BOOK 116R

Notes:

on front:
"Bk #2 Machined Slabs 60-61-62"
"U-Slab Bk 2"
"Book #2, Machined Billets"

on spine:
"Bk #2 U-slabs 60-61-62"

Blank pages: page opposite page 1, 1, 135-139, 152, 156, 157, 161, 183, 184, 277-300 inside back cover

3 onion-skin pages clipped to inside front cover
1 piece of paper between pages 144 and 145
9 graph sheets between pages 154 and 155
pages 187, 197, 205, 207, 211, 216, 219, 222, 229, and 233 each have one small sheet taped to it
page 192 has 1 small sheet taped and 1 8.5x11 graph sheet taped
1 small graph and 1 very large graph is between pages 192 and 193
1 long graph is between 198 and 199

Scanned by:
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May 8, 2001

Multiplication Experiments with Bare and Reflected 93.4% U^{235} Enriched Uranium Metal Slabs

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A series of experiments to determine the critical thickness of slabs of uranium metal have been completed. The uranium metal was enriched to 93.4% in U^{235} and had a density of 18.7 g/cc. The effect of Plexiglas as a reflector was determined and a limited number of systems with beryllium and graphite reflectors were studied.

The uranium metal was assembled on the horizontal "split table facility" of the ORNL Critical Experiments Laboratory. A smaller spring loaded aluminum table was mounted on the movable half of the assembly mechanism. This table was air cocked and held in position by a magnet. A total of 342 kg of machined metal pieces was available for these experiments.

The neutron source used in the experiments was a Po-Be source with a strength of 10^7 neutrons sec. Three BF_3 gas filled counters placed in position about the arrays were used to measure the multiplication.

The critical mass of uranium as a function of slab geometry is given in Fig. 1 and Table I for the unreflected and Plexiglas reflected periments. These data indicate that the extrapolated critical thickness infinite slab of uranium is 2.4 in. and 0.6 in. for the unreflected n. Plexiglas reflected slab. respectively.

Table 1. Extrapolated Critical Thickness and Critical Mass of Slabs of 93.4% U^{235} Enriched Uranium Metal Reflected with Plexiglas

Slab Dimensions $(in.)^2$	Plexiglas Reflector Thickness (in.)	Extrapolated Critical Thickness (in.)	Extrapolated Critical Mass	Percent of Extrapolated Critical Thickness Assembled
5 x 5	0	9.13	70.2	97
	1	4.96	38.0	96
	2	3.7	28.4	98
	6	3.05	23.4	98
8 x 10	0	3.74	91.8	97
	1	2.64	64.8	95
	2	1.89	46.4	93
	3	1.63	40.0	92
	4	1.55	38.0	97
	6	1.53	37.5	98
10 x 10	0	3.32	101.8	98
	1	2.32	70.2	97
	2	1.72	52.8	93
	6	1.3	39.9	96
15 x 15	0	2.87	198.0	96
	1	1.92	132.5	97
	2	1.35	93.2	94
	6	0.95	65.6	92
20 x 10	0	2.72	334.0	92
20 x 20	1	1.79	220.0	98
	3		112.8	95
	6	0.80	98.2	94
	1	1.77	326.0	85
	6	0.71	136.1	94
	0	2.4[a]	-	-
	6	0.6[a]	-	-

+a.

A slab with area 8 x 10 $in.^2$ was reflected with graphite. The results of these experiments are shown in Table 2. The extrapolated critical thickness and critical mass of a 5 x 5 $in.^2$ slab reflected with 12 in. of beryllium is 1.4 in. and 10.78 kg of uranium.

Table 2. Extrapolated Critical Thickness and Critical Mass of Slabs of 93.4% U^{235} Enriched Uranium Reflected with Graphite

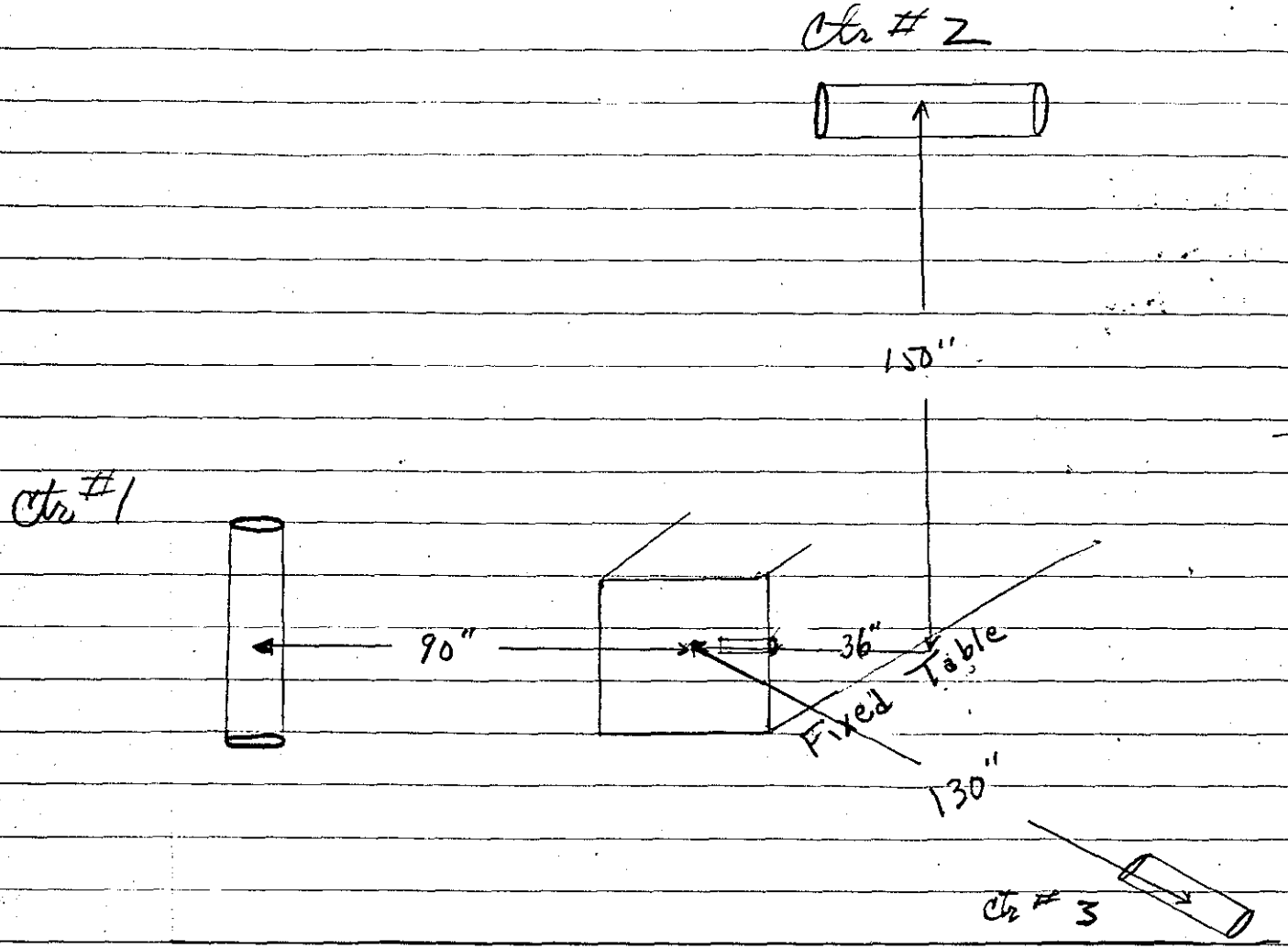
Slab Dimension (in.)	Graphite Reflector Thickness (in.)	Extrapolated Critical Thickness (in.)	Extrapolated Critical Mass (kg of U)	Percent of Extrapolated Critical Thickness Assembled
8 x 10	1.43	2.52	61.8	94
8 x 10	2.87	2.11	51.8	95
8 x 10	5.75	1.65	40.5	91
8 x 10	12.0	1.32	32.4	95

E-8

CTU Speed and Load Check p. 164

5" X 5" Bare p. 140, 175

Page 5	- 8" X10" U-Metal with Li H + Li D - also Page 95
23	8" X10" X 1" - Latticed with 1" Plexiglas
28	1" Thick U Metal with 1" Plexiglas Reflector
38	U-Metal - 3" Reflector
43	5" X5" U Metal - Bare
46	" - Reflector 1"
49	" - " 6"
52	" - " 2"
56	10" X 10" Metal - Bare
59	15" X 15" " - Bare
61	20" X 20" " - Bare
63	10" X 10" " - 1" Refl.
65	" " - 2" "
66	" " - 6" "
68	15" X 15" " - 1" "
71	" " - 2" "
73	" " - 6" "
75	20" X 20" " - 1" "
78	" " - 3" "
80	" " - 6" "
82	25" X 25" " - 6" "
85	8" X10" " - Graphite Refl.
131	5" X 5" " - Be Refl.
185	8" X 10" " - Bare


Ctr #2
150"
Ctr #1
90"
36"
Table
Fixed
130"
Ctr #3

2-11-60

Miholczo
Lynn
McCarty

Exp I

INSTRUMENT CHECK

Time 12:25 ~~AM~~ PM Source PN-467

		Channel A	B	C	D	E
Range	γ F	10/1000	0pr	10^{-11}	10/1000	1050 V
Source Dist.	0K	13"	0"	48"	2"	0"
% F.S. Trip		85	OK	100	80	100 T

Counters 1, 2 & 3

CA _____ Expr. I Run 1

Sheet _____ Date 2-11-1960 Time 22:40 ~~AM~~ PM

Purpose Multiplication Measurements with Li D and Li H between U Slabs.

On Moveable Table – 1½" X 8" X 10" Fuel

" Stationary " – 1¾" X 8" X 10" Fuel with Source

Fuel on stationary Table placed back so that when tables are together the fuel slabs will be separated by 6½".

Table Separated – Source in place

	Counter #1 (25t)	#2	#3
3 min	32^{+114}	54^{+188}	24^{+240}
	32^{+207}	54^{+224}	25^{+95}
	32^{+131}	54^{+251}	24^{+157}
	25,028	42,135	19,180
CPM	2,781	4,681	2,131

Run 1 Tables Closed – Fuel Separated 6½"

3 min	41 +83	67 +243	31 +168	
	41 +176	68 +99	32 +31	
	42 +105	68 +213	31 +139	
	32,108	49,963	~~32,082~~ 29,402	
CPM	3,567	5,551	~~3,560~~ 3,267	11,829 ~~12,683~~ 8454
1/CPM	2803	1801	~~2808~~ 3689	~~7886~~

Run 2 Moveable Table – 2" Fuel
Stationary " – 2" Fuel } 6½" Separation when closed.

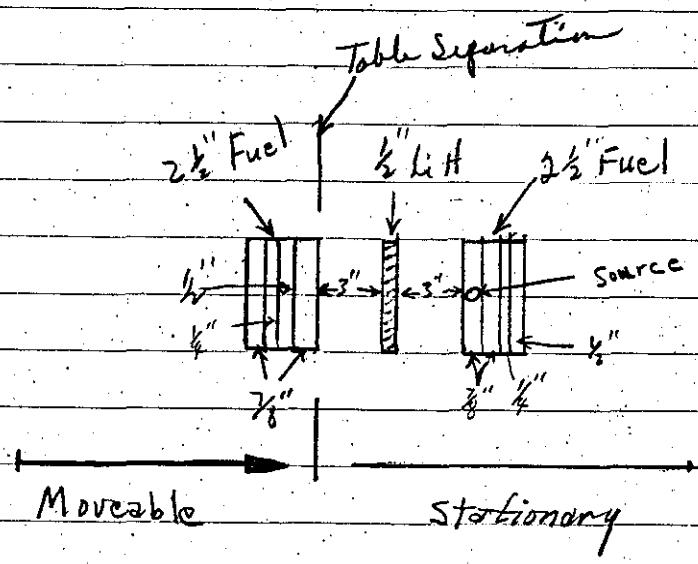
3 min	55 +52	90 +4	40 +184	
	54 +202	89 +242	41 +92	
	54 +171	89 +159	40 +93	
	42,153	69,013	31,345	1
CPM	4,684	7,668	3,483	15,837
1/CPM	2135	1304	2871	6315

Run 3 Moveable Table – 2½" Fuel
Stationary " – 2½" Fuel } 6½" Separation when closed.

3 min	105 +95	167 +210	75 +49	
	104 +14	167 +214	74 +237	
	105 +171	168 +167	75 +57	
	80,664	~~129,103~~	53,687	
	8,963	14,345	6,410	29,718
	1116	6971	1560	3365

Run 4 Placed ½" x 8" x 10" - Li H, 3" from fuel on fixed table - Half way between fuel slabs when tables are closed.

3 min	$89^{+1.6}$	$144^{+.76}$	$75^{+.26}$	
	$89^{+.20}$	$146^{+.33}$	$75^{+.86}$	
	$90^{+.15}$	$145^{+.200}$	$74^{+.42}$	
	68,889	111,669	57,498	ε
CPM	7,654	12,408	6,389	26,451
$\frac{1}{CPM}$	1307	8059	1565	3781



8

2-12-60

INSTRUMENT CHECK

Time 8:20 AM PM Source PK. 467

	Channel A	B	C	D	E
Range	F	1/100	0μ	10^{-10}	10/1000	1038 V.
Source Dist.		10"	0"	48"	8"	0"
% F.S. Trip		80	OK	100	80	100

Counters 1, 2 + 3

Run 5 Repeat of Run 4

3 min	93^{+209}	152^{+239}	74^{+191}
	94^{+44}	153^{+198}	73^{+32}
	93^{+231}	151^{+152}	74^{+87}

Run 6 Repeat of Run 4 + 5 after screwing billet on fixed table more firmly, so that when putting source in and out they will not move so easily.

3 min	97^{+52}	183^{+248}	73^{+194}	
	97^{+67}	156^{+90}	73^{+237}	
	96^{+33}	154^{+58}	74^{+84}	
	74,392	119,436	56,835	Σ
CPM	8,266	13,271	6315	27,852
CPM/Gm	1210	7535	1583	3590

½" LiH

Run 7 Repeat of Run 3.

3 min	97^{+126}	161^{+109}	76^{+123}	
	97^{+237}	162^{+29}	76^{+227}	
0	97^{+5}	161^{+88}	77^{+181}	
	74,864	124,130	57,155	
	8,318	13,792	6,573	28,683
	1202	7251	1521	3486

Run 8 1" Li H Midway between H slabs.

3 min	91^{+213}	146^{+60}	72^{+127}	
	93^{+79}	147^{+105}	72^{+107}	
1" Li H	93^{+12}	147^{+44}	73^{+46}	
	71,216	112,849	55,832	
CPM	7,913	12,539	6,204	26,656
CPM	1264	7,975	1612	3752

Run 9 1½" Li H Midway between H Slabs.

3 min	87^{+124}	139^{+21}	70^{+238}	
	86^{+185}	138^{+146}	69^{+52}	
1½" Li H	87^{+86}	138^{+21}	71^{+94}	
	66,955	106,428	57,144	Σ
	7,439	11,825	6016	25,280
	1344	8,457	1662	3956

Run 10 — 2" Li H - Midway between 11 slabs.

3 min	80^{+194}	127^{+160}	67^{+87}	
	88^{+222}	129^{+176}	68^{+15}	
2" Li H	79^{+230}	128^{+69}	66^{+181}	
	61,830	98,707	51,739	E
CPM	6,870	10,967	5,749	23,586
Corr	1456	9118	1739	4240

Run 11 — 2½" Li H - Midway between 11 slabs.

3 min	74^{+174}	119^{+235}	66^{+253}	
	73^{+138}	119^{+137}	67^{+74}	
2½" Li H	74^{+166}	119^{+225}	67^{+58}	
	57,057	91,893	51,582	
CPM	6,339	10,221	5,731	22,291
Corr	1578	9784	1748	4486

Run 12 — 3" Li H - Midway between 11 slabs.

12:35 PM

3 min	70^{+108}	115^{+21}	65^{+246}	
	71^{+144}	114^{+243}	65^{+105}	
	71^{+28}	115^{+68}	66^{+119}	
	70^{+73}	114^{+19}	66^{+135}	
3" Li H	72,642	117,599	67,627	
	6,054	9,800	5,640	21,494
	1652	1020	1773	4652

Run 13 3½" Li H - Midway between 4 slabs.

3 min	77 +118	119 +47	64 +204	
	77 +99	118 +156	64 +225	
3½" Li H	76 +134	119 +49	65 +0	
	76 +245	120 +83	65 +110	
	78,932	122,191	66,387	Σ
	6,577	10,183	5,549	22,309
	1520	9820	1802	4482

Run 14 4" Li H - Midway between 4 slabs

	74 +3	116 +160	65 +75	
3 min	75 +141	116 +53	65 +239	
	74 +130	114 +199	66 +115	
	74 +204	115 +85	65 +124	
1	4" Li H	76,510	118,518	67,369	
16		6,376	9877	5,614	21,867
		1568	1012	1781	4573

Run 15 4½" Li H - Midway between 4 slabs.

3 min	80 +250	121 +152	64 +164	
	81 +249	122 +203	65 +130	
	81 +122	121 +150	64 +220	
4½" Li H	62,573	93,689	49,922	
14	6953	10,410	5,547	22,910
52	1438	9606	1803	4365

12

2-15-60

INSTRUMENT

Time 8 20 AM PM

R K

	A	D		B	E
Range	10/1000	1/100	1	cpm	10 5
Source Dist.	14	4"	4'		0
% F.S. Tap	60	50	100	DC	100

Exp J.

C.A. _____ Expr. J Run 1

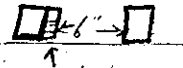
Sheet _____ Date 2-15-60 Time 8:45 AM PM

Purpose Multiplication Measurements of Li H and Li D between U slabs (2½" slabs)

Run 1 2½" x 8" x 10" fuel on each table.
6½" Separation.

3 min	97^{+30}	160^{+239}	73^{+180}	
	97^{+129}	160^{+247}	73^{+219}	
	98^{+43}	159^{+49}	73^{+201}	
	74,954	123,159	56,624	
cpm	8,328	13,684	6,292	28,304
$\overline{cpm}$	1201	7308	1589	35.33

Run 2 Placed ½" x 8" x 10" Li H, so that tables closed movable slab against Li H.



3 min	109^{+83}	171^{+253}	73^{+64}	
1"	108^{+5}	170^{+47}	73^{+111}	
½	108^{+15}	168^{+204}	73^{+213}	
	108^{+224}	170^{+134}	73^{+44}	
	111,175	174,464	75,184	
	9,265	14,539	6,265	30,069
	1079	6878	1596	3325

Run 3 Placed 1" Li H against fuel on fixed table.

3 min	99^{+66}	172^{+106}	86^{+64}	
	100^{+164}	172^{+221}	86^{+0}	
1½	99^{+31}	173^{+131}	86^{+220}	
	99^{+64}	172^{+196}	86^{+214}	
	101,962	177038	88,362	
	8,497	14753	7,380	30,630
	1178	6778	1353	3265

Run 4 1" Li H against fuel of each table.

3 min	92^{+81}	159^{+223}	81^{+191}	
	93^{+121}	161^{+4}	80^{+185}	
4 2"	94^{+31}	160^{+177}	82^{+192}	
3	71657	123281	62776	
	7962	13698 ~~10,274~~	6975	28,626
	1256	73003 ~~9737~~	1434	3493

Run 5 2" Li H against fuel g movable & 1" Li H against fuel g fixed

3 min	82 55	143 22	75 159	
	81 81	141 67	75 145	
	80 243	140 84	75 89	
3"	62,327	107949	58,003	
	6,952	11,994	6,445	23,391
	1438	8337 5	1552	3938

Run 6 2" Li H against fuel g rock Table

	76 +8	132 +138	72 +145	
3 min	76 +227	130 +91	73 +154	
	77 +165	131 +83	74 +92	
	59024	100,092	56,433	
4"	6,558	18,213	6,273	24,034
	1525	8918	1594	4161

Run 7 3" Li H against fuel g movable & 2" against fuel g fixed.

	72 +147	122 +70	69 +155	
	72 +178	123 +12	70 +103	
	72 +79	123 +183	71 +101	
5"	73 +~~150~~	123 +96	70 +44	
	74,537	126,057	72,083	
	6,211	10,505	6,007	22,723
	1610	9519	1465	4401

Run 8 — 3" LiH against fuel @ each Table.  LiH hanging loosely, The ½" mostly taken up. distributed among LiH slots.

3 min

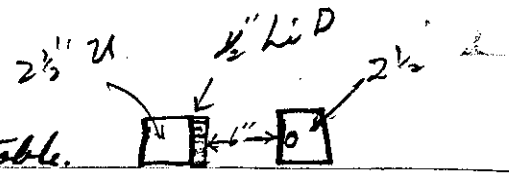
	78 +24	124 +120	66 +182	
	79 +30	123 +236	66 +101	
	79 +164	123 +21	65 +68	
6"	60,634	95,097	50,783	
	6737	10,566	5643	22,946
	1484	9464	1772	4398

Run 9 — 6½" LiH between the two U slabs.  Tables brought to 0.59, all spaces closed.

	67 +78	113 +253	67 +80	
	66 +125	114 +221	67 +142	
6½"	66 +201	114 +223	67 +211	
	51,348	87,893	51,859	~~24,691~~
	5705	9777	5762	21,244
	1753	1023	1736	4707

Run 10 — Repeat of Run 8, except a ½" al spacer at Center of the two units. 

	67 +154	114 +200	68 +154	
6"	66 +249	113 +186	68 +192	
3 min	68 +38	116 +219	69 +135	
	51,902	88,819	52,981	
	5767	9869	5887	21,523
	1734	1013	1699	4646



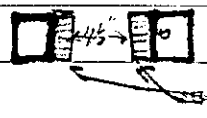
Run 11 ½" Li D against fuel g Movable Table.

3 min	98 +3	158 +99	76 +245	
	97 +204	158 +239	76 +13	
	99 +67	159 +227	76 +139	
1½"	75,538	122,165	58,765	
CPM	8,393	13,574	6529	28,496
CPM	1191	7367	1532	3509

Run 12 ½" Li D against Movable face + 1" Li D against fixed face

	131 +186	210 +82	98 +183	
3 min.	131 +203	210 +83	98 +38	
	131 +2	209 +215	98 +56	
1½"	100,743	161,404	75,543	
	11,193	17,933	8394	37,520
	8934	5576	1191	2665

Run 13 1" Li D against each face.



3 min	128 +8	203 +24	96 +103	
	128 +98	203 +149	97 +52	
	128 +0	203 +147	96 +71	
2"	98,710	156,224	74,210	
	10,934	17,358	8,246	36,538
	9146	5761	1213	2738

2-16-60

INSTRUMENT CHECK

Time 8:40 ~~AM~~ PM Source PN-467

	Channel A	B	C	D	E
F	$\frac{10}{1000}$ opr		10^{-10}	$\frac{10}{1000}$	1050
D	13"	0"	48"	3"	0"
P.S. Trip	86	OK	100	80	100 +

Counter 1, 2 + 3

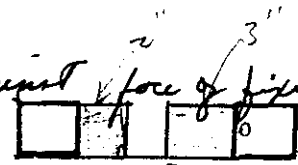
Run 14 1" LiD against face of Moveable + 2" LiD against face of fixed.

3 min	128^{+173}	201^{+124}	93^{+150}	
	126^{+162}	199^{+130}	94^{+247}	
	127^{+160}	201^{+104}	94^{+248}	
3"	98,031	157,214	72,581	
	10,892	17,135	8,065	36,092
	9181	5836	1240	2771

Run 15 2" LiD against each face.

	118^{+37}	187^{+85}	92^{+14}	
	117^{+188}	183^{+145}	91^{+99}	
	118^{+6}	186^{+124}	91^{+165}	
4"	90,621	143,202	~~93,462~~ 70,422	
	10,069	15,911	7,825	33,805
	9931	6285	1278	2958

Run 16 2" Li D against face of Movable + 3" against face of fixed. 1½" at spacers between units.

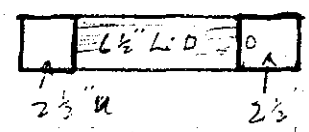


3 min	112^{+177}	174^{+139}	86^{+207}	
	112^{+96}	175^{+73}	87^{+61}	
5"	114^{+75}	176^{+5}	87^{+120}	
	86,876	134,617	66,948	Σ
CPM	9653	14,957	7439	32049
$\frac{1}{CPM}$	1036	6686	1344	3120

Run 17 3Li D against face of each table. ½" at spacers between units.

3 min	107^{+233}	167^{+23}	85^{+163}	
	107^{+202}	168^{+207}	85^{+68}	
6"	107^{+84}	168^{+50}	85^{+51}	
	82,695	129,048	65,564	Σ
CPM	9,188	14,339	7285	30,812
$\frac{1}{CPM}$	1088	6974	1373	3245

Run 18 6½" Li D between U slabs.



3 min	105^{+38}	162^{+140}	84^{+38}	
	105^{+177}	164^{+14}	83^{+230}	
	105^{+140}	162^{+8}	83^{+192}	
6½"	80,895	125,090	69,460	
	8,999	13,899	7,162	30,060
	1111	7195	1396	3327

Run 19 Removed all Li D. 2½" U | 6½" Space | 2½" U

3 min	$95^{-}+0$	$157^{-}+235$	$74^{-}+97$	
	$95^{-}+92$	$157^{-}+31$	$74^{-}+207$	
	$94^{-}+166$	$158^{-}+163$	$75^{-}+288$	
	72,962	120,483	57,600	E
	9,107	13,388	6,400	27,895
	1099	7469	1563	3585

Run 20 Removed fuel from movable Table. 6½ Li D | 2½" U
Replaced 6½" Li D against fuel of fixed table

3 min	$93^{-}+151$	$147^{-}+186$	$76^{-}+106$	
	$94^{-}+184$	$148^{-}+158$	$77^{-}+130$	
	$94^{-}+213$	$149^{-}+51$	$76^{-}+30$	
	72,228	114,059	56,836	E
	9,025	12,673	6,315	27,013
	1246	7891	1584	3702

Run 21 Removed Li D. Added 6½" Li H on fixed table. 6½ Li H | 2½ U

3 min	$71^{-}+248$	$114^{-}+2$	$60^{-}+243$	
	$71^{-}+85$	$114^{-}+48$	$61^{-}+76$	
	$70^{-}+225$	$114^{-}+1$	$61^{-}+102$	
	54,830	87,603	47,015	
CPM	6,092	9734	5,224	21,050
	1641	1027	1914	4751

20

Bore Slab

Run 22 1½" Fuel on moveable + 1½" on Stationary Table.
3 minute Counts

Table Separation				
6.56	28 +96 28 +192 28 +190	52 +223 54 +89 54 +140	28 +45 27 +240 27 +106	
	21,982	41,412	21,383	E
CPM	2,442	4,601	2,376	9419
1/CPM	4095	2173	4209	1062
				1022
6.06	28 +250 29 +121 29 +210	55 +51 55 +127 55 +85	28 +141 27 +246 27 +206	
	22,597	43,503	21,585	
	2,511	4,723	2398	9632
	3982	2117	4170	1038
				1005
5.06	31 +192 31 +231 31 +35	57 +234 58 +59 58 +190	29 +126 30 +212 30 +59	
	24,266	44,771	23,181	E 10,247
	2696	4,975	2576	9758
	3709	2010	3882	9405
4.06	34 +221 34 +205 35 +87	63 +179 63 +102 63 +247	32 +231 32 +62 32 +58	
	26,881	48,912	24,927	
	2987	5,435	2,770	11,192
	3348	1840	3610	8935

3.06	39 +197 39 +123 39 +140	71 +155 72 +196 72 +177	35 +220 36 +182 35 +60	
	30,412	55,568	27,598	
	3,379	6,174	3,066	12,619
	2959	1620	3262	7925
2.06	48 +237 49 +193 49 +23	87 +151 87 +116 89 +39	43 +98 42 +211 42 +77	
	37,829	67,534	32,898	
	4203	7,504	3,655	15,362
	2379	1333	2736	6510
1.56	57 +235 58 168 58 119	101 +119 102 82 102 65	48 +65 49 130 49 144 48	
	44,810	78,350	37,459	
	4,979	8706	4,162	17,847
	2008	1149	2402	5603
1.06	72 187 72 224 72 234	127 41 127 237 128 253	60 202 59 230 60 74	
	55,945	98,323	46,352	
	6,216	10,925	5,150	22,291
	1609	9153	1942	4486
				4342

0.56	103 200	181 57	175 84	
	103 192	183 128	80 142	
	104 61	181 185	84 21	
	79,913	139,890	65,362	
	8,879	15,543	7,262	31,684
	1126	6434	1377	3156
				3054
0.06	140 228	248 252	113 204	
	141 13	251 57	116 209	
	140 227	252 52	115 225	
	108,244	192,617	88,702	
	12,027	21,402	9,856	43,285
	8315	4672	1015	2310
				2236

$\frac{2236}{2310} = .967965$

See Book #1 p 290 + 291

$\frac{3447}{3054} = 1.1922$

2-17-60

INSTRUMENT CHECK

Time 10:20 — PN - 467

Range & F.	OK	$\frac{10}{1000}$	Off	10^{+0} $\frac{10}{100}$	1010
Source Dist.		18"	0"	48"	4"	1/3"
% F.S. Trip		75	OK	100	80	100+

84
56

Exp. K

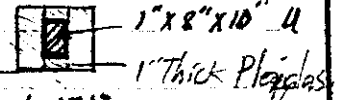
C.A. U Slabs Expr. K Run 1

Shot ____ Date 2-17-60 Time 10:10 —

Purpose 1" U Slabs Latticed With 1" Plexiglas, ~ Density 1/2

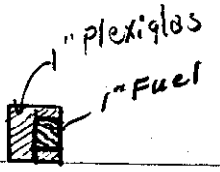
285
10

Run 1 1"x8"x10" U Slab surrounded by 1" Plexiglas.



Nothing → Moveable Table Fixed Table

3 min			
	19^{+219}	42^{+27}	19^{+175}
	19^{+147}	42^{+116}	19^{+202}
	18^{+171}	42^{+58}	19^{+226}
	19^{+65}	42^{+191}	19^{+222}
	19,802	32,904	20,281
	1650	2,742	1,690 6082
	6061	3647	5917 1644



Run 2 on Moveable Table – 1" Plexiglas + 1" Fuel

Fixed " – 1" Plexiglas, 1" Fuel + 1" Plexiglas – see Run 1.

3 min	130^{+242}	220^{+148}	98^{+35}	
	131^{+24}	221^{+47}	98^{+252}	
	131^{+104}	220^{+81}	98^{+114}	
	100,722	169,492	75,665	
	11,191	18,832	8,407	38,430
	8936	~~5310~~ 5310	1189	2602

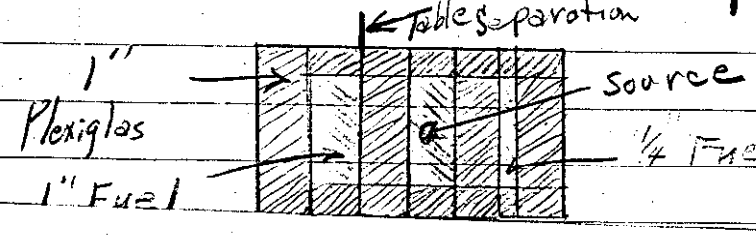
Run 3 Added to Fixed Table ¼"X8"X16" Fuel + 1" Plexiglas.

Tables Separated

36^{+122}	70^{+109}	33^{+285}
35^{+249}	70^{+161}	33^{+124}
37^{+231}	70^{+95}	32^{+232}

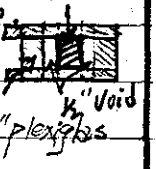
1.04"	80	125	58	= 241	583
.96"	97^{190}	188^{+234}	66^{+249}	= 313	319
.86	120^{+160}	184^{+2}	83^{+235}	388	258
.76	165^{+40}	250^{+167}	812^{+138}	528	189
	213	326	146		145
	258	392	176	43 821	121
	377		258	633	.82

Critical at 0.4" Separation (estimate)



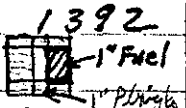
C.A. U Slabs Expr. L Run 1
Sheet ____ Date 2-17-1960 Time 3:40 ~~AM~~ PM
Purpose U Slabs Latticed with 1" plexiglas with ½" Voids between Units ~ Density ½

Run 1 on moveable - 0 (Tables Separated)
on Fixed Table - 1"X8"X10" Fuel surrounded by 1" plexiglas with ½" between fuel and plexiglas



3 min	20 +39	41 +219	22 +209	
	20 +60	41 +26	23 +73	
	19 +227	40 +143	23 +15	
	20 +51	40 +216	22 +188	
	20,601	42,076	23525	E
CPM	1,717	3,506	1,960	7,183
1/CPM	5824	2852	5102	1392

Run 2 on moveable - 1" plexiglas, ½" Void, 1" Fuel.
on Fixed Table - ½" void, 1" Plexiglas, 1" Fuel, ½" Void, 1" plexiglas (see Run 1)



3 min	58 +80	98 +28	58 +79	
	57 +168	97 +238	56 +124	
	57 +244	98 +247	49 +250	
	44,524	75,521	38,597	
	4,947	8,391	4,289	17,627
	2021	1192	2332	5673

2-18-60

INSTRUMENT CHECK

Time 1:50 PM Source PN-467

	Channel A	B	C	D	E
Range	F 10/1000	3pr	10^-10	10/1000	1038V
Source Dist.	11'	8'	4½"	3"	0"
% F.S. Trip	80	1K	100	80	100+

Caution) 2+3

Run 3 on moveable - 1" Plexiglas, ½" Space, 1" Fuel, ½" Space, 1" Plexiglas, ½" Space, 1" Fuel

on Fixed Table - Same as Run 1

3 min	190 169	281 220	127 239	
	190 220	284 21	127 37	
	190 29	282 11	126 232	
	146275	217084		
	16253	24120	10865	51238
	6153	4146	9204	1952

Run 4 Tables Separated, Source in place. see Run 5"

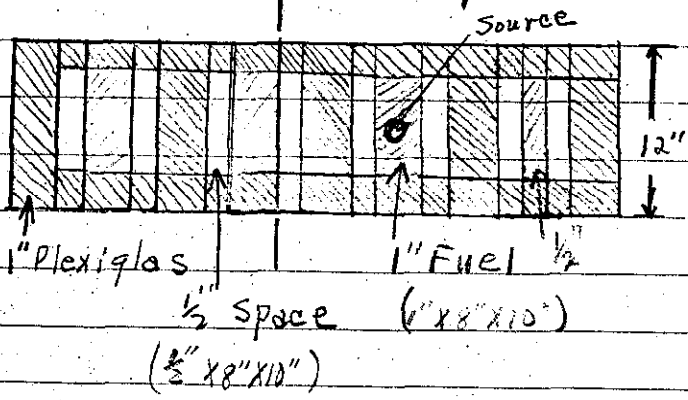
3 min	40 +142	69 +74	31 +221	
	41 +57	70 +127	32 +238	
	41 +12	68 +98	32 +75	
	31,443	53,221	24,854	
	3,494	5,913	2,761	12,168
	2862	1691	3621	8218

Run 5 On Moveable Table – Same as Run 3
On Fixed Table – ½" space, 1" Plexiglas, ½" space, 1" Fuel, ½" space, 1" Plexiglas, ½" space, ½" Fuel, ½" space, 1" Plexiglas

0.6 → 1 min	191		281	127	.334
face, 30 min	110		157	72	.294
.55"	121		173	78	.269
.50"	135		192	88	.241
.45"					
.40"	147	53459	208 211	95	.2217
		29091	113 163 PHS-2a		
		1,8596	PHS-5b		
.3	153		175	99	
8					
1 min	312 32		235 149	204 45	
	311 155		232 13	205 78	
	159675		119714	104797	384,186
	79837		59,857	52,399	242229
	17530		109,993	19094	
			90915		.04128

Corrected for pH change

3.65 ±.25 ±.15



28

2-23-60

INSTRUMENT CHECK

Time 1:15 PM Source PN-467

		Channel A	B	C	D	E
Range	F_1	10/1000	opr	10^{-10}	10/1000	1050 ✓
Source Dist.		9"	0"	48"	4"	0"
% F.S. Trip		80	OK	100	80	100+

C.A. U slabs Expr. M Run 1

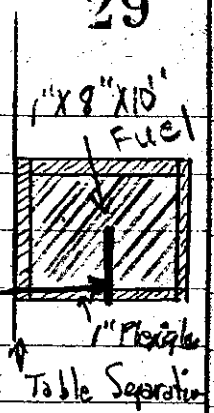
Sheet ____ Date 2-23-1960 Time 11:25 AM PM

Purpose Multiplication of 1" Thick U slab with 1" thick plexiglas Reflector, Placed Horizontally on Tables

Run 1 1"X 8" X10" – [redacted] Tuballoy with 1" plexiglas Reflector.

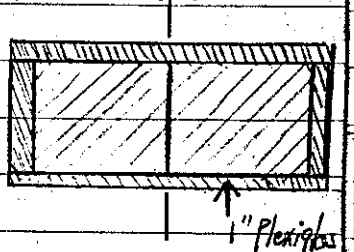
	Ctr # 1 (256)	#2 (258)	#3 (256)
3 Min	8^{+224}	51^{+83}	15^{+247}
	9^{+87}	51^{+97}	15^{+105}
	9^{+35}	50^{+234}	15^{+209}
	9^{+42}	51^{+204}	15^{+34}
	8^{+193}	50^{+175}	15^{+200}
	11,589	65,561	19,995
CPM	772.6	4,371	1,333

Run 2 1"X8"X10" - Orally with 1" Reflector
80 in²



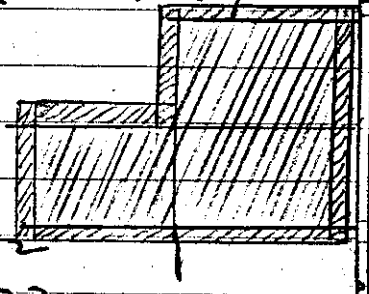
3 min	18+112	106+221	29+78	
	18+116	107+73	29+79	
	18+125	106+200	29+83	
	17+210	106+204	29+170	
	18,739	109,498	30,106	
CPM	1,562	9,125	2,509	13,196
1/CPM	6402	1096	3986	7578

Run 3 1"X8"X20" - Orally with 1" Reflector 160 in²
1"X8"X10" on Each Table



3 min.	21+139	111+34	35+153	
	21+39	109+192	34+121	
	21+18	110+69	35+88	
	16,324	84,775	26,986	
	1,814	9,419	2,998	14,231
or.	5512	1062	3336	7027

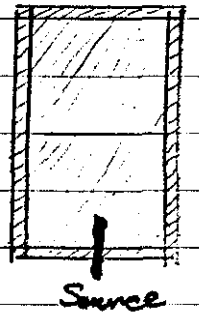
Run 4 added 1"X8"X10" to fixed Table.
240 in²
* with Tables Separated.



3 min	18+88	112+18	31+22	
	18+101	110+215	30+133	
	18+61	112+180	31+45	
	14,074	85,928	23,752	
CPM	1,564	9,548	2,639	14,901
1/CPM	6394	1047	3789	6711

See drawing previous page. (Tables closed)

3 min				
	21 +230	121 +104	36 +151	
	20 +201	120 +183	35 +213	
	21 +114	122 +93	36 +59	E
	16,417	93,358	27,815	
	1,824	10,373	3,091	15,288
	5482	9640	3235	6541



Fixed Table →

19 +129	116 +144	32 +118	
19 +37	116 +31	31 +98	
19 +103	114 +154	30 +212	
14,861	88,905	24,236	
1,651	9,878	2,693	14,222
6057	1012	3713	7031

2-24-60

INSTRUMENT CHECK

Time 8:30 AM ~~PM~~ Source PN-#67

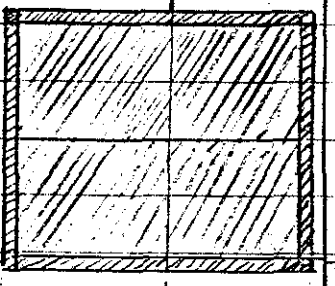
	Channel A	B	C	D	E
Range	10/1000	off	10^{-10}	10/1000	1050 ✓
Source Dist.	13"	0"	48"	3"	0"
% F.S. Trip	81	BOX	100	85	100 ✓

Counters 1, 2 & 3

Run 5 Added 1"X8"X10" to Movable Table

SLAB - 1"X16"X20" - 1" Reflector

320 in²



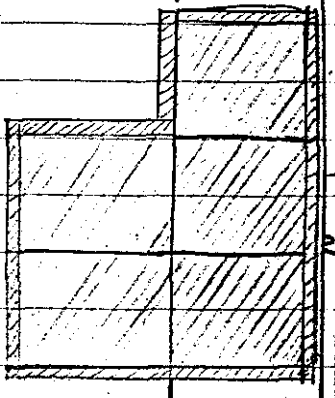
3 min	21^{+101}	125^{+134}	36^{+73}
	21^{+149}	124^{+238}	35^{+131}
	21^{+125}	124^{+126}	36^{+48}
	16,503	95,986	27,644
CPM	1,834	10,665	3,072
$\frac{1}{CPM}$	5'452	9376	3255

15,371

6422

Run 6 Added 1"X8"X10" to Fixed Table

Slab - as shown - 400 in²



	21^{+114}	125^{+39}	36^{+37}
	21^{+115}	124^{+213}	36^{+137}
	21^{+91}	125^{+24}	36^{+241}
	16,448	96,020	28,063
	1,828	10,669	3,118
	5'470	9373	3207

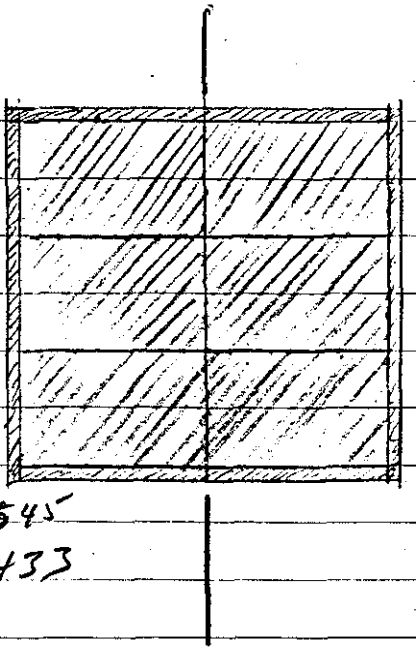
E

15,615"

6404

Run 7 added 1"X8"X18" to Moveable Table.

