

BOOK17R

Notes:

-This is a "paper copy" of a logbook previously copied by someone other than myself.

-"Book 7" hand-written on page 1.

Blank pages: 33, 111

Scanned by:

Sheila Finch

RSICC /Oak Ridge National Lab.

August 2, 1999

Book 1

10/11/14

C
C

2

CTU CHECK - P.98

U disc, Infinite Poly., one side.
 7" dia p. 8
 9" " 10, 30
 11" " 12, 29
 13" " 16, 26
 15" " 19

Page 35 - U disc, graphite reflected.

Page 35 U diameter, C Thickness

	7"	1"	
37, 90	7"	Sandwich	1" C
40, 93	7"	"	2" C
42, 94	7"	"	3" C
42, 95	11"	"	1" C
44, 98	11"	"	2" C
46, 101	11"	"	3" C
47, 103	15"	"	1"
47	15"	1" C Complete	
48, 105	15"	Sandwich	2" C
49, 108	15"	"	3" C
51, 110	7"	Bare	
54	15"	Bare	

4

7.7112

9.6366

11.5609

13.4813

	7"	9"	11"	13"	15"
A (in ²)	38.48	63.62	95.03	132.73	176.71
Kg / 1" Ht	11.84 <small>11.8112</small>	19.55 <small>19.5224</small>	29.18 <small>29.1590</small>	40.74 <small>40.7149</small>	54.19 <small>54.2012</small>
g / 1/32" Ht	370	611	912	1273	1692

M
P
Tay

Ru

3.00425

1.0015
99.00

99.97
99.97

F

Ru

6" Poly - 1 side

5

Mihalozoff
Lynn, J.
Taylor, J.

14 Nov 67
9:20 Taylor & Lynn

$\frac{10}{1000}$	op	1-15	$\frac{10}{1000}$	900	750
10"	ok	30"	1"	3"	ok
100+	-	100	100+	100+	-

Run 1 Critical Stack 7" dia disc with 6" thick polyethylene on one (1) side. 44" x 44" x 6" poly slab. Fuel ($3\frac{3}{4}$ ") x 7" loaded on ram, raised against poly.

pes # 2732, 2733, 2728, 2729, 2770 + 2771

Sub Crit.

Mass (2)
44,302 gm.



up Pes # = 11.320
11.390

#3 = 0
#4 = -2

1" Bore

Run 2 Fuel Height = 4"

#1 = 11.070
#2 = 11.140

$k < 1$ Close

pes 2732, 2733, 2731, 2770 + 2771 = 47,268 gm

Run 3 Added Shim for power.

Neq period

LN = 405 sec - 3.5 #
#1 = 415 - 3.4
#3 = -3.45 #

6

Run 4

added 1" thick steel on support base, except ~~immediately~~ ^{directly} under fuel.

$$70 \times 15.015 \text{ in} = 1050.105 \text{ in}$$

Pos Period Pette = +12.41 ¢

LN = +12.75 ¢

STEEL = 16.03 ¢

+12.58 ¢

Run 5

Removed 6" poly from North side

Poly now 44" x 38" x 6"

Pos Period Pette = +13.27 ¢

Poly = -0.69 ¢

Run 6

Same as Run 1, except Fuel = 4 1/16"

pos 2732, 2733, 2731 + 2730

mass (u) = 48,043 gms.

∞

#1 = 10.942 up = 11.008

#2 = 11.008 = 11.072

at -.066", 15 mils = 15 ¢

(Forget Runs 1 thru 6)

R

12 b
3 7/8

Run

Run 7 Levelled top ^{ply} to get better contact with ^{fuel} in up position, using graphite as guage.

8¢

Fuel Height = 4"

Base Area = 255 in²
of support stand

12 blocks }
3 7/8" x 3 7/8" x 1"

~~1~~ 1" Thick Fe on base
except edges. (180 in²)

Pos Period $P_{atte} = 40.07 \text{¢}$

~~up~~ #1 = 11.116 #3 = - 2
#2 = 11.186 #4 = 0

6

~~∞~~ #1 = 11.076
#2 = 11.045

3 gms.

Run 8 Fuel = 4"

Base Run $P_{atte} = +14.04 \text{¢}$

1" Fe Base = 26 ¢

15 Nov 67

9:00

Taylor & Lynn

Ru

$\frac{10}{1000}$	opr L-15	$\frac{10}{1000}$	900	750	
10"	215	30"	1"	1"	OK
100	-	150	100	100+	-
✓	✓	✓	✓	✓	
✓	-	✓			
226 + 8					✓
✓	✓				✓

Run 9 Vertical Support evaluation.

 $\frac{1}{16}$ " thick Al used for mock up. ($\frac{1}{2}$ the pcs)

Ru

(down pos #1 = .03)

up #1 = 11.127

#3 = -1

#2 = 11.197

#4 = +1

log N = 40.2 sec, +18.98¢

Pette = +18.15¢

18.57¢

#1 = 11.110

∞

#2 = 11.181

Run 10

Base Run4" Fuel7" dia

Log N = 70.6 sec + 12.56¢

Pette + 12.12¢

12.34¢Vertical Support = 6.23¢

Run 11 Removed 6" Poly from North Side
and 3" poly from East side.

Poly now 38" x 41" x 6"

Log N 12.47 ¢
Pette + 11.87 ¢

Poly = -0.17 ¢

12.17 ¢

o) Run 12 Fuel = $3 \frac{15}{16}$ " Poly 44" x 44" x 6"

pes 2732, 2733, 2730, 2729, 2770 + 2771

mass (u) = 46,513 gms

up #1 = 11.187

#2 = 11.260

Pette = -50.42 ¢

7' dia x $\frac{1}{16}$ " = 62.3 ¢

Total Supports = 32.23 ¢

4 ¢
=

Run 13 CRITICAL STACK, 9" DIA. DISC
 Poly one (1) side 44" X 44" X 6"

FUEL = $2 \frac{13}{16}$ " pcs 2731, 2732, 2730+2771
 2738, 2762, 2737+2774
 Mass (U) = 54,896 gms

Sub Crit -

14. FUEL = $2 \frac{7}{8}$ " pcs 2731, 2732, 2729, 2770, 2771
 38, 62, 36, 74, 75
 Mass (U) = 56,121 gms

9" up #1 = 12.245 3 = +1 LN = $12.85^{68.4}$
 2 = 12,317 4 = - Pitte = 12.02
 Disc 12.44

∞ #1 = 12.232 - 7¢ 12.228 - 31¢ 12.216
 #2 = 12.305 12,300 12,283

18 Fuel = 7" dia = $2 \frac{7}{8}$ " as #14 33, 966
 7" X 9" ring = $2 \frac{13}{16}$ " as #13 21, 679
 9 7 Pitte = - 2.3¢ 55,645 gms

$\frac{7}{16}$ " (7" X 9") = 14.74¢

Run 16 Supports added [Vertical + Bose]

$$Pitte = + \underline{53.6} \text{ \#}$$

2771

2774

$$\text{Supports} = \underline{\underline{56}} \text{ \#}$$

2771

75

4

12.85

4

12.0212.44

2.210

2.283

6

9

5 gms

16 Nov 67

9:10

Taylor + Lynn

Run

A	B	C	D	E
1000	oper	L-15		900 750
1"	ok	30"		1" OTK
100+	-	100		100+ -
✓	✓	-		
✓	-	✓		
226+8				✓

Run 17

CRITICAL STACK,
Poly one (i) side

11" DIA DISC
44" X 44" X 6"

Run

Fuel = $2 \frac{5}{16}$ "
 $\frac{1}{2}$ " Supports in place.
Sub critical

7"	7x9	9x11
2731	2762	2776
2728	2736	2742
2729	2829	2443
2730	2737	2767

Run

Run 18

Fuel = $2 \frac{3}{8}$ "

pro

2731	2762	2776
2732	2738	2745
2729	2736	2742

Sub Crit

Run 19

Fuel 7" dia = $2 \frac{7}{16}$ "

2731	S	2776
2729	A	2742
2730	M	2767
2770		2778
2771	E	2779

11

Mars (w)
70, 60 5 gm

$\phi = +42.16 \phi$

1 = 12.665

2 = 12.729

12.676

12.739

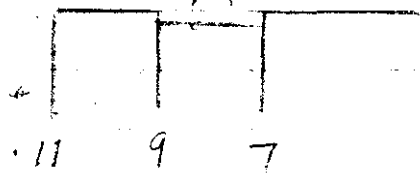
+154

Run 20 Supports Removed (1/2)

1 1/16" up

#1 = 12,705
#2 = 12,770

Pette = +6.78 \$



Supports (1/2) = 35.4 \$ ←
Total = 71 \$

Run 21 Remained Poly. Now 41" X 38" X 6"

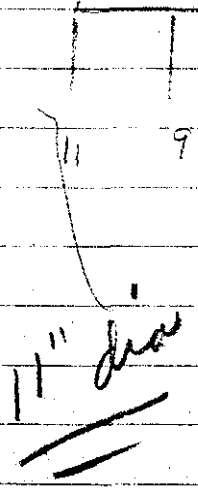
Pette = 2.82 (x20) P = 5.64 \$

loss due to poly = 1.14 \$

- 9x11
- 2776
- 2742
- 2443
- 2767

Run 22 Fuel = 2 ⁷/₁₆" , per 7" , 7x9 , 9x11

- 2776
- 2745
- 2742
- 76
- 742
- 767
- 778
- 779



Super ≅ 60\$ (good ext.)

#1 = 12,685
#2 = 12,748

S	2762	S
A	2736	A
M	2737	M
E	2774	E
	2775	

18,781

P = + 40 \$

Ⓢ - 20 mls
20 \$

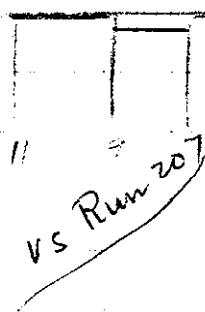
mass (u) 71,078 gms.

Run 23

Fuel = 7" dia = $2 \frac{7}{16}$ "
 7 x 9 = $2 \frac{13}{32}$ "
 9 x 11 = $2 \frac{7}{16}$ "

7" dia, 7 x 9, 9 x 11

S	2762	S
A	2738	A
M	2763	M
E		E
3217		



Patte = + 27.58 \$

$\frac{1}{32}$ " (7 x 9) = 20.8 \$
 do not use

18,533

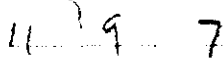
Mass(u) 70,830 gms

Run 24

Fuel 7" dia = $2 \frac{3}{16}$ "
 7 x 9 = $2 \frac{13}{32}$ "
 9 x 11 = $2 \frac{13}{32}$ "

7" dia, 7 x 9, 9 x 11

S	S	2776
A	A	2745
M	M	2744
E	E	
3216		



Patte = 14.94 \$

23,209

Mass(u) = 70,540 gms.

$\frac{1}{32}$ " (9 x 11) = 12.64 \$
 do not use

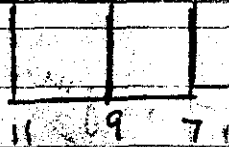
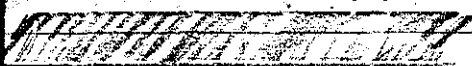
Run 25

Fuel = 7" dia = $2 \frac{3}{8}$ "
 7 x 11 = $2 \frac{7}{16}$ "

7" dia, 9 x 9, 9 x 11

2731	2762	2776
2732	2737	2767
2729	2736	2742
2829	2743	
2763	2744	

Supports in place



$\rho = \underline{22.63}$ \$

28,095

18,782

23,515

70,392 gms

vs Run 22

+60 \$
 Supports 79 \$
 131

1.31

21.03

1" (7" dia pc)

9 X 11
S
A
M
E

17 Nov 67

9:00

Taylor + Lyon

A	B	C	D	E	F
1000	opr L-15	900	750		
1"	OK 30	Ex 1"	OK		
	- 100	X 100+			
	✓	✓	✓		
	✓	-	✓		
	226 + 8				✓
✓					✓

30 gm

Run 26 Fuel - 7" dia = $2 \frac{3}{8}$ " 7", 7x9, 9x11

9 X 11

7x9 = $2 \frac{7}{16}$ " S S AS

2776

9x11 = $2 \frac{13}{32}$ " M M Run

2745

E E 24

2744

70,086 gm U

3216

Inst. Trip - "E" at Inst. check (900V).

3,209

" 9 7

Log N = .01

Rem Run

Cost = +15.5¢

$\frac{1}{82}$ " (9x11) = 7.1¢

$\frac{71}{12.64} = .562$

9 X 11

2776

Run 23 $\frac{1}{32}$ " (7x9) = 11.7¢

2767

25 $\frac{1}{32}$ " (7" dia) = 5¢

2742

$\frac{1}{32}$ " (11" dia) = 72.8¢

2743

2744

3,515

U

16

Run 27

CRITICAL STACK 13" DIA. Disc.

Poly one (1) side = 44" x 44" x 6"

Supports in place.

Fuel = $2 \frac{3}{16}$ " , 7" dia , 7x9 , 9x11 , 11x13
 $1" + \frac{9}{16}" + \frac{3}{8}" + \frac{1}{4}"$

up #1 = 12.957

Super (1) #1 = 12.857

+17¢ #2 = 12.917

Run 28

Fuel

7" dia = $2 \frac{1}{16}$ "

7" x 13" = $2 \frac{1}{8}$ "

Sub critical

13 11 9 7

Run 29

Fuel

7" dia = $2 \frac{1}{16}$ "

7" x 13" = $2 \frac{5}{32}$ "

Sub Crit.

