined the licensee's evaluation of the issue appropriately identified the apparent and contributing causes. Additionally, the inspectors determined that the corrective actions developed as a result of the apparent cause evaluation were reasonable commensurate with the safety significance of the ESW system.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's correction action program documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment and corrective maintenance issues, but also considered the results of daily inspector corrective action program item screening discussed in Section 4OA2.1. The review included issues documented outside the normal correction action program in system health reports, corrective maintenance work orders, component status reports, site monthly meeting reports, and maintenance rule assessments. The inspectors' review nominally considered the six month period of January through June, 2014, although some examples expanded beyond those dates when the scope of the trend warranted.

The inspectors compared and contrasted their results with the results contained in the licensee's latest integrated quarterly assessment report. Corrective actions associated with a sample of the issues identified in the licensee's trend report were reviewed for adequacy.

b. Assessment and Observations

No findings of significance were identified. In general, the licensee has identified trends and has addressed the trends with their corrective action program. No new adverse trends were identified this period that had not already been identified by the licensee.

4OA5 Other Activities

(Discussed) Licensee Event Report, 05000281/2014-001-00, Pressurizer Safety Valves Fail As-Found Setpoint Testing

NRC Integrated Inspection Report 05000280/2014003 and 05000281/2014003 closed LER 05000281/2014-001-00 and stated that "No findings or violations were identified". This statement was incorrect and should be changed to "This failure to comply with TS 3.1-3.b constitutes a minor violation that is not subject to enforcement action in accordance with the NRC's Enforcement Policy". This LER remains closed.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On October 21, 2014, the inspection results were presented to Mr. R. Simmons 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.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

P. Blasioli, Director, Nuclear Support Services
J. E. Collins, Fleet Emergency Preparedness
J. Eggart, Manager, Radiation Protection & Chemistry
J. Fleming, Licensing Engineer
B. Garber, Supervisor, Station Licensing
C. Gum, Manager, Fleet Nuclear Emergency Preparedness
A. Harrow, Manager, Organizational Effectiveness
L. Hilbert, Manager, Outage and Planning
R. Johnson, Manager, Operations
L. Lane, Site Vice President
D. Lawrence, Director, Station Safety and Licensing
K. Longston, EP Specialist
C. Olsen, Director, Station Engineering
R. Scanlan, Manager, Maintenance
R. Simmons, Plant Manager
W. Thompson, EP Specialist
N. Turner, Supervisor, Emergency Preparedness

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

None

Discussed

05000281/2014-001-00	LER	Pressurizer Safety Valves Fail As-Found Setpoint Testing (Section 40A5)
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LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

Procedures

0-OP-FC-001A, Spent Fuel Pit Cooling System Alignment, Rev. 7
OP-46.1A, Instrument & Service Air Compressors No. 2 Turbine Building/Outside Valve Alignment, Rev. 25
0-OP-SW-002A, Emergency Service Water System Alignment, Rev. 9

Condition Reports (*NRC Identified)

553605* 553842* 556038* 557057* 557734

Drawings

1301042-11448-FM-081A SH 1, Flow/Valve Operating Numbers Diagram Fuel Pit Systems Unit 1, Rev. 0
11448-FM-075A SH 2, Flow/Valve Operating Numbers Diagram Compressed Air System Unit 1, Rev. 19
11448-FM-075A SH 1, Flow/Valve Operating Numbers Diagram Compressed Air System Unit 1, Rev. 87
11448-FM-071A SH 1, Flow/Valve Operating Numbers Diagram Circulating and Service Water System, Rev. 80

Section 1R05: Fire Protection

Procedures

1-FS-FP-107, Unit 1 Emergency Switchgear Room – Elevation 9 Feet – 6 Inches, Rev. 2
1-FS-FP-108, Unit 1 Relay Room – Elevation 9 Feet – 6 Inches, Rev. 2
0-FS-FP-123, Diesel Generator Room Number 3 – Elevation 27 Feet – 6 Inches, Rev. 1
0-FS-FP-224, Mechanical Equipment Room (MER 5) – Elevation 27 Feet – 6 Inches, Rev. 3
2-FS-FP-109, Battery Room 2A – Elevation 9 Feet – 6 Inches, Rev. 2

