August 9, 2004

Mark A. Peifer
Site Vice President
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SUBJECT: DUANE ARNOLD ENERGY CENTER - AUDIT OF THE LICENSEE'S MANAGEMENT OF REGULATORY COMMITMENTS (TAC NO. MC3650)

Dear Mr. Peifer:

On May 27, 2003, the U.S. Nuclear Regulatory Commission (NRC) Office of Nuclear Reactor Regulation published Office Instruction LIC-105, "Managing Regulatory Commitments Made by Licensees to the NRC." Office Instruction LIC-105, which is publicly available electronically from the Agencywide Documents Access and Management Systems (ADAMS) Public Electronic Reading Room on the Internet at the NRC web site (Accession Number ML022750041), provides the NRC staff and its stakeholders with a common reference for handling regulatory commitments made by licensees for commercial nuclear reactors to the NRC staff. The guidance is consistent with the industry guidance prepared by the Nuclear Energy Institute (NEI), NEI 99-04, "Guidance for Managing NRC Commitment Changes." Office Instruction LIC-105 specifies that the NRC staff will audit the licensee's commitment management program once every 3 years.

An audit of Duane Arnold Energy Center's (DAEC's) commitment management program was performed on site on June 21 through 25, 2004. Based on the results of this audit, the NRC staff concluded that (1) DAEC properly tracked and implemented regulatory commitments, and (2) DAEC implemented an effective program to manage regulatory commitment changes. Details of the audit are provided in the enclosed audit report.

Sincerely,

/RA/

David P. Beaulieu, Project Manager, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-331

Enclosure: Audit Report

cc w/encl: See next page

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AUDIT REPORT BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REGULATORY COMMITMENTS MADE BY THE LICENSEE TO

THE NUCLEAR REGULATORY COMMISSION

DUANE ARNOLD ENERGY CENTER

DOCKET NO. 50-331

1.0 INTRODUCTION AND BACKGROUND

On May 27, 2003, the U.S. Nuclear Regulatory Commission (NRC) Office of Nuclear Reactor Regulation published Office Instruction LIC-105, “Managing Regulatory Commitments Made by Licensees to the NRC.” Office Instruction LIC-105, which is publicly available electronically from the Agencywide Documents Access and Management Systems (ADAMS) Public Electronic Reading Room on the Internet at the NRC web site (Accession Number ML022750041), provides the NRC staff and its stakeholders with a common reference for handling regulatory commitments made by licensees for commercial nuclear reactors to the NRC staff. The guidance is consistent with the industry guidance prepared by the Nuclear Energy Institute (NEI), NEI 99-04, “Guidance for Managing NRC Commitment Changes.”

Office Instruction LIC-105 defines “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. Office Instruction LIC-105 further directs the Nuclear Reactor Regulation 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 Duane Arnold Energy Center's (DAEC's) commitment management program was performed on site on June 21 through 25, 2004. This audit consisted of two major parts: (1) verification of the licensee’s implementation of NRC commitments, and (2) verification of the licensee’s programs for managing NRC commitment changes.

2.1 Verification of Licensee’s Implementation of NRC Commitments

2.1.1 Audit Scope

The NRC staff reviewed sample of the licensee's commitments that were approved by the NRC to justify a licensing action (amendment, exemption, etc.) or resolve a licensing activity (bulletin,
generic letter, etc.) to evaluate whether the commitments were implemented in a manner that satisfied both the action committed to and the overall intent of the commitment. For commitments that had not yet been implemented, the NRC staff evaluated whether these commitments were being effectively tracked for future implementation by the committed schedule. The NRC staff searched ADAMS for past licensing actions/activities and evaluated

whether the licensee entered associated commitments into their tracking database. The NRC staff evaluated the licensee's implementation of specific regulatory commitments by reviewing licensee commitment management records, work orders, revised procedures, design documents, surveillance histories, and other documentation that could demonstrate that the specific actions were completed in accordance with the stated commitment and schedule. In addition, the NRC staff interviewed cognizant licensee engineering and licensing personnel as necessary to confirm implementation. Each commitment was also evaluated to determine whether the commitment was captured, as appropriate, in an update to the Updated Final Safety Analysis Report.

