Transportation data call for use in the transportation analysis to be included in the SPD SEIS.

1. Assuming up to 6 MT of non-pit plutonium is processed and ultimately shipped to WIPP for disposal and up to 9 MT of pit plutonium is processed into MOX fuel in PDCF. The number of shipments of TRU waste estimated for each option should include all TRU waste that could be generated on the site related to the option including any TRU waste that may come out of the WSB related to that option.

Shipment Route	Estimated Number of Shipments	Mode of Transportation (Commercial or SST/SGT)	Form of Material being Shipped	Estimated Isotopic Breakdown of Material in Shipment	Shipping Container to be used
TRU waste from SRS to WIPP through direct disposal to WIPP option (prepare in K and package for shipment in E Area) (Note: This is for 6 MT of non-pit Pu shipped directly to WIPP)	1156 (Based on 2 TRUPACT-II and 1 HalfPACT/truck, 35 standard pipe overpacks/truck, 14 standard pipe overpacks/TRUPACT -II and 7 standard pipe overpacks/HalfPACT)	Commercial by truck	Solid waste in standard pipe overpack	197 g KIS Pu per standard pipe overpack	TRUPACT-II and HalfPACT
Additional TRU waste from SRS to WIPP generated by H-Canyon operations for up to 6MT of non-pit plutonium					
Additional TRU waste generated from approximately 5 MT of non pit plutonium through MFFF and 9 MT plutonium from surplus pits	85 (Based on 14 drums/TRUPACT-II, 3 TRUPACT-II/truck)	Commercial by truck	Solid waste in 55-gallon drums with filtered bags	20 g WG Pu per drum	TRUPACT-II
	129 (Based on 14 drums/TRUPACT-II, 3 TRUPACT-II/truck)	Commercial by truck	Solid waste in 55-gallon drums with filtered bags	10 g KIS Pu per drum	TRUPACT-II
	214 Total				
Additional TRU waste generated from processing up to 9 MT of pit plutonium in a separate PDCF	85 (Based on 14 drums/TRUPACT-II, 3 TRUPACT-II/truck)	Commercial by truck	Solid waste in 55-gallon drums with filtered bags	20 g WG Pu per drum	TRUPACT-II
Additional TRU	85	Commercial	Solid waste	20 g WG	TRUPACT-

waste generated from processing up to 9 MT of pit plutonium in a combined PDCF/PuP	(Based on 14 drums/TRUPACT-II, 3 TRUPACT-II/truck)	by truck	in 55-gallon drums with filtered bags	Pu per drum	II
Additional TRU waste generated from processing up to 6 MT of non-pit plutonium in a separate PuP	155 (Based on 14 drums/TRUPACT-II, 3 TRUPACT-II/truck)	Commercial by truck	Solid waste in 55-gallon drums with filtered bags	10 g KIS Pu per drum	TRUPACT-II
Additional TRU waste generated from processing up to 6 MT of non-pit plutonium in a combined PDCF/PuP	155 (Based on 14 drums/TRUPACT-II, 3 TRUPACT-II/truck)	Commercial by truck	Solid waste in 55-gallon drums with filtered bags	10 g KIS Pu per drum	TRUPACT-II

2. Assuming up to 48 MT (assumes 34MT of Pu from previous decisions + 9MT of Pu from pits included in the SPD SEIS + 5MT of Pu from non-pit plutonium included in the SPD SEIS) of plutonium could be made into MOX fuel with any additional TRU waste that may be generated during these activities shipped to WIPP. Transportation of MOX fuel to TVA reactors would be analyzed for entire amount of MOX fuel since transportation to these potential sites is not included in previous NEPA analyses.

