



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

September 30, 2011

Vice President, Operations
Arkansas Nuclear One
Entergy Operations, Inc.
1448 S.R. 333
Russellville, AR 72802

SUBJECT: ARKANSAS NUCLEAR ONE, UNITS 1 AND 2 - AUDIT OF THE LICENSEE'S
MANAGEMENT OF REGULATORY COMMITMENTS (TAC NOS. ME5709
AND ME5710)

Dear Sir/Madam:

In U.S. Nuclear Regulatory Commission (NRC) Regulatory Issue Summary 2000-17, "Managing Regulatory Commitments Made by Power Reactor Licensees to the NRC Staff," dated September 21, 2000, the NRC informed licensees that the Nuclear Energy Institute (NEI) document NEI 99-04, "Guidelines for Managing NRC Commitment Changes," contains acceptable guidance for controlling regulatory commitments and encouraged licensees to use the NEI guidance or similar administrative controls to ensure that regulatory commitments are implemented and that changes to the regulatory commitments are evaluated and, when appropriate, reported to the NRC.

The NRC Office of Nuclear Reactor Regulation has instructed its staff to perform an audit of licensees' commitment management programs once every 3 years to determine whether the licensees' programs are consistent with the industry guidance in NEI 99-04, and that the regulatory commitments are being effectively implemented.

An audit of Arkansas Nuclear One, Units 1 and 2's (ANO-1 and 2's) commitment management program was performed at the plant site on May 3-4, 2011. Based on the audit, the NRC staff concludes that Entergy Operations, Inc. (the licensee), has implemented NRC commitments on a timely basis, and the licensee has implemented an effective program for managing NRC commitment changes at ANO-1 and 2. The details of the results of the audit, including the NRC staff observations and recommendations, are set forth in the enclosed audit report.

- 2 -

If you have any questions, I can be contacted at (301) 415-1480 or via e-mail at kaly.kalyanam@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "N. Kalyanam", with a horizontal line underneath the name.

N. Kalyanam, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-313 and 50-368

Enclosure:
As stated

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
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AUDIT REPORT BY THE OFFICE OF NUCLEAR REACTOR REGULATION

LICENSEE MANAGEMENT OF REGULATORY COMMITMENTS

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNITS 1 AND 2

DOCKET NOS. 50-313 AND 50-368

1.0 INTRODUCTION AND BACKGROUND

In U.S. Nuclear Regulatory Commission (NRC) Regulatory Issue Summary 2000-17, "Managing Regulatory Commitments Made by Power Reactor Licensees to the NRC Staff," dated September 21, 2000 (Agencywide Documents Access and Management System (ADAMS) Accession No. [ML003741774](#)), the NRC informed licensees that the Nuclear Energy Institute (NEI) document NEI 99-04, "Guidelines for Managing NRC Commitment Changes," contains acceptable guidance for controlling regulatory commitments and encouraged licensees to use the NEI guidance or similar administrative controls to ensure that regulatory commitments are implemented and that changes to the regulatory commitments are evaluated and, when appropriate, reported to the NRC.

The NRC Office of Nuclear Reactor Regulation (NRR) has instructed its staff to perform an audit of licensees' commitment management programs once every 3 years to determine whether the licensees' programs are consistent with the industry guidance in NEI 99-04, and that the regulatory commitments are being effectively implemented.

NEI 99-04 defines a "regulatory commitment" as 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. NRR guidelines direct 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, relief requests, exemptions, etc.) and licensing activities (bulletins, generic letters, etc.). The audit is to be performed every 3 years.

2.0 AUDIT PROCEDURE AND RESULTS

An audit of the Arkansas Nuclear One, Units 1 and 2 (ANO-1 and 2) commitment management program was performed at the plant site on May 3-4, 2011. The audit reviewed commitments made by Entergy Operations, Inc. (Entergy, the licensee) since the previous audit on September 15-16, 2008, which was documented in an audit report dated October 8, 2008

Enclosure

(ADAMS Accession No. ML082730777). The audit consisted of two parts: (1) verification of the licensee's implementation of regulatory commitments that have been completed, and (2) verification of the licensee's program for managing changes to regulatory commitments.

