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JK 8/14/67

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ISO-1022

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PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month July 1967

A. Metal

1. Average Cooling Time
2. Minimum Cooling Time

B. Waste Losses

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

C. Production (Uranium)

Depleted

Pounds

Tons

1. Ending Inventory (UNH)
2. Plus Removals (to URO)
3. Less Receipts from URO (Acid)
(UNH)
4. Less Beginning Inventory
5. Equals Net Production

<u>78,635.00</u>	<u>39.32</u>
<u>- 0 -</u>	<u>- 0 -</u>
<u>1,249.00</u>	<u>.63</u>
<u>8982.00</u>	<u>4.49</u>
<u>78,949.00</u>	<u>39.47</u>
<u>(10,545.00)</u>	<u>(5.27)</u>

K-6 Basis

1. Gross Production (K-6)
2. Less URO Acid U to Process
3. Less UNH Rework *C-24 waste to Depleted*
4. Equals Net Production

<u>- 0 -</u>	<u>- 0 -</u>
<u>1,249.00</u>	<u>.63</u>
<u>8982.00</u>	<u>4.49</u>
<u>1,228.00</u>	
<u>(11,459.00)</u>	<u>(5.73)</u>

D. Production (Plutonium)

Grams

Kgs.

1. Gross Units Produced
2. Less Adjustment
Sub-Total
3. Less Recycle
4. Less Rework
5. Equals Net Production

E. Rework (F-8)

Pounds

Grams

1. Beginning Inventory
2. Plus Receipts
3. Less Deliveries to UGS
4. Less Ending Inventory
5. Equals Reworked

U	Pu
U	Pu
U	Pu
U	Pu
U	Pu

Aug 23 6

mm 117

PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month July 1967A. Metal

1. Average Cooling Time
2. Minimum Cooling Time

B. Waste Losses

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

(Stored)

(Stored)

788,160.00

1464.00

222,712.00

929.00

C. Production (Uranium) Enriched

Pounds

Tons

1. Ending Inventory (UNH) ^{69,654.135}
2. Plus Removals (to URO)
3. Less Receipts from URO (Acid) (UNH)
4. Less Beginning Inventory
5. Equals Net Production

406,597.00

67,519.00

108,616.00

365,500.00

203.30

33.76

54.31

182.75

K-6 Basis

1. Gross Production (K-6)
2. Less URO Acid U to Process
3. Less UNH Rework
4. Equals Net Production

788,160.00

1238.00

411,060.00

378,328.00

394.08

.61

205.53

189.16

D. Production (Plutonium)

Grams

Kgs.

1. Gross Units Produced
2. Less Adjustment (Bias)
- Sub-Total
3. Less Recycle
4. Less Rework
5. Equals Net Production

222,712.00

16.20.00

224,332.00

224,332.00

222.7

1.6

224.3

224.3

E. Rework (F-8)

Pounds

Grams

1. Beginning Inventory
2. Plus Receipts
3. Less Deliveries to UGS
4. Less Ending Inventory
5. Equals Reworked

U

U

U

U

U

Pu

Pu

Pu

Pu

Pu

Net Production

Ending Inventory -

+ Removals to E. Export 3015.00

- Beginning Inventory 1968.00

Net Production

1047.00

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RECEIVED

RECEIVED

July 67

RECEIVED	RECEIVED

RECEIVED

RECEIVED

RECEIVED

Total
Total
Total
Total
Total

RECEIVED

RECEIVED

Under
RECEIVED

Stored

3716.00	1926.00
1464.00	929.00
2252.00	997.00

Discard

Actual Limit	37.00	48.00
Actual Loss	1.00	2.00
Under Limits	36.00	46.00

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PRODUCTION STATISTICS

Depleted U

Month End Work Sheet No. 1

Month August 1967

A. Metal

- 1. Average Cooling Time
- 2. Minimum Cooling Time

Beginning Inv.
Charged to Process
Received
Ending Inv.

B. Waste Losses

- 1. Gross Uranium Produced, lbs.
- 2. Pounds Uranium to Waste
- 3. Gross Plutonium Produced, grams
- 4. Grams Plutonium to Waste

C. Production (Uranium) Depleted

Pounds

Tons

- 1. Ending Inventory (UNH)
- 2. Plus Removals (to URO)
- 3. Less Receipts from URO (Acid) (UNH)
- 4. Less Beginning Inventory
- 5. Equals Net Production

54,865.00	27.43
0	0
19,470.00	9.77
0	0
75,645.00	37.32
(26,290.00)	(12.86)

K-6 Basis

- 1. Gross Production (K-6)
- 2. Less URO Acid U to Process
- 3. Less UNH Rework
- 4. Equals Net Production

0	0
19,470.00	9.77
10,700.00	5.35
13,649.00	6.85
(26,290.00)	(12.86)

D. Production (Plutonium)

Grams

Kgs.

- 1. Gross Units Produced
- 2. Less Adjustment Sub-Total
- 3. Less Recycle
- 4. Less Rework
- 5. Equals Net Production

E. Rework (F-8)

Pounds

Grams

- 1. Beginning Inventory
- 2. Plus Receipts
- 3. Less Deliveries to UGS
- 4. Less Ending Inventory
- 5. Equals Reworked

U	Pu
U	Pu
U	Pu
U	Pu
U	Pu

PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month August 1967

Enriched U

A. Metal

1. ~~Average Cooling Time~~
2. ~~Minimum Cooling Time~~

Beginning Inventory
Material Charged to Line
Material Received
Ending Inventory

337.47
337.47
- 0 -

B. Waste Losses

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

(Includes Scrap)

862.679
903.45500
161.900
19%

C. Production (Uranium)

Enriched U

Pounds

Tons

1. Ending Inventory (UWH)
2. Plus Removals (to URO)
3. Less Receipts from URO (Acid) (UWH)
4. Less Beginning Inventory
5. Equals Net Production

314,139.00
417,385.00
- 0 -
- 0 -
506,577.00
824,717.00

157.06
458.69
- 0 -
- 0 -
262.30
412.46

K-6 Basis

1. Gross Production (K-6)
2. Less URO Acid U to Process
3. Less UWH Rework
4. Equals Net Production

903,455.00
13,649.00
56,040.00

451.73
6.52
28.12
436.53

D. Production (Plutonium)

Grams

Kgs.

1. Gross Units Produced
2. Less Adjustment
Sub-Total
3. Less Recycle
4. Less Rework
5. Equals Net Production

E. Rework (F-8)

Pounds

Grams

1. Beginning Inventory
2. Plus Receipts
3. Less Deliveries to WGB
4. Less Ending Inventory
5. Equals Reworked

U Pu
 U Pu
 U Pu
 U Pu
 U Pu

PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month August 1967

Plutonium
A. Metal

- Beginning Inv.*
1. ~~Average Cooling Time~~
2. ~~Minimum Cooling Time~~

Metal Charged to Lines
Metal Returned

- 0 -
206,575.33
206,575.33
- 0 -

B. Waste Losses

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

(Includes Lines)

251.128
939

C. Production (Uranium)

1. Ending Inventory (UNH)
2. Plus Removals (to URO)
3. Less Receipts from URO (Acid)
(UNH)
4. Less Beginning Inventory
5. Equals Net Production

Pounds

Tons

Percent of Inputs 37%
45%

K-6 Basis

1. Gross Production (K-6)
2. Less URO Acid U to Process
3. Less UNH Rework
4. Equals Net Production

D. Production (Plutonium)

Grams

Kgs.

- on-Defense*
1. Gross Units Produced *Expense* 251.864
2. Less Adjustment 76
Sub-Total 251.788
3. Less Recycle - 0 -
4. Less Rework - 0 -
5. Equals Net Production 251.788

251.864
76
251.788
- 0 -
- 0 -
251.788

251.8
7
251.1
- 0 -
- 0 -
251.1

E. Rework (F-8)

Pounds

Grams

1. Beginning Inventory
2. Plus Receipts
3. Less Deliveries to UGS
4. Less Ending Inventory
5. Equals Reworked

U
U
U
U
U

Pu
Pu
Pu
Pu
Pu

PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month August 19 67*Neptunium*

- A. Metal, (*Feed Storage*) *Beginning Inv.*
1. ~~Average Cooling Time~~ *Metal Charged to Line*
 2. ~~Minimum Cooling Time~~ *Metal Required*
- Ending Inv.*

- 0 -
1713.02
1713.02
 - 0 -

B. Waste Losses

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

C. Production (Uranium)PoundsTons

1. Ending Inventory (UNH)
2. Plus Removals (to URO)
3. Less Receipts from URO (Acid)
(UNH)
4. Less Beginning Inventory
5. Equals Net Production

K-6 Basis

1. Gross Production (K-6)
2. Less URO Acid U to Process
3. Less UNH Rework
4. Equals Net Production

D. Production (Plutonium)GramsKgs.

1. Gross Units Produced
2. Less Adjustment
Sub-Total
3. Less Recycle
4. Less Rework
5. Equals Net Production

E. Rework (F-8)PoundsGrams

1. Beginning Inventory
2. Plus Receipts
3. Less Deliveries to UGS
4. Less Ending Inventory
5. Equals Reworked

U	_____	Pu	_____
U	_____	Pu	_____
U	_____	Pu	_____
U	_____	Pu	_____
U	_____	Pu	_____