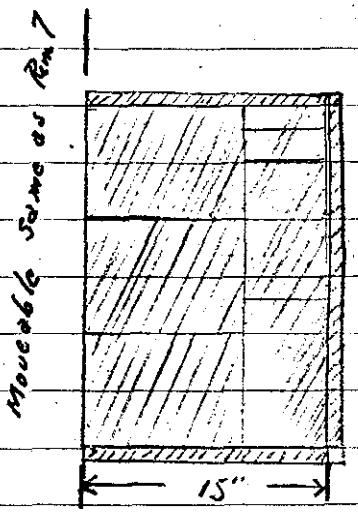
Slab - 1"X20"X24" - 480 in²



3 min	21 +50	123 +236	35 +120	
	22 +29	124 +146	36 +44	
	21 +236	124 +253	36 +43	
	16,699	95,611	27,599	
	See Run 4 +5'			
CPM	1855	10,623	3,067	15,545
1/CPM	5391	9413	3261	6433

Run 8 added 1"X5"X24" to Fixed Table.

Slab - 1"X24"X25" - 600 in²



3 min	23 +116	121 +208	37 +203	
	23 +48	120 +191	38 +105	
	23 +27	121 +241	38 +25	
	17,853	93,320	29,261	
	1,984	10,369	3,251	
1'	5-040	9644	3076	

E 15,604

6409

Change on Counter # 2 probably caused by a change in plexiglas of top. [Changing from 2⅞" pcs to solid sheets.]

2-25-60

INSTRUMENT CHECK

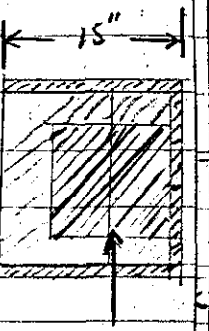
Source PN - 467

Time 8:30 AM PM

	Channel A	B	C	D	E
Range	F	$\frac{10}{1000}$	open	10^{-10}	$\frac{10}{1000}$	1050
Source Dist.		8 OK	13"	0"	48"	4"	0"
% F.S. Trip			80	OK	100	86	100 T

Chan 1, 2 & 3 OK

Run 9 added 1" X 18½" X 18" g al to back top of fixed table.
[This is mock up al g moveable Table]



3 min	24^{+80}	136^{+10}	39^{+152}	
	24^{+30}	136^{+130}	39^{+136}	
	25^{+206}	135^{+173}	39^{+216}	
	18,512	104,505	30,456	ℓ
cpm	2,057	11,612	3,384	17,053
cpm	4861	8612	2955	5864

Run 10 Removed al added for Run 9
added ⅛" X 10" X 24" Fuel to Moveable Table
Slab — ⅜" X 10" X 24" Moveable Table
1" X 15" X 24" Fixed "

3 min	22^{+198}	130^{+164}	37^{+178}	
	22^{+95}	130^{+33}	37^{+113}	
	22^{+110}	130^{+161}	37^{+54}	
	17,299	100,195	28,761	ℓ
	1918	11,133	3,196	16,274
	5214	8982	3129	6145

Run 11 added ⅛" X 15" X 24" to fixed Table.
Slab - 9/8" X 24" X 25"

9/8"	26 +200 26 +165 26 +84	157 +233 155 +239 153 +43	45 +96 45 +19 45 +85	
	20,417	118,787	34,760	E
CPM	2,269	13,199	3,862	19,330
CPM	4407	7576	2589	5173

2-26-60

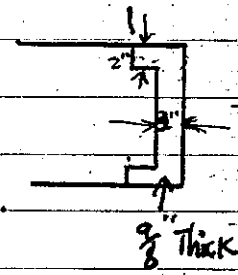
INSTRUMENT CHECK

Time 8:15 AM Source PN-467

		A	C	D	E
Range	F	$\frac{10}{1000}$	over 10^{-10}	$\frac{10}{1000}$	1050 V.
Source Dist.	8 OK	9"	0"	42"	3"	● ?
% F.S. Trip		90	OK	100	90	70

Counters 1, 2 & 3

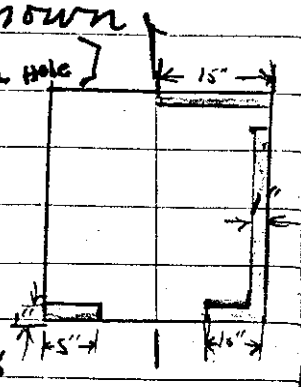
Run 12 Moveable Table - $\frac{10}{8}$" X 10" X 24" — 1" Reflector
Stationary Table - $\frac{10}{8}$" X 15" X 24" Except at extreme back 3" which is $\frac{9}{8}$" Thick.
Slab - $\frac{10}{8}$" X 24" X 25" - Except → All Fuel used Except Some $\frac{7}{8}$" Thick pcs.



3 Min	32^{+165}	190^{+187}	55^{-+8}	
	33^{+52}	193^{+95}	57^{+91}	
	32^{+66}	191^{+104}	55^{-+233}	
$\frac{10}{8}$"	25,115	147,330	42,315	
	2,791	16,370	4,702	23,826
	35-83	6109	2127	4197
Run 13	Slab - $\frac{11}{8}$" X 24" X 25" - Complete with 1" REFLECTOR			
	43^{+75}	258^{+81}	71^{+15}	
	42^{+162}	258^{+252}	72^{+172}	
$\frac{11}{8}$"	42^{+240}	257^{+55}	71^{+229}	
	32,989	198,276	55,210	
	3,665	22,131	6,133	31,829
	2729	45-39	1530	3142

Run 14 $\frac{12}{8}$" X 24" X 25" – Except as shown

Source Moved Down $\frac{1}{8}$" [removed $\frac{1}{8}$" from under $\frac{1}{8}$" pc with Hole]



$\frac{12"}{8}$	58^{+253}	373^{+110}	99^{+91}	
	58^{+204}	374^{+137}	99^{+34}	
	59^{+60}	375^{+128}	100^{+40}	
	45,317	287,607	76,453	
CPM	5,035	31,956	8,495	95,486
$\frac{1}{CPM}$	1986	3129	1177	2198

$\frac{4}{8}$" Thick

Run 15 $\frac{11}{8}$" X 25" X 25" – Complete with 1" Reflector

	41^{+19}	228^{+192}	69^{+82}	
	40^{+196}	227^{+189}	69^{+52}	
	41^{+94}	229^{+9}	69^{+135}	
	31,541	175,494	53,261	
CPM	3,505	19,499	5,918	28,922
$\frac{1}{CPM}$	2853	5128	1689	3458

2-29-60

INSTRUMENT CHECK

Time 8:45 AM Source PN-967

Channel	A	B	C	D	E
Range	F. 10/1000	opr	10^{-10}	10/100	1050 V
Source Dist.	& OK 8"	0"	42"	5"	0"
% F.S. Trip	80	OK	100	60	100+

Data 1, 2 & 3

Run 16 Repeat of Run 15.

3 min

A	B	C	E
41 +31	249 +177	70 +31	
41 +65	248 +108	70 +151	
41 +9	248 +148	69 +158	
31,593	191,153	53,844	E
3,510	21,239	5,983	30,732
2849	4708	1671	3254

Run 17 Repeat of Run 13. [Except for source movement indicated in Run 14]

Slab - 4/8" X 24" X 25"

A	B	C	E
40 +134	247 +78	70 +87	
41 +97	246 +68	69 +73	
41 +17	245 +154	70 +80	
31,480	18,9220	53,746	E
3,498	21,025	5,972	30,845
2849	4736	1674	3279

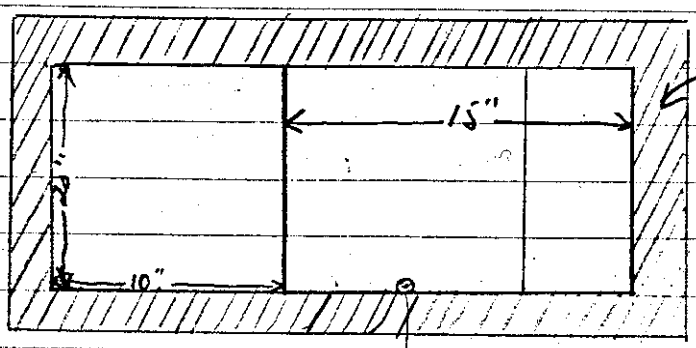
38 Exp M 3" REFLECTOR

Run 1 $\frac{7}{8}$" X 15" X 28" - U Slab with 3" Reflector

3 min	78^{+53}	527^{+237}	122^{+151}	
	75^{+96}	528^{+178}	122^{+243}	
	38,549	270,492	62,858	
cpm	6,425	45,082	10,476	61,983
I/cpm	1586	2218	9543	1613

Run 2 $\frac{7}{8}$" X 20" X 28" U Slab with 3" Reflector

1 min.	72^{+128}	out (jamming)	122^{+248}	
	74^{+5}		125^{+103}	
	74^{+65}		126^{+37}	
	73^{+221}	$\frac{18886}{6425} = 2.935$	126^{+53}	
	75,427		97,463	
	18,886	132,313	24,366	175,567
	5294		4104	0.56425

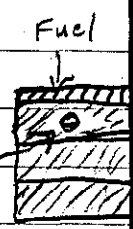


3-1-60

INSTRUMENT CHECK

Time 11:05 AM ~~PM~~ Source PN-467

	Channel A	B	C	D	E
F. Range	~~10/100~~	~~off~~	10^{-10}	~~10/1000~~	1050V.
Y OK Source Dist.	7"	0"	36"	3"	8"
% F.S. Trip	85	OK	100	80	100+
Ctr 1, 2 & 3					



Run 3 Slab - ¼" X 25" X 25" - 3" Reflector - Source at Center of 1" Plexiglas under fuel.

3 min	10 +27	52 +150	18 +179	
	10 +138	53 +159	18 +147	
	10 +77	52 +117	18 +102	
	10 +54	53 +45	18 +78	
	10 +38	53 +54	18 +48	
	13,134	67,853	23,644	E
CPM	8756	4,524	1,576	6976
1/CPM	1142	2210	6345	1433

Run 4 Slab - ½" X 25" X 25" - 3" Reflector

3 min	14 +158	84 +48	25 +215	
	14 +200	83 +2	26 +64	
	15 +63	83 +233	26 +44	
	14 +117	82 +135	25 +207	
	15,130	64,930	26,642	
	1,261	5,411	2,220	8892
	7930	1848	4505	1125

40

3-3-60

INSTRUMENT CHECK

Time 8:50 AM Source PW-467

	Channel F	A	B	C	D	E
Range	Y	10/1000	6per	10^-10	10/1000	10 50V
Source Dist.		7"	6"		2½"	0
% F.S. Trip		85 OK	100	90		

Counters 1, 2 + 3

Run 5 Slab - 3/8" X 20" X 28" - 3" Reflector

3 min

163 +137
164 +110
164 +251
164

126,190
14,021
7132

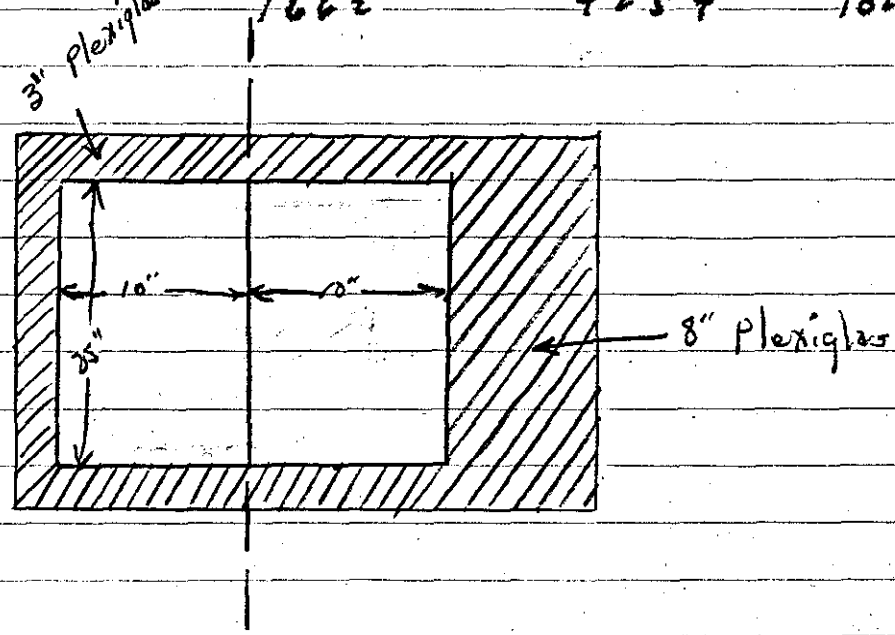
Jamming

19021 / 1,261 = 11.119
60,105
1662

272 +251
275 +167
277 +242

211,584
23,510
42.5-4

97,636
1024



C.A. U Slab Expr. N Run 1

Sheet ____ Date 3-3-1960 Time 11:30 ~~PM~~ AM

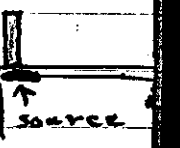
Purpose Bare slab
5"X5"

Run 1 Bare U Slab 5"X5"X 7/8" - Fixed Table. Source Under Fuel

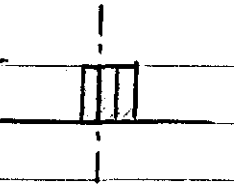
3 min	9 + 60 (256)	35 + 213 (256)	20 + 174 (256)	
	9 + 106	36 + 32	20 + 93	
	9 + 61	36 + 177	20 + 78	
7/8	9 + 81	35 + 132	20 + 53	
	9 + 76	35 + 153	20 + 251	
	11,904	46,019	26,249	E
17,676 CPM	~~11,904~~ 793.6	3068	1,750	5,612
1024 1/CPM	1260	3259	5714	1782

Run 2 Bare U slab 5"X5"X 14/8" - Fixed Table

3 min	10 + 65	38 + 160	21 + 190	
	10 + 40	38 + 128	20 + 211	
	9 + 192	37 + 253	21 + 125	
125 3/4"	10 + 106	38 + 79	21 + 80	
	10 + 107	38 + 149	20 + 244	
	13,054	49,154	27,218	E
CPM	870	3,277	1,815	5962
1/CPM	1149	3052	5509	1677



Run 3 Bare 4 Slab 5" X 5" X $\frac{21}{8}$" - 2⅛" on Fixed Table
⅞" on Movable Table



3 min	12^{+69}	42^{+171}	24^{+15}	
	12^{+54}	43^{+4}	23^{+145}	
	11^{+255}	44^{+62}	24^{+168}	
	11^{+186}	43^{+25}	24^{+11}	
$2\frac{1}{8}$"	11^{+231}	43^{+69}	23^{+230}	
	~~15,387~~	55,371	30,777	
	1,026	3,691	2,052	6,769
	9747	2709	~~4173~~ 4873	1477

Run 4 Bare 4 Slab 5" X 5" X $\frac{21}{8}$" - 2⅛" on Fixed Table
⅞" on Movable Table

3 min	14^{+60}	41^{+190}	28^{+93}	
	14^{+126}	41^{+235}	27^{+173}	
	14^{+131}	41^{+216}	27^{+124}	
	14^{+150}	42^{+52}	28^{+8}	
$3\frac{1}{2}$"	14^{+97}	41^{+186}	28^{+66}	
	18,484	53,615	35,794	
	1,232	3,574	2,386	7192
	8117	2798	4191	1390

3-4-60

INSTRUMENT CHECK

Time 9:00 AM Source PN-467

	Channel B	C	D	E
Source F	10/1000	Opr	10-10	10/1000	1050 V.
Source Dist. γ OK	4"	0" 48"	2.5"	0"
% F.S. Trip	100	OK	100	90	100+

Counter 1, 2 + 3

Run 5 Bare U Slab 5" X 5" X 3 5/8" - ~~3 5/8" on Fixed Table~~ 1/8" on Moveable "

3 min	20+52	52+156	38+23	
	20+80	52+224	38+69	
4 3/8"	19+229	52+171	34+185	
	20+9	52+90	34+125	
	20,594	53,889	35,730	
CPM	1,716	4,491	2,978	9185
1/cpm	5828	2227	3358	1089

Run 6 Bare U Slab - 5" X 5" X 4 3/8" - 3 7/8" on Moveable "

	29+221	85+144	47+234	
	30+83	85+53	47+236	
5 3/8"	30+30	85+145	47+219	
	29+245	84+209	48+81	
	30,797	~~65,573~~ 66,853	49,154	
	2,566	~~5,464~~ 5,571	4,096	12,233
	3897	~~1830~~ 1795	2441	9175

Run 7 Bore 11 Slab - 5" X 5" X $\frac{51}{8}$" - $\frac{40}{8}$" on fixed Table $\frac{11}{8}$ on Moveable Table

3 Min.	45^{+18}	138^{+101}	67^{+125}	
	44^{+110}	136^{+166}	67^{+160}	
$6\frac{3}{8}$"	43^{+239}	138^{+103}	66^{+241}	
	34,159	105,842	51,726	E
CPM	3,795	11,760	5,747	21,302
	2635	8503	1740	4694

Run 8 Bore 11 Slab - 5" X 5" X $\frac{55}{8}$" - $\frac{40}{8}$" on fixed Table. $\frac{15}{8}$ on Moveable 11.

3 min	54^{+52}	169^{+203}	80^{+3}	
	54^{+19}	170^{+114}	79^{+214}	
	55^{+71}	171^{+155}	79^{+229}	
$6\frac{7}{8}$"	41,870	131,006	61,374	E
	4,652	14,556	6,819	26,827
	2150	6870	1466	3842

Run 9 Bore 11 Slab - 5" X 5" X $\frac{59}{8}$" - $\frac{40}{8}$" on fixed Table $\frac{19}{8}$" on moveable Table.

	74^{+145}	248^{+133}	107^{+84}	
	74^{+239}	246^{+71}	106^{+120}	
$7\frac{3}{8}$"	74^{+152}	245^{+206}	108^{+110}	
	57,368	188,823	82,490	
	6,374	20,980	9,166	36,520
	1569	4766	1091	2738

Run 10 Bare U Slab - 5" x 5" x 63/8" - 49/8" on Fixed Table. 23/8" on Movable "

1 min

7 3/8

38 + 238	120 + 239	49 + 227	
36 + 157	122 + 192	50 + 131	
38 + 225	122 + 110	51 + 11	
36 + 7	121 + 126	50 + 91	
36,979	124,827	51,640	
9,245	31,207	12,910	53,362
1082	3204	7746	1874

Run 11 Bare U Slab - 5" x 5" x 67/8" - 49/8" on Fixed Table 27/8" on movable "

1 min

8 3/4"

62 + 163	217 + 1	87 + 91	
63 + 24	217 + 110	86 + 113	
63 + 26	219 + 107	88 + 140	
48,341	167,386	67,160	
16,114	55,795	22,387	99,246
6206	1792	4467	1060

Table.

Run 12 Bare U Slab - 5" x 5" x 71/8" - 49/8" on Fixed Table 23/8" on Movable "

Table Pos.	½ min			
.28"	20 + 92	68 + 186	29 + 130	.926
.20	33 + 93	113 + 240	46 + 91	.518
.15	58	203	79	.294

1 min	217 + 213	Jamming	303 + 36	
	220 + 6		306 + 29	
8 1/8	112,091	3.478	155,969	
	56,046	194,035	77,985	27,644
	1784		1282	03602

46

3-7-60

INSTRUMENT CHECK

Time 10:20 AM ~~PM~~ Source PN 467

	Channel A	B	C	D	E
Range	10/1000	Opx	10^{10}	10/1000	1050 V.
Source Dist.	8"	0"	40"	3"	½"
% F.S. Trip	90	OK	102	90	100+

~~Counts~~ 1, 2 + 3

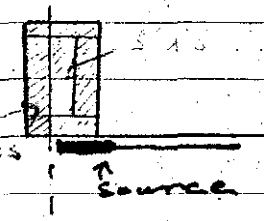
C.A. 71 Slab Expr. 0 Run 1

Sheet Sheet Date 3-7-1960 Time AM PM

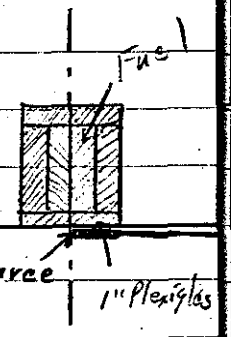
Purpose 5"X5" Slab
1" REFLECTOR

Run 1 5"X5"X1" — 1" REFLECTOR

3 min			
	9 +125	33 +169	20 +29
	9 + 117	33 +20	20 +3
	9 + 124	33 + 89	20 + 105
	9 + 121	33 + 133	20 + 19
	9 + 105	33 + 130	20 + 28
	12, 112	42, 781	25, 792 E
CPM	807	2, 852	1, 719 5378
$\frac{1}{CPM}$	1239	3506	5817 18.59



Run 2 — 5" x 5" x 2" — 1" Reflector — 1" Each Table



3 min

10 + 230	36 + 91	22 + 244	
10 + 211	37 + 139	22 + 159	
10 + 210	36 + 184	22 + 57	
10 + 232	36 + 84	22 + 94	
10 + 197	37 + 5	22 + 135	
13,880	47,095	28,843	
925	3,140	1,923	5,988
1081	3185	5200	1670

Run 3 — 5" x 5" x 3" — 1" Reflector — 2" on Fixed Table, 1" on Moveable

3 min

13 + 54	30 + 243	25 + 81	
13 + 11	31 + 50	26 + 8	
13 + 164	31 + 21	25 + 169	
13 + 116	32 + 72	25 + 114	
13 + 219	30 + 231	25 + 184	
17,204	40,041	32,812	
1,147	2669	2,187	6,003
8718	3747	4572	1666

Run 4 — 5" x 5" x 5" — 1" Reflector — 4" on Fixed Table, 1" on Moveable Table

5378 Table P->

1859 0.31 — 1/2 min — 46 — +65 — 60 — ~~569~~ 943

.29 — 75 — Jam — 96 — 584

Did not close Tables

Run 5 — 5" X 5" X 4" 21 Slab – 1" Reflector – 3" on fixed 1" on movable

1 min	7^{+172}	20^{+127}	11^{+240}	
	7^{+171}	20^{+231}	12^{+166}	
	7^{+78}	20^{+227}	12^{+89}	
	7^{+164}	20^{+194}	12^{+112}	
	7^{+147}	20^{+139}	12^{+242}	
	7^{+192}	20^{+172}	13^{+16}	
	11,676	26,690	16,225	E
	1,946	4,448	2,704	.9098
	5139	2248	3698	1099

Run 6 — 5" X 5" X 4½" 21 Slab – 1" Reflector 1½" on movable" 3" on fixed table

1 min	12^{+253}	39^{+163}	19^{+131}	
	13^{+96}	39^{+113}	19^{+208}	
	13^{+56}	40^{+9}	18^{+254}	
	13^{+12}	39^{+194}	19^{+248}	
	13^{+42}	40^{+142}	18^{+247}	
	16,946	51,053	24,896	
	3,369	10,211	4,979	18,559
	2968	9793	2008	5377
Run 7	26^{+254}	90^{+38}	36^{+166}	
1 min	27^{+218}	90^{+237}	36^{+226}	
	27^{+102}	90^{+134}	37^{+186}	
5X5X4¾	21,052	69,529	28,482	
	7,018	23,176	9,494	39,688
	1425	4315	1053	2520

3-8-60

INSTRUMENT CHECK

12:55 PM

PM-467

Exp P

		D	E
F	10/1000	10	10/1000
	oper	10	1050 V.
Y			
Source Dist.	8"	0"	42"	3"	1/3"
% F.S. Trip	85	OK	100	80	100+

Counters 1, 2 & 3

Run

C.A. U Slab Expr. P Run 1

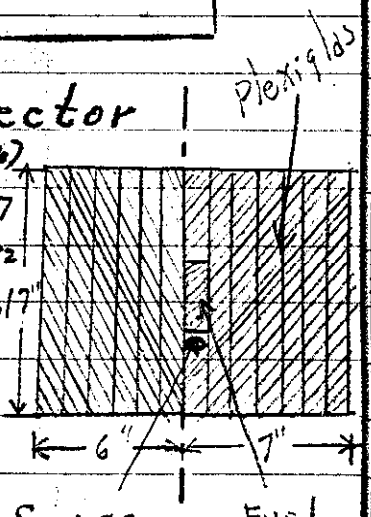
Sheet _____ Date 3-8-1960 Time 3:30 PM

Purpose 5" X 5" U Slab

6" Reflector

5" X 5" X 1" U Slab – 6" Reflector

	Ctr # 1 (254)	#2 (256)	#3 (256)
Run 1	12 + 74	26 + 216	20 + 7
10 min	12 + 26	27 + 36	18 + 252
	12 + 65	26 + 109	19 + 157
	12 + 49	27 + 5	19 + 148
	11 + 228	26 + 223	18 + 215
	15,546	34,381	24,843
CPM	311	688	497
	3215	1453	2012
	E	1496	
		6684	



Run 5 5"X5"X4" - 1" Plexiglas - 3" on Fixed Table - 1" on movable Table

1	7 +172	20 +127	11 +280
	7 +171	20 +231	12 +166

3-9-60

INSTRUMENT CHECK

Time 12:40 AM/PM S. P. R.

	F	A	B	C	E
Range	OK	1"/100 op	10"	1"/100	105
Source Dist.		8" OK	4'	3"	0
% F.S. Trip		90	100	100	100

Counters 1, 2 + 3

Run 2 5"X5"X2" U Slab - 6" Plexiglas Reflector
5"X5"X1" on each table

10 Min	18 +242	48 +111	28 +155	
	18 +181	48 +137	28 +148	
	19 +14	48 +147	28 +9	
	18 +232	48 +61	28 +90	
	19057	49608	29074	
	476,4	12402	726,8	24434
	2099	8063	1376	40926

Run 3 5" X 5" X 3" U Slab - 6" Reflector
2" on Fixed Table & 1" on Moveable Table

3 min	93^{+66}	315^{+41}	123^{+122}	
	93^{+213}	317^{+173}	125^{+100}	
	47,895	162,006	63,710	E
	7,983	27,001	10,618	45,602
	1253	3704	9418	2193

3-10-60

INSTRUMENT CHECK

Time AM ~~PM~~ Source

Channel

	F	A	B	C	D	E
Range	OK	$\frac{1}{1000}$	opn	10^{-10}	$\frac{10}{1000}$	1050
Source Dist.		8"	0"	48"	3"	1/4"
% F.S. TNP		85	OK	100	40	100+

Counting 1, 2 & 3

5" X 5" X 2 3/4" U Slab - 6" Reflector
1 3/4" on Fixed Table & 1" on moveable

3 min	15^{+110}	48^{+240}	—	
	15^{+138}	48^{+97}	21^{+206}	
	15^{+119}	49^{+24}	21^{+147}	
	15^{+136}	47^{+249}	21^{+165}	
	15^{+171}	48^{+108}	21^{+81}	
	19,874	62,158	23,103	E
CPM	1,325	4,143	1,474	6943
CPM	7547	2413	6784	1440

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2" Reflector

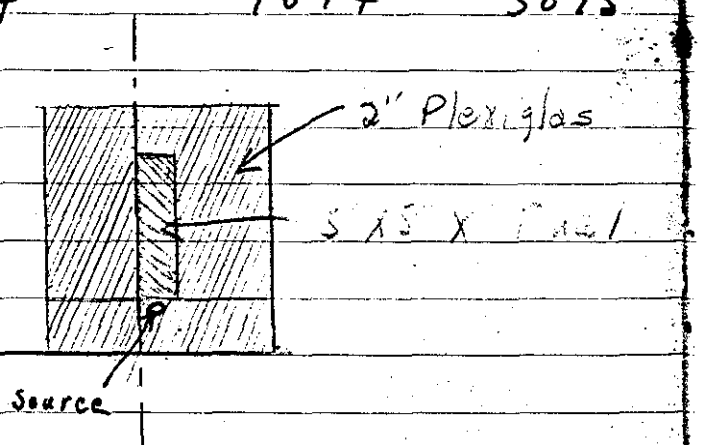
C.A. U Slab Expr. 9 Run 1

Sheet ____ Date 3-10-1920 Time 3:15 AM PM

Purpose 5" X 5" U Slab
2" Reflector

Run 1 5" X 5" X 1" - 2" Reflector

5 min.	11 +148	35 +2	17 +234	
	11 +142	33 +202	18 +10	
	14 +126	33 +174	17 +246	
	11 +9	34 +47	17 +204	
	11 +149	34 +59	17 +143	
	11 +138	34 +37	17 +214	
	17,608	52,489	27,419	E
CPM	587	1,750	914	3,251
1/CPM	1704	5714	1094	3075



3-11-60

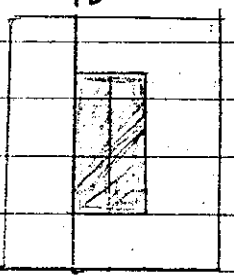
INSTRUMENT CHECK

8:30 AM — Source PR 467

	Channel A	B	C	D	E
Range	γ F	10/1000 sym	10^{-10}	10/100	1050 V
Source Dist.		8"	0"	40"	3"	½"
% F.S. Tap		85	OK	100	80	100+

Counter 1, 2, & 3

Run 2 5"X5"X2" - U Slab with 2" plexiglas Reflector



5 min.	19^{+6}	$59+168$	27^{+117}	
	19^{+81}	$59+173$	27^{+122}	
	18^{+109}	$58+224$	27^{+84}	
	18^{+233}	$60+129$	26^{+247}	
2"	19,373	61,110	27,962	E
	969	3,055	1,398	5,422
	1032	3273	7153	1844

Run 3 5"X5"X3" - U Slab - 2" Reflector
2" on Fixed Table + 1" on movable

3 min	$30+232$	$107+20$	42^{+159}	
	$31+73$	$105+80$	$42+125$	
3"	$30+237$	$105+197$	43^{+33}	
	23,838	81,499	32,829	
cpm	2,649	9050	3,648	15,347
1 cm	3775	1105	2741	06516

Run 4 5" x 5" x 3¾" U Slab – 2" Reflector
2" on fixed Table + 1½" on moveable.

3 min	44^{+175}	160^{+181}	61^{+252}	
	44^{+244}	159^{+48}	61^{+109}	
	45^{+128}	159^{+207}	61^{+59}	
3¾"	34,595	123,804	47,268	E
	3,844	13,645	5,252	22,741
	2601	7329	1904	4398

adjusted Center Separation

	45^{+113}	164^{+245}	63^{+138}	
	46^{+156}	163^{+249}	62^{+175}	
3¼"	46^{+11}	163^{+48}	63^{+92}	
	35,252	125,982	48,533	
cpm	3,917	13,998	5,393	23308
1/cpm	2552	714	1854	4290

Run 5 5" x 5" x 3½" U Slab – 2" Reflector
2" on fixed Table – 1½" on moveable.

3 min	98^{+134}	348^{+233}	131^{+138}	
	96^{+238}	349^{+189}	130^{+116}	
	50,036	178,854	67,070	
3½"	4,339	29,809	11,178 ~~4678~~	49,326 ~~42,826~~
	1199	335-5	8946 ~~2137~~	2027 ~~2335~~

Run 6 5" X 5" X 3 5/8" U Slab - 2" Reflector
2" on Fixed Table + 1 5/8" on Moveable.

Table Pos.	1/3 Min counts			
.27	11	43	17	.1408
.21	18	67	24	9174
.16	28	102	38	.3852

1 min.	67 + 199	246 + 55	91 + 164		
	67 + 200	253 + 247	92 + 121		
	68 + 253	251 + 175	92 + 211		
3 5/8	52,364	192,477	47,856	70,896	
	17,454	64,159	15,952	23,632	105,245
	5729	15-9	6269	4231	9502

Run 7 5" X 5" X 3 3/4" U Slab - 2" Reflector
2" on Fixed Table + 1 3/4" on Moveable Table.

Table Pos	1/3 min cts				
.37	9		32	13	.1852
.30	13		45	18	.1315
.24	19		68	26	.0885
.18	39	.2516	144	57	.0422
.16	68	.1476	out	91	
.14	134	.0746		185	
.12	210	.0476		391	

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Did Not Close tables

3·14·60

INSTRUMENT CHECK

Time 9:50 AM Source PN-96T

	Channel A	B	C	D	E
Range	F .1 / 1000	off	10	10 / 1000	1050 V.
Source Dist.	8"	0"	48"	3 3/4"	1/4"
% F.S. Trip	8%	OK	100	.80	100T

Counters 1, 2 & 3 OK

C.A. U. Slabs Expr. R Run 1

Sheet Date 3-14-1960 Time 10:08 AM

Purpose 10" X 10" U Slab

BARE

Run 1 10"X10"X 7/8" U Slab - Bare {10"X7"X 7/8" on Fixed / 10"X3X 7/8" on Movable

5 min	14^{+236}	106^{+233}	38^{+210}	
	14^{+228}	106^{+42}	38^{+82}	
7/8"	15^{-+99}	106^{+899}	39^{+3}	
	14^{+227}	102^{-+116}	38^{+113}	
	15,382	108,878	39,576	
CPM	~~7,669~~ 769	5,444	1,979	8,192
1/cpm	1300	1837	5053	1221

Run 2 10" X 10" X $\frac{4}{8}$" U Slab - Bare

5 mins	28^{+74}	187^{+70}	61^{+211}	
	27^{+146}	185^{+237}	62^{+53}	
	27^{+201}	189^{+25}	61^{+181}	
1 $\frac{3}{4}$"	21,413	143,948	47,549	
	1,428	9,597	3,170	14,195
	7063	1042	3153	7045

Run 3 10" X 10" X $\frac{21}{8}$" U Slab - Bare

3 mins	41^{+47}	259^{+41}	75^{+117}	
	40^{+248}	260^{+80}	78^{+208}	
	41^{+77}	258^{+137}	78^{+147}	
2 $\frac{5}{8}$"	31,604	199,170	58,072	
	3,512	22,130	6,452	32,094
	2847	4218	1550	3115

Run 4 10" X 10" X $\frac{23}{8}$" U Slab - Bore

2 mins	42^{+100}	264^{+219}	74^{+178}	
	42^{+141}	268^{+105}	76^{+137}	
	43^{+47}	266^{+248}	78^{+253}	
2 $\frac{7}{8}$"	32,800	204,836	58,170	
	5,467	34,143	9,698	49,308
	1829	2929	1031	2028

Runs 5 — 10" X 10" X 25/8" 21 Slab - Bare

2 Min	92 +142	575 +183	136 +135	
	93 +69	574 +137	156 +6	
	92 +194	574 +213	158 +8	
3 1/8"	71,317	441,621	158,869	
	11,886	73,603	~~26,498~~ 26,478	111,967
	8413	13579	3777	8931

Run 6 — 10" X 10" X 25.5/8" - added ~~10" X 5" X 1/8"~~

1 Min.	64 +17	395 +153	107 +43	
	64 +122	394 +237	107 +203	
	63 +17	394 +18	108 +11	
	49,050	306,928	82,689	
	16,350	102,309	27,563	146,222
	6116	9774	3628	6839

Run 7 — 10" X 10" X 26/8" 21 Slab - Bare

1 min	109 +52	Jamming	184 +185	
	109 +27		184 +27	
	109 +156		186 +104	
3 1/4"	83,947	27,982/16350 = 1.711	142,140	
	27,982	175,091	47,380	230,453
	3574	5711	2111	3993

3-15-60

INSTRUMENT CHECK

Time 8:55 ~~AM~~ ~~PM~~ Source Pu 467

	Channel A	B	C	D	E
Range	F	$\frac{10}{1000}$	10^{-10}	$\frac{10}{1000}$	1038 V.
Source Dist.	8"	0"	48"	3"	0"
% F.S. Trip	85	OK	110	80	100

Counters 1, 2 & 3

E.A. U Slot Expr. S Run 1

Shee Date 3-15-60 me 8:46 AM

Purpose 15" X 15" U Slab

Bare

Run 1 15"X15" X 7/8" U Slab - Bare ~~10"X15"X 7/8" on fixed Table~~ 5"X15"X 7/8" on movable

5 min	14^{+88}	108^{+35}	38^{+67}	
	14^{+74}	107^{+39}	38^{+7}	
7/8"	14^{+60}	105^{+149}	37^{+160}	
	14^{+47}	106^{+22}	37^{+87}	
	19,605	109,301	38,721	
CPM	730	5,465	1,936	8131
1/cpm	~~+370~~ 1370	1830	5165	1230

Run 2 15"X15"X 1 1/8" U Slab - BARE

5 min	27^{+5}	198^{+236}	64^{+66}	
	27^{+45}	199^{+91}	63^{+150}	
1 3/4"	27^{+24}	198^{+182}	64^{+37}	
	20,814	152,829	49149	
	1388	10,189	3,278	14,855
	7205	9818	3051	6732

Run 3 15" X 15" X $\frac{18}{8}$" U Slab - Bare

3 Min.	28^{+107}	207^{+26}	62^{+74}	
	28^{+192}	208^{+159}	61^{+51}	
	28^{+35}	209^{+9}	61^{+81}	
	21,838	160,962	~~62,670~~ 47,310	25,568
	2,426	17,885	~~6963~~ 5,257	~~27,274~~
	4122	5591	~~1436~~ 1902	~~3666~~ ~~4204~~ 3911

Run 4 15" X 15" X $\frac{20}{8}$" U SLAB - BARE

3 min.	46^{+65}	335^{+35}	93^{+43}	
	47^{+81}	336^{+46}	94^{+203}	
	46^{+258}	335^{+208}	95^{+117}	
	35,985	257,825	72,552	
	3,998	28,647	8,061	40,706
	2501	3491	1241	2457

Run 5 15" X 15" X $\frac{22}{8}$" U SLAB - BARE

2 min.	87^{+136}	631^{+189}	163^{+149}	
	87^{+0}	633^{+189}	164^{+247}	
	87^{+145}	633^{+206}	165^{+27}	
	67,097	488,776	126,378	
CPM	11,183	81,462	21,063	113,708
~~CPM~~	8942	1228	4748	8794

C.A. U Slab Expr. T Run 1
Shot Date 3-15-1960 Time 2:55 PM
Purpose 20" x 20" U Slab
BARE

Run 1 20" x 20" x 7/8" U Slab - BARE

5 Min				
	13 +247	105 +144	38 +62	
	13 +77	105 +51	39 +22	
	13 +219	105 +230	38 +142	
	13 +136	105 +7	38 +182	
	14 +26	104 +215	38 +128	
	17,601	134,791	49,432	
	704	5,392	1,977	8074
	1420	18555	50558	1239

Run 2 20" x 20" x 14/8" U Slab - Bare

5 Min.				
	25 +192	203 +238	67 +29	
	26 +143	203 +167	67 +63	
	26 +172	204 +49	67 +4	
	26 +155	204 +234	67 +53	
	27,030	209,072	68,757	
	1,352	10,454	3,438	15,244
	7396	95-66	2909	6560

62

3-16-60

INSTRUMENT CHECK

Time 8:15 AM

Source PN-467

Chart

	A	B	C	D	E
	10/1000	off	10^{-10}	10/1000	1050V
Source Dist.	5"	0"	48"	3"	0"
% F.S. TMp	80	OK	100	85	100+

Counters 1, 2 & 3

Run 3 20" X 20" X 18/8" U Slab - Bare

5 min	50 +94	398 +235	114 +81	
	51 +80	398 +227	115 +11	
	51 +10	398 +127	115 +120	
	38,800	306,253	~~116,436~~ 88,276	
CPM	2,587	20,417	~~7,762~~ 5,885	28,889
1/CPM	3865	4898	~~2848~~ 1699 ~~30,766~~ 3462	~~3280~~

Run 4 20" X 20" X 20/8" U Slab - Bare

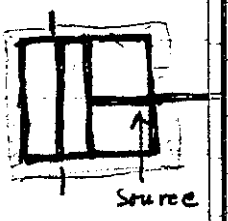
2 min	42 +148	335 +220	89 +253	
	42 +111	337 +248	90 +23	
	42 +248	337 +92	90 +90	
	32,763	258,856	69,230	
	5,461	43,142	11,538	60,241
	1831	2318	8667	1660

C.A. U Slab Expr. U Run 1

Sheet _____ Date 3-16-~~60~~ Time 2:10 ~~AM~~ PM

Purpose 10" X10"

