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

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

December 23, 1981

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-369/81-186. This report concerns T.S.3.3.3.8, "The radioactive liquid effluent monitoring instrumentation channels shown in Table 3.3-12 shall be operable...". 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
Attachments

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. 81-186

REPORT DATE: December 23, 1981

FACILITY: McGuire Unit 1, Cornelius, NC

IDENTIFICATION: Loss of Sample Flow Through EMF-31 Without Alarm Indication

INTRODUCTION: On November 25, during performance of a routine, weekly check and cleaning of EMF-31, the radiation monitor on the Conventional Wastewater Treatment (WC) line, it was discovered that the sample line's strainer was clogged, inhibiting the monitor from measuring radiation in the system's discharge flow. Examination revealed that the loss-of-flow alarm switch was also clogged, preventing an alarm signal from being transmitted to the control room. The monitor was declared inoperable, and periodic sampling and analysis was begun as required by the appropriate action statement of Technical Specification 3.3.3.8.

This event had no direct bearing on the operability of Unit 1, which was operating at ∿25% power at the time of the incident. The monitor was repaired and declared operable that same day. During the course of the following two weeks, however, it failed several times for the same or similar causes. These failures are attributed to a design deficiency.

EVALUATION: An incident identical to this event occurred on May 18, 1981. Reportable Occurrence Report RO-369/81-87 identified the apparent cause at that time to be attributable to the orientation of the sample tap off of the 12" diameter WC discharge line. The sample tap was attached at the bottom of the pipe, i.e., the 6 o'clock position. A work request was written to have the sample tap reoriented 90° so that bits of trash and resin which tended to collect on the lower part of the pipe would not be as likely to collect on the sample screen and occlude the sample flow path.

On August 21, the necessary piping was fabricated for installation; however scheduling problems associated with isolating the system for installation work prohibited the work from being done at that time. A mounting work load for the station resulted in further delays in the completion of the work request. This time lag was instrumental in providing the opportunity for this incident to occur. The most probable, direct cause of the blocking of the sample screen and the flow switch was an accumulation of Powdex mixed-bed resins. This was substantiated by an apparent correlation between the release of the polishing demineralizer backwash tanks and failures of the monitor. In addition, the weekly preventative maintenance on the monitor confirmed the presence of resin-like material within this instrument.

CORRECTIVE ACTION: EMF-31 was declared inoperable and collection and analysis of grab samples every 24 hours was begun in accordance with Action Statement #31 of Table 3.3-12 in the Technical Specifications Manual. The sample tap reorientation work request was completed on December 12 and the system was returned to operable status that same day. No further action is required or recommended at this time.

VERIFICATION: Grab samples obtained from the turbine building sump and analyzed confirmed that no liquid effluents greater than background were discharged via WC discharge pathway. This sampling was performed as stipulated by technical specifications to ensure further degradation of plant status did not occur. The reorientation of the sample tap, in conjunction with the stations preventative maintenance/periodic testing program, should virtually eliminate the recurrence of this problem.

SAFETY ANALYSIS: EMF-31 is provided to automatically monitor and control the release of radioactive materials in liquid effluents during the actual or potential release of liquid effluents via the WC system. In the absence of a primary to secondary leak (as is the case throughout this event), the activity of liquids discharged from the turbine building is essentially background level and is verified by grab sampling routines. During the inoperability of this instrument, periodic sampling of the turbine building sump and monitoring of sources which empty into this system provided confidence that the safe operability of the plant and the health and safety of the public were not affected by this incident.