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U. S. Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Gentlemen:

Subject: Oyster Creek Nuclear Generating Station (OCNGS)
Docket No. 50-219
Facility Operating License No. DPR-16
Core Spray Annulus Piping

References: (1) GPUN letter C321-93-2010, dated 1/15/93
(2) GPUN letter C321-93-2020, dated 1/19/93
(3) NRC letter dated 2/5/93

By references 1 and 2, GPUN submitted the results of the inspection activities and the evaluation of the findings on the Core Spray annulus piping in accordance with License Condition 2.C.(5). During a site visit on January 27th, the NRC staff requested additional information which was provided by telephone prior to restart. By reference 3, the staff requested this information in more detail which is provided as an attachment. If you have any questions or require further clarifications, please contact Mr. Michael Laggart, Manager, Corporate Nuclear Licensing at (201) 316-7968.

Very truly yours,

R.W. Keaten
Vice President and Director
Technical Functions

RWK/DGJ/att

cc: Administrator, Region I
Senior Resident Inspector
Oyster Creek NRC Project Manager

A001
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Attachment

Core Spray Annulus Piping

Per NRC staff request, GPUN analyzed the Core Spray Annulus piping to determine: 1) the shear stress in the 1/4 inch fillet weld at the field coupling assuming a full 360° weld, 2) the required length of weld at the ultimate stress condition, and 3) the relative displacement of the upper and lower pipe runs assuming the weld were to completely fail. The results of these analyses are tabulated below for the six load combinations:

Load Combination	Weld Shear Stress (ksi)	Req'd Length of Weld (inch)	Relative Displacemet (inch)
Normal Operation			
1. $D + F_D + T_o$	0.82	6.39	0
2. $D + F_D + T_o + E$	2.09	8.04	0
Core Spray Injection			
3. $D + T_a + P$	3.25	8.82	0.05
4. $D + T_a + P + E$	4.06	9.53	0.11
LOCA Blowdown			
5. $D + F_{D'} + T_o$	2.21	8.45	0.47
6. $D + F_{D'} + T_o + E$	3.24	9.35	0.52

Where:
- D = Deadweight
- F_D = Drag load during normal operation
- $F_{D'}$ = Drag load during LOCA blowdown
- T_o = Thermal load during normal operation
- T_a = Thermal load during core spray injection
- P = Pressure
- E = Earthquake load

Attachment

Core Spray Annulus Piping

The magnitudes of the loads were the same as those used in the previous analyses except for the earthquake load. The previous analyses were based on a static earthquake load of 5g. In these analyses, a more realistic earthquake load of 2g was used. The 2g load represents a total amplification factor of about 18 over the peak ground acceleration (0.11g) for the operating basis earthquake.

As shown on page one, the stresses in the 1/4 inch fillet weld are low such that a substantial portion of the weld could be cracked and still carry the load. Further, even if the weld were to completely fail, the coupling would not disengage.

The actual engagement (0.9) of the coupling (Fig. 5, TR092) was estimated as follows:

1. From the GE installation drawings, the length of the upper coupling sleeve is 4.5 inches.

2. From examination of the videotapes, the distance between the top of the upper sleeve and the 1/4 inch fillet weld is estimated to be about 3.6 inches.

3. On this basis, the length of engagement is 4.5 - 3.6 = 0.9 inches.