



Nebraska Public Power District

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NLS2009094
December 17, 2009

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Subject: Response to Request for Additional Information Regarding Nebraska Public Power District's Nine-Month Response to NRC Generic Letter 2008-01 Cooper Nuclear Station, Docket No. 50-298, DPR-46

- References:**
1. Letter from Carl F. Lyon, U.S. Nuclear Regulatory Commission, to Stewart B. Minahan, Nebraska Public Power District, dated November 3, 2009, "Cooper Nuclear Station – Request for Additional Information Re: Response to Generic Letter 2008-01, Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems (TAC No. MD7815)"
 2. Letter from Stewart B. Minahan, Nebraska Public Power District, to the U.S. Nuclear Regulatory Commission, dated October 10, 2008, "Nine-Month Response to NRC Generic Letter 2008-01, Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems"

Dear Sir or Madam:

The purpose of this letter is for the Nebraska Public Power District (NPPD) to submit a response to the Nuclear Regulatory Commission (NRC) Request for Additional Information (RAI) dated November 3, 2009 (Reference 1). The additional information requested is in support of the NRC review of NPPD's response to NRC Generic Letter 2008-01 for Cooper Nuclear Station submitted by letter dated October 10, 2008 (Reference 2).

The response to the RAI is provided in the attachment to this letter.

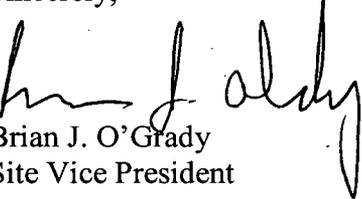
Should you have any questions regarding this submittal, please contact David Van Der Kamp, Licensing Manager, at (402) 825-2904.

A134
NRR

I declare under penalty of perjury that the foregoing is true and correct.

Executed On 12/17/09
(Date)

Sincerely,



Brian J. O'Grady
Site Vice President

/dm

Attachment

cc: Regional Administrator w/ attachment
USNRC - Region IV

Cooper Project Manager w/ attachment
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector w/ attachment
USNRC - CNS

Nebraska Health and Human Services w/ attachment
Department of Regulation and Licensure

NPG Distribution w/ attachment

CNS Records w/ attachment

Attachment

**Response to Request for Additional Information
Regarding Nine-Month Response to NRC Generic Letter 2008-01, "Managing Gas
Accumulation in Emergency Core Cooling, Heat Removal, and Containment Spray
Systems"**

Cooper Nuclear Station, Docket No. 50-298, DPR-46

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the information provided by Nebraska Public Power District (the licensee) for Cooper Nuclear Station (CNS) in its letter dated October 10, 2008, as revised by letters dated March 2 and May 7, 2009, and determined that additional information is necessary to determine that the licensee has acceptably demonstrated "that the subject systems are in compliance with the current licensing and design bases and applicable regulatory requirements, and that suitable design, operational, and testing control measures are in place for maintaining this compliance," as stated in NRC Generic Letter (GL) 2008-01.

Guidance on NRC staff expectations is provided by Reference 1, which is generally consistent with the Nuclear Energy Institute (NEI) guidance provided to industry in Reference 2, as clarified in later NEI communications. The NRC staff recommends that the licensee consult Reference 1 when responding to the following questions:

NRC Question No. 1

Discuss the control and revision of work packages due to change in maintenance work scope, including review and reauthorization of the package and any new temporary changes.

Nebraska Public Power District (NPPD) Response

Work packages are prepared by the Planning department in accordance with administrative work control procedures that consider the plant operating mode, Technical Specification (TS) requirements, and overall risk. The work packages are reviewed and approved by appropriate groups such as operations, engineering and maintenance.

Work packages are revised whenever changes in work scope are identified. Work package revisions follow the same review and approval processes as stated previously. This would include changes to system boundaries controlled by the Operations department (Operations).

Temporary changes to the plant to support operation are controlled by a specific process procedure, reviewed by appropriate departments, including Operations, and approved before implementation. Temporary changes to the plant are tracked by Operations in a temporary change log. Temporary plant alteration to support maintenance is controlled

by procedure and is reviewed by appropriate departments as part of the work package before implementation.

