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

August 28, 2009

Mr. Preston D. Swafford
Chief Nuclear Officer and Executive Vice President
Tennessee Valley Authority
3R Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: SEQUOYAH NUCLEAR PLANT – NRC PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT 05000327/2009006 AND 05000328/2009006

Dear Mr. Swafford:

On July 31, 2009, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Sequoyah Nuclear Plant Units 1 and 2. The enclosed report documents the inspection findings, which were discussed on July 31, 2009, and August 25, 2009, with Mr. Timothy Cleary 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 personnel.

On the basis of the samples selected for review, the team concluded that in general, problems were properly identified, evaluated, and corrected. There was one green finding identified during this inspection associated with the failure to complete a corrective action to address a condition adverse to quality. Specifically, the finding was related to the failure to implement a corrective action to address deficient out-of-train maintenance controls for safety-related equipment. This finding was determined to be a violation of NRC requirements. However, because of its very low safety significance and because it has been 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 Sequoyah Nuclear Plant.

In addition, examples of minor problems were identified by the team, including equipment issues that were not entered into the corrective action program and corrective action item closures that did not implement the actions required to be performed.

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. 50-327, 50-328
License Nos. DPR-77, DPR-79

Enclosure: Inspection Report 05000327/2009006 and 05000328/2009006
w/Attachment: Supplemental Information

cc w/encl. (See page 3)

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Letter to Preston D. Swafford from Daniel Merzke dated August 28, 2009.

SUBJECT: SEQUOYAH NUCLEAR PLANT – NRC PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT 05000327/2009006 AND 05000328/2009006

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos:	50-327, 50-328
License Nos:	DPR-77, DPR-79
Report No:	05000327/2009006 and 05000328/2009006
Licensee:	Tennessee Valley Authority (TVA)
Facility:	Sequoyah Nuclear Plant, Units 1 and 2
Location:	Sequoyah Access Road Soddy-Daisy, Tennessee 37379
Dates:	July 13 – 17, 2009 July 27 – 31, 2009
Inspectors:	S. Sandal, Resident Inspector, Farley, Team Leader C. Young, Senior Resident Inspector, Sequoyah S. Atwater, Senior Project Inspector C. Stancil, Resident Inspector, Browns Ferry J. Quinones-Navarro, Project Engineer
Approved by:	Daniel Merzke, Acting Chief Reactor Projects Branch 7 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000327/2009006, 05000328/2009006; 07/13/2009 – 07/31/2009; Sequoyah Nuclear Plant, Units 1 and 2; biennial inspection of the identification and resolution of problems.

The inspection was conducted by a senior resident inspector, senior project inspector, project engineer, and two resident inspectors. One Green NRC identified finding was identified. The significance of most findings is indicated by its color (Green, White, Yellow, Red) using the Significance Determination Process in 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 problem evaluation reports (PERs) was appropriately low, as evidenced by the types of problems identified and the large number of PERs entered annually into the Corrective Action Program (CAP). Employees were encouraged by management to initiate PERs. However, several examples of minor problems were identified by the team, including equipment issues that were not entered into the corrective action program and corrective action item closures that did not implement the actions required to be performed.

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 to resolve those concerns.

A. NRC Identified and Self-Revealing Findings

Cornerstone: Barrier Integrity

- Green. The NRC identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, for the licensee's failure to promptly correct a condition adverse to quality by failing to implement corrective actions to address deficient out-of-train maintenance controls during opposite train work weeks. This contributed to entry into a short term shutdown action statement and a Notice of Enforcement Discretion (NOED). The failure to implement corrective action to

provide guidance for controlling out-of-train maintenance was entered into the licensee's corrective action program as PER 177665.

This finding was determined to be greater than minor because it was associated with the Barrier Integrity Cornerstone attribute of barrier performance, and on September 25, 2008, adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers such as the control room protect plant operators and plant controls. The finding was evaluated using Phase 1 of the At-Power Significance Determination Process, and was determined to be of very low safety significance (Green) because the finding only represented a degradation of the radiological barrier function provided for the control room. The finding was assigned a cross-cutting aspect in the corrective action program component of the problem identification and resolution area because, although the licensee had identified deficient controls for out-of-train maintenance, corrective actions were not taken to address the issue in an adequate and timely manner, commensurate with safety significance and complexity. (P.1(d)). (Section 4OA2.a.(3))

