



January 9, 1997  
LIC-96-0199

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Mail Station P1-137  
Washington, DC 20555

References: 1. Docket No. 50-285  
2. Letter from NRC (T.P. Gwynn) to OPPD (T. L. Patterson) dated December 4, 1996

SUBJECT: NRC Inspection Report No. 50-285/96-12, Reply to a Notice of Violation (NOV)

The subject report transmitted a Notice of Violation resulting from an NRC inspection conducted October 15 through November 1, 1996 at the Fort Calhoun Station (FCS). Attached is the Omaha Public Power District (OPPD) response to this NOV.

In addition, the subject inspection report discusses several concerns or issues related to refueling operations during the Fort Calhoun Station (FCS) 1996 Refueling Outage. These concerns/issues involve: 1) poor reactor-side cavity water clarity, 2) apparent lack of concern by operators related to monitoring neutron count rates, 3) lack of utilization of TV camera aids, and 4) OP-11, "Reactor Core Refueling" procedure not explicitly stating a safe condition for a fuel assembly if refueling operations are unexpectedly suspended. A brief response to each of these items is provided below:

1) Poor Reactor-side Cavity Water Clarity

During fuel reload in the 1996 Refueling Outage, the reactor cavity side water clarity was murky due to the inability of an improperly operating Tri-Nuc filter in the cavity to clean up the water. OPPD's standard will be raised for all subsequent refueling outages to ensure good reactor-side cavity water clarity that will permit visual observation of possible obstructions and debris which could impede safe fuel movement. Poor clarity did not jeopardize the 1996 fuel reload because: 1) the integrity of each fuel assembly was verified during core off-load by means of fuel sipping and only new, repaired or non-damaged fuel bundles were reloaded, 2) the fuel

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is moved and placed in accordance with precise Fuel Handling Machine (FH-1) bridge and trolley coordinates for which there are two independent position indicating systems. The primary system is a digital encoder which is calibrated to a fixed benchmark location within 14 days of fuel movement. The backup position indicating system is a permanently mounted, above water alpha-numeric indexing system. A procedurally required cross-check between the two indexing systems is performed each time FH-1 indexes over the reactor core. 3) The FH-1 operators closely monitor fuel assembly weights for potential under/overload conditions; which is a good indication of fuel handling problems which could lead to fuel bundle damage. 4) independent verification of the correct fuel bundle being moved either in the Spent Fuel Pool (SFP) or Containment is completed by the Refueling Crew Control Room Coordinator, and 5) FCS utilized the fuel handling machine (FH-1) mast camera to perform a complete and thorough core alignment check (OP-11, Appendix L) and fuel loading verification check (OP-11, Appendix M) after fuel reload was completed.

To enhance cavity water clarity for future refueling outages, the following changes will be made prior to the 1998 refueling outage:

- a) Radiation Protection will take ownership to implement an action plan to maintain clarity of the reactor-side cavity and Spent Fuel Pool.
- b) OP-11 will be revised to include a sign-off step by the Fuel Handling Coordinator (normally a Shift Supervisor) or Control Room Shift Supervisor that the clarity standard of the spent fuel pool, fuel transfer canal, and reactor-side cavity are met to permit visual observation of possible obstructions and debris which could impede fuel loading or jeopardize safe fuel movement.

## 2) Apparent Lack of Operator Concern on Monitoring Neutron Count Rates

FCS Operations takes the movement of fuel and associated monitoring of plant parameters very seriously. In fact, for both fuel off-load and reload, only two (2) wide range neutron flux channels were to be operable and the Operations Staff insisted that at least three (3) channels be operable to provide additional indication.

Additional improvements are discussed in the enclosed attachment.

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3) Lack of Utilization of TV Cameras.

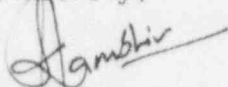
FCS utilized the fuel handling machine (FH-1) mast camera to perform a complete and thorough core alignment check (OP-11, Appendix L) and fuel loading verification check (OP-11, Appendix M) after fuel reload was completed. These checks ensure the fuel is properly aligned and all fuel assemblies, CEAs and sources are properly located and oriented, including verifying fuel assembly serial numbers. Due to an equipment limitation resulting from a modification to the refueling machine mast for in-mast sipping, little useful information could be obtained in using the camera during withdrawal and insertion of a fuel assembly. The current camera configuration points straight down and is only capable of viewing one adjacent fuel assembly. Viewing of a grappled fuel assembly was not possible with the mast camera. Modification of the current camera configuration is under consideration.

4) Procedure OP-11 does not explicitly state a safe fuel assembly position.

OP-11 was written to allow the Control Room Shift Supervisor or Refueling Crew Coordinator to determine the proper, safe configuration to leave a fuel assembly depending on the reason for the suspension of fuel movement. OPPD will review OP-11 to determine if additional guidance should be provided. If necessary, OP-11 will be revised prior to the start of the 1998 refueling outage.

If you should have any questions, please contact me.

Sincerely,



Sudesh K. Gambhir  
Division Manager  
Production Engineering

SKG/ddd  
Attachment

c: Winston and Strawn  
L. J. Callan, NRC Regional Administrator, Region IV  
L. R. Wharton, NRC Project Manager  
W. C. Walker, NRC Senior Resident Inspector

REPLY TO A NOTICE OF VIOLATION

Omaha Public Power District  
Fort Calhoun Station

Docket: 50-285  
License: DFR-40

During an NRC inspection conducted on October 15 through November 1, 1996, one violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG 1600, the violation is listed below:

Technical Specification 2.8(4) requires neutron flux to be continuously monitored by at least two source range neutron monitors whenever core geometry is being changed, with each monitor providing continuous visual indication in the control room.

Contrary to the above, on October 28, 1996, seven fuel assemblies were loaded into the reactor vessel near inoperable Wide Range Logarithmic Power Channel D (a source range neutron monitor) while the operable channels in other quadrants of the core were unable to provide the required continuous visual indication due to their distance from the assemblies.

This is a Severity Level IV Violation. (Supplement I) (285/9612-01)

OPPD Response

OPPD agrees that placing the initial seven fuel assemblies near an inoperable excore detector was a violation of the intent of Technical Specification 2.8(4) but it did not impact nuclear safety.

1. The Reason for the Violation

Fuel reload is controlled under procedure OP-11, "Reactor Core Refueling". This procedure does not contain guidance concerning the requirement to place the initial fuel assemblies near operable excore detectors. OP-11 was also deficient in providing guidance to address contingency actions when an excore detector is inoperable prior to, or fails during, core reload. As a result, the fuel reload sequence was not revised and the first seven fuel assemblies loaded into the reactor vessel were placed

near an inoperable excore detector.

2. Corrective Steps Which Have Been Taken and the Results Achieved

OPPD has reviewed our practices associated with fuel reload and will not initially load fuel assemblies near inoperable excore detectors.

3. Corrective Steps Which Will Be Taken to Avoid Further Violations

OP-11 will be revised prior to the 1998 Refueling Outage to require reloading the fuel initially near operable detectors. A reload sequence will be developed for two preferred operable excore detectors and contingency actions will be added to OP-11 should these detectors become inoperable prior to or during the reload process. This will ensure that the intent of Technical Specification 2.8(4) will be met.

4. Date When Full Compliance Will be Achieved

OPPD is currently in full compliance.