Production Neptunium
Final

Ending Inventory 54.00

+ Removals to E. 1 August 11 73.00
- Beginning Inventory - 0

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August 67

PLANT

PLANT

PLANT

PLANT

PLANT

Enriched U

PLANT

PLANT

under

PLANT

Stored Waste

Discard Waste

Limit

Actual

Under

37.00

- 0 -

37.00

48.00

44.00

4.00

3716.00

1926.00

1619.00

939.00

2097.00

987.00

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PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month September 1967

A. Metal

1. Average Cooling Time
2. Minimum Cooling Time

*Beginning Inventory
Charged to Process
Net from Production
See Sig. Inv.*

115 5,346.22
119 7,657.55
1,748.60
34,962.73

B. Waste Losses

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

Depleted U

1041,410.00
2656.00
403,495.00
1350.00

C. Production (Uranium)

1. Ending Inventory (UNH)
2. Plus Removals (to URO)
3. Less Receipts from URO (Acid)
4. Less Beginning Inventory (UNH)
5. Equals Net Production

Pounds

Tons

201,355.00
866,762.00
6,342.00
54,903.00
1,007,143.00

100.69
433.48
3.17
27.43
503.57

K-6 Basis

1. Gross Production (K-6)
2. Less URO Acid U to Process
3. Less UNH Rework
4. Equals Net Production

1041,410.00
6,342.00
27,925.00
1,007,143.00

520.71
3.17
13.97
503.57

D. Production (Plutonium)

1. Gross Units Produced
2. Less Adjustment
- Sub-Total
3. Less Recycle
4. Less Rework
5. Equals Net Production

Grams

Kgs.

402,552.00
943.00
403,495.00
—
—
403,495.00

402.6
.9
403.5
—
—
403.5

E. Rework (F-8)

1. Beginning Inventory
2. Plus Receipts
3. Less Deliveries to UGS
4. Less Ending Inventory
5. Equals Reworked

Pounds

Grams

U 1095.00
U 54.00
U —
U —
U 1095.00

Pu
Pu
Pu
Pu
Pu

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*Beginning Inventory
Charged to Process
Net from Production*

477,530.00
119,202.55
610.00

2150.15
2232.51
2.13

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PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month _____ 19__

A. Metal

1. Average Cooling Time
2. Minimum Cooling Time

B. Waste Losses

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

C. Production (Uranium) *Enriched*

1. Ending Inventory (UNH) *35612.00*
2. Plus Removals (to URO) *1092.00*
3. Less Receipts from URO (Acid) (UNH)
4. Less Beginning Inventory
5. Equals Net Production

Pounds

Tons

51600.00
232520.00
—
—
314129.00

40.50
116.36
—
—
157.06

K-6 Basis

1. Gross Production (K-6)
2. Less URO Acid U to Process
3. Less UNH Rework
4. Equals Net Production

D. Production (Plutonium)

1. Gross Units Produced
2. Less Adjustment
Sub-Total
3. Less Recycle
4. Less Rework
5. Equals Net Production

Grams

Kgs.

E. Rework (F-8)

1. Beginning Inventory
2. Plus Receipts
3. Less Deliveries to UGS
4. Less Ending Inventory
5. Equals Reworked

Pounds

Grams

U
U
U
U
U

Pu
Pu
Pu
Pu
Pu

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PUREX OPERATION

WORKSHEET FOR WASTE LIMIT CALCULATION

Month of _____ 19____

U POUNDS

PU GRAMS

Total Plant Removals

PLUS

Ending Inventory
(less Feed Storage & MSP)

MINUS

Beginning Inventory
(less Feed Storage & MSP)

Net Production

LIMIT %

LIMIT

3716.00

1926.00

Depl.
2654.00

Env.
255.00

ACTUAL LOSS

under

OVER LIMITS

Stored Waste

2911.00

1350.00

805.00

576.00

Discard Waste

Limit

37.00

48.00

Actual

Depl. (3) Env. (1) 4.00

- 0 -

Under

33.00

48.00

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PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month October 1967

A. Metal

1. Average Cooling Time
2. Minimum Cooling Time

Beginning Inventory 86,962.73
Charge to Receipts 787,435.61
Net from Sales 780,675.88
Ending Inventory -2-

B. Waste Losses

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

Oct. Basis 0.21% 10,880.8400
0.43% 2,819.6600
2,600.65

C. Production (Uranium)

1. Ending Inventory (UNH)
2. Plus Removals (to URO)
3. Less Receipts from URO (Acid) (UNH)
4. Less Beginning Inventory
5. Equals Net Production

Pounds	Tons
69,972.00	34.99
1006,206.00	503.40
8396.00	4.20
-	-
201,988.00	100.64
866,994.00	433.50

K-6 Basis

1. Gross Production (K-6)
2. Less URO Acid U to Process
3. Less UNH Rework
4. Equals Net Production

10,880.8400	544.05
8396.00	4.20
21,219.4.00	106.35
866,994.00	433.50

D. Production (Plutonium)

1. Gross Units Produced
2. Less Adjustment *Oct. Basis*
Sub-Total
3. Less Recycle
4. Less Rework
5. Equals Net Production

Grams	Kgs.
280,505.00	281.5
1461.00	1.5
281,966.00	282.0
-	-
281,966.00	282.0

E. Rework (F-8)

1. Beginning Inventory
2. Plus Receipts
3. Less Deliveries to UGS
4. Less Ending Inventory
5. Equals Reworked

Pounds	Grams
1137.00	Pu
2331.00	Pu
-	Pu
1094.00	Pu
2367.00	Pu

Beginning Inventory 1137.00
Charge to Sales 2331.00
Net from Sales 1094.00
Ending Inventory 2367.00

PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month October 1967

A. Metal

1. Average Cooling Time _____
2. Minimum Cooling Time _____

B. Waste Losses

1. Gross Uranium Produced, lbs. _____
2. Pounds Uranium to Waste _____
3. Gross Plutonium Produced, grams _____
4. Grams Plutonium to Waste _____

C. Production (Uranium)

1. Ending Inventory (UNH) _____
2. Plus Removals (to URO) _____
3. Less Receipts from URO (Acid)
(UNH) _____
4. Less Beginning Inventory _____
5. Equals Net Production _____

Pounds

Tons

K-6 Basis

1. Gross Production (K-6) _____
2. Less URO Acid U to Process _____
3. Less UNH Rework _____
4. Equals Net Production _____

D. Production (Plutonium)

1. Gross Units Produced _____
2. Less Adjustment
Sub-Total _____
3. Less Recycle _____
4. Less Rework _____
5. Equals Net Production _____

Grams

Kgs.

E. Rework (F-8)

1. Beginning Inventory _____
2. Plus Receipts _____
3. Less Deliveries to UGS _____
4. Less Ending Inventory _____
5. Equals Reworked _____

Pounds

Grams

U
U
U
U
U

Pu
Pu
Pu
Pu
Pu

PRODUCTION STATISTICS
Month End Work Sheet No. 1

13
Month October 19 67

A. Metal

1. Average Cooling Time
2. Minimum Cooling Time

B. Waste Losses

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

C. Production (Uranium)

1. Ending Inventory (UNH)
2. Plus Removals (to URO)
3. Less Receipts from URO (Acid)
(UNH)
4. Less Beginning Inventory
5. Equals Net Production

Pounds

Tons

K-6 Basis

1. Gross Production (K-6)
2. Less URO Acid U to Process
3. Less UNH Rework
4. Equals Net Production

D. Production (Plutonium)

1. Gross Units Produced
2. Less Adjustment
Sub-Total
3. Less Recycle
4. Less Rework
5. Equals Net Production

Grams

Kgs.

E. Rework (F-8)

1. Beginning Inventory
2. Plus Receipts
3. Less Deliveries to UGS
4. Less Ending Inventory
5. Equals Reworked

Pounds

Grams

U	_____	Pu	_____
U	_____	Pu	_____
U	_____	Pu	_____
U	_____	Pu	_____
U	_____	Pu	_____

188550.00	188.5
1481.00	1.5
190011.00	190.0
- 0 -	
- 0 -	
190011.00	190.0

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15

[REDACTED] (n)

BIREFY OPERATION

WASTESHEET FOR WASTE LIMIT CALCULATION

Month of October 1967

		<u>U POUNDS</u>	<u>PU GRAMS</u>
	Total Plant Removals		
<u>PLUS</u>	Ending Inventory (less Feed Storage & MSP)		
<u>MINUS</u>	Beginning Inventory (less Feed Storage & MSP)		
	Net Production		
<u>LIMIT %</u>			
<u>LIMIT</u>		<u>3716.00</u>	<u>1926.00</u>
<u>ACTUAL LOSS</u>		<u>2272.00</u>	<u>1216.00</u>
<u>under</u>	<i>Stored Waste</i> {	<u>1444.00</u>	<u>710.00</u>
<u>OVER LIMITS</u>			

Discard Waste

<i>Limit</i>	37.00	48.00
<i>Actual</i>	- 0	10.00
<i>Under</i>	37.00	38.00

[REDACTED]

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16

~~SECRET~~

PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month Nov 19 67A. Metal

1. Average Cooling Time
2. Minimum Cooling Time

Sept 26
Beginning Inv.
Charges
Receipts from Dues
Ending Inv.