Condition Reports (*NRC Identified)

552191* 552194* 552973 553113* 557980* 550258

Section 1R11: Licensed Operator Regualification Program

Procedures

1-AP-21.00, Loss of Main Feedwater Flow, Rev. 8
1-AP-24.01, Large SG Tube Leak, Rev. 35
1-OPT-RX-005, Control Rod Assembly Partial Movement, Rev. 31

Section 1R12: Maintenance Effectiveness

Procedures

ER-AA-1, Equipment Reliability, Rev. 0
ER-AA-SYS-1001, System Health Report, Rev. 8
ER-AA-MRL-10, Maintenance Rule Program, Rev. 5
ER-AA-MRL-100, Implementing Maintenance Rule, Rev. 6
0-OSP-AAC-003, Automatic Start Test of AAC Diesel Generator, Rev. 10

Condition Reports

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501077	511898	519812	521753	526671	529694
538877	555059				

Other Documents

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Section 1R13: Maintenance Risk Assessments and Emergent Work ControlProcedures

0-AP-37.01, Abnormal Environmental Conditions, Rev. 62

Other Documents

EOOS Schedulers Risk Evaluation for Surry Power Station, July 3, 2014
 EOOS Schedulers Risk Evaluation for Surry Power Station, July 11, 2014
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Section 1R15: Operability Determinations and Functionality AssessmentsProcedures

0-AP-13.00, Turbine Building or #3 MER Flooding, Rev. 28
 0-AP-13.02, Loss of ESGR Cooling, Rev. 9
 0-OP-VS-006, Control Room and Relay Room Ventilation System, Rev. 67
 2-OSP-SW-001, Maintenance and Sampling of RSHX Service Water Piping in Wet Lay-up,
 Rev. 10

Condition Reports

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551502	551646	552763	553421	553422	553548
553905	555750	556425	557086	558282	558985

Work Orders

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Other Documents

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 Concrete Encased Lines Each with a 6" Diameter Hole with Surrounded Pipe Wall
 Thickness of 0.25", Rev. 0
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 Potentiometer Settings, Rev. 0
 LTR-NRC-14-46, Notification of the Potential Existence of Defects Pursuant to 10CFR Part 21,
 07/14/14
 OD-594, Potential Failure of RCP Turning Vane Bolts Operability Determination, 07/29/14
 ODM 549283, 1-RC-P-1B/1C and 2-RC-P-1A/1B/1C, 05/19/14
 Service Water Headers in Wet Lay-up Additional Information Memorandum, 01/07/99
 Surry Power Station Westinghouse Model 93A RCP Turning Vane Bolting Evaluation, Rev. 2

Unit 1 Reactor Coolant Pump Coastdown Loop Flow Date, 10/20/13 and 10/22/13
 Unit 2 Reactor Coolant Pump Coastdown Loop Flow Data, 04/20/14 and 04/22/14

Section 1R18: Plant Modifications

Procedures

CM-AA-DDC-201, EDG Ambient Temperature Monitoring, Rev. 005
 0-OP-FP-006, Operation of Fire Protection Systems, Rev. 12

Temporary Modifications

AC#S1-14-0707, Rental Portable Diesel Driven Fire Pump Taking Suction from 2-WT-TK-101
 and Discharging to 1-FP-51 or 1-FP-44
 S1-10-145, Install Thermocouple and Temperature Recorder in #3 EDG Room to Measure
 Ambient Temperature, Rev. 0

Condition Reports

552746 556879

Other Documents

ET-S-08-0094, High Ambient Temperature and Administrative Threshold and Operability Limit
 for EDG's 1, 2, & 3, Rev. 0
 ME-0930, Surry Units 1 & 2, EDG Maximum Ambient Air Temperature Operability Limit, Rev. 0
 ET-S-96-0210, Emergency Diesel Generator Maximum Allowable Ambient Temperature Surry
 Power Station Units 1 & 2, Rev. 2

