

**EXXON NUCLEAR COMPANY, Inc.**

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Phone: (509) 375-8100 Telex: 15-2878

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May 13, 1981

U.S. MAIL REG.  
MAIL SECTION

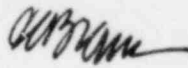
Mr. Charles E. MacDonald, Chief  
U.S. Nuclear Regulatory Commission  
Transportation Branch  
Division of Fuel Cycle and Material Safety  
Washington, D.C. 20555

Dear Mr. MacDonald:

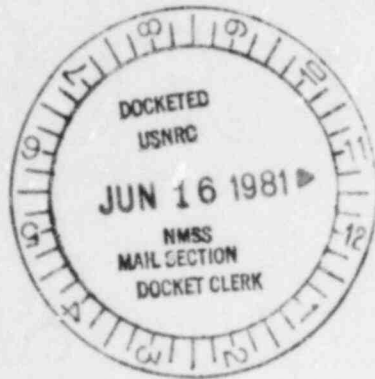
It is requested that Certificate of Compliance No. 9022, Rev. 5 (Model CE-250-2) be amended to allow the UO<sub>2</sub> contents of the package to be contained within sealed steel as well as stainless steel containers as defined in Part 5(b)(2) of the certificate. The use of "steel" as opposed to "stainless steel" as the UO<sub>2</sub> container material will have no significant impact on either the structural integrity or criticality safety of the shipping package. Justification for this change is given in Attachment I for your review and approval.

If you have any questions regarding this request, please contact me (Telephone No. 509-375-8572).

Sincerely,



Craig O. Brown, Sr. Engineer  
Licensing and Compliance,  
Operating Facilities



COB:clc  
Attachment  
As Noted

June 81-1

Applicant.	80
Check No.	009498
Amount/Fee Category	150-11-P
Type of Fee	Administrative
Date Check Rec'd.	6/12/81
Received By	Jackson

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AN AFFILIATE OF EXXON CORPORATION

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## ATTACHMENT I

### Engineering Justification for the Use of Steel In the UO<sub>2</sub> Container for the Model CE-250-2 Shipping Container

#### 1.0 Mechanical Properties of Materials

As stated in Section 2.3 of the renewal application for the Model No. CE-250-2 shipping container submitted by Combustion Engineering, Inc. on January 11, 1980, "Materials of all structural components used in the manufacture of the container have physical and mechanical properties equivalent to or better than 16 gauge steel." Even though the UO<sub>2</sub> container is not a "structural component" of the CE-250-2 package, it would nevertheless meet the above-stated requirement that the container material be 16 gauge steel or better. Also, there would continue to be no significant chemical, galvanic or other reactions between the container and other components and package contents.

#### 2.0 Thermal Evaluation

As described in Section 3.0 of the CE renewal application, the package with a UO<sub>2</sub> steel container would meet the thermal accident conditions.

#### 3.0 Criticality Safety Evaluation

The criticality safety analysis of the CE-250-2 shipping package assumes a UO<sub>2</sub> container made out of stainless steel (see Section 6.0 of the CE renewal application). In the KENO calculation model, the replacement of the stainless steel UO<sub>2</sub> container with a mild steel container will result in keff values slightly higher than reported in Section 6.4 of the renewal application. This is due primarily to the lower thermal absorption cross section of mild steel relative to stainless steel. The change in keff due to the different steel, however, would be small and the worst case keff value reported in Section 6.4 of the renewal application would not be expected to exceed 0.90 at the 95% confident level for the mild steel case.