Shipment Route	**Estimated Number of Shipments**	**Mode of Transportation (Commercial or SST/SGT)**	**Form of Material being Shipped**	**Estimated Isotopic Breakdown of Material in Shipment**	**Shipping Container to be used**
TRU waste from SRS to WIPP assuming a combined PDCF/PuP	406 (Based on 14 drums/TRUPACT-II, 3 TRUPACT-II/truck)	Commercial by truck	Solid waste in 55-gallon drums with filtered bags	20 g WG Pu per drum	TRUPACT-II
	129 (assumes 14 drums/TRUPACT-II, 3 TRUPACT-II/truck)	Commercial by truck	Solid waste in 55-gallon drums with filtered bags	10 g KIS Pu per drum	TRUPACT-II
	535 Total				
TRU waste from SRS to WIPP assuming separate PDCF and PuP	406 (Based on 14 drums/TRUPACT-II, 3 TRUPACT-II/truck)	Commercial by truck	Solid waste in 55-gallon drums with filtered bags	20 g WG Pu per drum	TRUPACT-II

	129 (Based on 14 drums/TRUPACT-II, 3 TRUPACT-II/truck)	Commercial by truck	Solid waste in 55-gallon drums with filtered bags	10 g KIS Pu per drum	TRUPACT-II
	535 Total				
Fresh fuel from SRS to reactors					

3. Assuming up to 13 MT of Pu could be immobilized with any additional TRU waste that may be generated during these operations shipped to WIPP.

Shipment Route	**Estimated Number of Shipments**	**Mode of Transportation (Commercial or SST/SGT)**	**Form of Material being Shipped**	**Estimated Isotopic Breakdown of Material in Shipment**	**Shipping Container to be used**
TRU waste from SRS to WIPP from immobilization					

Table 1. Plutonium Isotopic Compositions		
Radionuclide	Ci/g of WG Pu	Ci/g of KIS Pu
Pu-238	8.55E-03	6.84E-03
Pu-239	5.73E-02	5.45E-02
Pu-240	1.48E-02	2.62E-02
Pu-241	0.00E+00	3.81E-01
Pu-242	3.93E-06	1.02E-05
Am-241	3.44E-02	2.15E-01

Safeguards and Security

The quantity of plutonium contained in these materials dictates that they be subjected to the same safeguards and security requirements as materials that could be used in nuclear weapons. Therefore, intersite shipments would be made in SST/SGTs while intrasite transportation could require temporary road closures while the material would be moved from one area of the site to another. This practice would provide all needed security and mitigate potential risk to the public, without requiring the use of SST/SGTs for intrasite transfers.

The PDC Project would have appropriate security features at both the processing building at K-Area and the F/H Lab in F-Area. Physical barriers; access control systems; detection and alarm systems; procedures, including the two-person rule (which requires at least two people to be present when working with special nuclear materials in the facility); and personnel security measures, including security clearance investigations and access authorization levels, would be used to ensure that special nuclear materials stored and processed inside are adequately protected.

Nuclear material control and accountability would be ensured through a system that monitors storage, processing, and transfers. Closed-circuit television, intrusion detection, motion detection, and other automated material monitoring methods would be employed as part of the material control and accountability program. At any time, the total amount of special nuclear material in each facility, or in any material balance area within a specific facility, would be known. Physical inventories, measurements and inspections of material both in process and in storage would be used to verify inventory records. In addition, each of the three facilities would need to provide space and, to varying degrees, access for international inspection.

Excerpts above taken from SPD EIS, 1999

Excerpt below from an

Refinement Study Y-AES-K-00002
Revision 0, September 29, 2009
KAC Combination Project Page 336 of 571
APPENDIX K – USE OF F/H LABORATORY STRATEGY

Safeguards and Security
Currently, F/H Laboratory operates as a Category IV security facility, and is part of the F-Area Property Protection Area. The laboratory anticipates needing to transition from Category IV to Category III based on anticipated new mission scope including, but not necessarily limited to, the KAC Combination Project.

The evaluation concluded that, given the current inventory in F/H Laboratory, the lab could accept up to 700 grams from the KAC Combination Project and an additional 1100 grams of plutonium oxide (equivalent) from future new missions, and remain a Category III facility. The evaluation of rollup from a Category III quantity of SNM to a Category II quantity within F/H Laboratory was determined not to be credible, based on the anticipated configuration and dispersion of material.

- F/H Lab currently Category IV
- Phase 1 not expected cause change to Category III
- Phase 2 will cause change to Category III
- For Phase 2:
  - F/H Lab will become a Limited Area
  - Rollup study performed last year indicated Category II threshold would not be exceeded
  - Classified computing capability will be required

From PDC Formal Design Review presentation, August 2010