1" Reflector



Run 1 10" X10" X1" — 1" Plexiglas Reflector

3" on moveable Table + 7" on Fixed Table

5 Min	20^{+148}	168^{+242}	38^{+62}	
	21^{+4}	$+140$	39^{+92}	
	21^{+68}	170^{+212}	39^{+65}	
	16,348	130,386	29,918	E
	1,090	8,692	1,943	11,725
	9174	11510	5146	8529

889

3462

Run 2 10"X10" X 1½" — 1" Reflector

3 Min	23^{+222}	177^{+222}	40^{+112}	
	23^{+156}	176^{+117}	41^{+82}	
	23^{+221}	177^{+103}	40^{+181}	
	18,263	133,562	31,351	
	2,029	14,840	3,483	20,352
	4929	6739	2871	4913

Run 3 10" X10" X 1¾" — 1" Reflector

3 min	36^{+92}	261^{+197}	60^{+136}	
	36^{+222}	262^{+152}	62^{+77}	
	36^{+160}	262^{+113}	60^{+154}	
	28,122	201,422	46,959	
	3,125	22,380	5,218	30,723
	3200	4468	1916	3255

64

3-17-60

INSTRUMENT CHECK

Time 8:30 AM — PN-467

		A	B	C	D	E
Ranges	F	10/1000	off	10^{-10}	10/1000	1050V
Source Dist.	OK	9"	0"	48"	3½"	0"
% F.S. Trip		80	OK	100	80	100+

Counters 1, 2 + 3

Run 4 — 10" X 10" X 2" U Slab — 1" Reflector

3 min

61^{+111}	433^{+103}	95^{+238}	
61^{+146}	431^{+204}	96^{+64}	
62^{+49}	435^{+42}	98^{+52}	
47,410	332,893	74,238	
5,268	36,989	8,249	50,506
1898	2703	1212	1980

Run 5 — 10" X 10" X 2¼" U Slab — 1" Reflector

½ min

~~Run 5~~ .395	.28	188	43	.386
.12	43	~	66	.0917

1 min

85^{+232}	Jamming	133^{+163}	
86^{+109}		132^{+173}	
44,118		68,178	
22,059		34,089	
4533		2933	

C.A. U Slabs Expr. V Run 1
Sheet ____ Date 3-17 1960 Time 1:05 PM
Purpose 10" X 10" U Slab
2" Plexiglas Reflector

Run 1 10" X 10" X 1" U Slab - 2" Reflector

5 Min.	27 + 182	214 + 251	46 + 80	
	28 + 119	216 + 159	46 + 175	
	28 + 0	215 + 131	47 + 18	
	21,549	165,661	35,857	
CPM	1,437	11,044	2,390	14,871
1/cpm	6959	9055	4184	6724

Run 2 10" X 10" X 1½" U Slab - 2" Reflector

5 Min	106 + 243	763 + 247	169 + 133	
	107 + 79	764 + 103	170 + 66	
	54,850	391,262	86,983	
	5,485	39,126	8,698	53,309
	1823	25566	1150	1876

Run 3 10" X 10" X 1 5/8" U Slab - 2" Reflector

2 min	100 + 48	687 + 43	157 + 42	
	98 + 202	689 + 169	155 + 65	
	98 + 198	689 + 63	155 + 41	
	76,224	529,171	119,700	E
	12,704	88,195	19,950	120,849
	7872	1134	5013	8275

66

3-18-60

INSTRUMENT CHECK

Source Pu-467

Time 10:30 PM

	Channel A	B	C	D	E
Range	10 / 1000	gm	10^{-10}	10 / 1000	1080
Source D	8"	20"	48"	4"	0"
% F.S. Trip	85	OK	100	85	102+

Counters 1, 2 & 3

C.A. U Slab Expr. W Run 1

Sheet _____ Date 3-18-1960 Time 11:00 AM PM

Purpose 10" X 10" U Slab

6" Plexiglas Reflector

Run 1 10" X 10" X $\frac{1}{8}$" U Slab - 6" Reflector

5 min	8 + 254	67 + 25	14 + 6	
	9 + 9	67 + 132	14 + 24	
	9 + 33	67 + 67	14 + 181	
	8 + 222	66 + 174	14 + 128	
	9 + 85	66 + 176	14 + 88	
	11,611	85,824	18,347	E
C.P.M.	464.	3,433	734	463
$\frac{1}{2}$ C.P.M.	2153	2913	1362	215

Run 2 10" X 10" X 1¼" - U Slab - 6" Reflector

3 min	39 + 151	291 + 133	60 + 174	10/8
	39 + 139	291 + 27	61 + 44	
	39 + 205	290 + 241	62 + 165	
	30,447	223,633	47,231	
	3,383	24,848	5,248	33,479
	2611	4028'	1905'	.2989

Run 3 10" X 10" X 1⅛" - U Slab - 6" Reflector

3 Min	13 + 131	97 + 210	21 + 41	9/8
	13 + 94	97 + 91	21 + 83	
	13 + 30	98 + 99	20 + 190	
	13 + 36	97 + 181	21 + 22	
	13 + 98	98 + 216	20 + 255'	
	17,029	125,469	26,959	E
	1,135'	8,365'	1,797	11,297
	8811	1198'	5565'	8852

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3-21-60

INSTRUMENT CHECK

Time 2:30 ~~PM~~ Source PW-467

	Channel A	B	C	D	E
Range	F 1000		10	100	1050V
Source Dist.	6.5"	0"	42"	3"	0"
% F.S. Trip	80	OK	100	90	100

~~Counters~~ 1, 2 + 3

C.A. U Slab Expr. X Run 1

Sheet ____ Date 3-21-60 Time 2:30 ~~PM~~

Purpose 15" X 15" U Slab
1" Plexiglas Reflector

Run 1 15" X 15" X 7/8" U Slab - 1" Reflector

5 Min	16 + 9	183 + 13	32 + 128	
	15 + 233	152 + 173	33 + 138	
	18 + 172	183 + 163	32 + 252	
	16 + 53	153 + 163	32 + 238	
	16,439	156,928	33,780	E
CPM	822	7,846	1,689	10,357
CPM	1217	1275	5921	9655

Run 2 15" X 15" X 1" – 1" Reflector

5 min				
	18 +153	177 +148	37 +33	
	18 +105	176 +82	37 +110	
	18 +160	178 +22	37 +179	
	14,242	136,188	28,738	E
	9498	9,079	1,916	11,994
	1053	1401	5219	8372

3-22-60 8:35

INSTRUMENT CHECK PN-967

	F	10/1000	opr	10-10	10/1000	10.50V.
	OK					
Source Dist.		8"	0"	48"	4"	0"
% F.S. Dep		85	OK	100	80	100 +

Run 3 15" X 15" X 1½" – 1" Reflector

5 min				
	41 +199	383 +14	77 +1	
	41 +154	384 +73	77 +91	
	41 +94	383 +222	78 +14	
	41 +172	382 +186	76 +207	
	42,603	295,407	79,161	E
	2,130	14,770	3,958	20,858
	4698	6770	2527	4794

Run 4 15" X 15" X 1¾" U Slab - 1" Reflector

2 min.

	40 +234	355 +157	71 +87	
	41 +56	357 +170	72 +172	
	41 +190	357 +250	72 +172	
	31,712	274,241	55,471	
CPM	5,285	45,706	9,245	60,236
CPM	1892	2188	1082	1660

Run 5 15" X 15" X 1⅞" U Slab - 1" Reflector

Tablepos	½ min ctr.					
.60	13	111		22	146	.685
.50	14	121		25	160	.625
.40	16	134		29	179	.559
.30	19	161	53	34	214	.467
.20	24	205		43	272	.365
.20	25	Disc = 56.5 108	= 1.898	43	176	.568
.15	28	125		51	204	.490

1 min

	65 +151	284 +65	116 +230	
	66 +49	285 +188	116 +23	
	64 +236	283 +127	114 +140	
	50,336	192,829	88,969	E
CPM	16,785	64,297	29660	170,742
CPM	5958	1555	3372	9030
		1.875		
		122,036		168,491
		819		5935

C.A. U Slab Expr. 3 Run 1
Sheet Date 3-22-60 Time 1:40 P.M.
Purp 15"X15" U Slab
2" Plexiglas Reflector

Run 1 15" X 15" X 7/8" U Slab - 2" Reflector

3 min	13 +7	133 +157	23 +242	
	13 +99	132 +59	24 +27	
	12 +192	133 +150	23 +230	
	13 +78	133 +220	23 +236	
	13,432	136,522	24,543	
CPM	1,119	11,377	2,048	14,541
~~CPM~~	8937	8790	~~4890~~	6877

Run 2 15" X 15" X 1 1/8" U Slab - 2" Reflector

3 min	32 +205	310 +83	56 +130	
	33 +46	308 +129	56 +182	
	33 +151	310 +154	57 +102	
	25,490	237,934	43,678	
	2,832	26,437	4,853	34,122
	3531	3783	2061	2931

Run 3 - 15"X15" X 1¼" U Slab - 2" Reflector

3 min	81^{+2}	733^{+21}	137^{+37}	
	81^{+125}	734^{+110}	139^{+225}	
	41,599	375,683	70,918	
	6,933	62,613	11,820	81,366
	1442	1597	8460	1229

3-23-60

INSTRUMENT CLOCK

Time 12:45 — PN-467

	$\frac{10}{1000}$ Oper	10^{-10}	$\frac{10}{1000}$	1050V
Scaler Unit	6"	42"	3"	
Sec. to Trip	100	100	85	

Counters 1, 2 & 3

C.A. U Slab Sheet Z Run 1

Sheet 3-23-60 AM PM

Purpose 15" X 15" U Slab
6" Plexiglas Reflector
Source under Fuel of Find Table.

Run 1 15" X 15" X ½" U Slab — 6" Reflector

8 min	7^{+205}	67^{+63}	14^{+46}	
	7^{+162}	66^{+99}	14^{+13}	
	7^{+234}	67^{+128}	13^{+235}	
	7^{+14}	66^{+103}	14^{+90}	
	8039	68,489	14,464	E
PM	251	2,140	452	2843
from	3984	4673	2212	3517

Run 2 15" x 15" x 5/8" U Slot - 6" Reflector

8 min				
	10 + 126	90 + 77	18 + 187	
	10 + 171	91 + 126	19 + 26	
	10 + 148	91 + 72	18 + 106	
	8,125	69,907	14,399	E
	338.5'	2,913	600	3852
	2954	3433	1667	2596

Run 3 15" x 15" x 3/4" U Slot - 6" Reflector

8 min				
	16 + 62	141 + 45	28 + 37	
	16 + 167	143 + 230	28 + 42	
	16 + 64	142 + 85	27 + 188	
	12,481	109,416	21,515	
	520	4,559	896	5,978
	1923	2193	1116	1674

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3-24-60

INSTRUMENT CHECK

Time 9:05 AM — PN-467

	Channel A	B	C	D	E
Range	F				
	γ OK	10/1000	off	10^+0	10/1000	1050 V.
Source Dist.		8"	0"	42"	2½"	½
% F.S. Trip		85	OK	100	80	100+

Counters 1, 2 +3

Run 4 15" X 15" X 7/8" Al Slab - 6" Reflector

5 Min	25 +250	234 +38	43 +2	
	26 +60	232 +120	43 +98	
	26 +104	234 +37	43 +74	
	20,126	174,395	33,198	
	1,342	11,960	2,213	15,815
	745 2	8361	4519	6445

Exp. U Slab A-1
Shot 3-24-60 12:55
Purpose 20" X 20" U Slab
1" Plexiglas Reflector

Run 1 20"x20"X 2/8" U Slab - 1" Reflector

5 min	16 +55	154 +254	33 +39	
	16 +52	157 +31	33 +45	
	16 +71	155 +112	33 +46	
	16 +68	185 +247	33 +1	
	16,630	159,620	33,923	E
CPM	831.5	7,981	1,696	10,509
cpm	1203	1253	5896	9516

Run 2 20" x 20" x 9/8" U Slab - 1" Reflector.

5 min	23 +100	218 +129	47 +32	
	22 +143	216 +126	46 +231	
	23 +78	217 +109	46 +121	
	17,729	164,460	35,968	
	1,182	10,964	2,398	14,544
	8460	9121	4170	6876

Run 3 20"x20"x 4/8" 21 Slab - 1" Reflector

3 min	22 +251	209 +178	44 +3	
	22 + 91	209 + 25	43 +41	
	22 +223	209 +68	43 +170	
	17,961	160,783	33,494	
cpm	1,940	17,865	3932	23,737
	5185	5598	2543	4213

Run 4 20"x20"x 13/8" 41 Slab - 1" Reflector

3 min	55 +150	511+88	105 +27	
	55 + 252	510 +205	105 +90	
	55 + 61	513 +53	106 +77	
	42,703	393,050	81,090	
	4,745	43,672	9,010	57,427
	2107	2290	1110	1741

INSTRUMENT CHECK

3-25-60 — 9:20 AM — PN-467

	A	B	C	D	E
	1000	Opr	10^{-10}	1000	105V
	7.5"	0'	36"	4'	½"
F.S. Trip	80	OK	109	88'	

Counters 1, 2 & 3

Runs 20" X 20" X 14/8" U Slat — 1" Reflector

Table Pos.	½ min				
.4	19	172	35	226	.442
.3	23	207	43	273	.336
.3	23	Dist = 70 65 3.185	42	130	.769
.2	30	82	51	167	.560
.15	36	95	68	199	.502
.12	39	105	73	217	.461

1 min	84 +59	220 +203	185 +239	
	84 +161	222 +103	158 +230	
	83 +15	223 +195	156 +15	
	64,541	120,741	119,770	
CPM	21,514	56,914 X 3.185 = 181,271	39,923	242,708
	4648	17570	5376 2505	4120

C.A. U SLAB Expr. B-1 Run 1
Sheet ____ Date 3-25-60 Time 1:50
Purpose 20" X 20" U SLAB
3" PLEXIGLAS REFLECTOR

Run 1 20" X 20" X ½" U SLAB - 3" REFLECTOR
Tables Separated - 10" X 20" X ½" on Each Table.

3 Min	6^{+124}	65^{+108}	12^{+42}	84	.1190
	6^{+235}	66^{+100}	13^{+108}	86	.1163

3 Min.	9^{+108}	90^{+41}	17^{+244}	
	9^{+89}	88^{+248}	18^{+8}	
	9^{+9}	88^{+95}	18^{+8}	
	9^{+36}	89^{+112}	17^{+138}	
	9^{+89}	88^{+185}	18^{+45}	
	~~37,851~~	108,979	22,971	E
	8 43.8	7,265	1,531	9,640
	11 85	1376	6532	1037

Run 2 20" X 20" X ¾" U Slab - 3" Reflector
Tables Separated. 11^{+6} 104^{+21} 18^{+197} = 134 .7463

3 Min	24^{+89}	230^{+20}	43^{+48}	
	24^{+94}	230^{+205}	43^{+230}	
	24^{+73}	232^{+13}	44^{+87}	
	18,688	177,390	33,665	
	2,076	19,710	3,741	25,527
	4817	5074	2673	3917

Run 3 20" x 20" x 7/8 U Slab - 3" Reflector

Table exported - $15^{-}+155$ $142^{+}25^{-}3$ $24+232 = 182 \cdot 5^{-}49$

1 min	$32^{+}63$	$307^{+}214$	$5\overline{1}^{-}+220$	
	$31^{+}125^{-}$	$309^{+}163$	$57^{+}72$	
	$31^{+}219$	$308^{+}137$	$5^{-}7^{+}69$	
	24,471	237,038	43,625	E
	8,157	79,019	14,542	10,718
	1226	1266	6877	9831

.7463

80

3-28-60

INSTRUMENT CHECK

Time 10:15 AM ~~PM~~ Source PN-467

	Channel A	B	C	D	E
Range	F 10/1000	Dpr	10^{-10}	10/1000	1050 V
Source Dist.	25"	8"	4"	3"	½
% F.S. Trip	88	OK	100	88	100+

Counter 1,283

C.A. U Slab Expr. C-1 Run 1

Sheet ____ Date 3-28-1960 Time 11:10 AM ~~PM~~

Purpose 20"X20" U Slab
6" Plexiglas Reflector

Run 1 20"X20"X½" U Slab -6" Reflector

Counts with tables separated

5 min	5^{+151}_{-201}	40^{+196}_{-196}	7^{+195}_{-242}	927 cpm
	5	40	7	1079
			27805	
5 min	6^{+7}_{-252}	56^{+158}_{-101}	11^{+73}_{-27}	
	5^{+23}_{-228}	56^{+12}_{-153}	11^{+87}_{-52}	
	5^{+221}	57^{+50}_{-}	11^{+230}_{-}	
	6 40	56 79	10 51	
	36 160	338 98	65 181	
	18595	173195	33894	
	310	2886	565 374	1659
	3,226	3465	1769	

Run #2 20" X 20" X 5/8" U Slab - 6" Reflector

10 min Counts with tables separated

	14 +98	104 +415	19 +200	
			35465	
			11805	.0847
5 min.	10 +87	96 +197	18 +35	
	10 +102	96 +185	18 +12	
	10 +28	95 +106	18 +48	
	10 +94	96 +177	18 +27	
	10 +92	97 +88	18 +70	
	13203	123633	23232	
	5281	4945	9292	6402
	1893	2022	10762	1.56

Run 3 20"X 20" X 6/8" U Slab 6"

counts with tables separated

5 min.	10 +80	78 +238	13 +86	
5 min.	35 +145	345 +46	62 +91	
	36 +51	344 +234	61 +89	
	36 +135	343 +129	61 +249	←
	18,763	264601	47533	
	1,251	17640	3169	22060
	7994	5669	3156	4593

82

3-29-60

INSTRUMENT CHECK

Time 8:45 AM ~~PM~~ Source PN-967

	Channel A	B	C	D	E
Range	F				
	1u/1000	Opr	10^{-10}	1u/1000	1050V
Source Dist.	7"	ox	48"	2½"	½"
% F.S. Trip	85	ox	100	80	100

Counters 1, 2 & 3

C.A. U Slabs Expr. D-1 Run 1

Sheet _____ Date 3-29-60 Time 10:10 AM ~~PM~~

Purpose 25"x25" U Slab
6" Plexiglas Reflector

Run 1 25"x25"x ½" U Slab - 6" Reflector.

Tables Separated.

5 Min	3 + 197	31 + 143	5 + 116	1.250
	3 + 183	32 + 92	5 + 186	1.285
5 min	3 + 47	35 + 42	6 + 153	
	3 + 78	35 + 49	6 + 114	
	3 + 97	35 + 20	6 + 73	
	3 + 108	34 + 81	6 + 149	
	3 + 40	34 + 145	6 + 56	
	3 + 65	35 + 19	6 + 111	
	3 + 55	34 + 161	6 + 176	
	3 + 100	35 + 75	6 + 137	
	3 + 70	34 + 108	6 + 51	
	3 + 64	34 + 206	6 + 77	

	8,514	89,226	16,457	E
CPM	170	1,785	329	2284
cpm	5882	5602	3040	4374

Run 2 25" X 25" X ½" u Slab - 6" Reflector

15 min.	19^{+41}	147^{+253}	25^{+213}	.781
	18^{52}	149^{55}	26^{126}	.773

5 min.	7^{+36}	74^{+231}	13^{+25}
	6^{+253}	75^{+54}	13^{+10}
	7^{+9}	74^{+233}	13^{+53}
	6^{+218}	74^{+236}	13^{+20}
	7^{+72}	75^{+77}	13^{+49}
	7^{+94}	75^{+49}	13^{+104}
	10,922	115,312	20,229
	364	3,844	674
	2747	2601	1484

4,882
2048

84

3-30-60

INSTRUMENT CHECK

Source SN-467

Time 10:00 ~~PM~~ AM

	Channel A	B	C	D	E
Range	F 10/1000	opr 10	10/1000	1050V,	
Source Dist.	25"	8"	42"	3"	½"
% F.S. Trip	81	OK	100	80	100+
~~Counts~~	1,283				

(Not enough 1/8" foil to Completely Cover 25"x25")

Run 3 25" X 25" X ~ 5/8" - 4 Slab - 6 "Plexiglas, ~~addack~~ 1/8" to 440 in² & top. ~2" along outside edges not Covered

5 min	8 +14	69 +146	11 +163	.53
	7 +186	68 +161	11 +119	~~.47~~
				.573
5 min	12 +19	127 +176	21 +224	
	12 +30	128 +~~203~~	21 +142	
	12 +66	126 +62	21 +238	
	12 +11	127 +43	22 +40	
	11 +242	126 +111	21 +240	
	11 +24	126 +53	22 +19	
	18,312	19,442	33,671	
	610	6,481	1,124	8,215
	1639	1543	8897	1217

Graphite Reflector

C.A. U Slabs Expr. E-1 Run 1
Sheet Date 3-30 1960 Time 2:05 ~~AM~~ PM
Purpose 8" X 10" U Slab
1 7/16" Graphite Reflector

Run 1 8" X 10" X 1" U Slab - 1 7/16" Graphite Refl.

5 min	20^{+80}	148^{+10}	35^{-46}	
	19^{+207}	149^{+25}	35^{-113}	
	20^{+48}	150^{+7}	35^{-22}	
	15,439	114,474	27,061	
	1,029	7,632	1804	10,463
	9718	1310	5543	9556

Run 2 8" X 10" X 1½" U Slab - 1 7/16" Graphite Refl.

5 min	34^{+224}	247^{+0}	$5-7^{+97}$	
	35^{-+184}	245^{-+187}	$5-8^{+9}$	
	35^{+90}	248^{+51}	$5-8^{+89}$	
	27,122	189,678	44,483	
	1,808	12,643	2,966	17,419
	5531	7808	3372	5741

86

3-31-60

INSTRUMENT CHECK

Time ____ A.M. P.M. Source PN-467

	Channel A	B	C	D	E
Range	F 10/1000	ofm	10⁻¹⁰	10/1000	
Source Dist.	8"	0"	42"	3"	½"
% F.S. Trip	80	OK	100	8½	10+

Counters 1, 2 & 3

Run 3 8"X10"X1¾" U Slab - 1 7/16" C Refl.

	A	C	E
3 min.	29 +244	207 +230	47 +234
	30 +173	208 +210	48 +52
	30 +167	208 +33	48 +158
	23,368	159,981	37,052
	2,596	17,776	4,117
	3852	5626	2429
			24,489
			4083

Run 4 8"X10"X2" U Slab - 1 7/16" C Refl.

	A	C	E
3 Min	47 +76	314 +203	72 +250
	47 +1	314 +219	73 +155
	47 +169	317 +146	73 +187
	36,292	242,483	56,400
	4,032	26,943	6,267
	2480	3712	1596
			37,242
			2685

Run 5 8" x 10" x 2¼" ℓ Slab - 1 7/16" C Refl.

3 min	93^{+46}	609^{+202}	141^{+106}	
	93^{+112}	610^{+163}	143^{+80}	
	93^{+93}	608^{+49}	142^{+169}	
	71,625	468,126	109,411	Σ
	7,964	52,014	12,157	72,135
	1256	1923	8226	1386

Run 6 8" x 10" x 2 3/8" ℓ Slab - 1 7/16" C Refl.

1 min ~~=5~~ tables Separated

.25	39^{215}	254^{+126}	61^{+23}
.25	39^{+212}	Dia. at 20 68^{+48} = 3,735	60^{+176}

1 min. 58^{+193} 92^{+213} } 405 87^{+92}

Dia. at 20

	58^{+57}	371^{+213}	87^{+200}
	58^{+55}	376^{+31}	88^{+126}
	44,849	191,476	67,646 Σ
	14,950	95,738	22,549 133,237
	6689	1045	4432 7503

C.A. U Slabs Expr. F-1 Run 1
Sheet Date 3-31-1960 Time 2:20 AM PM
Purpose 8" X 10" U SLAB
2 7/8" GRAPHITE REFLECTOR

Run 1 8" X 10" X 1" U Slab - 2 7/8" C Refl.

5 Min	24 +140	172 +141	41 +83	
	24 +155	172 +162	41 +85	
	24 +95	172 +251	41 +82	
	18,722	132,650	31,738	E
	1,248	8,843	2,116	12,207
	4012	1131	4726	8192

Run 2 8" X 10" X 1 1/4" U Slab - 2 7/8" C Refl.

5 Min	34 +245	236 +225	55 +188	
	34 +141	234 +194	56 +105	
	35 +96	238 +204	55 +139	
	26,594	181,871	42,928	E
	1,773	12,125	2,862	16,760
	5640	8247	3494	5967

Run 3 8" X 10" X 1½" U Slab - 2⅞" C Refl.

3 min	32 +156	213 +213	50 +196	
	32 +168	213 +38	51 +60	
	32 +144	214 +125	50 +72	
	25,044	164,216	38,984	E
	2,783	18,~~248~~ 246	4,332	25,361 ~~28,063~~
	3593	~~4134~~ 5480	2308	3943 ~~5536~~

4-1-60

INSTRUMENT CHECK

Time 8:40 AM ~~PM~~ Source PN-467

	Channel A	B	C	D	E
Range	F 19/1000	9pr	10-10	10/1000	10.32V
	+ OK				
Source Dist.	8"	0"	12"	3"	½"
% F.S. TMD	80	OK	100	80	100+

Counters 1, 2 & 3 OK

Run 4 8" X 10" X 1¾" U Slab - 2⅞" C Refl.

2 min	40 +28	259 +116	60 +79	
	41 +71	263 +241	59 +226	
	40 +242	262 +179	60 +152	
	31,317	201,240	46,281	E
	5,220	33,540	7,714	46,474
	1916	2982	1296	2152

Run 5 8"X10"X 1 7/8" u Slab - 2 7/8" C. Refl.

1 min	34^{+88}	213^{+124}	49^{+32}	
	34^{+183}	215^{+11}	50^{+113}	
	34^{+216}	215^{+239}	50^{+246}	
	26,599	164,982	38,535	E
	8,866	54,994	12,845	76,705
	1128	1818	7745	1304

Tables separated 8"X10X2" u Slab 2 7/8" C Refls.

Run #6 $.260^{+222}$ 372^{+188} 88^{+61}

1 min. $.259^{+239}$ Dia-50 212^{+195} } 1.252 88^{+166}

1 min	84^{+141}	288^{+195}		124^{+87}	
	85^{+39}	291^{+139}		124^{+231}	
	84^{+184}	292^{+97}		125^{+181}	
	65,132	223 409		95,987	E
	21,711	74,469	130,460	31,996	184,467
	4606	1343	7665	3125	5421

C.A. U Slab Expr. G-1 Run 1

Sheet _____ Date 4-1-1960 Time 2:45 AM ~~PM~~

Purpose 8" X 10" U Slab
5¾" Graphite Reflector

Run 1 8" x 10" x ⅞" U Slab - 5¾" Graphite Reflector.

5 min	25 +6	157 +235	38 +46	
	25 +86	157 +14	37 +215	
	25 +76	157 +118	38 +206	
	19,368	120,942	29,395	E
CPM	1,291	8,063	1,960	11,314
CPM	7746	1240	5102	8839

Run 2 8" x 10" x ⅞" U Slab - 5¾" C Reflector

E
467
421

3 min	24 +56	148 +163	36 +229	
	24 +141	148 +204	36 +244	
	24 +36	148 +218	37 +9	
	18,665	114,249	28,386	E
	2,074	12,694	3,154	17,922
	4822	7878	3171	5580

92

4-4-60

INSTRUMENT CHECK

Time 8:35 AM ~~PM~~ Source PN-467

	Channel A	B	C	D	E
Range	F				
	10/1000	opr	10^10	10/1000	1050V
Source Dist.	OK	9"	0"	42"	3"	½"
% F.S. Trip	80	OK	100	80	100

Counters 1, 2 & 3

Run 3 8" X 10" X 11/8" n Slab - 5¾" C Reflector

3 min	51 +162	296 +8	73 +129	
	50 +144	293 +149	71 +72	
	50 +67	296 +1	72 +139	
	39,049	226,718	55,632	E
	4,339	25,191	6,184	35,714
	2305	~~3970~~ ~~3930~~	1617	2800

Run 4. 8" X 10" X 12/8" n Slab - 5¾" C Reflector

1 min	30 +230	181 +77	45 +0117	
	31 +178	184 +52	45 +225	
	32 +65	183 +167	45 +104	
	24,281	141,096	35,006	E
	8,094	47,032	11,669	66,295
	1235	2126	8569	1497

4-5-60

INSTRUMENT CHECK

Time 8:20 AM Source PN-467

	Channel A	B	C	D	E
Range	10³/1000	off	10⁻¹⁰	10⁻¹⁰/1000	1050 V
Source Dist.	8'	0"	42"	4"	½"
% F.S. Trip	85	off	100	75	600+

Counter 1, 2 & 3

C.A. U SLAB Expr. 14-1 Run 1

Sheet ____ Date 4-5-1960 Time 8:35 AM

Purpose 8"X10" U SLAB
12" GRAPHITE REFLECTOR

Run 1 8"X10"X 7/8" U Slab — 12" C Reflector

5 min	21 +231	124 +161	31 +154	
	22 +123	123 +14	32 +22	
	22 +197	123 +12	31 +118	
	22 +66	123 +98	31 +9	
	22,891	128,026	32,303	E
	1,148	6,401	1,615	9161
	8734	15-62	6192	1092

Run 2 8" X10" X1" U Slab - 12" C Reflector

5 min	32^{+234}	177^{+130}	45^{-+114}	
	32^{+14}	177^{+71}	45^{-+110}	
	32^{+90}	178^{+228}	46^{+3}	
	24,914	136,621	35,053	
	1,661	9,108	2,336	13,105
	6020	1098	4281	7631

Run 3 8" X10" X $\frac{9}{8}$" U Slab - 12" C Reflector

3 min	32^{+246}	175^{-+129}	45^{-+145}	
	32^{+42}	174^{+224}	44^{+221}	
	32^{+174}	175^{-+232}	46^{+46}	
	25,038	133,705	34,972	E
	2,782	14,856	3,886	21,524
	3595	6731	2573	4646

Run 4 8" X10" X $\frac{10}{8}$" U Slab - 12" C Reflector

1 min	27^{+226}	153^{+62}	39^{+51}	
	28^{+85}	154^{+17}	40^{+4}	
	28^{+68}	155^{-+254}	40^{+56}	
	28^{+216}	155^{-+74}	40^{+196}	
	29011	158,359	41,011	E
	7,253	39,590	10,253	56,096
	1379	25126	9253	1783

4-6-60

INSTRUMENT CHECK

Time 1205 AM/PM Source PN-467

	Channel A	B	C	D	E
	14/1000 appr		10	9/1000	1038 V
Source Pos.	8"	0"	42"	3"	0"
% E.S. Trip	80	ok	100	85	100+

Counters 1, 2 + 3

C.A. U-Slab Expr. I-1 Run 1

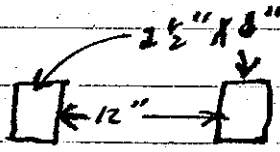
Sheet ____ Date ____ 19__ Time ____ AM/PM

Purpose: Multiplication Measurements of LiD between 2½" U Slabs with tables closed slabs are 12" Separated.

Li D

Counts with tables separated, 2½" U Slab on each table

3 min	28 + 114 + 176	82 + 228 + 254	41 + 31 + 132	E
	28	82	40	13,001
Run 1	2440 CPM	7078 CPM	3483 CPM	7692
3 min	33 + 142	101 + 48	49 + 75	
	34 + 71	101 + 129	48 + 215	
	33 + 253	100 + 119	48 + 207	
	26,066	77,608	37,617	E
cpm	2896	8,623	4,180	15,699
± cpm	3453	1159	2392	6370



Run 2 2½"X8"X10" U Slab on each table. When tables are Closed slabs are separated by [redacted] Inches.

3 min	36^{+239}	118^{+215}	52^{+119}	
	37^{+195}	116^{+90}	51^{+74}	
	36^{+228}	116^{+137}	51^{+164}	
	28,566	89,274	39,781	
CPM	3,174	9,919	4,420	17,513
CPM	3151	1008	2262	5710

Run 3 2½"X8"X10" U Slab on each table. When 1 tables are Closed slabs are separated by 12 inches.
½"X 8"X10" Li D against inner face of U Slab on fixed table.

3 min	39^{+168}	112^{+254}	58^{+75}	
	40^{+21}	113^{+65}	58^{+205}	
	40^{+99}	113^{+143}	58^{+9}	
	30,752	86,990	44,833	
	3,417	9,666	4,981	18,064
	2927	1035	2008	5536

Run 4 1"X8"X10" Li D against forced & fixed slab.

	44^{+167}	132^{+185}	63^{+203}	
3 min	44^{+135}	133^{+134}	62^{+125}	
	43^{+107}	131^{+162}	63^{+32}	
	33,945	101,817	48,488	
	3,772	11,313	5,388	20,473
	2651	8839	1856	4884

Run 5 1½" x 8" x 10" Li D against face of fixed slab

3 min	45 +191	131 +166	67 +136	
	45 +59	131 +160	67 +208	
	46 +53	132 +74	67 +238	
	35,119	101,264	52,038	E
	3902	11,252	5,782	20,936
	2563	8887	1730	4776

INSTRUMENT CHECK

Time 8:15 AM Source PN-467

	Channel A	B	C	D	E
Range	10 / 1000	0	10 / 100	10 / 100	1050 V
Source Dist.	8"	0"	42"	3"	½"
% F.S. Trip	85	OK	100	85	100+

Counters 1, 2 & 3

4-7-60

Run 6 2" x 8" x 10" Li D against face of fixed slab.

3 min	46 +104	137 +134	66 +92	
	46 +151	137 +63	65 +7	
	46 +124	137 +75	65 +41	
	35,707	105,488	50,316	
CPM	3,967	11,721	5,591	21,279
CPM	2521	8532	1789	4699

Run 7 3" X 8" X 10" Li D against face of fixed Slab.
#6 Li D Slab = 3058 gms.

3 min	45 + 245	134 + 179	67 + 115	
	46 + 149	136 + 174	66 + 73	
	46 + 175	134 + 58	66 + 125	
	35,641	103,715	51,257	E
CPM	3,960	11,524	5,695	21,179
$\frac{+}{-}$ cpm	2525	8678	1756	4722

Run 8 4" X 8" X 10" Li D against face of fixed Slab.

3 min	44 + 131	130 + 71	65 + 255	
	43 + 127	130 + 72	65 + 211	
	44 + 205	130 + 38	65 + 232	
	34,511	88,981	53,618	
	3,835	11,110	5,624	20,569
	2608	9001	1778	4862

Run 9 5" X 8" X 10" Li D against face of fixed Slab

3 min.	44 + 249	128 + 71	65 + 245	
	45 + 49	127 + 83	65 + 23	
	44 + 33	126 + 243	65 + 107	
	34,379	97,933	50,295	
	3,820	10,881	5,588	20,289
	2618	9190	1789	4929

6. Run 10 6"x8"x10" Li D against face of fixed slab.
#7 Li D slab = 3064 gms.

3 min	44^{+86}_{+50}	118^{+190}_{+167}	66^{+194}_{+163}	
	44^{+97}	117^{+81}	66^{+43}	
	34,015	90,806	51,088	Σ
CPM	3,779	10,090	5,676	19,545
CPM	2646	9911	1762	5116

Run 11 7"x8"x10" Li D Against face of fixed slab.

3 Min	~~123~~ 43^{+207}_{+87}	123^{+142}_{+1}	$64^{+176}_{65^{-}+45^{-}}$	
	44^{+173}	123^{+36}	$62^{-}+60$	
	33,747	94,643	47,385	
	3,750	10,516	5,265	19,531
69	2667	9509	1899	5120
62				

Run 12 8"x8"x10" Li D Against face of fixed slab

3 min	43^{+15}_{+87}	121^{+145}_{+77}	64^{+138}_{+147}	
	43^{+59}	121^{+215}	64^{+74}	
	33,185	93,877	49,511	
	3,687	10,431	5501	19,619
89	2712	9597	1818	5097
29				

Run 13 9" X 8" X 10" Li D against face of fixed slab.
8 Li D Slab = 3073 gms?

3 min	43 +146	122 +175	65 +54	
	43 +134	122 +8	65 +17	
	43 +150	122 +205	64 +154	
	33,454	94,084	49,889	E =
	3,717	10,454	5,543	19,714
	2690	9566	1804	5073

Run 14 10" X 8" X 10" Li D against face of fixed slab

3 min	43 +179	120 +110	64 +153	
	42 +89	122 +205	65 +224	
	43 +16	121 +192	65 +93	
	33,852	93,435	50,135	
	3,672	10,382	5,571	19,625
	2723	9632	1795	5096

Run 15 12" X 8" X 10" Li D between the two Slabs.

3 min	43 +98	123 +34	65 +151	
	43 +111	123 +151	65 +86	
	43 +121	123 +227	66 +12	
	33,360	94,882	50,421	
	3,707	10,542	5,603	19,852
	2698	9486	1785	5037

Run 16 Removed 2½" Fuel from Moveable table.

42^{+60}_{+128}	$122^{+27}_{120^{+119}}$	$63^{+166}_{64^{+171}}$	
42^{+58}	121^{+38}	64^{+3}	
32,302	93,172	49,236	
3,611	10,352	5,471	19,434
2769	9660	1878	5146

4-8-60

INSTRUMENT CHECK

Time 10:40 AM ~~PM~~ Source PN-467

Channel	A	B	C	D	E
F					
Range	10 / 100				
Source Dist.	8"		42"	2.5"	1"
% F.S. Trip	85		100	80	100+

Counters 1, 2 + 3

C.A. 11 Slabs Expr. J-1 Run 1

Sheet ____ Date 4-8-60 Time 10:55 AM ~~PM~~

Purpose Multiplication measurements of Li D between 2.5"X8"X10" 11 Slabs spaced 6½" apart

Li D

Run 1 2½"X8"X10" U Slab on each table.

Table reported

	27 + 236	85 + 194	37 + 69
	27 + 99	84 + 213	37 + 2
	27 + 240	85 + 133	86 + 166
	21,311	65,364	28,397
cpm	2,368	7,285	3,155

Table closed just reported 6½"

	43 + 124	135 + 244	59 ~~+ 154~~
	43 + 81	137 + 108	60 + 28
	43 + 104	137 + 184	60 + 216
	33,333	105,240	46,217
cpm	3,704	11,693	5,135
cpm	~~2600~~ 2700	9552	1947

½ 20,532 4870

Run 2 ½" x 8" x 10" Li D against face of fixed slab.

3 Min.	51^{+8}	148^{+155}	73^{+63}	
	50^{+189}	148^{+24}	73^{+92}	
	50^{+162}	148^{+248}	73^{+115}	
	39,015	114,091	56,334	Σ
CPM	4,335	12,679	6,259	23,271
1/CPM	2307	7888	1594	4297

Run 3 1" x 8" x 10" Li D Against face of fixed slab.

56^{+43}	171^{+46}	79^{+164}	
55^{+121}	168^{+142}	77^{+131}	
55^{+156}	168^{+163}	79^{+35}	
42,816	132,703	60,751	
4,757	14,745	6,750	26,252
2102	6782	1481	3809

Run 4 1½" x 8" x 10" Li D Against face of fixed slab.

56^{+154}	166^{+201}	79^{+250}	
56^{+153}	167^{+13}	80^{+126}	
56^{+74}	167^{+79}	80^{+31}	
43,391	128,293	61,391	
4821	14,255	6,843	25,919
2074	7015	1461	3858

Run 5 2"x8"x10" Li D against face of fixed slab.

3 min	52 + 105	141 + 251	77 + 252	
	52 + 166	140 + 181	78 + 181	
	52 + 109	140 + 55	78 + 128	
	~~42,116~~ 40,316	108,263	60,209	
	~~4,679~~ 4480	12,029	6,689	23,198
	~~2137~~ 2252	9313	1495	~~4274~~ 4311

Run 6 3"x8"x10" Li D against face of fixed slab.

3 min	52 + 233	153 + 183	77 + 252	
	52 + 105	152 + 235	77 + 131	
	53 + 28	154 + 14	76 + 237	
	40,538	117,936	59,480	
	4506	13,104	6,609	24,219
	2219	7631	1513	4129

Run 7 4"x8"x10" Li D against face of fixed slab

3 min	49 + 40	144 + 209	73 + 168	
	50 + ~~234~~	143 + 145	73 + 233	
	50 + 67	144 + 100	73 + 168	
	38,485	110,790	56,633	
CPM	4,276	12,310	6,293	22,879
1/CPM	2339	8123	1589	4371

Run 8 5"X 8"X10" Li D Against face of fixed plat.

3 min	48^{+192}	138^{+123}	71^{+124}	
	48^{+27}	139^{+45}	70^{+237}	
	48^{+113}	139^{+133}	70^{+193}	
	37,196	106,797	54,570	E
4311	4,133	11,866	6,063	22,062
	2420	8427	1649	45-33

Run 9 6½"X8"X10" Li D between fuel slabs.

48^{+65}	135^{+223}	70^{+210}	
47^{+37}	134^{+45}	70^{+200}	
47^{+95}	135^{-+4}	70^{+143}	
36,589	103,696	54313	
4,065	11,521	6035	2/621
2460	8680	1657	.4625

4-11-60

INSTRUMENT CHECK

Time 8:15 AM PM Source Po Be

	Channel A	B	C	D	E
Range	1/1000 OPR	10	10/100	1050	
Source Dist.	8½" OK	4'	3.5	1"	
% F.S. Trip	90 OK	100	80	100	

Counters 1, 2 & 3

Run 10 Removed the 2½" fuel from moveable Table.

