



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GEORGIA 30303-8931

October 30, 2009

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 PROBLEM IDENTIFICATION AND
RESOLUTION INSPECTION REPORT 05000280/2009006 AND
05000281/2009006**

Dear Mr. Heacock:

On October 2, 2009, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Surry Power Station Units 1 and 2. The enclosed report documents the inspection findings, which were discussed on October 2, 2009, with Mr. B. L. Stanley (Director of Station Safety & Licensing) and other members of your staff.

The inspection was an examination of activities conducted under your license as they relate to the identification and resolution of problems, and compliance with the Commission's rules and regulations and with the conditions of your operating license. Within these areas, the inspection involved examination of selected procedures and representative records, observations of plant equipment and activities, and interviews with plant personnel.

On the basis of the samples selected for review, the team concluded that in general, problems were properly identified, evaluated, and corrected. The team identified examples of problems in the area of identification of plant issues, prioritization and evaluation, and effectiveness of corrective actions that were determined not to be findings of significance. The team also identified a finding of very low safety significance (Green) that involved a violation of NRC requirements. However, because of its very low safety significance and because it was entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you wish to contest this non-cited violation, 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 20555-001; 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 Senior Resident Inspector at the Surry Power Station.

In addition, if you disagree with the characterization of any finding 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 Surry Power Station. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

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 the 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/

Daniel Merzke, Acting Chief
Reactor Projects Branch 7
Division of Reactor Projects

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

Enclosure: Inspection Report 05000280/2009006 and 05000281/2009006
w/Attachment: Supplemental Information

cc w/encl. (See page 3)

In addition, if you disagree with the characterization of any finding 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 Surry Power Station. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

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cc w/encl:

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Letter to David A. Heacock from Daniel Merzke dated October 30, 2009.

SUBJECT: SURRY POWER STATION – NRC PROBLEM IDENTIFICATION AND
RESOLUTION INSPECTION REPORT 05000280/2009006 AND
05000281/2009006

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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.: 05000280/2009006 and 05000281/2009006

Licensee: Virginia Electric and Power Company (VEPCO)

Facility: Surry Power Station, Units 1 and 2

Location: 5850 Hog Island Road
Surry, VA 23883

Dates: September 14 – 18, 2009
September 28 – October 2, 2009

Inspectors: J. Rivera-Ortiz, Senior Reactor Inspector, Team Leader
J. Dodson, Senior Project Engineer
G. Wilson, Senior Project Engineer
J. Nadel, Resident Inspector, Surry Power Station
L. Pressley, Project Engineer RIDP

Approved by: Daniel Merzke, Acting Chief
Reactor Projects Branch 7
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000280/2009006, IR 05000281/2009006; September 14 – October 2, 2009; Surry Power Station, Units 1 and 2; biennial inspection of the identification and resolution of problems.

The inspection was conducted by a senior reactor engineering inspector, two senior project engineers, a project engineer, and a resident inspector. The inspectors identified one Green finding involving a violation of NRC requirements. The significance of most findings is indicated by its color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, Significance Determination Process (SDP). The cross-cutting aspect was determined using IMC 0305, Operating Reactor Assessment Program. Findings for which the Significance Determination Process 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.

Identification and Resolution of Problems

The team concluded that, in general, problems were properly identified, evaluated, prioritized, and corrected. Generally, the threshold for initiating condition reports (CRs) was appropriately low, as evidenced by the types of problems identified and large number of CRs entered annually into the Corrective Action Program (CAP). In addition, employees were encouraged by management to initiate CRs. The team identified two examples of plant issues that were not appropriately entered into the CAP.

Generally, prioritization and evaluation of issues were consistent with the licensee's CAP guidance; formal root cause evaluations for significant problems were adequate; and corrective actions specified for problems were acceptable. Overall, corrective actions developed and implemented for issues were generally timely, effective, and commensurate with the safety significance of the issues. The team identified three examples of conditions adverse to quality whose evaluation and corrective actions were not fully consistent with the licensee's procedures.

The team determined that, overall, audits and self-assessments were adequate in identifying deficiencies and areas for improvement in the CAP, and appropriate corrective actions were developed to address the issues identified. Operating experience usage was found to be generally acceptable and integrated into the licensee's processes for performing and managing work, and plant operations.

Based on discussions and interviews conducted with plant employees from various departments, the inspectors determined that personnel at the site felt free to raise safety concerns to management and use the CAP as well as other alternate avenues to resolve those concerns.

A. NRC Identified and Self-Revealing Findings

Cornerstone: Barrier Integrity

Green. The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Plants," for failure to demonstrate effective preventive maintenance of Unit 1 low head safety

injection (LHSI) cold leg check valves in accordance with 10CFR50.65(a)(2) and not establish goals and monitor against those goals in accordance with 10CFR50.65(a)(1).

