UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO NRC BULLETIN 96-03

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

EDWIN I. HATCH NUCLEAR PLANT, UNIT 1

DOCKET NO. 50-321

1.0 INTRODUCTION

By letter dated March 25, 1997, Southern Nuclear Operating Company, Inc. (SNC or the licensee) submitted a supplemental response to NRC Bulletin 96-03, "Potential Plugging of Emergency Core Cooling Suction Strainers by Debris in Boiling-Water Reactors." The licensee requested the staff to review and approve its criteria for sizing the new strainers for its emergency core cooling system (ECCS) suction strainers (specifically, the low pressure coolant injection (LPCI) and the low pressure core spray (CS) systems), which are to be installed by the licensee in response to NRC Bulletin 96-03 during the upcoming refueling outage for Hatch Unit 1. The refueling outage is scheduled to commence on October 11, 1997. On May 15, 1997, the staff forwarded a request for additional information (RAI) to the licensee. The licensee's response to the RAI was provided to the staff in a letter dated May 28, 1997. This safety evaluation provides the staff's evaluation of the licensee's criteria for sizing its new LPCI and CS suction strainers. However, because of insufficient information provided on the adequacy of the licensee's new strainer design, the staff will review this information when it becomes available.

2.0 DISCUSSION

The staff's contractor, Science and Engineering Associates, Inc. (SEA), performed a technical evaluation of the licensee's submittal and its response to the staff's RAIs. SEA's evaluation results are documented in the attached Technical Evaluation Report (TER). The staff has evaluated the contractor's findings and agrees with the conclusions in the TER.

3.0 CONCLUSIONS

Based on the staff's evaluation of the licensee's submittals, the contractor's TER, and all other relevant information, the staff finds the licensee's design criteria for sizing its ECCS suction strainers to be adequate to meet the intent of NRC Bulletin 96-03. Specifically, the licensee's calculated debris loadings for the new strainers are acceptable. However, the details of the new strainer design have not been finalized by the licensee's contractor.

Enclosure

Because of this, the details as to the dimensions of the new strainers, the associated headloss across the new strainers with the calculated debris loadings, the basis for the estimated headloss across the new strainers, and the calculated net positive suction head margin with the new strainers were not available for staff review at this time. Therefore, the staff is unable to draw any conclusions as to the adequacy of the strainer design to perform its function with the calculated debris loadings. The licensee should submit this information to the staff when it becomes available.

In addition, the licensee indicated in a telephone conference with the staff (R. Elliot and A. D'Angelo, NRC) and J. Branum, SNC, on June 2, 1997, that it was evaluating taking credit for the fact that the strainer is not a solid object in its calculations for determining the hydrodynamic loads on the strainer. This results in a change in how the licensee calculates the drag forces on the strainer. The licensee has not yet performed its 10 CFR 50.59 evaluation of this methodology change. If it is determined that the licensee will revise the hydrodynamic load methodology and that it constitutes an unreviewed safety question, then the licensee should submit its license amendment as soon as possible. This is an important consideration for the licensee considering the time that would be needed for staff review and the short lead time prior to the fall refueling outage for Unit 1. The licensee's submittal of March 25, 1997, did not provide any discussion on the method the licensee intends to use for evaluation of the hydrodynamic loads on the strainer. The staff has, therefore, made no evaluation in this area.

The staff also notes that adding additional margin for potential foreign material in the suppression pool is a conservative practice and will assist the licensee in minimizing potential operability concerns should the licensee find foreign material in the suppression pool. However, the staff wants to make it clear that increasing the margin in the strainer size does not in any way reduce the licensee's responsibility to maintain an effective foreign material exclusion program, and to take all steps necessary to minimize the amount of material that can accumulate in the suppression pool, vent pipes, vent header, downcomers, drywell, and in any other system or component that communicates with the torus.

Attachment: Technical Evaluation Report

Principal Contributor: Rob Elliott

Date: June 17, 1997