NRC FORM 366
(7-77)

U. S. NUCLEAR REGULATORY COMMISSION

# LICENSEE EVENT REPORT

EXHIBIT A

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

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SUPPLEMENTARY INFORMATION

Report No.: 50-302/79-087/01T-4

Facility: Crystal River Unit #3

Report Date: 20 November 1979

Occurrence Date: 4 October 1979

Identification of Occurrence:

Inadequate design of seven (7) Nuclear Services Closed Cycle Cooling (SW) System hangers reportable under 6.9.1.8.i.

Conditions Prior to Occurrence:

Mode 1 power operation (100%)

Description of Occurrence:

At 1815, following an engineering evaluation conducted by Gilbert Associated, it was reported that seven (7) Nuclear Services Closed Cycle Cooling (SW) System hangers did not meet the requirements of IE Bulletin 79-02. Sw System hangers SWH-404A, 429A, 431A, 432A, 449A, 451A, and 478A, all had a safety factor less than two.

Designation of Apparent Cause:

The cause of this event is attributed to inadequate design.

Analysis of Occurrence:

No effect upon the plant or general public. Justification is provided for the continued operation of the plant with seismic 1 supports having anchors with safety factors less than two (2) as reported by LER 79-087/01T-0.

The supports are located on Nuclear Services Closed Cycle Cooling System piping inside containment at the secondary shield wall penetrations accessible from outside the secondary shield wall. Each of the piping lines is similar with the piping coming off the main headers rising up the shield and turning through the penetration. The supports are classified Seismic 1 to maintain the integrity of the piping which acts as a containment isolation boundary inside containment. There are automatic isolation valves on these lines outside containment to give the double isolation boundary consistent with FSAR requirements. This piping is not required for safe shutdown of the reactor. There are manual isolation valves at the base of each riser off the main headers. The loads on these supports are due to deadload, thermal and seismic with the seismic portion being twice the value obtained from an analysis which utilized the Operating Basis Earthquake. This combination of loads provides a resultant load that produces a safety factor of less than two (2) for the anchor bolts. If one OBE seismic load is used in combination with the deadweight and thermal loads, the safety factor is greater than two (2).

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The seven (7) supports each have three (3) supports upstream and downstream which meet the factor of safety criteria given in Bulletin 79-02.

Corrective Action:

Modification 79-6-86F has been initiated to repair the affected hangers to provide a minimum safety factor of two (2). It was originally assumed that repair of the supports could be made with the plant in operation. Further investigation revealed that although the supports are accessible during plant operation, welding to the piping will be required. To perform the welding and to assure an acceptable weld safely, the associated piping should be drained. Repairs will be completed during the next plant outage.

Failure Data:

This is the second occurrence of this type reported. Refer to LER 79-61.

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