PSNH PUBLIC SERVICE
Company of New Hampshire

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

June 1, 1984
SBN - 661
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 Permit CPPR-135 and CPPR-136, Docket Nos. 50-443 and 50-444

Subject: Response to SER Outstanding Issue #9; Fracture Toughness of RCPB and Secondary System Materials (5.2.3, 10.3.6)

Dear Sir:

In response to the subject SER Outstanding Issue as it relates to the fracture toughness of the main steam and feedwater systems, we have enclosed a revised version of FSAR Section 10.3.6.1.c. This revised FSAR section addresses the issue delineated in Safety Evaluation Report Section 10.3.6, namely, "The applicant should provide a technical rationale justifying the waiving of fracture toughness testing of ferritic steel components of the main steam and feedwater systems."

The enclosed FSAR revision will be included in OL Application Amendment 53.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY

John DeVincentis
Engineering Manager

Enclosure

cc: Atomic Safety and Licensing Board Service List

A001
1/1

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

Roy P. Lessy, Jr., Esquire
Office of the Executive Legal Director
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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

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

Mr. John B. Tanzer
Designated Representative of
the Town of Hampton
5 Morningside Drive
Hampton, NH 03842

Roberta C. Pevear
Designated Representative of
the Town of Hampton Falls
Drinkwater Road
Hampton Falls, NH 03844

Mrs. Sandra Gavutis
Designated Representative of
the Town of Kensington
RFD 1
East Kingston, NH 03827

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

Senator Gordon J. Humphrey
U.S. Senate
Washington, DC 20510
(Attn: Tom Burack)

Diana P. Randall
70 Collins Street
SEabrook, NH 03874

Donald E. Chick
Town Manager
Town of Exeter
10 Front Street
Exeter, NH 03833

Brentwood Board of Selectmen
RED Dalton Road
Brentwood, New Hampshire 03833

Edward F. Meany
Designated Representative of
the Town of Rye
155 Washington Road
Rye, NH 03870

Calvin A. Canney
City Manager
ity Hall
126 Daniel Street
Portsmouth, NH 03801

Dana Bisbee, Esquire
Assistant Attorney General
Office of the Attorney General
208 State House Annex
Concord, NH 03301

Anne Verge, Chairperson
Board of Selectmen
Town Hall
South Hampton, NH 03842

Patrick J. McKeon
Selectmen's Office
10 Central Road
Rye, NH 03870

Carole F. Kagan, Esq.
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. Angie Machiros
Chairman of the Board of Selectmen
Town of Newbury
Newbury, MA 01950

Town Manager's Office
Town Hall - Friend Street
Amesbury, Ma. 01913

Senator Gordon J. Humphrey
1 Pillsbury Street
Concord, NH 03301
(Attn: Herb Boynton)

Richard E. Sullivan, Mayor
City Hall
Newburyport, MA 01950

Design Criterion 51, and found to be acceptable. (See SER for Containment Boundary).

c. The main steam and feedwater piping between the steam generators and the containment penetrations is fabricated from ASME SA155, grade KCF70, Class 1, material or ASME SA106, Grade B, seamless material.

The nil ductility temperature from NUREG 0577 Table 4.4 (T_{NDT} + 1.3σ) is 67°F for the SA106 material and 39°F for the SA155 material.

See Insert for Page 10.3-8

The Permissible Minimum Service Temperature for these materials is (T_{NDT} + 30°F) from Figure NC-2311(a)-1 of ASME III, or 97°F for SA106B material and 69°F for SA155 material. The minimum service temperature for the main steam lines is restricted to a hydrostatic test temperature of 100°F.

The feedwater piping between the steam generators and the containment penetrations is fabricated from ASME SA106 Grade B, normalized material. The Permissible Minimum Service Temperature for this material is (T_{NDT} + 30°F) from Figure NC-2311(a)-1 of ASME III, or 97°F. The minimum service temperature for the feedwater piping is restricted to a hydrostatic test temperature of 100°F.

Since neither the main steam nor the feedwater lines will be pressurized at temperatures at or below the T_{NDT}, impact testing was not required by the design specification. This is in compliance with NC-2310 of ASME III, Summer, 1972 addenda.

48

10.3.6.2 Materials Selection and Fabrication

All Class 2 and 3 pipe, valves and fittings used in the steam and feedwater systems are fabricated from materials that are listed in Appendix I of Section III of the ASME Code.

The following materials are used for Class 2 and 3 service:

Main Steam	Feedwater
SA-106, Grade B and C	SA-106, Grade B
SA-155, Grade KCF70	SA-234
SA-234	SA-105
SA-105	SA-193, Grade B7
SA-193, Grade B7	SA-194 Grade 7, 2H, 4 or 3
SA-194, Grade 7, 2H, 4 or 3	SA-312, Type 304

INSERT FOR PAGE 10.3-8

c. The main steam system pipe and fittings inside containment were fabricated from the materials listed in Subsection 10.3.6.2 below. All welded joints were examined radiographically to ensure minimum weld defects. Impact testing of this material was not considered necessary, since the maximum nil ductility transition temperature for these materials (conservatively taken from NUREG-0577 as 97°F considering the thickness adjustment) was below the minimum service temperature of 100°F established for the hydrostatic test fluid temperature.

The feedwater system pipe and fittings inside containment and outside containment up to the check valve beyond the isolation valve were fabricated from the materials listed in Section 10.3.6.2 below. All welds were examined radiographically to ensure minimum defects. The piping material, SA-106, was heat-treated to improve impact properties. Impact tests were performed on seven of the eight heats of piping material and met code requirements at the minimum emergency feedwater injection temperature of 50°F.