The finding is more than minor because it affected the Barrier Integrity cornerstone objective of providing reasonable assurance that physical design barriers (e.g., reactor coolant system (RCS)) protect the public from radionuclide releases caused by accidents or events. Specifically, the finding affected the LHSI cold leg check valves, which provide an isolation barrier from the high pressure RCS when the SI System is in standby to ensure that the integrity of the reactor RCS boundary is maintained. The finding is also associated with the cornerstone attribute of reactor coolant system equipment and barrier performance. The inspectors determined that this performance deficiency was a separate consequence of the degraded performance associated with the LHSI cold leg check valves. Because of this characterization, the inspectors determined that this issue should not be processed through the Significance Determination Process. Therefore, in accordance with the guidance in NRC Inspection Procedure 71111.12, Appendix D, this issue was determined to be a maintenance rule Category II finding and is of very low safety significance (Green). Based on the assessment performed by the team on the current licensee's implementation of 10CFR50.65, the results of the licensee's extent of condition review for this finding, and because this finding occurred on November 18, 2007, the team determined that this finding was not indicative of current licensee performance and, therefore, no Cross Cutting Aspect was assigned to this issue. This issue was entered in the licensee's CAP as CR02560. The licensee restored compliance by establishing goals and monitoring the system performance against those goals in accordance with 10CFR50.65(a)(1). (Section 4OA2.a(3)i)

B. Licensee Identified Violations

None

REPORT DETAILS

4. OTHER ACTIVITIES

4OA2 Problem Identification and Resolution

a. Assessment of the Corrective Action Program

(1) Inspection Scope

The inspectors reviewed the licensee's CAP procedures which described the administrative process for initiating and resolving problems primarily through the use of CRs. The inspectors selected and reviewed a sample of CRs that had been issued since the last biennial Problem Identification and Resolution (PI&R) inspection, from September 2007 to September 2009. This review was performed to verify that problems were being properly identified, appropriately characterized, and entered into the CAP for resolution. Where possible, the inspectors independently verified that the corrective actions were implemented as intended.

Within the time frame described above, the inspectors selected CRs for risk-significant systems, major plant departments' issues, NRC issued non-cited violations and findings, licensee identified violations, and Licensee Event Reports. The review of risk-significant systems consisted of a detailed review of selected CRs associated with the following systems: Service Water (SW), Safety Injection (SI), and Alternate AC Power (AAC). The inspectors conducted plant walkdowns of equipment associated with the selected systems and other plant areas to assess the material condition and look for any deficiencies that had not been previously entered into the CAP. The inspectors reviewed CRs, maintenance history, completed work orders (WOs), and associated system health reports. These reviews were performed to verify that problems were being properly identified, appropriately characterized, and entered into the CAP for resolution. Items reviewed generally covered a 24-month period of time; however, in accordance with the inspection procedure, the inspectors performed a five-year review of age-dependent issues for the selected risk significant systems.

The review of major plant departments' issues consisted of a representative number of CRs that were assigned to different plant departments, including operations, engineering, maintenance, radiation protection, emergency preparedness, and security. This selection was performed to ensure that samples were reviewed across all cornerstones of safety identified in the NRC's Reactor Oversight Process (ROP). These CRs were reviewed to assess each department's threshold for identifying and documenting plant problems, thoroughness of evaluations, and adequacy of corrective actions. The inspectors also attended meetings where CRs were screened for significance to determine whether the licensee was identifying, accurately characterizing, and entering problems into the CAP at an appropriate threshold.

Enclosure

The inspectors reviewed a sample of CRs associated with NRC issued non-cited violations and findings, licensee identified violations, and Licensee Event Reports issued since the last PI&R inspection. This review was performed to verify the effectiveness of the licensee's CAP to evaluate and correct conditions adverse to quality identified in NRC inspection findings and reportable events.

In addition, the team conducted a detailed review of selected root-cause and apparent-cause evaluations of problems identified since the last PI&R inspection. The inspectors reviewed these evaluations against the descriptions of the problem described in the CRs and the guidance in licensee procedures PI-AA-300-3001, "Root Cause Evaluation," and PI-AA-300-3002, "Apparent Cause Evaluation." The inspectors assessed if the licensee had adequately determined the cause(s) of identified problems, and had adequately addressed operability, reportability, common cause, generic concerns, extent-of-condition, and extent-of-cause. The review also assessed if the licensee had appropriately identified and prioritized corrective actions to prevent recurrence.

Finally, the team reviewed site trend reports, to determine if the licensee effectively trended identified issues and initiated appropriate corrective actions when adverse trends were identified. The inspectors attended various plant meetings to observe management oversight and implementing functions of the corrective action process. These included CR Review Team (CRT) meetings and Corrective Action Review Board meetings.