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 problem evaluation reports (PERs). To verify that problems were being properly identified, appropriately characterized, and entered into the CAP, the inspectors reviewed PERs that had been issued between August 2007 and June 2009, including a detailed review of selected PERs associated with four risk-significant systems: Auxiliary Feedwater (AFW), Residual Heat Removal (RHR), Diesel Generators (DGs), and Main Steam Isolation Valves (MSIVs). Where possible, the inspectors independently verified that the corrective actions were implemented as intended. The inspectors also reviewed selected common causes and generic concerns associated with root cause evaluations to determine if they had been appropriately addressed. To help ensure that samples were reviewed across all cornerstones of safety identified in the NRC's Reactor Oversight Process (ROP), the team selected a representative number of PERs that were identified and assigned to the major plant departments, including operations, maintenance, engineering, emergency preparedness, health physics, chemistry, and security. These PERs were reviewed to assess each department's threshold for identifying and documenting plant problems, thoroughness of evaluations, and adequacy of corrective actions. The inspectors reviewed selected PERs, verified corrective actions were implemented, and attended meetings where PERs were screened for significance to determine whether the licensee was identifying, accurately characterizing, and entering problems into the CAP at an appropriate threshold.

The inspectors conducted plant walkdowns of equipment associated with selected systems and other plant areas to assess the material condition and to look for any deficiencies that had not been previously entered into the CAP. The inspectors reviewed PERs, maintenance history, completed work orders (WOs) for the systems, and reviewed associated system health reports. These reviews were performed to verify that problems were being properly identified, appropriately characterized, and entered into the CAP. Items reviewed generally covered a 23-month period of time; however, in accordance with the inspection procedure, a five-year review was performed for selected systems for age-dependent issues.

Control Room walkdowns were also performed to assess the main control room (MCR) deficiency list and to ascertain if deficiencies were entered into the CAP. Operator Workarounds and Operator Burden screenings were reviewed, and the inspectors verified compensatory measures for deficient equipment were being implemented in the field.

The team conducted a detailed review of selected PERs to assess the adequacy of the root-cause and apparent-cause evaluations of the problems identified. The inspectors reviewed these evaluations against the descriptions of the problem described in the PERs and the guidance in licensee procedures PIDP-5, "Apparent Cause Evaluations," and PIDP-6, "Root Cause Analysis." 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.

The team reviewed selected industry operating experience items, including NRC generic communications, to verify that they had been appropriately evaluated for applicability and that issues identified through these reviews had been entered into the CAP.

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 functions of the corrective action process. These included PER Screening Committee (PSC) meetings and Corrective Action Review Board (CARB) meetings.

Documents reviewed 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 that there was a low threshold for entering issues into the CAP. This conclusion was based on a review of the requirements for initiating PERs as described in licensee procedure PIDP-1, "PER Initiation," management expectation that employees were encouraged to initiate PERs for any reason, and a review of system health reports. Trending was generally effective in monitoring equipment performance. Site management was actively involved in the CAP and focused appropriate attention on significant plant issues.

However, the team identified four occasions where equipment issues had not been entered into the licensee's CAP. Specifically:

- WO 09-772494-000 was implemented on February 13, 2009 to repair failed packing on the 1A-A DG Start Air Receiver cross-tie isolation valve (0-VLV-082-517-1A1). In the performance section of the WO, the craft documented as-found gouges on the valve stem that could not be buffed out. The gouged valve stem was reinstalled into the valve by the maintenance craft, leak checked satisfactorily, and the diesel was later returned to service. The team did not find evidence that a PER or WO had been initiated to correct or otherwise evaluate the acceptability of the valve stem condition identified and documented during the work sequence. The licensee

entered PER 177198 into the CAP to address the issue. The performance deficiency was assessed using IMC 0612 Appendix B and was screened as Minor because no safety consequences to the plant had occurred as a result of the performance deficiency. This failure to comply with the requirement to initiate PERs for all conditions adverse to quality constituted a violation of minor significance that was not subject to enforcement action in accordance with the NRC's Enforcement Policy.

- During a walk down of the AFW system, the team identified that three Essential Raw Cooling Water (ERCW) supply isolation valves for the 1A-A Motor Driven AFW (MDAFW) pump, the 1B-B MDAFW pump and the 2B-B MDAFW pump had evidence of seat leakage as indicated by water coming from the valve tell tale drains. The team did not find evidence that either a PER or WO had been initiated in the CAP to correct or evaluate the observed seat leakage. The licensee entered PER 177540 into the CAP and WOs 09-777959-000, 09-777960-000, and 09-777961-000 to address the issues. The performance deficiency was assessed using IMC 0612 Appendix B and was screened as Minor because the small amount of observed leakage did not challenge the operability of the ERCW supply to the AFW pumps, and no safety consequences to the plant had occurred as a result of the performance deficiencies. These failures to comply with the requirements of PIDP-1, "PER Initiation", constituted violations of minor significance that were not subject to enforcement action in accordance with the NRC's Enforcement Policy.

