



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

December 30, 2010

Mr. Rodney M. Krich  
Vice President, Nuclear Licensing  
Tennessee Valley Authority  
3R Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

SUBJECT: SEQUOYAH NUCLEAR PLANT, UNIT NOS. 1 AND 2 - AUDIT OF THE  
LICENSEE'S MANAGEMENT OF REGULATORY COMMITMENTS  
(TAC NOS. ME5170 AND ME5171)

Dear Mr. Krich:

Once every 3 years, the U. S. Nuclear Regulatory Commission (NRC) staff is required to audit a licensee's commitment management program in accordance with the NRC Office of Nuclear Reactor Regulation Office Instruction LIC-105, "Managing Regulatory Commitments Made by Licensees to the NRC." LIC-105, which is publicly available electronically through the Agencywide Documents Access and Management System (ADAMS) at the Electronic Reading Room of the NRC web site (ADAMS Accession Number ML090640415), provides the NRC staff and its stakeholders with a common reference for handling regulatory commitments made to the NRC staff by licensees for commercial nuclear reactors. The guidance is consistent with the industry guidance prepared by the Nuclear Energy Institute (NEI), NEI 99-04, "Guidance for Managing NRC Commitment Changes."

An audit of Sequoyah Nuclear Plant's (SQN's) commitment management program was performed at the SQN site during the period of December 15-16, 2010. The NRC staff concludes, based on the audit that (1) SQN has implemented NRC commitments on a timely basis, and (2) SQN has implemented an effective program for managing NRC commitment changes. Details of the audit are set forth in the enclosed audit report.

Sincerely,

A handwritten signature in black ink that reads "Siva P. Lingam".

Siva P. Lingam, Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-327 and 50-328

Enclosure: Audit Report

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AUDIT REPORT BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
LICENSEE MANAGEMENT OF REGULATORY COMMITMENTS  
SEQUOYAH NUCLEAR PLANT, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-327 AND 50-328

1.0 INTRODUCTION AND BACKGROUND

The Office of Nuclear Reactor Regulation (NRR) of the U.S. Nuclear Regulatory Commission (NRC) has published NRR Office Instruction LIC-105, "Managing Regulatory Commitments Made by Licensees to the NRC." LIC-105 provides the NRC staff and its stakeholders with a common reference for handling regulatory commitments made to the NRC staff by licensees for commercial nuclear reactors. The guidance is consistent with the industry guidance issued by the Nuclear Energy Institute (NEI) in NEI 99-04, "Guidance for Managing NRC Commitment Changes." The current revision to LIC-105 is publicly available electronically through the Agencywide Documents Access and Management System (ADAMS), at the Electronic Reading Room of the NRC web site (ADAMS Accession Number ML090640415).

According to LIC-105, which cites the definition from NEI-99-04, a "regulatory commitment" is an explicit statement to take a specific action agreed to, or volunteered by, a licensee and submitted in writing on the docket to the NRC. LIC-105 further directs the NRR Project Manager to "audit the licensee's commitment management program by assessing the adequacy of the licensee's implementation of a sample of commitments made to the NRC in past licensing actions (amendments, reliefs, exemptions, etc.) and activities (bulletins, generic letters, etc.)." The audit is to be performed every 3 years.

2.0 AUDIT PROCEDURE AND RESULTS

An audit of Sequoyah Nuclear Plant's (SQN's) commitment management program was performed at SQN in Soddy Daisy, TN during the period December 15-16, 2010. The audit reviewed commitments made since the previous NRC audit report dated November 7, 2007 (ADAMS Accession Number ML072990038). The audit consisted of two major parts: (1) verification of the licensee's implementation of NRC commitments that have been completed and (2) verification of the licensee's program for managing changes to NRC commitments.

2.1 Verification of Licensee's Implementation of NRC Commitments

The primary focus of this part of the audit is to confirm that the licensee has implemented commitments made to the NRC as part of past licensing actions/activities. For commitments not yet implemented, the NRC staff should determine whether they have been captured in an effective program for future implementation.

2.1.1 Audit Scope

The audit addressed most of the commitments made during the review period. The audit focused on regulatory commitments (as defined above) made in writing to the NRC as a result of past licensing actions or licensing activities. Commitments made in Licensee Event Reports

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or in response to Notices of Violation may be included in the audit but the review will be limited to verification of restoration of compliance, not the specific methods used.

