Omaha Public Power District
444 South 16th Street Mall
Omaha, NE 68102-2247

LIC-11-0084
August 17, 2011

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

References:
1. Docket Number 50-285
2. Letter from NRC (K. M. Kennedy) to OPPD (D. J. Bannister) dated May 6, 2011 (NRC-11-0041)
3. Regulatory Conference with Omaha Public Power District (OPPD) at the NRC Region IV Headquarters, Arlington TX, held on June 2, 2011
4. Letter from NRC (E. E. Collins) to OPPD (D. J. Bannister) dated July 18, 2011 (NRC-11-0076)

SUBJECT: NRC Inspection Report 05000285/2011007, Reply to a Notice of Violation (NOV); EA-11-025

In Reference 4, the Nuclear Regulatory Commission (NRC) transmitted a Notice of Violation (NOV) to the Omaha Public Power District (OPPD) that documented a White finding. This White finding was associated with the June 14, 2010, failure of a reactor trip contactor (M2) in the reactor protection system (RPS). Pursuant to the provisions to 10 CFR 2.201, OPPD submits its response to the violation as an Enclosure to this letter. OPPD accepts the violation and has elected not to appeal the staff's final significance determination.

On June 2, 2011, (Reference 3) OPPD attended a regulatory conference at NRC Region IV to present its position on the failure of the RPS M2 trip contactor apparent violation. During the regulatory conference OPPD provided information on the results of the root cause analysis, the OPPD perspective on the significance determination of the apparent violation, and corrective actions taken.

The maintainability of the Fort Calhoun Station (FCS) RPS is of the utmost importance to OPPD. Actions have been completed and are on-going to address deficiencies in equipment, station procedures, and training. Based on the completed actions OPPD is in full compliance with NRC regulations.

This letter contains regulatory commitments that are summarized on the last page of the Enclosure. If you should have any questions, please contact me.

Jeffrey A. Reinhart
Site Vice President

Enclosure

REPLY TO A NOTICE OF VIOLATION

Omaha Public Power District
Fort Calhoun Station

Docket No. 50-285
License No. DPR-40
EA-11-025

During an NRC inspection conducted from January 17 through April 15, 2011, one violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition.

Contrary to the above, between November 3, 2008, and June 14, 2010, the licensee failed to assure that the cause of a significant condition adverse to quality was determined and corrective actions were taken to preclude repetition. Specifically, the licensee failed to preclude shading coils from repetitively becoming loose material in the M2 reactor trip contactor. The licensee failed to identify that the loose parts in the trip contactor represented a potential failure of the contactor if they became an obstruction; and therefore, failed to preclude repetition of this significant condition adverse to quality, that subsequently resulted in the contactor failing.

This violation is associated with a White significance determination process finding in the Mitigating Systems Cornerstone.

OPPD Response

1. Reason for the Violation

On November 3, 2008, the Fort Calhoun Station (FCS) reactor protection system (RPS) contactor, AI-3-M2 (M2) began to chatter and was classified as operable but degraded. The chatter was caused by a loose contactor armature shading coil. The shading coil was re-attached; however, this was accomplished without a formal engineering evaluation and adequate, approved work instructions to facilitate the repair. The re-attachment of the shading coil stopped the contactor from chattering. Work requests were generated to replace the remaining RPS contactors; however, since the chattering had ceased, M2 was declared operable in November 2009 and the remaining contactors were not replaced as planned.

On March 20, 2010, M2 began to chatter again; however, the station mindset was that if the contactor failed it would always fail in the conservative open position and it would be replaced during the 2011 refueling outage. Testing on March 25, 2010, was aborted due to the chattering of the contactor and it was classified as operable but degraded. On March 31, 2010, the M2 contactor shading coil was re-attached initially, reducing the noise level of the chattering. On June 14, 2011, during RPS surveillance testing, the M2 contactor failed to open as required and was jammed in the non-conservative closed position. The failure of the M2 contactor was caused by the shading coil fragmenting after repeated cycling by the armature which resulted in one of the shading coil fragments jamming the contactor in the closed position.

The violation occurred because procedural guidance was insufficient to consistently recognize nonconforming conditions, resulting in the failure to adequately evaluate operability and risk. The lack of procedural guidance influenced restoration decisions based on intuitive knowledge and judgment. Additionally, key contributing causes included:

- Engineering evaluations on the RPS M2 contactor repair were not performed as required.
- Maintenance procedures provided inappropriate guidance for the repair of the RPS M series contactors.
- A degraded, nonconforming condition was assumed to have been restored in November 2009 and was not.
- Station mindset was that the RPS M2 contactor would always fail open as required.

2. Corrective Steps Taken and the Results Achieved

- On June 17, 2010, the RPS M2 contactor was replaced, restoring the M2 contactor status to operable.
- On February 4, 2011, the RPS M1, M3, and M4 contactors were replaced.
- An operations memorandum that describes the actions required for an inoperable contactor was issued.
- The FCS leaders were briefed on the organizational behaviors that led to the M2 contactor failure.

- The Functional Importance Determination (FID) classification of the RPS M contactors was upgraded from FID-2 to FID-1.
- The FCS condition reporting and operability process was revised to expand the requirements for recognizing and evaluating degraded or nonconforming equipment.
- Procedures were revised to include the requirements for form, fit, and function characteristics of a contactor, and to add implementing guidance for ensuring that degraded/nonconforming safety-related components are evaluated for form, fit and function. Additionally, maintenance procedures were revised to ensure that loose shading coils are not reattached or repaired.
- Training for maintenance planning personnel which included a case study on this event as it pertains to the use of inadequate procedures and the "safe-as-is" mentality was completed.

3. Corrective Steps That Will be Taken

- Benchmarking will be completed by August 26, 2011, to identify needed improvements in the FCS tracking and close-out process for degraded/nonconforming equipment.
- Training will be provided by October 31, 2011, to selected FCS employees on the improvements made to the FCS tracking and close-out process for degraded/nonconforming equipment.
- Training will be provided by October 31, 2011, to engineering support personnel with regards to licensing basis degraded/nonconforming conditions.
- Training will be provided by October 31, 2011, to maintenance personnel with regards to form, fit, and function for maintenance rule systems, structures and components.
- Training will be provided by October 31, 2011, to operations personnel with regards to licensing basis, degraded/nonconforming conditions.

4. Date When Full Compliance Will be Achieved

The M2 contactor was replaced on June 17, 2010, and full compliance was achieved on February 4, 2011, when the M1, M3 and M4 contactors were replaced.

Regulatory Commitments

Commitment	Due Date	CR Number
Benchmarking will be performed to identify needed improvements in the FCS tracking and close-out process for degraded/nonconforming equipment.	August 26, 2011	2011-0451
Training will be provided to selected FCS employees on the improvements made to the FCS tracking and close-out process for degraded/nonconforming equipment.	October 31, 2011	2011-0451
Training will be provided to engineering support personnel with regards to licensing basis degraded/nonconforming conditions.	October 31, 2011	2011-0451
Training will be provided to maintenance personnel with regards to form, fit, and function for maintenance rule systems, structures and components.	October 31, 2011	2011-0451
Training will be provided to operations personnel with regards to licensing basis, degraded/nonconforming conditions.	October 31, 2011	2011-0451