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 problems were generally prioritized and evaluated in accordance with the licensee's CAP procedures as described in the PER significance determination guidance in PIDP-4, "Corrective Action Program Screening and Oversight." Each PER written was assigned a priority level by the PSC. Management reviews of applicable PERs conducted by the CARB were thorough, 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 PIDP-4, "Apparent Cause Evaluations," and PIDP-5, "Root Cause Analysis."

The team determined that generally, 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 PIDP-2, "PER Supervisory Review," and PIDP-3, "Operability and Reportability Reviews of PERs."

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 corrected and non-recurring.

For significant conditions adverse to quality, the corrective actions directly addressed the cause and effectively prevented recurrence in that a review of performance indicators, PERs, and effectiveness reviews demonstrated that the significant conditions adverse to quality had not recurred. Effectiveness reviews for corrective actions to prevent recurrence (CATPRs) were sufficient to ensure corrective actions were properly implemented and were effective.

However, the team identified three occasions where the actions taken to close action items (AIs) associated with PERs did not match or otherwise fully implement the required action description. Specifically:

- AI 121709-002 required the incorporation of inspection and acceptance criteria into Preventative Maintenance (PM) procedures 063604803 (1A), 063604804 (1B), 060304805 (2A) and 060304806 (2B). These inspections were being done to measure and evaluate DG exhaust wall thickness as a result of Operating Experience (OE) received by the licensee. The team did not find acceptance criteria, or the basis document that derived the acceptance criteria, referenced in the PMs that were generated. The team concluded that the actions taken to close the AI were not consistent with the required action to perform. For the PMs reviewed, the team concluded that wall thickness measurements were evaluated by site engineering and did meet the calculation derived acceptance criteria for acceptable wall thickness. The licensee revised the applicable PM procedures to address the issue. The failure to ensure that corrective actions are performed as specified in accordance with SPP-3.1, “Corrective Action Program” constituted a violation of minor significance that was not subject to enforcement action in accordance with NRC’s Enforcement Policy.

- AI 129603-001 required, in part, a revision to the locally posted procedures used to reset the Unit 1 and Unit 2 TDAFW pump trip and throttle valves. The action taken to close the AI stated “Fabricated and installed updated PIPs in both Unit-1 and Unit-2 TDAFWP Rooms. An additional copy of the PIP was sent to Training Dept.” During a walk down of the TDAFW pump areas the team identified that the revised PIP had not been posted in the Unit 2 TDAFW pump room as stated in the action taken to close the AI. The team concluded that the actual actions performed were not consistent with documented basis for AI closure. The licensee entered PER 176422 into the CAP to address the issue. The performance deficiency was assessed using IMC 0612 Appendix B and was screened as Minor because no safety consequence to the plant occurred as a result of the performance deficiency. The failure to ensure that corrective actions are performed as specified in accordance with SPP-3.1, “Corrective Action Program”, constituted a violation of

minor significance that was not subject to enforcement action in accordance with the NRC's Enforcement Policy.

- CATPR 128340-004 required a revision to procedure OPDP-1, Conduct of Operations, to state expectations for protecting stand-by equipment during work, to ensure all out of train manipulations have been evaluated for conflicts with tagged and/or inoperable equipment, and develop method for handling exceptions to allow out-of-train work to commence. The action taken stated that OPDP-1, revision 9, was issued on February 29, 2008 and met the requirements set forth in the PER. The team reviewed revision 9 (and subsequent revisions) of OPDP-1 and other work control procedures and did not find evidence that the revisions contained the information required by the AI. The team concluded that the required action to revise OPDP-1 was not performed. The licensee entered PER 177665 into the CAP to address the issue. The team concluded that the failure to correct a condition adverse to quality was a violation of regulatory requirements and is further discussed in this report below.

(3) Findings

i. Failure to Promptly Correct a Condition Adverse to Quality Associated with Out-of-Train Maintenance Controls

Introduction: The NRC identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, for the licensee's failure to promptly correct a condition adverse to quality by failing to implement corrective actions to address deficient out-of-train maintenance controls during opposite train work weeks. This contributed to entry into a short term shutdown action statement and a NOED.

Description: On July 31, 2007, Unit 2 entered Technical Specification (TS) 3.0.3 actions to commence an unplanned short term shutdown due to the failure of the 714-foot elevation penetration room cooler essential raw cooling water supply valve (making 'B' train containment spray inoperable) during a molluskicide injection coincident with planned maintenance on 'A' train containment spray pump. The supply valve was subsequently opened by the licensee to return the 'B' train containment spray train to operable status which allowed exit of the required actions under TS 3.0.3. The licensee entered PER 128340 into the CAP and initiated a root cause analysis (RCA). The RCA determined that operational procedures had vague wording when dealing with working activities out-of-train. The action of PER 128340-004 was to revise procedural guidance to state the expectations for work activities, ensure all out-of-train manipulations have been evaluated for conflicts with tagged and/or inoperable equipment, and develop a method for handling exceptions to allow out-of-train work to commence. This action, 128340-004, was documented in the licensee's CAP as completed on March 3, 2008.