13

13

13

R

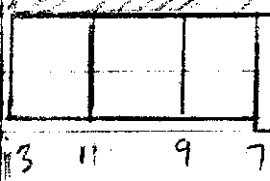
Run

1

DATE 20 Nov 67
 TIME 9:45 - Taylor + Lynn
 1000 Opr L15 1000 900 750
 0 14 OK
 100 100+ -

Run 30 Fuel - 7" dia = $2\frac{3}{16}$ Supports Removed
 7" x 13" = $2\frac{5}{32}$

	7"	7 x 9	9 x 11	11 x 13
#	2731	2762	2776	2752
	30	36	42	49
	29	74	78	82
	71	75	79	83
		3217	3216	3215
	25,843	16,612	20,797	25,577



mass = 88,248 gms U
 88,306
 Pette = -7.17 #

Run 31 Fuel 7" dia + 7 x 9 = $2\frac{3}{16}$
 9" x 13" = $2\frac{5}{32}$

13	11	9	7	Removed per 2775 + 3217 =	4,084
				Added per 2737 =	4,336

$\frac{1}{32}$ (7 x 9)"
 15.79 #

mass = 88,500 gms U
 88,558
 P = +8.62 #
 ∞ = -20 mils

Run 32 Fuel = Same Poly 44" x 38" x 6"

Run

$P = +6.80 \text{ \textcent}$

Poly = -1.82 \text{ \textcent}

33 Fuel = 7" dia, 7x9 + 9x11 = 2 $\frac{3}{16}$ "
 11 x 13 = 2 $\frac{5}{32}$ "

Poly = 44" x 44" x 6"

Removed # 2779 + 3216 = 5,125

Added # 2767 = 5,410

$P = 20.64 \text{ \textcent}$

$\frac{1}{32}$ " (9x11) = 12,02 \text{ \textcent}

~~88,785~~ gms U.
88,843

Run

34 Fuel = ~~7" dia, 7x9~~, 2 $\frac{3}{16}$ "

Removed # 2782 + 3215 = ~~6,147~~

Added # 2753 = 6,514

$2 \frac{3}{16}$ "

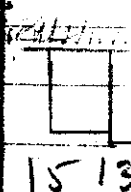
$P = 29.89 \text{ \textcent}$

89,210?
~~89,152~~ gms U
89,144

$\frac{1}{32}$ " (11x13) = 9,25 \text{ \textcent}

-70 miles = -42 \text{ \textcent}

or 70 miles = 72 \text{ \textcent}



1513

Run 35 CRITICAL STACK, 15" DIA. DISC
Poly = 44" X 44" X 6" on (1) side

Fuel = 2 1/16"
7" dia, 7 x 9, 9 x 11, 11 x 13, 13 x 15

up #1 = 13.193

Super #1 = 13.01 ≈ + 29¢
#2 = 13.071

25
L10

Run 36 Fuel = 2" Supports on (mock up)

7" dia, 7 x 9, 9 x 11, 11 x 13, 13 x 15

# 2731	2762	2776	2751	2760
2732	2738	2745	2752	2786
23,655	15,413	19,218	2753	2739
			2754	
			23,241	26,806

up #1 = 13.140
#2 = 13.204

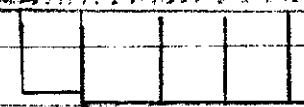
108,598 gms U

6,147
~~1697~~
514

U
144

p = 33.70 ¢

37 Remogred from (13x15) # 2739 = 13,461



Added # 2766
2758

15 13 11 9 7 p = 27.55 ¢

3217
= 11,459
- 2004

1/32" (13x15) = 6.15 ¢

106,504 gms U

Run 38 Removed from (11 x 13) $\frac{1}{32}$ "
vs Run 36

2753
2754

11,608 g

Added

2755

3215

$\phi = \underline{20.71 \phi}$

2780

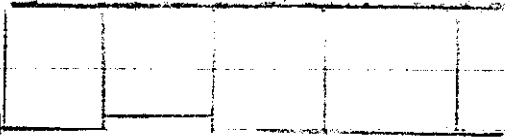
11,201 g

- 407

$\frac{1}{32}$ " (11 x 13) = 13 ϕ

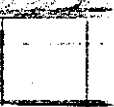
108,704

gms 2



5 3 7

Run



Run

11/1

15

21 Nov 67

8:45 = Taylor & Lynn

608g

1000	off L-15	1000	900	750
1"	OK 30	1"	2"	OK
100	- 100	100	100+	-
✓	✓	✓		
	226 + 8			✓
✓	✓			✓

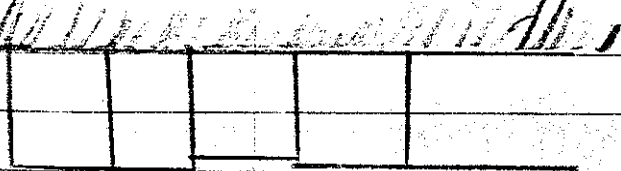
201g
-407
u

Run 39 Removed $\frac{1}{32}$ " (7x9) # 2738 7710
 Added # 2745 = 9634
 US Run 36 # 2737 = 4336
 # 2767 = 5410
 3217 2167
 3216 = 2708
 2767 = 953
~~2744 = 1223~~
 9341
~~8397~~ 7456
 $\rho = 10.45 \text{ g}$
 $\frac{1}{32}$ " (7x9) = 23.25g
 -254



108,257 gms u

Run 40 Removed $\frac{1}{32}$ " (9x11) # 2745 = 9634
 Added # 2767 = 5410
 US Run 36 3216 = 2708
 2744 = 1,223
 9341
 $\rho = 14.22 \text{ g}$
 $\frac{1}{32}$ " (9x11) = 19.48g
 -293



108,215 gms

15 13 11 9 7

Run 41 Fuel = 2" $\frac{1}{2}$ Supports in place.

Sub crit -
Found Support stand somewhat bent.

42 Installed 2nd Support stand.

Fuel = 2" Supports up. (mock up)

Same as

~~#~~ Run 36

$$P = \underline{34.89} \text{ \textdollar}$$

sup #1 = 13.130

#2 = 13.195

43 Removed 4 blocks Fe ($\frac{1}{2}$) from
periphery of base

$$4 \text{ Fe} = \underline{31.19} \text{ \textdollar} \quad P = \underline{3.70} \text{ \textdollar}$$

44 Removed poly from edges

$$P_{\text{poly}} = 41" \times 38" \times 6"$$

$$P_{\text{poly}} = \underline{\underline{-0.67}} \text{ \textdollar} \quad P = \underline{3.03} \text{ \textdollar}$$

45. Removed 2 Fe from base center. ($\frac{1}{2}$)
 vs Run 42 $P = \underline{6.91 \text{ \textdollar}}$

$$2Fe = \underline{27.98 \text{ \textdollar}}$$

46. Removed $\frac{1}{2}$ of Al upright support
 mock up.

$$P = \underline{1.65 \text{ \textdollar}}$$

$$\frac{1}{2} \text{ Al supports} = \underline{5.26 \text{ \textdollar}}$$

$$\text{Run 43} \quad \underline{31.19}$$

$$\text{Run 45} \quad \underline{27.98}$$

$$64.43 \text{ \textdollar} \times 2 = \underline{1.29 \text{ Supports}}$$

11-27-67

9:30

Taylor & Lyman

1000	oper	L-15	1000	900	750
2"	OK	36"	1"	2"	OK
100		100	100 ⁺	100 ⁺	
	✓	✓	✓		
227	+	✓			
TABLE		LIGHTS			

Run 47 Fuel Evaluation.

Fuel = 2" raised 1/4" off support stand
up position in order to be able to add 1" x 1" x 1/8"
to bottom of stack.

#1 = 12.896

#2 = 12.958

#3 = +2

#4 = -13

U = 108,508 gms.

Base Run

P₀ = 5.82¢

48 Placed 1" x 1" x 1/8" (38 gms) at
bottom center of stack.

8.32
x .679
5.65¢

P₁ = 14.14¢

P₁ - P₀ = 8.32¢

49 Fuel pc moved out 1/2"
1/2" from 0 position

5.38¢

P₂ = 13.74¢

P₂ - P₀ = 7.92¢

50 Fuel pc 1 1/2" from 0 position.

4.62¢

P₃ = 12.63¢

P₃ - P₀ = 6.81¢

51 Fuel pc $2\frac{1}{2}$ " from 0 position.
 $P_4 = 11.71 \text{ ¢}$
 4.00 ¢ $P_4 - P_0 = 3.89 \text{ ¢}$

52 Fuel pc $3\frac{1}{2}$ " from 0 position.
 $P_5 = 10.23 \text{ ¢}$
 2.99 ¢ $P_5 - P_0 = 4.40 \text{ ¢}$

53 Fuel pc $4\frac{1}{2}$ " from 0 position.
 $P_6 = 8.94 \text{ ¢}$
 2.12 ¢ $P_6 - P_0 = 3.12 \text{ ¢}$

54 Fuel pc $5\frac{1}{2}$ " from 0 position.
 $P_7 = 7.80 \text{ ¢}$
 1.34 ¢ $P_7 - P_0 = 1.98 \text{ ¢}$

55 Fuel pc $6\frac{1}{2}$ " from 0 position.
 $P_8 = 6.86 \text{ ¢}$
 0.71 ¢ $P_8 - P_0 = 1.04 \text{ ¢}$

57 Fuel pc $7\frac{1}{2}$ " from 0 position.
 $P_9 = 6.66 \text{ ¢}$
 0.57 ¢ $P_9 - P_0 = 0.84 \text{ ¢}$

58 Base Run + Carrier (to Strip A1)
 for fuel in place as Run 48. $P = +8.49 \text{ ¢}$
 $\frac{5.65}{83} = 0.679$ $P_1 - P_9 = 5.65 \text{ ¢}$
 $8.32 - 5.65 = 2.67 \text{ ¢}$

tand
 "x 1/8"

2 ¢

2 ¢

63 ¢

¢

Run 59 Fuel Evaluation, 13" dia disc.

Fuel 1 = $2\frac{3}{16}$ ", as Run 34 p. 18

$U = 89,210$ gms.

Base Run, same procedure as p. 24.

60 Fuel at 0 position. (38 gms, $1" \times 1" \times \frac{1}{8}"$)

20 miles from up to slow period

$$P_0 = 19.48 \text{ } \phi$$

$$P_1 = 27.04 \text{ } \phi$$

$$P_1 - P_0 = 7.56 \text{ } \phi$$

61 0 position - $\frac{1}{2}"$

$$P_2 = 26.20 \text{ } \phi$$

$$P_2 - P_0 = 6.72 \text{ } \phi$$

62 0 pos. - $1\frac{1}{2}"$

$$P_3 = 26.49 \text{ } \phi$$

$$P_3 - P_0 =$$

63 0 pos - $2\frac{1}{2}"$

$$P_4 = 25.55 \text{ } \phi$$

$$P_4 - P_0 = 6.07 \text{ } \phi$$

64 0 pos - $3\frac{1}{2}"$

$$P_5 = 21.65$$

$$P_5 - P_0 = 2.17$$

65 0 pos - $4\frac{1}{2}"$

$$P_6 = 19.98 \text{ } \phi$$

$$P_6 - P_0 = 0.5 \text{ } \phi$$

66 0 Position - $\frac{1}{2}"$

$$P_7 = 26.17 \text{ } \phi$$

$$P_7 - P_0 = 6.75 \text{ } \phi$$

Do Not Use This Data

See out Add

67 0 position - 5 1/2" P = 18.70 #

28 Nov 67

8:25

Taylor + Lynn

1500	OK	15	1000	900	750
2"	OK	36"	4"	2"	OK
100	-	100	100	100	-
✓	✓	✓	✓	✓	✓

227 + 8

Run 68 Repeat 13" dia dia

See Run 34
out # 2737

Fuel = 2 3/8", except (9x7) ring = 2 5/32"

U = 88,956 gms -

Add # 3217
2775

3/8" Plug (12 gms)

Base Run

up #1 = 12,710

P₀ = 10.03 #

69 Fuel pc @ 0 position (center of stack)

P₀ = 19.29 #

19.29
12.64
6.65

665 / 929 = .7181

P₀ - P₆ = 9.26 #

70 Fuel pc @ -1/2"

P_{1/2} = +18.98 #

P_{1/2} - P₆ = 8.95 #

71 FUEL PC @ -1 1/2"

P_{1 1/2} = +17.66 #

P_{1 1/2} - P₆ = 7.63 #

72 Fuel pc @ -2 1/2"

P_{2 1/2} = +16.07 #

P_{2 1/2} - P₆ = +6.04 #

F 73 Fuel pc \odot - $3\frac{1}{2}$ " $P_{3\frac{1}{2}} = 14.33 \text{¢}$
 $P_{3\frac{1}{2}} - P_6 = \underline{4.30 \text{¢}}$

74 Fuel pc \odot - $4\frac{1}{2}$ " $P_{4\frac{1}{2}} = 12.82 \text{¢}$
 $P_{4\frac{1}{2}} - P_6 = \underline{2.84 \text{¢}}$

75 Fuel pc \odot - $5\frac{1}{2}$ " $P_{5\frac{1}{2}} = 11.47 \text{¢}$
 $P_{5\frac{1}{2}} - P_6 = \underline{1.44 \text{¢}}$

76 Fuel pc \odot - $6\frac{1}{2}$ " $P_{6\frac{1}{2}} = 10.63 \text{¢}$
 $P_{6\frac{1}{2}} - P_6 = \underline{0.60 \text{¢}}$

10:30 77 Fuel carrier \odot 0 $P_{c0} = 12.64 \text{¢}$
 $\frac{1}{16}$ " Thick Al, $\frac{1}{2}$ " wide $P_{c0} - P_6 = \underline{2.61 \text{¢}}$

13:00 78 Carrier \odot - $2\frac{1}{2}$ " $P_{c2\frac{1}{2}} = 11.40 \text{¢}$
 $P_{c2\frac{1}{2}} - P_6 = \underline{1.37 \text{¢}}$

79 carrier \odot - $5\frac{1}{2}$ " $P_{c5\frac{1}{2}} = 10.68$
 $P_{c5\frac{1}{2}} - P_6 = \underline{0.65 \text{¢}}$

14:5

Run 80 FUEL EVALUATION, 11 DIA. DISC.
Fuel = See Run 23 p.14

81 FUEL CARRIER @ 0 position $P_b = 31.01 \text{ } \phi$
 $P_{c0} = 33.61 \text{ } \phi$
 $P_{c0} - P_b = 2.60 \text{ } \phi \leftarrow$

82 CARRIER @ -2" $P_{2c} = 32.38 \text{ } \phi$
 $P_{2c} - P_b = 1.37 \text{ } \phi \leftarrow$

84 CARRIER @ -4" $P_{4c} = 31.50 \text{ } \phi$
 $P_{4c} - P_b = 0.49 \text{ } \phi \leftarrow$

85 FUEL @ 0 (center of stack) $P_0 = 41.50 \text{ } \phi$
 $P_0 - P_b = 10.49 \text{ } \phi$

14:50 86 FUEL @ -1" $P_1 = 40.46 \text{ } \phi$
 $P_1 - P_b = 9.45 \text{ } \phi$

87 FUEL @ -2" $P_2 = 38.62 \text{ } \phi$
 $P_2 - P_b = 7.61 \text{ } \phi$

88 FUEL @ -3" $P_3 = 36.23 \text{ } \phi$
 $P_3 - P_b = 5.22 \text{ } \phi$

89 FUEL @ -4" $P_4 = 34.35 \text{ } \phi$
 $P_4 - P_b = 3.34 \text{ } \phi$

90 FUEL @ -5" $P_5 = 32.66 \text{ } \phi$
 $P_5 - P_b = 1.65 \text{ } \phi$

29 Nov 67		SAFETY CHECK	
8:40		Taylor & Lyman	
$\frac{1}{1000}$	OFF	L-15	$\frac{1}{1000}$
2"	OK	36"	2"
100.	-	100	100
AUX	✓	-	✓
SUNGLAS	227 + 8	MAGNET	✓
TABLES	✓	UNITS	✓
		AREA CLEARED	✓

Run 91 FUEL EVALUATION, 9" DIA DISC.
 Fuel = $2\frac{7}{8}$ " , see Run 14 p.10.