2.1 Verification of Licensee's Implementation of Regulatory Commitments

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

2.1.1 Audit Scope

The audit addressed a sample of commitments, majority of which were made during the review period of approximately the last 3 years. The audit focused on regulatory commitments made in writing to the NRC as a result of past licensing actions (amendments, exemptions, relief requests, etc.) and licensing activities (bulletins, generic letters, etc.). Before the audit, the NRC staff searched the Agencywide Documents Access and Management System (ADAMS) for the licensee's submittals since the last audit and selected a representative sample for verification.

The audit excluded the commitments that are internal to licensee processes such as those that are made on the licensee's own initiative among internal organizational components, those that pertain to milestones of licensing actions/activities, or those made as an internal reminder to take actions to comply with existing regulatory requirements such as regulations,

2.1.2 Audit Results

Entergy has implemented Corporate Procedure EN-LI-110, "Commitment Management Program," which identifies the methods and site organization tools for managing development, review, and implementation of station commitments.

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 verified 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.

The documents furnished by the licensee during the audit included summary sheets providing the status of the commitments and appropriate backup documentation, as needed (i.e., commitment change evaluation form, plant procedures, examination records, and/or other plant documentation). The NRC staff reviewed the documents and summarized the selected commitments information in the audit report.

The NRC staff audit confirmed that the licensee has documented its implementation of regulatory commitments made to the NRC staff as part of past licensing. The NRC staff audit of

the licensee's commitment management program for ANO-1 and 2 did not identify any regulatory commitments that were not satisfied or incorporated into its commitment management program for implementation. The licensee's database was found to be well maintained and the commitments selected for this audit were easily traceable in the database. Licensee personnel were able to demonstrate effective use of the commitment management database and provided status tracking to the applicable implementation document. The NRC staff found that generally, the selected commitments were effectively implemented. Using the Entergy tracking program as a starting point, the NRC staff sought to determine that commitments were implemented in documents such as plant procedures, or in appropriate engineering packages. The attached Audit Summary Table provides details of the audit and its results.

Based on the above, the NRC staff concludes that the licensee has implemented the regulatory commitments management program effectively in accordance with LIC-105, "Managing Regulatory Commitments Made by Licensees to the NRC," and consistent with NEI 99-04.

2.2 Verification of the Licensee's Program for Managing Regulatory Commitment Changes

The primary focus of this part of the audit was to verify that the licensee has established administrative controls for satisfying, modifying, or deleting commitments made to the NRC. The audit should ensure that changes to commitments (modifications or deletions) are evaluated in accordance with the licensee's programs and procedures, that the licensee's technical evaluations adequately justify the change, and that the NRC is informed of commitment changes that have safety or regulatory significance.

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 process used at ANO-1 and 2 is contained in the Entergy Corporate Procedure EN-LI-110. During the current review period, the licensee has not notified of any changes to the commitments already made. Additionally, the sample of commitments reviewed at the audit did not contain any changes.

2.2.1 Audit Results

The licensee carries out its obligations under its regulatory commitments by the processes that are outlined in the procedures. Any changes to the commitments are processed through the established processes and changes are reported to the NRC in accordance with the recommendations of LIC-105. However, no commitment changes were identified during the audit for the commitments included in the scope of review.

The NRC staff concluded that the licensee is following NEI 99-04 guidelines for commitment tracking, commitment changes, and reporting requirements. The staff also found that the traceability of the commitments is an area for additional focus by the licensee. The attached Audit Summary Table provides details of this portion of the audit and its results.

Based on the results of the on-site audit, the NRC staff believes the licensee has implemented regulatory commitment changes appropriately, in accordance with LIC-105 and consistent with

NEI 99-04. However, as a recommendation for enhancing the commitment management system, the NRC staff offered the following.