Section 1R19: Post Maintenance Testing

Procedures

0-NAT-E-003, Control Circuitry Checkout/Initial Energization of Electrical Equipment, Rev. 2
 0-NSP-CW-001, High Level Intake Structure Canal Level Probes Inspection, Rev. 15
 0-OPT-FP-009, Fire Pump Flow Rate Test, Rev. 19 OTO-1
 0-OPT-SW-003, Emergency Service Water Pump 1-SW-P-1C, Rev. 51
 0-OSP-AAC-003, Automatic Start Test of AAC Diesel Generator, Rev. 10
 1-OPT-FW-001, Motor Driven Auxiliary Feedwater Pump 1-FW-P-3A, Rev. 33
 1-PT-18.8, Charging Pump Service Water Test, Rev. 36

Condition Reports

552581 559856 555109 Work Orders
 38103464894 38103362452

Section 1R22: Surveillance Testing

Procedures

2-OPT-EG-001, Number 2 Emergency Diesel Generator Monthly Start Exercise Test, Rev. 71
 1-OPT-CH-001, Charging Pump Operability and Performance Test, Rev. 57
 2-OPT-CS-002, Containment Spray System Test, Rev. 17
 0-EPT-0104-01, Semi-Annual Station Battery Test, Rev. 16

Condition Reports

559741

Work Orders

38103465951 38103460180 38103479103

Section 1EP2: Alert and Notification System EvaluationProcedures and Reports

0-LSP-ESW-001, 14-Day Frequency PT: Early Warning System Polling Functionality Test, Rev. 13, performance dated June 24, 2014

0-LSP-ESW-003-2013-3, Early Warning System Quarterly Inspection, performances dated September 12, 2013, February 21, 2014, and June 30, 2014

Condition Reports

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52907, EWS Siren Scheduled Polling – Siren #62 Failed to Poll

554548, SPS EWS Siren Scheduled Polling Test issues

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551079, Miscellaneous Repairs to Sirens during Annual Inspection

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Section 1EP3: Emergency Preparedness Organization Staffing and Augmentation SystemProcedures

TRA-AA-210, Training Program Guide, Nuclear Emergency Responder dated 10/29/2012

0-LSP-CO-005, Emergency Planning Surveillance Procedure Augmentation Capability, Rev. 0

EPIP-3.05, Augmentation of Emergency Response Organization, Rev. 11

Records and Data

2013 and 2014 Quarterly Drill Reports

2013 and 2014 Unannounced Staffing Drill Report

2013 and 2014 Unannounced Pager Test Results

Emergency Notification List dated 7/29/2014

Emergency Response Organization Teams Listing dated 7/9/2014

Various EP Staff and ERO Member Training Records

Condition Reports

543829, Clarity of E-Plan Table 5.1 Minimum On-shift Staffing

480251, Corp ERO Availability 2-deep Minimum Standard Not Met

481421, Corp ERO Availability 2-deep Minimum Standard Not Met

541263, E-Plan Table 5.1 Contains Minimum On-staffing Ambiguity

Section 1EP4: Emergency Action Level and Emergency Plan ChangesProcedures

EP-AA-101, 10 CFR 50.54(q) Change Evaluation, Rev. 5

EP-AA-102, Revision and Control of Emergency Plan, Emergency Action Levels (Technical Basis and Matrix), and Reference Manual, Rev. 7

Change Packages

Emergency Plan, Rev. 59

Emergency Action Level Technical Bases Document, Rev. 4

Emergency Action Level Matrices, Rev. 4
 EPIP-1.01, Emergency Manager Controlling Procedure, Rev. 56
 EPIP-2.01, Notification of State and Local Governments, Rev. 43
 EP-AA-303, Equipment Important to Emergency Response, Rev. 8

Condition Reports

514573, Vital Battery Fires and Alert Declarations
 517314, Seismic Event Classification Improvements
 541033, EAL Bases Not Documented Per Engineering Process

Section 1EP5: Maintenance of Emergency Preparedness

Procedures

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 PI-AA-200, Corrective Action, Rev. 22
 EP-AA-303, Equipment Important to Emergency Response, Rev. 8

Records and Data

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 Self-Assessment 2330, ERO Availability Trends
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Condition Reports