9 min	44 5	124 134	65 13	
	44 +247	123 +117	62 +16	
	43 +107	124 +229	61 +169	
	33,893	95,556	47,814	E
CPM	3,766	10,617	5,313	19,696
$\frac{1}{CPM}$	2655	9419	1882	5077

C.A. 4 Slab Expr. K-1 Run 1
Sheet ____ Date 4-11 1960 Time 9:28 AM
Purpose Multiplication with Tuballoy as Li O is added to see if there were scattering effect in previous experiments

Run 1 2"X 8"X 10" Tuballoy on Fixed Table
Nothing on Moveable Table. Tables Closed.

5 Min.

13 +243	37 +71	18 +162	
13 +238	37 +150	18 +165	
13 +237	37 +39	19 +87	
13 +212	37 +133	19 +3	E
14,498	38,281	19,361	3607
Cm 725	1,914	968	2772
1 cm 1379	5225	1033	

Run 2 ½"X 8"X 10" Li O against face of Tuballoy.

14 +73	35 +227	19 +37	
14 +83	35 +45	18 +217	
14 +20	36 +34	19 +55	
14 +15	35 +64	19 +14	E
14,527	36,466	19,523	3523
726	1,823	976	2837
1377	5485	1025	

Run 3 1" X 8" X 10" Li O against face of Tuballoy

14 +40	34 +200	19 +91	
14 +118	34 +168	20 +38	
14 +4	33 +244	19 +133	
14 +111	34 +145	19 +141	
14,609	35,367	20,118	E
730	1,768	1006	3504
1369	5656	9940	2854

Run 4 1½" X 8" X 10" Li D Against face of Tubalcoy

5 min	16 + 212	34 + 87	23 + 254	
	16 + 197	34 + 50	24 + 6	
	16 + 188	34 + 145	23 + 195	
	16 + 197	33 + 111	24 + 65	
	17,178	34,953	24,584	E
	859	1,748	1,229	3836
	1164	5721	8137	2607

Run 5 2" X 8" X 10" Li D against face of Tubalcoy.

	16 + 180	33 + 124	24 + 17	
	16 + 40	33 + 113	24 + 171	
5 min	16 + 109	33 + 225	24 + 176	
	16 + 45	34 + 10	24 + 184	
	16,758	34,530	25,124	E
	837.9	1,727	1,256	3,824
	1193	5790	7962	2617

Run 6 3" X 8" X 10" Li D Against face of Tubalcoy.

	16 + 202	33 + 10	24 + 210	
5 Min	16 + 170	33 + 43	25 + 13	
	16 + 31	32 + 231	24 + 201	
	16 + 160	33 + 163	24 + 215	
	16,947	33,983	25,471	
	847	1,699	1,274	3820
	1181	5886	7949	2618

Run 7 4"X8"X10" Li D against Tuballoy

5 Min	14 +31	31 +144	20 +86	
	14 +128	32 +67	20 +226	
	14 +102	31 +254	20 +141	
	14 +163	31 +219	19 +225	
	14,760	32,428	20,902	E
	738	1,621	1,045	3,404
	1355	6169	9569	2938

Run 8 5"X8"X10" Li D against Tuballoy.

5 Min	14 +8	31 +164	19 +245	
	14 +54	31 +132	20 +12	
	14 +66	31 +80	20 +128	
	14 66	31 +147	20 +174	
	14,530	32,267	20,783	
	727	1,613	1,039	3,379
	1376	6200	9625	2959

Run 9 6½"X8"X10" Li D against Tuballoy.

5 Min	14 +51	31 +100	19 +250	
	14 +110	31 +163	20 +23	
	14 +138	30 +218	20 +35	
	14 +82	30 +107	20 +29	
20	14,717	31,823	20,561	E
18	736	1591	1028	3355
	1359	6295	9728	2981

4-20-60

C.A. U Slab Expr. L-1 Run 1
Sheet Date 4-20-1960 Time 8:25 AM
Purpose Multiplication Measurements with 2½" X 8" X 10" Tuballoy slabs on each table, spaced 6½" apart, Li D to be placed between slabs.

2½" X 8" X 10" Tuballoy Slabs 6½" apart.

Run 1	29 +6	75 +186	37 +247	
10 min	28 +138	78 +36	36 +137	
	28 +182	74 +132	36 +240	
	22,086	57,698	28,528	E
CPM	736	1,923	950.9	3610
1/CPM	1359	5200	1052	2770

Run 2	Placed ½" X 8" X 10" Li D against face of fixed slab.			
5 Min.	14 +170	35 +72	18 +241	
	14 +221	35 +184	18 +215	
	14 +169	36 +88	19 +71	
	14 +121	36 +164	19 +25	
	15,117	36,860	19,496	
	756	1843	975	3574
	1323	5426	1026	2797

Run 3	~~Placed~~ 1" X 8" X 10" Li D against face of fixed Tuballoy slab.			
5 Min	15 +22	34 +20	19 +192	
	15 +0	34 +29	19 +173	
	14 +169	34 +81	19 +121	
	14 231	34 249	19 191	
	15,270	35,195	20,133	
	764	1760	1007	3531
	1309	5682	9930	2832

Run 4 1½" x 8" x 10" Lid Against face of fixed slab.

14 + 42	32 + 37	19 + 129	
14 + 67	33 + 131	19 + 128	
14 + 41	33 + 144	19 + 95	
13 + 25	33 + 7	19 + 107	
14,485	33,851	19,915	
724	1,693	996	3413
1381	5907	1004	2930

Run 5 ~~14 + 86~~ ~~33 + 52~~ ~~19 + 247~~

2" x 8" x 10" Lid Against face of fixed Slab

14 + 86	33 + 52	19 + 247	
14 + 55	32 + 166	19 + 209	
14 + 116	32 + 19	19 + 195	
14 + 112	32 + 95	19 + 226	
14,705	33,100	20,333	E
735	1655	1017	3407
1361	6042	9833	2933

Run 6 3" x 8" x 10" Lid. Against face of fixed slab

14 172	31 116	19 280	
14 110	31 104	19 170	
14 + 139	31 + 213	20 + 31	
14 142	31 224	19 146	
14,899	32,401	20,299	E
7449	1620	1015	3380
1342	6173	9852	2959

Run 7 8"X8"X10" Li D Against face of fixed slab.

5 min	13 +150	31 +143	19 +83	
	14 +27	31 +133	19 +228	
	13 248	30 196	19 154	
	13 +230	30 +227	19 +148	
	14,223	31,936	20,069	E
	711	1597	1003	3311
	1406	6262	9970	3020

Run 8 8"X8"X10" Li D Against face of fixed slab.

5 min	13 +119	30 +127	20 +80	
	14 +5	30 +0	19 +129	
	13 +115	30 +215	19 +83	
	13 131	30 171	19 137	
	13,988	31,233	20,151	~~3269~~ E
	699	1562	1008	3269
	1431	6402	9921	8059

Run 9 6½"x8"x10" Li D Against face of fixed slab

	13 148	29 218	20 15	
5 min	14 9	29 187	19 105	
	13 227	29 139	19 172	
	13 232	29 177	20 6	
	14,194	30,419	20,266	
	709	1521	1013	3243
	1410	6575	9872	3084

INSTRUMENT CHECK

Time 12:30 ~~AM~~ PM Source Pu Be

	Channel A	B	C	D	E
Range	1/100	opr	15"	1/100	105 V
Source Dist.	9"		3½"	3½"	1½"
% F.S. Trip	80	OK	100	70	100

C.A. U Slabs Expr. M-1 Run 1

Sheet ____ Date 4-20 1960 Time 1:37 ~~AM~~ PM

Purpose Multiplication measurements with Li D between 2½"X8"X10" U Slabs 6½" apart

Run 1 2½"X8"X10" U Slabs 6½" apart

	37 + 228	110 + 111	5-2 + 40	
3 min	38 + 76	112 + 21	5-2 + 86	
	38 + 20	110 + 28	5-1 + 215	
	29,252	85,160	40,021	
CPM	3250	9,462	4447	17,159
1/CPM	3077	1057	2249	5828
M	4.4158	4.9204	4.6766	4.7532

Run 2 1"X8"X10" Li D against face of fixed slab

	49 + 55	147 + 166	66 + 107	
	48 + 203	147 + 96	67 + 66	
	49 + 26	148 + 44	67 + 8	
	~~37,660~~	113,458	51,381	
CPM	~~3051~~ 4184	12,606	5,709	~~21,366~~ 22499
1/CPM	~~3278~~	~~7933~~	1752	~~4680~~
M	~~4.0357~~ 5.476	6.9399	5.8554	~~5.9782~~ 6.372

Run 3 1½" X 8" X 10" L.D Against face of first Slab

	49 + 193	149 + 165	68 + 242	
	58 + 64	149 + 119	69 + 114	
	49 + 194	148 + 47	68 + 218	
	38,329	114,507	50,494	
cpm	4,259	12,723	5,610	22,592
cpm	2348	7860	1783	4426
M	5.8826	7.5151	5.6325	6.6194

Run 4 2" X 8" X 10" L.D Against face of first slab.

	49 + 176	146 + 87	68 + 248	
	48 + 180	144 + 201	69 + 20	
	49 + 167	147 + 27	69 + 179	
	37899	112187	53183	
	4211	12,465	5,909	22,585
M	5.7292	7.532	5.810	6.68229

Run 5 3" x 8" x 10" L.D

	48 + 26	138 + 178	67 + 144	
	47 + 145	137 + 178	66 + 118	
	46 + 130	137 + 145	67 + 183	
	36397	106023	51645	
	4044	11,780	5738	21562
M	5.429	7.271	5.653	6.379

Run 6	4" x 8 x 10	L-D		
	44 178	129 32	64 59	
	44 147	129 224	64 59	
	45 24	129 182	63 172	
	34447	99510	49186	
	3827	11056	5465	20348
1/CR				
M	5.382	6.923	5.449	6.1474

Run 7	5" x 8" x 10"	L-D		
	43 200	122 208	61 67	
	43 111	123 95	62 101	
	43 53	124 126	62 4	
	33418	94883	47532	
CPM	3713	10543	5281	19537
M	5.311	6.75	5.239	5.976

Run 8	6 1/2" x 8" x 10"	L-D		
	41 243	120 115	61 220	
	42 91	119 144	62 28	
62	41 198	120 242	61 217	
9 C	32274	92455	47469	
CPM	3586	10273	5274	
M	5.058	6.754	5.206	5.8997

Run 9 6.5" L.D 1 Fuel unit removed.

3 min	39 + 100	108 + 157	56 + 245	
	39 + 58	109 + 79	57 + 66	
	39 + 72	109 + 166	58 + 34	
C	30182	83456	44121	
CPM	3353	9,273	4902	17528
M	4.8106	6.1207	4692	5.382

Run 10 2 ½" Tubular on ~~Fixed~~ 6.5" L.D

5 min	13 + 188	29 + 221	20 + 147	
	13 + 174	29 + 51	20 + 88	
	13 + 125	29 + 79	20 + 90	
	13 148	30 4	20 9	
	13947	30307	20895	
CPM	697	1515	1044.7	3256.7

4-21-60 2½"X8"X10" Tuballoy on each Table, 12" apart.

Run 1

5 min	14 (+5)	38 (+16)	27 (+68)	
	14 +13	38 +25	27 +180	
	14 +121	39 +5	27 +157	
	14 +134	39 +0	27 +221	
	14,749	39,896	28,384	E
CPM	737	1,995	1,419	441.5
1/CPM	1357	5013	7047	2409

Run 2 2"X8"X10" Li D against face of fixed slab.

	15 +71	34 +11	30 +140	
	14 +157	33 +222	30 +217	
	14 +237	33 +57	30 +124	
	15 +58	34 +52	30 +186	
	15,371	34,646	31,387	E
CPM	768.6	1732	1569	4070
1/CPM	1300	5774	6373	2457

Run 3 4"X8"X10" Li D against face of fixed slab.

	14 (82)	32 (12)	30 (226)	
	14 158	31 229	31 147	
	15 3	31 198	31 0	
	15 19	31 181	31 20	
	15,110	32,624	31,881	
CPM	756	1631	1594	3981
1/CPM	1323	6131	6274	2512

Run 4 6"X8"X10" Lid Against face of fixed slab.

14 +130	31 +28	30 +220	
15 +7	31 +52	30 +99	
14 +246	31 +151	30 +230	
14 +240	31 +65	30 +236	
15215 ~~13,530~~	32,038	31,505	E 3938 ~~5854~~
761 677	1,602	1,575	
1477	6242	6349	2595

Run 5 8"X8"X10" Lid against face of fixed slab.

14 +107	31 +107	30 +106	
14 +142	31 +31	30 +109	
14 +123	30 +195	30 +233	
14 +170	31 +36	30 +207	
14,878	31,857	31,375	
744	1,593	1,569	3906
1344	6277	6373	2560

Run 6 12"X8"X10" Lid between the two slabs

14 +22	30 +101	30 +217	
14 +66	31 +15	30 +143	
14 +28	30 +198	30 +187	
14 +28	30 +191	30 +57	
14,480	31,481	31,324	
724	1574	1566	3,864

Run 7 10" X 8" X 10" Li D between the two slabs against face of fixed slab.

14^{+125}	31^{+4}	31^{+9}	
13^{+247}	30^{+212}	31^{+87}	
13^{+244}	30^{+169}	30^{+211}	
13^{+252}	31^{+36}	30^{+150}	
14,436	31,653	31,689	
722	1,583	1,584	3889

Run 8 12" X 8" X 10" Li D against fixed slab - Tuballoy removed from movable Table.

14^{+46}	30^{+193}	30^{+249}	
14^{+54}	30^{+20}	31^{+49}	
14^{+89}	30^{+80}	30^{+90}	
13^{+244}	31^{+190}	31^{+23}	
14,518	31,459	31,643	
726	1,873	1,882	3881

INSTRUMENT CHECK

Time _____ AM PM Source _____

	Channel A	B	C	D	E
Range	10/1000	KPR	10^{-10}	10/100	105
Source Dist.	8"	OK	3'	2"	0
% F.S. Trip	75		60	75	100

4-22-60

h Slab
C.A. ~~70 92~~ 8 Expr. 0-1 1
Sheet Date Time AM PM
Purpose Multiplication measurement

h Slabs 12" apart

Run 1 2½" X 8" X 10" h Slabs 12" Apart

3 Min	32 +133	98 +108	62 +48	
	32 +199	97 +7	61 +93	
	32 +133	97 +129	61 +188	
	25,041	74,994	47,433	
CPM	2,782	8,333	5,270	1.385
M	3.7747	4.1769	3.7138	3.947

Run 2 2" X 8" X 10" Lid against face of fixed Slab

	44 +84	128 +111	98 +47
	44 +165	129 +166	89 +225
	45 +22	129 +251	90 +237
	34,319	99,344	69,373
	3,813	11,038	7708	2.2551
	4.9583	6.372	4.912	5.543

Run 3 4" X 8" X 10" L:D against face of fixed slab.

43 +3	123 +58	90 +22
43 +139	123 +251	90 +57
43 +46	122 +192	91 +45
33,212	94,965	70,616 46,460
3,6902	10,551	~~5,462~~ 4,846
4.881	6.4690	~~3,238~~ 4.9222 / 5.5484

22,097 +9403 ~~4.8737~~

Run 4 6" X 8" X 10" L:D Against face of fixed slab.

42 +20	118 +251	89 +13
42 +78	119 +101	88 +192
41 +180	118 +100	89 +99
32,278	91,332	68,400 ←
~~3,864~~ 3,586	10,148	7,600 21,334
~~5.2964~~ 4.7122	6.3345	4,825 5.4174 ~~5.3355~~

Run 5 8" X 8" X 10" L:D against face of fixed slab.

42 +3	116 +84	88 +255
41 +167	117 +81	89 +198
41 +68	118 +128	88 +192
31,982	90,149	68,485
3,554	10,017	7,609 21,180
4.7769	6.2881	4.8496 5.4229

Run 6 10" X 8" X 10" Li D

41 +100	115 +221	88 +90	
41 +20	114 +170	87 +149	
40 +254	117 +46	87 +67	
31,611	89,013	67,378	
3,512 ft	9,890	7,486	20,888
4.8643	6.2476	4.726	5.371

Run 7 11" X 8" X 10" Li D

40 +168	115 +196	89 163	
40 +195	115 +189	89 +5	
41 +105	116 +167	89 +30	
31,444	89,128	68,570	
3,4938	9,903	7,618	21,014
4.8312	6.2876	4.852	5.4299

Run 8 12" X 8" X 10" Li D

41 +34	116 +174	89 +48	
40 +218	115 +226	89 +44	
41 +168	115 +111	89 +88	
31,652	89,087	68,532	
3,516	9,898	7,614	21,028
4.8563	6.2884	4.862	5.442

Run 9 12"x8"x10" Li D - 2½"x8"x10" U Slab on each table, Tables Separated

40 +90	114 +94	87 +198
40 +73	114 +133	86 +128
40 +169	114 +16	86 +32

Run 10 Remove Fuel from Movable Table.

40 +87	113 +217	87 +192	
40 +174	113 +141	86 +233	
40 +116	114 +209	85 +239	
31,097	87,607	66,712	
3,455	9,734	7,412	20,601
4.7176	6.1882	4.6852	5.308

4-22-60

INSTRUMENT CHECK

Time 8:15 AM Source PN-467

Channel	A	B	C	D	E
Range	F 10/100	OK	10	10/1000	1050
Source Dist.	7"	0"	42"	2.5"	1"
% F.S. Trip	90	OK	100	85	100+

Ctrs 1, 2 & 3

C.A. U Slab Expr. P-1 Run 1

Sheet Date 4-22-1960 Time 8:40 AM

Purpose Li D Thickness Study

Run 1 2½" x 8" x 10" U Slabs Each Table. 15" Li D against face of fixed slab. Tables separated.

3 Min	40 +193	113 +226	83 +52	
	40 +209	113 +164	84 +19	
	40 +191	114 +170	83 +237	
	31,215	88,112	64,308	
CPM	3,468	9,790	7,145	20,403
1/CPM	2884	1021	1399	4901

Tables closed

	41 +182	117 +94	87 +165	
	40 +168	117 +92	86 +63	
	40 +168	116 +148	86 +178	
	31,494	89,934	66,710	
CPM	3,499	9,993	7,412	20,904
1/CPM	2858	10007	1349	4784

Run 2 14" Li Against face of fixed slab. Tables separated.

	40^{+73}	117^{+19}	85^{+108}	
3 min	40^{+212}	117^{+30}	86^{+253}	
	40^{+251}	115^{+157}	85^{+112}	
	31,005	89,550	66,009	
	3,445	9,950	7,334	20,729
	2903	1005	1,364	4824

Tables closed.

40^{+219}	115^{+192}	88^{+91}	
40^{+117}	117^{+54}	88^{+53}	
41^{+130}	117^{+104}	87^{+185}	
31,442	89,694	67,657	
3,494	9,966	7,517	20,977
2858	1003	1,330	4767

Run 3 13" Li D Against face of fixed slab. Tables separated

40^{+30}	114^{+189}	86^{+13}	
40^{+94}	114^{+126}	85^{+120}	
40^{+36}	114^{+179}	86^{+97}	
30,880	88,046	66,002	
3,431	9,783	7,334	20,548
2914	1022	1364	4866

Tables closed.

40^{+106}	115^{+224}	88^{+135}	
40^{+153}	116^{+43}	88^{+110}	
41^{+89}	116^{+144}	87^{+61}	
31,324	89,243	67,634	
3480	9,916	7,515	20,911
2374	1008	1331	4782

Run 4 12" Li D Against face of fixed slab. Tables separated

	40 +94	108 +29	88 +197	
	41 +69	107 +188	87 +202	
		Source Locked ~½" being Fully in.		
	40 +46	115 +4	86 +59	
	40 +164	115 +0	86 +200	
	40 +128	115 +79	87 +0	
	31,058	88,403	66,563	
CPM	3,451	9,823	7,396	20,670
1/CPM	2898	1018	1352	4838

Tables closed.

40 +195	117 +157	88 +30	
40 +16	115 +183	88 +175	
40 +175	116 +154	88 +176	
31,106	89,582	67,965	
3456	9,954	7,552	20,962
2894	1005	1324	4771

Fuel on stationary table Not Moved for Run 1 thru 4.
Spacing Acheived by ~~Tables~~ Moveable Table
For Run 5 ~~thru 4~~ Fuel on stationary table Moved Forward 4."

Run 5 11" Li D Against face of fixed slab. Tables separated

39 +70	110 +21	83 +251	
39 +176	112 +102	82 +182	
38 +92	111 +28	83 +190	
30,034	85,399	64,111	
3,337	9,489	7,123	19,949
2997	1054	1404	5013

Tables closed

3 min

40^{+91}	112^{+168}	86^{+122}	
40^{+58}	$115^{-}+12$	86^{+226}	
39^{+183}	111^{+207}	87^{+73}	
30,796	86,915'	66,725'	
3,422	9,657	7,414	20,493
2922	1036	1349	4890

Run 6 10" Li D against face of fixed slot. Tables separated

38^{+233}	110^{+241}	82^{+34}	
39^{+31}	110^{+119}	$84^{+31'}$	
$38^{+145'}$	110^{+89}	83^{+72}	
29,853	84,928	63,885'	
3,317	9,437	7,098	19,852
3015'	1060	1409	5037

Tables closed.

39^{+247}	114^{+27}	86^{+56}	
39^{+144}	113^{+156}	$85^{-}+147$	
40^{+97}	112^{+109}	86^{+90}	
30,746	87,076	66,081'	
3,416	9,675'	7,343	20,434
2927	1034	1362	4894

Run 7 9" Li D Against face of fixed slab. Tables Separated.

3 min	38^{+255}	110^{+151}	84^{+69}	
	38^{+206}	111^{+166}	83^{+52}	
	38^{+246}	110^{+147}	84^{+47}	
	29,891	95,200	69,424	
CPM	3,321	9,467	7,158	19,946
CPM	3011	1056	1397	5014

Tables closed.

39^{+141}	115^{+4}	87^{+191}	
40^{+52}	118^{+139}	88^{+89}	
40^{+36}	114^{+78}	87^{+114}	
30,693	88,285	67,466	
3410	9,809	7,496	20,715
2933	1019	1334	4827

Run 8 8" Li D Against face of fixed slab. Tables Separated.

38^{+204}	111^{+221}	84^{+60}	
38^{+241}	113^{+10}	84^{+98}	
38^{+141}	111^{+122}	83^{+201}	
29,770	86,113	64,618	
3,308	9,568	7,179	20,053
3023	1045	1393	4986

Tables Closed

41^{+64}	116^{+208}	88^{+81}	
41^{+66}	116^{+243}	89^{+96}	
40^{+57}	117^{+49}	89^{+139}	
31,419	89,844	~~63,242~~ 68,42 7601	21,075
3,491	9,983	~~7,032~~ 7,1316	~~20,506~~
2865	1002	~~7422~~	~~4877~~ 4745

Run 9 7" Li D Against face of fitted slot. Tables Separated.

38^{+221}	109^{+113}	82^{+51}	
39^{+36}	109^{+255}	80^{+143}	
38^{+233}	109^{+169}	81^{+144}	
~~34,340~~ 29,930	84,249	62,546	E
3,326	9,361	6,950	19,637
3006	1068	1439	5092

Tables closed.

41^{+177}	118^{+169}	89^{+52}	
41^{+185}	117^{+222}	89^{+82}	
41^{+241}	118^{+113}	90^{+67}	
32,092	90,872	68,809	
3566	10,097	7,645	21,308
2804	9904	1308	4693

Run 10 6" Li D Against face of fitted slot. Tables Separated

38^{+155}	107^{+254}	79^{60}	
36^{+244}	108^{+117}	79^{+43}	
38^{+119}	107^{+198}	79^{+94}	
29,190	83,001	60,869	
3243	9,222	6,763	19,228
3084	1084	1479	5201

Tables closed.

42^{+61}	121^{+26}	89^{+78}	
42^{+59}	121^{+142}	89^{+208}	
43^{+83}	121^{+83}	90^{+0}	
32,459	93,179	68,894	
3,606	10,353	7,655	21,614
2773	9659	1306	4627

Run 11 5" Li Against fixed slab. Tables separated.

3 min	39^{+144}	110^{+238}	83^{+119}	
	39^{+116}	111^{+82}	82^{+90}	
	39^{+139}	110^{+86}	81^{+142}	
	30,351	85,142	63,328	
	3372	9,460	7,036	19,868
	2966	1057	1421	5-033

Tables closed.

47^{+248}	139^{+103}	102^{+163}	
48^{+71}	138^{+186}	102^{+196}	
47^{+243}	138^{+3}	104^{+113}	
36,914	106,532	79,320	
4102	11,837	8,853	24,752
2438			

d.

4-27-60

INSTRUMENT CHECK

Time 12:40 ~~AM~~ PM Source PN-467

	Channel A	B	C	D	E
Range	10/1000	Opr	10	10/1000	1050V
Source Dist.	8'	0'	42"	2½"	1"
% F.S. Trip	90	OK	100	80	100

Counters 1, 2 & 3

C.A. U Slabs Expr. 9-1 Run 1

Sheet ____ Date 4-27-60 Time ____ ~~AM~~ PM

Purpose 5"X5" U Slabs.
12" Be Reflector.

Run 1 5"X5"X1" U Slab - 12" Be Reflector.

5 min	9+36	24+252	80+168	
	8+218	24+124	81+11	
	9+80	25+6	82+98	
	8+211	25+173	80+203	
	9249	25,603	83,168	E
cpm	462	1,280	4,158	5700
1/cpm	2165'	781.2	240.5'	169.2'

Run 2 5"X5"X1⅛" U Slab - 12" Be Refl.

	11+172	33+250	109+28	
5 min	12+35	33+108	107+243	
	12+20	34+41	107+109	
	11+216	34+22	108+129	
	12,218	34,723	111,357	
	611	1,736	5,568	791.5'
	1636	5760	1796	1263

132

4-28-60

INSTRUMENT CHECK

Time 8:15 AM PM Source PR-Ra-Be

Channel	A	B	D	E
Range	10/1000	0pn	10-10	50/1000	1050 V
Source Dist.	8"	0"	36"	25"	1"
% F.S. Trip	81	0pn	100	85	100

Run 1, 2 & 3

Run 3 5" X 5" X 10/8" U Slab - 12" Be Reflector

5 Min.	19 +200	56 +7	175 +123	
	19 +117	56 +94	175 +125	
	19 +147	55 +99	176 +236	
	1505	42952	135140	
CPM	1004	2863	9009	12876
1/CPM	996	349	1110	7766

Run 4 5" X 5" X 11/8" U Slab - 12" Be Reflector

3 Min

48 +215	141 +121	458 +106	
49 +93	141 +58	460 +73	
48 +135	141 +230	464 +5	
37,563	108,697	455,608	
4,174	12,077	50,623	66,874
2396	8280	1975	1495

4-29-60

INSTRUMENT CHECK

Source PN-467

Time 12:30 PM

	Channel A	B	C	D	E
	10/1000	off	10^{10}	10/1000	1050V
Source Dist.	8"	0"	40"	2½"	1½"
% F.S. Trig	80	off	100	90	100+

CA 21 Slab Expr. R-1 Run 1

Sheet Date 4-29-1960 Time 1:00 AM PM

Purpose 10" X 10" 21 Slab - 12" Be Reflector

Run 1 10"X10"X⅛" 21 Slab - 12" Be Reflector.

5 min	5^{+160}	27^{+193}	53^{+183}	
	5^{+140}	28^{+20}	54^{+146}	
	5^{+141}	27^{+171}	54^{+41}	
	5^{+162}	27^{+216}	54^{+164}	
	5,723	28,504	55,174	
	286	1425	2,779	4490
	3497	7018	3598	2227

Run 2 10" X 10" X ½" U Slab - 12" Be Refl.

5 min	10 +114	53 +197	103 -+83	
	10 +39	53 +215	103 -+138	
	10 +57	52 +223	106 +22	
	10 +149	53 +214	106 +56	
	10,599	42,067	108,331	ℓ
	~~5,~~ 530	2,103	5,417	8050
	1887	4753	1846	1242

140

5-22-61

Mikalczo
Lynn
McCarty

INSTRUMENT CHECK

Time 9:00 ~~PM~~ AM Source M-226 γ on E & F

	A	B	C	D	E
Table - OK					
Range F - OK	$\frac{10}{1000}$	ogr	10^{-12}	$\frac{10}{1000}$	.1058 V.
Source Dist.	12"	0°	23"	3½"	8"
% F.S. Trip	80	OK	101	80	100+

E-5

C.A. U-Slab Expr. (5X5) A Run 1

Sheet _____ Date 5-22-61 Time 11:15 ~~PM~~ AM

Purpose Determine Critical Height of 5"X5" U" Slab. on Vertical Table.

Height = 7 7/8"
4" on Bottom table, 3 7/8" on diaphram.

Run 1 Counters

3 Min Counts	#1	#2	#3
	3,329	1,962	1 +166 = 422
	3,229	2,001	1 +168 = 424
	3,256	1,999	1 +139 = 395
	3,287	2,008	1 +166 = 422

✓ After shutdown found top and bottom to be poorly aligned. ✓

Run 2 added 1/8" to top
+ height = 8"

3 min	#1	#2	#3
	3,498	1,921	1 + 223
	3510	1,966	1 + 209
	3,683	1,917	1 + 237
	3,633	2,017	1 + 197
	3,537	2,009	1 + 242
T	17,861		
CPM	1191		
$\frac{1}{2}$ CPM	8396		

142

5-23-61

INSTRUMENT CHECK

Time 8:20 AM ~~PM~~ Source M-226 Vonc 7F

	Channel A	B	C	D	E
Range	___	off	10^{-12}	$\frac{10}{1000}$	810 V.
Source Dist.	9"	0"	3½"	3"	2½"
% F.S. Trip	80	O/C	100	85	___

C.A. ½ - Slab Exp: (5x5) Run ___

Sheet ___ Time 8:40 AM ~~PM~~

Purpose Determine Critical Height of 5"x5" ½ Slab on Vertical Tables

8.25" High

Run 3 added ¼" to top - H = 8½" ✓

	#1	#2	#3 (X256)
3 Min Ct	4,344	2,373	$2^{+87} = 599$
	4,414	2,341	$2^{+90} = 602$
	4,604	2,428	$2^{+125} = 637$
	4,493	2,320	$2^{+100} = 612$
T	17,855	9,462	2450
CPM	1,488	789	213
$\frac{1}{\sqrt{CPM}}$	~~.026~~ .0272	.1267	.0695

H = 8.5"

Run 4	#1	#2	#3 (X256)
	5,554	3,219	2^{+235}_{+249} : 747
	5,699	3,213	2^{+230} = 761
	5,694	3,099	2 = 742
T	16,947	9,531	2,250
CPM	1883	1,059	250
1/CPM	5311	9443	400

Run 5 add 1/4" to Top - H = 8.75"

	#1	#2	#3 (X 256)
	8,173	4,769	4^{+114} = 1038
	8,314	4,722	4^{+119} = 1143
	8,510	4,882	4^{+135} = 1159
T	24,997	14,373	3,440
CPM	2,777	1,597	3822
1/CPM	3601	6262	2616

Run 6 added 1/4" to top - H = 9.0"

	#1	#2	#3
	15,474	9,252	8^{+54} = 2,102
	16,144	9,649	8^{+116}_{156} = 2,164
	15,921	9,509	8
	47539		
	5282		
	1893		

144 VDT #3 = -2 #4 = +3.5 Selsyn = 17.736

Run 7 added 1/8" (two 1/16" pcs) - H = 9.125" ✓

	#1	#2	#3 (X256)
3 Min.	30,584	18,633	16^{+48} = 4,144
	31,755	19,314	16^{+186} = 4,282
	31,683	19,324	16^{+120} = 4,216
T	94,020	57,271	12,642
CPM	10,347	6,363	1,405
1/CPM	9664	1572	7117

Run 8 VDT #3 = -2 #4 = 4. Selsyn = 17.736

added 1/8" (two 1/16" pcs) H = 9.25" ✓

#3 (45 sec ctr)

Slightly Sub Critical T = -4160 pcm
= -0,30 ¢

Run 9 added 1/32" - H = 9.28"

LN

Positive Period — 121 pcm

(1/32" Fuel = 8.58 ¢) + 8.28 ¢

C.A. U-Slab Expr. A Run 10

Sheet ____ Date 8-23-961 Time ____ AM PM

Purpose Diaphram Evaluation

Added 5 mil SS

H = 9 9/32"

5 Mil

Positive Period — 396.3 pcm

+ 2.98 ¢

% g CM	Crit Thickness
97	9.13"

Mass/in = ~7,680 g.

from NP Annual Report 1960

Run 11 – 10 mil SS inserted instead of 5 mil

10 mil

VDT #3 = -2 #4 = +3.5 Selsyn 17.733

10 mil SS = – 10.37 ¢

– 647.1 μs
– 2.09 ¢

Run-12

VDT #3 = -2.3 #4 = +3.5 17.732

15 mil SS inserted at diaphram. neg. Period – 220 μs

C.A. _____ Expr. B A Run 13

Sheet _____ Date _____ 19 ___ Time _____ AM PM

Purpose Support Structure Eval.

9 1/4 less 1/32" thick

9 7/32"

Sa

VDT #3 = -2.3 VDT #4 = +3.5 Selsyn

Positive Period – 265 μs
+ 4.25 ¢

Run 14 9 1/4" Fuel λ = .55

VDT #3 = -2.3 VDT #4 = +3.5

? Source in ?

Positive Period 1134 μs
+ 0.11 ¢

Run 15 9 9/32" Fuel S-S

VDT #3 = – VDT #4 = +

Positive Period (1/32" Fuel = 7.80 ¢) 127 μs
+ 7.97 ¢

Repeat Run 14 9 1/4" Fuel

≈ 1991 μs
0.65 ¢

if +

8-24-61

INSTRUMENT CHECK

Time 3:00 PM Source M-22-6 from E+F

Tables OK Channel

F= OK

	A	B	C	D	E
Range	.0 1000	off	10^12	1000	1000V
Source Dist.	7.5"	0"	30"	3.5"	11"
% F.S. Trip	90	OK	100	80	100+

C.A. U-Slab (Refl) Expr. (5x5) A Run 1

Sheet ____ Date 8-24-61 Time 3:20 PM

Purpose To Determine Critical Height of 5"x5" U Slab with 1" Plexiglas Reflector. 2" Below diaphram (on Pan)

H = 3"

Source on drive outside Reflector

VDI #3 = -1 #4 = +4 Sllsyn = 17.685

Run 1A	Counter #1	#2	#3 (x256)	
3 min	1108	227	0 +143	
	1128	210	0 +160	
	1086	200	0 +153	1" Separation
	1167	338	0 +99	
	1152	297	0 +116	
	1122	280	0 +98	
	1135	288	0 +97	
T	4876	1203	410	E =
CPM	381.33	100.25	34.17	172
cpm	2622	9975	2926	5814

5-25-61

Run - 1-B

INSTRUMENT CHECK

Time 8:15 AM ~~PM~~ Source M-226

Tables - OK

F - OK

S. E & F

	Channel A	B	C	D	E
Range	$\frac{10}{1000}$	or	10^{-12}	$\frac{10}{100}$	1086
Source Dist.	10"	0"	32"	3"	12"
% F.S. Trip	75	ok	100	80	100+

Continued Critical Height - Height = 4"

	#1	#2	#3 (X256)	
3 min cts	1347	390	0 106	
	1469	360	0 129	
	1399	427	0 144	
	1377	417	0 144	
	1387	410	0 134	
T	6979	2004	0-657	E
CPM	465.2	133.6	93.8	214
$\frac{1}{4}$ CPM	214	748	228	4672

Run 1-C added ¼" - H = 4.25"

#1	#2	#3 (X256)	
1631	447	0 +144	
1666	480	0 +159	
1636	436	0 +136	
1572	418	0 +145	
1605	466	0 +142	
8110	2241	726	E
5406	1494	484	246
1529	669	206	4065

Run 1D added ¼" - 17' = 4.5"

VOT #3 = +4 #4 = -5' Selsyn = 18.762

3 min	#1	#2	#3 (x256)	
	2046	601	0 +194	
	2093	607	0 +167	
	2100	621	0 +167	
	2058	601	0 +163	
	2029	592	0 +191	
	10336	3022	882	E
	6890	201.5'	58.8	316.4
	1451	4962	170	3161

Run 1E added ¼" H = 4.75"

VOT #3 = +4 #4 = -5' Selsyn = 18.762

#1	#2	#3 (x256)	
3453	1039	0 +254 = 254	
3439	1041	1 +42 = 308	
3469	1069	1 +8 = 264	
3589	1027	1 +26 = 282	
3540	1046	1 +46 = 312	
1749	5242	1420	E
1166	349.5'	946	537
857	2861'	105.7	1862

Run 1-7 Added $\frac{1}{8}$" H = 4 $\frac{7}{8}$"

VDT #3 = +4 VDT #4 = -4

	#1	#2	#3 (2.6)	
3 min	7,193	2,056	$2^{+84} = 596$	
	7,242	2,158	$2^{+92} = 604$	
	7,073	2,101	$2^{+73} = 585$	
	7,279	2,031	$2^{+54} = 266$	
	7,183	2,250	—	
	35970	10,596	2051	ε
4	223	706.4	170.9	1092
1	417	1416	58.5	9157

Run 1-8 Added $\frac{1}{16}$" H = 4 $\frac{15}{16}$"

VDT #3 = +4.2 VDT #4 = -4 Selayn 18,753

	#1	#2	#3
3 min	16,213	4,809	$4^{+239} = 1263$
	16,930	4,982	$5^{+69} = 1349$
	17,041	5,160	5^{+31}
		15,751	
ε		1750	
37		5714	
62			

Run 1 H added $\frac{1}{32}$" — H = 4 $\frac{31}{32}$" 4,9687

Positive Period — 265 ms

Run 1I Added $2\frac{7}{8}$" x $2\frac{7}{8}$" x .004" pc 4 sheet to top center of stack.

Reactivity down from previous run ~ level.

1J Repeat of Run 1H.
VDT #3 = +4 #4 = -4 Selsyn = 18.75 2

Neg. Period -

1K VDT #3 = 4 #4 = -5 Selsyn 18.75 1

Repeat of Run 1H.
Replaced small pieces of top Reflector with larger ones, i.e. 1" x 6" x ½" etc with pcs 1" x 3" x 6".

Positive period

C.A. U-Slot Expr. (5"x5") AB Run 1L
Sheet 5-25-61 Time 2:30 AM PM
Purpose Diaphram Evaluation.

1L Inserted 5 mil sheet SS at diaphram.
VDT #3 = 4 #4 = -5 Selsyn = 18.731 ?

1M added 2⅞" X 2⅞" X .004 pc U Sheet to top Center of stack

Reactivity down from previous run. This is apparently caused by the pc not lying flat on other materials.

10-17-61

Mihalczo
Lynn
McCarty.

INSTRUMENT CHECK

Time 1:00 ~~AM~~ PM Source Pu Be + γ

	F	A	B	C	D	E
			Channel			
Range	OK	0 & 1	cps 10^{-12}	$\frac{10}{1000}$	1000 V	
Source Dist.		OK	30"	1.5"	8"	
% F.S. Trip			DC	100	85	100+

C.A. U-Slabs Expr 6X8-B Run 1a

Sheet ____ Date 10-17-1961 Time: ~~AM~~ PM

Purpose To obtain Critical Assembly with detectors for R & Meas. in place.

H = 9 1/8"

$\frac{8}{8}" + \frac{1}{16}"$

1a 1 detector ~ 1/16" from assembly.
1 detector ~ 1/8" from assembly.

Super Critical — 160 sec period.

1b Each detector ~ 1/2" from assembly.

Sub Critical

1c Each detector ~ 3/8" from assembly.