The NRC staff audited commitments that involved orders, exemptions, responses to generic letters and bulletins, and licensee event reports. During the audit, the NRC staff reviewed documents generated by processes in effect during the scope of the audit, and other documents related to the commitments. The audit excluded the following types of commitments that are internal to licensee processes:

- (1) Commitments made on the licensee's own initiative among internal organizational components.
- (2) Commitments that pertain to milestones of licensing actions/activities (e.g., respond to an NRC request for additional information by a certain date). Fulfillment of these commitments was indicated by the fact that the subject licensing action/activity was completed.
- (3) Commitments made as an internal reminder to take actions to comply with existing regulatory requirements such as regulations, technical specifications, and updated final safety analysis reports. Fulfillment of these commitments was indicated by the licensee having taken timely action in accordance with the subject requirements.

### 2.1.2 Audit Results

Before the audit, the NRC staff searched ADAMS for the licensee's submittals during the last 3 years and selected most of the commitments for verification, however, all the commitments made since October 17, 2007, were reviewed during this audit. The licensee provided the documentation to support the NRC staff's audit in each of these commitments. The licensee's documentation included summary sheets providing the status of the commitment and appropriate backup documentation, as needed (e.g., plant procedures, examination records, and/or other plant documentation). The NRC staff found that the licensee's commitment tracking programs had captured the regulatory commitments that had been identified by the NRC staff prior to the audit.

Additionally, the NRC staff reviewed plant procedures that had been revised as a result of commitments made by the licensee to the NRC. The NRC staff found that the procedures had been revised in accordance with the commitments made to the NRC. The attached table summarizes the licensee's commitments that were audited by the NRC staff and the current status of the licensee's commitments.

### 2.2 Verification of Licensee's Program for Managing NRC Commitment Changes

The primary focus of this part of the audit is to verify that the licensee has established administrative controls for modifying or deleting commitments made to the NRC. The NRC staff compared the licensee's process for controlling regulatory commitments to the guidelines in NEI 99-04, which the NRC has found to be an acceptable guide for licensees to follow for managing and changing commitments. The audit reviewed most of the commitment changes that included changes that were or will be reported to the NRC, and changes that were not or

will not be reported to the NRC. The audit also verifies that the licensee's commitment management system includes a mechanism to ensure traceability of commitments following initial implementation. This ensures that licensee personnel are able to recognize that future proposed changes to the affected design features or operating practices require evaluation in accordance with the commitment change control process.

### 2.2.1 Audit Results

The process used at SQN for managing commitments is contained in Nuclear Power Group (NPG) document NPG-SPP-03.3, "NRC Commitment Management." Revision 1 of NPG-SPP-03.3 included the guidance prescribed in NEI 99-04; and it requires SQN Nuclear Licensing to identify and track commitments using a process similar to that of NEI 99-04. Appendix C to NPG-SPP-03.3 provides an evaluation process to aid in the decision making process regarding scope changes to a commitment. This process is identical to the guidance provided as figure A-1 in NEI 99-04. Scope changes must be evaluated, and justified by the responsible organization within NPG. Form NPG-SPP-03.3-1 is then forwarded to SQN Nuclear Licensing for appropriate notification and tracking.

Additionally, the NRC staff reviewed most of SQN's commitments for the period of October 17, 2007 to December 16, 2010. The NRC staff found that the basis/justification provided for the change to each commitment was acceptable; and that the changes were managed effectively, in accordance with plant procedures.

## 3.0 CONCLUSION

The NRC staff concludes, based on the above audit, that (1) SQN has implemented commitments in a timely basis, or is tracking them for future implementation; and (2) SQN has implemented an effective program to manage regulatory commitment changes.

## 4.0 LICENSEE PERSONNEL CONTACTED FOR THIS AUDIT

Zachary Kitts, SQN Site Licensing Engineer

Principal Contributor: Siva P. Lingam

Attachment: Summary of Audit Results

SUMMARY OF RESULTS  
AND REGULATORY COMMITMENTS INCLUDED IN AUDIT  
AT SEQUOYAH NUCLEAR PLANT  
PERFORMED DURING DECEMBER 15 AND DECEMBER 16, 2010

