

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

September 15, 1975

Honorable William A. Anders  
Chairman  
US Nuclear Regulatory Commission  
Washington, DC 20555

**Subject: REPORT ON EXXON NUCLEAR COMPANY ECCS EVALUATION MODEL FOR  
RELOAD CORES IN PWR'S**

Dear Mr. Anders:

At its 185th Meeting, September 11-13, 1975, the Advisory Committee on Reactor Safeguards completed its review of the Exxon Nuclear Company's ECCS Evaluation Model for reload cores in pressurized water reactors. A Subcommittee meeting was held with representatives of the Exxon Nuclear Company, Inc., and the Nuclear Regulatory Commission in Washington, D.C., on August 21, 1975. The Committee also had the benefit of the documents listed below.

Following its review of the Exxon Nuclear Company's ECCS Evaluation Model for reload cores for nonjet-pump BWR's, the Committee recommended in its March 10, 1975, report to the Commission that future applications by the Exxon Nuclear Company present an integrated set of models. The Exxon Nuclear Company, in responding to this recommendation, has used the Nuclear Regulatory Commission's Water Reactor Evaluation Model (WREM) code package as the starting point and has developed the Exxon Nuclear Company WREM-Based Generic PWR ECCS Evaluation Model. Since the NRC Staff's WREM model did not satisfy all requirements of Appendix K to 10 CFR 50, a significant effort has been required to demonstrate conformance of the new evaluation model with Appendix K. Deficiencies identified by the Staff have been addressed, and the Committee believes that the Exxon Nuclear Company can complete the remaining requirements set forth by the Staff. Even with an approved generic evaluation model, applications of the model will require case-by-case evaluation by the NRC Staff. Applications are scheduled for H. B. Robinson Unit 2, Yankee Rowe, and Palisades.

The Committee believes that, with the additional requirements set by the NRC Staff, the Exxon Nuclear Company WREM-Based Generic PWR ECCS Evaluation Model will conform to Appendix K to 10 CFR 50.

Sincerely,



William Kerr  
Chairman

REFERENCES TO EXXON NUCLEAR COMPANY ECCS EVALUATION MODEL FOR RELOAD CORES  
IN PWR'S LETTER:

1. Division of Technical Review, Nuclear Regulatory Commission, report entitled: "WREM: Water Reactor Evaluation Model, Revision 1," dated May 1975, (NUREG-75-056).
2. Division of Technical Review, Nuclear Regulatory Commission, report entitled: "TOODEE 2: A Two Dimensional Time Dependent Fuel Element Thermal Analysis Program," dated May 1975, (NUREG-75-057).
3. Exxon Nuclear Company, Inc., report entitled: "Exxon Nuclear Company WREM-Based Generic PWR ECCS Evaluation Model," (XN-75-41)  
Volume I, dated July 25, 1975  
Volume II, "-Model Justification," dated August 1, 1975  
Volume II Appendix, "- 3-Loop Westinghouse Sample Problem," dated August 1, 1975  
Volume III (Revision 2), "-Small Break Model," dated August 20, 1975  
Supplement 1, "-Further Definition and Justifications to Reflood Heat Transfer Models," dated August 14, 1975  
Supplement 2, "-Supplementary Information Related to Blowdown and Reflood Analysis," dated August 14, 1975  
Supplement 3, "-Supplementary Information Relating to Blowdown and Heatup Analysis"  
Supplement 4, "-Supplementary Information Relating to Blowdown and Heatup Analysis," dated August 20, 1975
4. Exxon Nuclear Company, Inc., Nuclear Regulatory Commission, report entitled: "Core Physics Methods and Data Used as Input to LOCA Analysis," (XN-75-43) dated August, 1975
5. Office of Nuclear Reactor Regulation, Nuclear Regulatory Commission, report entitled: "Safety Evaluation Report Regarding Review of the Exxon Nuclear Company Pressurized Water Reactor Generic ECCS Codes and the H. B. Robinson Reactor ECCS Evaluation Model for Conformance to All Requirements of Appendix K to 10 CFR 50," dated September 11, 1975.