- 92 Fuel pc @ 0 $P_b = +18.79$
 $P_0 = 29.46\phi$
 $P_0 - P_b = 10.67\phi$
- 93 " @ $-\frac{1}{2}$ " $P_{\frac{1}{2}} = 28.87\phi$
 $P_{\frac{1}{2}} - P_0 = 10.08\phi$
- 94 " @ -1 " $P_1 = 27.86\phi$
 $P_1 - P_0 = 9.07\phi$
- 95 " @ -2 " $P_2 = 25.04\phi$
 $P_2 - P_0 = 6.25\phi$
- 96 " @ -3 " $P_3 = 22.10\phi$
 $P_3 - P_0 = 3.31\phi$

97 FUEL Pc @ -4" $P_4 = 19.77 \text{ \#}$
 $P_4 - P_0 = 0.98$

98 Fuel Carrier @ 0 $P_{c0} = 20.45$
 $P_{c0} - P_b = 1.66 \text{ \#}$

99 " @ -1" $P_{c1} = 19.77 \text{ \#}$
 $P_{c1} - P_b = 0.98$

100 " @ -3" $P_{c3} = 18.70$
 $P_{c3} - P_b = 0$

Run 101 FUEL EVALUATION, 7" dia Disc.
 FUEL = 4", See Run 10 p. 8.

	FUEL CARRIER	⊙	0	$P_{Co} = 18.13 \text{ } \phi$
	"	⊙	-1"	$P_{Co} - P_b = \underline{1.67 \text{ } \phi}$ $P_{C1} = 17.38 \text{ } \phi$
102	"	⊙	-1"	$P_{C1} - P_b = 0.92 \text{ } \phi$
103	"	⊙	-2"	$P_{C2} = 16.98 \text{ } \phi$
104	Boze Run			$P_{C2} - P_b = 0.52 \text{ } \phi$ $P_b = 16.46 \text{ } \phi$
105	FUEL	⊙	0	$P_o = 25.56 \text{ } \phi$ $P_o - P_b = \underline{9.10 \text{ } \phi}$
106	"	⊙	-1/2"	$P_{1/2} = 24.86 \text{ } \phi$ $P_{1/2} - P_b = \underline{8.40 \text{ } \phi}$
107	"	⊙	-1"	$P_1 = 23.69$ $P_1 - P_b = \underline{7.23 \text{ } \phi}$
108	"	⊙	-2"	$P_2 = 26.09 \text{ } \phi$ $P_2 - P_b = \underline{4.63 \text{ } \phi}$
109	"	⊙	-3"	$P_3 = 18.12 \text{ } \phi$ $P_3 - P_b = 1.66 \text{ } \phi$

Passes alpha possible

Page 39 - 7" dia, 1" Refl Top + Bottom

41 - " , 2" " "

42 - " , 3" " "

Run 3 Added $\frac{1}{2}$ " to diaph. (#2770 and #2771)

Ht = 4" #1 = 19.37
 Pos Period 2 = 19.357
 ≈ 5¢

Run 4 Ht = $3\frac{7}{8}$ " (#2771 off, #2768 on)

Pos Period #1 = 19.49
 ~ 5¢ #2 =

Run 5 Ht = $3\frac{3}{4}$ " (#2768 off)
 #1 = 19.59

Pos Period
 ∞

Run 6 Ht = $3\frac{5}{8}$ " (#2770 off, #2768 on)

$\rho < 1$ #1 = 19.775
 #2 = 19.767

2 min cts

286	343	220
126	232	109
107 107	172	103

k
R
h

C.A. _____	Exp. <u>7" dia</u>	Run <u>7</u>
_____	Date <u>APR 3 1970</u>	Time <u>2:40</u>
PURPOSE	<u>7" U with 1" C Refl</u> <u>on <u>bottom</u> and <u>Top</u></u> <u>only.</u>	

n)

Run 7 $HT = 4''$ 3" on digls, 1" on Ram

up - #1 = 19,215

Tables down, source cut

2 min cts

BF ₃	#1	#2	#3
	285	310	228
	311	294	224

Tables closed, source in.

$k > 1$	400	459	258
	382	446	297
CPM	196	226	139

on)

Run 8 $HT = 4\frac{1}{4}''$ $2\frac{3}{4}''$ on digls, $1\frac{1}{2}''$ on Ram

$k > 1$	1075	1307	543
	1191	1327	565

DATE APR 6 1970 SAFETY CHECK

TIME 9:05 AM BY TAYLOR and LYNN

CHANNEL	A	B	C	D	E	F
RANGE	$\frac{10}{1000}$ cpr	6.9	$\frac{10}{1000}$	900	900	900
SOURCE DIST.	16" OK	OK	2"	4"	OK	OK
% F. S. TRIP	100		100	100+		
BLOC. ALARM	✓	✓	✓			
AUX STRG.	✓	✓	✓			
SOURCES USED	227 + 8		ISOTOPIES			✓
TABLES	✓	✓	✓	AREA CLEARED		✓

Run 8
↓ (4 1/4")

Run 9
#2770
#2732 off, #2730, 2728 + 2729 on
K > 1, up #1 = 19.215

Pitte LN
+ 16.96⁺, 17.47⁺, 17.30, 17.70, 17.70⁺

B_{F3} Counters
#1, #2, #3

B
#2770
#2732
#2733

#2734
A

Run 10 -

Added NE 102 - 1/2" on diaphragm
1/2" from stack.

Counter moved P > 1, + 22.88⁺
away when tables raised.

Run 11 - Repeat with Counter taped
in place.

P > 1, + 25.81

ctr @ 1/2" = + 8.85⁺

Run 12 -

ctr placed in contact with stack.
 Taped in position.

$$P > 1, \quad +32.29 \text{ } \phi$$

$$\text{ctr @ contact} = +16.33 \text{ } \phi$$

Run 13 -

Removed Center (~~2730~~³⁶⁰" dia) plugs
 from pcs #2734, 33, ~~30~~, 28 and 29.
 #2730 has no hole.

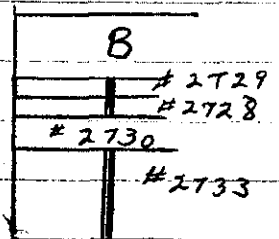
k < 1.

Run 14 -

Returned Center plug to #2734.

$$k < 1, \quad \sim .5 \text{ } \phi$$

HT = $4 \frac{5}{16}$ " less center plugs →
 shown.



↑ DIAPH

APR 7 1970

DATE		APR 7 1970					
TIME		8:25 AM					
BY		TAYLOR & LYNN					
	A	B	C	D	E	F	
	10			10	900	900	
	1000	OK	7-9	1000	900	900	
	18"	OK	OK	1"	5"	OK	
	100			100	100 ⁺		
	✓	✓	✓	✓			
	✓	✓	✓	✓			
DEVICES USED	227			MAGNETS		✓	
TABLES	✓	LIGHTS	✓	AREA CLEARED		✓	

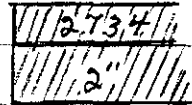
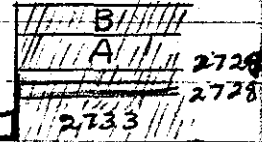
7" dia π with 2" C reflector top and bottom only.

Run 15 - $Ht = 3 \frac{3}{4}"$ $2 \frac{1}{4}"$ on diaph, $1 \frac{1}{2}"$ on horn
 $k < 1$ Counter in place.

2 min Counts

417 434 326
 566 471 311

NE 102 (1/2)



Run 16 - $Ht = 3 \frac{13}{16}"$

#2728 + 29 OFF, #2730 + 70 ON.

2 cts

482 569 423
 531 523 324

Run 17 $HH = 3 \frac{15}{16}''$ #2768 on

2 min etc

741	781	434
749	806	399

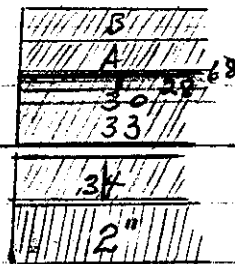
Run 18 $HH = 4 \frac{1}{16}''$ #2770 off, 2728 on

$k > 1$, $+33.14 \text{ } \neq$

SEE Run 12 p. 39, removing same plugs as for Run 14 would give system close to ∞ .

$4 \frac{1}{16}''$ has plugs as shown

DIAPH



mm

2728
2728

APR 1970

DATE		SAFETY CHECK					
TIME	10:15 AM	BY TAYLOR & LYNN					
CHANNEL	A	B	C	D	E	F	
RANGE	100	OPR 1-9	1000	900	900		
SOURCE DIST.	16" OK	36"	1"	6"	OK		
% F. ST. TIP	100	OK	100	100f			
BLDG. ALARM	✓	✓	✓				
AUX STRE.	✓	✓	✓				
SOURCES USED	227 + Co		NETS		✓		
TABLES	✓	LIGHTS	✓	AREA CLEARED	✓		

68
29
28
33
4

Run 21 11" diameter μ with 1" graphite on top and bottom only.

Est. up = 19.24

Ht = $2 \frac{3}{4}$ "

Diaph = $1 \frac{1}{4}$ "

#2731, 38 & 45

#2803

Ram = $1 \frac{1}{2}$ "

#2734, 40 & 47

$k > 1$

#1 = 19.11

Run 22 - Ht = $2 \frac{11}{16}$ "

Diaph = $1 \frac{3}{16}$ "

#2728, 36 & 42

#2730, 37 & 67

#2803

Ram = $1 \frac{1}{2}$ "

SAME

$k > 1$, + 40.24 ϕ

Run 23 - Ht = $2 \frac{11}{16}$ "

DIAPH = $1 \frac{11}{16}$ "

RAM = 1"

All plugs out.

$k < 1$, $\approx 10 \phi$

NE102 ($\frac{1}{2}$ "

$2 \frac{11}{16}$ " can use,

$\frac{1}{8}$ 38		
78	74	70
67	37	30
42	36	28
2803		
45	38	32

APR 9 1970

DATE	APR 9 1970		SAFETY CHECK			
TIME	9:45	AM	BY TAYLOR & LYNN			
CHANNEL	A	B	C	D	E	F
RANGE	$\frac{10}{1000}$	opr	L-9	$\frac{10}{100}$	900	940
SOURCE DIST.	15"	OK	6'	1"	6"	OK
% F. S. TRIP	100		OK	100	100†	
ELDG. ALARM	✓	✓	✓			
AUX CRTS.	✓	✓	✓			
SOURCES USED	227 & Co		MAGNETS		✓	
TABLES	✓	LIGHTS	✓	AREA CLEARED		✓

Run 24 - 11" DIAMETER WITH 2" GRAPHITE ON
Top and Bottom only.

up #1 = 18.71

$k = 2 \frac{3}{8}$ "

Diaph ($\frac{3}{8}$ ") =

- # 2768, 63, 44
- # 2729, 2829, 43
- # 2770, 74, 78
- # 2728, 36, 42
- # 2803

~~k~~ $k > 1$

RAM (1") = # 2732, 38, 45

#1 = 18.66

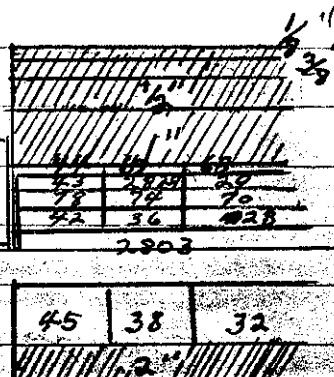
NE102 ($\frac{1}{2}$ ") in place.

Run 25 - $k = 2 \frac{3}{8}$ "

all plugs removed & Detector up.

$k > 1$, + 29.05 ϕ

NE102 ($\frac{1}{2}$ ")



APR 28 1970

45

DATE	APR 28 1970	SAFETY CHECK	
TIME	10:50	Taylor & Lynn	
GRANITE	10	10	
LEAD	1000 Ofr L-9	1000	Pro 960
CEILING	15" ok	3'	14 6" ok
WALLS	100	100	100 100+
FLOOR	✓ * ✓	✓	
ADJ CTAS.	✓ ✓ ✓		
SOURCES USED	227 + Co 18	MAGNETS	✓
TABLES	✓	LIGHTS	✓
		AREA CLEARED	✓

* SLUGGISH

Run 26 - $H = 2\frac{5}{16}"$ Diaph $- 1\frac{5}{16}"$ #70, 74, 78, 29, 2829

and 43 Ofr

#30, 37 & 67 on

Detector up & Pulgs in -

$k < 1$, slight instrument response -

maybe - 60 f

Probably too far out.

n

4
3

11
39

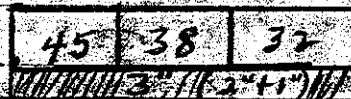
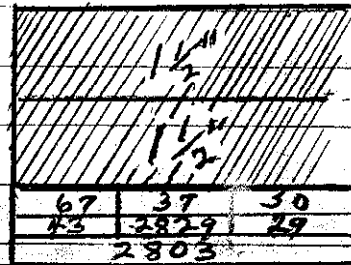
C.A. _____ Expr. _____ Run 27
 Date 4-13-1970 Time _____ ^{AM}/_{PM}
 Purpose 11" Dia u with 3"C
Reflector on Bottom and
Top only

Run 27 - HT = $2 \frac{1}{16}$ " Diaph $1 \frac{1}{16}$ "
 up #1 = 17,740 Ram 1"
 k < 1

Run 28 - HT = $2 \frac{1}{8}$ " Diaph ($1 \frac{1}{8}$ ") = { # 71, 75, 79
 # 29, 2824, 43
 # 70, 74, 78
 # 2803 }
 Ram (1") = # 32, 38, 45
 k < 1

Run 29 - HT = $2 \frac{3}{16}$ " DIAPH ($1 \frac{3}{16}$ ") =
 k > 1, #1 = 17,67
 ~ + 25 #

$2 \frac{3}{16}$ " with plugs
 removed might
 get ∞ .



