

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

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February 20, 1985

U.S. Nuclear Regulatory Commission  
Region II  
ATTN: Dr. J. Nelson Grace, Regional Administrator  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30323

Dear Dr. Grace:

Enclosed is our response to J. A. Olshinski's January 23, 1985 letter to H. G. Parris transmitting IE Inspection Report No. 50-328/84-36 for our Sequoyah Nuclear Plant which appeared to have been in violation of NRC regulations.

If you have any questions, please get in touch with R. E. Alsup at FTS 858-2725.

To the best of my knowledge, I declare the statements contained herein are complete and true.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*R. H. Shell*

R. H. Shell  
Nuclear Engineer

Enclosure

cc (Enclosure):

Mr. James Taylor, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Records Center  
Institute of Nuclear Power Operations  
1100 Circle 75 Parkway, Suite 1500  
Atlanta, Georgia 30339

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ENCLOSURE  
RESPONSE - NRC-OIE INSPECTION REPORT NO. 50-328/84-36  
J. A. OLSHINSKI'S LETTER TO H. G. PARRIS  
DATED JANUARY 23, 1985

Item 50-328/84-36

Technical Specification 6.8.1.6 requires that written procedures be established and implemented to control refuel operations. The licensee's Fuel Handling Instruction (FHI)-7, Revision 16, Section III establishes and requires the operator to verify, prior to raising the fueling transfer side upender, that the conveyor at reactor lamp is illuminated on the reactor side console and that the fuel assembly (F.A.) is clear of the transfer tube.

Contrary to the above, on October 25, 1984, FHI-7 was inadequately implemented in that the conveyor interlock was challenged by raising the reactor side upender without the conveyor at reactor lamp illuminated. In addition, verification was not adequately performed to ensure the required conveyor location prior to raising the reactor side upender.

This is a Severity Level IV violation.

1. Admission or Denial of the Alleged Violation

TVA admits the violation occurred as stated.

2. Reason for the Violation if Admitted

Because of a problem with the transverse digital counter resetting to zero, bypassing the conveyor interlock was necessary by the shift before the incident to raise the reactor side upender. The interlock prohibiting raising the reactor side upender was indicated to be removed when the conveyor at the reactor lamp in the reactor side console was illuminated. This indication was based on the agreement between the transverse counter digital and preset values. However, with a digital counter value of zero and a preset value of approximately 54,800, the conveyor at reactor lamp would not energize, and the conveyor interlock prevented raising the reactor side upender.

Before raising the reactor side upender with FA N37, containing rod cluster control assembly (RCCA) R-110 that was damaged, on October 25, 1984, both the refueling senior reactor operator (SRO) and the reactor side console operator visually verified, using binoculars, that the conveyor rollers were against the reactor side upender to ensure the correct position of the conveyor. The refueling SRO's visual verification was performed approximately above the point of contact between the conveyor rollers and reactor side upender. The reactor side console operator's visual verification was made from the console verifying the same point of contact between the rollers and upender. However, considering the reactor side console operator location relative to the point of contact verified, an error of approximately 0.3 inch was included because of parallax.

Refueling personnel indicated that spent fuel pool water optical clarity was degraded during the course of the refueling operations. The decision by the refueling SRO to visually verify the conveyor position, rather than wait until the water optical clarity improved, was a subjective decision that was within accepted industry practices.

The refueling reactor side console operator noted that the conveyor at reactor lamp was not illuminated, before raising the FA with the RCCA R-110, because the transverse digital counter providing this indication was not working properly. The visual verification then performed by the refueling SRO was an important consideration because of the close clearance involved raising the reactor side upender with an FA containing an RCCA (i.e., approximately two inches). After visual verification that the conveyor was at its full travel limit against the reactor side upender and the FA was clear of the transfer tube, in accordance with FHI-7, Revision 16, instruction steps I.3 and I.4, the refueling SRO ordered the upender to be raised. In doing so, the electrical interlock to ensure that the FA conveyor was properly positioned was challenged, since the conveyor interlock was in the "in" position as verified by FHI-7, Revision 16, instruction step D.7. The unwarranted challenge of the fuel transfer conveyor interlock and inadequate visual verification to the FA position were failures to adequately implement procedure FHI-7. As a result, the RCCA contained in the FA was damaged when the upender was actually raised by depressing the reactor side frame up pushbutton.

3. Corrective Steps Which Have Been Taken and Results Achieved

Immediately after damaging the RCCA in the FA, refueling operation was stopped for investigation. To correct the binding near the reactor side upender, plant instruction change No. 84-168, dated October 29, 1984, was issued to raise and lower reactor side upender before receiving the FA to remove small alignment offsets of the upender with the fuel transfer canal. Also, an amendment to the final core configuration was obtained from Westinghouse because FA N37 and RCCA R-110 were not used in the core.

4. Corrective Steps Taken to Avoid Further Violations

Permanent corrective actions were taken to replace the transverse digital counter quadrature conversion circuit with a bidirectional motion decoder to prevent noise received in the circuit from resetting the digital counter. To ensure proper alignment of the reactor side upender with the transfer canal, guide pins were installed for the upender. To provide visual verification, a television camera will be used to verify the conveyor at the reactor side upender stop and clearance from the fuel transfer canal, as specified in FHI-7, Revision 17, instruction step I.4.

5. Date When Full Compliance Will Be Achieved

Installation of unit 2 guide pins was completed on November 25, 1984. Full compliance for unit 2 was achieved with the issuance of FHI-7, Revision 17 on November 27, 1984.

Unit 1 will achieve full compliance before using the fuel transfer conveyor for fuel handling.