

11/26/02

## Ongoing NMSS Assessments to Be Integrated

- Spent fuel storage casks and transport packages
- Non-spent fuel transport packages
- Panoramic irradiators

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•Evaluating spent fuel storage casks and transport packages for:

(1) large jetliner impacts, (2) small plane loaded (3) (truck and waterborne), (4) and (5)

Ex 2

•Non-spent fuel packages are not being evaluated for large jetliner, otherwise same threats as for spent fuel.

•Types of non-spent fuel packages to evaluate cover all packages that NRC certifies:

Gamma irradiator source package (30,000 Curies of Co-60)

- Reactor waste package (Resin beads) 20,800 Curies of Co-60, the most common isotope

- TRU waste 2,800 g of Pu per package, 3 packages per shipment

Evaluating dispersibility of the following packages:

- 850,000 Curies of CsCl powder per package, similar to an RDD

- Medical Isotopes (1,000 Ci per package XX packages per shipment of Mo-99/Tc-99)

- Fuel cycle front end - 370 pounds of UO2 powder per package, 75 packages per truck; more packages per shipment for other modes

For comparison, the HRCQ quantity for Co-60 and Cs-137 is 27,000 curies

•Consistency of Dose threshold for transport and the rest of NMSS

-- SFPO chose to evaluate packages that are routinely used to ship larger quantities of RAM (i.e., >27,000 Ci of Co-60) because they are much more attractive to a terrorist than a much smaller package (i.e., radiography package with 100 Ci). Additionally, most isotopes of concern from the RDD paper (Pu, Am, Sr and Cs) are not routinely shipped in quantities which are easily dispersible and require an NRC-certified package.

-Panoramic irradiators: looking at

Portions Ex 2

Ex 2

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## NMSS Progress to-date

### Spent fuel storage and transport

- Large plane evaluation
- Preliminary modeling for ( ) Ex 2
- Panoramic Irradiators
  - ( ) Ex 2
- RDD Assessment
  - Near-term action recommendations

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#### SFPO Large plane evaluation:

Spent fuel jetliner evaluations are for a impacting a cask at ) SFPO used an

Preliminary evaluations for the storage cask and transportation package show ( )

Most preliminary calculations for storage cask are done.

The transportation package calcs have only been done for the cask-to-cask impacts.

Still need to perform the penetration for the hard components of the plane. Ex 2

SFPO staff is planning on submitting a preliminary status report in the next month or two.

Structural models for ( ) are completed. Structural calculations have just started.

Non-spent fuel package evaluations will begin in December.

#### Panoramic irradiators

• preliminary consequences show that a )

#### RDD assessment

-- completed relative hazards assessment in November

Portions Ex 2

## Ongoing NMSS Assessments to Be Integrated

- Spent fuel storage casks and transport packages
- Non-spent fuel transport packages
- Panoramic irradiators

Evaluating spent fuel storage casks and transport packages for large jetliner impacts, small plane<sup>e</sup>

Ex 2

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For comparison, the HRCQ quantity for Co-60 and Cs-137 is 27,000 curies

Consistency of Dose threshold for transport and the rest of NMSS

•SFPO chose to evaluate packages that are routinely used to ship larger quantities of RAM (i.e., >27,000 Curies of Co-60). They are much more attractive to a terrorist than a much smaller package (i.e., radiography package with 100 curies). Additionally, most isotopes listed in the RDD paper which are considered readily dispersible, Pu, Am, Sr and Cs, are not routinely shipped in quantities which are easily dispersible and require an NRC-certified package.

## NMSS Progress to-date

### Spent fuel storage and transport

- Large plane evaluation
- Preliminary modeling for ( )
- Panoramic Irradiators
  - ( )
- RDD Assessment
  - Near-term action recommendations

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#### Spent Fuel Storage and Transport Large plane evaluation:

- Spent fuel jetliner evaluations are for a
- All calculations performed to-date for the storage cask and transportation package show
- Most calculations for storage cask are done, with the exception of cask-to-cask interaction and of the cask on the pad.
- Most of the impact of hard components on transport package and storage cask have been performed.
- SFPO staff is planning on submitting an informational white paper to the Commission next month.
- Preliminary structural models and calculations for ( ) calculations are completed.
- Need to perform calculations for the Vulnerability Assessment Threat.
- ( ) on Non-spent fuel packages will start as soon as the spent fuel casks are completed.
- Preliminary calculations have been performed for a spent fuel transport package, storage casks and non-spent fuel transport package.
- Results are currently being evaluated.