10/19/61

INSTRUMENT CHECK

Time 8:15 AM PM Source

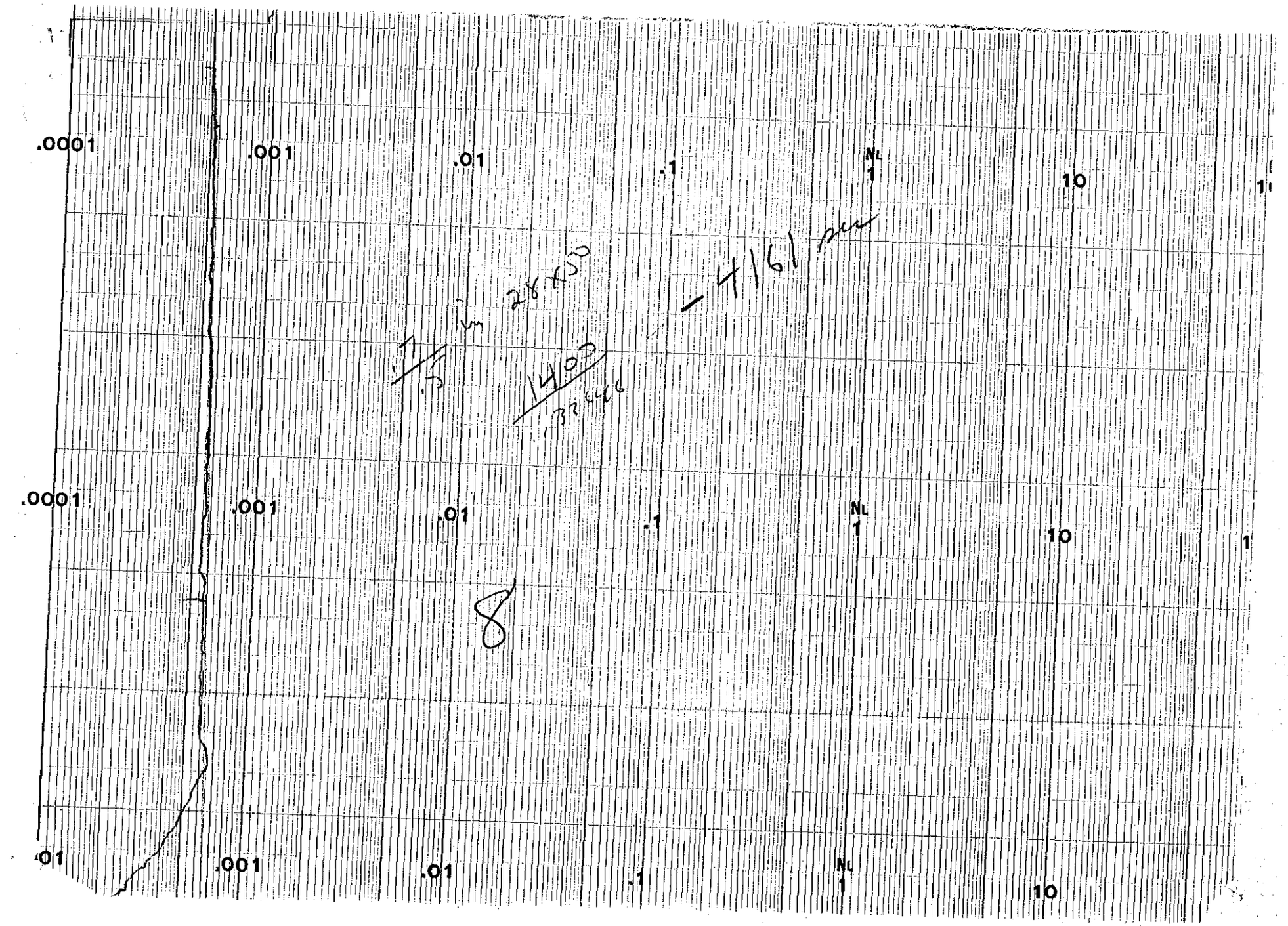
	F	A	B	C	D	E
				Channel		
Range	OK	—	2PV	1^{-12}	$\frac{1^{\circ}}{1000}$	250
Source Dist.		—	OK	—	3.5	5"
% F.S. Trip		—	—	100	70	100

E.A. ____ Expr. ____ Run 1b

Sheet ____ Date ____ 19 ____ Time ____ AM PM

Purpose Repeat of 1c of previous

Day Slightly + period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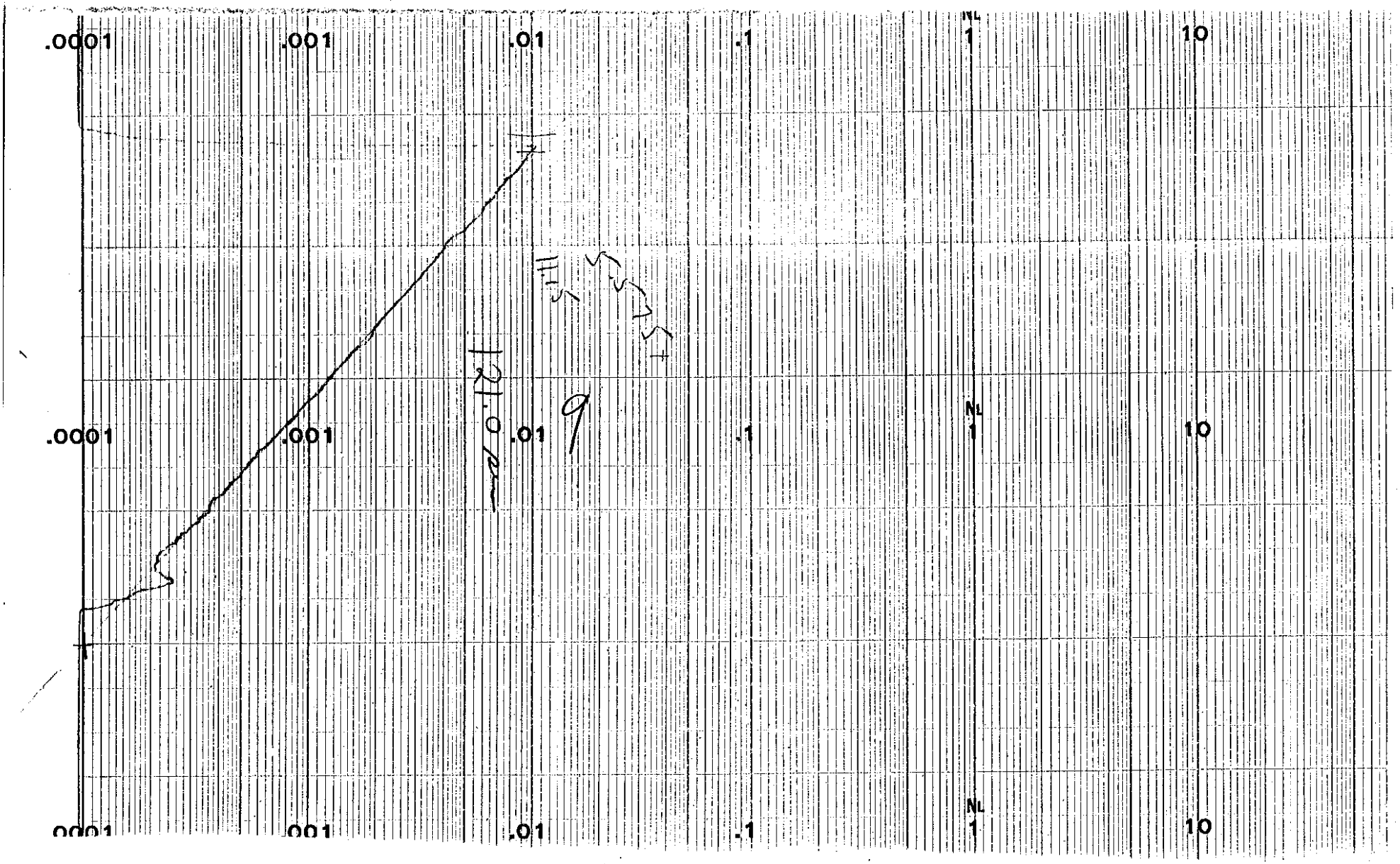
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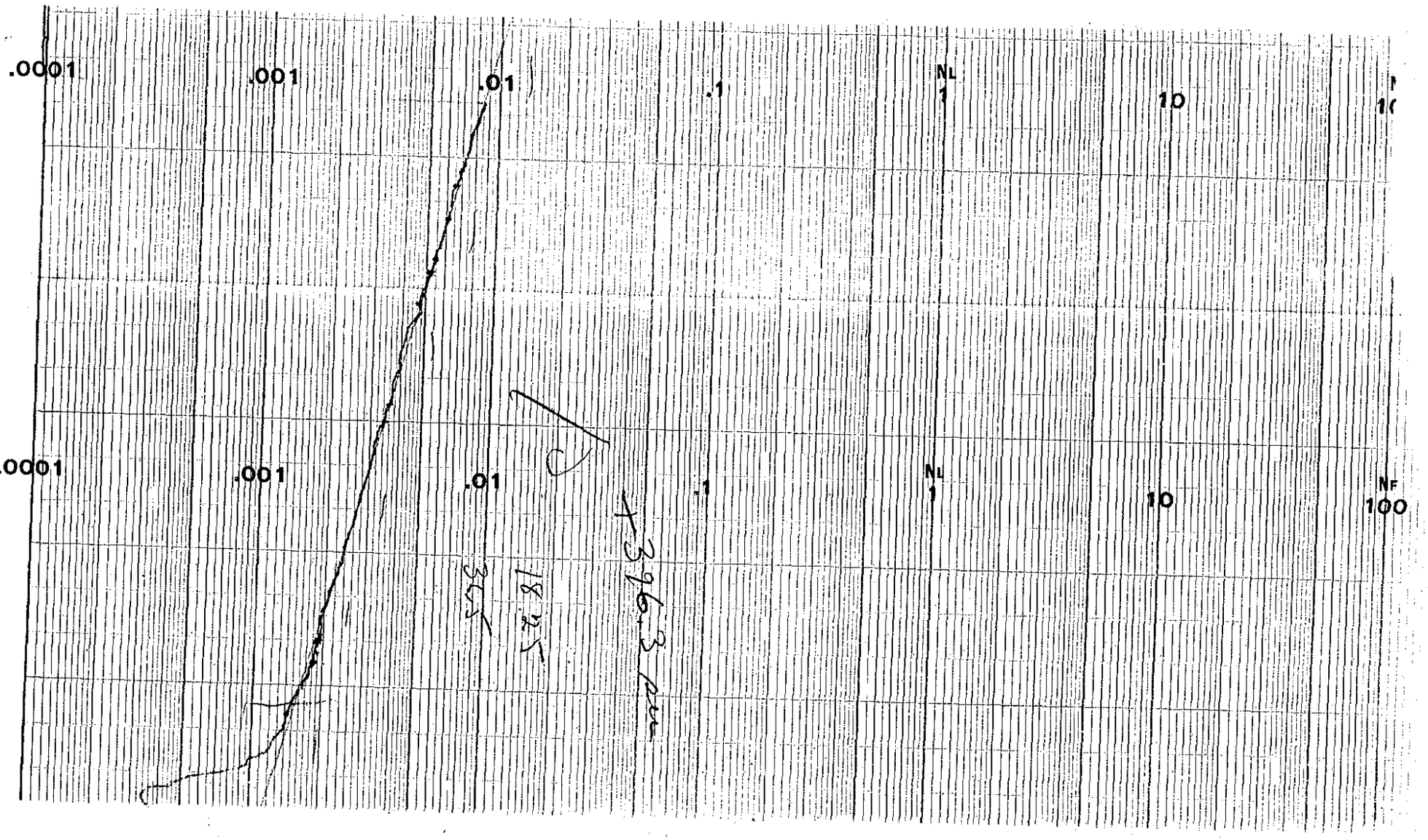
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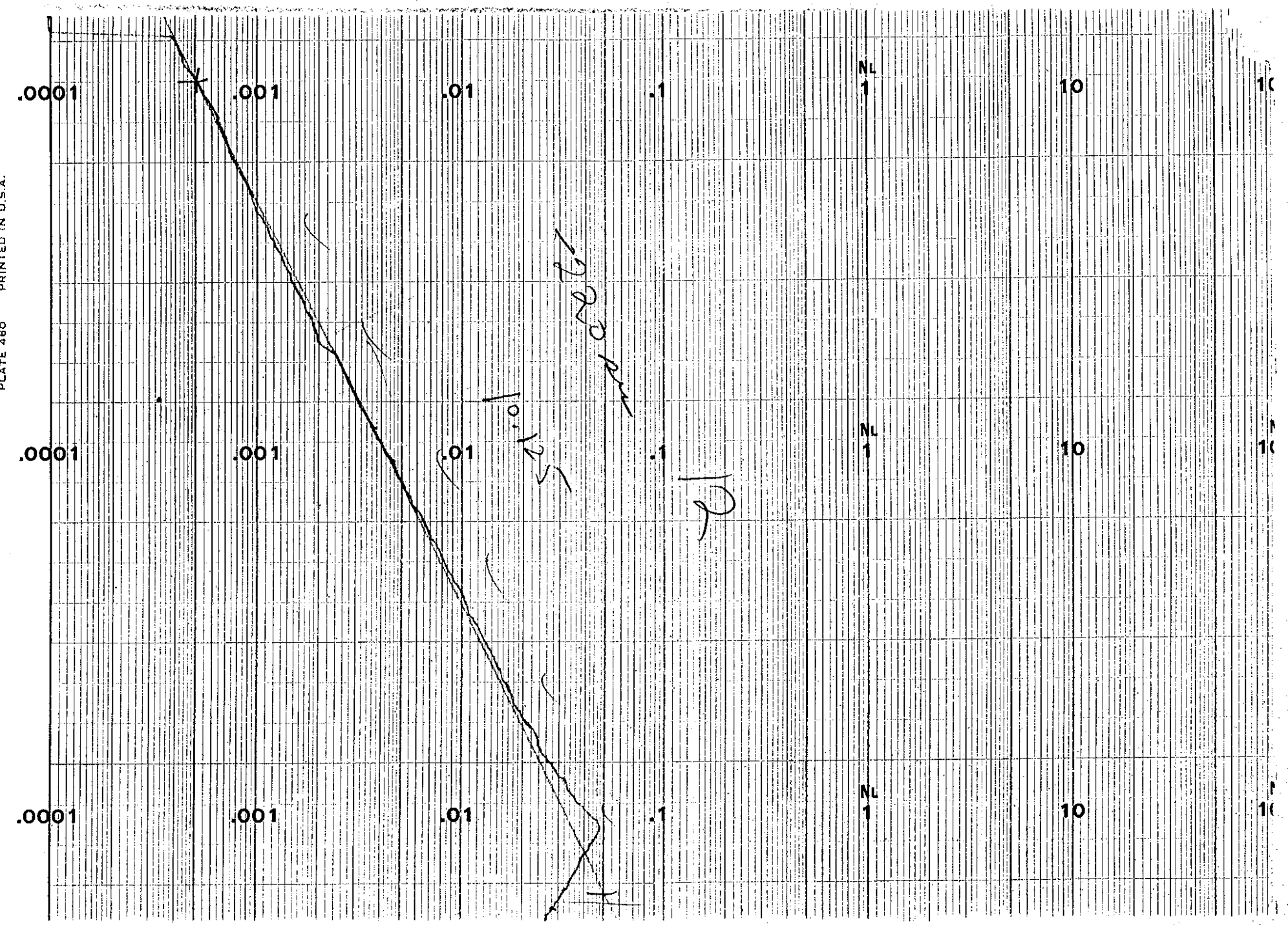
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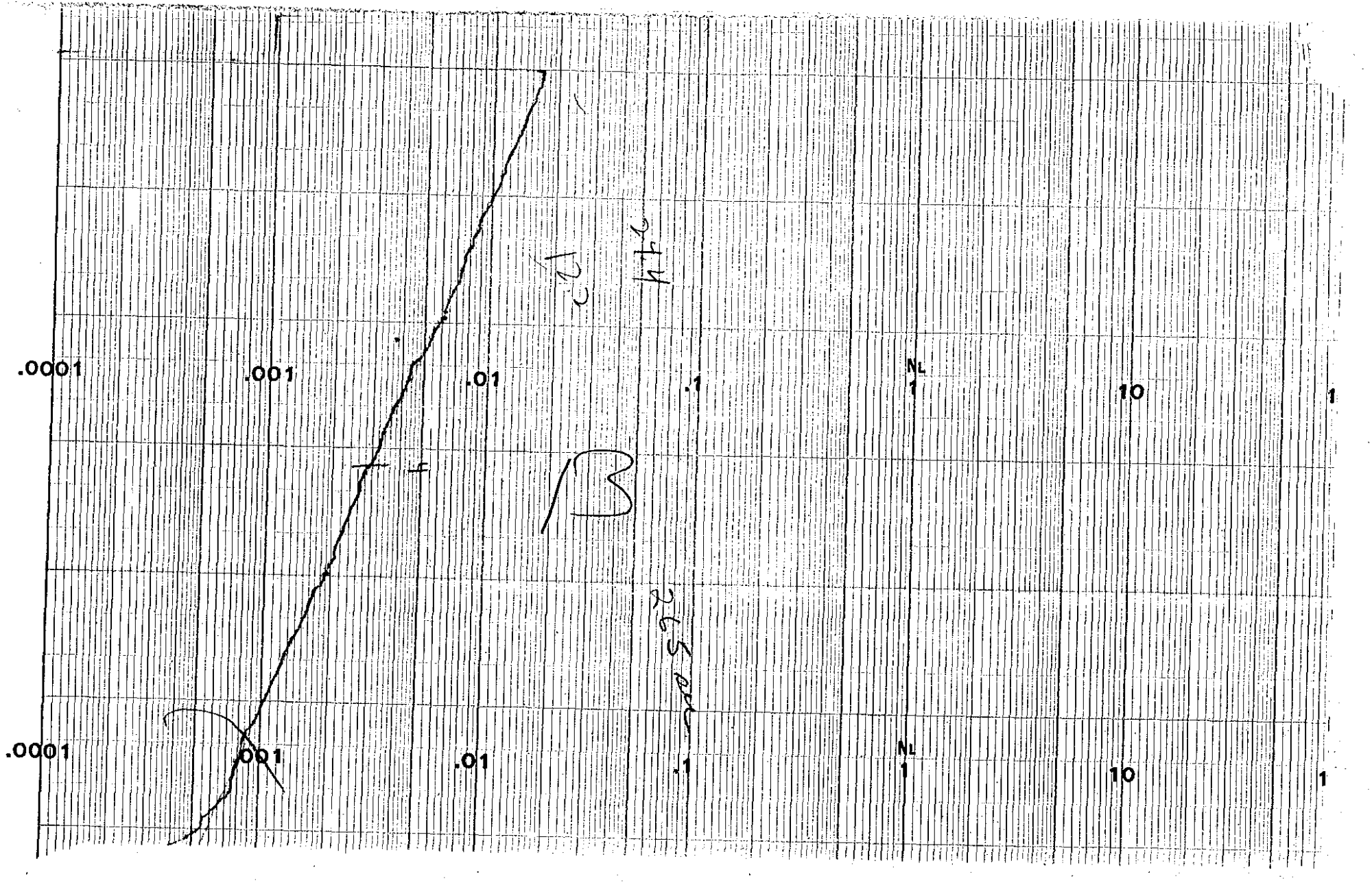
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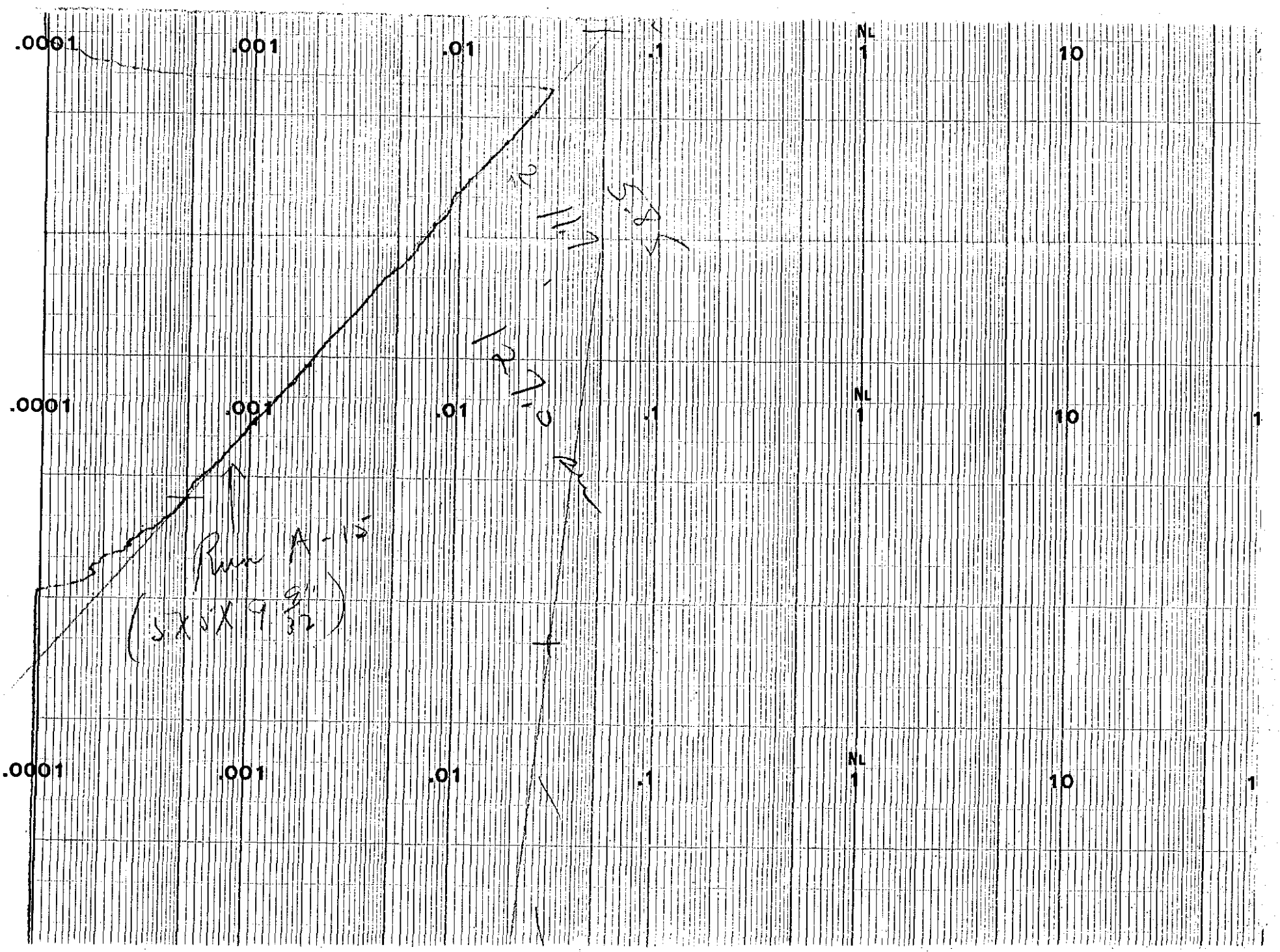
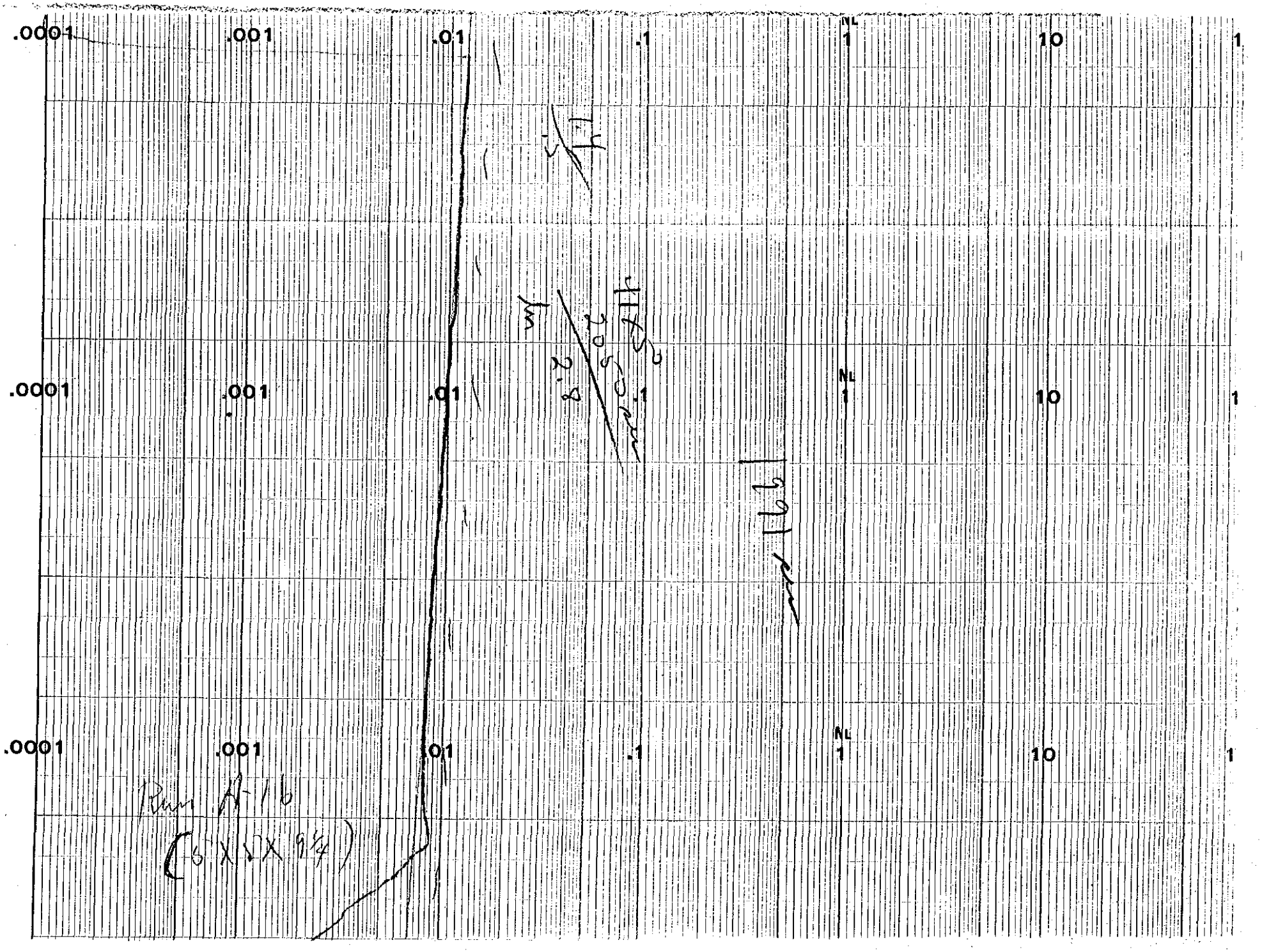
PLATE 460 PRIT




.0001
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NL
PRINTED IN U.S.A.

INSTRUMENT CHECK

Pu Be

Time 1:15 PM

	F	A		D	E
Tables - OK					
Range	OK	ppr	1^{-12}	$\frac{10}{1000}$	105
		~~X~~	33	3"	7"
Source Dist.					
% F.S. Trip			10	70	100

B.A. _____ Expr _____ Run 1a

Sheet _____ Date _____ 19 ___ Time _____ AM PM

Purpose _____

158

~~10~~

11-2-61

INSTRUMENT CHECK

Time 1:10 PM Source $Pu Be + \gamma$ (1 mc)

	Channel A	B	C	D	E
Range	F				
	0	~~0~~	16^{-12}	$\frac{1}{1000}$	2050 V
Source Dist.	5	0"	33"	5"	13"
% F.S. Trip		~~0~~ K	100	80	100 +

C.A. _____ Expr. _____ Run _____ AM PM

Sheet _____ Date _____ 19 __ Time _____

Purpose No Run

INSTRUMENT CHECK

11-3-61 Time 2:45 PM Source Pu Be + γ

	Channel A	B	C	D	E
Range	F	off	10^{-12}	$\frac{10}{1000}$	1050V.
Source Dist.	OK	0"	30"	4"	6"
% F.S. Trip		OK	100	85	100+

C.A. U-Slab Expr. _____ Run 1d

Sheet _____ Date 11-3-1961 Time 3:15 PM

Purpose To Obtain Crit. level for R & measurement

H = 7 3/16"

Slightly Super Cricital.

11/6/61

INSTRUMENT CHECK

Time 12 00 AM/PM Source Pu Be γ

Tables OK

	Channel A	B	C	D	E
Range	F	opR	10^{-12}	$\frac{10}{1000}$	1050
Source Dist.	OK	OK	28"		5"
% F.S. Trip			100	80	100

During scram check a drg Metal pieces flew off of table on to grating & floor. In set up of this assembly diaphram was positioned to low. With system 4" Apart At scram check table fell only 1" to bottom, Buckling bars at support. Pins damaged.

100

G.A. _____ Expr. _____ Run _____

Sheet _____ Date _____ 19 ___ Time _____ AM PM

Purpose 9"x5x5 Metal sys R-a

11-7-61

INSTRUMENT CHECK

Time 8:30 AM PM Source Ra Be + γ

	Channel				
	F	A	B	C	D	E
Range	OK	~~9~~ 4μr	10^{-12}	1/4000	1000 V.
Source Dist.		~~4~~ 0"	28"	3.5"	6"
% F.S. Trip		OK	100	90	100 +

G.A. 4" Slab Expr. _____ Run _____

Sheet _____ Date 11-7-1961 Time _____ AM PM

Purpose 5x5 Metal System

for R - α Meas.

2-19-62

INSTRUMENT CHECK

Time 8:20 AM ~~PM~~ Source P.B.

Channel

	D	B	C	A	E
Range	F 0K	10/1000 opm	10-12		1050
Source Dist.		2"	OK 3"		
% F.S. Trip		80	100		100

1691 ✓
15158 ✓

C.A. _____ Expr. (5X5) C Run 1

Sheet _____ Date 2-19-1962 Time _____ ~~AM~~ PM

Purpose Obtain Crit Height for 5"X5" U Slab

H = 9 1/8"

Just Critical Log N = No Response

INSTRUMENT CHECK

Time

Source Dist.

% F.S. Trip

2-19-62

Run #2

C.A. _____ Expr (5x5) C Run 2

Sheet _____ Date 2-19-1962 Time 2:20 PM

Purpose Obtain Crit. Height for 5"x5" U Slab

N = 9 1/4"

Sub Critical (slight) Log n = .0006

1 min cts

#2 (x 64)		#3 (x 64)	
82	+ 82	81	+ 42
81	+ 50	79	+ 58

Run #3

C.A. _____ Expr. (5 x 5) C Run 3

Sheet _____ Date 2-19 1962 Time 3:15 PM

Purpose Obtain Crit. Height for 5"x5" U Slab

N = 9 1/4"

added pc plexiglas 1"x1"x2" to top Center of Stack.

sponse

Super critical - 97.2 Sec period.

164 2/23/62

Table speed Check

Load.	Fast Speed	Slow speed	Lifting Current
0	21.76 in/min	0.335 in/min	45 ma
25 lbs	23.40	0.395 in/min	50-52
50	20.22	0.335	55-57
100	19.36	0.365	65
150	18.60	.325	75
200	15.18	.270	84
300	15.58	.290	106
400	9.85	.225	132
350	10.97	.235	120
500	8.88	.215	175
550	5.41	.150	200
600	5.87	.178	240
625	4.97	.165	290
650	No Lift		
425	9.9	.21	140
500	5.65	.195	175
300	13.46	.262	—
250	13.92	.262	—
200	14.6	.29	—
150	18.82	.330	—
100	—	.335	—
50	19.82	.335	—
25	20.34	.370	
0	22.5	.382	—

2-26-62

INSTRUMENT CHECK

Time 10:40 AM PM Source Rb + 8

		A	B	C	D	E
Range	F		cpm	10^{-n}	$\frac{10}{1000}$	.1050
Source Dist.	OK	0	0"	30"	25"	7"
% F.S. Trip			OK	100	78	100+

C.A U-Slab Expr. (5X8) C Run 4

Sheet Date 19 Time AM PM

Purpose Assembly of 5x5x9 1/4 in A
25 mil cd can ~25 1/2" diameter

Super Critical - 258.5 Sec Period = 4.45 ¢

C.A (5X5) C 5'

Sheet

Purpose Same as above, except all cd removed but bottom piece.

Wd Shapes
WY Sizes C.A.

Sub Critical

C.A. _____ Expr. (5X3) C Run 6

Sheet _____ Date _____ Time _____ AM PM

Purpose Same as Run 5
achieved power level by using
2"x2"x1" plastic

sub critical - Measured negation period
2.52 Sec ρ = 6.1 ¢

3/1/62

INSTRUMENT CHECK

Time 9:00 AM ~~PM~~ Source Ra Be + γ

	Channel A	B	C	D	E
Range	1²	opr	1²·¹²	10/100	1050
Source Dist.	OK	30"	2'	8"	
% F.S. Trip		100	80	100	

Up Position: VDT #3 = 6.5 #4 = -6.5

Selsyn = 16.895° (F)

C.A. _____ Expr. (5"x5") C Run 7A

Sheet _____ Date 3-1-1962 Time 9:~~00~~ AM ~~PM~~

Purpose 5"x5"x9¼" with 25 mil cd Sheet on Bottom achieved power by use of plexiglas

measured neg period - 271.5 sec 5.58 ¢

Run 7B - 2" dia x ¼" Thick - Plastic Scint. material, ~ 0.5 ¢ Position 6 ¢

7C - 2" dia x ½" Thick - + 171.6 Sec pd ; 6.31 ¢ 11.9 ¢

7D - 2" dia x 1" Thick 95.6 Sec. period ; 10.2 ¢ 16.8 ¢

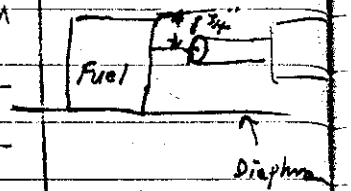
7E - 2" dia x 2" Thick 66 Sec pd ; 13.5 ¢ 19.1 ¢

3-1-62

C.A. _____ Expr. (5 X 5) C Run 8

Sheet _____ Date 3-1-1962 Time 1:05 ~~AM~~ PM

Purpose 5" X 5" X 9¼ with 25 mil Cd Sheet on Bottom



Run 8A Large Scint. Detector on diaphram in Contact with fuel. ~ 50 ¢ Excess

Run 8B - Large detector NE102-2

Distance	Background (16")	NE102	BF_3 (X256)
0"	100 cts/sec	0.995 2200 CPS	211^{+110}
¼"	70 "	0.767 1949	245^{+183}
½"	34 "	0.733 1508	201^{+170}
1"	30.8 "	0.598 1192	194^{80}
2" System just Crit.	23 "	0.431 903	204^{94}

3-21-62

3-23-62

INSTRUMENT CHECK

Time 1:15 PM Source Pu Be + γ

		Channel A	B	C	D	E
Basic	F	0	opr	10^{-12}	$\frac{10}{1000}$	10.0
Source Dist.	OK	F	0"	28"	4"	1.5"
	OK	-1		28"	3"	0" (Shielded)
% F.S. Trip			OK	100	75"	100+
			OK	102	80	100+

C.A. _____ Expr. 5 X 5 Run D-1

Sheet _____ Date 3-23 1962 Time 2:30 ~~AM~~ PM

Purpose 5"X5"X9 1/8"

Achieved power by using plastic 1" X 1½" X 2"

Sub critical - negative period -278 Sec 5.42 ¢

up = 16.885 (F)

"C" = 2.5 X 10^{-12}

"C" = 2

Run 2 Placed detectors near stack.

Pos. Period - 173.6 Sec, 6.25 ¢

Level at up pos = 16.71 (F).

170

3-26-62

INSTRUMENT CHECK

Time AM PM Source Pu Be + Y

	Channel A	B	C	D	E
Range	F	Opr	10^{-12}	$\frac{10}{1000}$	1050
Source Dist.	OK	0"	30"	25"	0" Shielded
% F.S. Trip		OK	100	85	100 +

C.A. Expr. 5 X 5 Run D-2

Sheet Date 3-26 1962 Time 8:45 AM PM

Purpose 5" X 5" X 9 1/4"

Achieved power by using Plastic 1" X 1 1/2" X 2"

Very Slightly sub Critical - up = 16.89 (F)

C.A. Expr. 5 X 5 Run D-3

Sheet Date 3-26-62 Time 11:20 AM PM

Purpose 5" X 5" X 9 1/4"

Adjusted detectors so that system is just critical

Log n : .0004 , up = 16.89 (F)

3-27-62

INSTRUMENT CHECK

Time 9:25 AM ~~PM~~ Source M-226 + X

	Channel A	B	C	D	E
Range	F	~~oper~~ 0ux	10^{-12}	10/1000	1050
Source Dist.	OK	0"	30"	2"	1.5"
% F.S. Trip		OK	100	75	100+

C.A. _____ Expr 5X5 Run D-4

Sheet _____ Date 3-27-62 Time 10:05 AM ~~PM~~

Purpo: 5"X5"X9 1/4"

Achieved power by using plastic
Size- 1"X1½"X2"

Had Horizontal table closed.
Moved wooden walk way around table out of the Way - Loaded Carts in Corner near Vertical table moved away.

Slightly Sub Critical.

Run 5 Adjust detector so that system is just Crit.
Log N = .0004 up pos = 16.89 (F)

Crit = 11:10 AM

Down = 4 22 PM

3-28-62

INSTRUMENT CHECK

Time 8:20 AM ~~P.M.~~ Source M-226 + 8

	F	Channel A	B	C	D	E
Range	OK	out	ope	10^{-2}	$\frac{1}{1000}$	1000 V.
Source Dist.			0"	30"	2"	1.5"
% F.S. Trip Ctrs 1 + 2			OK	100	80	100 +

C.A. ____ Expr 5 X 5 ____ Run E-1

Sheet ____ 3-28-62 Time 11:10 AM ~~P.M.~~

Purpose 25 mil. Cad. Can around Upper + lower part of Table = Bottom + top enclosed.

Stacks 5" X 5" X 9 3/32

achieved power by use of Plexiglas - 1" x 1½" x 2"

Super Critical - up @ 16.67

E-2 Removed 1/32 Sheet of fuel - H = 9 3/16

~~83.6~~ Pos. Per. - ~~+~~ 11.3 +

up = 16.89 Closed.

E-3 Removed 1/32 Sheet of Fuel H = 9 5/32

Pos period - Slight

E-4 adjust detectors to obtain level. ~~Good Count~~.

1:23 PM Remove source & start data collection

Negative period = 2260 Sec

0.6 +

3-29-62

INSTRUMENT CHECK

Time 8:40 AM PM Sys M-226 + 8

Channel

		A	B	C	D	E
Range	F	out	opr	10^{-2}	$\frac{10}{1000}$	1050 V.
Source Dist.	OK	—	0"	30"	2.5"	1.5"
% F.S. Trip		—	OK	100	80	100+

Ctrs 1, + 2

C.A. _____ Expr 5 X 5 Run E-5

Sheet _____ Do 3-29 1962 Time 8 45 AM PM

Purpo 2-5 mil Cd Can around Upper + lower part of table Bottom + top enclosed

Stack 5"X 5" X 9 29/32"

E-6 Up at 12:50 Stack 5"X5"X 8 29/32

Source placed ~~under cover~~ on top of Stack (10" Source)

Sub crit.

E-7 Up at Stack 5"X5"X 9 5/32"

Source removed from top of stack

Added 1/4 inch of fuel.

Slightly Super @ 16.88 Level @ 16.71

E-8 Adjust Detector as an attempt to level at Closed

Slightly super @ 16.89 Level @ 16.72

3-30-62

INSTRUMENT CHECK

Time 8:20 AM PM Source M-226 + Y

		Channel A	B	C	D	E
Range	F	Dwn	open	10^{-12}	$\frac{10}{1000}$	1050 V.
Source Dist.	OK		0"	30"	35"	1.5"
% F.S. Trip			OK	100	80	100 T

OK 1 & 2

CA _____ Expr. _____ Run _____ AM PM

Sheet _____ Date _____ 19 ___ Time _____

Purpose System submitted ~ fraction of f held level with source 5x5x ~~8~~ 9 $\frac{3}{32}$

Start of Data collection ~ 10:12.

Reactor Period

C - $\frac{52}{50}$ in 15 minutes

D - $\frac{65}{50}$ in 500 sec

LN - $\frac{3}{2}$ in 15x50

4-2-62

INSTRUMENT CHECK

Time 8:10 AM PM Source Pu Be + K

Channel

	A	B	C	D	E
Range	F	Out	8pr 10	12 / 10 / 100	1050 V.
Source Dist.	OK		0"	30"	2.5"	1"
% F.S. Trip			OK	100	80	100+

Ctrs 1, 4 2

C.A. _____ Expr. (5x5) F Run 1

Sheet _____ Date 4-2-1962 Time _____ AM PM

Purpose Determine Crit. Height

Removed Cd from around system. Stack: 5" x 5" x 9 3/32"

add Pb Brick (2" x 4" x 8") parallel to N+S side ~ 6" from fuel.

Slightly Super Critical

2. Adjust detector so that system is close to Critical (Slightly Super).
   Started data collection @ 12:05 PM.

3 Adjust detector so that system is Close to critical
   Started data collection @ 2:20 PM
   Down @ 3:18 PM

INSTRUMENT CHECK

4-3-62 Time 2:30 AM PM Source $Pu Be + \gamma$

	Channel A	B	C	D	E
Range	F	~~opr~~	10^{12}	~~10~~ 1000	1000V
Source Dist.	~~0~~	~~0~~"	30	2"	1.5"
% F.S. Trip	~~0~~	~~0~~	100	80	100

$Log N = .0000$

$\neq 1 = 40$

$\neq 3 = 391$

C.A. U-Slabs Expr. (5X5) Run 2

Sheet _____ Date 4-3-1962 Time 2:40 ~~PM~~ AM

Purpose Determine Crit. with small fission counters located near stack.

5" x 5" x 9 3/32"

System sub critical. (~ 300 - 400 Sec).

Measured Top & Bottom Thickness.

Top (4 3/32")		Bottom (5")	
4.108	4.110	5.005	5.005
.112	.110	.011	.011
.104	.105	.008	.010
.102	.102	.004	.014
.103	.110	.010	.012
.104	.108	.005	.014

$A_t = 4.1065$ $A_b = 5.00908$

4-4-62

INSTRUMENT CHECK

Time 8:21 AM Source Pu Be + γ

	Channel A	B	C	D
Range	F	out	off	10" 10
	OK			1000 1050V.
Source Dist.		0"	30"	21 1.8"
% F.S. Trip		OK	100	80 100+

C.A. U Slabs Expr. 5 X 5 Run 3-A

Sheet ____ Da 4-4-1962 Time 8:40 AM PM

Purpose Determine crit with small fission counters located near stack

5" X 5" X 9 3/32"

50 min.

Position Period -

C = 62 → 80 in 10 min.

D = 55 → 70 in 700 Sec.

3B Adjusted detector (rear bank).

Data collection @ 10:36 AM

negative period. C. 60 → 44 in 20 min.

