

71-9343



Research Reactor Center
University of Missouri-Columbia

1513 Research Park Drive
Columbia, MO 65211

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Ms. Michele Sampson
Acting Chief, Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

28 May 2014

RE: Request for renewal of authorization to ship Type B quantities of radioactive material

Dear Ms. Sampson,

This letter is a request for renewal of authorization to ship limited Type B quantities of radioactive material in DOT Specification 20WC-1 and 6M packages. This authorization was granted by NRC (accession number ML13086A934) to the University of Missouri Research Reactor (MURR) and is scheduled to expire on June 30, 2014.

Request

MURR currently operates a Type B package fleet under DOT Special Permit SP-14657 which expires on June 30, 2014.

MURR has received an extension from DOT for SP-14657 through August 31, 2014. This extension is found under Revision 7 of the special permit and is attached. We request that the NRC authorization to ship under this special permit be renewed through August 31, 2014, in tandem with the DOT Special Permit.

Authorized Shipment Totals

As of this writing 1,533 shipments of Type B quantities of material have been made under this NRC authorization with no adverse incidents.

Regulatory Approval and Production Efforts

We continue our efforts to replace our fleet of DOT Specification packages with packages that are compliant with 10CFR71.

NMSSD1



Definitions

“Croft” refers to Croft Associates, Ltd., the radioactive material package design and manufacturing firm that was awarded the contract.

“CHT” refers to Columbiana Hi-Tech Nuclear, the sub-contractor hired by Croft for package fabrication.

“MSC” refers to Manufacturing Sciences Corporation, the sub-contractor hired by Croft to cast the DU forms for the inner containment vessel of the SAFKEG-HS.

“DU” refers to Depleted Uranium, which will be used in the SAFKEG-HS inner containment vessel (CV) for shielding.

SAFKEG-LS

A fleet of forty-five (45) SAFKEG-LS packages have been received and deployed for use at MURR for contents allowed under the Certificate of Compliance.

SAFKEG-HS

A Certificate of Compliance (certificate number 9338) has been issued by NRC for the SAFKEG-HS package.

Issues with the DU manufacturing have been resolved and final assembly is underway. We anticipate delivery of the HS package fleet in early June of 2014.

There is a significant effort involved in bringing the packages into the MURR Quality program and working with end-users to safely implement the use of the packages and their inserts for routine transportation and use. This work includes checking the packages into our system, providing end users with training aids (slide shows, tooling, documentation, etc.), sending an empty package to each end-user so they may evaluate the handling of the packaging and inserts, and reviewing the entire program prior to the first formal shipments. For the SAFKEG-LS implementation, a period of forty-five (45) days was needed to get the packages checked in and the end-users properly trained. We expect the implementation of the SAFKEG-HS to take at least thirty (30) days longer than the SAFKEG-LS due to the number of end users involved, hence the need to extend operations under SP-14657 until August 31, 2014.

Summary and Contact

The SAFKEG-LS fleet is in active service at MURR. The SAFKEG-HS package is in the final stages of manufacturing and delivery is expected in the next few weeks.

We request that NRC provide MURR with authorization to ship under SP-14657 until August 31, 2014, in tandem with the DOT Special Permit.



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The point of contact for inquiries is Mr. Michael Flagg, who may be reached at (573) 882-5364 or via email at flaggm@missouri.edu.

Sincerely,

Matthew R. Sanford (ACTING)

Ralph A. Butler
Director, University of Missouri Research Reactor

28-may-2014

Date

Enclosure: Special Permit SP-14657 (Seventh Revision)

May 23, 2014



U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 14657
(SEVENTH REVISION)

EXPIRATION DATE: August 31, 2014

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: University of Missouri Research Reactor (MURR)
Columbia, MO
2. PURPOSE AND LIMITATION:
 - a. This special permit authorizes the transportation in commerce of specified radioactive materials in designated DOT specification 6M and 20WC-1 packagings on or after October 1, 2008, in order to allow the Grantee a transition period to performance oriented package use. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
 - b. The safety analyses performed in the development of this special permit only considered the hazards and risks associated with the transportation in commerce.
 - c. No party status will be granted to this special permit.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 173.416(c) insofar as the 6M and 20WC-1 packagings and radioactive contents specified herein are authorized for shipments exceeding an A₂ quantity of normal form radioactive material, on or after October 1, 2008. The packages must be in conformance with all aspects of the requirements of 49 CFR Subchapter C in effect on October 1, 2003.