In the "Commitment List," under the columns titled, "Text," "Comments," and "Status," a short description of the corrective action to be taken, general comments, and the status of the commitment are provided chronologically. While the auditors found that many of these notes contained the author's identity and date, this was not done in a consistent and uniform manner. Many of the notes lacked this information. The auditor is of the opinion that these additions provide a valuable historical background.

3.0 CONCLUSION

Based on the results of the audit, the NRC staff concludes that (1) the licensee had implemented or is tracking for future implementation regulatory commitments; and (2) the licensee had implemented an effective program to manage regulatory commitment changes, in accordance with LIC-105 and consistent with NEI 99-04.

4.0 LICENSEE PERSONNEL CONTACTED FOR THIS AUDIT

Robert Clark
David Bice
Stephanie Pyle

Principal Contributor: N. Kalyanam

Date: September 30, 2011

Attachment:
Summary of Audit Results

Summary of Regulatory Commitment Audit Results Performed on May 3-4, 2011
Arkansas Nuclear One, Units 1 and 2
Entergy Operations, Inc.
Docket Nos. 50-313 and 50-368

TAC No.	Date of Licensee's Letter	ADAMS Accession No.	Commitment		Documents Reviewed	Comments, if any	Status & Date
			No.	Description			
MD9483	7/21/2008	<u>ML082040918</u>	A-18828	Entergy will establish the Technical Specification (TS) Bases for Limiting Condition for Operation (LCO) 3.0.8 as adopted with the applicable license amendment.	LO-LAR-2008-0134-36	Bases Rev. 36 has been updated on receipt of TS Amendment 283.	Closed 5/5/2009.
			A-18829	Entergy will ensure, during the relocation of the TS 3.7.8 snubber requirements to the Technical Requirements Manual (TRM) that the TRM Actions are modified, in accordance with 10 CFR 50.59, to require recognition of the design function of the inoperable snubber (i.e., seismic vs. non-seismic) and implementation of any Tier 2 restrictions each time a required snubber is rendered inoperable.	LO-LAR-2008-0134-36	TRM Rev. 37 has been updated on receipt of TS Amendment 283.	Closed 5/5/2009.
			A-18830	Entergy will revise station procedures or administrative process to ensure seismic risks are considered during application of the LCO 3.0.8 delay period when one or more snubbers are inoperable.	LO-LAR-2008-0134-36	-----	Satisfactory (implemented by controlled documents)
MD5250	4/17/2007	<u>ML071150108</u>	A-18687	Entergy shall review changes to the plant, operational practices, applicable plant and industry operational experience, and, as appropriate, update the of probabilistic risk assessment (PRA) and categorization and treatment processes. Entergy shall perform this review in a timely manner but no longer than once every two refueling outages.	-----	Superseded by Commitment No. A-18755 (see below).	Closed 2/22/2008.
MD5250	2/20/2008	<u>ML080520186</u>	A-18756	The analyses performed in support of R&R activities will follow the requirement in the proposed methodology for crediting operator action.	-----	This Relief Request "has not been and will not be implemented any time in the near future." (see Note (1) at the end)	Open.

