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

JAN 09 1978

MEMORANDUM FOR: Lawrence Shao, Chief, Engineering Branch, DOR

FROM: Robert L. Baer, Chief, Reactor Safety Branch, DOR

SUBJECT: GETR EMERGENCY COOLING SEISMIC QUALITY

The Reactor Safety Branch has reviewed the GETR emergency cooling systems and identified those systems that are required to assure adequate cooling of the core. The enclosure identifies these systems and specifies the operability conditions that must be met by each system. We request that the Engineering Branch examine the seismic qualifications of the components listed in the enclosure and identify any which do not satisfy the required operability conditions.

Robert L. Baer, Chief
Reactor Safety Branch
Division of Operating Reactors

Enclosure:
As stated

cc: V. Stello
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# GETR ESSENTIAL SYSTEMS

The GETR emergency cooling systems are designed such that during a seismic event all active valve realignments are accomplished during the low magnitude initial shock and prior to the advent of large accelerations. The seismic trip is initiated at an acceleration of 0.01 g. The control rods begin to drop into the core 530 msec after the initial shock and the emergency cooling valves are fully open by that time. The primary system is fully depressurized at 1 sec after the initial shock. The flow control valves on the proposed fuel flooding system are also opened upon receipt of the seismic scram signal.

The following sections list the components of the GETR system which are required to assure that the core is adequately cooled following a design basis failure and simultaneous seismic event. It is assumed that the main seismic event is preceeded by a relatively low magnitude initial shock.

A. Passive components that must not fail during a seismic event.

1. Reactor pool and liner
2. Primary system main piping and standpipes
3. Bottom head penetrations
4. Fuel flooding system piping and tanks
5. Fuel storage canal and liner
6. Fuel storage tanks
7. Polar crane restraints

B. Components that must operate actively during the initial low magnitude tremor and must not fail passively during the main shock.

1. Emergency cooling valves PRI 130 and PRI 150
2. Fuel flooding system flow control valves

C. Components that must remain operable following the main shock.

1. Primary cooling check valves PRI 140 and PRI 160
2. Anti siphon valves PRI 190 and PRI 191
3. Fuel flooding system check valves
4. Fuel flooding system anti siphon devices