

From: Kaltreider, Randall [REDACTED]
Sent: Wednesday, November 24, 2010 8:42 AM
To: Dimarzio, John A.
Subject: FW: FFTF material

Here are responses to most of the questions. The SARP I provided you provides you with much more specific detail for your analysis. Waiting for SRS response to item 5.

Randall Kaltreider

EM-33, Office of Nuclear Materials Disposition

[REDACTED]
 Materials Disposition
 [REDACTED]

From: Dimarzio, John A. [REDACTED]
Sent: Thursday, November 18, 2010 1:05 PM
To: Kaltreider, Randall
Cc: McAlhany, Sachiko W.; virginia.kay [REDACTED]; Cynthia.Williams [REDACTED]; Gorden, Milton E.
Subject: FW: FFTF material

I asked Milton about the issues you raised and he revised his questions. Of course, in the interim, he came up with some new questions! Hope this makes sense. If you have any questions, Milton's phone number is at the bottom of this email.

Thanks for your help....John

From: Gorden, Milton E.
Sent: Thursday, November 18, 2010 11:44 AM
To: Dimarzio, John A.
Cc: Roles, Gary W.
Subject: FFTF material

I have a few questions, or just need confirmation, regarding the FFTF material to complete the transportation analysis:

1. I am assuming there would be 2 HUFPS per SGT. I got this from a picture I found on the internet that was sent to a member of the public through a FOIA request to SRS. **1 HUFPS per SGT**

2. To determine the number of POC shipments that was to be dedicated to the FFTF material, I took the ratio of 0.7 MT Pu of FFTF material to 6 MT Pu total and applied it to the total number of POC shipments (1,156). I determined there would be 134 fewer POC shipments that would be sent to WIPP (applicable to both the 2 MT alternative and 6 MT alternative) if the FFTF material is shipped in the HUFPS. Using 197g Pu per POC, 3,554 POCs, or 102 shipments (35 POCs/shipment) would be associated with the FFTF material. Since the original number of POCs was determined using the 197g Pu per POC limit, I think I should use the 102 shipments for FFTF material. **The number of POCs was based on 175 FGE Pu per POC, which would equate to 4000 POCs for the FFTF material. At 35 POCs/shipment, it would be 114 shipments.**

3. The HUFPS Safety Analysis Report (SAR) describes the package as being able to contain driver fuel assemblies or IDENT-69G containers. I ran across another document on the internet that implied that the HUFPS sent to SRS contain FFTF material in 3013s. This makes a difference in how I do the accident analysis. The *Feasibility Study for the Disposition of 5 MT of Surplus Non-Pit Plutonium* states that the material is contained "in several layers of robust packaging and is primarily Pu/U oxide pellets." Can we get a more detailed description of how the material is contained in the HUFPS? Are they whole assemblies, pins, or both? **Both.**

4 HUFPS contain loose pins and 9 HUFPS contain driver fuel assemblies. If everything is broken down, then are they in a container that is in a 3013 with x number of 3013s in a HUFPS? **The pins and DFAs are packaged in core component container (CCC). The CCC has 7 separate compartments for up to 7 DFAs or 6 IDENT-69G containers for loose pins. (See SARP for CCC configuration and loading.)** In the accident analysis, since the transport package is a Type B container, I assume only one package in the Type B container releases its contents, so if it is a whole assembly in the package, that is a much larger release inventory than assuming a 3013 releases its contents. **Not sure that it reasonable assumption that entire DFA releases its contents, since the DFA contain pins which contain pressed pellets.**

4. The HUPF SARP provides bounding radionuclide inventories for driver fuel assemblies and different types of pins (I would assume these would be DFA pins). Depending on the response to the above, I would use the isotopic profiles in the SAR, unless SRS can provide a bounding isotopic profile specific to the FFTF material at SRS. **Use isotopic profile in the SAR**
5. I was going to assume the external dose rate 1 meter from the surface of a HUPF was 5 mrem/hr unless there is actual data to support otherwise. This dose rate is consistent with the dose rate being assumed for the fresh MOX fuel packages (obtained from the MOX EIS).

Thanks for the help.

Milton E. Gorden | SAIC
Senior Engineer
Energy, Environment & Infrastructure Solutions
[REDACTED]

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