- 0 -
1047 402.08
1047 402.08 net
- 0 -

B. Waste Losses

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

1233700
2456
347262
826
103

C. Production (Uranium)

1. Ending Inventory (UNH)
2. Plus Removals (to URO)
3. Less Receipts from URO (Acid) (UNH)
4. Less Beginning Inventory
5. Equals Net Production

Sept 26
Pounds
189077
1069226
10121
69972
1178210

Tons
94.5
534.6
5.0
35.0
589.1

K-6 Basis

1. Gross Production (K-6)
2. Less URO Acid U to Process
3. Less UNH Rework
4. Equals Net Production

1233700
10121
57159
1166420

616.8
5.0
28.6
583.2

D. Production (Plutonium)

1. Gross Units Produced
2. Less Adjustment Sub-Total
3. Less Recycle
4. Less Rework
5. Equals Net Production

Grams
343105.00
Bis + 4157
347262.00

Kgs.
343.1
4.2
347.3

E. Rework (F-8) *Net Production*

1. ~~Beginning~~ Inventory
2. ~~Plus Receipts~~ Shipped
3. ~~Less Deliveries~~ to UGS
4. ~~Less Ending~~ Inventory
5. ~~Equals Reworked~~

~~Pounds gms.~~
U - 0 -
U 2441.00
U
U 1134.00
U 1307.00

Grams
Pu
Pu
Pu
Pu
Pu

Pu

Beginning Inventory - 0 -
Charges 302527.51
Receipts 302527.51
Ending Inv - 0 -

Beginning Inv
Charges
Rec'd
Ending Inv

Net Production
- 0 -
1325.76
1325.76
- 0 -

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PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month December 1967

A. Metal

1. Average Cooling Time
2. Minimum Cooling Time

B. Waste Losses

Depleted

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

151,925.00
56.00
64,919.00
880.00

C. Production (Uranium)

1. Ending Inventory (UNH)
2. Plus Removals (to URO)
3. Less Receipts from URO (Acid)
(UNH)
4. Less Beginning Inventory
5. Equals Net Production

Pounds

Tons

53,671.00	26.84
240,146.00	130.07
978.00	49
187,077.00	94.54
123,762.00	61.58

A-B Basis

1. Gross Production (K-6)
2. Less URO Acid U to Process
3. Less UNH Rework
4. Equals Net Production

*134,600.00
11,197.00
128,403.00*

151,925.00	75.96
978.00	49
25,560.00	12.78
125,387.00	62.69

D. Production (Plutonium)

Depleted

1. Gross Units Produced
2. Less Adjustment
Sub-Total
3. Less Recycle
4. Less Rework
5. Equals Net Production

Grams

Kgs.

64,529.00
390.00
64,919.00
64,919.00

E. Rework (F-8)

1. Beginning Inventory
2. Plus Receipts
3. Less Deliveries to UCS
4. Less Ending Inventory
5. Equals Reworked

Pounds

Grams

U	Pu
U	Pu
U	Pu
U	Pu
U	Pu

*Non Day
29265*

29265

PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month December 1967

Enriched U

A. Metal

1. Average Cooling Time
2. Minimum Cooling Time

*Beginning Inv.
Charges to Loss
Receipt from Loss
Fuel Qty Low*

*- 0 -
355 85153
360 79253
444100*

B. Waste Losses

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

*132 562.00
970.00*

C. Production (Uranium)

1. Ending Inventory (UNH)
2. Plus Removals (to URO)
3. Less Receipts from URO (Acid)
(UNH)
4. Less Beginning Inventory
5. Equals Net Production

Pounds

Tons

*192 378.00
- 0 -
- 0 -
76 737.00
115 641.00*

*96.19
- 0 -
- 0 -
38.37
57.82*

K-6 Basis

1. Gross Production (K-6)
2. Less URO Acid U to Process
3. Less UNH Rework
4. Equals Net Production

*131.566
132 562.00
- 0 -
19 585.00
113 057.00*

*66.28
- 0 -
9.75
56.53*

D. Production (Plutonium)

1. Gross Units Produced
2. Less Adjustment
Sub-Total
3. Less Recycle
4. Less Rework
5. Equals Net Production

Grams

Kgs.

E. Production (Neptunium) Rework (F-8)

1. *Ending* Beginning Inventory
2. Plus Receipts *Removals*
3. Less Deliveries to UGS
4. Less Ending Inventory
5. Equals Reworked *Net Prod*

Pounds

Grams

U
U
U
U
U

Pu
Pu
Pu
Pu
Pu

*Beginning Inventory - 0 -
Charges to Losses 1120000
Receipts from Loss 113 50533
Fuel Storage inv 1034.67*

*Nept.
Beginning Inv - 0 -
Charges 896.5
Receipts 402.57
Fuel Qty 12.34*

19
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December 67

Rept.

Stored Waste
Depl
Enrueled

3716.00	1926.00
56.00	236.00
970.00	644.00
1026.00	880.00

131.00
84.92
315.92

under

2690.00	1046.00
---------	---------

Discard Waste

Limit
Actual
Under

45.00
* 44.00
4.00

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* Includes October & November

RICHLAND OPERATIONS OFFICE

美

SS MATERIALS INVENTOR

CONTRACTOR		COMPONENT		DATE				
8-21-67		Purex		8-21-67				
CUSTODIAN/SUPERVISOR		AREA	BLDG.	AEC SURVEY NO.				
O. F. Deaulieu		200-E	202-A					
☐ NORMAL U ☒ DEPLETED U ☒ ENRICHED U:		☒ PLUTONIUM ☒ NEPTUNIUM						
INVENTORY COMPOSITION		(C)	(D)	TOTAL SS WT. IN	ISOTOPIC WEIGHT	(E) MEASUREMENT METHOD	ALLOTMENT NUMBER	REFERENCE
(A) TYPE	(B) IDENTIFICATION	☐ PIECE CT. ☐ GROSS WT. ☐ VOLUME	ANALYTICAL FACTOR					
		Depleted U Pounds	U-235 Pounds	Plutonium Grams	Enriched U Pounds	U-235 Pounds	Plutonium Grams	Neptunium Grams
In Progress		44 926.00	284.83	-0-	8 212.00	69.64	12 374.00	2 065.00
Finished Product		54 865.00	347.84	-0-	314 129.00	2 663.81	147 251.00	54.00
Total		99 791.00	632.67	-0-	322 341.00	2 733.45	159 625.00	2 119.00
Component	Enrichment Inventory							
254		99 791.00	632.67		8 212.00	69.64		2 110.00
256							159 625.00	
252								
254					314 129.00	2 663.81		
Totals		99 791.00	632.67		322 341.00	2 733.45	159 625.00	2 119.00
TOTALS							ACCOUNT NO. - 102 & 103	
THIS ☐ BOOK ☒ PHYSICAL		INVENTORY CERTIFIED CORRECT AS OF 8-21-67 AT 4:00 PM		WITNESSED BY				
WITH ☐ NO ☒ ALL EXCEPTIONS NOTED ABOVE		DECLASSIFIED		R. P. Drago (REL-AEC REPRESENTATIVE)				
P. J. Gr. (CUSTODIAN/SUPERVISOR)		Ed Kelley (REL-AEC REPRESENTATIVE)		L. P. Wirtz (CONTRACTOR'S REPRESENTATIVE) 18000000 INC.				
I.E. (A) FUEL ELEMENTS, METAL, COMPOUNDS, SOLUTIONS, ALLOYS, SCRAP FUEL ELEMENTS, SCRAP METAL, SCRAP COMPOUNDS, SCRAP SOLUTIONS, ETC.				(D) FACTOR WT. OF FUEL ELEMENTS, STOICHIOMETRIC FACTOR/OR CHEM. ANALYT. FACTOR, RADIO ASSAY VALUE, MASS, SPEC. ANALYSES, WEIGHT PERCENT U-235.				
(B) SOLID 8, CORED 1/2 DIA., RODS, BUTTONS, UO ₃ , UNH, U-SILICON, FUEL ELEMENTS, SOLUTIONS.				(E) PIECE COUNT FACTOR, SCALE WEIGHED - NET, VOLUME BY VISUAL, BOOK VS PREVIOUSLY DETERMINED VERIFICATION, ESTIMATED, ETC.				
(C) PIECE CT. OF FUEL ELEMENTS, GROSS WT. OF COMPOUNDS, VOLUME OF SOLUTIONS.								

