CONNECTICUT YANKEE ATOMIC POWER COMPANY

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June 27, 1985

Docket No. 50-213
B11591

Director of Nuclear Reactor Regulation
Attn: Mr. John A. Zwolinski, Chief
Operating Reactors Branch #5
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Reference: (1) J. F. Opeka letter to J. A. Zwolinski, dated June 11, 1985.

Gentlemen:

Haddam Neck Plant
Request for Additional Information on
Proposed Revision to Technical Specifications
Pressure/Temperature Limit Curves

Per a telephone conversation held on June 18, 1985 with the Staff, additional information was requested and conveyed with regard to our proposed revision to Technical Specifications forwarded by Reference (1). Attachment 1 summarizes the information requested and discussed.

As discussed in the attachment, because of the requests for additional information, the three curves which were part of our original proposed revision to Technical Specifications have been revised. Therefore, pursuant to 10CFR50.90, Connecticut Yankee Atomic Power Company (CYAPCO) hereby proposes to amend its Operating License, DPR-61, by revising Section 3.4 as described in Reference (1) except using the attached three curves, Figures 3.4-1, 3.4-8 and 3.4-9 which supersede those originally sent.

It is noted that the reviews in accordance with 10CFR50.59 and 10CFR50.92 documented in Reference (2) remain valid.

In accordance with the requirements of 10CFR50.91(b), a copy of this letter is being provided to the State of Connecticut.

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If you have any further questions, feel free to call us. We continue to project the need for the amendment by July 20, assuming continued plant operation at or near 100% power.

Very truly yours,

CONNECTICUT YANKEE ATOMIC POWER COMPANY

J. F. Opeka
Senior Vice President

cc: Kevin McCarthy, Director
Radiation Control Unit
Department of Environmental Protection
State Office Building
Hartford, Connecticut 06424

STATE OF CONNECTICUT)
) ss. Berlin
COUNTY OF HARTFORD)

Then personally appeared before me J. F. Opeka, who being duly sworn, did state that he is Senior Vice President of Connecticut Yankee Atomic Power Company, a Licensee herein, that he is authorized to execute and file the foregoing information in the name and on behalf of the Licensees herein and that the statements contained in said information are true and correct to the best of his knowledge and belief.

Lorraine J. D'Amico
Notary Public

My Commission Expires March 31, 1988

Attachment 1

Response to Requests for Additional Information

Haddam Neck Plant

Pressure/Temperature Limit Curves Technical Specifications

June 1985

REPLY TO NRC QUESTIONS

1.Q. What is the RT_{NDT} of the closure region?

1.A. The RT_{NDT} of the closure region is conservatively estimated (per MTEB 5-2) to be:

Reactor Vessel Flange RT_{NDT} = 10°F (A-336 Material)
Closure Head Flange RT_{NDT} = 60°F

2.Q. What is the copper and phosphorous content for Weld Heat 1248? Also, what is the fluence at the location of that weld material; at 22EFPY, at 27EFPY?

2.A. We do not have a complete analysis of the Heat 1248 weld wire, however, this heat of material with the identical flux type was used to fabricate the surveillance weld for the Zorita nuclear plant. This weld was made by the identical fabricator and is of the same vintage as the CY weld and we consider it representative of the CY material.

	Cu%	P%	Ni%
Heat 1248	0.22*	.015	.08*

The fluence at the lower to intermediate shell weld is equivalent to the lower shell plate welds:

22EFPY	27EFPY
(n/cm^2) = 2.6×10^{19}	3.8×10^{19}

3.Q. Was Capsule "D" the last surveillance capsule removed?

3.A. Yes.

4.Q. Which weld is delineated in Table I? Why does lower shell plate W-9807-5 start at the same surface fluence and change as it gets deeper?

4.A. The weld modeled for fluence calculations is the worst longitudinal seam in the intermediate shell, i.e., adjacent to the core centerline.

There is a typographical error in Table I, the surface fluence for plate W-9807-5 should be 2.6×10^{19}, not 4.3×10^{19}.

5.Q. Why isn't there a vertical lower limit lie for bolt-up?

5.A. Historically, we have not had a requirement for a lowest bolt-up temperature. We will add a vertical bolt-up line at 60°F for both hydrostatic testing and operation. (Note that 60°F is equal to the higher of the reactor vessel flange RT_{NDT} and the closure head flange RT_{NDT}.)

See attached curves.

*Zorita analysis - Matsurv data base.

6.Q. Why isn't the flange protection line at 622 psi?

6.A. From 10CFR50 Appendix G IV.A.2 says:

"In addition, when pressure exceeds 20 percent of the preservice system hydrostatic test pressure, the temperature of the closure flange regions that are highly stressed by bolt preload must exceed the reference temperature of the material in those regions by at least 120°F for normal operation, and by 90°F for hydrostatic pressure tests and leak tests...."

