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the southern electric system

NED-84-177

April 5, 1984

Director of Nuclear Reactor Regulation  
Attention: Mr. John F. Stolz, Chief  
Operating Reactors Branch No. 4  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

NRC DOCKETS 50-321, 50-366  
OPERATING LICENSES DPR-57, NPF-5  
EDWIN I. HATCH NUCLEAR PLANT UNITS 1, 2  
STATUS OF SIL 402, "WETWELL/DRYWELL INERTING"

Gentlemen:

The purpose of this letter is to report the status of Plant Hatch with respect to the recommendations of Service Information Letter (SIL) 402, which was issued by General Electric in response to the vent header cracking discovery at Hatch Unit 2. The specific recommendations of SIL 402, as well as the actions taken at Plant Hatch, are as follows:

Recommendation 1 - Evaluate Inerting System Design

"Evaluate the design of the nitrogen inerting system. Investigate the potential for introducing cold (less than 40°) 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."

Status

An evaluation of the Plant Hatch nitrogen inerting system design has been performed. In order to prevent the injection of cold nitrogen (less than 50°) into the Unit 1 or Unit 2 containment, a redundant temperature switch controlling the low temperature shutoff valve was added. The nitrogen ports in the Units 1 and 2 drywell and the Unit 1 wetwell (torus) are presently oriented such that no essential equipment is in the path of injected nitrogen. The nitrogen port in the Unit 2 torus is being relocated to a point where injected nitrogen will not impinge on essential equipment.

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This modification will be complete by the end of the current Unit 2 outage.

Recommendation 2 - Evaluate Inerting System Operation

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

Status

Operating experience and plant procedures related to use of the nitrogen inerting system have been reviewed. Operating experience indicates that malfunctions of the nitrogen inerting system have occurred. The modifications being made will eliminate future malfunctions. Plant procedures have been verified to contain adequate instructions for calibration, maintenance, and operation of the nitrogen inerting system. Cold nitrogen injection would be detected and prevented by the automatic shutoff feature of the inerting system. Operators would be alerted to the low nitrogen temperature condition by an annunciator. Plant personnel will monitor local nitrogen temperature indicators during future inerting operations to provide further assurance that a malfunction would be promptly detected.

Recommendation 3 - Test for Drywell/Wetwell Bypass Leakage

"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 following 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 drywell-wetwell pressure difference. This will provide an indication that the vent system integrity is intact and that no gross failure exists."

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Status

Immediately following discovery of the vent header cracking in Unit 2, a bypass leakage test was performed on Unit 1 in accordance with the existing plant procedure. Leakage was found to be within the Technical Specification limit, indicating that no gross failure of the vent system existed. A similar test will be performed on Unit 2 at the end of the outage which is currently in progress in accordance with Unit 2 Technical Specifications.

Recommendation 4 - Inspect Nitrogen Injection Line

"Conduct an ultrasonic test (UT) as soon as convenient of all accessible welds in the nitrogen injection line from the last isolation valve to the wetwell and drywell penetrations. Also UT the containment penetrations and the containment shell within 6 inches of the penetration. UT is recommended because cracks would be most likely to initiate on the inside of the pipe or on the side of the metal in contact with cold nitrogen."

Status

Visual inspection and limited magnetic particle testing have been performed on all accessible welds of the Units 1 and 2 nitrogen injection lines from the containment penetrations to the inboard isolation valves. No indication of cracking was found. Ultrasonic testing of these welds and the containment shell in the vicinity of the penetration were not performed due to a lack of base line examination data. Alternative inspection techniques are under consideration.

Recommendation 5 - Inspect Containment

"During the next planned outage, perform a visual inspection of the vent header, downcomers and other equipment in the 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 steel liner for at least 6 inches around the nitrogen penetration."

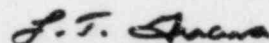
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Status

Visual inspections of Hatch Units 1 and 2 have been performed. All equipment which could be affected by the injection of cold nitrogen, including the vent headers (inside and outside), downcomers, and the containment shell in the vicinity of the nitrogen penetrations, was inspected. No cracking was found other than that on the Unit 2 torus vent header. The extent of the damage, as well as the plans for repair, have been communicated to the NRC. The repairs will be complete by the end of the current outage.

Please contact this office if there are any questions.

Very truly yours,



L. T. Gucwa

JH/mb

xc: H. C. Nix, Jr.  
J. P. O'Reilly (NRC- Region II)  
Senior Resident Inspector