1:30 PM 3C Adjusted detector:

Started Data collection @ 2:00 PM

down @ 4:12 PM

178

4-5-62

INSTRUMENT CHECK

Time 8135 AM ~~PM~~ Source Pu Be + X

Channel	A	B	C	D	E
Range	F	~~out~~	opx	10^{-12}	$\frac{10}{1000}$	1050 V.
Source Dist.	OK	—	0"	3¼"	3"	1.5"
% F.S. Trip		—	OK	100	75	100+

C.A. _____ Expr. 1¾" Run 30

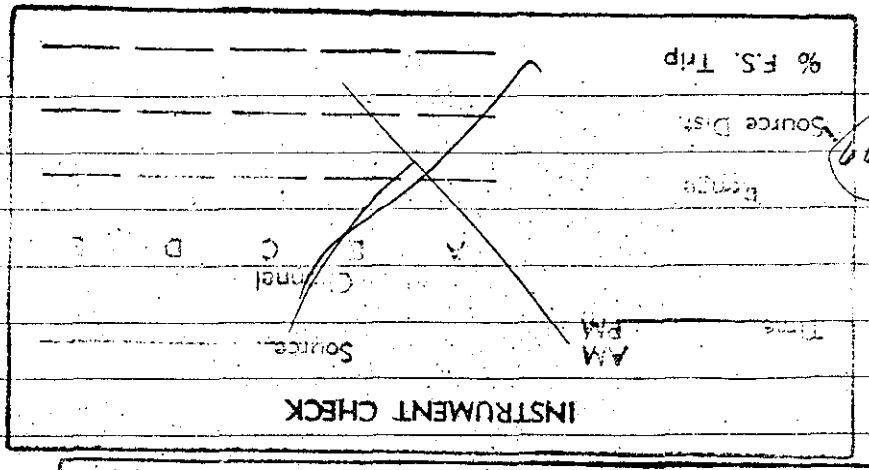
Sheet _____ Date 4-5-1962 Time _____ AM ~~PM~~

Purpose adjust detectors so that system is just critical for Parris L measurements 5" x 5" x 9 3/32"

System slightly sub critical.

C = 70 to 52 in 10 min

D = 40 to 30 in 10.5 div (5 25" pm)



4-6-62

INSTRUMENT CHECK

Time 8:25 AM

Source Pu Be + 8

	Channel A	B	C	D	E
	F	out	out	10^12	10/1000	1050 V.
Source Dist.	OK	0"	30"	2"	45"
% F.S. Trip		OK	100	85	100+

10:35 Data coll. started

Run 3E Same as 3D.
Slightly sub. Critical.

180

4-8-62

4-9-62

INSTRUMENT CHECK

Time 11:21 AM

Source Pu Be + F

Channel

		A	B	C	D	E
Range	F	out	out	10"	10 Volts	1050 V.
Source Dist.	4K		0"	30"	34"	1.5"
% F.S. Trip			4K	100	75	100+

C.A. _____ Expr. _____ Run 5 D

Sheet _____ Date 4-9-1962 Time _____ AM PM

Purpose Resin & Monument

Position Period:

D = 60 to 80 in 1¼' dia) (225 sec)

C = 46 to 75' in 20 min (1200 sec)

4-10-62

INSTRUMENT CHECK

Time 8:15 AM PM Source Pu Be + 8

	Channel A	B	C	D	E
Range F OK	out	off	10^{-12}	1000	1050 V
Source Dist.		0"	30	1.5"	1.5"
% F.S. Trip		OK	100	80	100+

C.A. _____ Expr. _____ Run 6D

Sheet _____ Date 4-10-1962 Time 8:45 AM PM

Purpose Basic Measurements

Level.

Started data Collection @ 9:00 AM

Down @ 1:25 PM

182

C.A. _____ Expr. 5X5 Run E

Sheet _____ Date 4-10 1962 Time 1:50 ~~AM~~ PM

Purpose Fuel addition to obtain Critical
With table separation.

added ⅛" Fuel to Top.
" " " Bottom.

Critical @ 16.548 Closed Reading ~ 16.72

Log n = .0003 up position = 16.895

C = 5.0 m $5^{-}X10^{-2}$

D = 35 $\frac{19}{500}$

5-9-62

INSTRUMENT CHECK

Time 2:30 PM Source Pu Be + K

	Channel A	B	C	D	E
Range	10			10	
	1000	op	10^12	1000	1050
Source Dist	11"	0"	30"	1"	1"
% F.S. Trip	100	OK	100	80	100+

Ctr #1 + 2

C.A. U-Slab Expr. 8"X10" Run A-1

Sheet ____ Date 5-9-1962 Time ____ PM

Purpose Approach to Critical on Vertical Table (CTU).

H = 3 3/8"

Source #563 laying on diaphram.

SF = .31

Some of 10" length pcs have tapped holes in the ends. Used in earlier expt.

A-1 Loading – 2" on bottom table
1 3/8" on Diaphram

VDT #3 #4
+7 +12.5

Selsyn = 18.85°
Log N = .00014

2 min Ctr #1 #2

46 +116 48 +54
46 +87 44 +203

A-2 Loading = 3 1/2"

VDT #3 #4
+7 +12

Selsyn = 18.85°
Log N = .00028

2 Min Ctr #1 #2

114 +165 116 +53
123 +125 119 +48

186

5-10-62

INSTRUMENT CHECK

Time 8:20 AM ~~PM~~ Source PuBe + 8

		Channel A	B	C	D	E
Range	F	10/1000	Open	10-12	10/1000	1050 V.
Source Dist.	OK	12"	0"	36"	3"	0"
% F.S. Trip		100	OK	100	90	100+

Ctr #1 + 2

C.A. _____ Expr. 8 X 10 Run 51062A AM PM

Sheet _____ Date _____ 19 ___ Time _____

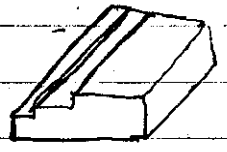
Purpose Determine critical thickness of 8 X 10 slab of U-235 enriched 93.2 metal 2" on ram

3 5/8"

A - 1 5/8 on diaphram - Super critical ~ 25-50 ¢

B - 1/8" removed on 3"x10" of top
Super Crit. 8.3 ¢ Excess

C - Removed 1/8" from 1"X10" of top.
on diaphram - 5"X10" X 1.625"
2" X10" X 1.5"
1 X10" X 1.375"



END View

Started Data Collection at 1:45 PM.

5-14-62

INSTRUMENT CHECK

Time 1:00 ~~AM~~ PM Source PuBe + X

	Channel A	B	C	D	E
Range	10 / 1000	opr	10^{12}	10 / 1000	1010 V.
Source Dist.	12"	0"	4'	3"	1"
% F.S. Trip	95	0%	100	75 ~~4~~	100

C.A. ____ Expr. 8" X 10" Run 51462A

Sheet ____ Date ____ 19 ____ Time ____ AM PM

Purpose Same as p 186

a small control drive installed to drive a 1 7/16" X 1 7/16" X 1/4" pc 2 at (~ 1¢ reactivity) for small reactivity control.

Crit Time = 1 hr.

On RAM → 8 FEB 68

$2'' = \frac{7}{8} + \frac{7}{8} + \frac{1}{4}$

Stack = 2.004"

Mass = 48,979 g

On Diaph — 5 X 10 = 1 5/8 --- 1/4 = 3,851

2 X 10 = 1 1/2 --- 1/8 = 767

1 X 10 = 1 3/8 7/8 + 1/2 = 33,664

14 = 1.565" 38,282

5-15-62

INSTRUMENT CHECK

Time 8:15 AM PM

S Pu Bu + γ

Cm

		A	B	C	D	E
Range	F	10 / 400	Off	10-12	10 / 1000	1052
Source Dist.	OK	7"	0"	3'	6.5"	6.5"
To F.S. Trip	Sta #2	100+	OK	100	100	100+

C.A. _____ Expr. 8" X 10" Run 51562A

Sheet _____ Date _____ 19 __ Time _____ AM ~~PM~~

Purpose Same as p. 186

Run a measure on 8X10 sht

A Data collected ~ 30 min.

B Data Collected 4 hr 15 min.

12:00 Noon Down 4:15 PM

5-16-62

INSTRUMENT CHECK

Time 8:10 AM ~~PM~~ Source Pu Be + γ

	Channel A	B	C	D	E
Range	F	10/1000 cpr	10^{-12}	10/1000	1050 V
Source Dist	OK	7"	0"	30"	1.5"	2"
% F.S. Trip		100	OK	100	85	180 +

Ctr #2

C.A. _____ Expr. 8" X10 Run 51162A

Sheet _____ Date _____ 19 ___ Time _____ AM ~~PM~~

Purpose Same as p186

H = 2.+

A No Data collection

C.A. U-Slabs Expr. 8" x10" Run B

Sheet _____ Date _____ 19 ___ Time _____ AM PM

Purpose Approach to Critical with 2" Separation at diaphram
Stop Flanges set for 2" Separation.
2" on Ram + 1.625" on diaphram

Source #563 lying on diaphram

Sub Critical Up Scaler

B. Counter #2 2 min (X256) 8 + 33 8 16.84

C. 2" on Ram + 1.75" on diaphram
ctr #2 2 min (X256) 8 + 209

16.84

D 2" on Ram + 1.875" on diaphram — Selsyn
Ctr # 1 — Ctr # 2 — 16.84
2 min (X256) — 0 +138 — 8 +229

E 2" on Ram + 2" on diaphram — 16.84
Ctr # 1 — # 2
0 +98 — 10 +199

F 2.25" on Ram + 2" on diaphram — 16.84
Separation 1.75"
Ctr # 1 — # 2
0 +70 — 16 +103

G 2.25" on Ram + 2.25" on diaphram
Ctr # 1 — # 2 — 16.84
0 +138 — 25 +141
~~Super Crit~~

H 2.5" on Ram + 2.25" on diaphram
Super Critical (Not up) — 16.78

I 2.375" on Ram + 2.375" on diaphram
Sub Critical — 16.84
Separation 1.625"

J 2.375" on Ram + 2.375" on Diaphram
Removed Source #563 from diaphram — 16.84
Used Source # 962 or drum
Sub Crit — VDT #3 +7 — #4 +13

K Adjusted Step flanges. Selsyn

VDT #3 = +10.75 #4 = off 16.955

Position Period = 185.3 Sec. 6.9#

VDT #3 = +5.75" 16.948

A: 61 to 72.5 in 400 Sec.

C = 66 to 82 in 600 Sec.

K

8 K

192

5-17-62

INSTRUMENT CHECK

Time 9:45 AM/PM — S RaBe + γ

		Channel A	B	C	D	E
Range	F	~~10~~	~~opk~~	10^{12}	10/1202	1050V
Source Dist.	OK	12"	0"	3'	4"	4"
% F.S. Trip		90	OK	100+	95	100+

C.A. Al Slab Expr. 8"X10" Run 51762 A

Sheet ____ Date ____ 19 ____ Time ____ AM/PM

Purpose Ross. & Measurements

2.375" on Ram — Separation
2.375" on Diaphram — ~1.625"

Run A Started Data Collection @ 9:33 AM

UDT #3 = +4 #4 = +2.5 Selsyn = 16.9 ~~=~~

1.332 in separation 0.0 ~~=~~

5" 1" 6"

C.A. ____ Expr. ____ Run ____

Sheet ____ Date ____ 19 ____ Time ____ AM/PM

Purpose Air circulation may have caused change in reactivity in the previous run. Mylar cloth placed around the CTR at the gate pipe between diaphram and outer edge of frame

0.0005 on LN - 2000 TPS

Possible Stacking — 7 Feb 68

On Ram — 8" X 10" X 2 3/8"

7/8" + 7/8" + 1/4" + 1/4" + 1/8"

2 3/8" = 2.375"

.008" for gaps

Stack = 2.383"

2 3/8" = 58,134 gms

On Diaphragm —

8" X 10" X 2 3/8"

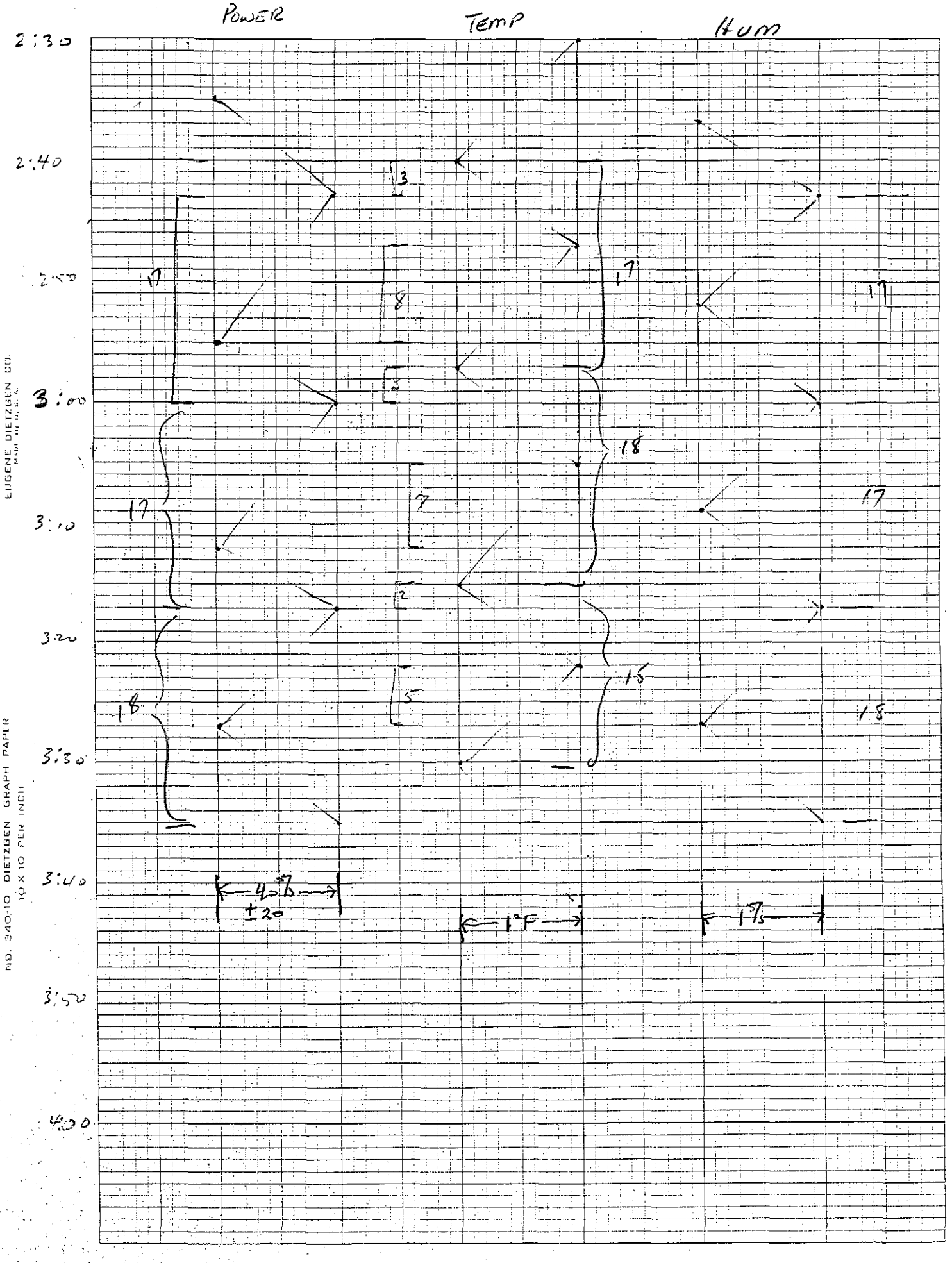
7/8" + 1/2" + 1/2" + 1/4" + 1/8" + 1/8"

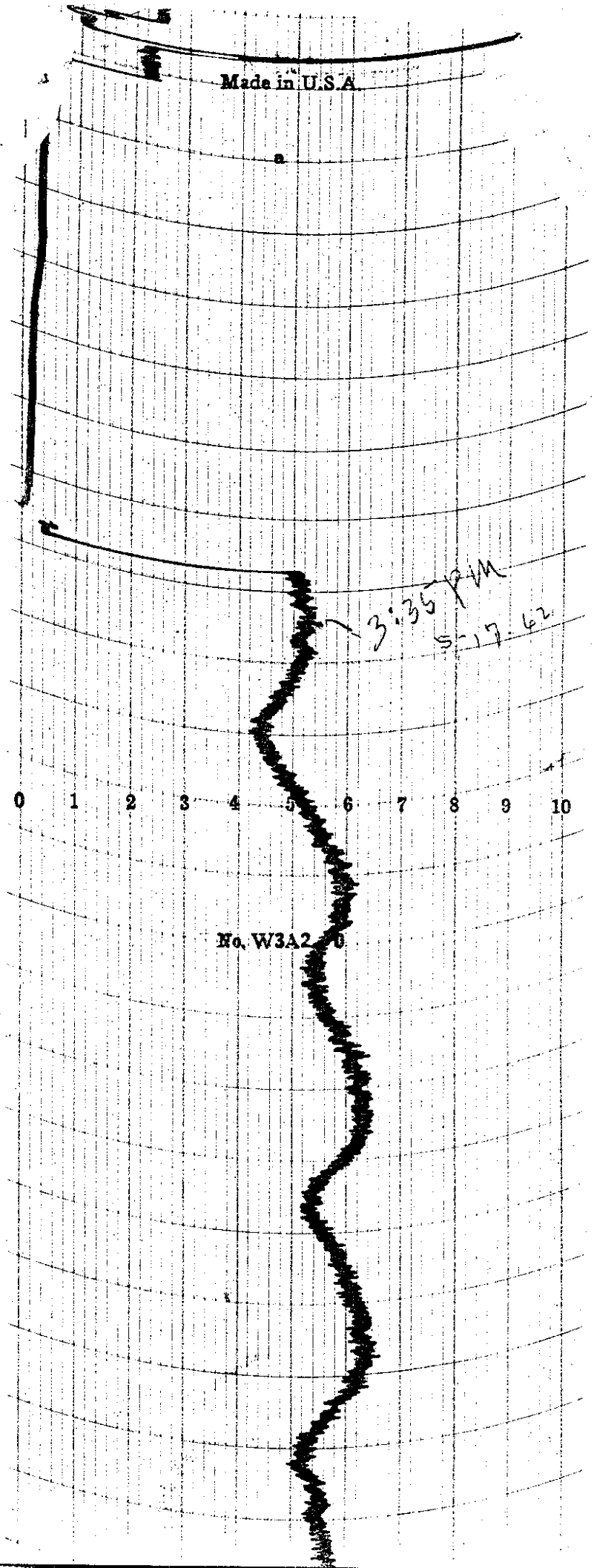
2 3/8" = 2.375"

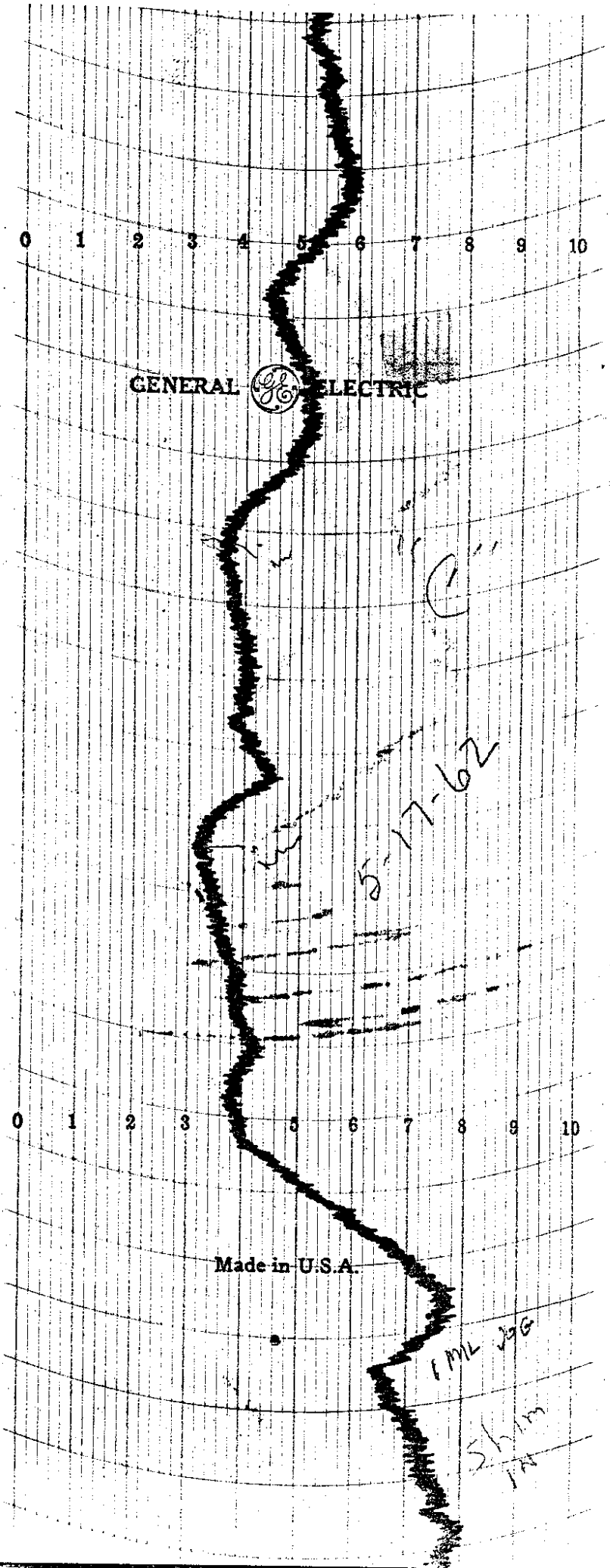
.010" for gaps.

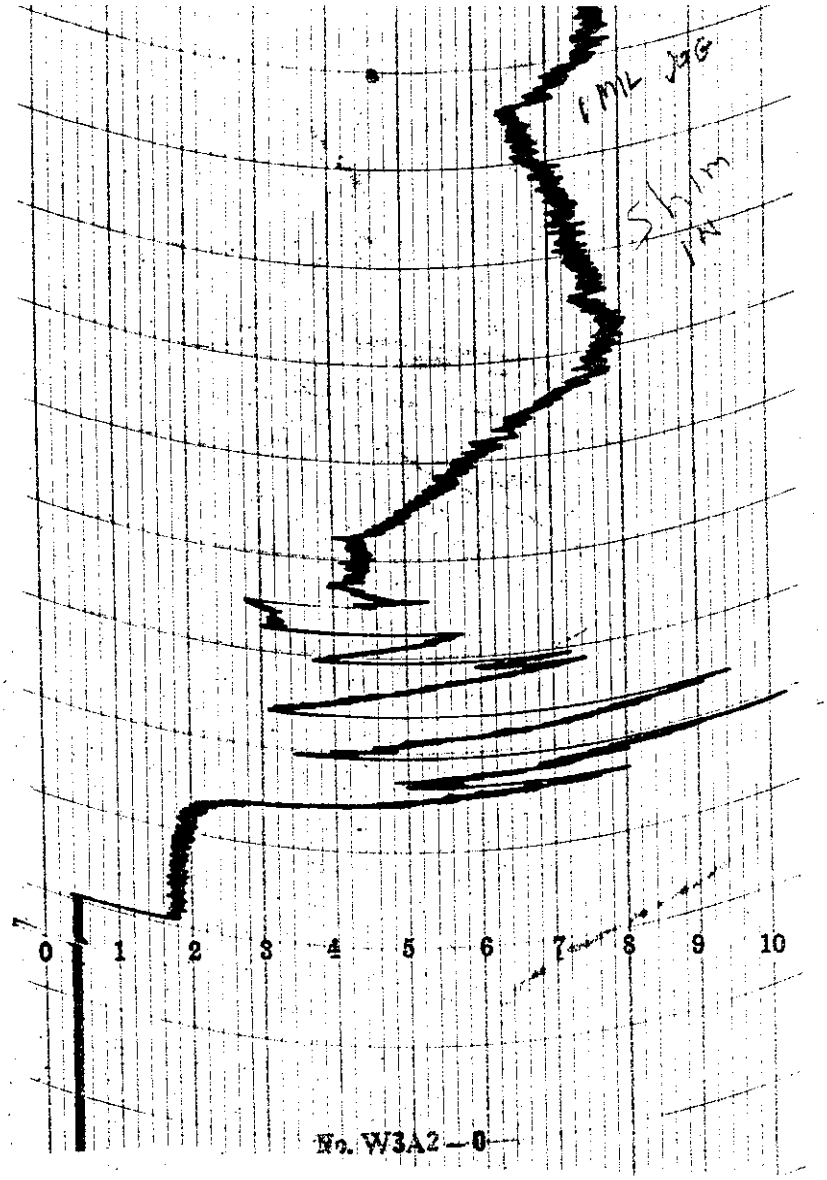
Stack = 2.385

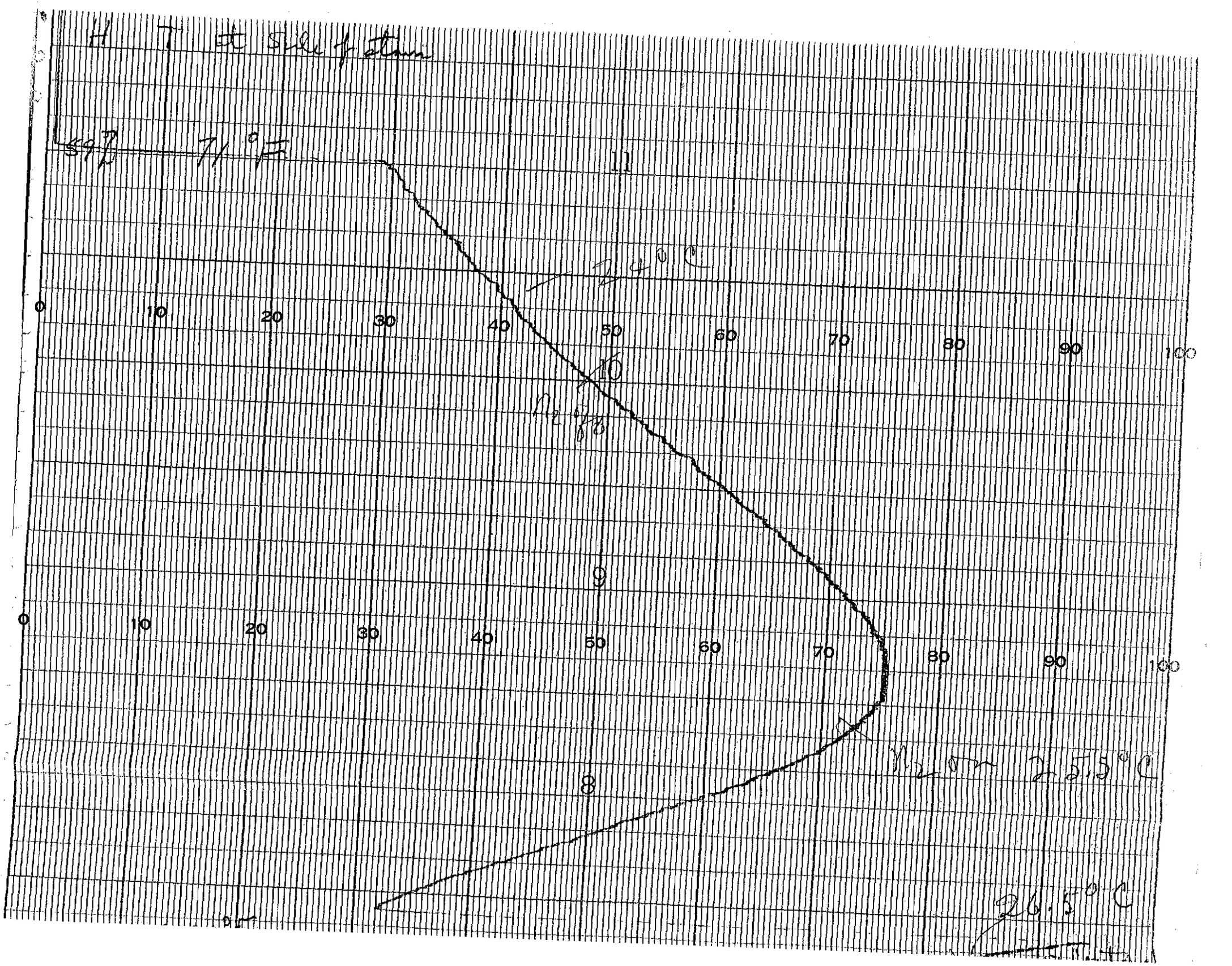
2 3/8" = 58,243 gms

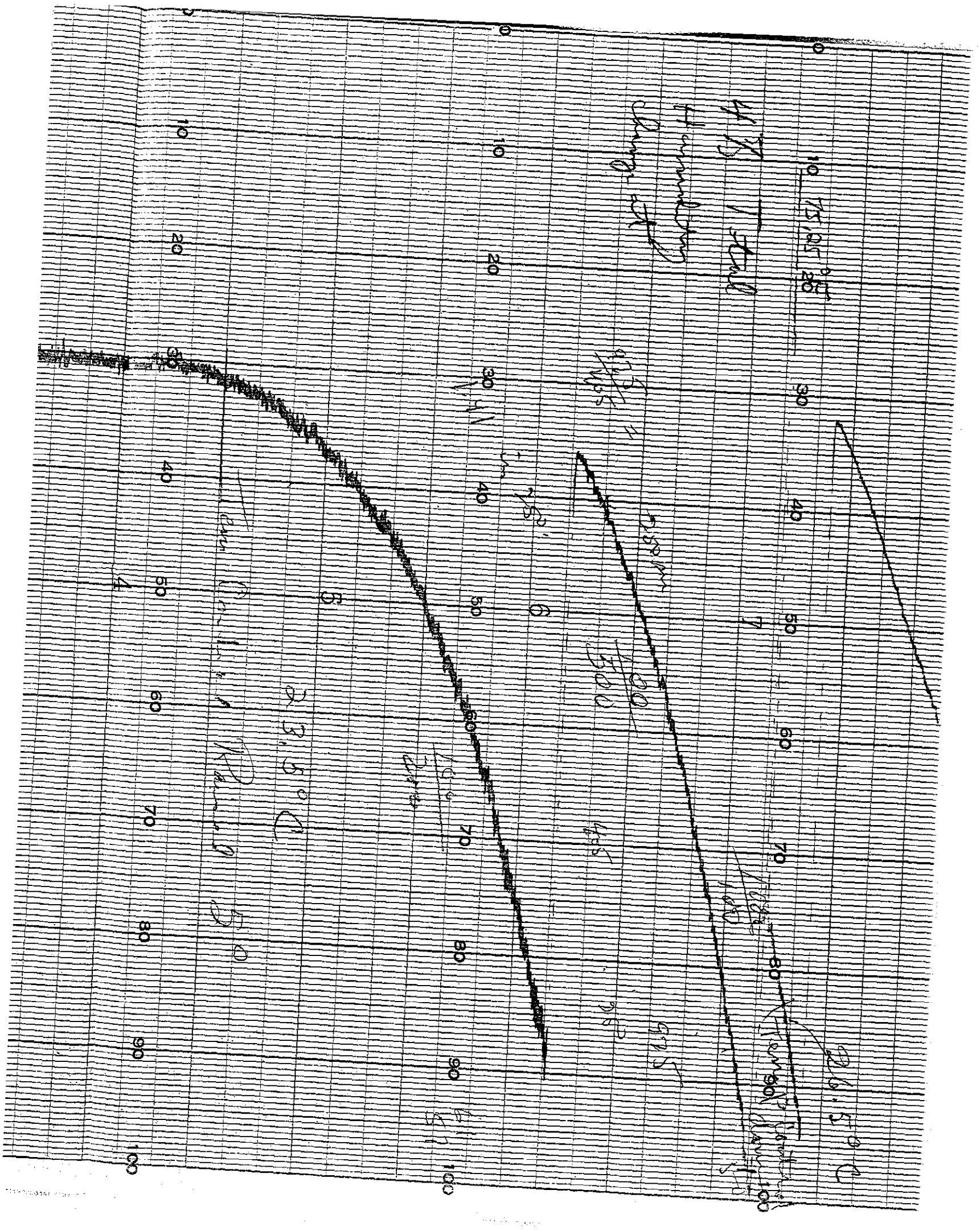

POWER
Temp
Hum
2:30
2:40
2:50
3:00
3:10
3:20
3:30
3:40
3:50
4:00
3
8
2
17
18
7
2
5
15
17
17
17
18
17
18
4.5°F
±20
1°F
1°F
EUGENE DIETZGEN CO.
NO. 340-10 DIETZGEN GRAPH PAPER
10 X 10 PER INCH


Made in U.S.A.
3:35 PM
5-17-62
0 1 2 3 4 5 6 7 8 9 10
No. W3A2

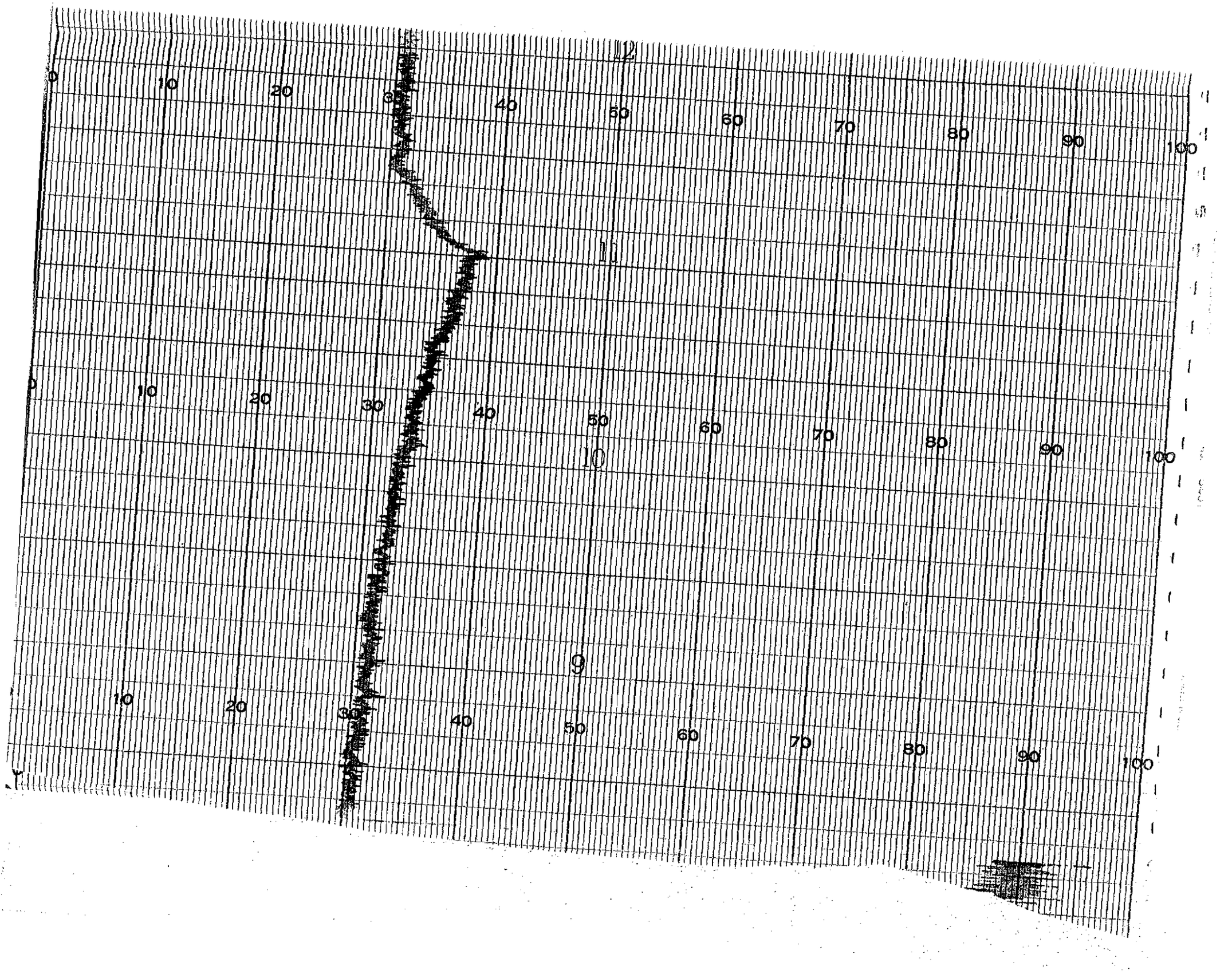

0 1 2 3 4 5 6 7 8 9 10
GENERAL ELECTRIC
0 1 2 3 4 5 6 7 8 9 10
Made in U.S.A.


1 MIL JIG
0
1
2
3
4
5
6
7
8
9
10
No. W3A2—0


Heat Sink Temp
59°F
71°F
11
10
9
8
0
10
20
30
40
50
60
70
80
90
100
Water 25.5°C
26.5°C



0
10
20
30
40
50
60
70
80
90
3
2
1
12


12
11
10
9
0
10
20
30
40
50
60
70
80
90
100

INSTRUMENT CHECK

5-18-62

Time ____ AM/PM

		A	B	C	D	E
Sensee	F	$\frac{10}{100}$	Over	10^{-12}	$\frac{19}{1000}$	1630 V.
Source Dist.	OK	1'	0"	3'	2"	6"
% F.S. Trip		100	OK	100	80	100+

Attempts to hold a metal system critical on 5-17-62 were unsuccessful. Reactivity changes of about 3 ¢ were observed with the cloth dropped around the CTE. These can be due to F. Differential expansion of top + lower half of the CTE causing variation in the gage spacing. ~~The~~ A in density and humidity changes in the air between the two halves of the system. ~~Stand~~ Attempts to evaluate both of these will be made

5" up down

I A Stout gauge reading to 1 mil and another reading to 1/10 of a mil were placed in contact with the foil on the diaphram. The gauges were mounted with resistant offs a magnesium ladder. The temps of the room was raised 5-6° F to see if any significant expansion was observed. No observable differential expansion.

II B Comparing the frequency & oscillation of power temp and humidity as shown on the chart: Power and humidity ~~show~~ oscillate in phase.
A copper tube 1/4 in Dia with 1/8" holes every 1" was installed so that it could blow dry nitrogen

into the gap

C.A. Exp.
Sheet Date 19 Time AM PM
Purpose Evaluation of effect of humidity

System was made critical Temperature of room raised reactivity change observed. Heater turned off Nitrogen introduced into gap

Condition	Temp	Humidity	T	ρ
critical	23.5°C	57%	∞	0
+	24.5°C	61%	~~27~~ 261 pcm	4.4 ±
N_2 introduced into gap	25.5°C			~ −3 ¢

∴ Humidity changes have produced the oscillation in power level. ~~Coeff~~ Humidity coefficient of reactivity is large for this type of system

Measurement of separation of halves

7.548	+ 11.268	E	18.297
	11.252	W	= −16.965
	11.233	N	
	11.243	C	1.332

C.A. _____ Expr. _____ Run _____

Sheet _____ Date _____ 19 ___ Time _____ AM PM

Purpose Added 3/4 in Metal to Ram
Moved plunger 3/4 of inch.

Down Selsyn - 0.007
14.1 on silsyn log N up 1/2 dumb
Critical ~ 14.35

C.A. _____

Sheet _____ Date _____ 19 ___ Time _____ AM PM

Purpose Removed 1/4 in Metal from
the Ram
2 7/8 on ram 2 3/8 on diaphram

Critical at 15.52 1/2" Fuel removed gap
1.42 in

C.A. _____ Expr. _____ Run _____

Sheet _____ Date _____ 19 ___ Time _____ AM PM

Purpose Add 1/2 in Fuel to top
2 7/8 on Dia
2 7/8 on Ram

Selsyn 14.47 not quite critical

196

5-21-62

INSTRUMENT CHECK

Time 8:15 AM ~~PM~~ Source Pile Burst

Channel	A	B	C-12	D	E
Range	10 / 1000	Off	10 / 1000	10 / 1000	10 / 10
Source Dist.	7"		30"	81"	2"
% F.S. Trip	98 OK		100	80	100

C.A. _____ Expr. 8"X10" Run 52162 A

Sheet _____ Date 5-21-1962 Time 8:30 AM ~~PM~~

Purpose Obtain Crit Position.
Rough a measurements
2 7/8" on Diaphram
2 7/8" on Ram.

A. Selsyn @ 14.495" VDT #3 = 10 #4 = 0 ~~FT~~

Position period 225 Sec = +5#

Level @ Selsyn = 14.481 VDT #3 = -.05"

B. Data Taken

Level Selsyn = 14.48 VDT #3 = -2

C. Data Taken

Level Selsyn = 14.48 VDT #3 = -5"

ON RAM — 10" X 8" X 2 7/8"

P. 192 — 2.383"

1/4" + 1/4" (- 1/2") — .504

stack = 2.887

2 7/8" = 70,398 gms.

ON DIAPHRAGM

P. 192 — 2.385"

1/2" — .502"

stack = 2.887"

2 7/8" = 70,507 gms

Possible Stock 7 Feb 68

INSTRUMENT CHECK

Source Pu Be + γ

Time 8:15 →

Channel

		A	B	C	D	E
Range	F	10/1000	cps	10^{-12}	10/1000	1000 V
Source Dist.	OK	8"	0"	3'	2"	1"
% F.S. Trip		100	OK	100	85	100+

5-22-62

C.A. 1 Slabs Expr. 8'X10" Run 52262A

Sheet ____ Date ____ 19 ____ Time ____ AM ~~PM~~

Purpose Rossi α Measurements

2 7/8" on diaphragm

2 7/8" on floor

A. Data Collected

Selsyn = 14.47 VDT #3 = -9.5

Logγ = .0007

B. Data Collection @ 1:35 PM

Logγ = .002 → .0028 VDT #3 = -8

Measured distance from Bottom Slab to diaphragm.

