ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

March 10, 1975

Honorable William A. Anders
Chairman
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: EMERGENCY CORE COOLING SYSTEMS EVALUATION MODEL (ECCS-EM) FOR THE NONJET-PUMP BOILING WATER REACTOR

Dear Mr. Anders:

At its 179th meeting, March 6-8, 1975, the Advisory Committee on Reactor Safeguards completed its review of the Exxon Nuclear Company's ECCS Nonjet-Pump Boiling Water Reactor Fuel Heatup Model. The initial application of this model is for the evaluation of a reload core at the Oyster Creek Nuclear Generating Station and requires the proper coupling with the approved General Electric Emergency Core Cooling Systems Evaluation Model (ECCS-EM) for the nonjet-pump boiling water reactor. The Jersey Central Power and Light Company is responsible for obtaining the overall ECCS-EM which meets the requirements of 10 CFR 50.46, Appendix K. Subcommittee meetings were held with the NRC Staff and the representatives of the Exxon Nuclear Company in Washington, D.C., on February 1 and 22, 1975, with attendance at the second meeting expanded to include participation by representatives from the Jersey Central Power and Light Company. The Committee previously reported on Evaluation Models for Commission Criteria for Emergency Core Cooling Systems for Light-Water-Cooled Nuclear Power Reactors on November 20, 1974. The Committee also had the benefit of the documents listed below.

The ACRS believes that the Exxon Nuclear Company's portion of the ECCS-EM with the additional modifications required by the NRC Staff and when properly coupled with the approved General Electric nonjet-pump boiling water reactor model will conform to 10 CFR 50.46, Appendix K. Although the Committee believes that the coupling procedure is acceptable for the present application, the Committee recommends that future applications be based upon an integrated set of approved models.

Sincerely yours,

William Kerr
Chairman

References:

1. XN-73-34 (Rev 2), "HUXY: A Generalized Multirod Heatup Code"

2. XN-74-25 (Rev 1), "2DQ: A Two Dimensional Quenching Model"

3. XN-74-27 (Rev 1), "BULGEX: A Computer Code to Determine the Deformation and the Onset of Bulging of Zircaloy Fuel Rod Cladding"

4. XN-74-51, "ECCS Analysis for Oyster Creek Fuel Types IIIA, IIIE, and IIIF with the Exxon Nuclear Evaluation Model for BWR Loss of Coolant Accidents"

5. XN-174 and Suppl 1, "Densification Effects on Exxon Nuclear Boiling Water Reactor Fuel"

6. XN-235, "Exxon Nuclear Evaluation Model for BWR Loss of Coolant Accidents"

7. Report Regarding the Exxon Nuclear Company ECCS Non-Jet-Pump-BWR Fuel Heatup Model by the Office of Nuclear Reactor Regulation March 6, 1975