2.1.2 Audit Results

The specific commitments that were audited are as follows:

Docketed Correspondence	**Regulatory Commitments as Stated in Licensee Submittal**	**Audit Results - Verification of Implementation Status**
DAEC Submittal January 30, 2004 ML040420424 ---------- **NRC Issuance** Amendment 254 June 10, 2004 ML041480049	1. Nuclear Management Company (NMC) has verified that a hydrogen monitoring system capable of diagnosing beyond design-basis accidents is installed at each facility and is making a regulatory commitment to maintain that capability. The hydrogen monitors will be included in the Technical Requirements Manual. This regulatory commitment will be implemented by the implementation date. 2. NMC has verified that an oxygen monitoring system capable of verifying the status of the inerted containment is installed and is making a regulatory commitment to maintain that capability. The oxygen monitors will be included in the Technical Requirements Manual. This regulatory commitment will be implemented by the implementation date.	Commitments are being appropriately tracked (CAP032070) for completion by the committed date of October 15, 2004.
DAEC Submittal March 23, 2004 ML010870296 ---------- **NRC Issuance** Amendment 240 July 31, 2001 ML011660142	1. As part of implementation of this license amendment, NMC will revise the guidelines for the assessment of systems removed from service during handling of irradiated fuel assemblies or Core Alterations at DAEC to implement the provisions of Section 11.3.6.5 of NUMARC 93-01, Rev. 3. 2. The design calculations using the Brockman-Bixler pipe deposition model will be updated to only credit horizontal runs of piping in the next revision of these calculations used to support a DAEC licensing action.	Complete Outage Risk Management Guideline OMG-7 changed as specified. Design calculation performed as specified.

Docketed Correspondence	Regulatory Commitments as Stated in Licensee Submittal	Audit Results - Verification of Implementation Status
DAEC Submittal March 12, 2004 ML040850127 ---------- **NRC Issuance** Relief Authorization April 13, 2004 ML040930429	If there is an unplanned shutdown with a drywell entry before the next refueling outage (currently scheduled to begin in March 2005), another inspection of this mechanical joint will be performed to look for any evidence of leakage.	Complete Item added as a Startup issue to the pre-RFO 19 schedule.
DAEC Submittal May 30, 2003 ML031611045 ---------- **NRC Issuance** Amendment 252 August 8, 2003 ML031750871	1. NMC will develop contingency plans for obtaining and analyzing highly radioactive samples from the reactor coolant system, the suppression pool, and the containment atmosphere. The contingency plans will be contained in the plant technical procedures and implementation will be completed within the 180-day implementation period for the Amendment when approved. Establishment and maintenance of contingency plans are considered a regulatory commitment. 2. The capability for classifying fuel damage events at the Alert level threshold will be established for DAEC at radioactivity levels of 300 µCi/gm dose equivalent iodine. This capability will be described in the emergency plan implementing procedures and implementation will be completed within the 180-day implementation period for the Amendment when approved. The capability for classifying fuel damage events is considered a regulatory commitment. 3. The NMC has developed an I-131 site survey detection capability, including an ability to assess radioactive iodines released to offsite environs by using effluent monitoring systems or portable sampling equipment. The capability for monitoring iodines is maintained within the emergency plan implementing procedures. The capability to monitor radioactive iodines is considered a regulatory commitment. Implementation of this commitment is complete.	Complete Post Accident Sampling and Analysis Procedures, as well as, the Emergency Plan and implementing procedures, were revised. **See further discussion of the item below.**

