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0CAN050802

May 8, 2008

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: Three Month Response to Generic Letter 2008-01
"Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems"
Arkansas Nuclear One, Units 1 and 2
Docket Nos. 50-313, 50-368, and 72-13 (ISFSI)
License Nos. DPR-51 and NPF-6

REFERENCE:
1. Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems", dated January 11, 2008 (0CNA010801)
2. Entergy letter dated April 10, 2008, "Request for Extension to the 3 Month Response to Generic Letter 2008-01" (0CAN040802)

Dear Sir or Madam:

The U. S. Nuclear Regulatory Commission (NRC) issued NRC Generic Letter (GL) 2008-01 (Reference 1) to request that each licensee evaluate its emergency core cooling, decay heat removal, and containment spray systems licensing basis, design, testing, and corrective actions to ensure that gas accumulation is maintained less than the amount that challenges operability of these systems, and that appropriate action is taken when conditions adverse to quality are identified.

The GL requested each licensee to submit a written response in accordance with 10 CFR 50.54(f) within nine months of the date of the GL to provide the following information:

a. A description of the results of evaluations that were performed pursuant to the requested actions of the GL. This description should provide sufficient information to demonstrate that you are or will be in compliance with the quality assurance criteria of Sections III, V, XI, XVI, and XVII of Appendix B to 10 CFR Part 50 and the licensing basis and operating license as those requirements apply to the subject systems of the GL;

b. A description of all corrective actions, including plant, programmatic, procedure, and licensing basis modifications that you determined were necessary to assure compliance with these regulations; and,

c. A statement regarding which corrective actions were completed, the schedule for completing the remaining corrective actions, and the basis for that schedule.

Additionally, the NRC requested that if a licensee cannot meet the requested response date, the licensee "shall provide a response within 3 months of the date of the GL". In the 3-month response, the licensee was requested to provide the described alternative course of action that it proposes to take, including the basis for the acceptability of the proposed alternative course of action.

In discussions between the industry and the NRC, there appeared to have been some confusion as to the need to perform walkdowns as part of the response to the GL. As part of the clarifications, the NRC provided guidance on requesting an extension to the due date for the 3-month response described above.

In Reference 2, Entergy formally requested an additional 30 days to complete the 3-month response for Arkansas Nuclear One (ANO). The basis for this extension was the unanticipated additional action(s) (i.e., completion of system walkdowns). The NRC verbally accepted the request and changed the due date for the 3-month response to be May 11, 2008.

The attachments to this letter contain the 3-month response to the requested information in GL 2008-01 for ANO-1 and ANO-2.

This submittal contains several commitments that are contained in Attachment 3 to this submittal.

Should you have any questions regarding this report, please contact me.

I declare under penalty of perjury that the foregoing is true and correct. Executed on May 8, 2008.

Sincerely,

Dale E. James

DEJ/rwc

Attachments: 1 ANO-1 Response to NRC GL 2008-01
2 ANO-2 Response to NRC GL 2008-01
3 List of Regulatory Commitments

cc: Mr. Elmo E. Collins
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U. S. Nuclear Regulatory Commission
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Attachment 1 to

0CAN050802

ANO-1 Response to NRC GL 2008-01

ANO-1 Response to GL 2008-01

This response discusses:

- The required evaluations that will not be complete by October 11, 2008 (nine months from the date of GL 2008-01).
- The alternative course of action planned.
- The basis for the acceptability of the alternative course of action.

For Arkansas Nuclear One, Unit 1 (ANO-1), the following emergency core cooling systems and decay heat removal systems are considered within the scope of GL 2008-01:

- **High Pressure Injection (HPI) System** (also used continuously for normal Reactor Coolant System (RCS) make-up and seal injection)
- **Building Spray System (BS)**
- **Decay Heat Removal (DH)/Low Pressure Injection (LPI) System**

The performance of an in-field inspection of the HPI, BS, and DH system piping slope is not considered to be a necessary part of the ANO-1 evaluations at this point in time. This is due to the methodology used to vent these systems post outage, on-going inspections to verify solid water in the DH and HPI systems, quarterly surveillance testing on DH and BS, and periodic HPI train swaps.

Verification of vent valves will require less rigorous reactor building walkdowns of the affected piping systems. Since portions of the above systems are inaccessible or high dose areas during power operations, an outage is required to complete the response to the GL.

ANO-1 has a refueling outage scheduled during the fall and early winter of 2008 (1R21) and will complete any remaining walk downs and inspections during that outage. Therefore, the full scope of the required evaluations and any resultant corrective actions will not be complete prior to the requested nine month GL response date.

The ANO-1 venting methodology consists of the following actions for each system:

DH/LPI System

Suction piping from the RCS is vented after decay heat operation is secured during plant heat up. With RCS pressure between 200 and 300 psig, the high point is vented multiple times in conjunction with leak checks of the upstream isolation valves. Follow-up one time NDE has confirmed solid water at the vent location. Portions of the DH pump discharge and suction piping are maintained full via DH operation during quarterly surveillances, which circulates water from and to the Borated Water Storage Tank (BWST). Reactor building (RB) low pressure injection (LPI) lines are also maintained full via DH operation and subsequently by periodic pressure monitoring and injection header depressurization events, i.e. blow downs. Analysis has been performed to confirm an acceptable range of blow down times to maintain system

operability in the presence of a small gas void. These estimated times currently and historically indicate little or no gas voiding.