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6366

$$1036.18 \times 10^4 = 2.017 \text{ gms } P_2$$

6365

$$4308.51 \times 10^4 = 8.377 \text{ gms } P_2$$

6264

$$3170.68 \times 10^4 = 6.173 \text{ gms } P_2$$

6263

$$8088.98 \times 10^4 = 15.749 \text{ gms } P_2$$

6128

$$2218.28 \times 10^3 = 0.432 \text{ gms } P_2$$

6127

$$2315.56 \times 10^4 = 6.455 \text{ gms } P_2$$

6898

$$3182.55 \times 10^4 = 6.196 \text{ gms } P_2$$

58691

$$2572.02 \times 10^4 = 5.008 \text{ gms } P_2$$

6862

$$3080.43 \times 10^4 = 5.998 \text{ gms } P_2$$

5765

$$2325.11 \times 10^4 \times 1.947 \times 10^{-7} = 4.527 \text{ gms } P_2$$

5764

$$2876.52 \times 10^4 \times 1.947 \times 10^{-7} = 5.601 \text{ gms } P_2$$

I 56 442 10/14/66

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5738

$$\begin{array}{rcl} 1480.86 \times 10^4 & " & = 2.883 \\ 3.23101 & & = 9.315 \end{array}$$

5749

$$\begin{array}{rcl} 1295.56 \times 10^4 & " & = 2.522 \\ 3.23101 & & = 8.149 \end{array}$$

5920

$$\begin{array}{rcl} 3125.96 \times 10^4 & " & = 6.086 \\ 3.23101 & & = 19.664 \end{array}$$

6184

$$\begin{array}{rcl} 3066.9 \times 10^4 & " & = 5.971 \\ 3.23101 & & = 19.292 \end{array}$$

6185

$$\begin{array}{rcl} 2464.7 \times 10^4 & " & = 4.799 \\ 3.23101 & & = 15.506 \end{array}$$

6306

$$\begin{array}{rcl} 8861.14 \times 10^3 & " & = 1.725 \\ 3.23101 & & = 5.573 \end{array}$$

6307

$$\begin{array}{rcl} 8745.84 \times 10^3 & " & = 1.703 \\ 3.23101 & & = 5.502 \end{array}$$

$$P_{total} = \frac{76.473}{17} = 4.498$$

$$U_{total} = \frac{247.085}{17} = 14.534$$

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7783

27

Harry Taylor

A

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Pu	U
8.627	28.115
2.078	6.771
15.587	50.78
6.109	19.91
6.107	19.902
0.408	1.33
5.865	19.114
4.897	15.96
6.060	19.750
5.35	17.436
4.395	19.095
<u>65.413</u>	<u>213.163</u>

3.006	9.80
2.636	8.57
1.574	5.13
1.553	5.061
5.80	18.9
4.661	15.19
<u>7.033</u>	<u>22.921</u>
26.257	85.572

AB = R6021
Q6022

$$\frac{65.413}{11} = \underline{5.95 \text{ gms Pu for A}}$$

$$\frac{213.163}{11} = \underline{19.38 \text{ lbs U for A}}$$

$$\frac{26.257}{7} = \underline{3.75 \text{ gms Pu for B}}$$

$$\frac{85.572}{7} = \underline{12.22 \text{ lbs U for B}}$$

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$$\text{Total Pu } \frac{65.413 + 26.257}{18} = \underline{5.09 \text{ gms Pu}}$$

$$\text{Total U } \frac{213.163 + 85.572}{18} = \underline{16.6 \text{ lbs U}}$$

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3008

G_W

R # 6306

SpGr = 1.29

U = 4.45-3

P_U = 1.53-3

C₁₃₇ = 7.76+3

WTFr 33

H_{re} MWD = 920

$$\frac{33}{1.29} = 25.6 = 1141.9 (7760) = 8861.14 \times 10^3$$

$$\frac{613.6}{920} = 0.66695 \text{ gm Pu / MWD}$$

$$\frac{0.95(0.66695)}{3.567 \times 10^6} = 1.776 \times 10^{-7} \text{ gm Pu / C}_{137}$$

$$(1.776 \times 10^{-7} \times 8861.14 \times 10^3) = 1.574 \text{ gms Pu}$$

$$3.259 (1.574) = 5.1316 \text{ U } 5.539$$

Q # 6307

SpGr = 1.292

U = 5.32-3

P_U = 1.64-3

C₁₃₇ = 7.69+3

$$\frac{33}{1.292} = 25.5 = 1137.3 (7690) = 8745.84 \times 10^3$$

$$(1.776 \times 10^{-7} \times 8745.84 \times 10^3) = 1.553 \text{ gms Pu}$$

$$3.259 (1.553) = 5.06116 \text{ U } 5.467$$

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R #6184

$$SpGr = 1.308$$

$$U = 2.8-3$$

$$Pu = 1.16-3$$

$$C_{137} = 2.43+4$$

$$Hx MWD = 864$$

$$WT Fr = 37$$

$$\frac{37}{1.308} = 28.2 = 1262.1(24300) = 3066.9 \times 10^4$$

$$\frac{613.6}{864} = 0.71018 \text{ gms Pu / } \mu\text{C } 137$$

$$\frac{0.95(0.71018)}{3.567 \times 10^6} = 1.891 \times 10^{-7} \text{ gm Pu / } \mu\text{C } 137$$

$$(1.891 \times 10^{-7})(3066.9 \times 10^4) = \underline{5.80 \text{ gms Pu}} \quad 5.882$$

$$5.80(3.259) = \underline{18.9 \text{ lbs U}} \quad 19.17$$

Q #6185

$$SpGr = 1.294$$

$$U = 3.15-3$$

$$Pu = 1.20-3$$

$$137 = 1.96+4$$

$$WT Fr = 36.4$$

$$\frac{36.4}{1.294} = 28.1 = 1257.5(19600) = 2464.7 \times 10^4$$

$$1.891 \times 10^{-7}(2464.7 \times 10^4) = \underline{4.661 \text{ gms Pu}} \quad 4.7273$$

$$4.661(3.259) = \underline{15.19 \text{ lbs U}} \quad 15.41$$

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B006

5920

SpGr = 1.262

U: 1,8-3

Pu:

Cs 137 = 245+9

Tons Charged 7.76

Al MWD 726

WT Fr = 36

$$\frac{36}{1.262} = 28.5 = 1275.9 \text{ gal } (24500) = (3125.96 \times 10^4)$$

$$\frac{613.6}{786} = 0.84517$$

$$\frac{0.95 (0.84517)}{3.567 \times 10^6} = 2.25 \times 10^{-7} \text{ gm Pu / } \mu\text{Cs 137}$$

$$(2.25 \times 10^{-7}) (3125.96 \times 10^4) = 7.033 \text{ gms Pu}$$

$$3.259 (7.033) = \frac{22.921 \text{ lbs U}}{19.540}$$

5921

- Sturped

No Cs-137

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BOOS

2215 @ 28 May 66

R # 5738

U 9.08-4

Pu 4.610-4

SpGr 1.2410

Cs137 1.14+4 uc/gal

WT Fr = 36

Tons Charged 8.06

MWD/Ton (AIR) 803

MWD/charge 6472.18

$$\frac{36}{1.241} = 29 = 1299 \text{ gallons}$$

$$0.3068 \frac{\text{gm Pu}}{\text{lb U}} \times 2000 \frac{\text{lb}}{\text{ton}} = 613.6 \frac{\text{gm Pu}}{\text{ton U}}$$

$$613.6 \frac{\text{gm Pu}}{\text{ton U}} \times \frac{8.06 \text{ Ton U}}{\text{Charge}} = 4945.62 \frac{\text{gm Pu}}{\text{Charge}}$$

$$4945.62 \frac{\text{gm Pu}}{\text{Charge}}$$

$$\frac{4945.62 \text{ gm Pu/Charge}}{6472.18 \text{ MWD/Charge}} = 0.76413 \text{ gm Pu/MWD}$$

$$1299 (114.00) = 1480.86 \times 10^4$$

$$\frac{0.95 (0.76413)}{3.576 \times 10^4} = \frac{0.72592}{3.576 \times 10^4} = 2.03 \times 10^{-7} \text{ gm Pu/uc Cs-137}$$

$$(1480.86 \times 10^4) (2.03 \times 10^{-7}) = 3006.146 \times 10^{-3} = 3.006 \text{ gms Pu}$$

$$\frac{1}{0.3068} = 3.259 \frac{\text{lb U}}{\text{gm Pu}} \times 3.006 \text{ gms Pu} = 9.8016 \text{ lb U}$$

$$\frac{9.8016}{9.255} = 1.059$$

R # 5749

U 1.3-4

SpGr 1.222

Pu 5.38-4

Cs137 9.8+3

WT-Fr

$$\frac{36}{1.222} = 29.5 = 1322 \text{ gallons}$$

$$2.03 \times 10^{-7} \text{ gm Pu/uc Cs-137}$$

$$1322 (9800) = 1295.56 \times 10^4$$

$$(1295.56 \times 10^4) (2.03 \times 10^{-7}) = 2.63 \text{ gms Pu}$$

$$3.259 (2.63) = 8.57 \text{ lbs U}$$

$$\frac{8.57}{8.099}$$

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6366
Spd = 1.285
V = 2.41-3
Pv = 1.1-4
137 = 8.24+3
Spd = 36.1

$$\frac{36.1}{1.285} = 28.1 = 1257.5 (8240) \quad (2.005 \times 10^{-7}) (1036.18 \times 10^4) = 2.078 (3.259) = \frac{6.771610}{6.476}$$

$$\frac{8.687 (3.259) = 28.1151610}{26.1893} \quad (2.005 \times 10^{-7}) (4302.51 \times 10^4) = 8.687 \text{ gms Pu}$$

$$\frac{0.95 (0.75288) = 2.005}{3.567 \times 10^4} \quad 27.8 = 1243.5 (39600) \quad 4302.51 \times 10^4$$

