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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SOUTH CAROLINA ELECTRIC & GAS COMPANY

SOUTH CAROLINA PUBLIC SERVICE AUTHORITY

VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1

DOCKET NO. 50-395

1.0 INTRODUCTION

The staff completed its review of the licensee's conformance to Regulatory Guide 1.97, Revision 3, by providing the staff's safety evaluation to the licensee on November 13, 1987. The staff found that the licensee's design was acceptable with respect to conformance to Regulatory Guide 1.97 with the exception of the accumulator tank level and pressure, containment atmosphere pressure, and vent from steam generator safety relief valves or atmospheric dump valves. For the accumulator tank level and pressure, the staff left this issue open, because the staff was involved in a generic review of the need for environmental qualification of accumulator tank and pressure instrumentation. By letters dated February 16, 1988 and May 20, 1988, the licensee requested that the staff reevaluate the containment atmosphere pressure and the vent from steam generator safety relief valves or atmospheric dump valves needed.

2.0 EVALUATION

A detailed review and technical evaluation of these two issues was performed by EG&G Idaho, Inc., (EG&G) under a contract to the NRC, with general supervision by the NRC staff. This work was reported by EG&G in Technical Evaluation Report (TER), "Conformance to Regulatory Guide 1.97: Summer," dated April 1988 (attached).

The staff has reviewed the evaluation performed by EG&G contained in the attached TER and concurs with its bases and findings except for the findings contained in TER section 3.3.13 concerning accumulator tank level and pressure. For the remaining items we agree with the EG&G findings that the licensee either conforms to, or has provided an acceptable justification for, deviations from the guidance of Regulatory Guide 1.97.

In TER section 3.3.13 EG&G concluded that for the accumulator tank level and pressure, the licensee should designate either level or pressure as the key variable to directly indicate accumulator discharge and provide instrumentation for the designated variable that meets the requirements of 10 CFR 50.49. The staff, however, is still in the process of generically reviewing the need for environmentally qualified Category 2 instrumentation to monitor accumulator tank level and pressure. The staff will, therefore, report on the acceptability of this item when the generic review is complete.

Regulatory Guide 1.97 recommends Category 2 containment atmosphere temperature instrumentation, with a range of 40° to 400°F, to indicate the accomplishment of cooling by containment cooling systems. The licensee has provided Category 2 instrumentation that has a range of 50° to 350°F. The licensee states that the worst case postulated accident would not cause the peak reactor building temperature to rise above 321.5°F. The licensee further states that the minimum reactor building temperature would be 50°F. Since the worst case postulated temperature will not decrease below 50°F, we find the range of 50° to 350°F adequate to monitor this variable during all accident and post-accident conditions. Therefore, the instrumentation provided by the licensee is acceptable.

Regulatory Guide 1.97 recommends Category 2 instrumentation to detect significant releases of airborne radioactive materials from the vent from steam generator relief valves or atmospheric dump valves. The licensee has provided steam line radiation monitors, steam flow instrumentation and steam line isolation valve position indication instrumentation to monitor this variable. This instrumentation meets the Category 2 criteria except for environmental qualification. The licensee states that these monitors are located in areas of mild environment during accident conditions for which the monitors are required to operate. Therefore, the instrumentation provided by the licensee is acceptable.

3.0 CONCLUSION

Based on the staff's review of the attached TER and the licensee's submittals, we find that the Virgil C. Summer Nuclear Station design for the containment atmosphere pressure and the vent from steam generator safety relief valves or atmospheric dump valves is acceptable with respect to conformance to Regulatory Guide 1.97, Revision 3.

The acceptability of instrumentation for accumulator tank level and pressure will remain open pending the outcome of the staff's generic review of the need for environmentally qualified Category 2 instrumentation to monitor this variable. The staff will therefore report on the accountability of this issue when the generic review is complete.

Principal Contributor: B. Marcus

Dated: July 27, 1988