<b>Item No.</b>	<b>Commitment No.</b>	<b>Commitment Letter/Date</b>	<b>Description of Commitment</b>	<b>Status</b>	<b>Method of Closure</b>
1	NCO10172296	SQN-TS-09-02 9/29/09	TVA will include in Steam Generator Tube Inspection Report (SGTIR) any flaws that are identified during the inspection of the clod legs. The SGTIR will report tubes where slippage has occurred and will include any tube where the bottom of the WEXTEx expansion is greater than 2.88 inches below the top of the tubesheet (Commitment No. 4).	closed	Surveillance Instruction (SI) 2-SI-SXI-068-114.3, Appendix D, 1.0 I and 1.0 J reflected the commitment requirements.
2	NCO10172473	SQN-TS-09-02 9/29/09	TVA will revise the Steam Generator Program (SGP) to confirm that the bottom of the cold leg expansion transition for all tubes is below the top of tubesheet and that the bottom of the transition is no more than 2.88 inches from the top of tubesheet. The 2.88 inches accounts for an uncertainty of 0.12 inch. If the WEXTEx expansion is greater than 2.88 inches below the top of the tubesheet, then the examination will be extended into the tubesheet to ensure at least 7.5 inches (plus measurement uncertainty) of non-flawed tube is inspected (Commitment No. 1)	closed	SI 2-SI-SXI-068-114.3, Section 6.2 [9] reflected the commitment requirements.

Item No.	Commitment No.	Commitment Letter/Date	Description of Commitment	Status	Method of Closure
3	NCO10172631	SQN-TS-09-02 9/29/09	TVA will revise the SGP to inspect the +2/-10.5 inches of the cold leg tubesheets in 20 percent of the open tubes in each steam generator. If a crack-like indication is discovered in this area of a steam generator the 100 percent of that steam generator's cold leg tubesheets will be inspected. If the expanded sample identifies a crack-like indication in the +2/-10.5-inches region then 100 percent of the tubesheets in each of the steam generators will be inspected (Commitment No. 3).	closed	In SI 2-SI-SXI-068-114.3, Section 6.1.C.3.c (3) was added, 6.1.D.3.a and 6.2 [8] were revised, and 6.1.D.7.b and 6.1.D.7.c were added to reflect the commitment requirements.
4	NCO10173263	SQN-TS-09-02 9/29/09	TVA will revise the SGP to require the following assumed leakage methodology: If cold leg indications are not detected (i.e., a 20 percent sample is performed), then in the faulted SG, TVA will assume a total of four top of tubesheet indications exist in the non-examined tubes at the top-of-tubesheet region (i.e., 0.1 inch to 1 inch below WEXTX Transition) at an assumed leakage of 0.05 gallons per minute (gpm) per tube plus the inservice Row 1 tubes that have had plugs removed will be assumed to leak at 0.00009 gpm. If cold leg indications are detected, then the hot leg W* methodology will be applied to the cold leg (except 10 percent of the total cumulative quantity of indications in the cold leg region 0 to 10.5 inches below the top of tubesheet will be assumed in the cold leg region 10.5 to 12 inches and multiplied by 0.0045 gpm). (Commitment No. 2)	closed	In SI 2-SI-SXI-068-114.3, Appendix F, items U and V were added, Appendix I data sheet was revised, to reflect the commitment requirements.

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10	NCO070017001	SQN-TS-06-03 8/14/07	TVA design configuration controls will ensure that the new minimum essential raw cooling water (ERCW) design flow to each emergency diesel generator heat exchanger is at least 400 gallons per minute (including 5 percent measurement uncertainties). The supporting diesel calculation MDQ 000 067 2003 142 will be revised to capture the revised values and Tubular Exchanger Manufacturers Association (TEMA) references.	closed	The calculation MDQ 000 067 2003 142 was revised and issued as Revision 3, incorporating TEMA values and references. The calculation includes ERCW minimum flow at 522 gpm at 87F and is greater than 400 gpm plus 5% flow measurement uncertainties.
11	NCO080002001	Probability of prior cycle detection (POPCD) TSC 06-06 01/08/08	TVA will revise SQN's steam generator program to incorporate the methodology for implementation of POPCD as described in Enclosure 1 of this submittal. The program revision will be completed within 45 days following NRC approval of the SQN Unit 2 POPCD TS Change 06-06.	closed	Unit 2 Surveillance Instruction 2-SI-SXI-068-114.3 associated with SG tubing ISI and augmented inspections was revised adding source note C.28.
12	NCO080021003	GL 2008-01 06/06/08	Complete the detailed walkdowns of SQN inaccessible piping sections of GL 2008-01 subject systems prior to startup after the next refueling outage for each unit (Unit 1 Cycle 16, Unit 2 Cycle 16).	closed	Completed piping surveys of SI and RHR cold leg injection piping inside containment up to the secondary check valve. Also completed void volume calculation for suspect piping segments in the SI piping. All measurements reviewed for accuracy and potentially voided segments of a sizable volume.