6365
Spd = 1.294
V = 6.54-3
Pv = 1.89-3
Cs 137 = 3.46+4
Wt Fr = 36
Hm MWD = 815

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24

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A009

SECRET
DECLASSIFIED 29

A008

R #6263

$$SpGr = 1.291$$

$$U = 6.3-3$$

$$Pu = 2.15-3$$

$$C_{137} = 6.98+4$$

$$R_{MWD} = 248$$

$$WTFr = 36$$

$$\frac{36}{1.291} = 1248.3(64800) = 8088.98 \times 10^4$$

$$\frac{613.6}{848} = 0.72358$$

$$\frac{0.95(0.72358)}{3.567 \times 10^6} = 1.927 \times 10^{-7} \text{ gm Pu / uc } 137$$

$$(1.927 \times 10^{-7})(8088.98 \times 10^4) = \frac{15.515}{15.587} \text{ gms Pu}$$

$$15.587(3.259) = 50.7816 \text{ U}$$

50.563

Q #6264

$$SpGr = 1.291$$

$$U = 2.9-3$$

$$Pu = 9.25-4$$

$$137 = 2.54-4$$

$$1248.3(25400) = 3170.68 \times 10^4$$

$$(1.927 \times 10^{-7})(3170.68 \times 10^4) = \frac{6.081}{6.109} \text{ gms Pu}$$

$$6.109(3.259) = \frac{19.91}{19.818} \text{ U}$$

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$$\frac{1.3316 \text{ U}}{1.385}$$

$$(1.842 \times 10^{-7}) (2.218 \times 10^3) = 0.408 \text{ gm/R}$$

$$\frac{37}{1.28} = 28.8 = 1289.7 (1720) = 2218 \times 10^3$$

$$\begin{aligned} \text{SpGr} &= 1.281 \\ U &= 3.73-2 \\ P_v &= 5.13-2 \\ C_{137} &= 1.72 \pm 3 \end{aligned}$$

6128

$$\frac{20.724}{6.107 (3.259) = 19.902 \text{ U}}$$

$$(1.842 \times 10^{-7}) (3315.56 \times 10^4) = 6.107 \text{ gm/R}$$

$$\frac{0.95 (0.69177)}{3.567 \times 10^6} = 1.842 \times 10^{-7} \text{ gm/R/137}$$

$$\frac{613.6}{887} = 0.69177 \text{ gm/R/137}$$

$$\frac{37}{1.28} = 28.7 = 1285.1 (25800) = 3315.56 \times 10^4$$

$$\begin{aligned} \text{Hx MW D} &= 887 \\ \text{WTFr} &= 37 \\ 137 &= 2.58 + 4 \\ P_v &= 1.55-3 \\ U &= 3.04-2 \\ \text{SpGr} &= 1.28 \end{aligned}$$

* 6127

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4007

31

5862

SpGr = 1.279

$$U = 1.8 - 3$$

$$\bar{P}_u = 6.48 - 4$$

$$C_5 - 137 = 2.38 + 4$$

$$WTF_r = 37$$

Tons Charged. = 7.53

Ave MWD = 860

$$\frac{613.6}{860} = 0.71348 \text{ gm Pb / MWD}$$

$$\frac{0.95(0.71348)}{3.567 \times 10^6} = 1.904 \times 10^{-7} \text{ gmpu/mcG137}$$

$$(1.904 \times 10^7 \text{ g Pu} / \text{UCG137}) (3080.43 \times 10^4) = \frac{5.908}{5.865} \text{ gms Pu}$$

$$3.259(5.865) = \frac{19.141611}{19.254}$$

R #58691

$$\frac{37}{1.274} = 29.0 = 1299 \left(19820 \frac{4.0}{3.2} \right) = 2572.02 \times 10^4$$

$$SpGr = 1.274$$

U: 2.7-3

$$P_0 = 1.17-3$$

$$C_1 = 1.98 + 4$$

$$(1.94 \times 10^{-7} \times 2572.02 \times 10^9) = \frac{4.933}{4.897 \text{ gms Pu}}$$

15.96-16 U
16.077

R# 5898

$$\frac{37}{1.376} = 29.0 = 1299 (24500) = 3182.55 \times 10^4$$

$$J_{p6r} = 1.276$$

U- 17-3

$P_v = 6.11 - 4$

$$C_{137} = 2.45 + 4$$

$$3182.55 \times 10^4 (1.904 \times 10^{-7}) = \underline{6.060 \text{ gms Pu}}$$

$$3.259(6.060) = \frac{19.750160}{19.893}$$

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R004 @ 0115 @ 24 May

32

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R # 5764
U = 5.92-4
P_u = 7.86-4
SpGr = 1.309
G 137 = 2.44-4
WTFr = 34.5
Tons Charged = 10.88
Ave MWD/ton = 878
MWD/charge = 9552.64

$$\frac{34.5}{1.309} = 26.4$$

$$\frac{1160.5}{18.7} = 1178.9$$

$$0.3068(2000) = 613.6 \text{ gm Pu/Ton U}$$

$$\frac{613.6}{878} = 0.69886 \text{ gm Pu/MWD}$$

$$1178.9(24900) = 2876.52 \times 10^4 \text{ uc}$$

$$\star \frac{0.95(0.69886)}{3.567 \times 10^6} = \frac{0.66392}{3.576} = 1.86 \times 10^{-7} \text{ gm Pu/uc}_{137}$$

$$(2876.52 \times 10^4)(1.86 \times 10^{-7}) = \frac{5.35 \text{ gms Pu} \star}{17.436 \text{ lbs U}} \quad \begin{matrix} 5.517 \\ 17.980 \end{matrix}$$

21mmers

R # 5765
U = 1.66-3
P_u = 8.66-4
SpGr = 1.310
G 137 = 1.98-4

$$\frac{34.5}{1.310} = 26.3 \quad \frac{1160.5}{13.5} = 1174.3$$

$$1174.3(19800) = 2325.11 \times 10^4$$

$$(1.86 \times 10^{-7})(2325.11 \times 10^4) = \frac{4.325 \text{ gms Pu}}{14.095 \text{ lbs U}} \quad \begin{matrix} 4.460 \\ 14.535 \end{matrix}$$

$$3.259(4.325) = \frac{14.095 \text{ lbs U}}{14.535}$$

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Σx Σx^2

35

5.5390
 5.4670
 19.1700
 15.4100
 19.5900
 9.2550
 8.0990
 26.8930
 6.4760
 19.8180
 20.7240
 1.3850
 19.2540
 16.0770
 19.8970
 17.9800
14.535
 245.5150

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30.6805
 29.8891
 36.7489
 23.7468
 381.8116
 85.6550
 65.5938
 723.2334
 41.9386
 398.7531
 429.4842
 1.9182
 370.7165
 258.4649
 395.7314
 323.2804
211.2662
 4347.3779

$$\text{Ave } U = 245.5150 / 17 = 14.442$$

$$\frac{(\Sigma x)^2}{n} = 354.5742$$

$$V_x = \frac{\Sigma x^2 - (\Sigma x)^2/n}{n-1} = \frac{4347.3779 - 354.57420}{16} = 50.1022$$

$$V_{\bar{x}} = 50.1022 / 17 = 2.9472$$

$$S_{\bar{x}} = \sqrt{2.9472} = 1.7167$$

$$95\% \text{ Confidence Limit } t = 2.1199$$

$$\pm S_{\bar{x}} = 2.1199(1.7167) = \pm 3.64$$

$$U \text{ Waste / Batch} = 14.442 \pm 3.64 / 6$$

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Σx

1.6996

1.6775

5.8820

4.6610

5.9960

2.8400

2.8450

8.2520

1.9870

6.0810

6.3590

0.4250

5.9080

4.9330

6.1040

5.5170

4.4600

75.6271

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Σx^2

2.8886

2.8140

34.5979

21.7299

35.9520

8.0656

8.0940

68.0955

3.9482

36.9786

40.4369

0.1806

34.9095

29.3345

37.2588

30.4373

19.8916

410.6035

$$\text{Hve } P_u = 75.6271/17 = 4.499$$

$$\frac{(\Sigma x)^2}{n} = 336.4387$$

$$V_x = \frac{\Sigma x^2 - (\Sigma x)^2/n}{n-1} \quad \text{where } n=17$$

$$\frac{410.6035 - 336.4387}{16} = \frac{74.1648}{16} = 4.6353$$

$$V_{\bar{x}} = V_x/n \quad 4.6353/17 = 0.27266$$

$$S_{\bar{x}} = \sqrt{V_{\bar{x}}} = \sqrt{0.27266} = 0.52217$$

$$95\% \text{ confidence limit } \pm = 2.1199$$

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$$\pm S_x = 2.1199(0.52217) = \pm 1.107$$

$$P_u \text{ Waste / Batch} = 4.499 \pm 1.107 \text{ gms}$$

Pu 7 025

35

~~SECRET~~

! DECLASSIFIED

B

A

Pu	U	Pu	U
1.6996	5.539 3	8.252	26.899
1.6775	5.467 ~	1.987	6.476
5.882	19.17	15.515	50.563
4.661	15.410	6.081	19.818
5.996	19.540	6.359	20.724
2.840	9.255	10.425	1.385 1.
2.845	8.099	5.908	19.254
		4.933	16.077
		6.104	19.893
		5.517	17.980
		4.460	14.535

