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MURRAY R. EDELMAN
VICE PRESIDENT
NUCLEAR

February 28, 1985
PY-CEI/NRR-0193 L

Mr. B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Perry Nuclear Power Plant
Docket Nos. 50-440; 50-441
Additional Information on Steam Quencher
Thermal Stresses, Question No. 210.10

Dear Mr. Youngblood:

This letter and its attachment provides our response to your letter dated January 22, 1985 requesting additional information on the quencher design (Question 210.10).

Attachment 1 to this letter provides an evaluation which concludes that although classified as ASME Code Class 3, the quencher would satisfy Class 1 maximum stress and fatigue life criteria considering thermal gradients and cyclic effects.

If you have any questions, please let me know.

Very truly yours,

Murray R. Edelman

Murray R. Edelman
Vice President
Nuclear Group

MRE:njc

Attachment

cc: Jay Silberg, Esq.
John Stefano (2)
J. Grobe

B001
1/1

210.10 The quencher device is classified as an ASME Code Class 3 component. Provide the basis for assuring that the quencher device has been adequately designed for all applicable stresses resulting from the actuation of the safety-relief valves, including localized bending stresses and thermal gradients.

RESPONSE

ASME III Code Class 3 design criteria do not explicitly provide for local or secondary stresses.

However, an evaluation was made at the location of peak thermal stress - the quencher arm wall thickness near the connection to the quencher body during an SRV blowdown.

The evaluation indicated that <u>if</u> ASME III Code Class 1 criteria were applied, the quencher arm stress would meet NB 3600 with a fatigue life of approximately of 50,000 blowdown cycles (design life is 1820 cycles). This investigation conservatively combined the worst mechanical stresses (internal pressure and bending moment) and thermal gradient stresses. Maximum thermal stress was computed based on $90^{\circ}F$ pool water; maximum thermal gradient (ΔT_1) was calculated to be about $180^{\circ}F$.