DATE		SAFETY CHECK					
APP 11 1970		TAYLOR & LYNN					
TIME 10:00							
	A	B	C	D	E	F	
WIND	$\frac{10}{1000}$	OPR	L-9	$\frac{10}{100}$	900	900	
WIND DIR.	15"	OK	3'	1"	5'	OK	
WIND S. TEMP	100		100	100	100 ⁺		
WIND ALARM	✓	✓	✓				
WIND STOP	✓	✓	✓				
WIND S. CLOS	22.7	+	18			✓	
TABLES	✓	LIGHTS	✓	AREA CLEANED	✓		

Run 30 - $HT = 2\frac{1}{4}"$ Diaph ($1\frac{1}{4}"$) = # 31, 62, 76, 57, 39
 $up = 19.72$ RAM. (1") = # 2803, 82, 2885-
 # 32, 38, 45, 56, 35

19 }
 43 }
 8 }
 45

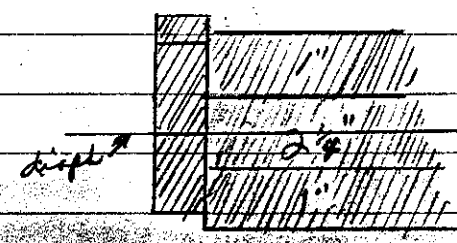
$k < 1$

Run 31 - $HT = 2\frac{1}{4}"$
 Added (17"x15") x 2" graphite ring
 on diaphragm.

$k < 1$

Run 32 - $HT = 2\frac{1}{4}"$
 Added (17"x15") x $1\frac{1}{2}"$ to Ram
 " x $\frac{1}{16}"$ to Diaph

$2\frac{1}{4}"$ DETECTOR UP
 $k > 1$, + 6.8 #
 1" Complete Reflected
 Trim up C + remove plugs then can use



48
APR 15 1970

15" DIA. 2" C SANDWICH

DATE	APR 15 1970	TAYLOR # LYNN			
TIME	10:15	TAYLOR # LYNN			
QUANTITY					
LABOR	$\frac{10}{1000}$	APR 1-9	$\frac{10}{1000}$	900	900
SEE TO BE	15" OK	4'	1"	6"	OK
% F. S. T. P.	90+	100	100	100+	
ELAB. ALARM	✓	✓	✓		
AUX. COIN.	✓	✓	✓		
SOURCES USED	227 + 18				✓
TABLES	✓	LIGHTS	✓	AREA CLEANED	✓

Run 33

$HT = 1 \frac{15}{16}$

Diaph ($\frac{15}{16}$ ") { # 68, 63, 44, 80, 58 }
 { # 30, 37, 67, 55, 66 }
 # 2803
 Ram (1") # 32, 38, 45, 56, 35.

up = 18.725
 #3 = -2
 #4 = -4

$k > 1, +38.88 \text{¢}$

DETECTOR UP.

Run 34 - REMOVED PLUGS FROM THE RAM PCS.

$HT = 1 \frac{12}{16}$ " $k > 1, +2 \text{¢}$

Can still removed needed plugs from top fuel.

DATE		SAFETY CHECK			
TIME	1:45	TAYLOR & LYNN			
		10	10	10	10
		1000	1000	1000	1000
		18" OK	36" 1"	6" OK	
		90+	100	90+	100+
		✓	✓	✓	
		✓	✓	✓	
		227 # 18			✓
TABLES	✓	LIGHTS	✓	AREA CLEANED	✓

58 }
6 }

Run 35 - 15" DIAMETER, 3" C SANDWICH.

DETECTOR UP - PLUGS OUT OF RAM FUEL

$H_t = 1 \frac{11}{16}$ " , Diaph ($\frac{45}{16}$ ") SAME AS RUN 33

RAM ($\frac{3}{4}$ ") #29, 28, 29, 43, 50, 85
#28, 36, 42, 49, 84

up = 17.975

$k > 1$, Slight multiplication
 $k < 1$

Run 36 - Added RAM PLUGS

$k > 1$? Very little difference
 $k < 1$

Looks as if $\frac{1}{16}$ " Fuel addition would be too much -

50
APR 17 1970

DATE		SAFETY CHECK					
TIME	8:45	AM	BY Taylor & Lynn				
CHANNEL	A	B	C	D	E	F	
RANGE	¹⁰ 1000	OPR	49'	¹⁰ 1000	900	900	
SOURCE DIST.	18"	OK	2	1"	6"	OK	
% F. S. TRIP	90+		100	90+	100+		
ELEC. ALARM	✓	✓	✓				
AUX CTBS.	✓	✓	✓				
SOURCES USED	227	+ 18	MAGNETS			✓	
TABLES	✓	LIGHTS	✓	AREA CLEARED		✓	

J.T.
J.W.
D.

Run 37 - Added 3" RADIAL REFLECTOR TO DIAPHRAGM -

#1 = 17.82 $k > 1$, + 28.54¢

SEP 2 1970

51

J. T. Mihalezo
J. J. Lynn
J. R. Taylor

DATE		SAFETY CHECK					
TIME	10:30 AM	BY TAYLOR & LYNN					
CHANNEL		A	B	C	D	E	F
RANGE	OUT	OPR	L-11	1000	900V	900V	
SOURCE DIST.	5'	✓	36"	1"	15"	OK	
% F. S. TRIP	77	OK	OK	100	100	100	
BLDG. ALARM		✓	✓	✓			
AUX CHS.		✓	OUT	✓			
SOURCES USED	m-227, h-18			BEGLTS		✓	
TABLES	✓	LEUTS	✓	ASBA	CLEA	✓	

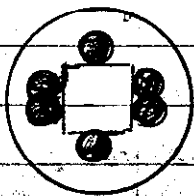
Rhett
Response
OK

Exp.	7" Dia	Run	38
Date	9-2-70	Time	11:05 AM
Critical Stack			
7" dia Solid Cylinder			

Run 38 Loading = $4 \frac{15}{16}$ " + 2 [$2 \frac{1}{2}$ " x $2 \frac{1}{2}$ " x $\frac{1}{32}$ "]

RAM = $1 \frac{1}{2}$ "	up #1 = 20,090
Diaph = Remaining	#2 = 20,119
	#3 = +10
Sub Crit.	#4 = +16

Run 39 Added six (6) G.A. Sphere buttons,
 $\frac{3}{8}$ " dia x $\frac{1}{8}$ " thick, 132 gms to top.



$k = 1$, -8.75+ Pitte

-10.4+ Log n

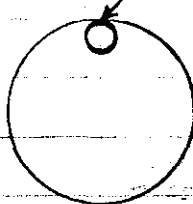
DATE	SEP 3 1970		SAFETY CHECK			
TIME	3:10		AM PM	BY TAYLOR - LYNN		
CHANNEL	A	B	C	D	E	F
RANGE	OUTZ	OPR	L-11	1/1000	900V	900V
SOURCE DIST.	-	OK				
% F. S. TRIP	-	-	OK	100	100	100
BLDG. ALARM	✓	✓	✓			
AUX CTES.	✓	OUTZ	✓			
SOURCES USED	227 & 18		MAGNETS		✓	
TABLES	✓	LIGHTS	✓	AREA CLEARED		✓

Rhette Response OK

DEC

Run 40 Loading = Same

cf B on top edge to edge lined up



$$\text{Log } N = .0009$$

$$1 \text{ min cts ctr. 1} = 15,076, 15,406$$

$$3 = 9,750, 9,718$$

Run 41 cf B moved to top center.

Log N	1 Min	# 1	# 3
3:55 PM		68,840	44,215
4:00 PM		78,217	49,488
4:02 PM		90,963	57,980

FAST NEUTRON SURVEY METER WITH SO. B ON TOP & ARM DOWN
FROM OUTER SURFACE OF TOP PIECE AVG READINGS:
contact = ~50 m-rem; 2" = 28 m-rem; 4" = 16 m-rem

DEC 1 1970

Scram time measurement by E.R.R.
a"

OK

~~FR~~

Down

DEC 2 1970

"Keithly Micro-Microammeter installed for Chan "A" replacing Vibrating Reed meter." (By G.R.R.)

Mihaloz, J.
Lynn, J.
Taylor, J.

DATE	DEC 2 1970	SAFETY CHECK	
TIME	10:40	BY Taylor + Lynn	
CHANNEL		L	R
RANGE	10X10 ¹² over L.R.	700V	900V
SCALES DIST	14" etc 36"	4	5"
SCALE RANGE	OK	100	100+
ELEC. MARK		✓	✓
AUX. CHRS.		✓	✓
SOURCES USED	227 + Co		✓
TABLES	✓	LIGHTS	✓
		AREA CLEANED	✓

"A" = 100
Source @ 18"

G.A. 15" Dia Ht 2 ¹⁵/₁₆" Run 1

Bare Date _____ Time _____ AM
PM

Purpose Reactivity measurement

Run 1 Loading - Ram = $\frac{13}{16}$ "
 (2 ¹⁵/₁₆") Top = 2 ¹/₈" Down = 99.99
 Little = - 2.58 up = 20.820
 #3 = 5
 #4 = 15

Run 2 Loading = Ram Same

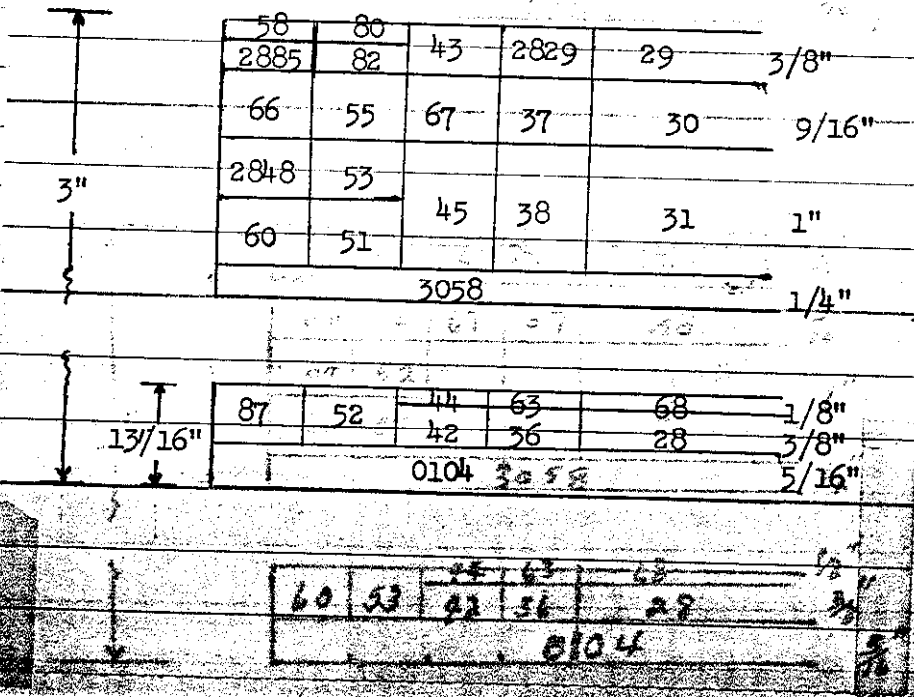
$\left(\begin{array}{l} 0 \rightarrow 3.5'' = 3'' \\ 3.5'' \rightarrow 7.5'' = 2\frac{1}{16}'' \end{array} \right)$ Diaph $\rightarrow 0 - 3.5'' = 3''$ Ht
 $3.5'' - 7.5'' = 2\frac{1}{16}''$

$P = -1.62$

$\frac{1}{16}'' (7'' \text{ dia}) = 96 \#$

$\#1 \quad \#2$
 $2p = 20.855 \quad 20.85-4$
 $\#3 = 0$
 $\#4 = -7$

@18"



DATE	SAFETY CHECK					
DEC 3 1970						
TIME	11:10	AM	BY TAYLOR & LYNN			
CHANNEL	A	B	C	D	E	F
RANGE	10X10 ⁻²	DPR	2-10	only	900V	900V
SCOUR DIST.	12"	OK	5'		6"	OK
% F. S. TOP	94		100	1	100+	
ELEC. (VARI)	✓	✓	✓			
100% F. S.						
SOURCES USED	227 d G				✓	
TABLES	✓	✓				✓

SEE p. 55

Run 3 loading = 3"

Ram = same ($\frac{13}{16}$ ")

Period up $\text{Log } N = +19.5 \phi$
 $\text{Pette} = -18.7 \phi$

Depth = $2 \frac{3}{16}$ " $\text{Pette} = -69.1 \phi$

up = SAME

$$\therefore \frac{1}{16}'' \times (3.5'' \times 7.5'') = 93 \phi$$

2/32

DATE DEC 9 1970 SAFETY CHECK

TIME 1⁰⁰ PM BY TAYLOR J/LYN

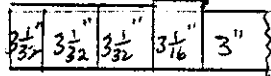
CHANNEL	A	B	C	D	E	F
RANGE	10x10 ⁻¹²	SPV	L-8	2	900V	900V
SOURCE DIST.	18"	OK	7'	4	6"	OK
% F. S. TRIP	100		100	T	100 ⁺	
BLOSS. ALARM	✓	✓	✓			
AUX. OTAS.	✓		✓			
SOURCES USED	227 + Co			NETS		✓
TABLES	✓	LIGHTS	✓	AREA CLEANED		✓

Run 4 Loading = 0 → 3.5" Radius = 3"
 3.5" → 7.5" Radius = 3¹/₃₂"

Pette = -25.0 φ: up #1 =
 #2 = 20.898
 ∴ $\frac{1}{32} \times (3.5 \times 7.5) = 44 \phi$ #3 = +1.8
 #4 = -8

Run 5 Added $\frac{1}{32}$ " to 3.5" → 4.5" radius
 pco 37.73 φ 3217 removed

pco 2762 added
 $\frac{1}{32} \times (3.5 \times 4.5) = 18.2 \phi$ up = Same.
 Pette = -6.8 φ



Run 6 Added NE 102 - 1/4 in Contact to diaphragm fuel.



