UNITED STATES
ATOMIC ENERGY COMMISSION
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THRU: R. J. Schemel, Chief, ORB #1, DRL

SAFETY EVALUATION FOR PROPOSED CHANGE NO. 4 TO THE TECHNICAL SPECIFICATIONS

The SEFOR license, as amended, requires that prior to excursion testing the technical specifications be changed to include: (a) criteria for operation with failed fuel, (b) detection of failed fuel, and (c) definition of unexplained behavior of the reactor. By letter dated September 3, 1970, GE applied for the subject change which was intended to fulfill these requirements. Our safety evaluation is contained in a request to GE dated December 1, 1971, for additional information and in a letter to file on the same date which summarizes a meeting with GE. In essence, we concluded that GE had not addressed (a) and that in view of this, the responses for (b) and (c) were not adequate.

The additional information was submitted by GE in letters dated December 11 and 22, 1970. The letter of December 22, 1970, addresses detection of failed fuel and an evaluation of the letter is contained in my letter to the Director dated January 28, 1971. Although we concluded that the analysis for response of the cover gas monitor to failed fuel might not be conservative, we also concluded after a discussion with GE that they might be able to provide a conservative criterion for operation (including excursion testing) with failed fuel. An analysis supporting such a criterion was submitted by GE on February 1, 1971. During a meeting with GE on February 3, we examined that analysis and concluded that it is indeed conservative. Following the meeting, Mr. Meyer proposed an appropriate criterion (0.6% strain) to be included in the Basis for Specification 3.12. Because of this work, the importance of (b) and (c) to assure reactor safety is reduced.

We have also completed our evaluation of the letter of December 11, 1970, which addresses definition of reactivity, flow and temperature anomalies. Although we conclude that the definitions and supporting information are acceptable, we have advised GE of two discrepancies.

First, the calculation of the power coefficient of reactivity at constant flow and constant inlet temperature is in error; and second, at low flow, a negative flow change equal to the defined anomaly will be larger than that required to cause scram. There is no indication that the error in the power coefficient has been carried over into the equation for predicting excess reactivity. Further, we believe that the definitions of unexplained reactor behavior provide reasonable assurance together with the other plant safety precautions that the health and safety of the public will not be endangered.

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