On September 25, 2008, both Units 1 and 2 entered TS 3.0.5 actions to commence an unplanned short term shutdown due to a start failure of 'B' train main control room air conditioning (CRAC) air handling unit coincident with planned maintenance on 'A' train diesel generator which had previously made 'A' train CRAC inoperable. The 'B' train

attempted start was for a train swap to set up conditions for 'A' train maintenance inspection. TS 3.0.5 limiting condition for operations (LCO) required action to be initiated within 2 hours to place both units in hot standby in the following 6 hours. Enforcement discretion was approved by the NRC to extend the LCO expiration time an additional 36 hours for parallel completion of the 'A' train diesel generator battery replacement and the unplanned maintenance to replace the motor in the 'B' train CRAC.

Around the time of this event, the licensee was responding to an independent assessment observation related to impact of risk significant activities not being adequately addressed with PER 151929 RCA. This September 25 event was evaluated under PER 151929 RCA. Interim corrective action in the form of an operations standing order SO-08-47 was issued September 27, 2008, for operation of opposite train equipment during train weeks. This standing order expired on December 31, 2008.

On May 19, 2009, the licensee performed an effectiveness review of PER 128340 and determined that corrective action 128340-004 (to provide guidance for out-of-train maintenance) had not been performed even though it was documented as being complete. The only corrective action resulting from the failed effectiveness review was to coach operations personnel to complete corrective actions as written unless otherwise approved.

The inspectors identified that corrective action to provide guidance for out-of-train maintenance was still not implemented, nor was there an open corrective action for planned implementation. Licensee procedure SPP-3.1, "Corrective Action Program," stated that the SPP established the processes and responsibilities for documenting and resolving problems at the station, including safety-related problems required to be corrected by 10 CFR 50, Appendix B, Criterion XVI, Corrective Action. The overall purpose of the licensee's CAP was to provide the necessary site standards to ensure that all conditions adverse to quality were resolved, including non-hardware related deficiencies. The licensee initiated PER 128340 and performed an RCA to ensure that the site standards imposed by SPP-3.1 were implemented to provide guidance for out-of-train maintenance controls to correct an identified programmatic deficiency. The licensee's failure to implement the corrective actions directed by PER 128340-004 was a missed opportunity to prevent placing the operating units in potentially higher risk situations such as short term shutdown action statements (e.g. July 31, 2007 and September 25, 2008 above) and/or noncompliance with a TS LCO (e.g. September 25, 2008 above). During an effectiveness review, the licensee discovered that the required corrective action was not performed, and failed again to ensure the specified corrective action was completed, as identified by NRC inspectors approximately two months later. Based on the observed issues with the control of out-of-train maintenance, including the expired standing order and the licensee's determination that the corrective action was ineffective, the inspectors concluded the licensee had past and recent opportunities to promptly correct a condition adverse to quality, the programmatic deficiency identified in PER 128340 in 2007. Therefore it was reasonable to conclude that it was within the licensee's ability to foresee and correct this identified problem.

Analysis: The licensee's failure to promptly correct a condition adverse to quality by failing to implement corrective actions, as required by the site standard of SPP-3.1, in order to resolve a known programmatic deficiency involving controls associated with out-of-train maintenance, was a performance deficiency. This finding was determined to be greater than minor because it was associated with the Barrier Integrity Cornerstone attribute of barrier performance, and on September 25, 2008, adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers such as the control room protect plant operators and plant controls. The finding was evaluated using Phase 1 of the At-Power Significance Determination Process, and was determined to be of very low safety significance (Green) because the finding only represented a degradation of the radiological barrier function provided for the control room.

The finding was assigned a cross-cutting aspect in the corrective action program component of the problem identification and resolution area because although the licensee had identified deficient controls for out-of-train maintenance, corrective actions were not taken to address the issue in a timely manner, commensurate with safety significance and complexity. (P.1(d)).

