



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

August 1, 2017

Mr. Scott P. Murray  
Manager, Facility Licensing  
GE-Hitachi Nuclear Energy  
3901 Castle Hayne Road  
P.O. Box 780  
Wilmington, NC 28402

SUBJECT: AUTHORIZATION TO SHIP COBALT-60 SOURCE RODS IN THE MODEL NO. 2000 PACKAGE

Dear Mr. Murray:

By letter dated July 6, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17187A076), you requested changes to the letter authorization issued on January 23, 2017 (ADAMS Accession No. ML17023A105) for use of Configuration 1 for the shipment of Cobalt-60 (Co-60) rods with a decay heat range between 0 and 1500 watts in the Model No. 2000 package. The request included revising Condition No. 8 to require that the high performance insert (HPI) be acceptance tested via a gamma scan, approval of revised drawings and an extension of the expiration date to March 31, 2018, or until Certificate of Compliance No. 9228 is renewed, whichever occurs first. The use of Configuration 1 for the shipment of Co-60 rods with a decay heat range between 0 and 1500 watts was originally reviewed and approved by the U. S. Nuclear Regulatory Commission on February 11, 2016 (ADAMS Accession No. ML16043A018), and extended on January 23, 2017 (ADAMS Accession No. ML17023A105).

As described in the attached safety evaluation report, Certificate of Compliance No. 9228 for the Model No. 2000 package is amended by this letter to allow shipment of Co-60 source rods to the General Electric-Hitachi (GEH) hot cell facility in at the Vallecitos Nuclear Center in Sunol, California, using the HPI with its dedicated materials basket. All other conditions of Certificate of Compliance No. 9228 shall remain the same. This authorization expires on March 31, 2018, or when Certificate of Compliance No. 9228 is renewed, whichever occurs first, and is also limited by the following conditions:

1. The package shall be shipped in "Configuration 1" with a decay heat between 0 – 1,500 watts.
2. The maximum Co-60 activity is 96,750 Curies.
3. The Co-60 rods shall be shipped in the HPI using the HPI Material Basket.
4. The separators, basket filler, material basket, barrel rack, and basket support, described in sections 5(a)(3)(ix), 5(a)(3)(vi), 5(a)(3)(v), and 5(a)(3)(x) of the certificate of compliance, shall not be used.
5. Co-60 is the primary radionuclide allowed to be shipped in the HPI. Co-60 encapsulated in zircalloy and other Co-60 rod activation products (such as zirconium) are the radionuclides allowed to be shipped in the HPI.

6. The package will be prepared for shipment and operated in accordance with the operating procedures prescribed in Certificate of Compliance No. 9228, Rev. 26, and supplemented by Chapter 7 of the application dated January 15, 2016.
7. The package shall be shipped in the upright position and will be an exclusive-use shipment.
8. The acceptance tests and maintenance program of the package shall follow the certificate of compliance as supplemented by Chapter 8 of the application dated January 15, 2016, except that the HPI shall be acceptance tested using a confirmatory gamma scan as described in the safety analysis report, Section 8.1.6, "Shielding Tests."
9. The HPI and HPI Material Basket shall be constructed and assembled in accordance with GE Drawing No. 001N8422G001, Rev. 3, "GE 2000 HPI and Material Basket Licensing Drawing," Drawing No. 001N8423G001, Rev. 2, "GE 2000 HPI Licensing Drawing," Drawing No. 001N8424G001, Rev. 2, "GE 2000 HPI Material Basket Assembly Licensing Drawing," Drawing No. 001N8425G001, Rev. 2, "GE 2000 HPI Body Licensing Drawing," Drawing No. 001N8427G001, Rev. 2, "GE 2000 Top Plug Assembly Licensing Drawing," and Drawing No. 001N8428G001, Rev. 2, "GE 2000 HPI Bottom Plug Assembly Licensing Drawing."
10. Modifications to the cask shall be constructed and assembled in accordance with GE Drawing No. 101E8718, Sheet 1, Rev. 16, and Sheet 2, Rev. 15, "Model 2000 Shipping Cask S/N 2001," and Drawing No. 105E9520, Sheet 1, Rev. 8, and Sheet 2, Rev. 7, "Model 2000 Shipping Cask all S/N's Except S/N 2001."
11. The containment boundary of Model No. 2000 package (Configuration 1) includes the steel-clad lead cylinder with a stainless steel forging at each end, the closure lid with O-ring combination, the pipe plugs at vent port and drain port, the containment welds, and the base metals. The O-rings at the vent port and drain port are not part of the containment boundary.

If you have any questions regarding this authorization, please contact me or Bernard White at (301) 415-6577.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

**/RA/**

John McKirgan, Chief  
Spent Fuel Licensing Branch  
Division of Spent Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

Docket No. 71-9228  
CAC No. L25234

Enclosure: Safety Evaluation Report

cc: R. Boyle, Department of Transportation

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2000 PACKAGE, DOCUMENT DATE: AUGUST 1, 2017

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