TAC No.	Date of Licensee's Letter	ADAMS Accession No.	Commitment		Documents Reviewed	Comments, if any	Status & Date
			No.	Description			
MD4664 and MD4665	4/8/2010	<u>ML100980614</u>	A-18955	Coating inspections will be conducted in the on-going refueling outage for ANO-1.	LO-LAR-2008-0227, CR-ANO-1-2010-00606	During refueling outage (RFO) 1R22 performed the inspection and identified the margin available.	Closed 4/14/2010.
			A-18954	Coating inspections will be conducted in the next refueling outage for ANO-2.	LO-LAR-2008-0227, CR-ANO-1-2011-01098	Walkdown of steam generator (SG) cavities was done during RFO 2R21.	Closed 4/14/2010.
			A-18956	In order to address this condition prior to the end of 2010, the ANO-2 debris generation calculation will be reanalyzed using a primer coating debris that is projected to be conservatively bounding considering the ANO-1 results. The revised analysis will comply with previously reviewed and approved methods, either per Nuclear Energy Institute 04-07 or accepted ANO RAI [request for additional information] responses, or the proposed changes will be discussed with the NRC staff for acceptability prior to their use. Entergy will submit a letter to the NRC reflecting changes to previously submitted information in ANO's supplemental response and RAIs due to the updated debris ZOIs [zones of influence] and will inform the NRC of any changes made to these plans.	LO-LAR-2008-0227	Revised analysis complies with previously reviewed/approved methods. Letter to NRC dated 9/29/2010 (ADAMS Accession No. <u>ML102730943</u>).	Closed. 9/29/2010
			A-18966	The ANO-2 debris generation calculation will be confirmed to be conservative during the next ANO-2 refueling outage.	LO-LAR-2008-0227, EC-28312	Revised analysis complies with approved methods.	Closed 4/4/2010.
			A-18967	Entergy plans to complete any needed modifications before the end of refueling outage 1R24 for ANO-1.	-----	Scheduled completion date is spring 2013.	Open.
			A-18968	Entergy plans to complete any needed modifications before the end of refueling outage 2R22 ANO-2.	-----	Scheduled completion date is fall 2012.	Open.
			ME1328	7/8/2009	<u>ML092050637</u>	A-18908	Any limitation and condition will be evaluated and how they are met will be documented in the implementation package of the revision to the COLSS [core operating limit support system] and CPC [core protection system] setpoints and the cycle-specific COLR [core operating limits report].

TAC No.	Date of Licensee's Letter	ADAMS Accession No.	Commitment		Documents Reviewed	Comments, if any	Status & Date
			No.	Description			
ME0629	2/9/2009	<u>ML090400962</u>	R-18870	The alternative examination proposed by the Relief Request will be completed each ANO-2 refueling outage until the reactor vessel head is replaced.	LO-LAR-2009-00011	Alternative examinations during RFOs 2R22 and 2R23 completed on 9/14/2009 and 3/3/2011, respectively.	Continuing Commitment.
MD9503	4/30/2009	<u>ML091210325</u>	R-18889	ANO-2 will perform a sample test plan similar to the plan described in NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants," Revision 1 for disassembly and inspection of check valves as an alternative to the test frequency required by the OM [ASME Operations and Maintenance] Code (Section 4.1.4). One of the two valves will be leak tested each refueling outage on a rotating basis. If problems are found with the sample valve that results in leakage in excess of the limiting value for operability described in the test procedure, both valves will be tested during the same outage to verify operability.	LO-LAR-2008-00177	Valve No. 2CV-1541-2 was leak tested during RFO 2R20. Valve No. 2CV-1560-2 was leak tested during RFO 2R21.	Continuing Commitment.
ME3128	1/20/2010	<u>ML100210161</u>	A-18949	ANO-1 is in the process of evaluating MRP-146, <i>Materials Reliability Program: Management of Thermal Fatigue in Normally Stagnant Non-Isolable Reactor Coolant System Branch Lines</i> , and these results will be incorporated into the RIS_B Program, as warranted.	LO-LAR-2010-0010	-----	Open.
			A-18950	The request for alternative pertaining to the use of Code Case N-578 will be withdrawn for use at ANO-2 upon NRC approval of the RIS_B Program submittal.		Entergy withdrew the Code Case N-578 alternative on 1/27/2011 (ADAMS Accession No. <u>ML110310533</u>).	Closed 1/27/2011.
			A-18951	Upon approval of the RIS_B Program, procedures that comply with the guidelines described in EPRI [Electric Power Research Institute] TR-112657 will be prepared to implement and monitor the program.		EPRI document guidelines will be prepared and implemented in the 4 th inservice inspection (ISI) interval.	Open.