Pette = -5.5 φ

NE 102 - 1/4 = 1.3 φ

DATE	SAFETY CHECK					
DEC 10 1970						
TIME 08 ²⁵	AM	BY TAYLOR & LYNN				
CHANNEL	A	B	C	D	E	F
RANGE	10X10 ⁻¹²	opt	L-15		900V	900V
SOURCE DIST.	20"	OK	24"		6"	OK
% E. S. TRIP	100		100		100	
BLDG. ALARM	✓	✓	✓			
AUX CHG.	✓		✓			
SOURCES USED	227 + Co					✓
TABLES	✓	✓	✓			✓

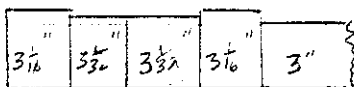
Run 7 Loading (15" Dia Disc, Bare)

$$0 \rightarrow 3.5" \text{ Radius} = 3"$$

$$3.5" \rightarrow 4.5" \quad " = 3 \frac{1}{16}"$$

$$4.5" \rightarrow 6.5" \quad " = 3 \frac{1}{32}"$$

$$6.5" \rightarrow 7.5" \quad " = 3 \frac{1}{16}"$$

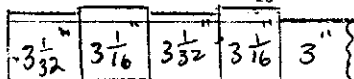


Removed 66, 58 & 3214 ; Added 2739
 Petle = -1.7 ϕ up = Same

$$\therefore \frac{1}{32} \times (6.5 \times 7.5) = 3.8 \phi$$

Run 8 Removed 55, 80 & 3215
 Added 2757

vs Run 6



$$\text{Petle} = +3.3 \phi \quad \text{up = Same}$$

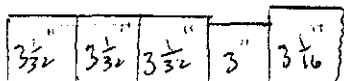
$$\therefore \frac{1}{32} \times (5.5 \times 6.5) = 8.8 \phi$$

$$\text{Then } \frac{1}{32} \times (4.5 \times 5.5) = 13 \phi$$

from Run 4

Run 9. Loading (15" dia disc, Bare)

0 → 3.5" radius = $3\frac{1}{16}$ "
 3.5" → 4.5" " = 3"
 4.5" → 7.5" " = $3\frac{1}{2}$ "



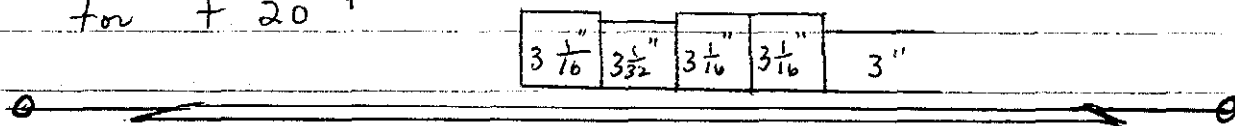
Pette = 52.1 ¢

(Detector in place since Run 6)

Run 4 = - 2.5 ¢

Run 7 = - 1.7 ¢

For + 20 ¢



10 1970

2:30 PM

Loaded $2\frac{15}{16}$ " ght = ~~2.60~~

84	49	79	75	76
96	54	43	2828	29
2888	58			
60	51	45	38	31
		3058	63	65
87	52	42	36	28
		104		

10 mil SS diags.

13 1/16

DEC 14 1970

CA-15-2 $\frac{15}{16}$ " Base

DEC 14 1970

Randomly pulsed neutron
measurement with Cf.

p. 263-C

Loading 2 $\frac{15}{16}$ " H⁺; # -2.60Depth = 2 $\frac{1}{4}$ "Ram = $\frac{1}{16}$ "Same pcs as 10 Dec 70
 $\frac{1}{2}$ " from Ram exchanged for
 $\frac{3}{8}$ " on depth.

Up Position: 1 = 20.950; 2 = 20.950; 3 = +3; 4 = 0.

1530 - SEPARATED FUEL; REMOVED CFC & RECLOSED.

DEC 15 1970

Raised table for background count, source
removed.

Lowered table added source CfC

Data collection start 08:50

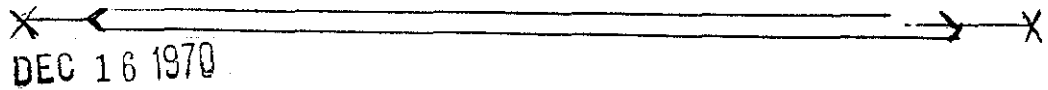
Repeat above steps. Start 10:30 / Source E.

DEC 16 1970

1-18-2 ¹⁵/₁₆ "

Cont'd of measurements.

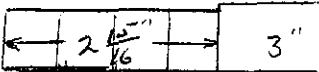
Base



Loading - Ram = $\frac{11}{16}$ "

Diaph = 0 → 3.5" Radius = 2 ⁵/₁₆ "

3.5 → 7.0" " = 2 ¹/₄ "



Removed #70 and #71

Added #30 (psi)

Est. $\frac{1}{16}$ -1.60
 see p. 52

70

ed.

DEC 17 1970

DATE	17 DEC 1970					
TIME	8:05					
OPERATOR	Lynn & Mihalcz					
CHARGE	A	B	C	D	E	F
RAM	MX10-12	OPR	L-15	0	900	900
SPRING FEEL	15"	OK	3'	4	6"	OK
90° B. T. SWP	100		100	T	100+	
LEAD	✓	✓	✓			
ACC. CLIP	✓	X	✓			
SUPPLIES USED	227 Co			MAGNETS		✓
TABLES	✓	LIGHTS	✓	AREA CLEANED		✓

Con'd. Cf measurements. Loading as p. 62.

DEC 17 1970

Loading = 3"

Ram = $\frac{1}{16}$ "

- 70 f

DIAPH = $2\frac{5}{16}$ "

SEE P. 56

66	55	67	37	30
87	52	44	63	68
2848	53	42	36	78
60	51	45	38	31
84	49	43	2829	29

Diaphragm

DEC 17 1970

Loading = 0 → 3.5" Radius = 3"

3:40 PM

35" → 7.5" " = $3\frac{1}{2}$ "

- 25 f

See p. 57

NOTE: See Ram #10

3214	3215	3216	3217	68
2885	92	78	74	28
66	55	67	37	30
2894	53	45	38	31

Same

DATE	SAFETY CHECK					
DEC 28 1970						
TIME	10 ³⁰	AM	BY TAYLOR & MIHALCZO			
CHANNEL	A	B	C	D	E	F
RANGE	1010 ⁻¹²	OPR	L-10	off	900	900
SOURCE DIST.	2'	OK	5'	off	4"	OK
% F. S. TRIP	100	-	100	off	100	OK
BLOC. ALARM	✓	✓	✓			
AUX ODS.	✓	-	✓			
SOURCES USED	N & H			IN TRAYS		✓
TABLES	✓	LIGHTS	✓	AREA CLEARED		✓

Rhett OK

FUEL HOADING SAME AS 17 DEC 70 (3:40 PM)

- UP Selwyn = 20.965, 20.965, +2, +3.
- 2 detectors are on diaphragm. Go up on the remote source to $h\nu = .00018$, pull source and take DF₃ etc to estimate a period. $\approx -12^{\#}$
- DN and put CF^c on detector - Back Up ($h\nu = .0009$)
JTM # DATA VIA He³ (Ref C-294)
- DN and put CF^a in place of CF^c - Back Up $h\nu = .0002$
- DN @ 1700 hrs.

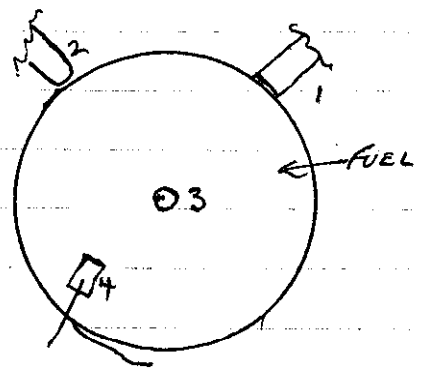
DATE DEC 29 1970		SAFETY CHECK					
TIME	0810	AM	BY TAYLOR & MIHALCZO				
OPERATOR	A	B	C	D	E	F	
RANGE	10710-12	OPR	1-10	X	900	900	
SOURCE DIST.	2'	OK	5'	X	4"	OK	Rhoette
REL. PRESS.	100	-	100	OK	100	OK	
ABR. PRESS.	✓	✓	✓				
ABR. TEMP.	✓		✓				
SEALING	N/A					✓	
TAILER	-		-			-	

Run #10 Fuel loading same as 17 Dec 70 (3:40 PM). He³ & source CTR. laying on diaphragm. Up Position = 20.965, 20.965, +3, +4.
 Rhoette = -7.1¢ ; h₀ = -8.1¢
 BF₃ #1 = -7.5¢ ; BF₃ #3 = -8.1¢ ; Avg. = -7.7¢

Run #11 Change fuel on 15-13 ring:
 FROM Pieces 3214, 2885, 2766
 TO 2739, 2758
 Also put up remote skin and
 a dummy CF source.
 Rhoette = +10.4¢

Run #12 Change fuel on 15-13 ring back to as Run #10 and using small Al shim (correct), operate @ ∞ the JTM data.
(Ref log C-300)

1: Scin; 2: HE³; 3: CF; 4: SUMMER



10:45
LN = .0005
A = 10x10⁻¹¹ @ 50
C = L-19 @ 48

11:35
LN = .0015
A = 3x10⁻¹⁰ @ 50
C = H-1 @ 48

12:20
LN = .0050
A = 10x10⁻¹⁰ @ 50
C = H-9 @ 45

2. CTR.
+4.

27

→ Oscillating CTU^{2.4"} vs CF^C source @ ∞ (DC)
23 runs (1min) ChA peak = 10x10⁻¹¹ @ 36

→ Oscillating CTU^{2.4"} vs CF^A source @ ∞ (DC)
10 runs (1min) ChA peak = 10x10⁻¹² @ 98
10 runs (1/2 min) ChA peak = 10x10⁻¹² @ 60
10 runs (1/2 min) ChA peak = 10x10⁻¹² @ 55

l

66

$$\begin{aligned} & (13-11) (9-7) \longrightarrow = 3\frac{1}{32}'' \\ & (15-13) (11-9) \& (-7'' \text{ dia}) = 3.0 \end{aligned}$$

Run #13

Change fuel on (15-13) and (11-9), rings.
 Remotok # 3214 and # 3216 & Remoti Shim
 Burton # 2886 and # 2779 est. @ -20°
 [see ref. to 17 Dec 70 (3:40 PM)]
 Table up @ 1515 hrs. - ON 1630

Run #14

Changed fuel to 1-15-2 ¹⁵/₁₆ for
 overnight run (Ref 14 Dec 70).
 Table up @ 1645.

John was in about 2230 and made
 some changes of settings.

fuel change was:
 from (Ref Run #13)

7-9	1/4 for 9/32 & 1/2 for 9/16
9-11	1/2 for 9/16
11-13	1/4 for 9/32 & 1/2 for 9/16
13-15	1/2 for 9/16
7 dia	1/2 for 9/16

DEC 30 1970

Found table down when I came in @ 0800. (no serum light showing). Raised table and proceeded with data plan. Charlie = L-2 @ 60

2886	2783	2779	2775	2771
2885	2782	2778	2774	2770
2787	2752	2744	2763	2768
2898	2753	2742	2736	2728
2760	2751	2745	2738	2731
DIAPHR		3058		
2784	2749	2743	2829	2729
		0104		

Run #15 Fuel change: 7" dia. only \rightarrow $\frac{3}{16}$ " for $\frac{1}{2}$ "
 frank Ref run #14 Charlie = L-2 @ 70
 @ up table @ 10:00 AM

$$\begin{array}{l} 15" - 7" \rightarrow 2 \frac{15}{16}" \\ 7" \text{ DIA} \rightarrow 3.0" \end{array}$$

NOTE: at 5:30^{PM}, $\frac{3}{16}$ " of fuel was REMOVED FROM THE 7" disc only for overnight run. However, the table was found to be down to 3" when I came in on the 31st. (see top of page also) JRT

BTE
DJM

DATE	DEC 31 1970		SANTA CREEK	
TIME	0900		TAYLOR & THOMAS	
CHANNEL	A	B	C	F
FAHRE	10x10 ⁻¹² OK	5-D	900	900
SEC	2' OK	5'	5"	OK
SEC	100 -		100	OK
BL	✓	✓	✓	
IS	✓	✓	✓	
SE	N & h			✓
TA	✓	✓	✓	✓

Run # 16 Change Fuel to 1-15-3"
 (started as 17 Dec 70 Pg 62)
 Table up @ 9²⁰ AM for CF, HE³ & Scin data.
 Ref Log Pg D-20
 Channel C → h-8@63

Notes: AT 1541 hrs the table came down
 (on reg. speed) to the 3" position again
 as prev. mentioned. LASH data is OK.
 - Ran table down and secured.

DATE		SAFETY CHECK					
DATE	JAN 4 1971						
TIME	0935 AM	BY TAYLOR & NITHALO					
CHANNEL		A	B	C	D	E	F
RANGE		10×10^{-12}	000	6-10	40	400	
SOURCE DIST.		2'	OK	5'	1'	5'	OK
% F. S. TEMP		100	-	-	0	100	OK
BL. OF. ALIGN		-	-	-	-	-	-
ALX. COND.		-	-	-	-	-	-
SOURCE CORR.		1.4	-	-	-	-	-
TABLES		✓	✓	-	✓	✓	✓

Run #17 Loading as 17 Dec 70 @ 3:40 PM

This is a repeat setup as run #12

Establish $\phi(D)$ using ϕ dummy ϕ source

Automatic cyclor has been installed.

- Up portions normal. Using ≈ 10 mil slow speed.

- Down @ 10:15 Put up ϕ^c

- Begin cycling @ 10:25

EXAMPLE: 30 sec @ Up; 1" travel; 55^{sec} cycle time

on ARLE 3×10^{-11} the peak avg = 65.