Enforcement: 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, requires, in part, that measures shall be established to assure that conditions adverse to quality, such as deficiencies, are promptly corrected. Contrary to this, on March 3, 2008, the licensee failed to assure that an identified programmatic deficiency associated with on-line out-of-train maintenance controls was corrected. Because the finding was determined to be of very low safety significance and has been entered into the licensee's CAP as PER 177665, this violation is being treated as an NCV consistent with Section VI.A of the Enforcement Policy: NCV 05000327, 328/2009006-01, "Failure to Promptly Correct a Condition Adverse to Quality Associated with Out-of-Train Maintenance Controls."

ii. Inadequate Scoping of SSCs Used in EOPs into the Maintenance Rule Program

Introduction: The team identified an unresolved item (URI) related to the scoping of those structures, systems, and components (SSCs) whose use is called out in Emergency Operating Procedures into the licensee's Maintenance Rule (MR) program as required by 10 CFR Part 50.65 (b)(2)(i), ''Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants.'' The team concluded that additional inspection would be required to determine: (1) the scope of those SSCs whose use is called out in EOPs with no corresponding monitored function identified in the licensee's MR program, and (2) to establish whether or not there was an adverse impact in the performance or material condition of those SSCs that occurred as a result of not being scoped in the MR program.

Description: On April 11, 2008, PER 142050 was initiated by the licensee to address an NRC identified Non-Cited Violation (NCV) 05000327, 328/2008003-001, "Gland Seal Steam Header Isolation Valve not scoped in Maintenance Rule." One of the corrective actions for this PER was to develop a position paper detailing the basis, background,

analysis, and recommendations for adding the Main Steam Isolation Valve (MSIV) backup function into the MR program. As part of this position paper, the licensee performed an extent of condition review that stated, in part, "…for those SSCs previously excluded, the functions would need to be identified and classified…" Based on a review of CAP documents the team concluded that there were no open corrective action items to ensure that those SSCs whose use was called out in EOPs were promptly identified and scoped into the MR program as appropriate. Additionally, based on a review of licensee MR program documents and EOPs, the team concluded that although the steam dumps were used in EOP-3 to cool down the Reactor Coolant System (RCS) during Steam Generator Tube Rupture (SGTR) event, no corresponding function for the steam dumps was found in TI-4, "Maintenance Rule Performance Indicator Monitoring, Trending, and Reporting – 10 CFR 50.65." On July 24, 2009, as a result of the team's concern related to the scoping of EOP SSCs into the MR program, the licensee initiated PER 177211 to evaluate how SSCs that are used to mitigate accidents or transients listed in the EOPs, meet the scope requirements of 10 CFR 50.65.

The team concluded that in order to properly evaluate and disposition this issue, additional inspection would be required to understand both the scope of the SSCs involved and the potential impact to the plant that may have occurred as a result of the failure to scope those SSCs into the MR program. The inspection team identified no immediate safety concern because, although there was evidence that the steam dumps were not scoped in the MR program as required, component performance was otherwise being maintained through the use of an established preventive maintenance program and there was no direct evidence that steam dump performance or material condition was being adversely impacted by the failure to scope the steam dumps within the MR program. This issue was identified as URI 05000327, 328/2009006-002, "Inadequate Scoping of SSCs Used in EOPs into the Maintenance Rule Program."

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

(1) Inspection Scope

The team examined licensee programs for reviewing industry operating experience, reviewed licensee procedure SPP-3.9, "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 August 10, 2007, to verify whether the licensee had appropriately evaluated each notification for applicability to the Sequoyah plant, 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. 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 procedures PIDP-5, “Apparent Cause Evaluations,” and PIDP-6, “Root Cause Analysis.”

(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 SPP-1.6, “NPG Self-assessment and Benchmarking Program.”

(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. PERs were created to document the results and associated recommendations from the final reports. The team verified that all recommendations from self-assessments reviewed had been entered into the CAP, and verified that actions had been completed consistent with those recommendations. The team also determined that the licensee had adequately prioritized issues entered into the CAP. 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. 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 discussed with 22 on-site workers their knowledge of the corrective action program at Sequoyah and their willingness to write PERs or raise safety concerns. During technical discussions with members of the plant staff, the inspectors conducted discussions to develop a general perspective of the safety-conscious work environment at the site. The discussions 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 Concerns Resolution Program (CRP) and interviewed the CRP manager. Additionally, the inspectors reviewed a sample of completed CRP reports to verify that concerns were being properly reviewed and identified deficiencies were being resolved and entered into the CAP when appropriate.

