



# NUCLEAR CONTAINERS, INC.

Chemical & Nuclear - Engineering and Equipment Fabrication

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January 11, 1993

United States Nuclear Regulatory Commission  
Washington, DC 20555

Attention: Mr. Charles E. MacDonald, Chief  
Transportation Branch  
Division of Safeguards and Transportation, NMSS

Reference: Docket Number 71-9234

Gentlemen:

Enclosed is Revision No. 1 to our Safety Analysis Report submitted in support of our request dated August 24, 1989, to amend Certificate of Compliance No. 9234AF, Rev. 2, to approve the NCI-21PF-1 Protective Shipping Package as a Type B package for the transportation of UF<sub>6</sub> enriched up to 5% U-235 contained in Model 30B UF<sub>6</sub> cylinders. This revised SAR is in response to questions posed in your letter dated February 13, 1990, and is in accordance with discussions we had with your staff on January 15, 1992, as summarized in the January 23, 1992, letter from your Ms. Nancy Osgood.

The SAR has been revised to provide answers to the questions asked in your letter dated February 13, 1990, as follows:

1. Contents are fully described in Section 1.2.3 and evaluated in Appendices 1.3.3 and 1.3.4, which also includes a list of the analytical procedures used to determine the concentration of various radionuclides. The package is now limited to 1,150 A<sub>1</sub> values such that it is now a Category II package.

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2. The 30B UF, cylinder is more fully described in Sections 1 and 2 and is more fully evaluated as the primary containment vessel in Section 4. The cylinder has also been more fully evaluated for cold temperatures (-40°F) in Section 2.6. Excerpts from ANSI Standard N14.1 are included as an Attachment to the SAR to provide the requested drawings and full descriptions of the 30B cylinder and cylinder valve.

3. Containment to Type B standards is evaluated in Section 2.5 and its corresponding appendices. Leak test requirements and procedures are incorporated which provide for testing the cylinder (a) for leaks in excess of  $4 \times 10^{-1}$  atm cc/sec within a 12-month period prior to a Type B shipment, and (b) for leaks in excess of  $10^{-3}$  atm cc/sec after filling with UF, prior to a Type B shipment.

A full scale package with a 30B cylinder filled with a dummy load has been subjected to drop and puncture testing as planned in discussions with your staff. These tests are fully discussed in Section 2.7 and its corresponding appendices. These tests demonstrate that the 30B cylinder contained in the NCI-21PF-1 package provides the containment necessary to meet Type B standards.

4. The 30B cylinder is evaluated for a reduced external pressure of 3.5 psia in Section 2.6.

5. Section 7. Operating Procedures has been expanded as requested and includes requirements for routine maintenance and for annual maintenance. Section 8. Quality Assurance has also been expanded to address all of the above changes; both sections more fully address considerations of the 30B cylinder.

Very truly yours,



William R. Housholder  
President

Encl.