The Log N peaks = .0002

Run 18 added $2\frac{1}{2} \times 2\frac{1}{2} \times \frac{1}{16}$ to center top of stack (paper) (32)

$$\text{Rhett} = +24.3\%$$

Fuel added estimated to be $\approx 15\%$

7/17 red ~~was~~ ~~shown~~ ~~in~~ $\approx 6\%$

Began cycling @ 1440 hrs

EXAMPLE: 17.5 sec up time; 1" travel; cycle

time = 40 sec after about 20

cycles (little out), peak $\approx 3 \times 10^{-10}$ @ 90

$$K \approx .002$$

SUN

Down ≈ 1650 hrs

Run 19 Loading $1-15-2\frac{1}{16}$; -2.58 (p. 57)

1700 hrs

Fuel as top page ~~57~~ ~~58~~ ~~59~~ ~~60~~ ~~61~~ ~~62~~ ~~63~~ ~~64~~ ~~65~~ ~~66~~ ~~67~~

$\rightarrow 67$

Start data @ 1717 hrs

NOTE: 5 Jan 71 morning - Table was in down pos.

DATE	JAN 5 1971		SAFETY CHECK			
TIME	09 ³⁰	AM	BY TAYLOR - MIHALOZO			
CHANNEL	A	B	C	D	E	F
RANGE	10010 ⁻¹²	OPR	6-10	10	900	900
SCUMBE DIST.	2'	OK	5'	10'	5"	OK
% F. S. TRIP	100	-	-	100	100	100
DLG. ALARM	-	-	✓			
AUX GMS.	✓	-	✓			
SENSORS USED	N & A			SENSORS	✓	
TABLES	✓	LIMITS	✓	AREA CLEARED	✓	

RUN # 20

LOADING = 7" dia = 3" ; 15" - 7" leg = 3 1/16"
 Scin # He³ det are in place and servo skin
 is up.

Rhoette = +47.9 #

#)

Cycling EXAMPLE: 7 1/2 sec @ up ; 1" travel ; NO slow
 speed ; 27 sec cycle time ; Not exceeding
 .005 on log N. hN = .005
 Source CFA A = 10 x 10⁻¹⁰ @ 26

58	80	46	73	
2886	83	44	36	
2885	82	42	63	28
87	54	79	75	68
2848	53	78	74	30
60	51	45	38	31
84	49	3058		
		43	2829	29
		0104		

#2.

Run #21

Add $[2\frac{1}{2} \times 2\frac{1}{2} \times \frac{1}{32}]$ to center of cap.
Use dummy Cf samples

Rhoite = 4 runs: $+58.18$ $+57.64$ $+57.72$ $+57.86$
AVG. 57.85

Put up Cf^A and cycle.

cycle EXAMPLE: 7 sec @ cap, 1" travel; no slow speed; cycle time = 27 sec

LN = .008

"A" = 10×10^{-10} @ 29

Run #22

Removed Cf^A. Added dummy

Measure Positive Period

* Ch "A" Tripped = LN .02 "A" = 45×10^{-10}
* " " = LN .055 A = 45×10^{-9}

Positive Period = $+57.64$

57.4 $+57.72$ \neq
58.12

Run # 23

add $[2\frac{1}{2}'' \times 2\frac{1}{2}'' \times \frac{1}{32}'']$ to center top
use dummy Cf source -

4
55

Pette = +67.3 ϕ
66.5
67.2 } +67 ϕ

Put up Cf A and cycle

low

10X10 TO
3X11-9

2 ϕ

DATE JAN 6 1971		SAFETY CHECK					
TIME	09 ³⁰	AM	BY TAYLOR-MITALCZO				
GRATE		A	B	C	D	E	F
RANGE		10X10 ⁻¹²	OPR	6-10	X	900	900
SOURCE DIST.		2'	OK	5'	X	5"	OK
90° S. DIST.		100	-	-	90°	100	100
BLEC. TOWER		✓	✓	✓			
AUX. TOWER		✓	-	✓			
SCREWS		N & S				✓	
TABLES	✓	✓	✓	✓	✓	✓	✓

Run #24 Same fuel loading as Run #23. Remove Cf^A & put up Cf dummy.
 Up position = 20.965 VBT: +10, +10

Rhottle = $\left. \begin{matrix} +67.1 \\ +66.9 \end{matrix} \right\} \text{ Avg } \underline{+67.0^{\dagger}}$

Using "remote control" source and cycling.
 (See Log D Pg 47 STM)

cycle EXAMPLE: 4.2 sec up time; 1" travel; No slow speed; ~ 50 sec cycle time

$hV = 1.02$
 $A = 10 \times 10^{-9} @ 14 \text{ peaks}$

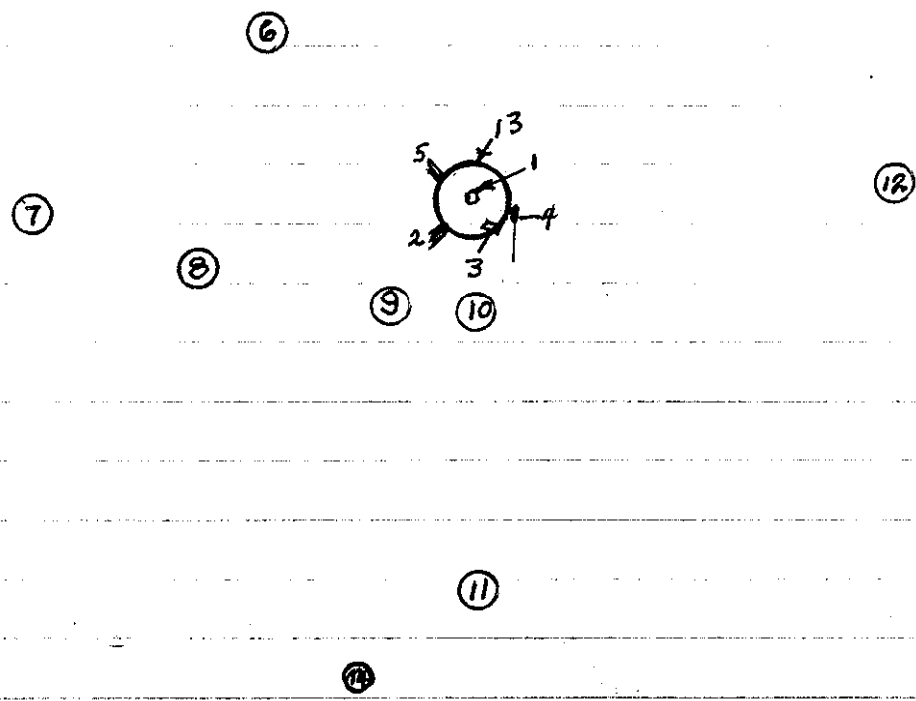
Table down for lunch @ 10:48.
 (cont Pg 76)

Restart cycling @ 13:25

Stopped @ 15:00 (Ref Log Pg D-56.)

CONFIGURATION, EQUIPMENT POSITIONS

BLDG NORTH



No.	ITEM	DISTANCE FROM	
		FUEL (HORIZ)(FT)	FUEL (VERT)(FT)
1	CF SOURCE	TOUCHING TOP CENTER OF FUEL	
2	HE ³	ON THE DIAPHRAGM	
3	AL SHIM	OVER (NEAR) TOP OF FUEL	
4	POBE (REMOTE)	OUTER EDGE OF FUEL	
5	SCIN	OUTER EDGE OF FUEL	
6	LOG N	5'	-1'
7	BF ₃ #1	7	-7
8	RHOETTE	5	-2
9	CH. A	3	-7
10	CH. E	3	-6
11	BF ₃ #2	7	-7
12	BF ₃ #3	7	-7
13	FUEL	0	0
14	CH C	17	-5

NOTE: FUEL IS 9' ABOVE THE FLOOR.

Start cycling again @ 13:25 hrs.
 Stopped @ 15:00 hrs. (Ref Log D-56)

DATE JAN - 1971		SAFETY CHECK					
TIME	0825	AM	BY TAYLOR-MIHALCZO				
CHANNEL	A	B	C	D	E	F	
RANGE	10×10^{-12}	OPR	1×10		900	900	
SOURCE DIST.	2'	OK	5'		5"	OK	
% F. S. TRIP	100	-	-		100	100	
BLDG. ALARM	✓	✓	✓				
AUX CHRS.	✓	-	✓				
SCHEMATIC CODE	N & N				✓		
TABLES	✓	✓	✓		✓	✓	

Run #25 Same loading. Level with table separated.

→ $h_N = .0005$; $C = 1-17 @ 50$; $A = 10 \times 10^{-11} @ 33$

Table = 20.820"

→ $h_N = .005$; $C = 8-8 @ 50$; $A = 10 \times 10^{-10} @ 45$

→ $h_N = .05$; $C = 11-20 @ 40$; $A = 10 \times 10^{-9} @ 55$; $\rho_{\text{hotte}} = 1.5 \times 10^{-8}$

∞ kept by using (fine table control).

Run #26 Measure reactivity

$\rho_{\text{hotte}} = +66.9; +66.7; +67.1; +67.2 = \text{Avg } 67.0^\dagger$

Cycling with Cf^A (Ref Log D-60)

cycle example: 4.3 sec count; 1" travel; cycle time = 6 sec

$h_N = .005$; $A = 10 \times 10^{-10} @ 16 \text{ peak}$

Run #27 Remove 2 [2 1/2" x 2 1/2" x 1/32"] from top.
(as run #20)

13:52

cycling with CFA (Ref D-65)
cycle example: 7.9 sec (count), 1" travel; cycle time = 28 sec.
LW = 1.005 ; A = 10 x 10⁻¹⁰ @ 20

Measure Reactivity
Rho_{eff} = +48.2; 48.8; 47.9; 48.0; Avg +48.2

4

cc

h

DATE		SAFETY CHECK					
TIME	0900	AM	BY TADACE-MIHAGCZO				
CHANNEL	A	B	C	D	E	F	
RANGE	10×10^{-12}	OPR.	L-10	XM	900	900	Rhoel
SOURCE DIST.	2'	OK	5'		5'	OK	
% F. S. TRIP	100	-	-	0	100	100	
BLEG. ALARM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
AUX. GYRS.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
SOURCES USED	N 4 J		MAGNETS				<input checked="" type="checkbox"/>
TABLES	<input checked="" type="checkbox"/>	LIGHTS	<input checked="" type="checkbox"/>	AREA CLEARED		<input checked="" type="checkbox"/>	

Run #28 Same loading; Measure reactivity:
Rhoel = +48.1%

→ Cycling with CFA
Cycle example: same as Run #27.

Ru

Ru

DATE JAN 12 1971 SAFETY CHECK

TIME 1340 BY Taylor & Symon

CHANNEL A B C D E F

NAME 10X10-12 APR L-10 900 900 *Sheet 1*

SCALE 100 - - 100 100

UNIT V V V

TYPE N B D V

TRIAL V - -

Run # 29 Reactivity Measurement - 15" Disc; BARE

$H_T = 2 \frac{15}{16}''$

27,159
27,203
67,813
37,264

2886	83	79	75	71
2885	82	78	74	70
87	52	42	36	28
2848	53	45	38	31
60	51			
3058				
84	49	43	2829	29
0104				

159,439 g.

54,277 g/in

$\rho = -2.50$

Run # 30 Repeat -

$\rho = -2.50$

80

Run #31 HT (0 → 7") = 3"
 (7 → 15") = 2 $\frac{10}{16}$ "

27,934	2886	83	79	75	30
27,203	2885	82	78	74	28
	87	52	42	36	
67,813	2848	53			31
	60	51	45	38	
	3058				
37,264	0104				

160,214 g

$P = -\$1.45$

Run #32 Repeat - $P = -\$1.48$

Run #33 HT = 3"

$P = -56.8 \text{¢}$

30,511	66	55	67	37	30
27,203	87	52	42	36	28
	2848	53			31
67,813	60	51	45	38	
	3058				
37,264	84	49	43	2829	29
	0104				

162,791 g

54597 g/m

Run #34 Repeat $P = -57.2 \text{¢}$

DATE	SAFETY CHECK					
JAN 13 1971						
TIME	0820	AM	BY	Taylor & Lynn		
CHANNEL	A	B	C	D	E	F
RANGE	10X10-12	OPR	L-10	OK	900	900
SOURCE DIST.	2'	OK	5'	OK	5"	OK
% F. S. TRIP	100	OK	OK	0	100	100
DLG. ALARM	✓	✓	✓			
AUX DTRS.	✓	—	✓			
SOURCES USED	N & T			MAGNETS		✓
TABLES	✓	LIGHTS	✓	AREA CLEARED		✓

Rhoetti OK

Run #35 H7 (0 → 7") = 3" (See p. 62).
 (7 → 15") = 3 1/2"

Cf (dummy) with Amp. in place, Scint with pb and He ctr also in place.

Al shim on drive for control. S

Inst Comp.

$P = + 59.7 \text{ sec}$, $14.15 \text{ } \phi$ Log N
 $14.0 \text{ } \phi$ Pitte

Run #36 Removed Cf (dummy) and Amp.

$P = -14.41 \text{ } \phi$

1

Run #37 Removed walk planks, ladders and etc.

No Reactivity Change.

also mat. moved (Ref Pg 75) are: ⑧ = 5'-8'; ⑨ = 5'-8'; ⑩ = 8'-5'

up and Down Counting J.T.M.

