

PDR

May 16, 1980



Mr. [Name], Chief
[Title]
[Address]

Subject: AP-101 Cask Modifications

Dear Mr. [Name]:

Enclosed are ten (10) copies each of Section 6 CRITICALITY EVALUATION, and Section 7 OPERATING PROCEDURES, to complete ANEFCO's submittal for a petition to amend the AP-101 cask Certificate of Compliance to include spent fuel assemblies as contents.

While the earlier submittal of December 20, 1979 indicated in Figure 1.6 (page 1-17) and on page 1-18 that 1/4" thick boral plates would be used for criticality control, we have added 1/8" thick plates of boral to the spent fuel basket design for PWR fuel. Revision A sheets for Figure 1.6 and page 1-18 are attached which incorporate that design modification.

The criticality analysis resulted in a maximum reactivity of 0.925 for the hypothetical accident condition of transport. We believe that the demonstrated safety from criticality along with the high degree of safety indicated in the earlier ANEFCO submittal support this petition to include spent LWR fuel assemblies as contents in the AP-101 cask.

We await any questions that you may have regarding this submittal and will respond in a timely fashion to expedite this petition.

Very truly yours,

ANEFCO INC.

John D. Murphy
President

JDX/ax

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Spacers will be attached to the cover of the fuel basket to fit into each fuel cannister and fill the space between the top of the fuel assembly and the cover of the fuel basket.

The fuel cannisters and fuel basket outer structure will be anodized aluminum to promote radiative transfer of heat from the contents to the AP-101 cask.

1.2.3.5.3 Criticality Control

Boral plates of nominal 1/4" and 1/8" thickness are used in the fuel baskets to provide criticality control. As noted in Figure 1.6, some of the plates will traverse the full width of the fuel basket in order to provide a conduction path for heat transfer from interior spent fuel assemblies. The boral plates will be affixed to the fuel cannisters with flat steel bands. The long boral plates will be banded to several fuel cannister tubes. Short boral plates will be banded to a single fuel cannister. (A)

The position of spent fuel assemblies and boral plates for criticality control are secured within the fuel basket outer structure, which is in turn secured within the cask cavity by the placement of aluminum tees where there are gaps between the fuel basket outer side walls and the cask cavity. This tight assemblage is based on close spacing between the individual fuel assemblies and the intervening structure (fuel cannisters and boral plate). Since no loss of integrity for the fuel assemblies is possible for the "normal" and "accident" conditions of transport, the array of fuel assemblies, boral criticality control, and fuel basket structure within the cask cavity represents the closest packing arrangement used as the basis for the criticality analysis presented in Section 6 of this Amendment to the AP-101 SAR.

