From: Cynthia.Williams[redacted]
Sent: Tuesday, October 12, 2010 12:47 PM
To: clayton.shedrow[redacted]; Dimarzio, John A.
Cc: brent.blunt[redacted]; sachiko-w.mcalhany@nnsa.srs.gov
Subject: Re: TRU Waste Shipments

Attachments: TRU_waste_shipments_2010-10-10 (U-NU).xls; Pits_HEU_Product_Byproduct_Shipments_2010-10-07 (U-NU).xls

Barry and Brent,

Thanks. John may already have these. We sent some documents by Fedex Friday, but I will resend just in case.

Cynthia Williams

[redacted]

From: Clayton Shedrow[redacted]
To: Brent Blun[redacted]
Cc: Cynthia Williams[redacted]srs, Sachiko Mcalhany/NNSA/DOE/Srs@srs
Date: 10/12/2010 08:48 AM
Subject: Re: TRU Waste Shipments

Brent, Cynthia

The attached docs are characterized as U-NU (unclassified-not UCNI). No need to send them through our STI. Please let me know if you have any questions.

C. Barry Shedrow

[redacted]

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From: Brent Blun[redacted]
To: Clayton Shedrow[redacted]
Cc: Cynthia Williams[redacted] Sachiko Mcalhany/NNSA/DOE/Srs@Srs
Date: 10/12/2010 08:05 AM
Subject: TRU Waste Shipments

Barry

I just the the attached files this morning. Can you get them through STI for me and then on to SAIC. I think Randy Reddick promised them to Sachiko today.

Brent

Summary of TRU Volumes and Shipments

U/NU
R. Shoberg URS
10/11/2010

Case	Total Volume (m3)	Total Shipments
Process 2.4 MT at PuP for MFFF	525	126
Operate PDC for 7.5 years (25 MT Pu)	1055.25	255
Total	1580.25	381
Process 4 MT at PuP for MFFF	875	210
Operate PDC for 7.5 years (25 MT Pu)	1055.25	255
Total	1930.25	465
Process 6 MT at PuP for WIPP	1312.5	315
Operate PDC for 7.5 years (25 MT Pu)	1055.25	255
POCs	8092	1156
Total	10459.75	1726
Process 2.4 MT at PuP for MFFF	525	126
Operate PDC for 10 years (34 MT Pu)	1407	340
Total	1932	466
Process 4 MT at PuP for MFFF	875	210
Operate PDC for 10 years (34 MT Pu)	1407	340
Total	2282	550
Process 6 MT at PuP for WIPP	1312.5	315
Operate PDC for 10 years (34 MT Pu)	1407	340
POCs	8092	1156
Total	10811.5	1811

TRU Waste Shipments

U/NU
R. Shoberg URS
10/11/2010

PuP at K-Area

Job Control Waste

Source: Waste Management Strategy for the Plutonium Preparation Project in the K-Area Complex, SK-[

Process 2.4 MT of Pu for MFFF

7	= Number of years for PuP processing
2.4	= MT Pu processed
75	= Volume per year (m3/yr)
525	= Total volume (m3)
0.2	= Volume of 55-gallon drum (m3)
2	= Packing efficiency
750	= Number of drums generated per year
14	= Drums per TRUPACT-II
54	= Number of TRUPACTs shipped per year
3	= Number of TRUPACTs per truck
18	= Number of trucks per year
126	= Total number of trucks

Process 4 MT of Pu for MFFF

7	= Number of years for PuP processing
4	= MT Pu processed
125	= Volume per year (m3/yr)
875	= Total volume (m3)
0.2	= Volume of 55-gallon drum (m3)
2	= Packing efficiency
1250	= Number of drums generated per year
14	= Drums per TRUPACT-II
90	= Number of TRUPACTs shipped per year
3	= Number of TRUPACTs per truck
30	= Number of trucks per year
210	= Total number of trucks

Process 6 MT of Pu for WIPP

7	= Number of years for PuP processing
6	= MT Pu processed
187.5	= Volume per year (m3/yr)
1312.5	= Total volume (m3)
0.2	= Volume of 55-gallon drum (m3)
2	= Packing efficiency
1875	= Number of drums generated per year
14	= Drums per TRUPACT-II
134	= Number of TRUPACTs shipped per year
3	= Number of TRUPACTs per truck

45 = Number of trucks per year
315 = Total number of trucks

POCs for WIPP

Source: Feasibility Study for the Disposition of 5 MT of Surplus Non-Pit Plutonium, Revision 0, Y-AES-G-(

2.5 = Pu (MT)
2.95E+06 = FGE in 2.5 MT Pu
175.00 = FGE/POC (standard pipe overpack) (with measurement uncertainty)
35 = POCs/shipment

