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NOV 0 9 1987

SGTB:HWL
71-9790

Department of Energy
ATTN: Mr. W. P. Engel
Division of Naval Reactors
Washington, DC 20585

Gentlemen:

This refers to your letter dated March 31, 1983 requesting approval of A1W-3 Barrel and Shroud Disposal container

In connection with our review, we need the information identified in the enclosure to this letter.

Please advise us within 30 days from the date of this letter when this information will be provided. Additional information requested by this letter should be submitted in the form of revised pages. If you have any questions regarding this matter, we would be pleased to meet with you and your staff.

Sincerely,

/s/ Rose Chappell

for Charles E. MacDonald, Chief
Transportation Branch
Division of Safeguards and
Transportation, NMSS

Enclosure:
As stated

Distribution: w/encl

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

Department of Energy
Division of Naval Reactors
A1W-3 Barrel and Shroud Disposal Container
Docket No. 71-9790

Encl to ltr dtd _____

Structural

1. The allowable stress criteria in the application should be based directly on material yield stress and ultimate stress rather than upon yield bending modulus and ultimate bending modulus (pgs. 2.1.20, 2.1.29, and 2.1.30).

2. Provide a free body diagram of the top closure plate showing all forces which act on the closure plate under top corner impact orientations (see sketch on pg. 2.7.163). Show that the plate is in equilibrium. Show explicitly how the maximum stress in the closure plate weld was calculated. Show that the weld stress is within allowable limits.

3. Justify that the equations for dynamic yield strength, dynamic ultimate strength, and flow stress (pgs. 2.1.23 and 2.1.24) are valid and appropriate for estimating the deformation required to dissipate the kinetic energy of the drop test and for determining g-loads. Provide a sketch or tabular data which shows the force-deflection relationship for each impact orientation. Justify that the stress-strain curve shown in Figure 2.1.2.4-1 is valid for strains up to 58% (pg. 2.7.6).

4. Because high strain rates usually result in lower fracture toughness than static loading conditions, it appears that the dynamic fracture toughness value, K_{1D}, should be used in equations 2.20-2.22, rather than K_{1C}. Also, note that the criteria in draft Regulatory Guide MS 501-4 is an acceptable method for demonstrating adequate material toughness.

Containment

Revise Section 4.3 and Table 4.1 to show that the package does not release radioactive material exceeding an A_2 quantity in one week for hypothetical accident conditions (10 CFR 71.73).