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OPPD
Omaha Public Power District

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June 28, 2007
LIC-07-0062

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

References:
1. Docket No. 50-285
2. Letter from NRC (A. Vegel) to OPPD (R. T. Ridenoure) dated March 2, 2007 (NRC-07-0020)
3. Letter from NRC (B. S. Mallett) to OPPD (R. T. Ridenoure) dated May 29, 2007 (NRC-07-064)

SUBJECT: NRC Inspection Report 05000285/2006018, Reply to a Notice of Violation (NOV) EA-07-047

In Reference 3, the NRC transmitted a Notice of Violation (NOV) to the Omaha Public Power District (OPPD). The NOV resulted from maintenance activities on Containment Spray Header Isolation Valve HCV-345 that caused the valve to be installed in the wrong orientation. In the attachment to this letter, OPPD has provided a reply to the NOV.

Based on the criteria provided in the NRC Inspection Manual Chapter 0609, "Significance Determination Process," Attachment 2, "Process for Appealing NRC Characterization of Inspection Findings," it appears that OPPD has no basis for appeal of this NOV since the NRC has documented the basis for their conclusions. While communication and interaction between NRC and OPPD on this issue were generally very good, there was a lapse in communication effectiveness at a critical point in the process.

The NRC provided the preliminary assessment of the safety significance of this finding in Reference 2. The preliminary safety significance assessment indicated an increase in core damage frequency (CDF) for internal events of 5.7E-6/year, or "White" for safety significance. Following receipt of the preliminary assessment, OPPD requested a regulatory conference which was held on April 16, 2007. During preparations for the regulatory conference, there was significant open communication between OPPD and the NRC. In Reference 2, the NRC clearly identified those areas where OPPD and the NRC agreed and those areas where there was disagreement. It was also clear in Reference 2 that in preparing for the regulatory conference, OPPD should concentrate efforts on those areas of disagreement.

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At the regulatory conference, OPPD provided the probabilistic risk assessment (PRA) model for two dominant scenarios previously discussed with the NRC. The safety significance assessment conducted by OPPD determined the event to be 4.2E-7/year, or "Green" for safety significance. In Reference 3 the NRC disagreed with OPPD and concluded the safety significance as 5.7E-6/year, or "White." Based on Reference 3, it appears that the NRC changed position on some of the initial areas of agreement with OPPD noted in Reference 2. Had OPPD known that the NRC disagreed with the position on those areas, information would have been presented at the regulatory conference to support OPPD's position.

OPPD is supportive of NRC's intent that the Reactor Oversight Process (ROP) should be predictable and repeatable. OPPD is considering working with the Nuclear Energy Institute (NEI) to improve the ROP such that similar situations can be avoided in the future.

This letter does not contain any regulatory commitments. If you should have any questions, please contact me.

Sincerely,

J. A. Reinhart
Site Director
Fort Calhoun Station

JAR/dkg

Attachment

c: B. S. Mallet, NRC Regional Administrator, Region IV
A. B. Wang, NRC Project Manager
L. M. Willoughby, NRC Senior Resident Inspector
Winston & Strawn

REPLY TO A NOTICE OF VIOLATION

Omaha Public Power District
Fort Calhoun Station

Docket No. 50-285
License No. DPR-40
EA-07-047

During an NRC inspection completed on February 13, 2007, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, this violation is listed below:

> **10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, that activities affecting quality shall be prescribed by documented instruction, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings.**
>
> **Contrary to the above, in May 2005, Fort Calhoun Station personnel accomplished maintenance activities without procedures appropriate to the circumstances. Specifically, the licensee performed maintenance and post-maintenance activities on Containment Spray Header Isolation Valve HCV-345 using procedures that were not appropriate to the circumstances because the procedures did not require actions to verify the correct orientation of the valve. As a result, the valve was installed in the wrong orientation during maintenance, and post-maintenance testing did not detect the improper reassembly prior to returning the valve to service. This failure caused one train of the Containment Spray system to be inoperable from May 11, 2005 to September 9, 2006.**
>
> **This violation is associated with a White SDP finding.**

OPPD Response

1. Reason for the Violation

On three separate occasions during the 2005 refueling outage, the containment spray header isolation valve, HCV-345, was removed from the system, disassembled, reassembled, and returned to the system. The activities performed during and following the maintenance did not identify the valve internals had been reassembled incorrectly. Due to the incorrect assembly, when the valve actuator and remote position indication indicated closed, the valve was open. The valve was approximately 80% closed. The valve is known to have been operating correctly prior to the 2005 outage. In November 1990, an air pressure test of the HCV-345 demonstrated that actual valve position matched indicated position. A review of the maintenance records concluded HCV-345 was not removed from the system between 1990 and 2005.

Technical Specifications require the containment spray pumps and associated valves to be operable. HCV-345 is associated with the containment spray pumps and is required to function during accident conditions. The design basis analysis assumes the spray valves will be fully open when necessary. A partially open spray valve would not allow the flow rate used in the design basis accident analysis. Therefore, HCV-345 was not capable of performing its specified function and was not operable.

A root cause analysis of these events was completed. As a result, Fort Calhoun Station (FCS) determined that the maintenance procedure allowed flexibility of performing selected portions of the procedure without providing adequate annotation of risk important steps that could impact the final valve alignment. In addition, reliance on the procedure used to conduct the maintenance without detailed acceptance criteria or verifications to ensure proper valve operation resulted in a failure of the post maintenance test process to identify the error in assembly of the valve.

2. Corrective Steps Taken and Results Achieved

The safety related air operated ball and butterfly valves, that are not containment isolation valves, were identified. Any risk important steps that require annotation and second verification were identified. Post maintenance testing was verified to ensure appropriate criteria exists.

In addition, the procedure for the inspection and repair of these control valves has been revised to include the following:

1) Manufacturer's index marks were referenced and the directions to add additional match marks during disassembly were removed.
2) Specific acceptance criteria on verifying the valve open or closed as part of final reassembly and annotating these steps as post maintenance test steps was included.
3) The format of the procedure was changed to allow partial performance, such as packing replacement.
4) Risk important steps (such as verification of valve position, i.e., post maintenance test) were annotated and the procedure included a second verifier for these steps.

In addition, enhancements were made to the training provided to individuals performing maintenance on HCV-345. The steamfitter mechanic training program master plan was revised to include just-in-time training prior to outages where HCV-345 is going to be disassembled. FCS has also acquired a mock-up of the HCV-345 valve for use in training personnel.

3. Corrective Steps That Will Be Taken To Avoid Further Violations

Corrective actions to prevent recurrence have been completed as noted above. Further enhancements may be implemented by the corrective action system.

4. The Date When Full Compliance Will Be Achieved

Fort Calhoun Station is currently in full compliance.