From CY FDSA, page 5.1.3-11 says:

"Hydrostatic testing of the vessel was performed at 3750 psig in accordance with paragraph UG-99, Section VIII of the ASME Code for unfired pressure vessels."

Therefore:

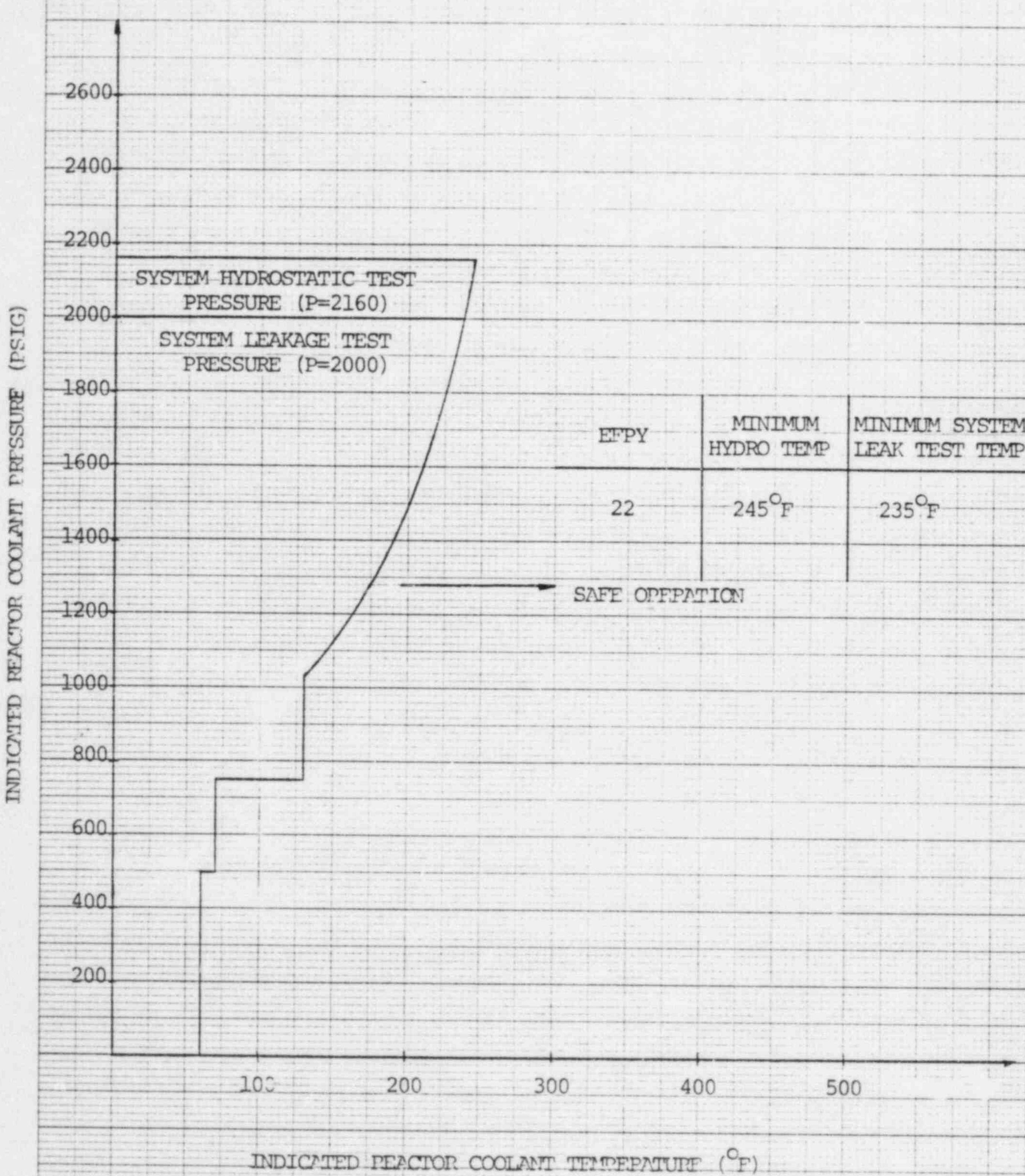
$T = RT_{NDT}$* (of flange region) + 120°F (or 90°F for hydro)
T = 40 + 120 (or 90) = 160°F (130°F for hydro)
P = 0.2 (3750) = 750 psig

See attached curves.

*Note that even though RT_{NDT} of the head flange is estimated to be 60°F, 40°F will be used because the flange material was quenched and tempered.

