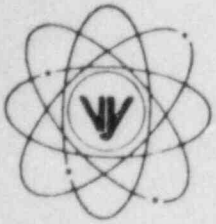


VERMONT YANKEE NUCLEAR POWER CORPORATION



RD 5, Box 169, Ferry Road, Brattleboro, VT 05301

June 29, 1984

FVY 84-60

REPLY TO:

ENGINEERING OFFICE

1671 WORCESTER ROAD
FRAMINGHAM, MASSACHUSETTS 01701

TELEPHONE 617-872-8100

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

Attention: Office of Nuclear Reactor Regulation
Mr. Domenic B. Vassallo, Chief
Operating Reactors Branch No. 2
Division of Licensing

References: (a) License No. DPR-28 (Docket No. 50-271)
(b) Letter, VYNPC to USNRC, FVY 84-45, dated May 15, 1984

Subject: Vermont Yankee Recirculation and Residual Heat Removal (RHR)
Weld Joint Inspection Program for the 1984 Refueling Outage

Dear Sir:

By letter dated May 15, 1984, [Reference (b)], we forwarded you supplemental information regarding the structural adequacy of weld joint overlays applied during our 1983 refueling outage for a second cycle of operation. The May 15 submittal included a reference to General Electric (GE) Report No. 22A2615 entitled, "Design Report - Recirculation System - Vermont Yankee Nuclear Power Station ANSI B31.1 Calculations".

During recent conference calls with members of your staff, we were requested to forward you the pertinent pages of the report for your review. These pages are provided as Enclosure 1. It should be noted that results of the GE report were used as supporting documentation for the basis of Appendix C-2.6, "Recirculation Loop Piping" and Section 4.3.1, "Reactor Recirculation System" to the Vermont Yankee Final Safety Analysis Report (FSAR).

We trust that this information is deemed acceptable; however, should you have any questions regarding this matter, please contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

J. B. Sinclair
Licensing Engineer

JBS/kg

Enclosure

8407030425 840629
PDR ADOCK 05000271
G PDR

Acc
1/1

NO
22A2615
MAY 20 1970

DESIGN REPORT
RECIRCULATION SYSTEM
VERMONT YANKEE
NUCLEAR POWER STATION
ANSI B31.1 CALCULATIONS

PREPARED BY

Engineering Assistant

Dennis P. Lauer 5-12-70

Engineer

C. Palmer 5-13-70

APPROVED BY

P. O. Swain 6-10-70

PIPING DESIGN ENGINEERING

ATOMIC POWER EQUIPMENT DEPARTMENT
GENERAL ELECTRIC COMPANY
175 CURRIER AVENUE
SAN JOSE, CALIFORNIA

VERMONT YANKEE - RECIRC
 USAS 831,1 ANALYSIS

DISCHARGE RISERS LOOP A-B

JOINT NO. 221
 TYPE TEE SML
 OD 12.567 ID 11.907 WT 0.930 INERTIA 363.8 Z 97.499

191,028

	MA	MB	MC
THERMAL	36630.	536800.	131000.
DEADLOAD	6544.	27200.	13060.
PRIMARY SEISMIC	18670.	272000.	190300.
SECONDARY SEISMIC	6430.	24110.	76170.

STRESS RATIO

- A. PRIMARY STRESS INTENSITIES
 - DEADLOAD + PRESSURE = 7254. 0.503
 - DEADLOAD + PRESSURE + SEISMIC = 16583. 0.958
- B. SECONDARY STRESS RANGE
 - THERMAL = 15554. 0.975
 - THERMAL + SECONDARY SEISMIC = 16835. 0.919
- C. PRIMARY PLUS SECONDARY STRESS RANGE
 - DEADLOAD + PRESSURE + THERMAL = 22788. 0.549
 - DEADLOAD + PRESSURE + SEISMIC + THERMAL = 33230. 0.668
- D. RARE EVENTS-PRIMARY STRESS LIMIT
 - ALLOWABLE STRESS = 17312.
 - ELFSTIC EVALUATED PRIMARY STRESSES AS SHOWN BELOW
 - EMERGENCY CONDITIONS 1 E-1 > P40 > 10E-3
 - DEADLOAD + PRESSURE + DOUBLE PRIMARY SEISMIC Sf = 1.5: 25924. 0.998
 - DEADLOAD + MAX. PRESSURE + PRIMARY SEISMIC Sf = 1.8: 17859. 0.829
 - FAULTED CONDITIONS 1 E-3 > P40 > 10E-6
 - DEADLOAD + MAX. PRESSURE + DOUBLE PRIMARY SEISMIC Sf = 1.56 27201. 0.952