30689m Pu
1610

25.601 - 3.657 Pu for B-2

7

82.48 = 11.783 U for B-2

7

25.601
65.541

91.142
18 = 5.06

³
65.541 = 5.958 Pu for A-2
15.515
11
50.026

82.48
213.598
296.078 = 16.95
18

213.598 = 19.418 U for A-2
11

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$$\frac{20}{20} = 1$$

$$\frac{75}{75} = 1$$

$$1225$$

$$36$$

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	n	Σx	Σx^2	$(\Sigma x)^2/n$	
(A)	7	25.6011	114.1371323	93.6209030	7
(B)	10	50.0260	296.466398	250.2600676	10
	17	25.6271	412.6035303	343.8909706	17
			$\Sigma x^2/17$	33.64387208	
B+A+B	7	452.25	7.45225	952 = 4.543	
RwD	66	7125597	15	4.4475	
	74	1648095	14	4.6353005	
			0.2726647		
			0.522173		
		Σx^2	952 = 2.1199	1.107	
			4.449	± 1.107	9 PM

	n	Σx	Σx^2	$(\Sigma x)^2/n$	
A	7	82.480	1182.586036	921.8500571	
B	10	163.035	3148.292069	2658.0411225	
	17	245.515	4347.378105	3629.8911796	
				3545.7420720	

	n	Σx	Σx^2	$(\Sigma x)^2/n$	
B+A+B	84	1491076	1	54.1491076	952 = 4.54
RwP	717	4869254	15	42.83246	
	801	6360830	14	50.1022520	
			2.9471912		
			1.7167385		
			3.6393		
		Σx^2	14.442	3.64	

$$1/x = \frac{\Sigma x^2 - (\Sigma x)^2/n}{n-1}$$

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$$V_x = V_x/n$$

$$S_x = \sqrt{V_x} \quad \text{to } S_x = \text{limit}$$

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H-10	5738	B025	225	1.2410	9.08-4	4.610-4	1.14+4
	5749		"	1.222	1.3-4	5.38-4	9.8+3
H-10	5764	A004	D130	1.309	5.92-4	7.86-4	2.44+4
	5765	A004	"	1.310	1.66-3	8.660-4	1.98+4

B-5	8.06 Tons	MWD	803 Hv MWD
A-4	10.88 "		878 Av MWD
B6	7.76 Tons		726 MWD
A-5	7.58 "		860 Hve MWD

803
8.06
4.816
64840
6472.18

$$0.00461(-1299) = 0.6 \text{ gms } 1300$$

$$3.5 \cdot 10^{-7} \cdot 2 \times 10^{-7} = 2 \times 10^{-7}$$

$$\frac{613.6}{80.3} = 0.76413$$

Rf RL-Sep-682
W.H. Zimmer

5
10.88
878
8704
7616
8764
9552.64

HW 71321 RY Jangle
10/11/61

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H-10 Fishes ~~SECRET~~

38

R5683

SpGr = 1.08

U = 1.96-4

Pu 1.34-4

Cs = 1.14 + 3 Mac 2.99

5684

8.58-5

Cs = 9.79 + 2

WF01

WT Fr = 42.3

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WF02

5704

5705

Trace Benthic + C-157

SpGr

1.029

1.028

U

3.61-4

5.46-4

Pu

1.26-4

1.71-4

Free Caudate

C-157

WT Fr = 12.8

WF03

5722

5705

SpGr

1.02

1.022

U

1.33-4

2.76-4

Pu

8.120-5

7.22-5

Free Caudate

C-157

WT Fr = 12

~~SECRET~~

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DECLASSIFIED 67, 869
760647

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PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month January 1968

A. Metal

1. Average Cooling Time
2. Minimum Cooling Time

B. Waste Losses

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

C. Production (Uranium)

1. Ending Inventory (UNH)
2. Plus Removals (to URO)
3. Less Receipts from URO (Acid)
(UNH)
4. Less Beginning Inventory
5. Equals Net Production

K-6 Basis

1. Gross Production (K-6)
2. Less URO Acid U to Process
3. Less UNH Rework
4. Equals Net Production 281.08

D. Production (Plutonium)

1. Gross Units Produced 121,218
2. Less Adjustment 802
Sub-Total 122,020
3. Less Recycle
4. Less Rework
5. Equals Net Production 122,020

E. Rework (F-8)

1. Beginning Inventory
2. Plus Receipts Shipments
3. Less Deliveries to UGS
4. Less Ending Inventory
5. Equals Reworked

Beginning Inv. 49,710
Charged to Loss 444,974.83
Rec'd from URO 440,033.83
Total 100,000

$$\frac{562163}{706} = 0.13^u$$
$$\frac{562869}{706} = 0.36^u$$
$$\frac{259694}{949} = 0.36^u$$
$$\frac{259694}{260643} = 0.36^u$$

922,723.00
206.00
259,694.00
922,723.00

Pounds	Tons
420,811.00	210.41
349,165.00	174.53
-	-
192,275.00	96.14
577,528.00	288.77

Grams	Kgs.
922,723.00	461.36
-	-
206,560.00	180.28
562,163.00	281.08

Grams	Kgs.
257,241.00	257.2
24,530.00	2.5
259,694.00	259.7
-	-
259,694.00	259.7

Pounds	Grams
230.0	
1892.0	
-	
-	
4.5	

U	Fu
230.0	
1892.0	
-	
-	
4.5	

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Beginning Inv. 151,000
Charged to Loss 207,431.9
Rec'd from URO 259,908.55
Ending Inventory - 0
Total 151,000

Beginning Inv. 151,000
Charged to Loss 207,431.9
Rec'd from URO 259,908.55
Ending Inventory - 0
Total 151,000

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PLANT OPERATIONS

MONTHLY PLANT LIMIT CALCULATION

Month of January 1968

		<u>IN POUNDS</u>	<u>PER GRAMS</u>
	Total Plant Removals	_____	_____
<u>PLUS</u>	Ending Inventory (less Feed Storage & MSP)	_____	_____
<u>MINUS</u>	Beginning Inventory (less Feed Storage & MSP)	_____	_____
	Net Production	_____	_____

LIMIT 2

*Enriched U
Depleted*

LIMIT

ACTUAL LOSS

Stored

under

OVER LIMITS

3716.00

1926.00

706.00

949.00

3010.00

977.00

Discard Waste

Limit

37.00

48.00

Actual Loss

5.00

* 67.00

Limits

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* Represents Dec.
Discards

$\frac{808}{397,610} = 0.20\%$
 $\frac{405}{173,103} = 0.23\%$
 $\frac{824}{397626} = .21\%$
 $\frac{423}{173121} = .24\%$

1- *increased*
 42
 Month End Work Sheet No. 1
 Month February 1968

A. Metal

1. Average Cooling Time
2. Minimum Cooling Time

*Beginning Inv
 Charges to Line
 Rec'd from Dan
 Feed Sls. Inv.*

424059.75
424059.75
- 5 -

B. Waste Losses

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

461872.00
808.00
172698.00
405.00

C. Production (Uranium)

1. Ending Inventory (UNH)
2. Plus Removals (to URO)
3. Less Receipts from URO (Acid) (UNH)
4. Less Beginning Inventory
5. Equals Net Production

Pounds	Tons
462571.00	231.44
316493.00	158.25
-	-
-	-
426511.00	210.41
358552.00	174.28

K-6 Basis

1. Gross Production (K-6)
2. Less URO Acid U to Process
3. Less UNH Rework
4. Equals Net Production

461872.00	230.94
-	-
65070.00	32.54
396862.00	198.40
198.4	

D. Production (Plutonium)

1. Gross Units Produced 64,456
2. Less Adjustment 135
- Sub-Total 64,591
3. Less Recycle
4. Less Rework
5. Equals Net Production 64,591