Inadvertent draining of a system is minimized by the use of approved work instructions and procedures, and by qualified plant personnel trained and authorized to operate plant equipment. System boundaries are protected by clearance orders (tagouts) controlled by Operations and established based on Maintenance Shop and Operations review.

As part of system restoration, the work package identifies steps for Operations to remove the clearance order and steps to restore the system using the system procedure to fill and vent an applicable section or the whole system as appropriate. Any air, or other gas introduced into the system as a result of maintenance would occur within the controlled tagged boundary and would be vented out as part of the restoration by Operations. In some cases, depending on the maintenance activity boundaries and relative location, fill and venting may include additional system piping. Ultrasonic Testing (UT) is performed based on the appropriate fill and vent procedure.

The Emergency Core Cooling System (ECCS) pumps are subject to static head on the suction piping from suppression pool level being maintained at TS required limits. The ECCS discharge piping is maintained at positive pressure by the keep-fill system. Under these conditions, system piping is at a positive pressure and any system boundary leaks would be noticeable. This reduces the likelihood of pulling air into the system due to a vacuum.

NRC Question No. 2

Briefly describe the monitoring of pump operation in all modes and specialized monitoring of appropriate plant parameters during shutdown operations.

NPPD Response

ECCS operation at Cooper Nuclear Station (CNS) is controlled by various operating, alarm/abnormal/emergency, and surveillance procedures. These procedures control aspects of ECCS pump operation during the various modes of plant operation at CNS, including shutdown operations.

Operating procedures at CNS contain guidance on pump operating limits, expected operating indications, as well as guidance on the pump operation in various system modes. Detailed guidance is provided to ensure the system is properly filled and vented after maintenance. Core Spray (CS) system and Residual Heat Removal (RHR) system operating procedures contain directions to perform UT of select piping locations to ensure the system is properly filled and vented as part of restoration after maintenance. High Pressure Coolant Injection system (HPCI) has a high point vent, but is not readily accessible for UT.

Procedure sections containing details for placing the system in standby line up ensure the pump is aligned for automatic operation. Other procedure sections provide guidance on how to operate the pump within various system operating modes, e.g., RHR system in its injection mode, test mode, shutdown cooling mode, etc.

Prior to system operation, the CNS procedure for shutdown cooling requires the piping on both suction and discharge lines be vented and flushed via a positive pressure above atmospheric to remove potential gas accumulation. Reactor Pressure Vessel water level, temperature, and system response are monitored as directed by CNS procedures for proper operation.

Alarm/abnormal/emergency procedures at CNS provide guidance for system operation during anticipated events. For example, alarm procedures provide guidance for a loss of system keep-fill. An abnormal procedure provides detailed guidance to address an inadvertent initiation of the pump. Other procedures provide guidance for system operation when directed by the appropriate emergency operating procedure.

Surveillance procedures at CNS provide guidance to routinely test ECCS pumps to ensure they can meet their design requirements. Some surveillance procedures ensure the pump is in a standby line up by checking valve position. Others ensure the pump/system is properly filled. Still others test the pump at simulated design conditions. Similar to operating procedures, surveillance procedures also contain guidance on pump operating limits, expected operating indications, as well as acceptance criteria that must be met. The acceptance criteria are primarily based on design requirements, Inservice Testing program guidelines, and TS requirements. Meeting acceptance criteria ensures the pump/system can perform its safety function. Pump and system performance that does not meet the established acceptance criteria is identified in a condition report which is assessed for operability and processed through the Corrective Action Program (CAP).

NRC Question No. 3

In several sections of the response, the licensee mentioned that procedures will be revised in order to incorporate the use of ultrasonic testing (UT) in assuring the in-scope systems are filled. Please expound further on how and where UT will be used to ensure said systems are filled.

