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SUBJECT: Special rept on 870429, irradiated Fuel Assembly N-09
 positioned in core location M3. Visual insp via TV camera
 revealed damaged grill strap on assembly. Caused by Fuel
 Assembly N-09 not fully in down position.

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United States Nuclear Regulatory Commission
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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
30-DAY SPECIAL REPORT - MISALIGNED FUEL ASSEMBLY

Dear Sir:

This report is submitted in accordance with 10CFR20.405(a)(1)(IV).

EVENT DESCRIPTION

The reactor was shut down for scheduled refueling, and fuel movement was in progress. On April 29, 1987, at 0340 hours, irradiated fuel assembly N-09 was being positioned in core location M3. Upon uncoupling from the manipulator, the assembly leaned against the core shroud. At approximately 1400 hours on April 29, 1987, visual inspection of the assembly via TV camera revealed a damaged grid strap on the assembly. The damage cost was estimated to exceed \$2,000, thereby requiring a 24 hour report per 10CFR20.403(b)(4). The NRC was notified by telephone at 1230 hours on April 30, 1987.

CAUSE

A detailed investigation of this event revealed several possible causes. Through further discussions including interviews with personnel directly involved with the event, four probable causes were identified. They are as follows:

- 1 - Fuel assembly N-09 was not fully in the down position.
- 2 - Fuel assembly N-09 was in the down position, but was not correctly seated on the core pins.
- 3 - The core pins were damaged, or debris existed around the pins.
- 4 - The assembly index tape markings, used for positioning the assembly, were incorrect.

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In order to determine the exact cause of this event, several actions were taken. Initially, the core floor was visually inspected for debris. The pins for the M3 assembly location were visually inspected for damage. No debris or pin damage was found. A dummy assembly was then positioned into the M3 location and was verified to be properly seated using a TV camera. Finally, the assembly index tape markings were verified to be accurate.

Based on the actions taken during this investigation, it has been determined that the cause of this event was that fuel assembly N-09 was not correctly seated on the pins. This determination is based on the fact that the assembly in question had been used in two previous operating cycles and that it had become slightly bowed or otherwise distorted during its use. Because of distortion, it may not have adequately seated on the core pins. In addition, although the slack cable light indicated that the assembly was in the down position, it is possible that the manipulator crane operator misread the elevation tape markings used to confirm that an assembly is in the fully inserted position within the core.

CORRECTIVE ACTION

When the assembly was unlatched from the manipulator and leaned against the core shroud, the Containment Building was immediately evacuated of all non-essential personnel, and verification was established that no radiological conditions (loss of fuel integrity) resulted.

A Special Procedure was developed with the technical assistance of the fuel vendor to upright the mispositioned fuel assembly and move it to the Spent Fuel Pit. This procedure provided limitations, precautions, and controls to recover the assembly that was in addition to the normal limitations and controls provided in existing fuel handling procedures. This procedure provided for the operation of the polar crane from the remote control of the operating deck and maintaining the inside door of the personnel hatch open for personnel safety concerns. A special Radiation Work Permit and pre-job briefing were required to ensure understanding of the radiological situation during the fuel assembly recovery. This procedure was successfully completed on April 30, 1987. Due to the grid strap damage, the assembly was not reused.

If you have any questions, please contact J. M. Curley at 803-383-1367.

Very truly yours,



R. E. Morgan
General Manager

H. B. Robinson S. E. Plant

RDC:jch

cc: J. N. Grace
H. E. P. Krug