DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

February 19, 1982

TELEPHONE: AREA 704
373-4083

Mr. J. P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Re: McGuire Nuclear Station Unit 1
Docket No. 50-369

Dear Mr. O'Reilly:

Please find attached Reportable Occurrence Report RO-369/82-10. This report concerns T.S.3.1.3.2, "The shutdown and control rod position indication system and the demand position indication system shall be operable and capable of determining the control rod positions within ± 12 steps." This incident was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

William O. Parker, Jr.

PBN/jfw
Attachment

cc: Director
Office of Management and Program Analysis
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Records Center
Institute of Nuclear Power Operations
1820 Water Place
Atlanta, Georgia 30339

Mr. P. R. Bemis
Senior Resident Inspector-NRC
McGuire Nuclear Station

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DUKE POWER COMPANY
McGUIRE NUCLEAR STATION
REPORTABLE OCCURRENCE REPORT NO. 82-10

REPORT DATE: February 19, 1982

FACILITY: McGuire Unit 1, Cornelius, NC

IDENTIFICATION: Continuing Failure of Digital Rod Position Indication

DISCUSSION: On January 20, 1982, while operating at 50% reactor power, all Digital Rod Position Indication (DRPI) for control rod K-8 was lost. The loss of both Data "A" and Data "B" channels required utilizing the movable incore detectors to monitor the control rod's position. The required core mapping procedure was continued until January 25, when the Data "B" channel was regained after a length of rod position detector cable was replaced.

EVALUATION: One data channel of control rod K-8 position indication was repaired by replacing a "10 to 15 ft" length of cable extending from the DRPI coil stack to the associated bulkhead connector. This replacement is a partial completion of a modification which will change out all like DRPI cables and their bulkhead connectors (106 cables and connectors).

The modification provides smaller diameter, more flexible cabling to the DRPI detectors, and strain relieving bulkhead connectors for the cables. The original cables were determined to be susceptible to conductor damage under flexure due to their own weight. They are approximately 1.5" in diameter and are difficult to maneuver when clearing the reactor head area is necessary. The replacement cabling is advertised as 300% more flexible and only about 0.86" in diameter. The replacement is expected to greatly alleviate the head area congestion problem.

Control rod K-8 position indication had performed at "half accuracy" since October 6, 1981, when one data channel failed as detailed in Reportable Occurrence Report RO-369/81-163. These previous incidents were erroneously evaluated as common cause, detector coil failure, events.

During a plant shutdown period in November, 1981 cables serving inoperable DRPI detector channels for control rods K-8, H-6, G-13, and M-14 were replaced. All of the associated data channels, except Data "A" for K-8, functioned properly after the replacement. Only Data "A" channel for control rod K-8 remains as a suspected detector malfunction.

Presently, Data "A" for control rod K-8 and Data "A" for control rod L-3 remain inoperable. DRPI for control rod L-3 became inoperable after the November 1981 shutdown period.

SAFETY ANALYSIS: Inaccurate control rod position indication could lead to control rod misalignment and uneven power distribution, a challenge to fuel rod integrity. In this instance accurate position indication was maintained. Plant safety and the health and safety of the public were not affected.

CORRECTIVE ACTION: During the planned outage in February, 1982 the completion of the modification is scheduled. Additionally, inspection of all DRPI detector coil stacks and the replacement of control rod K-8 detector coil stack are planned. The DRPI vendor, Westinghouse, will be involved in the inspection.

Replacement of DRPI cabling has proved effective in the correction of most DRPI problems.