6 = MT Pu
7.08E+06 = FGE in 6 MT Pu
40458 = Number of POCs
1156 = Number of shipments
8092 = Volume of POCs in 55-gallon drums (m3)

PDC at K-Area

Job Control Waste

Source: Pit Diassembly and Conversion Facility, Waste Management Plan, Rev. 1, Q-PRP-F-00001, Jun(

Operate PDC for 7.5 years (25 MT Pu)

7.5 = Number of years for PDC processing
140.7 = Volume of TRU and mixed TRU waste generated at PDC (m3/yr)
1055.25 = Total volume (m3)
0.2 = Volume of 55-gallon drum (m3)
2 = Packing efficiency

1407 = Number of drums generated per year
14 = Drums per TRUPACT-II
101 = Number of TRUPACTs shipped per year
3 = Number of TRUPACTs per truck
34 = Number of trucks per year
255 = Total number of trucks

Operate PDC for 10 years (34 MT Pu)

10 = Number of years for PDC processing
140.7 = Volume of TRU and mixed TRU waste generated at PDC (m3/yr)
1407 = Total volume (m3)
0.2 = Volume of 55-gallon drum (m3)
2 = Packing efficiency

1407 = Number of drums generated per year
14 = Drums per TRUPACT-II
101 = Number of TRUPACTs shipped per year
3 = Number of TRUPACTs per truck

34 = Number of trucks per year
340 = Total number of trucks

00009, September 24, 2009, p. 26

e 30, 2005, Table ES-1

TRU Waste Isotopics

U/NU
R. Shoberg URS
10/11/2010

325	= Maximum Pu-239 FGE for TRUPACT-II
14	= Number of drums per TRUPACT-II
23.21	= Average Pu-239 FGE per drum
200	= Maximum Pu-239 FGE per drum
160	= Maximum Pu-239 FGE per drum including measurement error (2 sigma)
18.57	= Average Pu-239 FGE per drum including measurement error
20.00	= Average WG Pu per drum (g)
0.0743	= Decay heat (W) (no adjustment for decay heat)
20.86	= Average KIS Pu per drum (g)
0.2093	= Decay heat (W)
0.1000	= Decay heat target (W)
10.0000	= Average KIS Pu per drum (adjusted for decay heat) (g)
175	= FGE Pu-239 limit for POC (including measurement uncertainty)
1.97E+02	= Average KIS Pu per POC (g)

	Radionuclide Specific Activity	WG Pu Weight Fraction	WG Pu Activity Per Gram of Pu (Ci)	WG Pu Pu-239 FGE	WG Pu Pu-239 FGE/g	Decay Heat (W/g)	WG Pu W/g	KIS Pu Weight Fraction	KIS Pu Activity Per Gram of Pu (Ci)	KIS Pu Pu-239 FGE
Radionuclide	(Ci/g)									
Pu-238	1.71E+01	0.00050	8.55E-03	1.13E-01	5.65E-05	5.73E-01	2.87E-04	0.00040	6.84E-03	1.13E-01
Pu-239	6.21E-02	0.92350	5.73E-02	1.00E+00	9.24E-01	1.95E-03	1.80E-03	0.87800	5.45E-02	1.00E+00
Pu-240	2.27E-01	0.06500	1.48E-02	2.25E-02	1.46E-03	7.16E-03	4.65E-04	0.11540	2.62E-02	2.25E-02
Pu-241	1.03E+02	0.00000	0.00E+00	2.25E+00	0.00E+00	3.31E-03	0.00E+00	0.00370	3.81E-01	2.25E+00
Pu-242	3.93E-03	0.00100	3.93E-06	7.50E-04	7.50E-07	1.17E-04	1.17E-07	0.00260	1.02E-05	7.50E-04
Am-241	3.44E+00	0.01000	3.44E-02	1.87E-02	1.87E-04	1.16E-01	1.16E-03	0.06250	2.15E-01	1.87E-02
					9.25E-01		3.71E-03			

HEU Isotopics

	Radionuclide Specific Activity	HEU Weight Fraction	HEU Activity Per Gram of HEU (Ci)
Radionuclide	(Ci/g)		

U-234	6.24E-03	0.01000	6.24E-05
U-235	2.16E-06	0.93100	2.01E-06
U-236	6.47E-05	0.00500	3.24E-07
U-238	3.36E-07	0.05400	1.81E-08

KIS Pu Pu-239 FGE/g	Decay Heat (W/g)	KIS Pu W/g
4.52E-05	5.73E-01	2.29E-04
8.78E-01	1.95E-03	1.71E-03
2.60E-03	7.16E-03	8.26E-04
8.33E-03	3.31E-03	1.22E-05
1.95E-06	1.17E-04	3.04E-07
1.17E-03	1.16E-01	7.25E-03
8.90E-01		1.00E-02