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13	NCO080021004	GL 2008-01 06/06/08	Complete evaluations of GL 2008-01 subject systems using results of the detailed walkdowns of inaccessible piping sections and submit supplemental responses to NRC documenting completion of the walkdowns and any impact upon the GL 2008-01 response as a result of completed evaluation within 90 days following startup from the listed refueling outages (Unit 1 Cycle 16, unit 2 Cycle 16).	closed	Evaluated void potential volume using walkdown data obtained and spreadsheet calculations (PER 138112 and FE 42912).
14	NCO080021005	GL 2008-01 06/06/08	Complete evaluations of GL 2008-01 subject systems using results of the detailed walkdowns of inaccessible piping sections and submit supplemental responses to NRC documenting completion of the walkdowns and any impact upon the GL 2008-01 response as a result of completed evaluation within 90 days following startup from the listed refueling outages (Unit 1 Cycle 16, unit 2 Cycle 16).	closed	Completed data reduction for Unit 1 piping surveys and spreadsheet calculations (PER 138112 and FE 42912).
15	NCO080021006	GL 2008-01 06/06/08	GL 2008-01 adverse conditions discovered at WBN will be entered into the Corrective Action Program and evaluated for applicability at SQN due to their design and construction similarities.	closed	Talked with WBN personnel and reviewed WBN PER database.
16	NCO081007001	TSC 08-06	Implement SQN station procedures requiring the inspection of each ice condenser within 24 hours of experiencing a seismic event greater than or equal to an Operating Basis Earthquake (OBE) within the five (5) week period after the completion of ice basket replenishment.	closed	Revised Sequoyah Nuclear Plant Abnormal Operating Procedure AOP-N.05, "Earthquake." Added specific guidance regarding the required inspections.

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17	NCO090002001	Confirmatory Order (NRC Office Of Investigation Report No. 2-2007-025) 01/05/09	TVA will ensure that site security procedures for all TVA nuclear sites are revised such that original documents required to be maintained by site security procedures are not destroyed, and are retained in accordance with regulatory requirements.	closed	Revised site security procedures at all three sites to comply with the commitment (SQN SSI 17.1)
18	NCO090002002	Confirmatory Order (NRC Office Of Investigation Report No. 2-2007-025) 01/05/09	As part of first-line supervisory training for security supervisors, TVA will provide fleet-wide training related to Civil Treatment/Ethics, Roles of the Supervisor, Communication in the Workplace, Standards of Conduct, Coaching and Counseling Employees, Operational Issues & Operating Experience, Leadership, Administration, Client Interface/service, Regulatory reporting requirements, safety, & Security Observation Program. Upon completion of TVA's transition to an in-house security force, TVA will ensure that security supervisors receive training consistent with first-line supervisors in other disciplines.	closed	Training completed.
19	NCO090002003	Confirmatory Order (NRC Office Of Investigation Report No. 2-2007-025) 01/05/09	TVA will ensure that security personnel at all TVA nuclear sites receive annual training on the use of TVA's internal programs for resolution of issues/deficiencies (e.g., Corrective Action Program, Employee Concerns program), consistent with training received by TVA personnel requiring unescorted access to the TVA nuclear sites.	closed	Training completed.

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20	NCO090002004	Confirmatory Order (NRC Office Of Investigation Report No. 2-2007-025) 01/05/09	TVA will conduct a minimum of 15 observations of Sequoyah security activities each month, until TVA transitions to an in-house security force.	closed	TVA conducted several observations from 1/1/09 to 7/16/09.
21	NCO090002005	Confirmatory Order (NRC Office Of Investigation Report No. 2-2007-025) 01/05/09	During TVA's transition to an in-house security force, each TVA nuclear site will conduct meetings at a minimum of twice each month with the security contractor, to monitor the status of the corrective actions associated with the Security Independent Evaluation.	closed	Conducted meeting twice a month during transition.
22	NCO090002006	Confirmatory Order (NRC Office Of Investigation Report No. 2-2007-025) 01/05/09	TVA will assess the effectiveness of the corrective actions and enhancements identified in its Security Independent Evaluation, and the results of this follow-up assessment will be factored into the TVA Corrective action Program. TVA agrees to complete the assessment of the effectiveness of the corrective actions and enhancements no later than June 30, 2010.	closed	Completed on June 30, 2010. Verified PERs 146528 and 208856, and Service Request 201793.
23	NCO090002007	Confirmatory Order (NRC Office Of Investigation Report No. 2-2007-025) 01/05/09	Follow-up response to NRC Confirmatory Order (Item h)	closed	TVA letter dated July 30, 2010, was issued satisfying the NRC Confirmation Order.