Grams	Kgs.
172335.00	172.3
363.00	.4
172698.00	172.7
-	-
172698.00	172.7

*Non Leg.
 108,107*

E. Rework (P-8) and Rept.

1. Beginning Inventory
2. Plus Receipts Shipments
3. Less Deliveries to URS
4. Less Ending Inventory
5. Equals Reworked

Pounds	Grams
U	Pu 302.00
U	Pu 1443.00
U	Pu 227.00
U	Pu 227.00
U	Pu 212.20

*Beginning Inv
 Charges to Line
 Reimburse*

*Beginning Inv
 Charges
 Reimburse*

PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month February 1965A. Metal

1. Average Cooling Time
2. Minimum Cooling Time

B. Waste Losses*Depleted U*

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

C. Production (Uranium)PoundsTons

1. Ending Inventory (UNH)
2. Plus Removals (to URO)
3. Less Receipts from URO (Acid)
(UNH)
4. Less Beginning Inventory
5. Equals Net Production

<u>1172.00</u>	<u>.59</u>
<u>53113.00</u>	<u>36.56</u>
<u>1454.00</u>	<u>.73</u>
<u>54832.00</u>	<u>27.42</u>
<u>(1994.00)</u>	<u>(1.00)</u>

K-6 Basis

1. Gross Production (K-6)
2. Less URO Acid U to Process
3. Less UNH Rework
4. Equals Net Production

<u>- 0 -</u>	
<u>1454.00</u>	<u>.73</u>
<u>(1454.00)</u>	<u>.73</u>

D. Production (Plutonium)GramsKgs.

1. Gross Units Produced
2. Less Adjustment
Sub-Total
3. Less Recycle
4. Less Rework
5. Equals Net Production

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

E. Rework (F-3)PoundsGrams

1. Beginning Inventory
2. Plus Receipts
3. Less Deliveries to WGS
4. Less Ending Inventory
5. Equals Reworked

U	_____	Pu	_____
U	_____	Pu	_____
U	_____	Pu	_____
U	_____	Pu	_____
U	_____	Pu	_____

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Representative Kennedy

4800
18.00
30.00
3700
16.00
21.00

Discreetly
Front
Actual Front
Under Front

* 11 pounds (assumed) 11

3716.00
1926.00
808.00
405.00
18
423
2908.00
1521.00

Head State

under

included in

January 65

DECLASSIFIED 44

$$\frac{1041220}{2895} = 0.25\%$$

$$\frac{2895}{1044115} = 0.28\%$$

$$P_4 = \frac{355341}{1652} \times \frac{1652}{356993} = 0.46\%$$

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PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month March 1968

Enriched U

A. Metal

1. Average Cooling Time
2. Minimum Cooling Time

Beginning Inv
Charged to Line
Rec'd from Line
Ending Inv.

109,531.42
1131,453.43
36,141.61

B. Waste Losses

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

C. Production (Uranium)

1. Ending Inventory (UNH)
2. Plus Removals (to URO)
3. Less Receipts from URO (Add UNH)
4. Less Beginning Inventory
5. Equals Net Production

Pounds	Tons
525,544.00	26.277
11,224.56.00	5.1123
439,696.00	21.95
76,257.10.00	23.147
1041,220.00	52.661

K-6 Basis

1. Gross Production (K-6)
2. Less URO Add U to Process
3. Less UNH Rework
4. Equals Net Production

1109,536.00	554.76
439,696.00	21.95
34,401.00	12.22
1041,220.00	52.661
1,085,129.00	542.6
1,085,129.00	Kgs.

D. Production (Plutonium)

1. Gross Units Produced
2. Less Adjustment Sub-Total
3. Less Recycle
4. Less Rework
5. Equals Net Production

354,667.00	3.54.7
674.00	6
355,341.00	355.3
355,341.00	355.3

E. Rework (F-8)

1. Beginning Inventory
2. Plus Receipts
3. Less Deliveries to UGS
4. Less Ending Inventory
5. Equals Reworked

Pounds	Grams	Grams
U	-	Pu
U	26,620.00	Pu
U	17,460.00	Pu
U	3,020.00	Pu
U	17,460.00	Pu

Beginning Inv
Charged to Line
Rec'd from Line

2895
1088024
1085129
2895
1088024

PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month March 1968A. Metal

1. Average Cooling Time
2. Minimum Cooling Time

B. Waste Losses

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

C. Production (Uranium)

1. Ending Inventory (UNH)
2. Plus Removals (to URO)
3. Less Receipts from URO (Acid)
(UNH)
4. Less Beginning Inventory
5. Equals Net Production

Pounds

Tons

1172.80	7.33
2654.60	1.64
1173.00	7.33
(2654.60)	(1.64)

K-6 Basis

1. Gross Production (K-6)
2. Less URO Acid U to Process
3. Less UNH Rework
4. Equals Net Production

- 0 -	- 0 -
2654.60	1.64
(2654.60)	(1.64)

D. Production (Plutonium)

Grams

Kgs.

1. Gross Units Produced
2. Less Adjustment
Sub-Total
3. Less Recycle
4. Less Rework
5. Equals Net Production

E. Rework (F-6)

Pounds

Grams

1. Beginning Inventory
2. Plus Receipts
3. Less Deliveries to UGS
4. Less Ending Inventory
5. Equals Reworked

U	Pu
U	Pu
U	Pu
U	Pu
U	Pu

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March 65

Limit

(Loss Limit) - Storage & M&P

Minus

(Estimated) - Storage & M&P

Limit

Limit

3716.00 1926.00

* 2895.00 * 1652.00

821.00 274.00

ACTUAL LOSS

Under
Limit

Stored Waste

* 682 lbs of U & 215 gms
of Pu Represents Feb Cont Waste

Discard Waste

Limit

37.00

48.00

Less

* 13.00

* 46.00

Under

24.00

2.00

*682 gms
1.73*

* Represents Feb waste

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PRODUCTION STATISTICS

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Period Covered 1-1-68 To 5-1-68

Type Metal _____ From _____ Area _____

	<i>Depleted</i>	Pounds Uranium	Grams Plutonium	Grams Neptunium
1. <u>Receipts</u>				
Beginning Inventory		<u>29,421.00</u>	<u>272,331.55</u>	<u>54,392.28</u>
Plus Receipts; DUN		<u>712,709.23</u>	<u>405,071.07</u>	<u>250,713</u>
UO ₃		<u>60,892.00</u>		
Other		<u>6,551.00</u>	<u>5900</u>	<u>252.00</u>
Less ending Inventory <i>Full storage</i>		<u>597,505.23</u>	<u>339,287.07</u>	<u>62,511.00</u>
Equals Net Receipts		<u>212,067.00</u>	<u>338,180.55</u>	<u>197,731</u>
2. <u>Production (K-6, L-10, Q-6)</u>				
Total production		<u>505,123.00</u>	<u>332,380.00</u>	<u>114,600</u>
Less URO acid U.		<u>60,892.00</u>	<u>-0-</u>	<u>-0-</u>
Less Rework		<u>47,650.00</u>	<u>-0-</u>	<u>-0-</u>
Equals Net Production	<i>1983</i>	<u>396,581.00</u>	<u>332,380.00</u>	<u>114,600</u>
3. <u>Total Waste Percent</u>	<i>Depleted & Enriched</i>			
Stored Waste		<u>19,260.00</u>	<u>1305.00</u>	<u>122.19</u>
Plus Discard Waste		<u>11.00</u>	<u>42.00</u>	<u>-0-</u>
Total Waste		<u>19,371.00</u>	<u>1347.00</u>	<u>122.19</u>
Plus Net Production		<u>603,909.00</u>	<u>332,380.00</u>	<u>114,600</u>
Equals Total Outputs		<u>605,846.00</u>	<u>333,727.00</u>	<u>122,681.9</u>
Total Waste = % Waste		<u>0.32</u>	<u>0.40</u>	<u>9.6%</u>
4. <u>Percent of Waste Limits</u>				
Stored Waste Limits		<u>3716.00</u>	<u>1926.00</u>	
Actual Stored		<u>1926.00</u>	<u>1305.00</u>	<u>122.19</u>
Percent of Limits		<u>52%</u>	<u>68%</u>	
Discarded Waste Limits		<u>37.00</u>	<u>48.00</u>	
Actual Discarded		<u>11.00</u>	<u>42.00</u>	
Percent of Limits		<u>29%</u>	<u>88%</u>	
5. <u>Materials Shipped</u>				
To UO ₃ Plant	<i>Depleted</i>	<u>20,749.00</u>		
To 234-5			<u>339,253.00</u>	
To Savannah River				<u>112,600</u>
To Others		<u>200</u>	<u>1200</u>	<u>1500</u>

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DECLASSIFIED

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PRODUCTION STATISTICS

Period Covered 4-1-68 To 5-1-68

Type Metal _____ From _____ Area N. K. K.

