September 29, 2008

Mr. Ralph A. Butler
Director
University of Missouri Research Reactor
1513 Research Park Drive
Columbia, MO 65211

SUBJECT: EXTENSION OF USE OF DOT SPECIFICATION 20WC AND 6M PACKAGES

Dear Mr. Butler:

As requested by your application dated August 22, 2008, and pursuant to 10 CFR Part 71, this letter constitutes authorization for the transport of Type B quantities of radioactive material in DOT Specification 20WC-1 and 6M packages with the following conditions:

1. All shipments must be made in accordance with DOT Special Permit No. DOT-SP 14657, dated September 5, 2008.

2. The packaging and contents are as described in University of Missouri, Research Reactor Center, application dated August 22, 2008.

3. This authorization is to not exceed 900 shipments, and expires August 31, 2010.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/

Eric J. Benner, Chief
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9343
TAC No. L24247

Enclosures: Safety Evaluation Report

cc: R. Boyle, Department of Transportation

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OFC	SFST		SFST		SFST		OGC		SFST		SFST	
NAME	NLOsgood		EJBenner		NMamish		APessin NLO (via email)		MDeBose		EWBrach	
DATE	9/29 /08		9/ 29 /08		N/A		9/29/08		9/26/08		N/A	

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SAFETY EVALUATION REPORT
Docket No. 71-9343
DOT SPECIFICATION 20WC AND 6M PACKAGES
UNIVERSITY OF MISSOURI RESEARCH REACTOR CENTER

SUMMARY

By application dated August 22, 2008, University of Missouri, Research Reactor Center (MURR), requested authorization to use DOT Specification 20WC-1 and 6M packages beyond the package authorization expiration date of October 1, 2008.

Based on the statements and representations in the application, the staff agrees that the extension of use of the package, with the additional conditions stated below, meets the requirements of 10 CFR Part 71.

BACKGROUND

NRC amended the regulations in 10 CFR Part 71, effective October 1, 2004, to be compatible with the 1996 edition of the International Atomic Energy Agency (IAEA), "Regulations for the Safe Transport of Radioactive Material" (TS-R-1, as amended in 2000). As a result, certain transportation packages that are compatible to the IAEA 1967 edition will no longer be authorized for use under the 10 CFR Part 71 general license after October 1, 2008.

EVALUATION

By application dated August 22, 2008, MURR requested authorization to use DOT Specification 20WC-1 and 6M packages beyond the package authorization expiration date of October 1, 2008. MURR submitted the request and supplied the information as described in U.S. Nuclear Regulatory Commission, Regulatory Issue Summary 2008-18, “Information on Requests for Extending Use of Expiring Transportation Packages.”

(1) Package Information. The packages to be used are DOT Specification 20WC-1 and 6M packages. The MURR application listed the serial numbers of the individual packages concerned.

(2) Identification of Shipments. MURR requested approximately 6 shipments per week of various radioactive materials, including Sm-153, Ir-192, Ir-194, Ba-135m, Ba-131, Cs-131, P-32, and Yb-169. The radioactive materials are used for cancer treatment, biomedical research, and industrial radiography.

(3) Reasons for Requesting Extended Use. The MURR application states that extended use of the package is needed due to delays in the certification and fabrication of replacement packages. MURR is currently developing two new package designs to use as replacement packages. MURR expects to submit applications for package approval to NRC in 2009. MURR evaluated the following: (a) Use of existing packages. Existing packages are not authorized for MURR contents, and would be difficult and/or costly to acquire packages that can be used. MURR indicated that it did not anticipate that it would need to develop its own packages, but relied on industry to satisfy the need. When it

became evident that replacement fleets were not being developed, MURR pursued, with diligence, development of its own designs. (b) Reconfiguring the contents into Type A quantities. This was not considered feasible due to the increased risk of occupational exposure and ALARA concerns. In addition, reconfiguring the contents to ship Type A quantities would make the material unusable for some of MURR's radiopharmaceutical clients. (c) Adjusting transport schedules. Because of the nature of the commodities transported by MURR, shipments are made on an ongoing basis, and no adjustment in shipment schedules is possible.

(4) Safety Justification for Continued Use and Proposed Compensatory Measures. MURR provided evidence that the DOT Specification 20WC-1 and 6M packagings are adequately inspected and maintained to ensure their continued performance.

(5) A Plan and Schedule to Acquire Replacement Packages or Complete Necessary Shipments. MURR has contracted with a package vendor to design, certify, and fabricate replacement packages. The packages are the SAFKEG-LS, which will replace the 6M, and the SAFKEG-HS, which will replace the 20WC-1 package. The designs of the packages have been developed. The following activities have been performed to date: Evaluation of materials of construction, shielding analyses, containment assessment, structural analysis, and engineering-type physical tests. MURR estimates that an application for package approval will be submitted to the NRC for approval of the SAFKEG-LS in March 2009, and for the SAFKEG-HS in May 2009.

DOT SPECIAL PERMIT

On September 5, 2008, the U.S. Department of Transportation issued Special Permit No. DOT-SP 14657, to University of Missouri, Columbia Research Reactor Facility, to authorize the subject shipments. This permit expires August 31, 2010.

CONDITIONS

Based on the statements and representations in the application, authorization is granted for the transport of Type B quantities of radioactive material by MURR using DOT Specification 20WC-1 and 6M packages with the following conditions:

1. All shipments must be made in accordance with DOT Special Permit No. DOT-SP 14657, dated September 5, 2008.

2. The packaging and contents are as described in the MURR application dated August 22, 2008.

3. This authorization is to not exceed 900 shipments, and expires August 31, 2010.

CONCLUSIONS

Based on the statements and representations in the MURR application dated August 22, 2008, the staff agrees that the use by MURR of the DOT Specification 20WC-1 and 6M packages meets the requirements of 10 CFR Part 71, subject to the conditions listed above.

Issued with letter to R. Butler
dated September 29, 2008.