17.808 - E

17.794 - S

17.820 - N

17.805 - W

17.770 - C

Av = 17.799

17.807

- 14.47

3.337

Av. 17.807

198

INSTRUMENT CHECK

Time 10:00 AM ~~PM~~ Source Pu Be + ~~Co~~

5-25-62

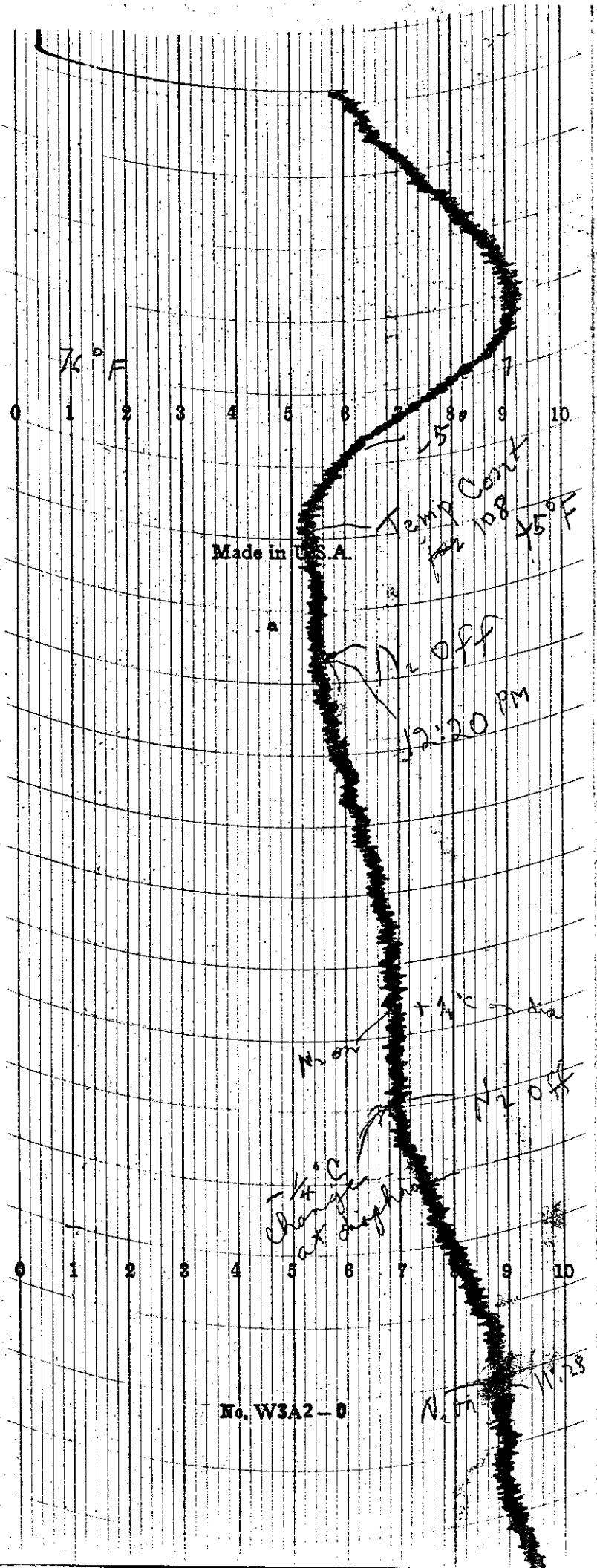
		Channel A	B	C	D	E
Range	F	~~10~~ 1	~~10~~ 1/2	10	~~10~~ 1/2	1000
Source Dist.	SK	7"	0	35"	2.5"	6" No Shield
% F.S. Trip		~~100~~ +	OK	100	80	100+

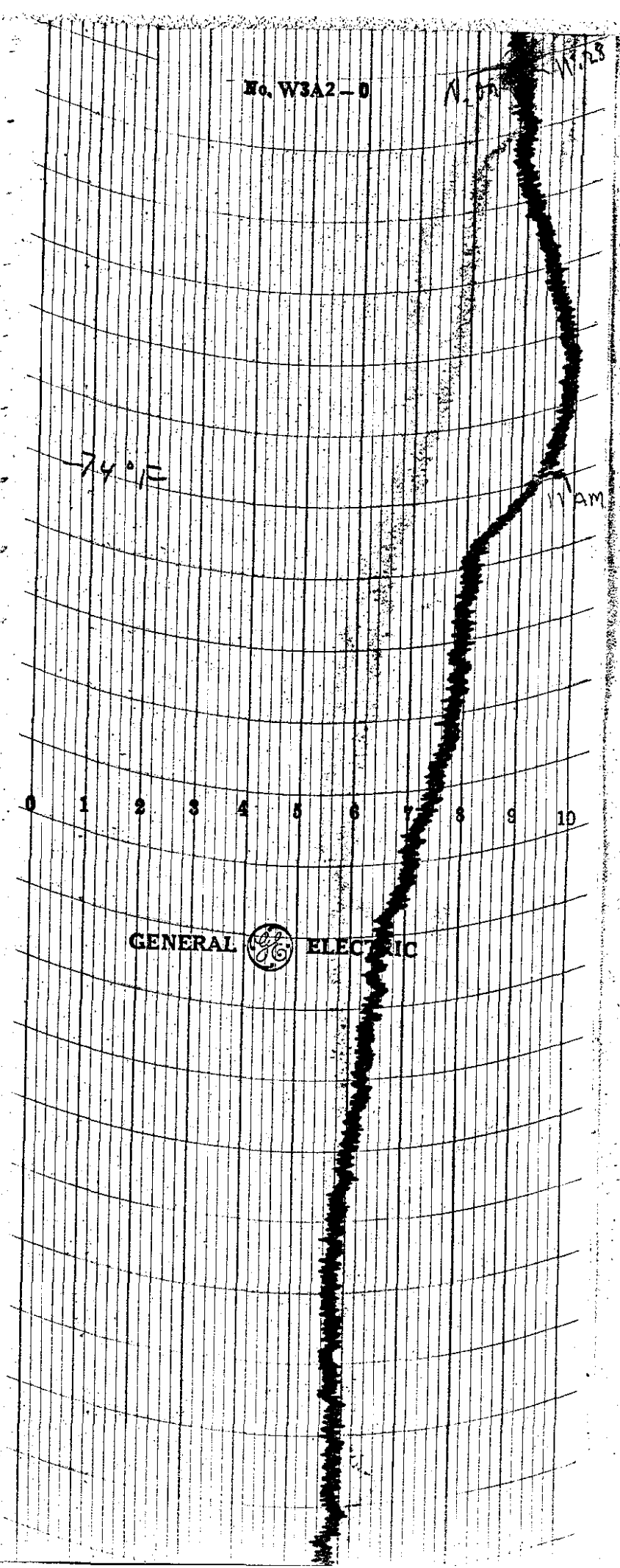
C.A. ____ Expr. 8"X10" Run 5-25-62 A

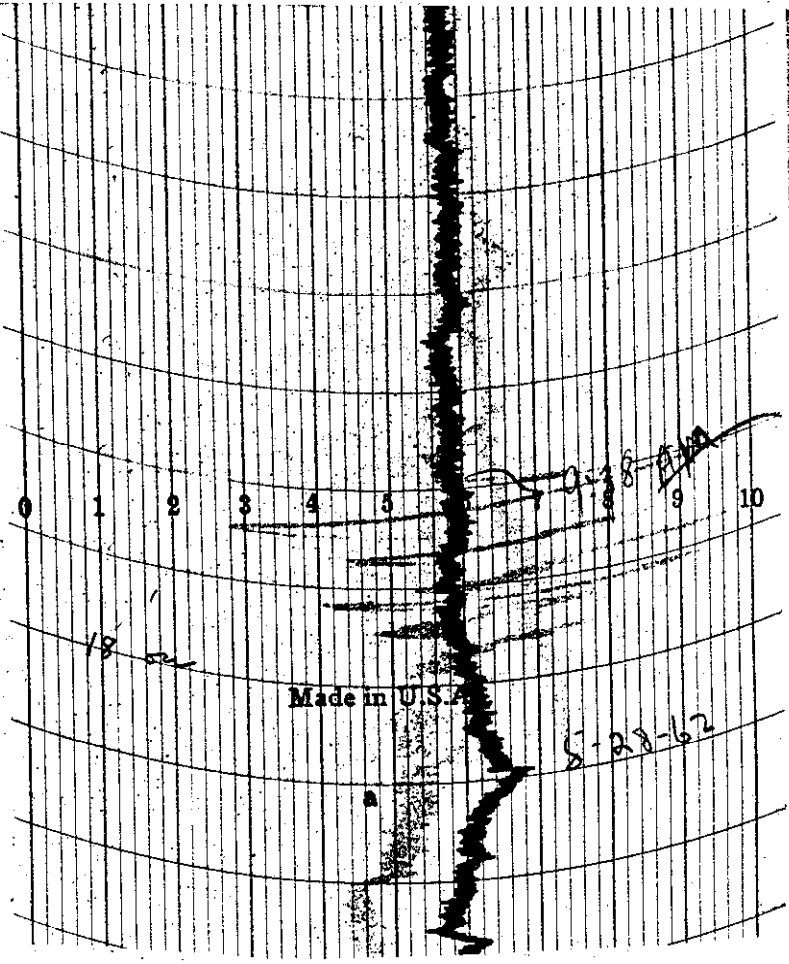
Sheet ____ Date ____ 19 ____ Time ____ AM PM

Purpose Attempt to reach equilibrium at critical with N_2 flowing through the gap

		C	D	A	Time
1.)	CRitical	55	70	53	
2)	Temp control raised 5°F(80) For 8 MIN.	66	85	62	0
3)	Temp control Lowered to 75 For min				8
4.)	N_2 flow off				30
5)	TAble moved to Level power				43
6.)	Temp control raised 5°F(80)				47
7)	T[illegible] to 75°F				55


K°F
0 1 2 3 4 5 6 7 8 9 10
Made in U.S.A.
N2 off
12:20 PM
N2 on
N2 off
0 1 2 3 4 5 6 7 8 9 10
No. W3A2—0


No. W3A2-D
74°F
0 1 2 3 4 5 6 7 8 9 10
GENERAL ELECTRIC


0
1
2
3
4
5
6
7
8
9
10
Made in U.S.A.

Expt. Run 3 23 62 B

Date 19 Time PM

Cathcart unit off water spilled on floor Critical for 10 min

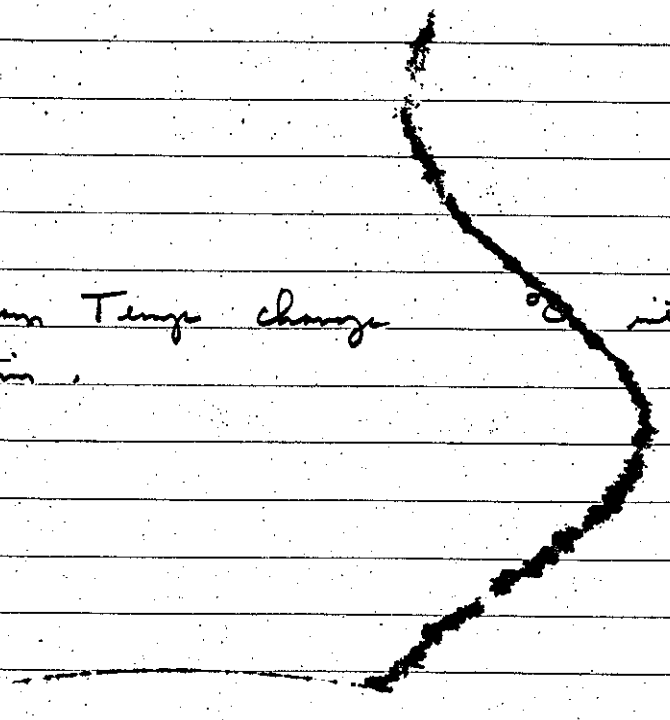
2.5% Humidity change ~1°F Temp change

Flux level drifted from 64 to 50 in 20 minutes

After Shut down

DB = 73°F R.H. = 41% 53 Grains/lb

WB = 59°F



Diaphram Temp change °C with no apparent deflection.

200

5-28-62

INSTRUMENT CHECK

Time 8:25 AM Source PuBe + γ

	Channel A	B	C	D	E
Range	F	$\frac{10}{1000}$	Opr	10^{-12}	$\frac{10}{1000}$	1050V
Source Dist	OK	7"	0"	30	1.5	2"
% F.S. Trip		100	OK	100	80	100+

C.A. _____ Expr. 8"X10" Run 52862A

Sheet _____ Date 5-28-1962 Time _____ AM

Purpose To try to determine Cause of reactivity drifts.

2 7/8" on diaphram

2 7/8" on Ram

Critical Position Selsyn = 14.47 VDT #3 = -6.5

WB = 56 R.H. = 35%

DB = 72 42 grains/lb

WB = 58 RH = 38%

DB = 74 46 grains/lb

2°C change in diaphram temp produced no deflection as measured by gauge mounted with constant off of stain bending

5-29-62

Rm #108
WB = 57
DB = 71
RH = 41%
48 grains/lb

INSTRUMENT CHECK

Time 10:00 AM ~~PM~~ Source Pu Be + X

		Channel A	B	C	D	E
Range	F	10/1000	Off	10^{-12}	10/1000	1050 V.
Source Dist.	OK	7.5"	0"	30"	2.5"	2"
% F.S. Trip		100	~~OK~~	100	80	100

C.A. U-slabs Expr. 8"x10" Run 52962A
Sheet ____ Date 5-29-62 Time ____ AM ~~PM~~
Purpose To determine cause of reactivity drifts.

.0001" dial gauge mounted against diaphram so that when ram is up a reading is indicated.

	Temp Diaphram	Dial Indicator	VOT #3	Time
Selsyn ~~+14.488~~		-2 (gauge read as min hand on clock)	+11.25	11:45 A
14.488	24° C	-10	+10.5	12:40 P
1. @ 12:50 PM	Temp Control #108	Change +5°F		
:56 PM	"	" "	-5°F	
2.	25.75°C	+14	10.25	12:56 P
3.	25.25°C	0	10.0	1:02 P
4.	24.5°	-15	10.0	1:06 P
5	24.25°	-22	10.0	1:13 P
6	23.9°	-25	10.0	1:23 P
7	24.0	-25	10.0	1:32

reading

Temp Control #108 raised 3° F 1132 PM

8	25.5	+5	9.7	1:41
9	24.5	-25	9.25	1.50
10	26.2	-2.5	Heat turned off. 9.2	1.57
11	25.0	+3.5	9.0	2:06
12	25.0	+3	9.0	2:11

Diaphragm Movement

	Top Dial	Bottom dial	Temp. of Diaphragm
3:08 PM	+4.1 mils	30 mils	24.5°C
	Raised Temp. Control in #108 5° F		
3:45	+ 4.1 mils	31 mils	27.0°C

This gauge mounted off stainless ring

This gauge mounted off ring

PM

6-1-62

INSTRUMENT CHECK

Time 8:40 AM ~~PM~~ Source Pu Be + γ

	Channel A	B	C	D	E
Range	F	$\frac{10}{1000}$ opr	10^{-12}	$\frac{10}{1000}$	1050
Source Dist	OK	7"	0"	30"	2"	2"
% F.S. Trip		100+	OK	100	85	100+

C.A. U. Slabs Expr. 8"X10" Run 6162A

Shroud _____ Date 6-1-962 Time AM ~~PM~~

Purpose Basic measurements

2 7/8" on diaphram

2 7/8" on Ram.

Circular diaphram support substituted for original support. [CTU].

2¼ mil thick Diaphram used.

A Selsyn up position = 19.505

Distance measured from Top of Fuelon Ram (down) to diaphram.

22.546 N

22.530 S

22.526 W

22.530 N

Av. 22.533

22.513 Center include

Av = 22.529

22.825

− 19.505

3.320" Separation

+ 0.296

22.529

22.825

204

6-4-62

INSTRUMENT CHECK

Time 12:45 ~~AM~~ PM Source Pu Be + γ

	Channel A	B	C	D	E
Range	F	$\frac{10}{1000}$	9er	10^{-12}	$\frac{10}{1000}$	1050V
Source Dist.	OK	8'	0"	3'	4"	4"
% F.S. Trip		100	OK	100	85	100

C.A. M-Slabs Expr. 8"X10" Run 6462A

Sheet 1 Date ____ 19 ____ Time ____ AM PM

Purpose Repeat of 2 3/8 X8X10 on Ram
2 3/8 x8x10 in dia.
with Low mass diaphram support

up to power + Period = 10.7X+232 cm

#3 9 #4 −2.5

4 −7

4.9 −7.5

4.7 ¢/45 mils Selsyn 22.01

2:13 PM

2:30 Table readjusted to load assembly

#3 − +3.8 #4 −8.8 negative

4.5

+4.5 −8 22.01

Measured distance between fuel on Ram (down) to diaphram.

29.332
−22.01
7.22" separation

12.953 +

10.095 S
.080 E
.072 N
.072 C

+ 0.296

Au = 23.332

7 Feb 68

On Ram 10" X 8" X 2 1/8"

2 1/8" = 7/8" + 7/8" + 1/4" + 1/8"

Stack = 2.131"

52,000 gms.

On Diaphragm.

2 1/8" = 7/8 + 5/8 + 1/2 + 1/4

stack = 2.131"

52,098 gms

6-5-62

INSTRUMENT CHECK

Time 11:45 ~~AM PM~~ Source Cu Ba + 8

	Channel B	C	D	E
Range	10/1000	cps 10^{-12}	10/1000	
Source Dist. OK	7"	0"	28"	2"	2"
% F.S. Trip	100+	OK	100	8+	100+

II

C.A. U·slabs Expr. 8"X10" Run 6562A

Sheet ____ Date ____ 19 ____ Time ____ AM PM

Purpose 2¼" on each half

#3 - +11.25 II 4 - 9.75 22,903

Table crept up ~1-mil

Syn .01

Measured distance between top of bottom slab to diaphram.

12.953 + 10.640 S
.633 E
.617 N
.640 W
.636 Center

5 ⌋53.166 10.633 Av.
+12.953
23.586

01 down)

23.586
- 22.903
.683" Separation

332

6-6-62

INSTRUMENT CHECK

Time 10:00 AM ~~PM~~ Source Pu Be + X

	Channel A	B	C	D	E
Range	~~10/2000~~ F	~~Open~~	10^{-2}	~~10/1000~~	
Source Dist.	7" OK	0"	30"	2"	
% F.S. Trip	100+		100+	90	

C.A. _____ Expr. _____ Run 6662 A AM

Sheet _____ Date _____ 19 ___ Time _____ PM

Purpose S.1.2 8X10

2" on RAM - 1.5 + 5x10 1/16 on DIA

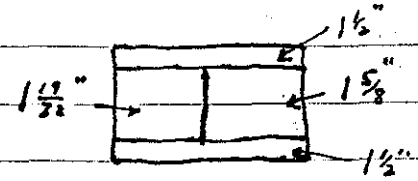
A. VDT #3 = +6.3 #4 = +10

Sat cut.

B. 2" on Ram

1.5" + 5"x5"x 3/32" + 5"x5"x 1/8"

on diaphram



up selsyn 23.775 VDT #3 = 6.8 #4 = 10.75

On Ram — 7 Feb 68

2" = 2 3/8" + 7/8" + 1/2"

Stack = 2.004"

mass = 48.949 gms

On Depth

2" = 2 3/8" + 1/2" + 1/8"

Stack = 2.006"

mass = 48.979 gms.

6-7-62

INSTRUMENT CHECK

Source Pu Be + Y

Time 1:20 ~~AM~~ PM

	Channel A	B	C	D	E
Range	$\frac{10}{1000}$ cps	10^{+2}	$\frac{10}{1000}$	1050 V.	
Source Dist.	7"	0"	28"	2.5"	
% F.S. Trip	100+	OK	100	90	100+

C.A. h-Slabs Expr. 8 X 10 Run 6262A

Shoot _____ Da 6-7 ... 962 Time 1:40 ~~AM~~ PM

Purpose ~~Solid~~ 8 X 10

2" on Ram . 2" on Dia

	VDT	# 3	# 4	Selsyn ¢	Period
A		-8.0 } 1.62 #/mil	-11.75	23.315	∞ (-)
B	1.91 #/mil	-2.0 }	-4.75	23.322	10.5 +
C		-18.1	~~-D.K.(?)~~	23.309	-13.15 —

Measured distance between top of fuel on Ram (down) and diaphram.

12.953 + 10.793 S

.789 E

23.733 .781 W

− 23.315 .775 C

.418" Separation .760 N

5 ⟌ 53.8798 10.780

C.A. _____ Expt. _____ Run C

Sheet _____ Date 6-11-62 Time _____ AM PM

Purpose Support Structure Evaluation

2" Each Half

C Base Run: LEVEL ⊕ Selsyn #1 = 23.313 #2 = 23.463+

D Added Support Structure Same as p. 208.

LEVEL Selsyn #1 = 23.269 #2 = 23.417

0.044 0.046"

See p. 208

Orr Ram 7-26-68

2 1/4" = 7/8 + 7/8 + 1/4 + 1/4

Static = 2.256"

Mass = 55,083 gms

On Depth

2 1/4" = 7/8 + 1/2 + 1/2 + 1/4 + 1/8 - 1/8

Static = 2.258"

Mass = 55,114 gms

C.n. 21 Slabs Spr 8" X10" Run E

Sheet Date 6-11-62 Time ~~AM~~ PM

Purpose Support Structure + Diaphram Evaluation.
2¼" on Ram
2¼" on Diaphrams

Stainless Steel Sheet on p. 209

63+ E ~~Support Structure as p. 208~~

Level (+) LogN = .00018

VDT #3 = 5.3 #4 = -10 Selsyn #1 = 22.47 #2 = 22.619

417 avg. 6.38 m/s Positive Period: 111 Sec = ~~9.14~~ 9.1

1.43 #/m² VDT #3 = 11.6 #4 = -2.3 Selsyn #1 = 22.475 #2 = 22.625

6" 6.38 ⌋ 9.1

Level (-) LogN = .0027

VDT #3 = 5.0 #4 = -10.7 Selsyn #1 = 22.47 #2 = 22.6183

F Removed Stainless Steel Base Run.

Negative Period = 95.5 Sec =

VDT #3 = 5.7 #4 = 9.3 Selsyn #1 = 22.47 #2 = 22.617

G Added Support Structure as on p. 208.

Level Selsyn #1 = 22.439 (47) #2 = 22.584 (618)

.031 .034

1.43
× 32
45.8 # for Support Structure

6-12-62

INSTRUMENT CHECK

Time 9:15 AM ~~PM~~ Source Pu Be + γ

		Channel A	B	C	D	E
Range	F	$\frac{10}{1000}$	opr	10^{12}	$\frac{10}{1000}$	1000 V
Source Dist.	OK	10"	0"	32"	2.5"	2"
% F.S. Trip		100	OK	100	90	100+

C.A. _____ Expr. 8"X10" Run 61262A

Sheet _____ Date _____ 19 __ Time 9:20 AM ~~PM~~

Purpose Rossi α measurements

2½" Fuel on Each Half.

~1" Separation.

Measured distance between top & bottom fuel + diaphragm

12.953 +
10.517 S
.519 E
.507 N
.531 W
.500 C

5) 52.574 | 10.515

10.515
12.953
23.468
22.480
0.988" separation

A. VDT #3 = -16 #4 = +1.5 Selsyn #1 = 22.48 #2 22.633

B Same as above

Level: VDT #3 = -14 #4 = 0.2 Selsyn #1 = 22.48 #2 = 22.625

C VDT #3 ~~-20~~ -10 #4 = 5.1 Selsyn #1 = 22.485 #2 = 22.629

Positive Period = 183 Sec 5.97 ¢

Moved 4.475 mils gives 1.334 ¢/mil

D VDT #3 = -17 #4 = -4.4 Selsyn #1 = 22.472 #2 = 22.622

Negative Period = 260.6 = 4.4 ¢.

E Stainless Steel placed on top of bottom stack

VDT #3 = -13.8 #4 = +0.3 #1 = 22.48

#2 = 22.627

#1 = 22.469

#2 = 22.616

Pos Pd 34.3 Sec

19¢ = 5S

VDT #3 = ~~-20~~

↑ Pos pd = 191 Sec

5.8 ¢

#4 = -13

$\frac{13.2}{11.1} = 1.19$ ¢/mil

6-13-62

INSTRUMENT CHECK

Time 8:15 AM ~~PM~~ Source Pu Be + γ

	Channel F	A	B	C	D	E
Range		1"/100"	OK	10"	10/1000	1050
Source Dist.	OK	7"	0° 34"	2"	3"	
% F.S. Trip		100+	OK	100	100	100+

C.A. _____ Expr. 8"X10" Run 61362A

Sheet _____ Date _____ 19 ___ Time _____ AM ~~PM~~

Purpose: Support Structure + Diaphram Evaluation

2⅛" Fuel on Each Half.

~.68" Separation p.205

633

5
625

A Base Run: Log N = .006 Level

629 VDT #3 = +14.8 #4 = +14.0 Selsyn #1 = 22.909 #2 = 23.0615

7.3 P.S 9

B Negative Period = 146.6 = 12.53¢

622 VDT #3 = +6.5 #4 = +3.4 Selsyn #1 = 22.90 #2 = 23.0535

Avg = 8.975 mils 8.975 / 12.53 = 1.396¢/mil

C Placed 8"X10"X.024" SS on Top of bottom fuel.

VDT #3 = +6.4 #4 = +4.0 Selsyn #1 = 22.903 #2 = 23.0515

7 Positive Period = 117.8 Sec. = 8.69¢

9 12.53¢ + 8.69¢ = 21.22¢ for 5'S

6 D Level: VDT #3 = +1.0 #4 = -3.0 Selsyn = 22.898 #2 = 23.0445

Avg = 6.1 mils $\frac{8.69}{6.1}$ = 1.42¢/mil

E Added Support Structure on top
Positive Period = 72.7 Sec = 12.6 ℄
Selsyn #1 = 22,869 #2 = 23.016

F Level : Selsyn #1 = 22.859 #2 = 23,0075
Avg = 9.25 mil $\frac{12.6}{9.25}$ = 1,36 ℄/mil

Run A = #1 22.909 #2 23.0615 1.36
F = 22.859 23,0075 X 52
.050" .054" 272
680
70.72 ℄
for Support

Measured distance Top Bottom Fuel to diaphram
12.953

12.953 +

10.640 - E
.636 - S
.645 - W
.616 - N
.625 - C
5 | 53.162
10.632
+12.957
23.585
- 22.909
0,676"

10,378 - E
.360 - N
.392 - W
.370 - C
.3785
5 | 51.885
10,377
+12.953
23.330
-22.02
1.310"

C.A. _____ Expr. 8"X10" Run 61362 G

Sheet _____ Date 6-13 1962 Time 2:06 ~~AM~~ PM

Purpose Diaphram & Support Structure Evaluation

2 3/8" on each half ~ 1.3" Separation

G Negative Period — 182 Sec. 9.2 ¢

VDT #3 = +[redacted] #4 = -6.2 Selsyn #1 = 22.008 #2 = 22.160

H. Stainless Steel on Top of Bottom Fuel.

Pos. Period — 113.4 Sec = 8.98 ¢

VDT #3 = -11 #4 = -6.5 Selsyn #1 = 22.006 #2 = 22.159

Level Selsyn #1 = [redacted] #2 = 21.151

I Removed SS. — Level (+)

VDT #3 = +1 #4 = +8 Selsyn #1 = 22.02 #2 = 22.167

C = + 73/67 in 300 sec ~~Sec pd~~ 3400 = .38 ¢

D 79/71 in 350 sec = 2012 Sec pd .65 ¢

J. Neg. Period — 228 = 6.9 ¢

VDT #3 = -5.5 #4 = +0.2 Selsyn #1 = 22.01 #2 = 22.162

Avg = 6.4 mils 6.9/6.4 = 1.08 ¢/mil

K Added Support Structure on Top

I+K 1.085 / 68.3 ¢ for Support

VDT #3 = #4 = ~~#~~ ~~21.97~~ Selsyn #1 = 21.97 #2 = 22.212

Positive Period — 53.7 Sec = 15.6 ¢

Level #1: 21.955 Selsyn #2: 22.107

Avg = 14.25 mils 15.6/14.25 = 1.09 ¢/mil

6-14-62

INSTRUMENT CHECK

Time 9:10 AM ~~PM~~ Source PuBe + X

		Channel A	B	C	D	E
Range	F	$\frac{10}{1000}$	Oper	10^{-12}	$\frac{10}{1000}$	1050
Source Dist.	OK	14"	8"	30"	2"	1.5"
% F.S. Trip		85	OK	100	90	100+

C.A. 8" X 10" 61462 A

Sheet ____ Date 6-14-62 AM PM

Purpose ~~Diagnosis + Support Structure Evaluation~~

8" X 10" - Rossi & measurement

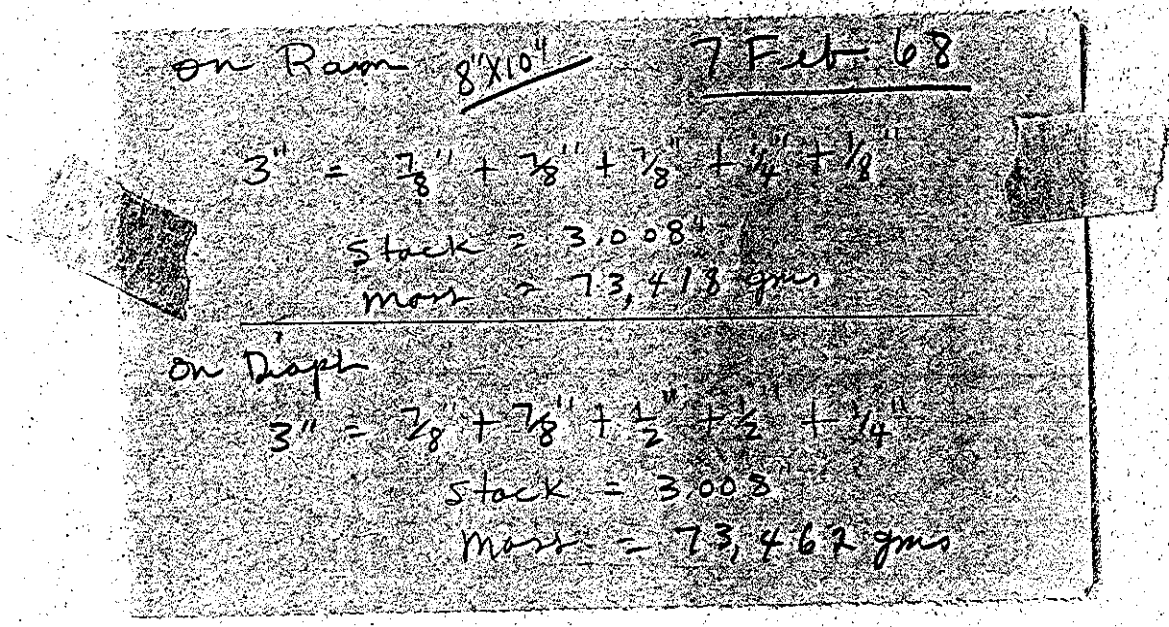
3" on each table ~5.1" Seperation

4.1

A Level:

VDT #3 = -12 #4 = off ; Selayn 1. 18.57
2- 18.714

Data Collection from 12:15 PM to 4:20 PM



on Ram 8"X10" 7 Feb 68

3" = 7/8" + 7/8" + 7/8" + 1/4" + 1/8"

stack = 3.008"

mass = 73.418 gms

on Diaph

3" = 7/8" + 7/8" + 1/2" + 1/2" + 1/4"

stack = 3.008"

mass = 73.462 gms

6-15-62

INSTRUMENT CHECK

Time 8:50 AM

Pu Be + Y

		A	B	C	D	E
Range	F	$\frac{10}{1000}$ Aμa	10^{-12}	$\frac{10}{1000}$	1050V.	
Source Dist.	OK	13"	0"	24"	1.5"	1.5"
% F.S. Trip		100	OK	100	8½	100+

C.A. _____ Expr 8"X10" Run 61562A

Sheet _____ Date 6-12-62 Time AM PM

Purpose Power & Measurements

2" on each Table
~ 42" Separation

A Level:

VDT #3 = -4 #4 = +4 SELSYN #1 = 23.31 #2 = 23.455

Started Data Collection @ 10:12 AM

Done 3:15 PM

6-25-62

INSTRUMENT CHECK

Time 3:00 PM — Pu 12a + K

	C	D	E
Range	10/1000	10^{-12}	10/1000	1050 V
Source Dist.	13"	0"	2"	2"
% F.S. Trip	100+		95-	

C.A. U-Slabs Expr. 3" X10" Run 6-25-62A

Sheet ____ Date ____ 19 ____ Time ____ AM PM

Purpose Obtain Critical Separation with 2 5/8" thickness on each half.

Level:

VDTs not on Selsyn #1 = 20.94

#2 = 21.090

$\log N = .100045$

On Ram — 8"x10" — 7 Feb 68

2 5/8" = 3/8" + 1/2 + 1/8"

Stack = 2.429"

Mass = 64,233 gms

On Dial — 3/8" + 1/8" + 1/2" + 1/4" + 1/8"

Stack = 2.633"

Mass = 64,273 gms

INSTRUMENT CHECK

Time 8:20 — Pu Be + γ

					Ω	E
Range	F	1/1000	Open	10^{-12}	10/1000	1037 V
Source Dist	OK	16"	0"	28"	3"	2"
% F.S. Trip		100	OK	100	95	~~Away~~

C.A. In Slabs Expo 8"X10" Run 62662 A

Sheet ____ Time ____ AM PM

Purpose Diaphram & Support Evaluation

2 5/8" Fuel on each half.

6-25-62

A_1 9"X11"X .024" SS Sheet placed on top of fuel on Bam.

	VDT	Selsyn
Positive Period	#3 = +12.2	#1 = 20.934
92.3 Sec = 10.4 ¢	#4 = +1.0	#2 = 21.081

A_2 Level

	#3 = -0.1	#1 = 20.92
	#4 = -14.5	#2 = 21.0665

Avg = 13.95 mils $\frac{10.4}{13.95} = 0.745$ ¢/mil ✓

B. Removed SS sheet.

Negative period = 166 Sec. = 10.45 ¢

VDT	Selsyn	
#3 = 12.5	#1 = 20.933	SS Sheet =
#4 = 1.5	#2 = 21.081	20.85 ¢

C_4 Placed Ram mock up on top of top fuel.

Positive period — 108.6 Sec = 9.25 ℄

Selsyn #1 = 20.879

#2 = 21.0265

Avg = 12.5 mils

C_2 Level — #1 20.868

#2 21.0125

$\frac{9.25}{12.5} = 0.74$ ℄/mil ✓

Support Value: Run A_2 vs C_2

Selsyn #1 = 54 mils #2 = 52 mils

SEE p. 223

0.74 ℄ × 53 = 39.2 ℄

+ 20.85

60.05 ℄ Value of Support

Measured distance between bottom fuel & diaphram

13.006 + 10.068 E

.0755

.090 W

.054 N

.064 S

5 ⟌ 50.351 ⟌ 10.070

+ 13.006

23.076

23.076

− 20.948 Ram A_2 − 20.92

2.128" Separation 2.156" Separation

p. 223

C.A. Expr. 8" X 10" Run D.
Sheet Date 6-26-62 Time AM PM
Purpose To Determine Critical Separation with 2 3/4" fuel on each half.

D. Slightly Sub Critical:
UDT #3 = +8.5' Selsyn #1 = 20.128
#4 = +16.0 #2 = 20.429

6-27-62

INSTRUMENT CHECK
Time 8:20 AM PM Source Pu Be + F

Range	F	$\frac{10}{1000}$ cps	10^{-12}	$\frac{10}{1000}$	1050 V.
Source Dist.	OK	18"	0"	28"	2" 3"
% F.S. Trip		90	OK 100	90	OK

C. Expr. 8" X 10" Run 62762A
Sheet Date 6-27-62 Time AM PM
Purpose Support Structure and diaphram evaluation.
2 3/4" each half.
9" X 10" X .024 SS Shut g Bottom fuel.

A1 Positive Period: 73.8 Sec = 12.39 ¢
UDT #3 = +9.5 #4 = -7.2 Selsyn #1 = 20.29 #2 = 20.443

A2 Level #3 = -11.4 (20.9 mils) #4 = off 20.268 (22 mils) 20.419 (24 mi)
Avg = 22.3 mils 12.39 / 22.3 = 0.555 ¢/mil

B. Removed S.S. Sheet from bottom fuel.
Negative period — 202 Sec = 8.1 ¢

UDT # 3 = +9.5 Selsyn #1 = 20.285
4 = −7.5 # 2 = 20.436

12.39¢ + 8.1¢ = 20.49¢ for S.S.

C. Lowered Stop flange - Base Run -

Level: UDTs off Selsyn #1 = 20.295'
2 = 20.448'

D, Ram Support Structure on top of fuel,

Positive Period: 117 Sec = 8.71 ¢

UDTS: Off Selsyn #1 = 20.217
Avg 16.25 mils $\frac{8.71}{16.25} = 0.536$ ¢/mil # 2 = 20.366

D_2 Level #1 = 20.20
#2 = 20.3505

Run C vs D_2 = 96.5 mils × .536 = 52 ¢

Measured distance between bottom fuel & diaphram:

13.006 + 9.936 E
9.940 S
9.920 N
9.948 W
9.925 C
5 ⟌ 49.669 ⟌ 9.932

13.006
9.932
22.938
− 20.295
2.643" separation

8 Feb 68

On Ram -

$2\frac{3}{4} = \frac{7}{8} + \frac{7}{8} + \frac{7}{8} + \frac{1}{8}$

Stack = 2.756"

Mass = 67,284 gms

On Discharge - $\frac{7}{8} + \frac{7}{8} + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{8}$

Stack = 2.760"

Mass = 67,324 gms.

C.A. _____ Expr. 3"x10" Run E

Sheet _____ Date 6-27 1962 Time _____ ~~AM~~ PM

Purpose Support Evaluation (Repeat)

2 3/8" fuel on each half.

E_1 Level : Base Run Selsyn #1 = 20.948
#2 = 21.101

E_2 Negative Period #1 = 20.94
278 Sec = 5.42 ¢ #2 = 21.091
Avg 9 mils $\frac{5.42}{9}$ = 0.602 ¢/mil ✓

F_1 Ram Support Structure on top of fuel.

Positive Period : 180 Sec = 6.1 ¢
SDTS : Off Selsyn #1 = 20.879
#2 = 21.024

F_2 Level : [redacted] #1 = 20.867
Avg 11.5 mils #2 = 21.013
$\frac{6.1}{11.5}$ = 0.530 ¢ ✓

p. 220

E_1 is F_2 = 84.5 mils 84.5 X .74 = 62 ¢ for Support

C.A. _____ Expr. 8"X10" Run G

Sheet _____ Date 6-27-1962 Time _____ AM PM

Purpose To obtain Critical Separation with 2 7/8" fuel on each half

G. Sub Critical: Selsyn #1 = 19.48
#2 = 19.6335

6-28-62

INSTRUMENT CHECK

Time 8:20 AM PM Source Ra Be + γ

		Channel A	B	C	E	
Range	F	10/1000	opr	10^{-2}	10/1000	1000 V
Source Dist.	OK	18"	0"	22"	2"	1.5"
% F.S. Trip		85	OK	100	80	out

C.A. _____ Expr. 8"X10" Run 62862 A

Sheet _____ Date 6-28-1962 Time _____ AM PM

Purpose Diaphram + Support Structure Evaluation

2 7/8 each half

A, 9"X10"X.024" SS Shut on bottom fuel.
Positive Period. 83.6 Sec = 11.3 ¢

VOT #3 = +7.8
4 = +9.5

Selsyn # 1 = 19.516
19.669

A_2 Level: VDT # 3 = -15.5 Selsyn # 1 = 19.492
4 = off # 2 = 19.644

Avg. = 24 mils $\frac{11.3}{24} = 0.471$ #/mil

B Removed S S Sheet
negative period — 184.6 Sec = 9.03 #
VDT # 3 = +7.7 Selsyn # 1 = 19.52
4 = +9.2 # 2 = 19.669

11.3 #
9.03 #
20.33 # S.S.

C_1 Base Run.
Positive period: 91.2 Sec Selsyn # 1 = 19.556
10.51 # # 2 = 19.707

C_2 Level: # 1 = 19.537
Avg = 23.5 mils # 2 = 19.683
$\frac{10.51}{23.5} = 0.447$ #/mil

D_1 Ram Support Structure on top of fuel.
Positive Period: 104.2 Sec Selsyn # 1 = 19.448
9.58 # # 2 = 19.598

D_2 Level: # 1 = 19.425
Avg. 23 mils # 2 = 19.575
$\frac{9.58}{23} = 0.416$ #/mil

measured distance from top of pearl To top of diaphram

22.822"	22.811"	22.807"
" .824	" .808	average 22.814
" .823	" .805	22.814
" .827	" .803	19.537
		3.277" Seperation

C.A. _____ Expr. 8"X10" Run 6-28-62 E

Sheet _____ Date _____ 19 __ Time 2:55 PM

Purpose To obtain critical Separation With 3" fuel on each half

E_1 9"X10"X.024" SS Sheet on bottom fuel.