(2) Assessment

Based on the interviews conducted and the PERs 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 CRP. These methods were readily accessible to all employees. Based on discussions conducted with a sample of plant employees from various departments, the inspectors determined 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 July 31, 2009 and on August 25, 2009, the inspectors presented the inspection results to Mr. Timothy Cleary and other members of the site staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

ATTACHMENT: SUPPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel
A. Barringer, Site Chemistry
C. Beasley, Site Communications
D. Bodine, Chemistry/Environmental Manager
C. Church, Plant Manager
T. Cleary, Site Vice President
T. Cosby, Organizational and Cultural Initiatives (Corporate)
D. Curtley, Maintenance Rule Coordinator
K. Dutton, Projects Manager
J. Dvorak, Work Control Manager
N. Eggemeyer, Nuclear Site Security Manager
D. Foster, Performance Improvement Manager
M. Halter, Radiation Support Manager
M. Hibbs, System Engineer NSSS-AFW
J. Hodge, System Engineer NSSS-ERCW
S. Hunnewell, Manager, NSSS System Engineering
C. Johnson, Performance Improvement
K. Jones, Engineering Director
W. Kimsey, Chemistry
R. Kerwin, Site Nuclear Assurance Manager
A. Keyser, Manager, NSSS System Engineering
B. Knitter, Diesel Generator System Engineer
A. Little, Security Field Support
T. Marshall, Maintenance Manager
S. Newell, System Engineer NSSS
P. Noe, Design Manager
K. Perry, System Engineer BOP-Ventilation
B. Picchiottino, Director of Training
R. Proffitt, Licensing Supervisor
R. Richie, Nuclear Assurance
W. Sanders, Maintenance Training Manager
S. Schannuth, MSIV System Engineer
A. Seaborn, Maintenance Support
P. Simmons, Operations Manager
D. Sturgis, Operations CAP Coordinator
D. Sutton, Licensing Engineer
N. Thomas, Licensing Engineer
R. Thompson, Emergency Preparedness Manager
M. Tipton, Security Coordinator
B. Wetzel, Licensing Manager
G. Yelliott, Site Concerns Resolution Manager
B. Zeik, Engineering Programs

NRC
S. Shaeffer, Branch Chief, Reactor Projects Branch 2
M. Speck, Resident Inspector, Sequoyah Nuclear Plant

Attachment

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000327, 328/2009006-02	URI	Inadequate Scoping of SSCs Used in EOPs into the Maintenance Rule Program

Opened and Closed

05000327, 328/2009006-01	NCV	Failure to Promptly Correct a Condition Adverse to Quality Associated with Out-of-Train Maintenance Controls

Closed

None

Discussed

None

Attachment

LIST OF DOCUMENTS REVIEWED

Procedures

0-GO-16, System Operability Checklists, Rev. 6
0-GO-2, Unit Start-up from Hot Standby to Reactor Critical, Rev. 30
0-GO-3, Power Ascension from Critical To Less Than 5% Reactor Power, Rev. 21
0-GO-5, Normal Power Operation, Rev. 58
0-GO-14, Units 1 and 2 Operator Rounds-Auxiliary Building 1 and 2 Rounds, Rev. 19 and 23
0-PI-OPS-000-028, Operator Aid Review Program, Rev. 11
0-SO-30-1, Control Building Heating, Air Conditioning and Ventilation, Rev. 35
0-TI-XXX-000-704.0, MIC and Cavitation Degradation Monitoring, Rev. 6
1, 2-SO-3-2, Auxiliary Feedwater System, Rev. 43
1-PI-SFT-003-002.0, Auxiliary Feedwater Pump Turbine 1A-S Over-speed Trip Tests, Rev. 3
BP-122, Governance, Oversight, Execution and Support Program, Revision 7
CRS-1, Concerns Resolution Staff Instruction 1 CRS Administration, Revision 12
G-40, Installation, Inspection, and Maintenance of Electrical Conduit, Cable Trays, Boxes, Containment Electrical Penetrations, Electrical Conductor Seal Assemblies, Lighting and Miscellaneous Systems, Rev. 15
NEDP-22, Functional Evaluations, Revision 6
OPDP-1, Conduct of Operations, Revision 10 and 13
Operations Directive Manual, Appendix D, Protected Equipment, Rev. 4
PIDP-1, PER Initiation, Revision 0
PIDP-2, PER Supervisory Review, Revision 0
PIDP-3, Operability and Reportability Reviews of PERs, Revision 0
PIDP-4, Corrective Action Program Screening and Oversight, Revision 2
PIDP-5, Apparent Cause Evaluations, Revision 1
PIDP-6, Root Cause Analysis, Revision 1
PIDP-7, PER Actions, Revision 2
PIDP-8, PER Operating Experience and Generic Reviews, Revision 2
PIDP-9, PER Closure, Revision 0 and 1
PIDP-10, PER Effectiveness Reviews, Revision 0
PIDP-11, PER Trending, Revision 1
PIDP-12, Integrated Trend Review, Revision 0
PIDP-13, Corrective Action Program Basis, Revision 0
PIDP-14, CAP Health Monitor, Revision 1
PIDP-15, Oversight of the Human Performance Program, Revision 0
PM 016401000, Turbine Driven Auxiliary Feedwater Pump Turbine Maintenance, Rev. 19
SPP-1, Organization and Administration, Revision 3
SPP-1.6, NPG Self-Assessment and Benchmarking Program, Revision 16
SPP-3.1, Corrective Action Program, Revision 13, 14, 15, and 16
SPP-3.9, Operating Experience Program, Revision 2
SPP-6.1, Work Order Process Initiation, Revision 5 and 6
SPP-6.2, Preventive Maintenance, Revision 6
SPP-6.6, Maintenance Rule Performance Programs and Indicator Monitoring, Trending Processes and Reporting – 10CFR50.65, Revision 9
SPP-7.1, On Line Work Management, Revision 13
SPP-9.16, Plant, System, Component, and Program Health, Revision 2
TI-4, Maintenance Rule Performance Indicator Monitoring, Trending, and Reporting – 10CFR50.65, Revision 22