TAC No.	Date of Licensee's Letter	ADAMS Accession No.	Commitment		Documents Reviewed	Comments, if any	Status & Date
			No.	Description			
MD7178	8/31/2009	<u>ML092530659</u>	A-18923	Entergy will provide the structure limit associated with the most limiting large break LOCA [loss-of-coolant accident] for the ANO-1 enhanced once-through steam generators (EOTSG) as part of the next EOTSG tube inspection report (required by TS 5.6.7) following the completion of the tube in the ANO-1 ETOSGs.	LO-LAR-2010-0081-04	The evaluation done during 1R22 on both SGs, concludes that postulated LOCA loads have no effect on tube integrity.	Closed by letter dated 7/29/2010 (ADAMS Accession No. <u>ML102250418</u>).
	10/26/2009	<u>ML093010329</u>	A-18930	Entergy will verify that the SGs are designed to withstand the loading associated with the worst-case LBLOCA [large break LOCA] and that tube integrity will be maintained for this LBLOCA as verified through implementation of TS 5.5.9, SG Program. The results of the verification shall be provided to the NRC within 30 days thereafter.	AREVA calculation AREVA-10-00083	The AREVA calculation summarizes that the tube integrity is maintained for the tube axial load resulting from LBLOCA long-term differential thermal expansion.	Closed by letter dated 1/26/2010 (ADAMS Accession No. <u>ML100280146</u>).
ME1198 and ME1999	4/27/2009	<u>ML091390436</u>	A-18879 and A-18880	Removal of plant-specific TS requirements will be performed concurrently with the implementation of 10 CFR 26, Subpart I requirements. This commitment will be completed no later than October 1, 2009.	-----	With adoption of TSTF-511, Revision 0, "Eliminate Working Hour Restrictions from TS 5.2.2 to Support Compliance with 10 CFR Part 26," the amendment was implemented 10/1/2009.	Closed 10/1/2009.

TAC No.	Date of Licensee's Letter	ADAMS Accession No.	Commitment		Documents Reviewed	Comments, if any	Status & Date
			No.	Description			
MC8282	9/9/2005	<u>ML052560109</u>	A-18471	As required by Section IV.E of the Order, the final results of the inspections will be provided in the 60-day report submitted to the NRC.	-----	For 2R18 – 11/30/2006 2R19 – 4/22/2008 2R20 – 5/15/2009	Continuing Compliance (see Note (2) at the end).
			A-18472	If the NRC staff finds that the crack-growth formula in MRP-55 is unacceptable, Entergy shall revise its analysis that justifies relaxation of the Order within 30 days after the NRC informs Entergy of an NRC-approved crack-growth formula (ADAMS Accession No. <u>ML060750482</u> , dated 5/17/2006).	LO-LAR-2006-00101	NRC has not approved an alternative crack-growth formula so far, and by default, the formula in MRP-55 seems acceptable so far	Closed.
			A-18473	If Entergy's revised analysis shows that the crack growth acceptance criteria would be exceeded during a single operating cycle, this relaxation is rescinded and Entergy will, within 72 hours, submit to the NRC written justification for continued operation.	-----	No additional RAIs or correspondence have been received from the NRC concerning the analysis methodology, implemented to justify ANO-2 relaxation request. Based on this, all these four commitments are closed.	Closed. 11/28/2011
			A-18474	If the revised analysis shows that the crack growth acceptance criteria would be exceeded during a single operating cycle, Entergy shall, within 30 days, submit the revised analysis for NRC review.	-----		Closed. 11/28/2011
			A-18475	If the revised analysis shows that the crack growth acceptance criteria would not be exceeded during a single operating cycle, Entergy shall, within 30 days, submit a letter to the NRC confirming that its analysis has been revised.	-----		Closed. 11/28/2011
			A-18476	If the NRC staff finds that the crack-growth formula in MRP-55 is unacceptable, any future crack-growth analyses performed for RPV [reactor pressure vessel] head penetrations will be based on the new NRC-acceptable crack growth rate formula.	-----		Closed. 11/28/2011