22A2615
 147 196

VERMONT YAKES - RECTIC
USAS 822.3 ANALYSIS

DISCHARGE WISEKS LOOP A.B

JOINT NO. 246 TYPE T&E SNL OD 12.567 ID 11.507 T 0.930 INERTIA 363.0 Z 97.890

141.828

	MA	MB	MC
THERMAL MOMENTS	36830.	369600.	629000.
DEADLOAD MOMENTS	6018.	21780.	41810.
PRIMARY SEISMIC MOMENTS	25560.	191000.	715000.
SECONDARY SEISMIC MOMENTS	5250.	34120.	70330.

	STRESS	RATIO
PRIMARY STRESS INTENSITIES		
DEADLOAD + PRESSURE	= 7728.	0.936
DEADLOAD + PRESSURE + SEISMIC	= 13201.	0.763
B. SECONDARY STRESS RANGE		
THERMAL	= 20544.	0.760
THERMAL + SECONDARY SEISMIC	= 22739.	0.701

C. PRIMARY PLUS SECONDARY STRESS RANGE		
DEADLOAD + PRESSURE + THERMAL	= 28269.	0.682
DEADLOAD + PRESSURE + SEISMIC + THERMAL	= 39131.	0.706

D. RARE EVENTS-PRIMARY STRESS LIMIT	17312.	
ALLOWABLE STRESS =		
ELESTIC EVALUATED PRIMARY STRESSES AS SHOWN BELOW		
EMERGENCY CONDITIONS 1.E-1>P40>10E-3		
DEADLOAD + PRESSURE + DOUBLE PRIMARY SEISMIC	SF=1.5: 18929.	0.729
DEADLOAD + MAX. PRESSURE + PRIMARY SEISMIC	SF=1.8: 14478.	0.669

FAULTED CONDITIONS 1.E-3>P40>10E-6		
DEADLOAD + MAX. PRESSURE + DOUBLE PRIMARY SEISMIC	SF=1.36 20205.	0.717

22A

177 178

VERMONT YANKEE - RECING
 CAS 033.1 0NA.VS18

DISCHARGE MISERS LOOP A.M.

22A2615
 81 20

JOINT NO. 30 TYPE ELBOW SML DU 12.001 ID 11.907 T 0.067 INERTIA 49.0 76.212
 RADIUS = 18.00400

I = 1.078

	MA	MB	MC
THERMAL MOMENTS	127500.	12280.	100200.
DEADLOAD MOMENTS	9191.	65700.	6138.
PRIMARY SEISMIC MOMENTS	17100.	65720.	74300.
SECONDARY SEISMIC MOMENTS	13500.	5860.	30130.

	STRESS	RATIO
PRIMARY STRESS INTENSITIES		
DEADLOAD + PRESSURE	= 7011.	0.486
DEADLOAD + PRESSURE + SEISMIC	= 9147.	0.528
SECONDARY STRESS RANGE		
THERMAL	= 4792.	0.177
THERMAL + SECONDARY SEISMIC	= 5565.	0.171

PRIMARY PLUS SECONDARY STRESS RANGE		
DEADLOAD + PRESSURE + THERMAL	= 10389.	0.251
DEADLOAD + PRESSURE + SEISMIC + THERMAL	= 13511.	0.272

RARE EVENTS-PRIMARY STRESS LIMIT 17312.

	STRESS	RATIO
ALLOWABLE STRESS *		
ELASTIC EVALUATED PRIMARY STRESSES AS SHOWN BELOW		
EMERGENCY CONDITIONS 1/E-1>P4U>10E-3		
DEADLOAD + PRESSURE + DOUBLE PRIMARY SEISMIC	SF=1.50 11523.	0.444
DEADLOAD + MAX. PRESSURE + PRIMARY SEISMIC	SF=1.60 10119.	0.46E

FAULTED CONDITIONS 1 E-3>P40>10E-6		
DEADLOAD + MAX. PRESSURE + DOUBLE PRIMARY SEISMIC	SF=1.36 12495.	0.437

JUN 16 1970