Documents reviewed partially or in their entirety during this inspection are listed in the Attachment.

(2) Assessment

Identification of Issues

The team determined that the licensee was generally effective in identifying problems and entering them into the CAP and there was a low threshold for entering issues into the CAP. This conclusion was based on the type of problems entered into the CAP; the review of licensee requirements for initiating CRs as described in licensee procedure PI-AA-200, "Corrective Action;" the management expectation that employees were encouraged to initiate CRs for any issue that is not meeting performance expectations regardless of whether it is a potential, suspect, or actual problem; a review of system health reports; and on inspectors' observations during plant walkdowns. Trending was generally effective in monitoring and identifying plant issues. Site management was actively involved in the CAP and generally focused appropriate attention on significant plant issues. As a result of plant walkdowns and CR reviews, the team identified the following two minor equipment issues, which were not previously identified by the licensee. However, the inspectors determined they were not findings of significance.

- During a walkdown of selected plant areas, the inspectors found that check valves 1-SI-410 and 2-SI-400 in the Safety Injection system showed evidence of external corrosion on the valve's body and adjacent piping. The licensee initiated CRs 348590 and 348592 to clean, inspect, and evaluate the issue. The licensee determined that the check valves were still capable

of performing their design function, and therefore they were declared “operable.” The inspectors reviewed the basis for operability and agreed with the licensee’s evaluation.

- During the review of CRs for the AAC system, the inspectors identified that various failures of the AAC communication modem were not recorded as a failure of the AAC system in the Reliability Tracking Spreadsheet included in procedure VPAP-0808. The licensee initiated CR349359 to address this issue and investigate if the modem failures should have been considered for the implementation of procedure VPAP-0808. The licensee determined that this issue did not affect the operability of the AAC system. The inspectors reviewed the basis for operability and agreed with the licensee’s evaluation.

Prioritization and Evaluation of Issues

Based on the review of audits conducted by the licensee and the assessment conducted by the inspection team during the onsite period, the team concluded that the licensee was generally effective in the prioritization and evaluation of identified problems. Problems were generally prioritized and evaluated in accordance with the licensee’s CAP procedures as described in the CR significance determination guidance in PI-AA-200, “Corrective Action.” Each CR written was assigned a significance level at the CRT meetings, and adequate consideration was given to system or component operability and associated plant risk.

The team determined that the station had conducted root cause and apparent cause analyses in compliance with the licensee’s CAP procedures, and assigned cause determinations were appropriate considering the significance of the issues being evaluated. A variety of causal-analysis techniques were used depending on the type and complexity of the issue consistent with licensee procedures PI-AA-300: Cause Evaluation, PI-AA-300-3001: Root Cause Evaluation, PI-AA-300-3002: Apparent Cause Evaluation, PI-AA-300-3003: Common Cause Evaluation, and PI-AA-300-3004: Cause Evaluation Methods. The inspectors determined that the licensee had performed evaluations that were technically accurate and of sufficient depth. The team further determined that operability, reportability, and degraded or non-conforming condition determinations had been completed consistent with the guidance contained in OP-AA-102, “Operability Determinations.” The team identified the following example of incomplete or inconsistent evaluation; however the inspectors determined it was not a finding of significance.

- On October 2007, the licensee performed a leak test on Unit 1 check valve 1-SI-85 (LHSI cold leg check valve) at the beginning of the refueling outage in order to identify any excessive back leakage that needed to be corrected by maintenance. The test was conducted under operating surveillance procedure OSP-SI-014 and the check valve showed back leakage in excess of the acceptance criteria. As a result of the valve failure to meet the acceptance criteria, the licensee performed maintenance on this valve during the outage. The Maintenance Rule (MR) performance criterion for these valves is based, in part, on the leak rate results when tested with procedure OSP-SI-014. The team noted that an MR evaluation was not performed to address the functional failure of the valve when it failed the test acceptance criteria as required by procedure ER-AA-MRL-100, “Implementing

Maintenance Rule.” The licensee initiated CR348343 to address this issue. The licensee also initiated CR349405 to address the extent of condition and found additional examples of CRs initiated around the same time that should have been evaluated for Maintenance Rule implementation. The licensee determined that none of the additional examples resulted in systems exceeding their MR performance criteria. In accordance with NRC’s Enforcement Manual, Chapter 7.11, the failure to perform Maintenance Rule evaluations in accordance with procedure ER-AA-MRL-100 does not constitute a violation of 10CFR50.65 and is not subject to NRC enforcement action.