TAC No.	Date of Licensee's Letter	ADAMS Accession No.	Commitment		Documents Reviewed	Comments, if any	Status & Date
			No.	Description			
ME1488	6/11/2009	<u>ML091620414</u>	A-18901	ANO-1 is in the process of evaluating MRP-146, Materials Reliability Program: Management of Thermal Fatigue in Normally Stagnant Non-Isolable Reactor Coolant System Branch Lines, and these results will be incorporated into the RIS_B Program, if warranted.	-----	Scheduled completion date 6/30/2011.	Open.
			A-18902	Request for Alternative CEP-ISI-007 pertaining to the application of Code Case N-663 will be withdrawn for use at ANO-1 upon NRC approval of the RIS_B Program submittal.	-----	CEP-ISI-007 was withdrawn by the licensee's letter dated 6/21/2010 (ADAMS Accession No. <u>ML101720478</u>).	Closed 6/21/2010.
			A-18904	Upon approval of the RIS_B Program, procedures that comply with the guidelines described in EPRI TR-112657 will be prepared to implement and monitor the program.	-----	Commitment is being researched along with EPRI TR-112657 and documented prior to closing.	Open.
MD7177	10/22/2007	<u>ML073030541</u>	A-18722	Entergy will establish the Technical Specification (TS) Bases for TS 3.7.9, consistent with TSTF-448, Revision 3, as adopted with the applicable license amendment.	-----	With the issuance of TS Bases Revisions 34 and 41 (ANO-1 and 2), the commitment was met.	Closed
			A-18723	The first performance of SR 3.7.9.6, in accordance with Specification 5.5.5.c.(i), shall 15 months be within 15 months of the approval of TSTF- following 448 for ANO-1. SR 3.0.2 will not be applicable amendment to this first performance.	-----	With the addition of License Condition 2.c.(10), to capture the requirements for the first performance of the tests, the commitments were met.	Closed
			A-18724	The first performance of the periodic assessment of CRE [control room envelope] habitability, Specification 5.5.5.c.(ii), shall be within 15 months of the approval of TSTF-448 for ANO-1. SR 3.0.2 will not be applicable to this first performance.	-----		Closed
			A-18725	The first performance of the periodic measurement of CRE pressure, Specification 5.5.5.d, shall be within 15 months of the approval of TSTF-448 for ANO-1. SR 3.0.2 will not be applicable to this first performance.	-----		Closed

TAC No.	Date of Licensee's Letter	ADAMS Accession No.	Commitment		Documents Reviewed	Comments, if any	Status & Date
			No.	Description			
MD7178	-----	-----	-----	The NRC staff reviewed the various submittals listed below related to the License Amendment Request on TS Changes and Analyses Relating to the used of Alternate Source Term and found no commitments made. 1. October 22, 2007 2. April 3, 2008 3. March 13, 2008 4. August 14, 2008 5. September 18, 2008	-----	-----	

Notes:

- (1) Discussed with the NRC staff and concluded that there are no Regulatory Requirements on the implementation of Relief Request or Request for Alternative.
- (2) The 10 CFR 50.55a revision in late 2008 rescinded order EA-03-009. There was no requirement to submit report. By letter dated February 9, 2009 (ADAMS Accession No. ML090400962), ANO-2 submitted a Request for Alternative to the requirements of Code Case N-729-1 for the remainder of the current (3rd) 10-year inservice inspection (ISI) interval and the fourth (4th) ISI interval until the head is replaced for ANO-2.

If you have any questions, I can be contacted at (301) 415-1480 or via e-mail at kaly.kalyanam@nrc.gov.

Sincerely,

/RA/

N. Kalyanam, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-313 and 50-368

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