Figure 3.4-1

CONNECTICUT YANKEE LIMIT CURVE FOR HYDROSTATIC AND LEAK TESTING
APPLICABLE FOR 22.0 EFFECTIVE FULL POWER YEARS.
(T_{ERROR} = 10°F, P_{ERROR} = 60 PSIG)



CONNECTICUT YANKEE REACTOR COOLANT SYSTEM HEATUP LIMITATIONS FOR 22.0 EFFECTIVE FULL POWER YEARS.
($T_{ERROR} = 10^{\circ}F$, P_{ERROR} = 60 PSIG)

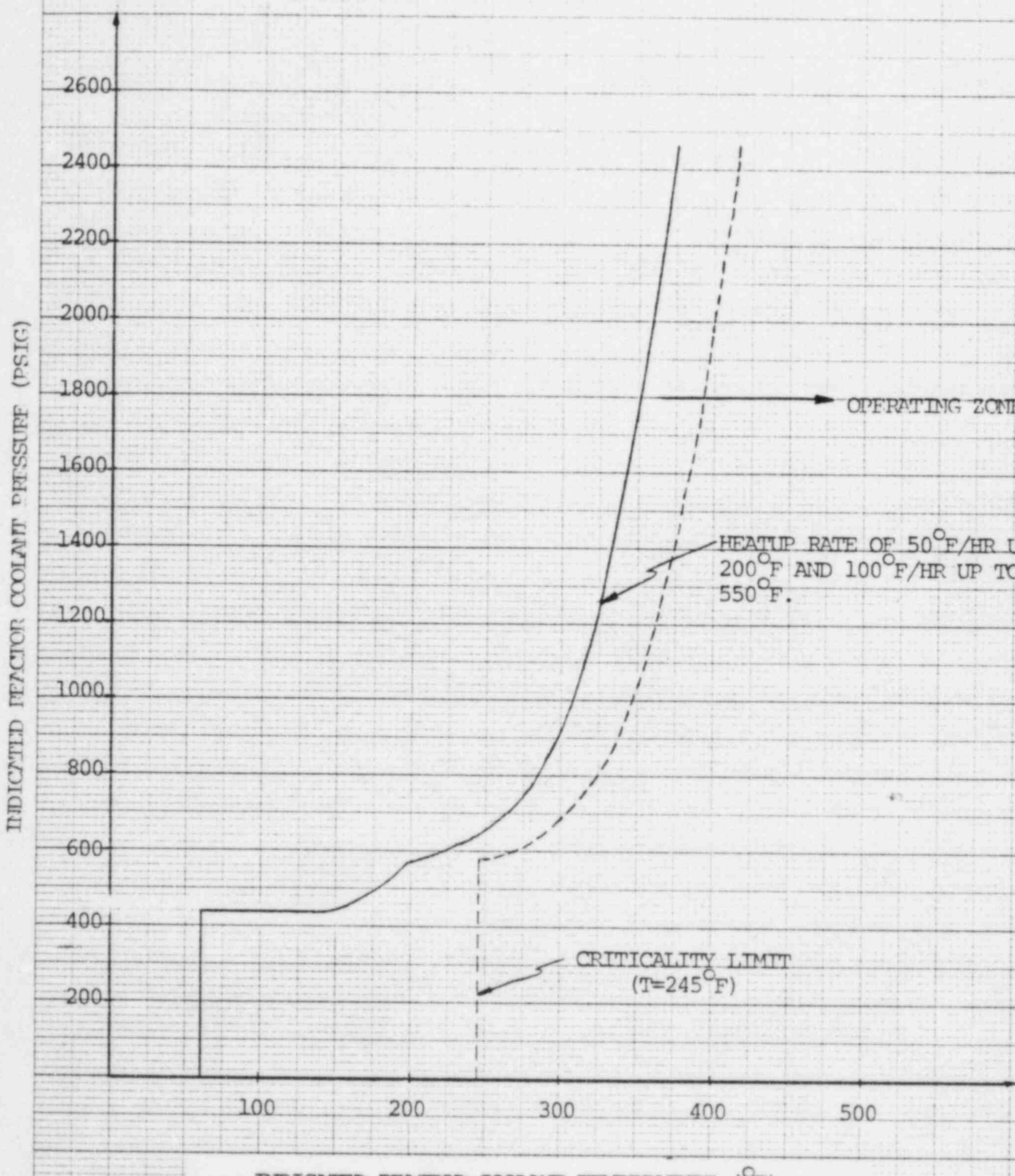


Figure 3.4-9

CONNECTICUT YANKEE REACTOR COOLANT SYSTEM COOLDOWN LIMITATIONS FOR 22.0 EFFECTIVE FULL POWER YEARS. ($T_{ERROR} = 10^{\circ}F$, P_{ERROR} = 60 PSIG)