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March 2, 1983

Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 2900
Atlanta, Georgia 30303

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

Dear Mr. O'Reilly:

Please find attached Reportable Occurrence Report EO-369/83-06. This report concerns T.S. 3.7.6, "Two independent control area ventilation systems shall be operable", and T.S. 3.0.4, "Entry into an OPERATIONAL MODE or other specified condition shall not be made unless the conditions of the limiting condition for operation are met without reliance on provisions contained in the ACTION requirements". This incident was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

H. B. Tucker

Hal B. Tucker

PBN:jfw
Attachment

cc: Document Control Desk
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

Senior Resident Inspector
McGuire Nuclear Station

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DUKE POWER COMPANY
McGUIRE NUCLEAR STATION
REPORTABLE OCCURRENCE REPORT NO. 83-06

REPORT DATE: March 2, 1983

FACILITY: McGuire Unit 1, Cornelius, NC

IDENTIFICATION: Changed from Mode 5 to 6 with Control Area Ventilation
System Train B Inoperable

INTRODUCTION: On January 25, 1983, during Mode 5, the Control Room Area Outside Air Pressure Filter Train 2 (VC-B) was declared inoperable. This resulted from the discovery of water-damaged components in the filter package. A faulty loop-seal level control, which isolates filter component drain lines to prevent bypass air flow and drain line backflow, was identified as the cause. This level control allowed water to back up into the filter package.

During Mode 5, no immediate corrective action is required, nor was taken, upon declaring one VC train inoperable. A work request was written to return VC-B Train to an operable status. VC-B Train's inoperability is classified as an Installation Deficiency, since the float operated level control was improperly installed and adjusted.

VC-A Train was also declared inoperable for several hours on 1/26-27/83, and again on 1/29/83. This was due to maintenance work on 1FD145 and 1FD144, Fuel Oil Transfer Filter 1A2 isolation valves, which required Diesel Generator 1A, and therefore the emergency bus feeding VC-A Train, be declared inoperable.

On 1/31/83, with the VC-B Train still inoperable, the Unit 1 reactor vessel head was detensioned, thus entering Mode 6. Although Technical Specification 3.7.6 Action requirements for Modes 5 and 6 do not address possible mode changes while a VC train is inoperable, Operations personnel evaluated the change to Mode 6 as being no different than continued operation in Mode 5. Upon review of this action, Duke Power has interpreted this mode change as being a violation of Technical Specification 3.0.4. This specification states that an operational mode shall not be entered by relying on the action requirements for the operability of an applicable system, unless entering or passing through such a mode as prescribed in the action requirements. This difference in interpretation of the allowability of mode changes is classified as an Administrative Deficiency.

EVALUATION: When preparing to load carbon into the Unit 2 Annulus Ventilation System filter package, water was discovered in the housings of both filter trains. The source of the water was determined to be the Make-up Demineralizer Water System (YM), which provides water to filter package loop-seals. The YM source was then isolated.

Further investigation revealed water had entered the Outside Air Pressure Filter Train 2 (VC-B). Water entered this filter package, a shared unit system, along with other Unit 2 filter packages, by overfilling the level control tanks and backing up the condensate drain lines. The loop-seal level control (McDonnell and Miller, Inc., Model No. 847 Make-up Water Feeder) had been installed in dry lines and allowed to rust, and had not been properly adjusted.

YM system overflow from the VC-B Train level control tank shares a common drain line with other filter package loop-seals. The loop-seals of these Unit 2 filter packages (not yet loaded or in service) were also improperly adjusted, allowing YM system flow to continue even though the loop-seal level control tanks were full. This unchecked flow exceeded the capacity of the 2 1/2" common drain lines, creating the potential for backflow. This was the case in the VC-B Train filter package, where the carbon bed and HEPA filters were damaged.