	<i>Enriched</i>	Pounds Uranium	<i>Defense</i> Grams Plutonium	<i>Non Defense</i> Grams Neptunium Plutonium
1. <u>Receipts</u>				
Beginning Inventory		801,836.71	272,331.55	- 0 -
Plus Receipts; DUN				405,077.07
UO ₃				
Other		3510.00		2909.00
Less ending Inventory		271,175.00	156,230.00	118,407.03
Equals Net Receipts		564,171.71	256,703.55	289,579.04
2. <u>Production (K-6, L-10, Q-6)</u>				
Total production		239,038.00	61,810.00	270,570.00
Less URO acid U.		- 0 -	- 0 -	- 0 -
Less Rework		31710.00	- 0 -	- 0 -
Equals Net Production	103.7	207,328.00	61,810.00	270,570.00
3. <u>Total Waste Percent</u>				
Stored Waste				
Plus Discard Waste				
Total Waste				
Plus Net Production				
Equals Total Outputs				
Total Waste = % Waste				
Total Outputs				
4. <u>Percent of Waste Limits</u>				
Stored Waste Limits				
Actual Stored				
Percent of Limits				
Discarded Waste Limits				
Actual Discarded				
Percent of Limits				
5. <u>Materials Shipped</u>				
To UO ₃ Plant				
To 234-S				
To Savannah River				
To Others				

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PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month 50 19

A. Metal,

1. Average Cooling Time
2. Minimum Cooling Time

B. Waste Losses

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

C. Production (Uranium)

1. Ending Inventory (UNH)
2. Plus Removals (to URO)
3. Less Receipts from URO (Acid)
(UNH)
4. Less Beginning Inventory
5. Equals Net Production

Pounds

Tons

Depleted
310,627.00
207,491.00
3149.00
57,743.00
1172.00
456,054.00

acc
(730.00) - 7mg.

K-6 Basis

1. Gross Production (K-6) *plus from enriched*
2. Less URO Acid U to Process
3. Less UNH Rework
4. Equals Net Production

505,123.00
3,049.00
47,650.00
455,324.00

D. Production (Plutonium)

Grams

Kgs.

1. Gross Units Produced
2. Less Adjustment
Sub-Total
3. Less Recycle
4. Less Rework
5. Equals Net Production

E. Rework (F-8)

Pounds

Grams

1. Beginning Inventory
2. Plus Receipts
3. Less Deliveries to UGS
4. Less Ending Inventory
5. Equals Reworked

U
U
U
U
U

Pu
Pu
Pu
Pu
Pu

51

PRODUCTION STATISTICS

Month End Work Sheet No. 1

Month

19

A. Metal

1. Average Cooling Time
2. Minimum Cooling Time

B. Waste Losses

1. Gross Uranium Produced, lbs.
2. Pounds Uranium to Waste
3. Gross Plutonium Produced, grams
4. Grams Plutonium to Waste

C. Production (Uranium)

Summed

841,220.00
561,979.00
569,453.00
233,746.00

Tons

K-6 Basis

1. Ending Inventory (UNH)
2. Plus Removals (to URO)
3. Less Receipts from URO (Acid) (UNH)
4. Less Beginning Inventory
5. Equals Net Production

239,038.00
31,718.88
206,328.00

Kgs.

D. Production (Plutonium)

1. Gross Units Produced
2. Less Adjustment
3. Less Recycle
4. Less Rework
5. Equals Net Production

Pounds

Grams

E. Rework (F-8)

1. Beginning Inventory
2. Plus Receipts
3. Less Deliveries to UGS
4. Less Ending Inventory
5. Equals Reworked

U
U
U
U
U
U

Pu
Pu
Pu
Pu
Pu
Pu

PRODUCTION STATISTICS

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Period Covered May 1 To May 31

Type Metal Depleted U. From DUN Area 100 B-C-D-Ke-Kev

	<u>Pounds</u> <u>Uranium</u>	<u>Grams</u> <u>Plutonium</u>	<u>Grams</u> <u>Neptunium</u>
1. Receipts			
Beginning Inventory F.S.	<u>31,851.43</u>	<u>18,089.04</u>	<u>118.64</u>
Plus Receipts; DUN	<u>534,198.61</u>	<u>199,110.55</u>	<u>1007.61</u>
UO ₃	<u>4050.00</u>	<u>6.00</u>	
Other			
Less ending Inventory	<u>16,335.98</u>	<u>4952.41</u>	<u>30.44</u>
Equals Net Receipts	<u>553,764.06</u>	<u>212,253.18</u>	<u>1105.81</u>
2. Production (K-6, L-10, Q-6)			
Total production	<u>563,519.00</u>	<u>249,216.00</u>	<u>3145.00</u>
Less URO acid U.	<u>4050.00</u>		
Less Rework	<u>49,220.00</u>		
Equals Net Production	<u>518,349.00</u>	<u>249,216.00</u>	<u>3145.00</u>
	<u>259.17</u>		
3. Total Waste Percent			
Stored Waste	<u>1581.00</u>	<u>831.00</u>	<u>100.31</u>
Plus Discard Waste	<u>5.00</u>	<u>37.00</u>	
Total Waste	<u>1586.00</u>	<u>868.00</u>	<u>100.31</u>
Plus Net Production	<u>518,349.00</u>	<u>249,216.00</u>	<u>3145.00</u>
Equals Total Outputs	<u>519,935.00</u>	<u>250,084.00</u>	<u>3245.30</u>
Total Waste $\times \frac{100}{\text{Total Outputs}} = \% \text{ Waste}$	<u>.31</u>	<u>.35</u>	<u>.32</u>
4. Percent of Waste Limits			
Stored Waste Limits	<u>3716.00</u>	<u>1926.00</u>	
Actual Stored	<u>1581.00</u>	<u>831.00</u>	
Percent of Limits	<u>.43</u>	<u>.43</u>	
Discarded Waste Limits	<u>37.00</u>	<u>48.00</u>	
Actual Discarded	<u>5.00</u>	<u>37.00</u>	
Percent of Limits	<u>.14</u>	<u>.77</u>	
5. Materials Shipped			
To UO ₃ Plant	<u>763,688.</u>		
To 234-7	<u>26,750.7.</u>	<u>289,187</u>	
To Savannah River	<u>3405.</u>		<u>2905.00</u>
To Others			

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PRODUCTION STATISTICS

Period Covered June 1, To July 1

Type Metal Depleted U From Dun Area 100-C-KE-KW

	Pounds Uranium	Grams Plutonium	Grams Neptunium
1. <u>Receipts</u>			
Beginning Inventory	<u>16,335.98</u>	<u>4952.41</u>	<u>2044</u>
Plus Receipts; DUN	<u>1,120,746.11</u>	<u>329,759.90</u>	<u>1357.28</u>
UO ₃	<u>9715.00</u>		
Other		<u>8.00</u>	<u>1.00</u>
Less ending Inventory	<u>- 0 -</u>	<u>- 0 -</u>	<u>- 0 -</u>
Equals Net Receipts	<u>1,146,797.09</u>	<u>334,720.31</u>	<u>1378.72</u>
2. <u>Production (K-6, L-10, Q-6)</u>			
Total production	<u>1,405,724.00</u>	<u>404,731.00</u>	<u>2642.00</u>
Less URO acid U.	<u>9715.00</u>		
Less Rework	<u>57,210.00</u>	<u>1755.00</u>	
Equals Net Production	<u>1,338,799.00</u>	<u>402,976.00</u>	<u>2642.00</u>
	<u>669.4 Tons</u>		
3. <u>Total Waste Percent</u>			
Stored Waste	<u>3478.00</u>	<u>1143.00</u>	<u>157.88</u>
Plus Discard Waste	<u>12.00</u>	<u>47.00</u>	<u>- 0 -</u>
Total Waste	<u>3490.00</u>	<u>1190.00</u>	<u>157.88</u>
Plus Net Production	<u>1,338,799.00</u>	<u>402,976.00</u>	<u>2642.00</u>
Equals Total Outputs	<u>1,342,289.00</u>	<u>404,166.00</u>	<u>2799.88</u>
Total Waste / Total Outputs = % Waste	<u>.26</u>	<u>.29</u>	<u>5.64</u>
4. <u>Percent of Waste Limits</u>			
Stored Waste Limits	<u>3716.00</u>	<u>1926.00</u>	
Actual Stored	<u>3478.00</u>	<u>1143.00</u>	
Percent of Limits	<u>93.60</u>	<u>59.35</u>	
Discarded Waste Limits	<u>37.00</u>	<u>48.00</u>	
Actual Discarded	<u>12.00</u>	<u>47.00</u>	
Percent of Limits	<u>32.43</u>	<u>97.92</u>	
5. <u>Materials Shipped</u>			
To UO ₃ Plant	<u>1,462,581.00</u>		
To 234-5		<u>474,659.00</u>	
To Savannah River			<u>3199.00</u>
To Others <u>Isk Ser. Pacific N.W.</u> <u>New Brunswick Isk.</u>	<u>10.00</u>	<u>21.00</u>	<u>5.00</u>

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