Pos Period VOT #3 = +12.5 Selsyn #1 = 18.59

70.6 sec #4 = +19.0 #2 = 18.737

12.8 ¢

E_2 Pos Period #3 = -4.8 #1 = 18.565

157 Sec #4 = -2.5 #2 = 18.7195

6.82 ¢ Avg = 20.3 mils $\frac{5.98}{20.3} = 0.295$ ¢/mil

F Removed S.S. Sheet

Negative Period #3 = 10.8 #1 = 18.59

~~18.6 Sec~~ #4 = 16.5 #2 = 18.733

~~9.08 ¢~~

206 Sec

7.8 ¢

~~12.8~~	¢ -	12.8
÷ ~~9.08~~		7.8
~~21.88~~		20.6 ¢ for S.S.

Measured distance from bottom fuel to diaphram

22.685"	22.706"	
.687	.711	Avg = 22.687"
.671	.671	
.696	.671	

INSTRUMENT CHECK

Time 8:10 — Source 2n 3e & 4

		A	B		D	E
Range	5	10/1000	0/21	10^{-12}		1000
Source Dist.	OK	16"	0"	32"	2"	1.5"
% F.S. Trip		100	OK	100	95	OK?

6-29-62

22.687
18.61
4.077" Separation

C.A. _____ Exp. 2" x 10" Run 6-2962 A

Sheet _____ Dat 9 Time _____ AM PM

Purpose Support Evaluation

3" each half -

A_1 Base Run

Positive Period : 92.3 Sec — Selsyn #1 = 18.639

10.04 ℄ — #2 = 18.791

A_2 Level :

#1 = 18.61

Av = 30 mils

#2 = 18.7395

$\frac{10.04}{30} = 0.335$ ℄/mil

B, Ram Support Structure on Top Fuel.
Position Period: 70.6 Sec Selsyn #1 = 18.497
12.08 ¢ #2 = 18.644

B₂ Level: Avg = 43 mils #1 = 18.45
#2 = 18.605
$\frac{12.08}{43} = 0.281$ ¢/mil

C.A. _____ Expr. #8"X10" Run 62962C,
Sheet _____ Date _____ 19 ___ Time _____ AM PM
Purpose Critical Separation -
S.S. + Support Evaluation
3 1/8" on each half

C, Base Run
Positive period: Selsyn #1 = 17.445
109.6 Sec = 9.18 ¢ #2 = 17.589

C₂ Level: Selsyn #1 = 17.409
Log N = .805 #2 = 17.554
17.409 · 200 / 209 mils 17.554 / 340 / 214 mils Avg = 35.5 mils
$\frac{9.18}{35.5} = 0.258$ ¢/mil

D, Ram Support Structure on Top Fuel
C₂ vs D₂ 211 mils Position Period: 112 Sec Selsyn #1 = 17.24
9.024 #2 = 17.380

D₂ Level: Selsyn #1 = 17.20
#2 = 17.340
Avg = 40 mils $\frac{9.02}{40} = 0.225$ ¢/mil

8-FEB 68

On Ram –

$3\frac{1}{8}" = \frac{7}{8} + \frac{7}{8} + \frac{7}{8} + \frac{1}{4} + \frac{1}{4}$

Stock = 3.133"

Mass = 76,496 gms

On Digh – $3\frac{5}{8}" = \frac{7}{8} + \frac{7}{8} + \frac{1}{2} + \frac{1}{2} + \frac{1}{4} + \frac{1}{8}$

Stock = 3.135"

Mass = 76,540 gms

E_1 9" X 10" X .02#" S.S. Sheet on Bottom Fuel.

Positive Period: VDT #3 = +15 Selsyn #1 = 17.395"
49.9 Sec = 16.45"/# #4 = -10 #2 = 17.537

E_2 Level: VDT's off #1 = 17.333
Avg = 62 mils $\frac{16.45"}{62} = 0.265$# #2 = 17.475"

F Base Run VDT #3 = +12.5" Selsyn #1 = 17.395"
Negative Period #4 = -12.5" #2 = 17.535"
278 Sec = 5.4#

16.45"
5.4
21.95# for S.S.

Measured distance from bottom fuel to diaphram.

22.571	22.580	22.550
.555	.574	.518
.569	.550	.546

Avg = 22.561"
C_2 = 17.409
5.152" Separation

INSTRUMENT CHECK

Source Pu Be + γ

7-2-62

Time ____ AM PM

	Channel B			Channel E	
Range	F	$\frac{10}{1000}$	opr 10^{-12}	$\frac{10}{1000}$	1050
Source Dist	OK	28"	0"	30"	2"	1.5"
% F.S. Trip		80	OK	100	85	out

C.A. ____ Expr 8" X 10" Run 7262 A

Sheet ____ Date ____ 19 ____ Time ____ AM PM

Purp Critical Seperation, Stainless Steel & Support Structure Evaluation 2¼" on each half

A. 5" X 10" X .024" SS Shut. on bottom fuel.
Positive Period: 67.3 sec = 13.2 ¢
VDT #3 = +8.3 Selsyn #1 = 22,482
#4 = -1.0 #2 = 22,630

A. Level VDT #3 = -1.2 #1 = 22.471
#4 = -13.0 #2 = 22.618

Avg = 11.1 mils $\frac{13.2}{11.1}$ = 1.19 ¢/mil

B. Removed SS. Shut ~~Base Run~~.
Negative Period − 154.2 sec = 11.7 ¢
VDT #3 = +6.2 Selsyn #1 = 22.479
#4 = -4.0 #2 = 22.625

C, Base Run

Position Period — Selsyn #1 = 22.492

167 Sec = 6.5° ↺ — #2 = 22.642

C₂ Level — #1 = 22.487

Avg. 6.75 miles — $\frac{6.5'}{6.75'} = 0.963$ ↺/mil — #2 = 22.6335

D Support Structure on top of fuel -

Position period: 103 Sec — Selsyn #1 = 22.4K

9.65 ↺ — #2 = 22.5865

Level:

Avg = 9.25 miles — #1 = 22.43

$\frac{9.6'}{9.25'} = 1.04$ ↺/mil — #2 = 22.578

$C_1 = 22.492$

$D = 22.43$

62

1.19
1.04
2.23
1.15
62
2230
6690
69.130

C.A. U. Slabs Expr. 8"X10" Run 7262 E

Sheet _____ Date 7-2- 1962 Time _____ AM PM

Purpose To obtain Critical Separation

1 3/8" Fuel on each half

E, ~~Key~~ Subcrit. (Slight +/4) VDT #3 = +9 #4 = off Selsyn #1 = 23.69 #2 = 23.843

E, 6"X10"X.024" SS shut on bottom fuel. subcritical VDT #3 = -19 #4 = +9 Selsyn #1 = 23.67 #2 = 23.821

7-3-62

INSTRUMENT CHECK

Time 8:15 AM Source Pu Be + γ

	Channel A	B	C	D	E
F					
Range	10/1000 cpm		10^2	10/1010	1050
Source Dist.	OK 16"	0"	38"	2.5"	
% F.S. Trip	100	0%		80	out

C.A. Ni Slabs Expr. 8"X10" Run 7362 A

Sheet _____ Date 7-2 1962 Time 8:25 AM PM

Purpose To obtain critical Separation Stainless Steel + Support Structure Evaluation

1 1/2" Fuel each half

On Ram 8"x10" 8 Feb 68

$1\frac{7}{8}" = \frac{7}{8} + \frac{7}{8} + \frac{1}{8}$

Stock = 1.879"

mass = 45,848 g

On Diapl - $\frac{7}{8} + \frac{7}{8} + \frac{1}{8}$

Stock = 1.879"

mass = 45,854 g -

A_1 SS shunt on.
Positive Period - 86.9 Sec = 10.95 ¢

VDT #3 = +7.8 Selsyn #1 = 23.695°
#4 = +8.8 #2 = 23.847°

A_2 Level: VDT #3 = +2.5 #1 = 23.687
#4 = +1.8 23.839

9
+3

Avg = 7.4 mils $\frac{10.95°}{7.4}$ = 1.49 ¢/mil

B SS sheet Removed:
Negative Period - 284 Sec = 5.31 ¢

VDT #3 = +8.0 Selsyn #1 = 23.69
#4 = +9.3 #2 = 23.844

C, Base Run:
Positive Period: 57.5° Sec = 14.5 ¢

VDT #3 = +2.0 Selsyn #1 = 23.70
#4 = +3.8 #2 = 23.854

B_2 Level: #3 = -5.0 #1 = 23.695°
#4 = -4.9 #2 = 23.8455

Avg = 7.55 mils $\frac{14.5°}{7.55°}$ = 1.92 ¢/mil

D, Ram Support Structure on top fuel.
Position Period: 92.3 Sec Selsyn #1 = 23.685
10.45 ¢ #2 = 23.8075

D₂ Level: #1 = 23.685
Avg = 6.25 Mils #2 = 23.802
$\frac{10.45}{6.25} = 1.67$ ¢/mil

1.67 x 45 mils = 75¢ for Support Structure

E, Repeat of A, S.S. Sheet on
Position Period – 116 Sec = 8.8¢
VDT #3 = +8.5 Selsyn #1 = 23.69
#4 = +9.3 #2 = 23.845

E₂ Level: #3 = +4.5 #1 = 23.685
#4 = 4.0 #2 = 23.838
Avg = 5.1 mils $\frac{8.8}{5.1} = 1.73$ ¢/mil

F. SS Chut Removed.
Negation Period – 157 Sec = 11.33¢
~~Level~~ #3 = 7.8
#4 = 8.4 #1 = 23.69
#2 = 23.838

11.33
8.8
20.13¢ for S.S.

Measured distance from bottom fuel to diaphram

23.841	23.830	23.851
.839	.843	.840
.833	.847	

Avg 23.8408'

C_2 — 23.695'

0.145" 5"

Separation

7-9-62

Out	98	100	OK	700
15"	15"	30"	0"	18"
1050	$\frac{10}{1000}$	10^{-12}	open	$\frac{10}{1000}$

% F.S. Trip
Source Dist.

Pu Be + 8

10:50

INSTRUMENT CHECK

C.A. U-Slab Expr. 8"x10" Run 7962 A

Sheet ____ Date 7-9 1962 Time ____ AM PM

Purpose Rossi α Measurements

1 7/8" Fuel on each half.

Level: VOT #3 = 0.5' Selsyn #1 = 23.69 Log N = .0005
#4 = 1.0 #2 = 23.846

7-13-62

INSTRUMENT CHECK

Time 12:50 PM Pu Be + γ

		A	B	C	D	E
Range	F	D/1000	Opr	10^-2	10/1000	1050
Source Dist	O/K	13"	0"	34"	1.5"	1"
% F.S. Trip		100	OK	100	95	100+

C.A. U Slabs Exp. 9"X10" Run 7136 2A

Sheet Time PM

Purpose: Basic Measurements.

17½ each half.

.0005

LEVEL :

Log N: 6000' VDT #3 = -0.5' Selsyn #1 = 23.684

#4 = -3.5' #2 = 23.835

238

7-16-62

INSTRUMENT CHECK

Time 8:25 AM PM Source Pu Be 4 8

	Ch. A	B	C	D	E
Neg.	F	10/1000 opr 10	2 10/1000	1650V.	
Source Dist.	OK	15"	0"	30"	25" OK
% F.S. Trip		100 OK	100	98	each

measured distance from bottom fuel to diaphram

23.825	23.827
.829	.843
.853	.854
.831	.937
.837	

Avg = 23.838

- 23.69

.138" Separation

C.A. U. Slabs Expr. 8"X10" Run 72662 A

Sheet Date 6-17 19 62 Time AM PM

Purpose Basis of measurements.

17/8" each half

A. Level: JDT #3 Selsyn #1 = 23.69 Log N = .007

#4 #2 = 23.844

C.A. Expr. 8"X10" Run B

Sheet Date 6-17-19 62 Time AM PM

Purpose Basis of measurements

17/8" on Ram

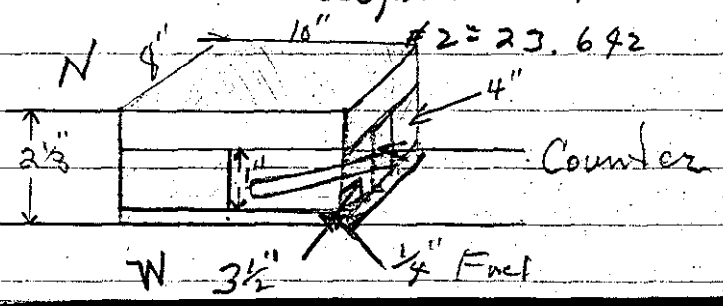
2 1/8" on Diaphram with a hole 1/8" X 1" X 5"

for fission Counter 1/4" above diaphram

B Level: JDT: off Selsyn #1 = 23.495

#2 = 23.642

Log N = .005



INSTRUMENT CHECK

7-17-62 Time 9:30 AM Source Pu Be + γ

	A	B	C	D	E
Range	5	10/1000	open	10	10/1000	1060 V.
Source Dist.	OK	11"	0"	30"	2"	1"
% F.S. Trip		95	OK	100	90	100+

C.A. U. Slabs Expr. 8"x10" Run 7/17/62 A

Sheet Do 7-17-1962 Time AM PM

Purpose Bonn. & Measurements

Same as p. 238 Run B

A Level: VDTs off Scl sgn #1 = 23.51

Log v: .0006 #2 = 23.640

B. Counter removed from hole place on top of fuel directly above hole.

7-18-62

INSTRUMENT CHECK

Time 8:25 AM PM Source Ra Be

	Channel A	B	C	D	E
Range	F 10/1000	cps	10^{-12}	10/1000	1050 V.
Source Dist.	OK 17"	0"	30"	2"	1.5"
% F.S. Trip	100	OK	100	98	100+

C.A. U-Slab Expr. 8" X10" Run 71862A

Sheet ____ Date 7-18 1962 Time ____ AM PM

Purpose Ross & Measurements

1 7/8" each half.

A Level: Log N .00023 VDT #3 = +2.8 #4 = +1.5 Selsyn #1 = 23.692 #2 = 23.843

B Level: Log N .0006 VDT #3 = +1.0 #4 = -0.5 Selsyn #1 = 23.69 #2 = 23.837

INSTRUMENT CHECK

Time 8:20 — Source Pu Be + γ

	Channel A	B	C	D	E
Range	F 100	open	10	100	1000 V.
Source Dist.	OK 10"	0"	20"	3"	1.5"
% F.S. Trip	95	OK	100	80	100+

C.A. U-Slabs Expr. 8"X10" Run 7-1962A

Sheet ____ Date ____ 19__ Time ____ AM PM

Purpose Rossi α measurements

1⅓" each half.

Level: VDT #3 + 2.5 Selsyn #1 = 23.692

#4 = + 1.0 #2 = 23.849

Log N = .0005

INSTRUMENT CHECK

Time ____ AM PM

C.A. U-Slabs Expr. 8"X10" Run 7-1962

Sheet ____ Date ____ Channel A B C Time ____ AM PM

Range ____

Purpose Aluminum Plate Stainless Steel & Support

Source Dist. Structure on top pail

% F.S. Trip ____

Level: VDT: off Selsyn #1 = 23.648

#2 = 23.795

242

7-20-62

INSTRUMENT CHECK

Time ____ AM ~~PM~~ Source Ra Be + γ

		Channel A	B	C	D	E
	F					
Range		10/1000	off	10^{-12}	1/1000	1050 V.
Source Dist.	OK	12"	0"	34"	2.5"	1"
% F.S. Trip		100	OK	100	80	100+

C.A. N-Slab Expr. 8" x 10" Run 7-20-62

Sheet ____ Date 7-20 19 ____ Time 10 ~~PM~~ 10 AM

Purpose Rossi α Measurements

3⅛" each half.

Level: UDTs = Off

LogN = .0005

Selsyn #1 = 17.36

#2 = 17.576

INSTRUMENT CHECK

7-23-62

Time 3:30 ~~AM~~ PM Source Puke t r

	Channel A	B	C	D	E	
Range	F	10/1000 opr	10 - 10/1000		1000 V	#1 = 23.84
Source Dist.	18"	0"	30"	2"	1.5"	#2 23.95
% F.S. Trip	95	OK	100	90	100 +	#3 = 5"
						#4 = 1"

C.A. 21 Slabs Expr. 8" X 10" Run 72362A

Sheet ____ Date 7-23-62 Time ____ PM

Purpose Solid (Rossi & measurements)

2" on Ram

1½" + 5 X 10" X 3/2" Centered on Top on diaphram

A VDT #3 = +6.5 Selsyn #1 = 23.84

#4 = +17.5 #2 = 23.950

Log N = .0005 started Data Collection @ 5:20 PM

Shut Down @ 8:30 PM

7-24-62

INSTRUMENT CHECK

Time 2105 ~~AM~~ PM Source Pu Be

		Channel A	B	C	D	E
Range	F	$\frac{10}{1000}$ Ops		10^{-12}	$\frac{10}{1000}$	1850V.
Source Dist.	ok	20"		38"	2"	1"
% F.S. Trip		95		100	90	100+

C.A. N-Slabs Expr. 8"X10" Run 72462 A

Sheet ____ Date ____ 19 ____ Time ____ ~~AM~~ PM

Purpose Rossi α measurements

Solid : Same as p. 243

A VDT # 3 = 18.5 Scl sgn # 1 = 23.805 Log N = 0.005

4 = off # 2 = 23.951

started Data Collection @ 3:20 PM

Shut down @ 8:05 PM

7-25-62

INSTRUMENT CHECK

Time 8:20 AM PM Source ^{12}Ru + ^{8}

		Channel A	B	C	D	E
Range	F	$\frac{10}{1000}$	Open	10^{-12}	$\frac{14}{1000}$	1050 V.
Source Dist.	OK	18"	0"	40"	2.5"	1"
% F.S. Trip		100	OK	100	90	100

C.A. _____ Expr. 8" X 10" Run 7-25-62 A

Sheet _____ Date _____ 19 __ Time _____ AM PM

Purpose Ranein & Measurements

9:50

Solid same as p. 243

A VDT #3 = 6.5"
#4 = off

Selsyn #1 = 23.79
#2 = 23.944

Log N = .0005

started Data collection @ 9:00 AM

B. VDT #3 = 10
#4 = off

Selsyn #1 = 23.79
#2 = 23.943

Log N = .0005

started Data collection @ 1:20 PM

7-26-62

INSTRUMENT CHECK

Time 8:10 AM Source Pu Be + γ

		Channel A	B	C	D	E
Range	F	10/1000	open	10^{-12}	10/1000	1050 V
Source Dist.	OK	18"	0"	4"	2"	1"
% F.S. Trip		95	OK	100	90	100 +

C.A. N. Slab Expr. 8" X 10" Run 72662-A

Sheet ____ Date ____ 19 ____ Time ____ AM PM

Purpose Resin & Measurements

Solid : Same as p. 245

A VOT #3 = 10.0 Selsyn #1 = 23.79

#4 = off #2 = 23.943

Log N = .0009

Started data Collection @ 1:15 PM

7-27-62

INSTRUMENT CHECK

Time 8:45 AM Source Ru Be + γ

	Channel A	B	C	D	E
Range	10/1000	0/4	10-12	110/1001	1050 V.
Source Dist.	17"	0"	40"	2.5"	1"
% F.S. Trip	10	8K	10	90	1000

C.A. 21-Slabs Expr. 8"x10" Run 7276217

Sheet _____ Date _____ 19 ___ Time _____ A.M.

Purpose Basic measurements

Soil: Same as p. 243

A. UDT # 3 = 9.0 Selsyn #1 = 23.79
4 = off # 2 = 23.946

Log N = .0009

Started data collection @ 9:20 AM

B. VDT # 3 = 10 Selsyn #1 = 23.79 Log N = .0005
4 = off # 2 = 23.946

Started data Collection @ 1:00 PM

C. VDT # 3 = 10 # 1 = 23.79 Log N = .0010
2 = 23.945

D VDT # 3 = 8 # 1 = 23.79
3:30 PM # 2 = 23.947 Log N = .001

INSTRUMENT CHECK

7-30-62

Time 8:20 A.M. Source 12 Be + 8

Channel	A	B	C	D	E
Range	F	10 / 1000	open	10 / 100	10 / 1000	1050 V
Source Dist.	OK	30"	0"	30"	2.5"	1.5"
% F.S. Trip		95	OK	100	90	10+

C.A. U-Slabs Expr. 8"X10" Run 73062A

Sheet ____ Date ____ 19 ____ Time 9:30 AM

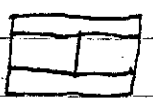
Purpose Power & measurements

Solid: Same as p. 243

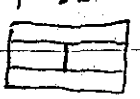
A VOLT ± 3 = 9.0 selsyn #1 = 23.79 LogN = .6006
± 4 = off #2 = 23.953

B, C + D — Same

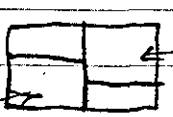
D_1 Removed 5"X 5"X 3/32" fuel from top.
Support structure in place.
Super Critical. on diaphram 1½" + 1/16" + 1/32"



D_2 Removed 5"X 5"X 1/32" fuel from Top
Sub critical. on diaphram 1½" + 1/32" + 1/32"



D_3 on diaphram
1½" + 1/16" + 1/32"



INSTRUMENT CHECK

Time 1245 PM Source P.B.

	=	X			
Range		1%/100	10^{-11}	6%/100	250
Source Dist.		2.5"	30	½"	¼"
% F.S. Trip		90	100	100	100

C.A. WSheds Expr. 8" X 10" Run 9-20-62

Sheet ____ Date ____ 19 ____ Time 1:45 PM

Purpose Check out of servo on Feet metal system

2⅝ in end shelf

Servo Reading 515 D = 50

S.I I 18.87 II 19.70 Slightly S.L

Log N 0.0058 VDT #3 off - VDT #4 off

Dother Level held constant by servo for minutes

INSTRUMENT CHECK

Time ____ AM / PM Source ____

	Channel A	B	C	D X	E
Range	10/1000	opr	15-12	12/1000	1/50
Source Dist.				1/4	5"
% F.S. Trip	100		100	100	

C.A. ____ Expr. ____ Run ____

Sheet ____ Date ____ 19 ____ Time ____ AM / PM

Purpose Runs a - 2 5/8 x 8 x 10 w end help

18.874 19069

30mm 18.875 19.0675

19.065 ? Selsyn may be slipping

19,062

18.879 19.064 Shim out

Up 18.875 19.059

?

Down 00.025

1st quarter

9/24/12

INSTRUMENT CHECK

Time 8:05 AM PM Source

Channel

	F	A	B	C	D	E
Range	OK	10/1000	up	15"	1/1000	1/250
Source Dist		1½"		4'	3"	1"
% F.S. Trip		100		100	95	90

C.A. ½-Slabs Expr. 8"x10" Run 9-2462

Sheet ____ Date ____ 19 ____ Time 8:28 AM PM

Purpose Rossi α 2⅝ w each half

Selsyn I II

~ 0.003

2nd quarter of memory

3+4 quarter ½ in channel width.

Up	18.870	19.0695	Measured separately with table down
Shutdown	18.870	19.0580	
Down	0.035		E = 21.007 C 21.011 S 21.02 N
			Center of stack 21.02
8.45 x 10⁷	Trigger	1st + 2nd quarter	W = 21.015N 21.025S 21.018C

Log N .0007

252

9/24/62

C.A. _____ Expr. 8" x 10" Run 92462

Sheet _____ Date _____ 19 __ Time 3:05 ~~AM~~ PM

Purpose 2 3/4 on and half

Rossi x

Selayn	18.215	18.409
$\log N$	.0007 − 18.215	18.404
	.00065	
D_{av}	0.03	

INSTRUMENT CHECK

Time 8:15 AM PM Source Pu Be

F

	Channel A	B	C	D	E
Range	10/1000	opn	10^{-11}	10/100	1050
Source Dist.	2"	OK	3,5"	1/2	1½"
% F.S. Trip	100		100	80	100

OK

Ca Slabs Expr. 8"X10" Run 92562

Sheet ____ Date ____ 19 ____ Time 8:35 AM PM

Purpose 2¾ mark half Rossi α

Selayn 18.215 18.409

18.218 18.398

Down 0.03

7×10^7 trigger in 4th quarter

Measured Separation

E 21.87

21.884

21.875

C 21.864

W 21.889

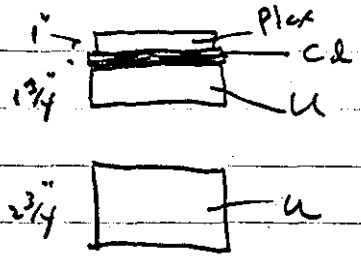
21.880

21.896

C.N. _____ Expr. _____ Run _____

Sheet _____ Date _____ Time _____ AM PM

Purp Remove one inch of fuel from top 2 3/4 on bottom 1 3/4 in top + mil cl + 1" Plex



1) Table Position

18.28 18.474 not critical
no materials measure on C
in hand.
Flanges removed 1 1/3"

2) Critical at unit 1924"

3) Remove 1/8" Fuel from bottom.

19.62 19.801 +10 on #3

Critical slightly positive with shim and also without

9/25/62

INSTRUMENT CHECK

Time 12:30 AM PM Source γ Pu Be

F

	Channel A	B	C	D	E
Range	10^{-1}	vpr	10^{-2}	10^{-1}	10^{-3}
Source Dist.	2½"	OK	3.5'	1"	
% F.S. Trip	100		100	100	100

C.A. _____ Expr. _____ Run _____

Sheet _____ Date _____ 9 __ Time _____ AM PM

Purpose Cutoff at 19.61 with shim ½" in/out

C

C.A. 2 Slabs Expr 8" X 10" Run 9-26-62

Sheet _____ Date _____ 9 __ Time 1:35 AM PM

Purpose Removed 1/8" Foil From Lower halt. 1¾" on top, 2.5" on bottom

Slow speed change at 18.7

Selsyn 19.932 20.1265 Log N .00056

19.932 20.1235

19.932 20.1215

250

25

9-21-62

INSTRUMENT CHECK

Time 8:05 A.M. Source Pu Be

X

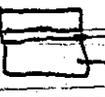
F

Channel	A	B	C	D	E
Range	10 Kcps	opr	1.5 Kcps	1 Kcps	1.5 Kcps
Source Dist.	2"	DK	35'	1½"	1.5"
% F.S. Trip	100		100	100	100

C.A. w Slide Expr. 8" X 10" Run 92762

Sheet _____ Date _____ 19 __ Time 8:25 AM PM

Purpose Runs a



Selsyn - 0.00

19.942
19.94

20.1224

Log N .0007

9-28-62

INSTRUMENT CHECK

Time 205 AM PM

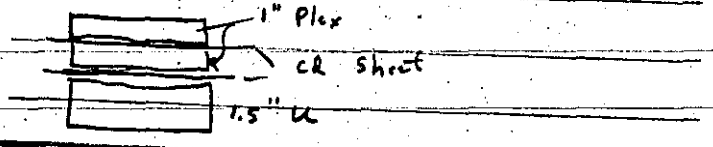
Source Pu Be

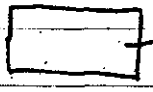
	Channel A	B	C	D	E X
Range	F	10/1000	opr	15"	10/1000	105
Source Dist.	OK	3.5"	OK	3.5'	0"	3"
% F.S. Trip		100		100	100	100

C.A. _____ Expr. _____ Run _____

Sheet _____ Date _____ 19 ___ Time _____ AM PM

Purpose





Not critical 20.55

INSTRUMENT CHECK

Time AM PM

Source

Channel

A B C D E

Range

Source Dist.

% F.S. Trip

9-29-62

CAR Slabs Expr. 8" X 10" Run 92962

Sheet _____ Date _____ 19 ___ Time 3:05 ~~AM~~ PM

Purpose Added $\frac{1}{8}$" of fuel to Top Layer
2" Fuel on Bottom
$1\frac{5}{8}$" on Top

Not Critical

10-1-62

INSTRUMENT CHECK

Time 9:00 AM PM Source Pu Be

	Channel A	B	C	D	E
X F					
Range	10/100	open 2.5/10	10/100	1.50	
Source Dist.	2"	OK	15"		
% F.S. Trip	10		100	102	100

C.A. h Slabs Expr. 8"x10" Run 10162

Sheet ____ Date ____ 19 ____ Time 10:20 AM PM

Purpose Added 1/4" to Bottom Stack

Critical 20.22

#3 -2.5 #4 offscale on +

C.A. h Slab Expr. 8"x10" Run 10-162

Sheet ____ Time 10:40 AM

Purpose 1 5/8" Fuel on top
2 1/4" " on bottom

VDT #3 = -2 #4 = -16.5

20.23 20.414

ZPU

10-3-62

INSTRUMENT CHECK P.B.

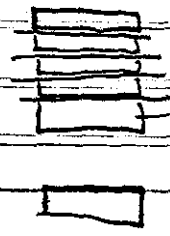
2 PM

		Channel A	B	C	D	E
F		10/100	opr	3.5×10^{-12}	10/100	1050
	OK	1½"	OK	¾"	0"	
		100		100	90	100

CA h-Slabs Expr. 8"X10" Run 10362

Sheet Date 19 Time AM PM

Purpose



20.25 Not Critical

CA h-Slabs Expr. 8"X10" Run 10362

Sheet Date 19 Time 2:20 AM

Purp Added ⅛" Fuel to bottom
4" Plastic + 1.5 Fuel on Top
2⅛" Fuel on bottom

20.59 not Critical

21.515
21.515
21.531
21.535
} spacing when down

Critical at 20.65
.0005.5

10-4-62

INSTRUMENT CHECK

Time 8:10 AM PM Source γ P-B-

Channel X

F

	A	B	C	D	E
Range	$\frac{10}{1000}$	opr	10^{-12}	$\frac{10}{1000}$	1050
Source Dist.	2"	OK	3'	½"	0
% F.S. Trip	100	___	100	90	100

C.A. In-Slab Expr. 8"X10" Run 10462

Sheet ___ Date ___ 19 ___ Time 8:20 AM PM

Purpose Run a continuation of 10-3-62 to accumulate more data

Selayn 20.65 - 20.648 20.832

Log N .0006

10-4-62

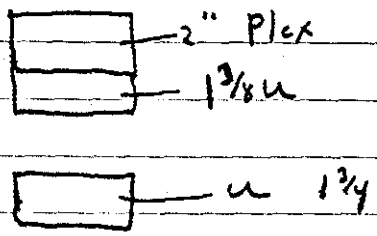
C.A. n-Slabs pr 8"X10" Run 10462

Sheet ____ Date ____ 19 ____ Time 2:25 PM

Purpose Remove 1/8 Fuel From top

Remove 3/8 Fuel From bottom

Remove 2" Plastic + cd from top



Net Critical 20.70

Added 1/8" to bottom

Removed 1/8 from bottom and added 1/4"

Added 1/8 to bottom

Added 1/8 to bottom

Selayn - 20.486 20.486

Log n .00055

10-5-62

INSTRUMENT CHECK

Time 810 AM PM Source Pu Be

F

	Channel A	B	C	D	E X
Range	OK				
	10/100	opr	1	10/100	1050
Source Dist.	2"	OK			1.0"
% F.S. Trip	100		100	90	100

C.A. U-Slabs 8"x10" Expr. Run 10-5-62

Sheet Dat. ? Time 8:40 AM PM

Purpose Repeat of previous day to obtain more Rossi α data for the 2" reflector with no cadmium

2 1/4

Selayne 20.49 20.670

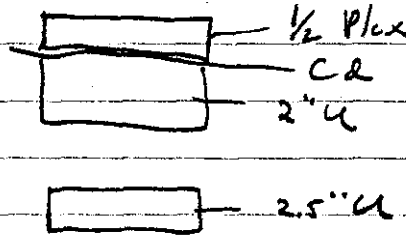
10-5-62

C.A. R-Slabs Expr. 8"X10" Run 10562

Sheet ____ Date ____ 11:10 AM

Purpose 2" Rossi ½" Plex + Cd

19.80 upper limit



Critical with slip
19.80 - 795

Selayn 19.75 · 19.976

Log R .00062

10-8-62

INSTRUMENT CHECK

Time 8:45 AM PM Source P.B.

	Channel A	B	C	D	E
Range	10/1000	opr	10-12	10/50	1050
Source Dist.	2.5"	OK	18"	1/2"	1.5"
% F.S. Trip	100		100	80	100

OK

C.A. 2 - Slabs Expr. 8"X10" Run 10862

Sheet _____ Date 10-8 1962 Time 9:15 AM PM

Purpose Rossi α 8X10 - Room Return
2" on ram 1.5" on diaphragm 24 mil
3/32 centered on top

24.745 up position

Selayn 21.75 21.923 - 21.925

Log N .00062

Removed 3/32" added 1/4"

VDT # 3 = +15.2 # 4 = +1.2

10/9/62

INSTRUMENT CHECK

Time 11.25 AM / PM Source P.B.

X

	F	A	B	C	D	E
				Channel		
Range	DC	$\frac{10}{1000}$	oyc	10^{-12}	$\frac{10}{1000}$	105 D
Source Dist.		2"	OF	18"	2"	1"
% F.S. Trip		100		100	90	100

C.A. R-Slabs Expr. 8"X10" Run 10-962

Sheet ____ Date ____ 19__ Time 11:30 AM

Purpose Runs a 8x10x3.5+ Runs

Return

Ln - 0.00028

Selsyn 21.742 21.922 21.9195

VDT #3 = +13.8 +15 #4 = - 5.2 -4

Log N .00027 .0003

Shutdown 4:20

10-10-62

INSTRUMENT CHECK

Time 8:05 AM PM Source ρ-β

	Channel	A	B	C	D	E
	F=				X	
Range	OK	$\frac{10}{1000}$	open	10^{-14}	$\frac{1}{1000}$	10^{-7}
Source Dist.		2"		2'	0	0
% F.S. Trip		100		100	90	100

C.A. λ-Slab Expr. 8"X10" Run 10 10 62

Sheet _____ Date 10-10 1962 Time 8:30 AM PM

Purpose Rossi κ 8x10 s.l.λ

Room return

L_N 0.0002

Selayn 21.742 21.742 21.9325 21.917

$\log_n$ .00021

VDT #3 = +13 4152 # χ = -6.8 -4.4

10-11-62

INSTRUMENT CHECK

Source P.K.

Time 8:05 AM PM

Checked X

	A	B	C	D	E
Range	F	5/1000	1" or 1.5"	1"/1000	1.5°
Source Dist.	OK	1.5"	2'	1"	1"
% F.S. Trip		100	100	80	100

C.A. U-Slab Expr. 8"X10" Run 10 11 62

Sheer Date 1962 Time 8:35 AM PM

Purpose Runs on 8x10 Room Return

Solayn 21.741 21.930 21.9305 21.9175

VDT #3: +13 +15 #4: -6.3 -4

$\log^N$ .00022 .00024

Down @ 4:20

10-12-62

INSTRUMENT CHECK

Time ____ AM / PM Source ____

		Channel A	B	C	D	E
	F					
Range	01c	1/1000	op-	10^-11	1/1000	105
Source Dist.		1½"	01c	30"	0"	
% F.S. Trip		100		100	100	130

C.A. 2-Slabs Expr 8"X10" Run 101262

Sheet ____ Date ____ 1962 Time 8:45

Purpose Rossi α

Selsyn 21.742 21.925

VDT #3: +13.2 #4: -6.2

Log N .000220

INSTRUMENT CHECK

Time 1:00 PM Source PuBe + δ

10-31-62

Channel X

	A	B	C	D	E
Range	10/1000 open		10^2	10/1000	1050 V.
Source Dist.	0"	0"	30"	2"	1"
P.S. Trip	110	076	103	108+	102

C.A. U-slabs Expr. 8"x10" Run 103162

Sheet ____ Date 10-31-62 Time ____ PM

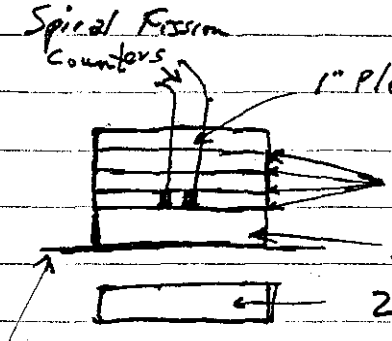
Purpose Fission ctrs wrapped in Cd.

2 1/8" Fuel on Beam
1 1/2" " " Diaphragm

A. 4" - 1" thick plexiglas on top of fuel; laminated with 40 mil Cd at 1".

Critical. #1 = 20.945 #2 = 21.129

log N = .0005 Servo Control.



diaphram

w speed

11-1-62

INSTRUMENT CHECK

Time 8:10 AM PM Source P.B. - 10'

Tables OK X Channel

	A	B	C	D	E
F OK	10/1000	opr	10^-12	10/1000	Loss
Source Dist.	1"	OK	2"	1"	X
% F.S. Trip	90		90	90	

C.A. U-Slabs Expr. 8" X 10" Run 11162

Sheet Date 11-1-1962 Time 8:30 AM PM

Purpose Exp. 270.

Leading Some

1".

A. Critical - VDT #3 = +12.5 #4 = -8.5

Selsyn #1 = 20.948 #2 = 21.132

Log N = .0005

B. Moved Counters 2" from fuel.

Critical - VDT #3 = Moved #4 = -6.0

Selsyn #1 = 20.948 #2 = 21.127

VDT #4 indicates a spacing 2.5 mils closer.

Log N = .0105

272

11-2-62

INSTRUMENT CHECK

Time 8:05 AM PM Source Pu-Be

Tables OK Channel A B C D E

Range	F	10/10.0	opr 10	10	10
	DK		"		
Source Dist.		2"	OK 3"	0	0
% F.S. Trip		60	60	80	100

C.A. U-SLAB Expr. 8" x 10" Run 11262

Sheet ____ Date ____ 19 ____ Time ____ AM PM

Purpose Spiral fission Counters moved down against fuel, 2" Plexiglas removed from Top fuel loading Zone.

Critical VDT # 3 = -3 # 4 = 0 ϕ

Selsyn # 1 = 20.98 # 2 = 26.157

Log N = .00055

Added 2x2" x 1/2" to center ~ 52 gm pencil 16 ϕ

INSTRUMENT CHECK

Time 9:12 AM PM Source P.B. 1.7

Table OK ✗

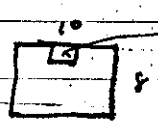
	Channel A	B	C	D	E
Range	1.0 / 1000	opr	1.0 / 10	1.0 / 100	1050
Source Dist	2.5" OK		2'	0	0
% F.S. Trip	50		100	80	100

Light Check OK

C.A. _____ Expr. _____ Run _____

Sheet _____ Date _____ 19 ___ Time _____ AM PM

Purpose Removed 2 x 2 x 1/32 to.



+ 145 on pound 7.3 ¢

Slow speed change about 50 mils from closure Another Limit switch mounted on west side for this purpose This is to allow Rossi a with excess sensitivity.

VDT #3 to be used to determine reproducibility of up position for measurements.

VDT #3 = -3, -3, -3.5, -3.5

2x2 x 1/32 moved 1 in closer to center

Period + 82.5 on 11.5 cents

Added Additional 2 x 2 x 1/32 in symmetric position

$T = \frac{t}{.6903}$ 5 sec per dm

$t = 3.5 \times 5 =$

t	T	ρ
3.5 x 5	25.35	
3.25	23.54	
3.4	24.62	
3.4	24.62	
3.5	25.35	
3.8	27.52	
3.4	24.62	
2.8	20.28	
3.75	27.16	
3.7	26.80	
3.9	28.25	
3.7	26.80	
2.75	19.92	
3.5	25.35	
3.6	26.07	

Avg. 25.08 = 20.75 ϕ

Measurement from top of fuel to diaphram

E- 21.537

N- 21.534

21- 532

W- 21.529

S- 21.52½

21.536

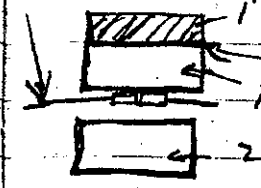
INSTRUMENT CHECK

11-7-62 8:20 — Pu Be + F

F 10/1000 cps 10-12 100 1050 V
OK 3" 6" 20" 2" 1.5"
100+ OK 100+ 90 100+

C.A. N.S. Lab Expt 8" X 10" Run 11 7 62
Sheet ____ Date ____ 19 ____ Time ____ AM PM
Purpose Find Crit. Separation

Counters



~ 1" Separation

Top = 1 3/4" Fuel + 1" plexiglas + 40 mil cd.
Ram = 2 3/8"

Slow speed 18.75

A. Critical # 1 = 20.29 VDT #3 = +8
Log N = .0004

B. Critical VDT #3 = -2.0 #4 = +8.0
Selsyn #1 = 20.28 #2 = 20.469
Log N = .00005

276

11-8-62

INSTRUMENT CHECK R.B.

Time 8:05 AM ~~PM~~ Source X

Tables OK

		Channel A	B	C	D	E
Range	F	1/1000	opn	10^{-12}	1/1000	10^{20}
Source Dist.	OK	3.5"	OK	3'	2"	0
% F.S. Trip	Light OK	100		100	80	100

C.A. U-Shab Expr. 8"X10" Run 11862

Sheet _____ Date _____ 19 __ Time 10:30 AM ~~PM~~

Purpose Find Critical Separation
Repeat of 11-7-62

Critical @ 20.285

Log^N .0006 VDT #3 = +2.5 VDT #4 = +1.6