Effectiveness of Corrective Actions

Based on a review of corrective action documents, interviews with licensee staff, and verification of completed corrective actions, the team determined that overall, corrective actions were timely, commensurate with the safety significance of the issues, and effective, in that conditions adverse to quality were promptly identified and corrected. For significant conditions adverse to quality (SCAQ), the corrective actions directly addressed the cause and effectively prevented recurrence in that a review of performance indicators, CRs, NRC inspection reports since the last PI&R, and effectiveness reviews demonstrated that SCAQ had not recurred. Effectiveness reviews for corrective actions to prevent recurrence (CAPRs) were sufficient to ensure corrective actions were properly implemented and were effective. The team noted two examples where corrective actions to address the full extent of the problems required several attempts, indicating problems with corrective action effectiveness. However, the inspectors determined these issues were not findings of significance.

- On November 12, 2006, the communication modem for the AAC Emergency Diesel Generator (non-safety related) experienced a failure resulting in loss of the AAC EDG auto-start capability. As a corrective action for this failure, in January of 2007, the licensee created a preventive maintenance (PM) task to hard reset the modem on an annual frequency. However, this corrective action was not implemented as intended and a second failure occurred before noticing that the PM was not included in the PM tracking database. The licensee modified the corrective actions to increase the frequency of the “modem reset,” but these actions did not prevent two additional modem failures. The licensee decided to replace the modem in 2009. The licensee placed the AAC system in MR status (a)(1) to monitor the system performance due to the multiple modem failures. The licensee addressed this issue in CR104861.
- The inspectors reviewed corrective action documents associated with the SW system for the period of October 23, 2006, to September 16, 2009, and determined that there was a long-standing issue with silting and bio-fouling of component cooling heat exchangers, control room chillers, charging pump lube oil coolers, and charging pump intermediate seal coolers. This issue led to repetitive instances of degraded performance and inoperable component cooling heat exchangers. Additionally, the silting and bio-fouling of charging pump lube oil and intermediate seal coolers resulted in inoperability of a charging pump in February 2008. The team determined that corrective actions have been able to manage the system related problems to prevent recurrence of inoperability of

safety-related components. However, the team considered that corrective actions may not have corrected the full extent of the problem, as evidenced by recent CRs documenting degraded performance of component cooling heat exchangers and Charging Pump related coolers. The inspectors determined that silting and bio-fouling represent a potential common cause failure mechanism and a challenge to the operability of risk significant and safety-related components. In addition, this long standing issue has the potential to lead to significant conditions adverse to quality. The licensee performed a collective significance analysis (CA081505) to evaluate all the problems with the service water system and generated a corrective action plan.

(3) Findings

i. Failure to Demonstrate Effective Preventive Maintenance of Unit 1 Safety Injection Check Valves nor Set Goals and Monitor under 10CFR50.65(a)(1)

Introduction: The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Plants," for failure to demonstrate effective preventive maintenance of Unit 1 LHSI cold leg check valves in accordance with 10CFR50.65(a)(2), and not establish goals and monitor against those goals in accordance with 10CFR50.65(a)(1).

Description: On November 18, 2007, Unit 1 LHSI cold leg check valves 1-SI-82 and 1-SI-85 were leak tested per operating surveillance procedure 1-OSP-SI-014, "Cold Shutdown Test of SI Check Valves to Reactor Coolant System Cold Legs." That test was performed at the end of the refueling outage and prior to return to power operations in order to determine check valve back leakage, as required by plant Technical Specifications. Both valves failed the test since they showed back leakage in excess of the acceptance criteria in 1-OSP-SI-014. The Maintenance Rule performance criterion for these valves is based on the leak test results from 1-OSP-SI-014. Specifically, a functional failure for these valves is defined, in part, as a failure to meet the acceptance criteria in 1-OSP-SI-014. In addition, the performance criterion to demonstrate effective preventive maintenance is defined as no more than one maintenance preventable functional failure within an eighteen-month period.

In January 2008, the resident inspectors identified that MR evaluations were not performed to address the functional failures of 1-SI-82 and 1-SI-85 in November 2007. The licensee initiated CR02560 to address this issue and performed the MR evaluations. The licensee determined that both functional failures were maintenance preventable (MPFF) and therefore the check valves exceeded their performance criterion. The licensee also determined that the system should have been monitored against established goals in accordance with 10CFR50.65(a)(1) since November 2007. The licensee took immediate actions to monitor the system under a(1) and it was eventually returned to a(2) when the system met the established goals.

