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USNRC REGION II  
ATLANTA, GEORGIA

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82 SEP 17 P 1: 53

September 10, 1982

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

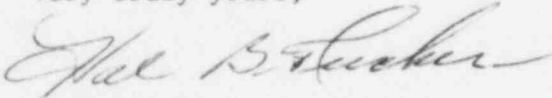
Re: McGuire Nuclear Station Unit 1  
Docket No. 50-369

Dear Mr. O'Reilly:

Please find attached Reportable Occurrence Report RO-369/82-66. 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.

A followup report will be submitted when the exact cause of the failures is identified and corrected.

Very truly yours,



Hal B. Tucker

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. 82-66

REPORT DATE: September 10, 1982

FACILITY: McGuire Unit 1, Cornelius, NC

IDENTIFICATION: Ventilation Unit Condensate Drain Tank Flow Totalizer Failure

DESCRIPTION: On August 12, 1982, while operating Unit 1 at 50% power, a Ventilation Unit Condensate Drain Tank (VUCDT) release to the Condenser Circulation Water (RC) system was commenced. The VUCDT flow totalizer (located on Waste Effluent Panel) did not count when the release started and was therefore declared inoperable. Operators then determined flow using pump head curves. Work requests were written to repair the totalizer.

On August 16, 1982, technicians tested the totalizer loop and found that it operated satisfactorily; however, the instrument lines were not filled on the transmitter. Technicians then filled and vented the transmitter while the VUCDT operated in the recirculation mode. On August 19, 1982, the flow totalizer was declared operable after proper operation was verified during several releases.

Following the termination of a VUCDT to RC release on August 20, 1982, an operator noticed that the flow totalizer continued to count slowly for approximately 5 minutes (the flow totalizer had functioned properly at the start of the release). The totalizer was again declared inoperable (unit was at 75% power).

After verifying that the totalizer operated correctly during a VUCDT to RC release, the flow totalizer was again declared operable on August 27, 1982.

The cause for the failures appears to be occasional unusual process conditions under which the totalizer cannot function properly, however, the cause of these conditions is not known at present. A followup report will be submitted when the exact cause of the conditions is identified and corrected.

EVALUATION: The flow totalizer loop consists of a flow element in the VUCDT discharge line (an orifice plate) which develops a differential pressure (corresponding to 0-125GPM) across a flow transmitter. The transmitter sends a signal to the flow totalizer and also to an Pneumatic to Electric converter which sends a signal to a recorder.

The August 12, 1982 totalizer failure was due to a loss of liquid in the section of discharge piping at the flow element. The differential pressure liquid flow transmitter must have liquid in the discharge piping to ensure both of the instrument lines (from the flow element to the transmitter) are filled completely; otherwise, unequal water columns or trapped air in the transmitter bellows would cause improper operation.

Check valve failures could have caused the loss of process liquid at the flow element, although various isolation attempts have thus far failed to confirm this as the cause. A design/operational deficiency is another possible cause, since research of past work requests and discussions with various technicians revealed

several occurrences where a vacuum was observed on the instrument lines. The vacuum caused erroneous signals from the transmitter which in turn caused the totalizer to count continuously, even though no release was in progress and the discharge valves were closed.

The apparent failure of August 20, 1982 may also be attributable to unusual process conditions at the flow element.

SAFETY ANALYSIS: Since alternate methods of determining flow are available, the flow totalizer failures did not prohibit proper monitoring of releases. Release volumes calculated using pump curves have been verified as being conservative, i.e., volume calculated is larger than the actual volume released.

The health and safety of the public were not affected by these events.

CORRECTIVE ACTION: Procedures (pumping VUCDT to the RC Discharge) require operators to verify that the flow totalizer is counting at the start of the release. If it is not, instructions are to use the flow rate indicator (recorder) or the discharge pressure and pump curves to determine flow. Immediate action in both failures was to use pump head curves to determine flow as allowed by Technical Specification 3.3.3.8 ACTION statement 33.

Additionally, technicians filled and vented the flow transmitter when it failed to operate on August 12, 1982. Operators verified proper flow totalizer operation during actual VUCDT to RC releases following the two failures, and flow totalizer operation is checked at the start of all releases per procedures. The totalizer has operated properly to date.

A long term solution will be pursued to identify and rectify the cause of the occasional process conditions that result in flow totalizer malfunction. The followup to this report will detail both cause and solution.