Docketed Correspondence	Regulatory Commitments as Stated in Licensee Submittal	Audit Results - Verification of Implementation Status
DAEC Submittal April 15, 2003 ML031150414 ---------- **NRC Issuance** Amendment 250 April 16, 2003 ML031070087	For the duration of this temporary TS allowance, NMC commits to not moving irradiated fuel assemblies (or portions thereof) within the secondary containment except as part of performing/supporting Core Alterations in Mode 5 (Refuel).	Complete Plant Manager issued Special Order 03-01 directing plant personnel as stated in commitment.
DAEC Submittal March 11, 2003 ---------- **NRC Issuance** Amendment 243	Single-Failure Proof Reactor Building Crane - Commitment to comply with NUREG-0612.	Complete Commitment reflected in Updated Safety Analysis Report, Section 9.1.4.4.3, and procedure ACP 1408.09, “Control of Heavy Loads.”
DAEC Submittal June 6, 2001	Perform generator load reject and main steam isolation valve closure transient tests required by the Extended Power Uprate Topical Report.	A subsequent DAEC submittal dated Oct. 17, 2001, incorporated commitment as a license condition.
DAEC Submittal May 1, 2001 ML011280096 ---------- **NRC Issuance** Relief Authorization May 7, 2001 ML011280097	DAEC will use Code Case N-S 16-1 in its entirety with the following added limitation: When welding is to be performed on high neutron fluence Class 1 material, then a mockup, using material with similar fluence levels, should be welded to verily that adequate crack prevention measures were used.	Complete DAEC Third Interval Inservice Inspection Plan modified to reflect commitment.

Docketed Correspondence	Regulatory Commitments as Stated in Licensee Submittal	Audit Results - Verification of Implementation Status
DAEC Submittal April 26, 2000 ML003710814 ---------- **NRC Issuance** Amendment 233 August 11, 2000 ML0037411440	Written procedures will be available describing compensatory measures to be taken in the event of an intentional or unintentional entry into Technical Specification 3.7.4 Condition B. As part of this commitment, the following compensatory measures are being added to procedures: a. Verify self-contained breathing apparatus equipment is available for the operating crew to use if determined necessary by the Operations Shift Supervisor in the unlikely event a hazardous environment arises. b. Notify Security Department of any impairment affecting security access control. c. If an impairment exists that precludes maintaining acceptable temperature and humidity in the control room, verify that Technical Specification Condition 3.7.5.D has been entered for inoperable Control Building chillers. d. If an impairment exists that affects fire protection features, verify that applicable requirements of the Fire Plan have been implemented.	Complete Surveillance test procedure appropriately revised.
DAEC Submittal April 12, 1999 ML003672739 ---------- **NRC Issuance** Amendment 230 December 29, 1999 ML003672720	The Corrective Action Program is capable of trending excess flow check valves (EFCV) test failures and determining whether additional testing is warranted. Additionally, we have revised our 10 CFR 50.65 Maintenance Rule Performance Criteria to ensure EFCV performance remains consistent with the extended test interval. The new performance criterion is less than or equal to 1 failure per year on a 3 year rolling average.	Complete Maintenance Rule Performance Criteria changed as stated. EFCV failures appropriately identified and trended.
NRC Issuance NRC Generic Letter 89-08, “Erosion/ Corrosion Inducted Pipe Wall Thinning”	DAEC commitment to establish a Flow Accelerated Corrosion Program.	Verified Licensee established a Flow Accelerated Program. Licensee corrective actions for three though-wall leaks were reviewed and found acceptable.

The NRC staff found that all the above commitments were captured in the licensee's database and that each commitment was implemented as specified or was being appropriately tracked for completion by committed schedule. In addition, the NRC staff found that revised procedures were properly annotated as necessary to refer to commitments.

