

Allen, William

From: Flagg, Michael Afton [FlaggM@missouri.edu]
Sent: Friday, March 22, 2013 11:26 AM
To: Allen, William
Cc: Sampson, Michele; Ernst, John P.; Butler, Ralph
Subject: RE: Renewal RAIs

Importance: High

Hello Chris,

Our response is embedded below. Please let me know if you have further questions.

Regards,

Michael Flagg
MU Research Reactor
(573) 882-5364

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From: Allen, William [mailto:William.Allen@nrc.gov]
Sent: Wednesday, March 20, 2013 1:48 PM
To: Flagg, Michael Afton
Cc: Sampson, Michele
Subject: Renewal RAIs

I apologize for not getting these out sooner. Although my Branch Chief has not seen the RAIs below, she did know I planned to provide them to you. In an attempt to ensure the RAIs were appropriate and unambiguous, a senior PM peer reviewed them and he provided some editorial comments.

Sincerely, Chris Allen

Request for Additional Information

1. Justify the need to renew authorization to ship Type B quantities of radioactive material in Department of Transportation (DOT) 6M Specification (6M Spec) packages.

As noted in your authorization renewal request dated February 25, 2013 (see Agencywide Documents Access and Management System (ADAMS) Accession No. ML13060A166), 45 Safkeg LS packages have been delivered to Missouri University Research Reactor (MURR) and 10 shipments have been made utilizing these packages. The Safkeg LS package is the replacement for the DOT Specification 6M packages utilized by MURR. Also note that the DOT authorization to use the 6M Spec package states that as replacement packages, which meet the requirements of 49 CFR 173.416(a) become available, they should replace the 6M package. In addition, although the response to a request for additional information (ADAMS Accession No. ML12242A273) identified that the 6M Spec packages are used to ship Ir-192 to a customer in southern California, the response did not substantiate that the customer needed the Ir-192 shipped in a 6M Spec package.

This information is necessary to satisfy the requirements in 10 CFR 71.39.

MU Research Reactor Response

The University of Missouri Research Reactor (MURR) has, in accordance with the DOT authorization and our original intent, implemented the LS in all possible instances. However, while the SAFKEG-LS is generally analogous to the specification 6M, it is not an exact one-to-one replacement for a 6M package.

For instance, unlike the 6M, the LS is not certified to handle medically relevant Type B quantities of Ir-192. The SAFKEG-HS, when approved, will fill this need, but in the meantime, specification packages are MURR's only option.

In addition, shipments of quantities of Ba-131/Ba-135m/Cs-131 product that exceed the activity limit for the LS must currently be shipped in a DOT Specification package. When one or more of the 20WC-1 packages must be removed from service or is held up at a customer facility for reasons outside of MURR's control, the 6M is MURR's only option for these shipments.

At our current workload, our entire fleet of 20WC-1 packages are consistently either at a customer, in transit, or at MURR being prepped for another shipment. Per the description of our active package fleet provided in our letter date 10 August 2012 (ADAMS Accession No. ML12242A286), MURR has a fleet of nine (9) 20WC-1 and twenty-four (24) 6M packages which operate under our Special Permit, in addition to the SAFKEG-LS packages in service. Currently, one of the 20WC-1 packages is out of service, leaving MURR with only eight (8) 20WC-1 packages in operation.

Regarding the comment on Ir-192 shipments to a customer in southern California, when MURR communicated with NRC in our letter dated 10 August 2012 (ADAMS Accession No. ML12242A286), we had the expectation, based on communications with the customer and the NRC, that the AOS-50A package would be approved and ready for service in Q1 2013. The AOS-50A was planned to handle this shipment, but the package has not been put into service as of this writing.

While MURR has shifted all possible materials out of the 6M and into the LS package (such as Sm-153 and Yb-169), we need to maintain the ability to ship in a 6M for some deliveries. Having the continued ability to use a 6M package under the DOT Special Permit allows us to ensure continued operations of routine shipments of medical isotopes.

2. Justify the need to renew authorization to ship Type B quantities of the following radioactive materials in either DOT Specification packages 20WC-1 or 6M: Sm-153, Cs-131 and Yb-169.

The original authorization letter (ADAMS Accession No. ML082750044) identified Sm-153, Cs-131, Yb-169, P-32, Ir-192, Ba-131, Ba-135m and Ir-194 for shipment in the DOT Specification packages. Subsequent renewals of the original authorization permitted shipment of Type B quantities of these isotopes. In its response to a request for additional information (ADAMS Accession No. ML12242A273), MURR indicated that Sm-153, Cs-131 and Yb-169 would be transported using the Safkeg LS package. Since the DOT authorization to use the 6M Spec package states that as replacement packages, which meet the requirements of 49 CFR 173.416(a) become available, they should replace the 6M package. Consequently, there does not appear to be a need to renew authorization to transport Type B quantities of these materials in DOT Specification packages.

This information is necessary to satisfy the requirements in 10 CFR 71.39.

The shipping needs for the byproduct materials listed above are as follows:

Sm-153: This product is shipped routinely in a SAFKEG-LS package.

Ba-131/B-135m/Cs-131: The radiopharmaceutical customer for the Cs-131 product provides targets that produce three (3) different activity levels depending on the customer need and irradiation position availability at MURR. Two (2) of those activity levels allow for shipment of this material in an LS package. The remaining activity level exceeds the allowable limit for the mix of Ba-131/Ba-135m/Cs-131 in the LS. In order to continue supplying the full demand for the raw material for the cancer therapy that utilizes the Cs-131 material, access to 6M or 20WC-1 packaging is necessary.

Yb-169: The next order for a shipment of Type B quantities of Yb-169, and all subsequent shipments, will be performed in a SAFKEG-LS package.