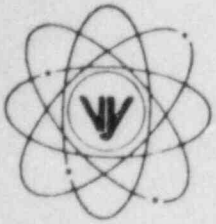


VERMONT YANKEE NUCLEAR POWER CORPORATION



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

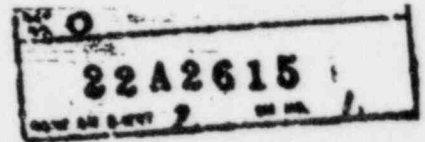
JBS/kg

Enclosure

8407030425 840629
PDR ADOCK 05000271
G PDR

Acc
1/1

Enclosure 1



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

6-10-72

PIPING DESIGN ENGINEERING

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

VERMONT YANKEE - NUCLEAR
USAS 831,1 ANALYSIS

DISCHARGE RISERS LOOP A-B

JOINT NO. 221 TYPE TEE SML OD 12.567 ID 11.507 WT 0.930 INERTIA 363.8 Z 97.499

141,628

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

STRESS RATIO

PRIMARY STRESS INTENSITIES
DEADLOAD + PRESSURE
DEADLOAD + PRESSURE + SEISMIC

= 7254. 0.503
= 16583. 0.958

B. SECONDARY STRESS RANGE
THERMAL
THERMAL + SECONDARY SEISMIC

= 15554. 0.975
= 16835. 0.919

C. PRIMARY PLUS SECONDARY STRESS RANGE
DEADLOAD + PRESSURE + THERMAL
DEADLOAD + PRESSURE + SEISMIC + THERMAL

= 22788. 0.549
= 33230. 0.668

D. RARE EVENTS-PRIMARY STRESS LIMIT

ALLOWABLE STRESS =

17312.

ELASTIC EVALUATED PRIMARY STRESSES AS SHOWN BELOW

EMERGENCY CONDITIONS 1 E-1>P40>10E-3

DEADLOAD + PRESSURE + DOUBLE PRIMARY SEISMIC
DEADLOAD + MAX. PRESSURE + PRIMARY SEISMIC

STRESS RATIO
SF=1.5: 25924. 0.998
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 YANKEE - RECTOR
USAS 821.1 ANALYSIS

DISCHARGE MISERS LOOP A.B

JOINT NO. TYPE OD ID T INERTIA Z
246 TBL SNL 12.56/ 11.50/ 0.530 363.0 27.890

141.828

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

	STRESS	RATIO
PRIMARY STRESS INTENSITIES		
DEADLOAD + PRESSURE	7728.	0.536
DEADLOAD + PRESSURE + SEISMIC	13201.	0.763
B. SECONDARY STRESS RANGE		
THERMAL	20544.	0.760
THERMAL + SECONDARY SEISMIC	22739.	0.701

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

	STRESS	RATIO
D. RARE EVENTS-PRIMARY STRESS LIMIT		
ALLOWABLE STRESS	17312.	
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

	STRESS	RATIO
FAULTED CONDITIONS 1.E-3>P40>10E-6		
DEADLOAD + MAX. PRESSURE + DOUBLE PRIMARY SEISMIC	SF=1.36 20205.	0.707

22A

177 178

VERMONT YAMBLE - RECING
 145 043.1 044.1515

DINCHAMBE WISENS LOOP A.M.

22A2615
 0.1 20

JOINT NO. 30 TYPE 11100H SML DU 12.001 ID 11.907 I 0.067 INERTIA 49.0 70.212
 RADIUS 10.00400

I=1.073

	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

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

RARE EVENTS-PRIMARY STRESS LIMIT

ALLOWABLE STRESS = 17312.
 ELASTIC EVALUATED PRIMARY STRESSES AS SHOWN BELOW

	STRESS	RATIO
EMERGENCY CONDITIONS 1E-1>P40>10E-3		
DEADLOAD + PRESSURE + DOUBLE PRIMARY SEISMIC	SF=1.50 11523.	0.444
DEADLOAD + MAX. PRESSURE + PRIMARY SEISMIC	SF=1.60 10119.	0.46E

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

JUN 16 1970