

Public Service of New Hampshire

SEABROOK STATION Engineering Office: 1671 Worcester Road Framingham, Massactovsetts 01701 (617) - 872 - 8100

January 26, 1983

SBN- 434 T.F. B7.1.2

United States Nuclear Regulatory Commission Washington, D. C. 20555

Attention: Mr. George W. Knighton, Chief Licensing Branch No. 3 Division of Licensing

References:

(a) Construction Permits CPPR-135 and CPPR-136, Docket Nos. 50-443 and 50-444

(b) USNRC Letter, dated April 28, 1982, "Request for Additional Information - Procedures and Test Review Branch," F. J. Miraglia to W. C. Tallman

Subject: Response to RAI 640.8; (Procedures and Test Review Branch)

Dear Sir:

We have enclosed a response to the subject Request for Additional Information which was forwarded in Reference (b).

The enclosed response will be incorporated into the FSAR in OL Application Amendment 49.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY

J. DeVincentis

for: Project Manager

ALL/fsf

cc: Atomic Safety and Licensing Board Service List

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ASLB SERVICE LIST

Philip Ahrens, Esquire Assistant Attorney General Department of the Attorney General Augusta, ME 04333

Representative Beverly Hollingworth Coastal Chamber of Commerce 209 Winnacunnet Road Hampton, NH 03842

William S. Jordan, III, Esquire Harmon & Weiss 1725 I Street, N.W. Suite 506 Washington, DC 20006

E. Tupper Kinder, Esquire Assistant Attorney General Office of the Attorney General 208 State House Annex Concord, NH 03301

Robert A. Backus, Esquire 116 Lowell Street P.O. Box 516 Manchester, NH 03105

Edward J. McDermott, Esquire Sanders and McDermott Professional Association 408 Lafayette Road Hampton, NH 03842

Jo Ann Shotwell, Esquire Assistant Attorney General Environmental Protection Bureau Department of the Attorney General One Ashburton Place, 19th Floor Boston, MA 02108 640.8

We have noted on other plant startups that the capacities of pressurizer or main steam relief values and turbine bypass values are sometimes in excess of the values assumed in the accident analysis for inadvertent opening or failure of these values. Provide a description of the testing that demonstrates that the capacity of these values is consistent with your accident analysis assumptions.

RESPONSE:

The accident analysis assumptions do not assume values for the pressurizer or main steam relief values or the turbine bypass values. The accident analysis is based on the capacities of the pressurizer safety and steam generator safety values. The capacities of the safety values greatly exceed that of the relief values or turbine bypass values.

The pressurizer safety valve is sized to relieve approximately twice the steam flow rate of a relief valve (15.6.1.1). The pressurizer safety valves are Crosby Model 6M6 valves with a nozzle bore diameter of 2.154 inches (bore area of 3.644 square inches). Test data for these valves may be found in the EPRI PWR Safety and Relief Valve Test Program, Safety and Relief Valve Test Report, EPRI NP-2628-LD, Interim Report, September 1982. The pressurizer relief valves are Garrett electric solenoid valves (part number 3750014) with a limiting flow area (seat) of 1.584 square inches. Test data for these valves may be found in the EPRI/Wyle Power-Operated Relief Valve, Phase III, Test Report, Volume II, EPRI NP-2670-LD, Interim Report, October 1982.

Main steam safety valves have steam capacities ranging from 893,200 lbs/hr at set pressure of 1185 psig (1200 psia) to 945,300 lbs/hr at 1255 psig (10.3.2.6). The main steam relief valve capacity is 400,000 lbs/hr at 1135 psig (10.3.2.4). The turbine bypass (steam dump to condenser) valve capacity is 510,000 lbs/hr at 1107 psia (10.4.4.2). These capacities are based on manufacturer's standard ratings based on generic testing. The NSSS supplier has indicated that the maximum actual capacity of any single valve should not exceed 970,000 lbs/hr at 1200 psia (Reference WCAP-7451, Revision 2). The accident analysis for inadvertent opening of a single steam dump, relief or safety valve (15.1.4.2) uses a steam flow rate of 268 lbs/sec at 1200 psia. This is equivalent to 904,800 lbs/hr at 1200 psia. It is noted that this is the maximum assured flow, at initial conditions, which decreases during the accident as the steam pressure falls.

Since the accident analysis is based on a substantially higher steam flow capacity than the relief or bypass valves are capable of providing, no testing is planned to demonstrate the capacity of these valves.