NPPD Response

Procedures were revised to include UT of specific accessible system high points. For the CS system, UT was added to the system fill and vent section for both divisions to check the pump suction piping in the vertical section from the condensate storage tank. The UT check would assure no air was trapped under the stop valve which could be pulled into the pump suction after pump start. In Division 1, UT was added to the existing system high point vent near the CS injection valve. The CS Division 2 injection piping is not readily accessible due to high radiation area concerns.

A change to the fill and vent procedure for RHR Division 2 added UT under the high point vent valve near the keep-fill connection. RHR Division 1 and HPCI don't have a similar high point vent readily accessible for UT.

The monthly surveillance procedure was revised to perform UT at the CS Division 1 injection line high point vent and the RHR Division 2 high point vent. The procedure states that if a gas void is identified by the UT, that the gas void is vented out and the UT be performed again to validate the gas void is removed.

Identified voids are documented in CAP. The individual conditions are assessed for past operability if the void has already been removed and current operability if it is impractical to remove the void.

NRC Question No. 4

Training was not identified in the GL (Reference 3) but is considered to be a necessary part of applying procedures and other activities when addressing the issues identified in the GL as the licensee has recognized. Please provide a brief description of training.

NPPD Response

Operations training is performed on filling and venting as part of regular operator training and as refresher training prior to each outage. The training material focused mainly on the mechanics of filling, venting, and draining. For fill and vent procedure revisions, the changes to address potential gas accumulation have been minor, and have been considered enhancements.

Engineering Support Personnel Continuing Training was performed to cover the background on new plant modifications, which included the new vent valves added to address gas accumulation concerns.

NPPD is an active participant in the Nuclear Energy Institute (NEI) Gas Accumulation Team (GAT). NEI GAT is currently coordinating with Institute of Nuclear Power Operations (INPO) to develop generic training modules for gas accumulation and the fundamentals to be considered for gas management. These training modules are planned to target Engineering, Operations, and Maintenance disciplines.

Consistent with industry practices, NPPD evaluates INPO training modules for applicability to CNS once the INPO training modules are completed and become available to the industry. If determined to be applicable, the INPO training modules are further tailored and scheduled for presentation to appropriate CNS departments utilizing the CNS training evaluation request process.

NRC RAI References

1. *Ruland, William H., U.S. Nuclear Regulatory Commission, letter to James H. Riley, Nuclear Energy Institute, "Preliminary Assessment of Responses to Generic Letter 2008-01, 'Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems,' and Future NRC Staff Review Plans," May 28, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML091390637).*
2. *Riley, James H., Nuclear Energy Institute, letter to Administrative Points of Contact, "Generic Letter (GL) 2008-01, 'Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems,' Evaluation and 3 Month Response Template," Enclosure 2, "Generic Letter 2008-01 Response Guidance," March 20, 2008.*
3. *Case, Michael J., U.S. Nuclear Regulatory Commission, letter to All Holders Of Operating Licenses For Nuclear Power Reactors, "NRC Generic Letter 2008-01: Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems," January 11, 2008 (ADAMS Accession No. ML072910759).*
4. *Minahan, Stewart B., Nebraska Public Power District, letter to U.S. Nuclear Regulatory Commission, "Nine-Month Response to NRC Generic Letter 2008-01," October 10, 2008 (ADAMS Accession No. ML082890161).*
5. *O'Grady, Brian J., Nebraska Public Power District, letter to U.S. Nuclear Regulatory Commission, "Revision to Commitment Made in Nine-Month Response to NRC Generic Letter 2008-01," May 7, 2009 (ADAMS Accession No. ML091340024).*
6. *U.S. Nuclear Regulatory Commission, NRC memorandum, "Revision 2 to NRC Staff Criteria for Gas Movement in Suction Lines and Pump Response to Gas," March 26, 2009 (ADAMS Accession No. ML090900136).*

Correspondence Number: NLS2009094

The following table identifies those actions committed to by Nebraska Public Power District (NPPD) in this document. Any other actions discussed in the submittal represent intended or planned actions by NPPD. They are described for information only and are not regulatory commitments. Please notify the Licensing Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITMENT NUMBER	COMMITTED DATE OR OUTAGE
None	N/A	N/A