BS System

Portions of the BS pump discharge and suction piping are maintained full via BS operation during surveillances, which circulates water from and to the BWST. Reactor building BS piping water level is maintained via quarterly stroke tests of the injection valves with the elevation head of the BWST applied.

HPI System (Also the Make-up and Purification System (MU&P))

One train of the HPI system is in service at all times to supply make-up and seal injection water to the Reactor Coolant System (RCS). The opposite redundant train is configured for HPI only. Train swaps are periodically performed for pump surveillances via the normal make-up path. Due to these train swaps and continuous operation, the HPI system suction and discharge piping is maintained solid water. For critical piping not in this flow path such as the piggyback lines, there are procedural fill and vent instructions. A non-destructive examination (NDE) is periodically performed to verify that nitrogen is not back leaking into one of the HPI discharge lines. No gas voiding has been noted since these inspections started in 2005.

ANO-1 does not anticipate making any physical changes to these systems due to this GL. ANO-1 will perform the vent valve walkdowns and complete the Engineering reviews of the venting methods on the normally accessible portions of the above systems by October 11, 2008.

The vent valve walkdown of the inaccessible portions of the systems will be completed during the refueling outage. The Engineering reviews of these portions of the systems will be completed by February 26, 2009. Additional walkdowns deemed necessary based on the Engineering reviews will be implemented in the fall 2008 ANO-1 outage. The GL 2008-01 requested information will be submitted to the NRC by March 26, 2009.

Attachment 2 to

0CAN050802

ANO-2 Response to NRC GL 2008-01

ANO-2 Response to NRC GL 2008-01

This response discusses:

- The required evaluations that will not be complete by October 11, 2008 (nine months from the date of GL 2008-01).
- The alternative course of action planned.
- The basis for the acceptability of the alternative course of action.

For Arkansas Nuclear One Unit 2 (ANO-2), the following emergency core cooling systems and decay heat removal systems are considered within the scope of GL 2008-01:

- **High Pressure Safety Injection (HPSI) System**
- **Low Pressure Safety Injection (LPSI) System** (both Main Injection and Shutdown Cooling Modes)
- **Containment Spray (CS) System** (both Spray and Shutdown Cooling Modes)

The performance of an in-field inspection of the system piping is considered to be a necessary part of the ANO-2 evaluations. Since portions of the above systems are inaccessible or high dose areas during power operations, an outage is required to complete the response to the GL.

ANO-2 had a refueling outage in the spring of 2008. Originally ANO-2 had not anticipated having to perform walkdowns to respond to the GL. Once the clarification was provided by the NRC, there wasn't sufficient time to erect the necessary scaffolding to reach portions of the ECCS piping.

The next refueling outage is scheduled during the fall of 2009 (2R20) and ANO-2 will perform the necessary walkdowns and inspections during that outage. Therefore, the full scope of the required evaluations and any resultant corrective actions will not be complete prior to the requested nine month GL response date.

To date ANO-2 has installed a HPSI Pressurization System (HPS) modification to maintain HPSI header pressures above Safety Injection Tank (SIT) pressures in order to eliminate nitrogen gas intrusion into the HPSI system. ANO-2 does not anticipate making additional physical changes to these systems due to this GL.

Quarterly surveillances are conducted on both the HPSI and LPSI systems to ensure that gas intrusion from the SITs is effectively controlled. Voids, when identified, are vented; however, since installation of the HPS modification no voids have been detected.

ANO-2 will perform the walkdowns and complete the evaluations of the normally accessible portions of the above systems by October 11, 2008. ANO-2 will complete the walkdown of the inaccessible portions of the systems during the next refueling outage and complete the evaluations of these portions of the systems by December 30, 2009. The GL 2008-01 requested information will be submitted to the NRC by January 28, 2010.

Attachment 3 to

0CAN050802

List of Regulatory Commitments

LIST OF REGULATORY COMMITMENTS

The following table identifies those actions committed to by Entergy in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

COMMITMENT	TYPE (Check one)		SCHEDULED COMPLETION DATE
	ONE-TIME ACTION	CONTINUING COMPLIANCE	
ANO-1 will perform the vent valve walkdowns and complete the Engineering reviews of the venting methods on the normally accessible portions of the HPI, BS, and DH/LPI systems.	✓		October 11, 2008
ANO-1 will perform the vent valve walkdowns of the inaccessible portions of the HPI, BS, and DH/LPI systems.	✓		During 1R21
ANO-1 will complete the Engineering reviews of the inaccessible portions of the HPI, BS, and DH/LPI systems.	✓		February 26, 2009
Entergy will submit the GL 2008-01 requested information for ANO-1.	✓		March 26, 2009
ANO-2 will perform the walkdowns and complete the evaluations of the normally accessible portions of the HPSI. LPSI and CS systems.	✓		October 11, 2008
ANO-2 will perform the walkdowns of the inaccessible portions of the HPSI, LPSI and CS systems.	✓		During 2R20
ANO-2 will complete the evaluations of the inaccessible portions of the HPSI, LPSI and CS systems.	✓		December 30, 2009
Entergy will submit the GL 2008-01 requested information for ANO-2.	✓		January 28, 2010