Analysis: The team determined that the failure to demonstrate effective preventive maintenance of the LHSI check valves and not establish goals and monitor against those goals as required by 10CFR50.65 was a performance deficiency. The finding is more than minor because it affected the Barrier Integrity cornerstone objective of providing reasonable assurance that physical design barriers (e.g. RCS) protect the public from radionuclide releases caused by accidents or events. Specifically, the

finding affected the LHSI cold leg check valves, which provide an isolation barrier from the high pressure RCS when the SI System is in standby to ensure that the integrity of the reactor RCS boundary is maintained. The finding is also associated with the cornerstone attribute of RCS equipment and barrier performance. The inspectors determined that this performance deficiency was a separate consequence of the degraded performance associated with the LHSI cold leg check valves. The inspectors also determined that this issue was not appropriate to process through the Significance Determination Process. Therefore, in accordance with NRC Inspection Procedure 71111.12, Appendix D, this issue was determined to be a maintenance rule Category II finding and was of very low safety significance (Green). Based on the assessment performed by the team on the current licensee's implementation of 10CFR50.65, the results of the licensee's extent of condition review for this finding, and because this finding occurred on November 18, 2007, the team determined that this finding was not indicative of current licensee performance and, therefore, no Cross Cutting Aspect was assigned to this issue. This issue was entered in the licensee's CAP as CR02560.

Enforcement: 10CFR50.65(a)(1) requires, in part, that holders of an operating license shall monitor the performance or condition of structures, systems, and components (SSCs) within the scope of the monitoring program as defined in 10.CFR50.65(b) against established goals, in a manner sufficient to provide reasonable assurance that such SSCs are capable of fulfilling their intended functions. 10CFR50.65(a)(2) states, in part, that monitoring as specified in 10 CFR50.65(a)(1) is not required where it has been demonstrated that the performance or condition of an SSC is being effectively controlled through the performance of appropriate preventive maintenance, such that the SSC remains capable of performing its intended function. Contrary to the above, from November 18, 2007, to January 10, 2008, the licensee failed to demonstrate that performance of Safety Injection cold leg check valves was being effectively controlled through the performance of appropriate preventive maintenance in that repetitive MPFFs occurred in November 2007, exceeding the system performance criteria for demonstrating effective preventive maintenance. Following the functional failure, the licensee failed to consider placing the SI system under 10CFR50.65(a)(1) for establishing goals and monitoring against those goals. Because the finding is of very low safety significance and has been entered into the licensee's corrective action program as CR02560, this violation is being treated as a non-cited violation consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000280/2009006-1, "Failure to Demonstrate Effective Preventive Maintenance of Unit 1 Safety Injection Check Valves nor Set Goals and Monitor under 10CFR50.65(a)(1)."

b. Assessment of the Use of Operating Experience (OE)

(1) Inspection Scope

The team reviewed the licensee's program for processing industry operating experience as described in licensee procedure PI-AA-100-1007, Operating Experience Program, reviewed the licensee's operating experience database, and interviewed the OE Coordinator, to assess the effectiveness of how external and internal operating experience data was handled at the plant. In addition, the team selected operating experience documents (e.g., NRC generic communications, 10 CFR Part 21 reports, licensee event reports, vendor notifications, and plant internal

operating experience items, etc.), which had been issued since September 2007 to verify whether the licensee had appropriately evaluated each notification for applicability to the Surry Power Station, and whether issues identified through these reviews were entered into the CAP. Documents reviewed are listed in the Attachment.

(2) Assessment

Based on interviews with the OE coordinator and a review of documentation related to the review of operating experience issues, the team determined that the licensee was generally effective in screening operating experience for applicability to the plant. This was demonstrated by the inspectors finding no OE that was not screened for applicability, and no events occurring which would have been prevented by applying OE lessons learned. Industry OE was evaluated at either the corporate or plant level depending on the source and type of document. Relevant information was then forwarded to the applicable department for further action or informational purposes. OE issues requiring action were entered into the CAP for tracking and closure. In addition, operating experience was included in all apparent cause and root cause evaluations in accordance with licensee procedure PI-AA-300, "Cause Evaluation," PI-AA-300-3001, "Root Cause Evaluation," and PI-AA-300-3002, "Apparent Cause Evaluation."

(3) Findings

No findings of significance were identified.

c. Assessment of Self-Assessments and Audits

(1) Inspection Scope

The team reviewed audit reports and self-assessment reports, including those which focused on problem identification and resolution, to assess the thoroughness and self-criticism of the licensee's audits and self assessments, and to verify that problems identified through those activities were appropriately prioritized and entered into the CAP for resolution in accordance with licensee procedure PI-AA-100-1004, "Formal Self-Assessments," and PI-AA-100-1005, "Informal Self-Assessments."

(2) Assessment

The team determined that the scopes of assessments and audits were adequate. Self-assessments were generally detailed and critical, as evidenced by findings consistent with the team's independent review. The team verified that CRs were generated to document all areas for improvement and findings resulting from the self-assessments. Generally, the licensee performed evaluations that were technically accurate. Site trend reports were thorough and a low threshold was established for evaluation of potential trends, as evidenced by the CRs reviewed that were initiated as a result of adverse trends. The team concluded that the self-assessments and audits were an effective tool to identify adverse trends.