Problem Evaluation Reports (PERs)

16123	16290	17845	18187
18653	18969	19483	20123
22444	26806	28634	88000
89357	89364	96236	116166
119023	121508	121709	122270
123583	125844	125906	125944
126209	126870	126928	127136
127308	127409	127429	128340
128423	128545	128804	128923
129191	129215	129303	129385
129463	129603	129614	129634
129803	130187	130711	130851
130883	131316	131355	131436
131573	131593	131752	131781
131864	131900	131965	132022
132112	132135	132146	132175
132400	132872	133047	133087
133450	133736	134395	134438
134683	134688	134692	134761
134866	134891	134904	135000
135203	135288	135396	135512
135661	135664	135736	135797
136150	136276	136431	136558
136660	136874	137332	137347
137354	137583	137693	138112
138145	138670	138743	138903
139272	139326	139507	139609
139779	140367	140956	141061
141063	141305	141308	141955
142050	142224	142566	142808
143061	143513	144343	144401
144403	144592	144765	145352
145579	145640	145827	146127
146136	146259	146265	146464
146960	147427	147452	147468
147508	147707	147722	147723
147796	147836	147839	147971
148095	148280	148340	148345
148514	148659	148792	148962
148964	148967	148970	148973
149035	149057	150528	150541
150816	150981	150982	151354
151447	151462	151493	151501
151572	151576	151591	151665
151762	151775	151887	151905
151929	152064	152068	152092
152285	152629	153165	153168

153285	153304	153318	153343
153400	153416	153658	153926
153969	154043	154330	154473
154666	154739	154908	155260
155329	155417	155447	155479
155481	155875	155933	156301
156429	156485	156726	156867
156870	157094	157126	157692
157753	159556	159600	159669
160005	160066	160132	160366
160368	160392	160410	160504
161133	161252	162324	162581
162641	162681	162711	162824
162837	164205	164583	164671
164697	165056	165218	165370
165491	165501	165674	165767
165946	166086	166354	166594
166781	166892	166924	167045
167056	167076	167124	167183
167361	167458	167463	167559
167574	167631	167681	167682
167700	167721	167734	168057
168117	168291	168334	168383
168515	168554	168713	168855
169172	169346	169387	169399
169513	169543	169859	169935
170008	170084	170150	170267
170281	170379	170827	170875
171059	171209	171272	171288
171591	171733	171769	171937
172017	172040	172276	172373
172471	173196	174339	174576
174740	175336	175445	176525

Work Orders

03-000699-000	03-010400-000	03-011360-000	04-776449-002
05-777579-000	05-782345-000	06-776027-000	06-776751-000
07-772695-000	07-778265-000	08-772636-000	08-772834-000
08-775229-000	08-774774-000	08-778105-000	08-778510-000
08-780088-000	08-780517-000	08-781840-000	08-782128-000
09-770054-000	09-771506-000	09-772840-000	09-773178-000
09-774705-000	09-776642-000	09-776802-001	09-776816-000
09-776856-000	09-776875-000	09-777499-000	09-777841-000
09-777851-000	09-777959-000	09-777960-000	09-777961-000

Self-Assessments and Audits

CRP-PA-I-09-006, Nuclear Power Group's Self-Assessment and Benchmarking Program Assessment
NA-SQ-09-003, Assessment of PIDP-6 Safety Culture Evaluation Process
SQN-PI-S-09-09, Snapshot Self-Assessment Report, Corrective Action Program
SQN-OPS-09-028, Focused/Snapshot Self-Assessment Report, Effectiveness of Actions Associated with PER 112718
SQN-M&M-S-09-025, Snapshot Self-Assessment Report, Understanding, Proficiency, and Implementation for the Corrective Action Program within MSB
SQN-SCH-F-09-02, Focused Self-Assessment Report, Plant Health and Work Management Inter-Relations
SSA903, Corrective Action Program (CAP) Audit
SSA0806, Maintenance Functional Area Audit
SSA0807, Systems Engineering Functional Area Audit