478092, Unexpected System Response of New Main Steam Radiation Monitors
 489460, LEOF HVAC Damper Indication
 516471, TSC Damper Malfunction
 520868, Unsuccessful PAR Notifications
 532072, TSC Dampers Failed Open
 543829, Clarify Minimum On-shift Staffing Table 5.1

Section 1EP6: Drill Evaluation

Procedures

EPIP-1.02, Response to Notification of Unusual Event, Rev. 16
 EPIP-1.03, Response to Alert, Rev. 23
 EPIP-1.04, Response to Site Area Emergency, Rev. 23
 EPIP-1.05, Response to General Emergency, Rev. 25
 EPIP-1.06, Protective Action Recommendations, Rev. 10
 EPIP-2.01, Notification of State and Local Governments, Rev. 43
 EPIP-2.02, Notification of NRC, Rev. 22
 1-AP-21.00, Loss of Main Feedwater Flow, Rev. 8
 1-AP-24.01, Large SG Tube Leak, Rev. 35

Condition Reports

555202 559606 559619 560369 560379

Other Documents

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Section 40A1: Performance Indicator VerificationProcedures

EP-AA-103, Emergency Preparedness Performance Indicators, Rev. 3

ER-AA-SPI-1001, Implementation of the Consolidated Data Entry (CDE) Reporting for Mitigating System Performance Index (MSPI), Rev. 2

ER-AA-SPI-1002, Maintaining the MSPI Basis Document, Rev. 1

Records and Data

Drill and Exercise Performance opportunities documentation from 2nd Quarter 2013, through 2nd Quarter 2014

Drill and exercise participation records of ERO personnel from 2nd Quarter 2013, through 2nd Quarter 2014

Siren Test results from 2nd Quarter 2013 through 2nd Quarter 2014

Condition Reports

539743, Unanticipated EAL Declaration during Simulator Scenario

543024, Unanticipated EAL and PAR during Drill

552630, Declining Drill/Exercise Performance

Other Documents

Memo-NSA-2013-0023, Evaluation of Potential Unavailability of Surry Unit 2 TDAFW Pump, 10/01/13

Monthly PI Reports with Associated Data, July 2013 to June 2014

Technical Report SE-0006, NRC MSPI Basis Document Surry Power Station, Rev. 1

Section 40A2: Identification and Resolution of ProblemsProcedures

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CM-AA-DDC-301, Post Design Change Testing, Rev. 4

Condition Reports

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547038	547053	547340	547342	547343	547905
548408	550164	550976	553239	553240	553365
553374	553375	553376	553377	553379	553380
553381	554296	555334	557386	558308	524610
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ASME OM-2012, ISTB-3310 Effect of Pump Replacement, Repair, and Maintenance on Reference Values.

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Nuclear Oversight 2nd Quarter 2014 Trend Report, 07/08/14

LIST OF ACRONYMS

AAC	Alternate AC
ACE	Apparent Cause Evaluation
ADAMS	Agencywide Document Access and Management System
AFW	Auxiliary Feedwater
ANS	Alert and Notification System
CA	Corrective Action
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CH	Charging
CR	Condition Report
DCP	Design Control Package
EDG	Emergency Diesel Generator
EAL	Emergency Action Level
EP	Emergency Preparedness
ERO	Emergency Response Organization
ESGR	Emergency Switchgear Room
ESW	Emergency Service Water
IMC	Inspection Manual Chapter
INPO	Institute of Nuclear Power Operations
IST	In-Service Test
LER	Licensee Event Report
MER	Mechanical Equipment Room
MOV	Motor Operated Valve
MSPI	Mitigating System Performance Indicator
NCV	Non-cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OD	Operability Determination
ODM	Operational Decision Making
PAR	Protective Action Recommendation
PARS	Publicly Available Records
PI	Performance Indicator
PMT	Post Maintenance Test
PT	Performance Test
RPS	Reactor Protection System
RSHX	Recirculation Spray Heat Exchanger
RSST	Reserve Station Service Transformer
RTP	Rated Thermal Power
SFP	Spent Fuel Pit
SG	Steam Generator
SI	Safety Injection
SW	Service Water
TS	Technical Specifications
TSC	Technical Support Center
UFSAR	Updated Final Safety Analysis Report
VEPCO	Virginia Electric and Power Company
WO	Work Order