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71-9128

January 29, 1991

Mr. Charles MacDonald, Chief
Transportation Branch
Division of Safeguards and Transportation
NMSS
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RE: Docket No. 71-9128

Dear Mr. MacDonald:

The enclosure is submitted in response to your January 25, 1991 letter requesting additional information regarding the Mode source changer. This should address the concerns noted in your January 25, 1991 letter.

Since this certificate expired on May 31, 1989 and this action has been pending NRC approval since the original application's submission on March 9, 1989, we request an expeditious review for final resolution of this action.

If you have any additional questions or if I can provide any additional information please contact me at (617) 272-2000, extension 230.

Sincerely,



Lori Podolak
Radiation Safety Specialist

Enclosures

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according to the applicable regulations of the Department of Transportation."

Notes:

1. For air shipments, the following shipper's certification may be used:

"I hereby certify that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in proper condition for carriage by air according to applicable national governmental regulations."

2. For air shipments to, from or through the United States, a "CARGO AIRCRAFT ONLY" label must be applied and the shipping papers must state:

"THIS SHIPMENT IS WITHIN THE LIMITATIONS PRESCRIBED FOR CARGO ONLY AIRCRAFT."

7. Due to the depleted uranium used as shielding in the source changer, a notice must also be enclosed in or on the package included with the packing list, or otherwise forwarded with the package. This notice must include the name of the consignor or consignee and the following statement:

"This package conforms to the conditions and limitations specified in 49 CFR 173.424 for excepted radioactive material, articles manufactured from depleted uranium, UN 2909."

SHIPMENT OF AN EMPTY PACKAGE

1. For shipment of an empty source changer, first assure the changer does not contain an unauthorized source or cropped source by performing a physical verification using the following procedure.

NOTE: Use only the gauge provided with the source changer. Do not use any other tool or a gauge for another device. If you do not have the proper gauge to perform the test, contact Amersham Corporation before conducting the test.

- a. Insert the proper gauge in the empty tube(s) of the source changer. Read the gauge at the top of the outlet fitting.

- b. The gauge should bottom out in the empty source tube and indicate a safe condition (i.e. no portion of the red indicator strip should be visible after inserting the gauge into the source changer tube). Verify that each empty tube indicates a safe condition and proceed to step 2.
 - c. If the gauge indicates an unsafe condition (red signal visible) there may be an obstruction in the tube. Remove the gauge slowly while observing the survey meter. If the radiation levels increase as the gauge is being removed keep the gauge within the device, secure the device and contact Amersham for further instructions. If the radiation levels remain normal as the gauge is being removed, completely remove the gauge and contact Amersham for shipping instructions.
2. When you have assured the container is empty, insert the shipping plugs securely over the empty tubes. Close the cover of the source changer, insert the closure bolt and padlock. Seal wire through the closure bolt.
 3. Assure that the levels of removable radioactive contamination on the outside surface of the outer package do not exceed 0.001 microcuries per 100 square centimeters.
 4. Survey the container and prepare the package depending upon the radiation levels obtained, as given below.
 - a. If the radiation level is below 0.5 mR/hr at the surface and there is no measurable radiation level at one meter from the container, no label is required. Mark the outside of the package with the proper shipping name (Radioactive Material, articles manufactured from depleted uranium UN 2909). Mark the outside of the package:

"Exempt from specification packaging, shipping paper and certification, marking and labeling and exempt from the requirements of Part 175 per 49 CFR 173.421-1 and 49 CFR 173.424."

Additionally, a notice must be enclosed in or on the package included with the packing list or otherwise forwarded with the package. This notice must include the name of the consignor or consignee and the statement:

"This package conforms to the conditions and limitations specified in 49 CFR 173.424 for excepted radioactive materials, articles manufactured from depleted uranium, UN 2909."

- b. If the radiation level exceeds 0.5 mR/hr, or if there is a measurable radiation level at one meter from the surface, use the criteria of table 1 to determine the proper shipping labels to be applied to the package. Mark the outside of the outer shipping package with the proper shipping name and identification number (Radioactive Material, LSA, n.o.s., UN 2912).

If the container is packaged inside a crate or other outer packaging, mark the outer package with the statement "INSIDE PACKAGE COMPLIES WITH PRESCRIBED SPECIFICATIONS, USA/9128/B(U), Type B."

Properly complete the shipping papers, indicating:

- (1) Proper shipping name and identification number (i.e. Radioactive Material, LSA, n.o.s., UN 2912)
- (2) Name of the radionuclide (i.e. depleted uranium-238)
- (3) Physical and chemical form (i.e. solid metal)
- (4) Activity of the uranium - 56 millicuries
- (5) Category of label applied (i.e. Radioactive Yellow II)
- (6) Transport index
- (7) USNRC identification number or DOT specification number (i.e. USA/9128/B(U))
- (8) For export shipments, the IAEA identification number (i.e. USA/9128/B(U))
- (9) Shipper's Certification:

"This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transport according to the applicable regulation of the Department of Transportation."

- NOTE: 1) For air shipments, the following Shipper's Certification may be used:

"I hereby certify that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in proper condition for carriage by air according to applicable national governmental regulations."

- 2) For air shipments, the package must be labeled with a "CARGO AIRCRAFT ONLY" label, and the shipping papers must state: "THIS SHIPMENT IS WITHIN THE LIMITATIONS PRESCRIBED FOR CARGO-ONLY AIRCRAFT."
5. Return the container to Amersham Corporation according to proper procedures for transporting radioactive material as established in Title 49 Code of Federal Regulations, Parts 172-178.

NOTE: The U.S. Department of Transportation, in 49 CFR 173.22(c) requires each shipper of Type B quantities of radioactive material to provide prior notification to the consignee of the dates of shipment and expected arrival.