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24	NCO090009001	Unit 1 Cycle 16 90-day ISI Summary report with a Relief Request (07/24/09)	SQN failed to properly substitute a weld for an inaccessible weld during the Unit 1 Cycle 16 refueling outage. A relief request (RR) is being prepared to request an extension to the first period of the third interval.	closed	TVA submitted the RR on August 28, 2009.
25	NCO090003001	GL 2004-02 (02/23/09)	TVA will complete the SQN in-vessel downstream effects evaluation following issuance of the final NRC Safety Evaluation report (SER) for Topical Report No. WCAP-16793-NP, "Evaluation of Long-Term Cooling Considering Particulate, Fibrous, and Chemical Debris in the Recirculating Fluid." Following completion of the evaluation the results will be submitted to NRC.	in progress	
26	NCO111053319-1	Confirmatory Order (NRC Office Of Investigation Report Nos. 2-2006-025 & 2-2009-003) 12/22/09	Through calendar year 2013, TVA shall conduct "Town Hall"-type meetings at least annually at Sequoyah Nuclear plant with TVA and contractor employees which address topics of interest including a discussion on TVA's policy regarding fostering a safety conscious work environment (SCWE). In the event of the transfer of the operating license of a facility to another entity, if any, the commitments for such facility shall survive any transfer of ownership.	closed (part 1)	To resolve NRC Confirmatory Order, TVA generated a commitment dividing into 4 parts. On May 19 and 20, 2010, the Station updates were conducting at Sequoyah by the Site Vice President. Part of the meetings discussed TVA's and Sequoyah's policy regarding the fostering of a healthy SCWE practice. All employees and contractors were invited and given the opportunity to ask questions. No significant issues or concerns were raised during these meetings.

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27	NCO111053319-2	Confirmatory Order (NRC Office Of Investigation Report Nos. 2-2006-025 & 2-2009-003) 12/22/09	Through calendar year 2013, TVA shall conduct "Town Hall"-type meetings at least annually at Sequoyah Nuclear plant with TVA and contractor employees which address topics of interest including a discussion on TVA's policy regarding fostering a safety conscious work environment (SCWE). In the event of the transfer of the operating license of a facility to another entity, if any, the commitments for such facility shall survive any transfer of ownership.	in progress (part 2)	PERs 212256 and 230725 keep track of this commitment.
28	NCO111053319-3	Confirmatory Order (NRC Office Of Investigation Report Nos. 2-2006-025 & 2-2009-003) 12/22/09	Through calendar year 2013, TVA shall conduct "Town Hall"-type meetings at least annually at Sequoyah Nuclear plant with TVA and contractor employees which address topics of interest including a discussion on TVA's policy regarding fostering a safety conscious work environment (SCWE). In the event of the transfer of the operating license of a facility to another entity, if any, the commitments for such facility shall survive any transfer of ownership.	in progress (part 3)	PERs 212256 and 230725 keep track of this commitment.

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29	NCO111053319-4	Confirmatory Order (NRC Office Of Investigation Report Nos. 2-2006-025 & 2-2009-003) 12/22/09	Through calendar year 2013, TVA shall conduct "Town Hall"-type meetings at least annually at Sequoyah Nuclear plant with TVA and contractor employees which address topics of interest including a discussion on TVA's policy regarding fostering a safety conscious work environment (SCWE). In the event of the transfer of the operating license of a facility to another entity, if any, the commitments for such facility shall survive any transfer of ownership.	in progress (part 4)	PERs 212256 and 230725 keep track of this commitment.

December 30, 2010

Mr. Rodney M. Krich  
Vice President, Nuclear Licensing  
Tennessee Valley Authority  
3R Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

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Sincerely,

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Siva P. Lingam, Project Manager  
Plant Licensing Branch II-2  
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