

Docket No. 50-410

APR 21 1975

Niagara Mohawk Power Corporation
ATTN: Mr. Gerald R. Rhode
Vice President - Engineering
300 Erie Boulevard West
Syracuse, New York 13202

Gentlemen:

Pursuant to § 50.54(f) of 10 CFR Part 50, the Nuclear Regulatory Commission (NRC) staff requires that certain information related to the design of the containment for your facility be submitted promptly to NRC for its review. This requirement results from recent developments associated with our on-going review area of BWR plants with pressure suppression-type containments and the capability of the suppression pool retaining structures to tolerate loads due to operation of the primary system pressure relief valves. Experience at several operating BWR plants has indicated that loads due to relief valve actuation may not have been fully considered in the structural design of the suppression chamber. In addition, the General Electric Company is now preparing to start a series of small-scale relief valve tests which will be used to verify analytical predictions of these loads as applicable to all classes of plants.

Pool dynamic loads due to relief valve operation are due to two distinct phenomena. First, pressure waves are generated within the suppression pool when, on first opening, relief valves discharge high pressure air followed by steam into the pool water. These are referred to as steam vent clearing loads. Second, steam quenching vibrations can accompany extended relief valve discharge into the pool if the water is at an elevated temperature. The enclosure specifies the information pertaining to these effects, which we will require to complete our review of your design with regard to these phenomena.

Your response to this request for information should be filed within ninety days of the date of receipt of this letter. If you cannot meet this schedule, please advise us within fifteen days.

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Please contact us if you desire additional discussion or clarification of the information requested.

Sincerely,

Original Signed by

D. Crutchfield

John F. Stolz, Chief
Light Water Reactors Branch 2-1
Division of Reactor Licensing

Enclosure:

Request for Additional
Information

This request for Generic Information was approved by GAO under a blanket Clearance No. B-180225 (R0072); this clearance expires July 31, 1977.

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DATED	4/21/75	4/21/75				

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REQUEST FOR ADDITIONAL INFORMATION
RELIEF VALVE LOADS

1. Specify the number of safety relief valves, their design flow rate, and discharge line size. Provide a listing of operating conditions under which these valves would be operated either manually or automatically. Describe, with the aid of drawings, the routing of the discharge line to, and orientation in, the suppression pool, and the design of the discharge line exit.
2. Provide the load specification for the suppression chamber structure to accommodate actuation of one or more safety relief valves.
3. Provide the design load capability for the suppression chamber structure.
4. Provide justification for the load specification given in (2) above by the use of appropriate experimental data and analysis. If the General Electric (GE) Company is responsible for specifying these loads, a statement to that effect is sufficient.
5. Identify, with the aid of drawings, any components or structures in the suppression pool region, other than the bounding walls of the suppression chamber, and the location of such components relative to the relief valve discharge line exits. Discuss the structural capability of these components to accommodate loads due to relief valve actuation.
6. Estimate the maximum number of single and multiple relief valve openings over the life of your plant.

7. Identify the maximum temperature limits of the suppression pool with the reactor at power. This temperature limit should include provisions for the testing requirements of relief valves.
8. Specify the operator actions that are planned when specified temperature limits are exceeded.
9. Present the temperature transient of the suppression pool starting from the specified limits in (1) for the following transients:
 - (a) main steam line isolation;
 - (b) semi-automatic blowdown; and,
 - (c) stuck open relief valve.

For purposes of this analysis, the minimum water level should be assumed in the suppression pool.

10. The temperature instrumentation that will be installed in the pool and the sampling or averaging technique that will be applied to arrive at a definitive pool temperature.