(3) Findings

No findings of significance were identified.

d. Assessment of Safety-Conscious Work Environment

(1) Inspection Scope

The team randomly interviewed on-site workers from different organizations regarding their knowledge of the CAP at Surry Power Station and their willingness to write CRs or raise safety concerns. During technical discussions with members of the plant staff, the inspectors conducted interviews to develop a general perspective of the safety-conscious work environment at the site. The interviews were also conducted to determine if any conditions existed that would cause employees to be reluctant to raise safety concerns. The inspectors reviewed the licensee's Employee Concerns Program (ECP) and interviewed the ECP coordinator. Additionally, the inspectors reviewed a sample of CRs for issues brought to the ECP to verify that safety concerns were being properly reviewed and resolved through the CAP when appropriate.

(2) Assessment

Based on the interviews conducted and the CRs reviewed, the team determined that licensee management emphasized the need for all employees to identify and report problems using the appropriate methods established within the administrative programs, including the CAP and ECP. These methods were readily accessible to all employees. Based on discussions conducted with a sample of plant employees from various departments, the inspectors concluded that employees felt free to raise issues, and that management encouraged employees to place issues into the CAP for resolution. The inspectors did not identify any reluctance on the part of the licensee staff to report safety concerns.

(3) Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

On October 2, 2009, the inspectors presented the inspection results to Mr. Stanley (Director of Station Safety & Licensing) and other members of the site staff. The inspectors confirmed that proprietary information reviewed during the inspection was returned to the licensee.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

B. Stanley, Director of Station Safety & Licensing
B. Garber, Licensing Supervisor
T. Steed, Manager of Organizational Effectiveness
B. Webster, Supervisor of Probabilistic and Risk Assessment
J. Holloway, Supervisor Engineering Coordination
M. Wilda, Supervisor Auxiliary Systems
B. Alcorn, Operating Experience Coordinator
M. King, Employee Concerns Program

NRC

C. Welch, Senior Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000280/2009006-01	NCV	Failure to Demonstrate Effective Preventive Maintenance of Safety Injection Check Valves nor Set Goals and Monitor under 10CFR50.65(a)(1) (Section 4OA2.a(3).i)
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Closed

None

Discussed

None

LIST OF DOCUMENTS REVIEWED

Procedures

0-LOG-SBIS-001R, Operations Log Procedure: Service Building Inside Logs, Revision 24
0-LSP-EW-001, Emergency Planning Surveillance Procedure: Early Warning System Polling Functional Test, Revision 7
0-MCM-0417-01, Velan Swing Check Valves Inspection and Overhaul, Revision 20
0-MCM-1420-10, Installation/Removal of Balance Weights on the LP Turbines, Revision 19
1-E-1, Loss of Reactor or Secondary Coolant, Revision 33
1-OP-CH-018, Operating Procedure: RCS Boration Using Emergency Boration Flowpath, Revision 7
1-OSP-S-014, Close Testing of Accumulator Discharge Check Valves, Revision 19
1-OSP-SI-014, Cold Shutdown Test of SI Check Valves to RCS Cold Legs, Revision 18
DNAP-0104, Superseded: Dominion Nuclear Self-Assessment Program, Revision 3
DNAP-0110, Identifying and Addressing Nuclear Safety and Quality Concerns, Revision 2
DNAP-0114, Superseded: Dominion Nuclear Self-Evaluation Program, Revision 3
DNAP-1408, Dominion Operability Determination Program, Revision 3
DNAP-1604, Superseded: Cause Evaluation Program, Revision 7
DNAP-3003, Dominion Operational Decision-Making Procedure and Guidelines, Revision 1
DOM-QA-1, Dominion Nuclear Facility Quality Assurance Program Description, Revision 8
EPIP-1.06, Protective Action Recommendations, Revision 8
EPIP-2.01, Notification of State and Local Governments, Revision 38
OP-AA-102, Operability Determination, Revision 4
PI-AA-100, Performance Monitoring, Revision 1
PI-AA-100-1003, Self-Evaluation, Revision 2
PI-AA-100-1004, Formal Self-Assessments, Revision 3
PI-AA-100-1005, Informal Self-Assessments, Revision 3
PI-AA-100-1007, Operating Experience Program, Revision 2
PI-AA-200, Corrective Action, Revision 6
PI-AA-200-2002, Effectiveness Reviews, Revision 3
PI-AA-300, Cause Evaluation, Revision 3
PI-AA-300-3001, Root Cause Evaluation, Revision 0
PI-AA-300-3002, Apparent Cause Evaluation, Revision 0
PI-AA-300-3003, Common Cause Evaluation, Revision 0
PI-AA-300-3004, Cause Evaluation Methods, Revision 0
VPAP-0310, Data System (EDS) Database Control, Revision 13
VPAP-0808, Emergency Diesel Generator Reliability Program, Revision 11
VPAP-0815, Maintenance Rule Program, Revision 16
VPAP-1601, Superseded: Corrective Action, Revision 23