On 1/26/83, Diesel Generator (D/G) 1A was declared inoperable due to a leaking diaphragm on Fuel Oil Transfer Filter 1A2 isolation valve 1FD145. The diaphragm was replaced. During the time that maintenance was performed on 1FD145, VC-A Train was declared inoperable due to loss of the emergency bus (supplied by D/G 1A). D/G 1A and VC-A Train were returned to operable status on 1/27/83.

Further maintenance work was required on 1/29/83, resulting in D/G 1A and VC-A Train being declared inoperable. (The leaking diaphragm of 1FD144, the second Fuel Oil Transfer Filter isolation valve, was replaced). In both cases, the diaphragm had become oil-saturated and began to leak, requiring replacement. Replacement diaphragms for these 2" Grinnell Diaphragm Valves are rated for a five year life.

The Action Statements for Technical Specification 3.7.6, under which VC-B was declared inoperable, are segregated into two classes. Action prescribed for Modes 1,2,3 and 4 and that of Modes 5 and 6 are listed separately. Changing modes with VC-B Train declared inoperable was the result of an Operations interpretation of Technical Specification 3.7.6, which does not differentiate between action statements applicable during Modes 5 or 6. As no differences existed in regards to VC System inoperability for the two modes, the mode change was evaluated as having no effect. However, Duke Power's subsequent reevaluation of the mode change (after Mode 6 had been entered) was based upon the failure of the VC system to meet the Limiting Condition for Operation. This was interpreted as a violation of the Technical Specification for Applicability, 3.0.4.

SAFETY ANALYSIS: As the exact time that water entered the Outside Air Pressure Filter Train 2 cannot be determined, a conservative assumption that the incident occurred with Unit 1 in Mode 1 should be made. The VC system includes two 100% filter trains for the purpose of cleaning control room air (1000 cfm recirculating) and introducing clean fresh air (1000 cfm outside) in the case of an accident. Impairment of this function by wetting the filter components would be minimal. The removed HEPA filter showed no holes or displacement of media, and would have still performed efficient particulate removal, if required. The wet carbon in the bottom of the bed combined with the wet portion of the HEPA filter would raise the differential pressure across the filter package and thereby reduce design flow rate. By this means, the condition of the filter train could have been discovered had the system operation been required. In such a case, the redundant train was available for use.

Prior to working on D/G 1A, and disabling emergency power to VC-A Train, Unit 1 entered Mode 5. Action specified when both VC trains are inoperable in Modes 5 or 6 is the disallowance of positive changes in reactivity or core alterations. These conditions were met.

Changing modes with one train of VC inoperable had no impact, as the action statement does not change from Mode 5 to 6. Operations personnel are well aware that an increase in operational mode (i.e., proceeding through start-up) requires prior VC system operability.

This incident had no effect upon the health and safety of the public.

CORRECTIVE ACTION: After discovering water-damaged filter components in the Outside Air Pressure Filter Train 2, the carbon bed and installed HEPA filters were removed, the filter housing cleaned, and filters reloaded. As water had entered the system by backing up the drain lines, the possibility of line blockage downstream of the filter packages was investigated. Downstream drain lines were cut and inspected for obstructions in several places. No obstructions were encountered, and piping was rejoined. The loop-seal level controls were then checked and found to be improperly adjusted and rusted. This was attributed to their having been installed in dry lines. The make-up water feeders were cleaned and properly adjusted.

Reloaded carbon and HEPA filters in the Outside Air Pressure Filter Train 2 were tested per "In-Place Test of HEPA and Carbon Adsorber Filters". The system was returned to service on 2/3/83. Proper loop-seal level control was functionally tested by aligning YM supply to the loop and monitoring flow with the instrumentation provided. The loop-seal filled and then allowed no further flow.

In order to eliminate any future confusion arising from a change from Mode 5 to 6, a change in Technical Specification 3.7.6 is being pursued. This change will list an exception to Technical Specification 3.0.4 in the Action Statements for Modes 5 and 6. This will then explicitly permit such a mode change (in either direction) with a VC train inoperable. The next issue date for Technical Specifications will be prior to Unit 2 fuel loading.