7590-01

NUCLEAR REGULATORY COMMISSION

10 CFR PART 60

AVAILABILITY OF DRAFT STAFF TECHNICAL POSITION

ON GEOLOGIC REPOSITORY OPERATIONS AREA

UNDERGROUND FACILITY DESIGN -- THERMAL LOADS

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice of Availability.

SUMMARY: The Nuclear Regulatory Commission is announcing the availability of the draft staff technical position (STP) on "Geologic Repository Operations Area Underground Facility Design -- Thermal Loads."

DATE: The comment period expires _____, 1991. [90-day public comment period.]

ADDRESSES: Send comments to David L. Meyer, Chief, Regulatory Publications Branch, Division of Freedom of Information and Publication Services, Office of Administration, U. S. Nuclear Regulatory Commission, Washington, D.C. 20555. Copies of this document may be obtained free of charge upon written request

to Anne E. Garcia, Repository Licensing and Quality Assurance Project Directorate, Division of High-Level Waste Management, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Mail Stop 4-H-3, Washington, D. C. 20555. Telephone 301/492-0438. A copy of this draft STP is also available for public inspection and/or copying at the NRC Public Document Room, 2120 L. Street (Lower Level), N.W., Washington, D.C. 20555.

FOR FURTHER INFORMATION CONTACT: Michael P. Lee, Project Manager, Repository Licensing and Quality Assurance Project Directorate, Division of High-Level Waste Management, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Mail Stop 4-H-3, Washington, D.C. 20555. Telephone 301/492-0421.

SUPPLEMENTARY INFORMATION: Section 60.133(i) requires that the underground facility of a geologic repository be designed so that the 10 CFR Part 60 performance objectives will be met, taking into account the predicted thermal and thermomechanical response of the host rock, surrounding strata, and groundwater system. This STP has been developed by the Division of High-Level Waste Management to provide regulatory guidance to the U. S. Department of Energy (DOE) on acceptable methodologies for demonstrating compliance with 10 CFR 60.133(i). The U.S. Nuclear Regulatory Commission (NRC) staff's position is that DOE should develop and use a defensible methodology to demonstrate the acceptability of a geologic repository operations area (GROA)

facility design. The NRC staff currently anticipates that this methodology will require development of fully coupled models to account for the thermal, mechanical, hydrological, and chemical processes that are induced by the thermal load. The GROA underground facility design: (1) should satisfy design goals/criteria initially selected by considering the performance objectives; and (2) must satisfy the performance objectives 10 CFR 60.111, 60.112, and 60.113. The methodology described in this STP suggests an iterative approach suitable for the underground facility design at the time of a license application.

Dated at Rockville, Maryland this 28th day of June, 1991.

For the Nuclear Regulatory Commission

B.J. Youngblood, Director
Division of High-Level Waste Management
Office of Nuclear Material Safety
and Safeguards