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DUKE POWER

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U.S. Nuclear Regulatory Commission
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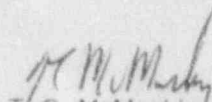
Subject: McGuire Nuclear Station
Docket Nos. 50-369, -370
Inspection Report No. 50-369, -370/92-13

Gentlemen:

Pursuant to 10CFR 2.201, please find attached Duke Power Company's response to Violation 369, 370/92-13-02 for McGuire Nuclear Station. This violation was also discussed in an Enforcement Conference held on June 8, 1992.

Should there be any questions concerning this matter, contact Larry Kunka at (704)875-4032.

Very truly yours,


T. C. McMeekin

LJK

Attachment

xc: Mr. S. D. Ebner
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Mr. P. K. Van Doorn
NRC Resident Inspector
McGuire Nuclear Station

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**McGUIRE NUCLEAR STATION
RESPONSE TO NOTICE OF VIOLATION**

Violation 369, 370/92-13-02

10 CFR 50 Appendix B Criterion III and the licensee's accepted Quality Assurance Program (Duke Power Company Topical Report Quality Assurance Program, DUKE-1-A) require that measures be established to assure that applicable regulatory requirements and the design basis for structures, systems and components are correctly translated into specifications, drawings, procedures and instructions.

Contrary to the above, measures were not effective to assure that applicable regulatory and the design basis for structures, systems and components were correctly translated into specifications, drawings, procedures and instructions. This is evidenced by the fact that on March 27, 1992, air was discovered in the Nuclear Service Water System and the design control process failed to recognize this possibility. This directly impacted the ability of the Auxiliary Feedwater System to perform its intended safety function.

1. Reason for violation

On March 27, 1992, McGuire Engineering (ME) personnel discovered air present at inspection port valve 1RN-1058 in the Nuclear Service Water System (RN) assured makeup flow piping to the Auxiliary Feedwater (CA) System. Valve 1RN-1058 is upstream of the valves which allow the assured makeup flow from the RN system to the CA system. Recognizing that the air could be a potential problem, ME personnel reported this discovery to the Operations (OPS) manager and the McGuire Engineering supervisor. OPS and ME personnel began checking for possible sources of air leakage. These sources included the RN system discharge vacuum breakers from the Control Area Ventilation and Chilled Water (VC/YC) system condensers.

On April 1, 1992, Train 1B RN vacuum breakers for the VC/YC system were inspected with no sign of air leakage found. On April 3, air was again discovered to be present at 1RN-1058. On April 6, 1992, Train 1A RN vacuum breakers for the VC/YC system were inspected with no sign of air leakage found. Other possible sources of air leakage were inspected with no problems found. On April 7, air was discovered to be present at valves 1CA-163 (CA suction header RN supply tell tale) and 1RN-840 (RN crossover high point vent).

Extensive review and evaluation of the RN system piping layout and vents was conducted by ME and OPS personnel to determine potential air sources. During this time, air continued to show up at locations identified for venting, leading personnel involved to believe they were not dealing with a finite amount of air introduced by maintenance activities. The possibility of oxygen/nitrogen off-gassing (dissolved gases coming out of solution) from Lake Norman became more probable as the possible sources of air leakage were eliminated.

Off-gassing was determined to be the source of the air found in the RN piping. The process of off-gassing in the RN piping was not recognized during the design phase. Additionally, the RN assured makeup connections tie in at the top and side of the RN piping, allowing air (dissolved gases) to accumulate in this piping.

Investigation has not determined the cause as to why off-gassing on the discharge side of the RN system was not considered in the original design process. It is not a usual design practice to take suction sources, such as was done for the CA system, from the discharge side of another system.

A detailed piping review of the RN system has confirmed this to be a unique configuration. Therefore, this is considered to be an isolated design oversight.

2. Corrective actions taken and results achieved

Initial Actions

1. Periodic venting was established at affected locations
2. 1CA-161C was conservatively closed to assure Unit 1 CA operability
3. The A train of the RN system supply to Unit 1 and 2 CA was temporarily isolated

Subsequent Actions

1. An extensive piping configuration review was conducted by ME and OPS personnel to identify possible sources of inleakage and additional venting locations
2. Temporary continuous venting system was installed at 1RN-835 and 2RN-815 to assure CA operability
3. Procedure changes were made to assure RN supply during realignment to the Nuclear Service Water Pond
4. Performed venting review of CA and ECCS pumps
5. OPS and ME developed procedures for the venting of the RN system for both units to assure establishment of water solid conditions in the RN system
6. OPS and ME developed procedures for the venting of the CA system for both units to assure establishment of water solid conditions in the CA system
7. Permanent continuous venting system was installed at 1RN-1060

3. Corrective actions to be taken to avoid further violations

1. ME personnel will coordinate the installation of additional vents to provide flexibility for establishing water solid conditions in the RN system
2. Temporary venting system at 1RN-835 and 2RN-815 will be upgraded to permanent
3. ME will develop a lessons learned package on this event which will be covered with all appropriate personnel. This will be completed and the package covered with all appropriate personnel by October 1, 1992.
4. A synopsis of the lessons learned package will be incorporated into the design input/criteria guidance of McGuire Nuclear Station NSM manual. This manual will be revised by October 1, 1992.

4. Date when full compliance will be achieved

Full compliance for items 1 and 2 above will be achieved prior to the start of the Unit 2 EOC 8 refueling outage; full compliance for items 3 and 4 will be achieved by October 1, 1992