Condition Reports (CRs)

CR000052	CR011384	CR022089
CR001132	CR011880	CR023027
CR002066	CR015243	CR023167
CR003025	CR016664	CR023180
CR005187	CR017415	CR023293
CR005239	CR018947	CR023546
CR006843	CR020278	CR023550
CR006972	CR020582	CR023739
CR007749	CR020679	CR024005
CR011286	CR021195	CR024453

CR024573	CR093855	CR316201
CR024665	CR093924	CR317206
CR024687	CR096233	CR317242
CR024842	CR096675	CR317613
CR025114	CR096828	CR319704
CR025172	CR097633	CR319825
CR025179	CR098223	CR320117
CR025180	CR098450	CR320198
CR025519	CR099403	CR320277
CR025563	CR100448	CR320394
CR025573	CR100848	CR320527
CR025635	CR102022	CR320530
CR025641	CR102448	CR320705
CR026106	CR102615	CR320789
CR026203	CR103443	CR320856
CR026512	CR104571	CR321107
CR026938	CR104911	CR323112
CR027401	CR105770	CR323119
CR028560	CR106064	CR324416
CR029313	CR106151	CR328250
CR072635	CR107698	CR328804
CR089856	CR107971	CR329762
CR089923	CR107972	CR332626
CR090051	CR108634	CR332821
CR090374	CR108907	CR333359
CR090484	CR109060	CR333852
CR091116	CR109654	CR334156
CR091454	CR114368	CR335313
CR091548	CR115052	CR336508
CR091566	CR117258	CR336576
CR091676	CR117266	CR341557
CR091682	CR118135	CR344735
CR091698	CR118625	CR347174
CR092331	CR119375	CR349405
CR093719	CR316040	CR349855

Work Orders

WO# 38079597601
 WO# 38102103464
 WO# 38102141628
 WO# 38102257499
 WO# 38102257513
 WO# 38102257527
 WO# 38102389724
 WO# 749724-01

Operating Experience Reviews

OPEX000917
 OPEX000964
 OPEX000969
 OPEX000994

OPEX001076
 OPEX001224
 OPEX001324
 OPEX001514
 OPEX001764
 OPEX001818
 OPEX001819
 OPEX001855
 OPEX001859
 OPEX001988
 OPEX001989
 OPEX002037

Self-Assessments

Dominion Nuclear Trend Report – Surry Power Station: 1st Quarter 2008
 Dominion Nuclear Trend Report – Surry Power Station: 1st Quarter 2009
 Dominion Nuclear Trend Report – Surry Power Station: 2nd Quarter 2008
 Dominion Nuclear Trend Report – Surry Power Station: 3rd Quarter 2008
 Dominion Nuclear Trend Report – Surry Power Station: 4th Quarter 2007
 Dominion Nuclear Trend Report – Surry Power Station: 4th Quarter 2008
 Nuclear Oversight Audit 09-07: Corrective Action and Independent Review Activities,
 07/23/09
 Safety Culture Survey Results– June 2009
 SAR000131, Employee Concerns Program Self-Assessment, 08/22/07
 SAR000402, Self Assessment of the Operating Experience Program, 02/26/09
 SAR000540, Evaluation of the Buried Piping Performance Improvement Initiatives,
 01/20/2009
 SAR000793, Problem Identification & Resolution Self Assessment, 07/08/09

Other Documents

2-OPT-RC-11.1, Operations Periodic Test: 10 Year In-service Inspection System Pressure
 Test of Class 1 Components Associated with the Reactor Coolant System, Revision 1
 (Performed on 5/19/08)
 38-C515-00014, Instruction Manual for Crosby Self-Actuated Safety Valves With Balancing
 Bellows and a Balancing Piston, Revision 2
 Apparent Cause Evaluation (ACE) 000176
 ACE000277
 ACE000472
 ACE000546
 ACE000748
 ACE000812
 ACE000830
 ACE000858
 ACE000894
 ACE000914
 ACE013628
 ACE013692
 ACE013794
 ACE013834
 ACE013862
 ACE013892

ACE013940

ACE013946

ACE013959

ACE014074

ACE017384

ACE017395

ACE017424

ACE017517

ACE017570

ACE017705

Calculation M-4, Emergency Condensate Storage Tank Volume and Design Basis Check (CN-TK-1) and Process & Instrument Set-point Location, Revision 0