		SAFETY CHECK					
DATE	JAN 14 1971						
TIME	0920	AM	BY Taylor & Lynn				PM
CHANNEL		A	B	C	D	E	F
RANGE		10×10^{-12}	OPR	6-10	1	900	900
SOURCE DIST.		2'	OK	5'	10'	5"	OK
% F. S. TRIP		100	-	-	100	100	100
BLDG. ALARM		✓	✓	✓			
AUX GENS.		✓	-	✓			
SOURCES USED		N & P			MAGNETS		✓
TABLES		- LIGHTS		-		AREA CLEARED ✓	

Rhoette ✓

Run # 38 REACTIVITY CHECK WITH CF (DUMMY)
 Rhoette = ∞ ; BF₃ #1 & #3 → ∞

Run # 39 Put CF^c back on. Make multiple runs taking data with HASL. (Ref Pg D-89 JTM)

DATE	JAN 15 1971					
SAFETY CHECK						
TIME	0820	AM	BY Taylor and Lynn			
CHANNEL	A	B	C	D	E	F
RANGE	1000'	100'	10'		100'	10'
SPURGE DIST.	2'	10'	5'		10'	10'
% F. S. TRIP	50			100	100	
BLDG. ALARM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
AUX CTRS.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
SOURCES USED	222 - 10			MAGNETS <input checked="" type="checkbox"/>		
TABLES <input checked="" type="checkbox"/>	LIGHTS <input checked="" type="checkbox"/>		AREA CLEARED <input checked="" type="checkbox"/>			

Chart OK

Run #40 Reactivity check as per Run 38

∞

- #41 as per Run 39. using $CF^C =$
- #42 Taking LASL data using $CF^A =$

DATE	JAN 18 1971		SAFETY CHECK			
TIME	0830	AM PM	BY Taylor - Lynn			
CHANNEL	A	B	C	D	E	F
RANGE	10x10 ⁻¹²	OPR	5-10	YM	900	900
SOURCE DIST.	18"	OK	5'	OK	6"	OK
% F. S. TRIP	100	-	-	OK	100	100
BLDG. ALARM	✓	✓	✓			
AUX GEAR	✓	-	✓			
SOURCES USED	N & O		CHECKETS		✓	
TABLES	✓	LIGHTS		✓	AREA CLEARED	

Photo OK

Run #43 Reactivity Check cf (Dummy). ∞

$L_N = .05$

1 min at	#1	#3
$L_N = .0007$	58,131	46,789
	56,506	45,766
	57,673	46,574
	57,310	47,000

#44 cf A on ; LASL Data Taking.

Discriminator
Out - No Data Taken

JAN 21 1971

DATE	JAN 21 1971		SAFETY CHECK	
TIME	0825	AD	TAYLOR - LYNN	
CONTROL	A	E	F	F
WHEELS	10X10-12	OPR 2-10	900	900
SUBSTRATE	18"	OK	6"	OK
WHEELS	100	-	100	100
ALX COND.	✓	✓	Rho OK	
SOURCES USED	N B 1		BATTERIES ✓	
TABLES	✓	LIGHTS ✓	AREA CLEARED ✓	

Run #45 Repeat Run #43, ρ LN = .05

1 min ct	#1	#3
	43476	33581
LN = .00075	43917	34480
	45518	35388
	45330	35422

Run #46 Cf A on ; Last Data Taking.

EXAMPLE: 10 min (ct time); full travel; cycle time = 13 min
 LN Peak = .0002 ; "A" peak = 10x10-11 @ 27

		SAFETY CHECK					
DATE	JAN 22 1971						
TIME	0820	BY	TAYLOR-LYN				
CHANNEL		A	B	C	D	E	F
RANGE		10×10^{-12}	OPR	L-10	909	900	
SCIENT. EFF.		2'	OK	5'	OK	6"	OK
% EFF. CORR.		100	-	-	0	100	100
DEF. CORR.		-	-	-	-	Checked	OK
ALPHA CORR.		✓	-	✓	-	-	-
SOURCE		N/A	-	-	-	-	-
TABLE		✓	-	-	-	-	✓

Run #47 REACTIVITY CHECK. Cf (Dummy).

∞ Log N = .06

	1 Min Cts	#1	#2
#48		28,212	30,072
		28,770	30,367
		28,509	30,371

Run #48 Cf^A on : LASL Data taking
See Run 46

Run #49 Cf^C on : LASL Data taking.

DATE	JAN 25 1971						SAFETY CHECK					
TIME	0820		AM		BY TAYLOR - LYNN							
QUINCEL	A	B	C	D	E	F						
NAME	10X10 ⁻¹² ORR		L-10		900 900							
SCOUTE DIST.	18" OK		5'		6" OK							
% W. S. T. S.	100		-		100 100							
DETECTORS	✓		✓		Rhett OK							
ALPHA	✓		-		-							
SCALE	N & H				✓							
TAGS	✓		✓		✓							

Run #50 Cf amplifier moved from center top to lateral surface.

He³ + Scient same -

Al Shim control in place for leveling.



$$\rho = -14.14 \text{ } \#$$

Run #51 Move Al Shim for more reactivity.

40 Sec cts	#1	#3
	42,491	43,938
	44,082	45,553
	43,742	45,302

Run #52 CFA on; Data Collection

#53 CFC on; Data Collection

DATE	SAFETY CHECK					
JAN 26 1971						
TIME	0820	AM	BY TAYLOR & LYNN			
CHANNEL	A	B	C	D	E	F
RANGE	10 ¹¹ 10 ⁻¹²	OPR	6-10	11	900	900
SOURCE DIST.	18" OK	6'		6"	OK	
% T. S. W.P.	100	-	-	100	100	
BLEED VALVE	✓	✓	✓	✓	✓	✓
AIR PRESS.	✓	✓	✓	✓	✓	✓
SCRAMMED	N & S				✓	
TABLES	✓	✓	✓	✓	✓	✓

Run #54 Reactivity Check. Cf (Dummy)

	#1	#3	∞	Ln = .05
40 Sec cts	27,353	26,950		
40 Sec cts	27,269	26,186		LogN = .0006
	27,482	26,558		

Run #55 Cycling using Cf^c (Ref Log D Pg 164)
 Cycle example: ct time = 53.6 sec, 1" travel;
 cycle time = 1.23 min; A peak = 10×10^{-12} @ ≈ 80

Had a plant wide power failure causing a
 SCRAM of the CTR. Routine re-startup.
 Time of (SCRAM & Power Out) = 14:34 Power
 back on @ 14:48

DATE		SAFETY CHECK					
TIME	0830	AM	BY Taylor & Lynn				
CHANNEL	A	B	C	D	E	F	
NAME	10X10 ⁻⁴	OPR	6-10	X	900	900	
SHIELD DIST.	20"	OK	6'		6"	OK	
YIELD, CT	100	-	-		100	100	
DETECTORS	✓	✓	✓		Rhettokt		
ADJUST	✓	-	✓				
SCALING	N d h					✓	
TAGS	✓	-				✓	

05 Run #56 Reactivity check, Cf (dummy). \mathcal{L} Log N = .05

6 40 Sec cts RB #1 #3
~~17,749~~ ~~18,077~~ Log N = .0006
 17,789 18,143
 18,224 18,344

64) Run #57 Cf^c cycling -

0, Run #58 Cf^A cycling -

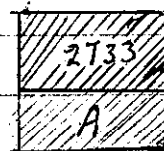
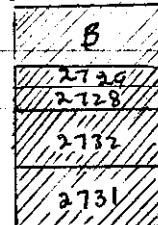
DATE JAN 20 1971		SAFETY CHECK					
TIME	10:55	AM	BY	Taylor & Lynn			
CHANNEL	A	B	C	D	E	F	
RANGE	10x10 ⁻¹²	OK	6-10	OK	900	900	
SCHEMATIC	18	OK	6'	OK	6"	OK	
% E. COUNT	100	-	-	OK	100	100	
BLK. ALARM	-	-	-	-	-	-	
AUX. ALARM	-	-	-	-	-	-	
SCHEMATIC	N & D	-	-	-	-	-	
TABLES	-	-	-	-	-	-	

CA 7" Sandwich Run 1
 1" C Top + Bottom Time 11:08 AM
 Critical assembly for Rossi & measurement

Run #1 7" dia U disc. HT = 4 1/4" Fuel
 1" Carbon Top and Bottom.

1 1/2" = RAM
 2 3/4" = Depth $k < 1$

He³ Counter in place



Run #2 Fuel = 4 5/16"

Some Plugs out $k < 1$.

Run #3 Fuel = 4 5/16"

Added center plug to #2733 + 1 1/2" Radial to 2732.
 $k < 1$

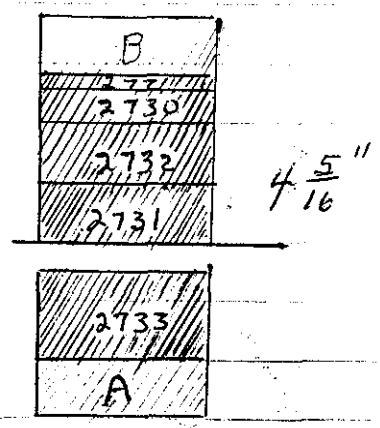
Run #4 Added All plugs. $k > 1$, + 12 ϕ
11:50 AM Al Shim on drive = out

Run #5 Removed plugs from # 2733.
Al Shim = ~ 6 ϕ $k < 1$, ~~+ 10 ϕ~~
- 10 ϕ

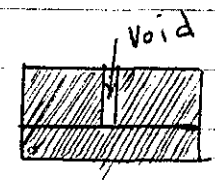
Run #6 Added center plug to # 2733.

$k > 1$, + 7 ϕ

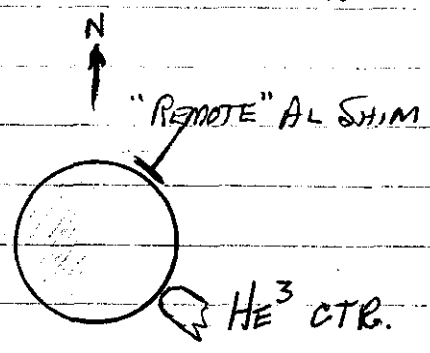
\therefore Center Plug = 17 ϕ
2733



Run #7 Only void is 1" in center
of # 2733.
on Al Shim



He³



(Ref Log D-181)

DATE	JAN 29 1971		SAFETY CHECK	
TIME	Mihalcz & Thomas			
QUANTITY			E	F
15x15-12	✓	Lb	0	900 900
12"		4"	4	2" OK
150			T	100 100
✓	✓	✓		
✓	✓	✓		
✓	✓	✓		
✓	✓	✓		
✓	✓	✓		
✓	✓	✓		

Run #8 Fuel = $7 \frac{5}{16}$ " , less 1" void as per Run #7.
 1" C Top and Bottom

Data Collection Rose & log N = .0005

14:34 - Lost Magnet Current.

Run #9 Start up again. Reached 15" lost current again.

Run

Run

Run

Run

Run

Run

DATE	SAFETY CHECK					
FEB 1 1971						
TIME 08 ²⁵	AM	BY Taylor & Luginer				
CONTROL	A	B	G	D	E	F
PLUGS	10x10 ⁻¹²	OPR	L-10	900	900	
SPACER DIST.	20" OK	6'	only	6" OK		
SP. TO S. WALL	100	-	-	100	100	
LEAK CHECK	✓	✓	✓			
AVG. STAG.	✓	-	✓	Rhoette OK		
CONTROLS USED	NDP				✓	
TABLES	✓	✓	✓	✓	✓	✓

7" dia Sandwich, 2" Carbon

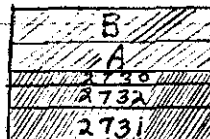
Run #10

Fuel = $4 \frac{1}{16}$ "

Ram = $1 \frac{1}{2}$ ", 1" of center plug out of #2733.

Dia ph = $2 \frac{9}{16}$ ", He³ center in place.

$k < 1$



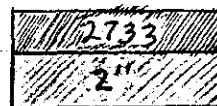
Run #11

Fuel = $4 \frac{1}{16}$ " Complete.

Made alignment adjustment.

$k > 1$, Log $\alpha = +15^4$

Little = 13.68^4 (5×10^{-10} Low Power)



Run #12 Repeat Run #10.

$k \infty$, on al shim.

Run #13 Poor Control
Removed $\frac{1}{8}$ " length plug from #2733 center.

Same control problem. Determined Table NOT closed.

Run #14 Made flange adjustment.

$k > 1$, + 0.5 ϕ

Run #15 Center Plug #2733 out

$k \infty$, on al shim.

DATE	FEB 2 1971	SAFETY CHECK					
TIME	0930	BY Taylor & Lynn					
CANONICAL		A	B	C	D	E	F
RAM	10x10 ⁻¹²	OPR	6-10	✓	900	900	
CANONICAL	16"	OK	6'	✓	6"	OK	
SERIAL	100	-	-	✓	100	100	
EXP.	-	✓	✓	✓	Phetteck	✓	
ISSUE	M227 & Co						✓
TAGS	✓						✓

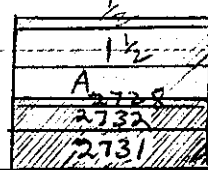
7" Dia Sandwich, 3" Carbon

Run #16 Fuel = 3 7/8"

Ram = 1 1/2" less plugs

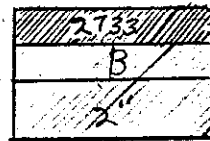
Depth = 2 3/8"

k < 1



Run #17 Add plugs

k < 1



Run #18 Fuel = 3 4/16", less all plugs.

→ Removed # 2732, Added # 2730, 2770 & 2771
k < 1

Run #19 Added All Plugs.

k < 1

Run #20 Added 2 pcs 2 1/2" x 2 1/2" x 1/32" to lateral surface, resting of diaphragm.

k ∞, on al skin



DATE	FEB 9 1971	SAVED BY	GRZOK
TIME	10:40	OPERATOR	Taylor & Lynn
TEST			
NO. OF			
TESTS			
TEST	10x10 ⁻⁴ opt k=10	900	900
TEST	20" ok 5'	6" ok	
TEST	100 - 100	100+	100+
TEST	✓ ✓ ✓		
TEST	✓ - ✓		
TEST	N # 8		✓
TEST	✓	✓	✓

11" Dia. Sandwich, 1" Carbon

Run #21 Fuel = 2 1/16"

Ram = 1", less plug of #2732

Depth = 1 1/16"

2767	2737	2730
2779	2770	2771
2778	2774	2780
2742	2736	2728
2803		
# 2776, 2762 + 2731		

k > 1, + 14.5%

Run #22 Fuel = 2 1/16"

Ram Fuel Now - #2745, 2738, 2732
with all plugs out.

Al Shim = 4.5% k < 1

Run #23 Added 1" radial plug to #2732, at center.

Al Shim in k < 1, ~ 5%

Run #24 Added another 1" to #2732.

Then 2nd pc = ~ 9% k > 1, + 0.5%

Run #25 Removed 3/8" of plug - #2732.

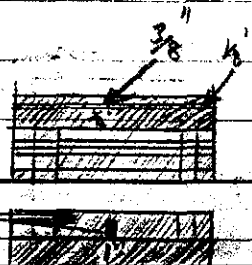
Radial Void = 3 5/8" from edge

Vert. void = 7/8" from Bottom

k ∞, on al Shim

Ref D-194

Void



TYPICAL FLANGE SETTING SITUATION:

Ram down separation: longest = 19.642";
shortest = 19.630"; Flange to stop button = 19.678"
Flange to bottom of frame (set) = 19.700";
Down Selyn = 00.000"; Slow relay @ 18.290";
Up Selyn = 19.678". Flange (VDT4) ^{weight} should be
separated about 10 mils more than flange
(VDT3) ^{weight} in order for them to read out the same.

