NIAGARA MOHAWK POWER CORPORATION

NIAGARA MOHAWK

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SYRACUSE, N.Y. 13202

B. G. HOOTEN
EXECUTIVE DIRECTOR
NUCLEAR OPERATIONS

September 14, 1984
(NMP2L 0162)

Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Schwencer:

Re: Nine Mile Point Unit 2
Docket No. 50-410

I.E. Bulletin No. 84-01 identified a potential for cracking in boiling water reactor vent headers using nitrogen inerting systems. Although not specifically requiring a response for Nine Mile Point Unit 2, we are providing the attached report for your use and information regarding this matter.

Additionally, we have addressed the recommendations identified in the General Electric Service Information Letter no. 402. Each of the five recommendations in that report are addressed in the attachment to this letter.

Very truly yours,

B. G. Hooten
Executive Director
Nuclear Operations

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Attachment
xc: Project File (2)

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Response to I.E. Bulletin No. 84-01

Question 1

Plants that are currently in cold shutdown should visually inspect for cracks in entire vent header and in the main vents in the region near the intersection with the vent header. To the extent practical, the inspection should include the entire surfaces of the aforementioned components. The inspection should be completed within 36 hours of receipt of this bulletin.

Response

Niagara Mohawk has not utilized the nitrogen inerting system for Nine Mile Point Unit 2; therefore, the effects of the nitrogen inerting system to cause cracks does not exist at Nine Mile Point Unit 2. At this time, we feel no inspection is required.

Question 2

If cracks are found, the containment should be declared inoperable.

Response

This section is not applicable as discussed in response to Question 1 above.

Question 3

The results of the inspection are to be reported by telephone to the NRC Operations Center within eight hours after the inspection has been completed. A written report describing the areas inspected and the results should be submitted within seven days of receipt of this bulletin.

Response

The inspection was not performed, therefore, a written report is not required as discussed in response to Question 1.

Question 4

Although not a requirement of this bulletin, boiling water reactor plants that are currently operating which have Mark I type containment should review their plant data and differential pressure between the wetwell and drywell for anomalies that could be indicative of cracks. Any such anomalies should be reported to the NRC in accordance with 10CFR50.72 and 10CFR50.73.

Response

Nine Mile Point Unit 2 does not utilize a Mark I type containment nor a differential pressure between the wetwell and drywell, and therefore, this evaluation is not required.

Response to SIL No. 402

Question 1

Evaluate the design of the nitrogen inerting system. Investigate the potential for introducing cold (less than 40°F) nitrogen and the orientation of the nitrogen port relative to the vent header downcomers, or other equipment in the wetwell and drywell which may be in the path of the injected nitrogen. Assure that the temperature monitoring devices, the low temperature shutoff valve and overall system design are adequate to prevent the injection of cold nitrogen into the containment.

Response

The following paragraph will be added to Section 9.3.1.5.3 of the FSAR.

To prevent introducing cold (less than 40°F) nitrogen into the primary containment, the nitrogen temperature for normal inerting is controlled to 70°F and monitored upstream of the normal vent and purge lines. Low nitrogen temperature (55°F) is alarmed in the Control room. Should the temperature continue to fall to 40°F at the outlet of the vaporizer, an independent temperature device will trip the outlet control valve closed. The nitrogen supply to the instrument nitrogen system fed from nitrogen storage bottles and the ambient vaporizer is followed by trim heaters to hold the temperature at 70°F. The supply is fed to an accumulator prior to any containment penetration, thus essentially precluding any cold nitrogen from entering the containment. In addition, a temperature device sensing just downstream of the trim heater will trip the downstream valve closed if temperature drops below 40°F. In addition, there is no equipment or piping in the direct path of the injected nitrogen in either the drywell or wetwell, and the nitrogen system is normally isolated from the primary containment. Inerting is administratively controlled and the valves are returned to a close position after inerting.

Question 2

Review the operating experience of the inerting system to assure that the vaporizer, the low temperature shutoff valve and the temperature indicators are functioning properly. Evaluate the plant calibration, maintenance and operating procedures for the inerting systems. Assure that the cold nitrogen injection would be detected and prevented.

Response

Nine Mile Point Unit 2 does not have any operating experience with the inerting system, since it has not been preoperational tested at this time. However, as part of the preoperational test, the inerting system will be evaluated to ensure that the vaporizer, the low temperature shutoff valve and the temperature indications function properly. Additionally, the guidance relative to plant calibration, maintenance and operating procedures will be incorporated into plant procedures to ensure that nitrogen injection would be detected and/or prevented below 40°F.

Question 3

Perform a bypass leakage test as soon as convenient to confirm the integrity of the vent system. This test should be conducted during plant operation for

normal plant procedures. If no procedures exist, the following is a general guide for preparing your procedure: pressurize the drywell to approximately 0.75 psi above the wetwell pressure, maintain this drywell pressure and measure the pressure buildup in the wetwell. Any bypass leak area can then be calculated (and is limited by Technical Specifications on many plants) from the wetwell pressure and the wetwell pressure difference. This will provide an indication that the vent system integrity is intact and that no gross failure exists.

Response

Niagara Mohawk has committed to perform a bypass leakage test as described in the FSAR. Bypass leakage rates will be measured as part of this test.

Question 4

Conduct an ultrasonic test as soon as convenient of all accessible welds in a nitrogen injection line from the last isolation valve to the wetwell and drywell penetrations. Also, UT the containment penetrations and the containment shell within six inches of the penetration. UT is recommended because cracks could be most likely to initiate on the inside of the pipe or on the side of the metal in contact with cold nitrogen.

Response

Since nitrogen inerting system has not been in use at Nine Mile Point Unit 2, an ultrasonic test to confirm that nitorgen has not affected metal in the area of the nitrogen injection point is not required.

Question 5

Inspect the containment during the next plant outage. Perform a visual inspection of the vent header downcomers and other equipment and containment which might be expected to be affected by the injection of cold nitrogen. The vent header should be inspected on the outside and the inside. Also inspect the containment shell or the liner steel for at least six inches around the nitrogen penetration.

Response

Vent headers are not used in the Unit 2 design. As discussed in response to the above questions, Niagara Mohawk believes the system design and subsequent testing will ensure proper operation of the nitrogen system. Therefore, a visual inspection of the vent downcomers and equipment in the containment is not considered necessary.