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5. BASIS: This special permit is based on the application of University of Missouri Research Reactor (MURR) dated April 22, 2014, submitted in accordance with § 107.109.
6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Radioactive material, transported under special arrangement, <i>non fissile or fissile-excepted</i>	7	UN2919	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - This special permit is limited to University of Missouri - Columbia Research Reactor Facility 6M specification packaging serial numbers 1802, 1803, 1820, 1824, 1863, 1864, 1866, 2160, 2161, 2162, 2165, 2256, 2257, 2258, 2990, 2991, 2992, 2993, 2994, 2995, 2996, 2997, 2998, and 2999; and 20WC-1 specification packaging serial numbers 4001, 4002, 4003, 4004, 4016, 4018, 4021, 4023 and 4025.

b. OPERATIONAL CONTROLS -

(i) This special permit is limited to solid radioactive materials only. No liquid or gaseous materials are permitted to be transported under the provisions of this special permit.

(ii) Each package may contain no more than the one of the following quantities of radioactive material:

- 1) Sm-153 (50A₂) - Powder in quartz vial in either welded aluminum canister or secured in sealed lead confinement
- 2) Ir-192 (300 A₂) and Ir-194 (10 A₂) - - Metal solids in either aluminum block or aluminum canister confinement
- 3) Cs-131 (20 A₂) and Ba-131 (10 A₂) and Ba-135m (100 A₂) - Powder in welded canister
- 4) P-32 (400 A₂) - Powder in welded canister
- 5) Yb-169 (200 A₂) - Powder in quartz vial in either welded aluminum canister or secured in sealed lead confinement

(iii) The use, repair, and maintenance of the specification packages must be conducted in accordance with the current U.S. Nuclear Regulatory Commission Quality Assurance Program Approval #0108.

(iv) The material condition of the specification packages must be in Excellent or Good condition, as outlined in the additional technical information dated July 10, 2008. Inspections must be conducted by a Certified Shipping Technician and documented on the "Type B Cask Inspection Log."

(v) Inspections and shipments must be conducted in accordance with the current revision of the following documents, as applicable:

- 1) AP-SH-001, Administrative Procedure, Radioactive Materials Shipping
- 2) RP-HP-110, Survey and Decontamination of Returned Shipping Containers
- 3) BPB-SH-002, 20WC-1 Packaging and Shipment of Type B Non-Waste Radioactive Material
- 4) FM-35, Control Check sheet for Type B USA DOT 20WC-1 Radioactive Materials Shipment
- 5) MURR-SAS-0007, Service Applications QA/QC Program: USA DOT 7A Inner Cask
- 6) MURR-SAS-0007, Quality Control Inspection: Control Check Sheet for DOT 7A Inner Cask Lid Gasket
- 7) MURR-SAS-0007, Quality Control Inspection: Control Check Sheet for DOT 7A Inner Cask Lid Hold Down Bolt
- 8) BPB-SH-005, DOT 6M Packaging of Type B Non-Waste Radioactive Material
- 9) FM-74, Control Check sheet for Type B USA DOT 6M Radioactive Materials Shipment

(vi) As replacement packages become available that are permitted for use in accordance with 49 CFR § 173.416(a), they must be used to the extent practical in lieu of the specification packages described herein.

c. COMMUNICATIONS -

(i) Each shipping paper issued in connection with a shipment made under this special permit must bear the notation "DOT-SP 14657" and be located so that the notation is clearly associated with the description to which the special permit applies.

(ii) The outside of each package used under the terms of this special permit must be plainly and durably marked "DOT-SP 14657".

8. SPECIAL PROVISIONS:

a. A person who is not a holder of this special permit who receives a package covered by this special permit may reoffer it for transportation provided no modification or change is made to the package and it is reoffered for transportation in conformance with this special permit and the HMR.

b. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

c. A quarterly update of package transition activities (actual vs. scheduled milestones for design, testing, application, certification, production, and completion) must be provided to the Office of Hazardous Materials Special Permits and Approvals by January 1, April 1, July, 1 and October 1 of each year this special permit is in effect.

9. MODES OF TRANSPORTATION AUTHORIZED: Cargo Aircraft Only (6M packages containing Sm-153 only) and Motor Vehicle.

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo aircraft or motor vehicle used to transport packages covered by this special permit. The shipper must furnish a copy of this special permit to the air carrier before or at the time the shipment is tendered.

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11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

- o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
- o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
- o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

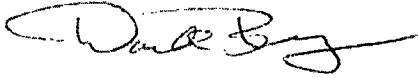
Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)—"The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 - Immediate notice of certain hazardous materials incidents, and 171.16 - Detailed hazardous

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materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:



for Dr. Magdy El-Sibaie

Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Material Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm. Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: JW/dl/kah