Notwithstanding, the NRC staff noted one instance in which although the licensee satisfied the specific wording of the commitment (and therefore no violation or deviation from NRC requirements occurred), the NRC staff discussed with the licensee whether the intent of the commitment was fully satisfied. Specifically, as described above, the licensee's letter dated May 30, 2003, includes a commitment that "NMC will develop contingency plans for obtaining and analyzing highly radioactive samples from the reactor coolant system, the suppression pool, and the containment atmosphere." The NRC staff evaluated the licensee's implementation of this commitment and noted that, DAEC Post Accident Sampling Procedure 2.7, "Contingency Reactor Coolant Sampling," Paragraph 2.1 (3), states, "Warning: exposure rates may be 200 Rem/hour or higher in sample sink vicinity during certain post-accident conditions." Similarly, DAEC Post-Accident Sampling Procedure 2.8, "Contingency Torus Water Sampling," Paragraph 2.2 (2) states "Warning: exposure rates may prohibit entry during certain post accident conditions." The NRC Safety Evaluation for this amendment stated, "the NRC staff has found that licensees could satisfy this function by developing contingency plans to describe existing sampling capabilities and what actions (e.g., assembling temporary shielding) may be necessary to obtain and analyze highly radioactive samples from the reactor coolant system, suppression pool, and containment atmosphere." The NRC staff noted that while DAEC's contingency plans reflect exposure rates that would too high to make sampling feasible, they had not evaluated whether the exposure rates would also be too high to allow temporary shielding to be installed. The NRC discussed this concern with the licensee who entered the issue into their corrective action program as Action Request OTH001686.

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

2.2.1 Audit Scope

The NRC staff evaluated whether the licensee appropriately established and implemented controls for modifying or deleting commitments made to the NRC by reviewing the following:

- *Change Control Procedure Verification* --The NRC staff reviewed the licensee's commitment change control procedure to identify and evaluate any differences between the licensee's process and NEI 99-04, "Guidelines for Managing NRC Commitment Changes," which the NRC has reviewed and found acceptable. In particular, the NRC staff evaluated whether the licensee's procedure provided guidance for evaluating proposed commitment changes in terms of safety and regulatory significance and whether criteria were specified for determining when it would be appropriate to notify the NRC of the change.

- *Procedure Implementation Assessment* -- Licensee implementation of their commitment change process was assessed by selecting a sample of commitment changes to verify the changes were evaluated in accordance with their established procedure, that the licensee's technical evaluations adequately justified the change, and that the NRC was informed of commitment changes which had safety or regulatory significance. The NRC

> staff also evaluated the licensee's administrative controls for maintaining commitment "traceability" (e.g., markings or notations within procedures) to ensure that licensee personnel are able to recognize that future changes to the affected design features or operating practices require evaluation of the proposed change in accordance with the commitment change control process.

The NRC staff also evaluated the licensee's administrative controls for maintaining commitment "traceability" (e.g., markings or notations within procedures) to ensure that licensee personnel are able to recognize that future changes to the affected design features or operating practices require evaluation of the proposed change in accordance with the commitment change control process.

2.2.2 Audit Results

The NRC staff evaluated DAEC Administrative Control Procedure (ACP) 102.2, "Procedure for Evaluation of NRC Commitment Changes," Revision 7, against NEI 99-04, "Guidelines for Managing NRC Commitment Changes," which the NRC has reviewed and found acceptable. The NRC staff noted that DAEC procedure ACP 102.2, specifies that when the need for a commitment change arises, an Action Request is written to initiate the preparation of an NRC Commitment Change Evaluation Form which provides a series of questions to justify the change. The NRC staff noted that series of questions listed in DAEC's form align with the series of questions provided in NEI 99-04. After the NRC Commitment Change Evaluation Form is reviewed and approved by the Responsible Manager, Licensing Engineer, and Licensing Manager, the completed form is retained by Licensing for incorporation, as needed, into the periodic 10 CFR 50.59 report to the NRC. DAEC procedure ACP 102.2 specifies that these forms be maintained as a lifetime quality assurance record.

The NRC staff found that, DAEC procedure ACP 102.2, closely follows the guidance of procedure NEI 99-04 in that it establishes the need for identifying, tracking and reporting commitments, and it provides an acceptable mechanism for changing commitments. Additionally, the effectiveness of a procedure can be indicated by the products that are produced by the procedure. As described in Section 2.1 above, the NRC staff found that the licensee had properly addressed each regulatory commitment selected for this audit and that commitment "traceability" was properly maintained.