Calculation Number 0114-0059-01- LHSI Hydraulic Analysis

Calculation Number CE-1588, Rev. 0, Analysis of Base plate and Anchor Bolts for Support 11448-PSSK-1021A6.131 in MER-3 with two missing Anchor Bolts; Addendum Title, Revised Analysis of Base plate and Anchor Bolts for Support 11448-PSSK-1021A6.131 in MER-3 with six of eight Anchor Bolts Missing

Collective Significance Analysis, Service Water System Events, CA081505

DC SU-09-0017

DC-91-03-3, Appendix 8-8, Impact of Sodium Hypochlorite

Drawing No. 11448-FM-071A, Rev. 72, 90, 31, Flow / Valve Operating Numbers Diagram Circulating and Service Water System Surry Power Station Unit 1

Drawing No. 11448-FM-071B, Rev. 58, 37, Flow / Valve Operating Numbers Diagram Circulating and Service Water System Surry Power Station Unit 1

Drawing No. 11448-FM-071D, Rev. 63, 13, Flow / Valve Operating Numbers Diagram Circulating and Service Water System Surry Power Station Unit 1

Drawing No. 11448-FM-071E, Rev. 9, Flow / Valve Operating Numbers Diagram Service Water Fuel Oil System Surry Power Station Unit 1

Drawing No. 11448-FMC-089B, Rev. 14 Sheets 1-4

Drawing No. 11548-FM-071A, Rev. 33, 56, 87, Flow / Valve Operating Numbers Diagram Circulating and Service Water System Surry Power Station Unit 2

Drawing No. 11548-FM-071B, Rev. 64, 32, Flow / Valve Operating Numbers Diagram Circulating and Service Water System Surry Power Station Unit 2

Engineering Transmittal ET-CME-04-0018, Revision 0

Engineering Transmittal ET-S-09-0062, Revision 0

Engineering Transmittal, ET-S-09-0001, Rev. 0, Restoration of Pipe Supports 11448-PSSK-1021A6.39; 11448-PSSK-1021A6.40; and 11448-PSSK-1021A6.131

EPIX 000348

ET-S-08-0094, High Ambient Temperature Administrative Threshold and Operability Limit for EDG's 1, 2, & 3, Revision 0

Gaseous Radioactive Waste Release Permit, 80231.017.009.G, Post Release Permit Update

LC000262 (Licensee Commitment)

LC000281 (Licensee Commitment)

Maintenance Rule Evaluation (MRE) 000230

MRE001031

MRE006849

MRE006983

MRE007328

MRE010522

MRE010719

O-MCM-0802-01, Revision 6

PMTER 2007-002

Root Cause Evaluation (RCE) 00062, Safety Injection Check Valves 1-SI-85,79,& 241

Exceed Acceptance Criteria for Back-leakage During Periodic Test 1-OPT-S-014

RCE000025, Open and Inspect on IST Check Valves not Performed

RCE000061, Unanticipated Pressure Increase of the Pressurizer Relief Tank during Shutdown for Unit 1 Refueling Outage (CR022876)

RCE000063, NDE performed on SI line without Operations Knowledge

RCE000223, 1-CC-E-1C Failed

RCE000227, Surry Unit 1 Reactor Trip Due to Elevated Turbine Vibrations

RCE000239, Safety Injection Actuation during Repair of a Broken Light for Indication of SI Unblock

RCE000966, Start Failure Alarm during Monthly EDG Exercise Start

RCE000979, 1-SW-P-1A Inoperable Following Engine Exhaust Stack Modifications

Safety Evaluation Number 99-123, Surry Power Station Units 1 and 2

SDBD-SPS-EG, System Design Basis Document for Emergency Diesel Generator System, Revision 14

Surry Power Station Serial No. 09-268, 2008 Annual Effluent Release Report

Surry Power Station: System Health Report – 2nd Quarter 2009

Surry Power Station: System Health Report – 3rd Quarter 2009

Technical Report ME-0180, Evaluation of Gas Accumulation in ECCS, Containment Spray and RHR Systems for GL 2008-01 Response, Revision 2

Technical Report ME-0180, Rev.1 Evaluation of Gas Accumulation in ECCS, Containment Spray, & RHR Systems for GL-2008-01 response

TR-105872, Safety and Relief Valve Testing and Maintenance Guide, August 1996

Training Synopsis RQ-08.7(S)-TS-2

VT-2 Visual Examination Report for Repair Replacement 06/424, 5/19/08

CRs Issued as a Result of this Inspection

CR348590, Superficial Corrosion on 1-SI-410

CR348592, Superficial Corrosion on 2-SI-400

CR349359, AAC Modem Failures Not Recorded in VPAP-0808 Reliability Tracking

CR348343, Missed Maintenance Rule Assignments on SI Check Valves in 2007

CR349405, Extent of Condition for CR348343