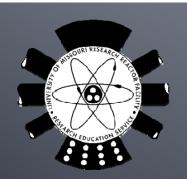
# Type B Packaging Replacement Efforts at the MU Research Reactor Center

NRC Public Meeting Washington, D.C.

11 July, 2012



Ralph Butler, Director John Ernst, Associate Director Michael Flagg, Assistant Director University of Missouri Research Reactor

# **Public Meeting**

- Overview of MURR
- Strategic Approach to Package Replacement and Review of Challenges
- Addressing RIS 08-18
- Special Permit and NRC Authorization to Ship
- Proposed Compensatory Measures
- Impact of Revocation of Authorization to Ship

#### MU Research Reactor (MURR)

- Largest University Research Reactor in U.S.
- Supplier of Medical, Research, and Industrial Radioisotopes, Irradiation Services
- Operates at 10 MW, 52 weeks per Year
- Average Over 1000 RAM Shipments per Year
  - Domestic and International
  - 200 300 Type B per year

# MURR Good Faith Efforts to Upgrade Packaging Fleet

- Multiple bid requests between 2005 and 2007 to find a vendor
  - MURR investigated designing own package
- Contract for two designs with 2010 delivery
- MURR has spent \$3M to date and will spend several million more dollars to complete the conversion
- MURR allowing use of package designs by everyone in Industry

# Strategic Challenges

- Original Cost Estimate by NRC for design and approval was \$340,000 - \$390,000 per design
- Final Design Implementation Cost will be 10X
   NRC Estimate, then must pay for packages
- Design Changes have pushed back delivery date

# Replacement Program Schedule

- SAFKEG-LS Packages (Model 3979A) Now Scheduled to Deploy at MURR in Q4 2012
- SAFKEG-HS SARP (Model 3977A) to be Submitted Q3/Q4
  - Incorporating Lessons-Learned from LS SARP and Manufacturing
  - Expectation that this will speed approval time

#### RIS 08-18

- Provides Information used to consider requests for extending use of DOT Specification Packages past 2008
- Package Information
- Shipments
- Reasons for Extending Use
- Safety Justification for Extended Use
- Replacement Plan

# NRC Authorization and DOT Special Permit

- Special Permit DOT SP-14657 issued in August 2008
  - Expires on 31 August 2012
  - Timely Renewal Requested
  - Quarterly Updates to DOT
- NRC Authorization Letter
  - NRC RIS o8-18 issued on 14 August 2008
  - Authorization ends on 31 August 2012
  - Renewal Requested

# **Shipments Currently Authorized**

- Isotopes Currently Shipped Under NRC Authorization to use DOT SP-14657
  - Ir-192 (treatment for cancer patients)
  - Sm-153 (treatment for cancer patients)
  - Cs-131 (treatment for cancer patients)
  - Yb-169 (industrial irradiation sources)
  - P-32 (used nationwide in biomedical research)

#### Reasons to Extend Use

- No ability to split into Type A Quantities
  - Significant ALARA Concerns to Workers
  - Physically Unable to Split Ir-192 into Type A
- No Replacement Packages Available
  - MURR Designs to be most flexible on market upon deployment
  - AOS 50 will not allow shipment of P-32
- No credible hazard to continued use of 20WC-1 and 6M packages under SP-14657

## **Proposed Compensatory Measures**

- We Propose a Voluntary Reduction in Quantities allowed under SP-14657:
  - P-32: Reduce A2 Multiple from 400 to 40
  - Yb-169: Reduce A2 Multiple from 200 to 100
- Upon deployment of the LS in Q4 2012 the following isotopes will shift off the special permit:
  - Sm-153
  - Cs-131
  - Yb-169

#### Impact if Authorization Rescinded

- Will force MURR to end production of medical isotopes needed by cancer victims, researchers, and industry
- Potential downstream effects to Medical Industry
- Loss of Income Will Delay HS Package
   Program and delay availability of compliant
   Type B packages to other industry users.
- Layoff of MURR Staff

### Summary

- Replacement Program in Critical Phase
  - MURR has invested heavily in the project to date
  - MURR is on track to invest millions more over the next two years to deploy a new package fleet
  - Inability to ship will directly harm the Replacement Program and the continued operation of MURR
- No expectation to ever earn the money back on sales of packages
  - Part of our responsibility to the medical and research communities

#### Request

- As the University of Missouri, a not for profit public institution, it is our mandated mission to advance the life sciences and protect public health in the fight against cancer and other diseases.
- We ask that you permit us to fulfill this mission by allowing us to continue to provide life-saving medical isotopes to the American people and continue our package replacement efforts.

#### Conclusion

What can MURR do to be allowed to continue to provide cancer victims, researchers, and industry access to these critically needed isotopes?

