UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

ENCLOSURE

SAFETY EVALUATION BY THE OFFICE OF SPECIAL PROJECTS

CONCERNING RUST IN LOWER CONTAINMENT HEADER

DUE TO LEAKING ISOLATION VALVES

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT, UNIT 2

DOCKET NO. 50-260

1.0 INTRODUCTION

The Tennessee Valley Authority (TVA or the licensee) submitted Licensee Event Report 88-003-000 (LER) concerning the presence of rust in the lower containment spray header at Browns Ferry Nuclear Plant, Unit 2. Water was observed flowing from the lower containment spray header during a hydrostatic pressure test of the residual heat removal system. The appearance of the water led to the conclusion the water had been present in the header for a significant period of time. Subsequent inspections found 20 percent of the sparger holes (seven sparger holes per nozzle) in two of 160 nozzles to be plugged with rust. The lower header was found to have layers of loose rust for 170 degrees of its circumference and loose flakes of rust were found in 30 to 40 percent of the nozzles in the lower spray header. The upper header was also inspected but did not have reportable amounts of loose rust. The water in the lower header was a result of a leak in the lower containment spray header inboard isolation control valve.

TVA removed and cleaned the nozzles in the lower containment spray header, and has committed to cleaning the interior of the lower spray header of loose rust, adjust or repair the inboard and outboard isolation valves for the lower spray header, and measure the wall thickness of the lower spray header to assure adequate pipe integrity.

2.0 EVALUATION

TVA's planned actions will (1) restore the lower containment spray header and its nozzles to full operational efficiency, (2) prevent leakage for the near term, and (3) provide adequate assurance of the lower header's structural integrity. The staff finds TVA's planned actions provide adequate short-term measures to correct the deficiencies caused by the leaking isolation valves. However, TVA has not provided any long-term measures to be taken to prevent or mitigate the occurrence of excessive rust in both of these headers (and those in Units 1 and 3) in the future should these isolations valves develop leaks.

3.0 CONCLUSION

Upon completion of TVA's planned actions of measuring the lower header's wall thickness and the adjustment or repair of the inboard and outboard isolation valves, TVA should report the results and also address long-term preventive measures for both containment spray headers. TVA should consider the long-term preventive measures taken by other licensees with similar problems (e.g. Pilgrim 1) to mitigate the severity of the problem.

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