Other Documents

Calculation 03DS3HCGFSW102886, AFW System-Design Temperatures, Rev. 5
Calculation SQS40056, Internal Flooding, Rev. 2
CDE 2264, B MCR Chiller Tripped Due to Vibrations
CDE 2285, B MCR Chiller Tripped and Both Units Entered LCO 3.7.15 Action A
CDE 2296, AFW Blown Fuse Impacting Start Logic Circuit
CDE 2363, MSIV Backup
CDE 2366, A MCR Chiller Due to Both Units Entered LCO 3.7.15 Action A
Design Criteria Document SQN-DC-V-13.9.6, Control Building Environmental Control System, Rev. 9
Design Criteria Document SQN-DC-V-13.9.8, Auxiliary Feedwater System, Rev. 22
Drawing 1, 2-47W803-2, Flow Diagram Auxiliary Feedwater, Rev. 63
FSAR Section 9.4.1, Heating, Ventilation, and Air-Conditioning, Control Building, SQN-16
LER 05000328/2008001-00, Manual Reactor Trip Following Partial Loss of Main Feedwater Flow to Loop 4 Steam Generator
LER 05000327/2008002-00, Loss of a Main Control Room Air Handling Unit in Conjunction with an Emergency Power Source Out of Service
N2-82-03A, Summary of Piping Analysis, Revision 6
NER 891276001, SOER 89-001: Testing of Steam Turbine/Pump Over-speed Trip Devices
Nuclear Safety Culture Survey, Sequoyah, March 2009 (Draft Report)
Operations Day Shift Log, Friday, September 26, 2008
Screening Review/Safety Evaluation for 1-PI-SFT-003-002.0 R0, Rev. 0
Screening Review/Safety Evaluation for 2-MI-MFT-003-002.0 R7, Rev. 0
Sequoyah Nuclear Plant Integrated Trend Report, Jan – Mar 2009
Sequoyah Operations Department Standing Order SO-08-047, 09/27/08
System Health Reports (10/01/08-01/31/09), Units 1 and 2 Auxiliary Feedwater, June 24, 2009
System Health Reports (10/01/08-01/31/09), Units 1 and 2 Standby Diesel Generator, Air, Fuel, Oil, June 24, 2009
Component Tagging Request 1629470 for Damaged 1-FSV-3-401-B Label From NRC Walk-down
Technical Specifications and Bases 3.7.7, Control Room Emergency Ventilation System

Technical Specifications and Bases 3.7.15, Control Room Air-Conditioning System (CRACS)
2008 (a)(1) Plans for Main Control Room Cooling, Revs. 0 and 9
5 Year SQN Raw Water Pipe Replacement Project

NRC Identified PERs

176349, PER written to establish a clean-up plan so that oil accumulation on the diesel generators does not prevent the identification of active leaks
176350, PER written to document that 2 diesel generator bull gears had indication of minor gear wear as evidenced by the presence of bare (non-oxidized) metal on the gear teeth
176409, 2A MDAFW pump has two scaffold poles in fire barrier
176422, PER written to address the observation that the locally posted procedure for latching the Unit 2 TDAFW pump trip and throttle valve had not been updated.
176429, calculation for AFW NPSH analysis does not include ERCW tell-tale flow
176518, 2-FCV-3-116B-A flex conduit (power) disconnected from rigid conduit
176520, PER written to show that air entrainment in the ERCW supply to the AFW pumps via the tell tale drains did not adversely impact operability of the pumps.
176525, PER written to address observations related to temporary equipment control and housekeeping.
177211, PER written to document the need to evaluate how structures, systems or components that are used to mitigate accidents or transients that are listed in the emergency operating procedures, meet the scope requirements of 10 CFR 50.65.
177415 TDAFW mechanical over-speed high RPM limit not adjusted per owners group recommendation
177416, PER written to document that on two occasions procedural requirements to attach required documentation to PERs were not complied with
177426, PER written for CM WO 09-774705-000
177433, PER written to identify that AFW turbine over-speed trip test procedures have ambiguous instructions relating to maximum permissible Turbine RPM.
177467 engineering evaluate PM procedure for specific guidance on tappet-bore clearance
177540 AFW tell-tale valve leakage identified and WOs written
177541, PER written to identify the failure to comply with a WO instruction to document the as-found condition of a component
177542, PER written regarding the acceptability of the content of the problem description in PERs written to document conditions requiring corrective maintenance
177567, PER written to document a failure to comply with a procedural requirements when closing one PER to another PER
177665, PER written to address the observation that actions taken to close CAPTR 128340-004 were not performed.
177860, PER written to address the observation that previous PERs written for personnel contamination events did not document the source(s) of contamination and why monitors closer to the event did not detect the contamination.