The specific commitment changes that were audited are as follows:

•DAEC Commitment Submittal Date •Commitment Change No. •Commitment Tracking System No.	Original Commitment Description	Revised Commitment Description	Reason for Change	NRC Informed?
•DAEC Submittal Nov. 21, 1986 ---------- •C96-010	Perform PT (dye-penetrant) exam of the control rod drive return nozzle once every 4 cycles.	Delete commitment	Not required by NUREG 0619, "BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking."	Yes DAEC Letter May 15, 1997
•DAEC Submittal Nov. 21, 1986 & Dec. 16, 1986 ---------- •AR 971798.00 New 9217 ---------- •86121601 & 86112103	Per NUREG 0619, UT control rod drive piping every refueling outage.	Inspect 2 ½ feet of stainless steel control rod drive return line (containing stagnant water) in accordance with NUREG 0313, rev.1, "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping."	Clarification of commitment	Yes DAEC Letter Nov. 19, 1998
•DAEC Submittal Aug. 25, 1992 ---------- •AR 28099 ---------- •9008250102	Provide 80 hours of simulator training per year for licensed operator requalification	Provide a minimum of 60 hours of simulator training per year for licensed operator requalification	60 hours minimum is per INPO 86-025, and will allow for better quality training.	Yes DAEC Letter Oct. 20, 2003
•DAEC Submittal May 14, 1986 ---------- •AR 28100 ---------- •8605140101	All shift technical advisors (STAs) must complete a 42 week hot license training course.	All STAs must complete an STA training course.	Allow STA candidate to concentrate on integrated plant knowledge rather than operator skills (panel skills).	Yes DAEC Letter Oct. 20, 2003

•DAEC Commitment Submittal Date •Commitment Change No. •Commitment Tracking System No.	Original Commitment Description	Revised Commitment Description	Reason for Change	NRC Informed?
•DAEC Submittal June 15, 1992 ---------- •AR 972471.00 New 9940 ---------- •9206150105	Accelerated testing provision for station blackout diesel generators.	Delete provision for accelerated testing.	NRC Generic Letter 94-01, "Removal of Accelerated Testing and Special Reporting Requirements for Emergency Diesel Generators," allows deletion due to Maintenance Rule.	Yes DAEC Letter Nov. 19, 1998
•DAEC Submittal July 27, 1976 ---------- •OTH025760 ---------- •7607270201	Inspect condensate storage tank (CST) level element probes every 4 years.	Eliminate the required inspection	The inspections performed over the last 15 years have found no indication of algae growing on the probes. Also the surveillance test procedure performed quarterly to functionally check the CST level (low) instrumentation will indicate problems with the probes from algae or cable degradation.	No NRC notification required.

•DAEC Commitment Submittal Date •Commitment Change No. •Commitment Tracking System No.	Original Commitment Description	Revised Commitment Description	Reason for Change	NRC Informed?
•DAEC Submittal June 29, 1990 ---------- • AR 14671 ---------- •199006290508	Require the preparation of comparisons of current reference values to original pump curves for ASME program pumps and require a yearly comparison of current pump performance to the original pump curves for ASME program pumps.	Require comparisons of current reference values to original pump curves for ASME program pumps before accepting the reference value.	A favorable comparison, performed by the inservice test engineer indicates the pump is in good condition and reasonably conforms to the manufacturer's design and test data. This is a good practice activity and has no ASME nor code compliance aspect. Yearly trending by the System Engineer is not necessary.	No NRC notification required.

3.0 CONCLUSION

The NRC staff concluded that based on the above audit (1) the licensee properly tracked and implemented regulatory commitments, and (2) the licensee implemented an effective program to manage regulatory commitment changes.

4.0 LICENSEE PERSONNEL CONTACTED FOR THIS AUDIT

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