Ru

DATE	FEB 4 1971		SAFETY CHECK			
TIME	08 ²⁰	AM	BY	Taylor & Co.		
CHANNEL	A	B	C	D	E	F
RANGE	18 x 10 ⁻¹²	OPR	L-10	OK	900	900
SOURCE DIST.	15"	OPR	30"	OK	6"	OK
% F. S. TRIP	100				100	100
BLDG. ALARM	✓	✓	✓	Chattel OK		
AUX CTRS.	✓	—	—	Chattel OK		
SOURCES USED	A	B		MAGNETS	✓	
TABLES	✓	LIGHTS	—	AREA CLEARED	✓	

Run #26 Repeat Run #25.

Crit @ 08:40 AM

∞ at Shin

Down

FEB 5 1971

DATE	FEB 5 1971		SAFETY CHECK			
TIME	AM	BY				
CHANNEL	A	D	B	D	E	F
RANGE	10×10^{-12}	opt	L-10		900	900
SOURCE DIST.	18"	OK	30"	}	6"	OK
% F. S. TYP	100		100		100+	-
BLOS. ALARM	✓	✓	✓			
AUX CIRS.	✓	-	✓			
SOURCES USED	Co 60		CIRCUITS		✓	
TABLES	✓	LIGHTS	✓	AREA CLEANED		✓

CTU - Table speed checks.

Condition	Press ^(FEED)	wt lbs	Speed
Fast	70	75	15.20 in./min
"	"	"	15.38 "
Slow	"	"	0.28 "
"	"	"	0.29 "
Normal	"	"	"
Down	"	"	37.6 "
Fast	"	0	17.5 "
Down	"	0	35.1 "

Run #27 11" dia. Sandwich, 2" Carbon

HT = $2 \frac{3}{8}$ " 0 → 7 rings

$2 \frac{11}{32}$ " 7" → 11" "

all plugs out.

k < 1, -10⁴

Run # 28

~~11" to Report~~

Added center plug to # 2732.

k ∞, on skin.

Run # 29

Restack :

$$HT - (0 \rightarrow 7") = 2 \frac{5}{16}" + 2 \text{ pos } 2\frac{1}{2} \times 2\frac{1}{2} \times \frac{1}{2} \text{ at center}$$

$$\bullet (7" \rightarrow 11") = 2 \frac{3}{8}"$$

All plugs in.

k < 1, -25 #

1/2"		
1 1/2"		
46	73	70
79	75	
42	36	30
78	74	71
2803		

45	38	32
[Scribbled out]		
[Scribbled out]		

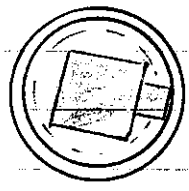
Run # 32
P. 100

→

DATE	FEB 1971	SAFETY CHECK
TIME	08:20	Lynn & Taylor
DEPTH	10x10 ⁻²	opr E-10
CL	15" OK	24"
SL	100	100
EL	✓	✓
AL	✓	✓
SL	✓	✓
TABLE	✓	✓

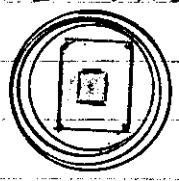
Run# 30 7H+ (0 → 9) = 2 $\frac{5}{16}$ " + 2pc 5" x 5" x $\frac{1}{32}$ "
 + 2pc 2 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " x $\frac{1}{32}$ "
 (9 → 11) = 2 $\frac{3}{8}$ "

k < 1, Est. -10¢



Run# 31 7H+ (0 → 7) = 2 $\frac{5}{16}$ " + 1pc 5" x 5" x $\frac{1}{32}$ " + 1pc 2 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " x $\frac{1}{32}$ "
 (9 → 11) = 2 $\frac{3}{8}$ "

k < 1, Est. -12¢



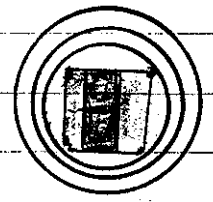
Run# 32 added 1 pc 2 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " x $\frac{1}{32}$ " to top

k ∞, on al skin

Crit 09:25-

SEE p. 99

Down 16:05



DATE FEB 9 1971 SA. CHECK
 TIME 0840 AM BY Taylor & Lipman
 CHANNEL A B C D E F
 RANGE 10X10-12 CPR A-10 900 900
 SOURCE DIST. 18" OK 2' 6" OK
 % F. S. THIP 100 - 100 100 100
 ELDG. ALARM ✓ ✓ ✓ Chertok
 AUX CTAS. ✓ - ✓
 SOURCES USED N/A ✓ MAGNETS ✓
 TABLES ✓ LIGHTS - AREA CLEARED -

Run #33 Same as Run #29 Pg 46 except all plugs are out except (7/8" is in vertical center of #32).
 $k > 1 \Rightarrow z + 3\epsilon$ (shim out)

Run #34 Removed 1/2" of Center plug of #32 93
 on al Shim.

Crit 09:20 AM
 Start 9:33 AM

#28 plugs out

12 - B		
15 - A		
27	37	38
47	36	28
2808		

#32 plug out except 3/8" at center

45	38	32
2		
1		

DATE		SAFETY CHECK					
TIME	0830	AM	BY	Taylor & Lynn			
CHANNEL	A	B	C	D	E	F	
RANGE	10V10 ⁻¹²	1PR	2-10	4	992	900	
SOURCE DIST.	15" OK	2'	4"	4"	OK		
% F. S. TWP	100	-	100	100	100	100	
BLES. / ALARM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Chetko OK			
AUX CHS.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
SOURCES USED	4 & h	ELECTETS		<input checked="" type="checkbox"/>			
TABLES	<input checked="" type="checkbox"/>	LIGHTS	<input checked="" type="checkbox"/>	AREA CLEARED		<input checked="" type="checkbox"/>	

* Neutron source not used as per ECR.

Run #35

@ DC cont of ASL data taking.

crit: 08:50 AM

Data Start @ 09:00 AM (Ref Report D-202)

Down 16:12 PM

Run.

15" Diameter, 1" Carbon ^{Sauterch}

DATE	FEB 11 1971		CHECK	
TIME	09:55	Taylor & Lynn		
CHANNEL	A	F		
SCALE	10X10 ⁻¹⁰	OK	240	900 900
SCALE DIST.	20"	OK	6'	6" OK
W. T. S. TRIP	100	—	100	100T —
SCALE PLANNED	✓	✓	✓	
SCALE USED	227 + C ₃ 60	✓		✓
TARGET	✓	LIGHTS	✓	✓

Run # 36 Fuel Ht (60 → 7) = 2 $\frac{1}{4}$ " ; Diaph (7 → 15) = 1 $\frac{7}{8}$ "
 (7 → 15) = 2 $\frac{5}{16}$ " ; Ram = $\frac{3}{8}$ "
 Critical @ 10:20 A Up Position = 20.275 (Sec # 1)
 Data Start @ 10:35 A

∞, oval skin $\frac{9}{16}$

	1" - B					1/16" void
	66	55	67	37	69	
	85	50	56 79	75	32	
$\frac{1}{4}$	2895	82	78	74	68	
	60	51	43	2829	29	
$\frac{1}{4}$	3058					
$\frac{3}{8}$	84	49	42	36	28	
	1" - A					

DATE FEB 12 1971		SAFETY CHECK					
TIME	AN BY Taylor & Lynn						
CHANNEL	A	B	C	D	E	F	
RANGE	10x10 ⁻¹²	CPR	H-10		900	900	
SOURCE DIST.	2' OK		6'		6"	OK	
% F. S. YAP	100	-	-		100+	100+	
BLDG. STAGE	✓	✓	✓				
AUX. COND.	✓	-	-		Rhett's OK		
SOURCES USED	M227	-	de			✓	
TABLES	✓	LIGHTS	✓	AREA CLEARED		✓	

Run #37 Cont 15" wt 1" c (LAL data) Ref (D-205)
 Critical @ 0845 $L_m = .00014$
 Down @ 1020 hrs.

FEB 16 1971

15" Diameter Sandwich, 2" Carbon 105

FEB 16 1971		CHECK	
08:50		Lynn + Taylor	
10x10 ⁻²	op L-10	900	900
15"	OK 6'	6"	OK
100	- 100	100	-
✓	✓		
✓	-		
N	Y		✓
✓	✓		✓

Run #38 HT = $1 \frac{15}{16}$ " , Diaph = $1 \frac{9}{16}$ "
 Ram = $\frac{3}{8}$ "

$k > 1$, +50¢

Run #39 HT (0 → 7") = $1 \frac{7}{8}$ " + 5" x 5" x $\frac{1}{32}$ " pc
 (7" → 15") = $1 \frac{5}{16}$ "

$k < 1$, ?

Run #40 HT (0 → 7) = $1 \frac{15}{16}$ "
 (7 → 11) = $1 \frac{29}{32}$ "
 (11 → 15) = $1 \frac{15}{16}$ "

$k > 1$, +40¢

Run #41 HT (0 → 7) = $1 \frac{15}{16}$ "
 (7 → 9) = $1 \frac{29}{32}$ "
 (9 → 11) = $1 \frac{7}{8}$ "
 (11 → 15) = $1 \frac{29}{32}$ "

$k < 1$, -8¢

Run #42 $7 \frac{1}{2}$ (0 → 7) = $1 \frac{15}{16}$ " (11 → 13) = $1 \frac{29}{32}$ "
 (7 → 9) = $1 \frac{29}{32}$ " (13 → 15) = $1 \frac{15}{16}$ "
 (9 → 11) = $1 \frac{7}{8}$ "

$k \infty$, Al shim. (No Data Taken)

Down @ 13:40

Run #43 Repeat Run #42.
 critical 14:15 P

Start Data @ 14:20

Log N = 1.0005

Down @ 16:22

$\frac{1}{32}$ " Voids
 $\frac{1}{16}$ " Void

1" - C				
1" - B				
66	52	78	32	30
2885	22			80
60	51	45	38	70
3058				
84	49	42	36	28
1" - A				
1" - D				

2885 - (6 → 11)

DATE	FEB 17 1971					
TIME 08:20			AM	BY Taylor & Lynn		
CHANNEL	A	B	C	D	E	F
RANGE	10x10 ⁻¹²	APR	L-70	✓	900	900
SOURCE DIST.	15"	✓	6'	✓	6"	OK
% F. S. TRIP	100	-	100	✓	100	100
BLUR. ALARM	✓	✓	✓	Rholett OK		
AUX OPS.	✓	✓	✓			
SOURCES USED	N & D			BRACKETS	✓	
TABLES	✓	LIGHTS	✓	AREA CLEANED	✓	

Run #44 Cont Run #43 Log N = .00014
 Critical (∞) @ 0835 (Ref Log D Pg 207)

Start Data at 08:45

DATE		FEB 18 1971						SAFETY CHECK	
TIME	0850	AM	BY	Taylor & Lynn					
CHANNEL		A	B	C	D	E	F		
RANGE		10110 ⁻¹²	APR	L-10	X	970	900		
SOURCE DIST.									
% F. S. TRIP		100	-	100	X	100	100		
BLED. ALARM		✓	✓	✓	✓	✓	✓		
AUX. GAGE.		✓	✓	✓	✓	✓	✓	Chertoff	
SCREWS USED		N & A							
TABLES		-	LIGHTS	✓	AREA	CLEANED	✓		

Ref. Sec D-210
for ASK data

Run #45 Fuel Ht (0-7) = 1¹¹/₁₆" 3/8" is on Ram
(7-15) = 1²³/₃₂"

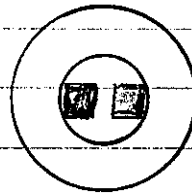
Up Selam = 18.295 $k < 1 = -17\%$

Run #46 Add 2 (2¹/₂" x 2¹/₂" x 1/32") pieces to the center fuel.

$k > 1 = +6\%$

Run #47 Add Shim (2⁷/₈" x 2⁷/₈" x 1/4") = 3%
Spread and Removed 1/4" plug from Center.

$k > 1 = +2\%$



Run #48 Removed 3/8" plug from Ram Center.

crit @ 10:05 A

Data Start 10:18 A

Down 16:15 P

$(0-7) = 1 \frac{1}{10} + 2(2 \frac{1}{2} \times 2 \frac{1}{2} \times 2 \frac{1}{2})$
 $(7-15) = 1 \frac{2 \frac{1}{2}}{3 \frac{1}{2}}$

210
data

1/2"

1 1/2"

1" - B

3/2" Void expansion
for 2 Pica

3214	3215	3216	3217	71
28	5	28	74	20
	55	67	37	30
30.58				

Piling
Voids

84	49	55	36	28
----	----	----	----	----

1" C

1" - A

1" - D

rel.

7 CYLINDER (BARE)

DATE	FEB 19 1971		SAFETY CHECK			
TIME	10:30	AM	BY Taylor & Lynn			
CHANNEL	A	B	C	D	E	F
RANGE	10X10 ⁻¹²	CPR	6-10	10	900Y	900Y
SOURCE DIST.	20"	OK	6	16"	OK	
% F. S. TRIP	100	-	100	100	100	100
BLDG. ALARM	✓	✓	✓			
AUX CTRS.	✓	-	-	Rhoette OK		
SOURCES USED	N ²⁴	A		MAGNETS		✓
TABLES	✓	LIGHTS	✓	AREA CLEARED		✓

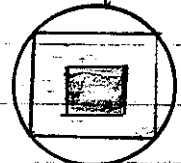
Reference
 700Y E Lg = 14

Run #49 $H_4 = 4 \frac{15}{16} + 5" \times 5" \times \frac{1}{32} + 2 \frac{1}{2} \times 2 \frac{1}{2} \times \frac{1}{32}$

1" on Ram ; H₃ Counter at center of Stack

up #1 = 20.625

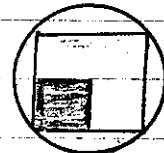
k > 1, + 5¢



Top View

Run #50 Moved $2 \frac{1}{2} \times 2 \frac{1}{2} \times \frac{1}{32}$

k > 1, + 0.5¢



Top View

Run #51 Again
 k > 1, + 0.5¢



Run #52 Again
 crit @ 11:40^A

