BOOK68R

Notes:
"Pulsed Neutron Sub-Critical 1966" on spine

Blank pages: inside front cover sheets, 2-9, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 44, 46, 48, 50, 51-300, inside back cover sheets

-page 10 has picture taped to it

Scanned by:
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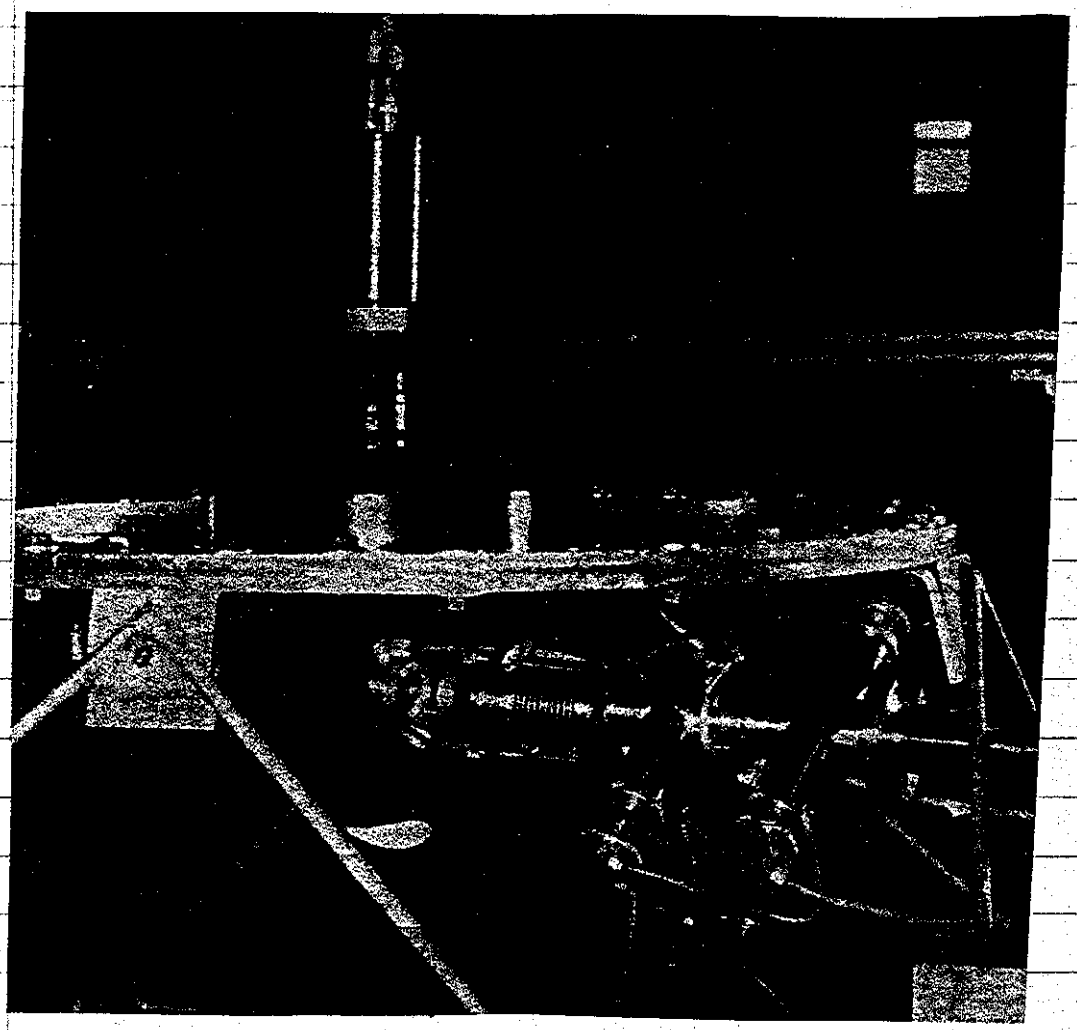
PULSED NEUTRON BASIC

8/23/66 11" - 2,625

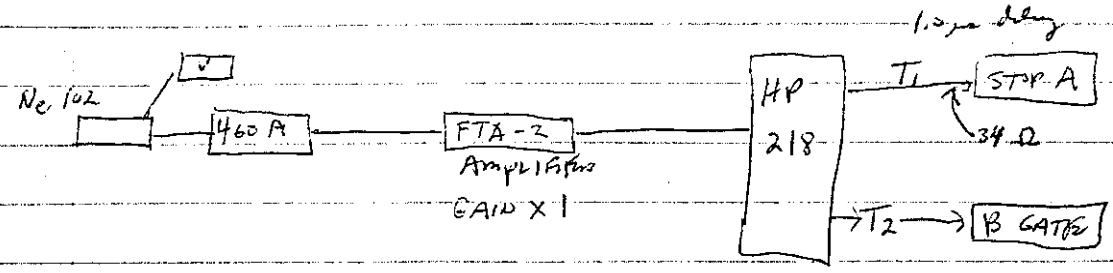
MEASURE PULSE SHAPE PRIOR TO LOADING FUEL

5 m sec channels ~ 50 mm half width



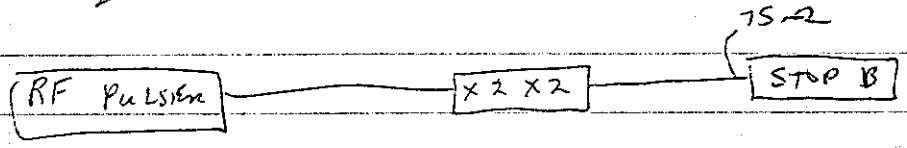
9/24/64

DATA ACCUMULATION RATE SLOW WITH ALL 450 kc pulses fed into B stop. B stop gated on by A −3 V 1.5 μsec pulse initiated by A pulse



T_1 Amplitude ○ Polarity — Width ○ 1.0 μsec delay
ABOUT 1 VOLT TO A bu

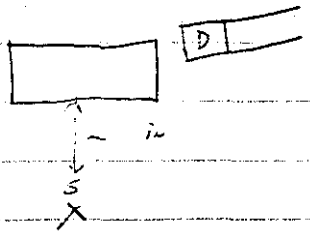
T_2 −3 V WIDTH = 2



11" OD 2.625

1325 V 2000 APS

1.39×10^{7} A cm^{-2}



11" OD 2 3/4

16 8/25/66

11" OD 2 7/8

500 psi BREAK RLS ION SOURCE ON

50 cps DRIVING ON

START 8:30 AM

18 8/25/66

11"00 3.0"

512 5 mm ch.

STOP TO PRINT AT 1:34 PM

1.69×10^7 A

11:50 AM — 2:00 PM

130 min.

11 3.125 START 2:20 PM

1.38×10^7 A pulses

11 - 3,187

STARS 1,28 x 10^7

11" OD 2.5" THICK

2.16×10^7

26

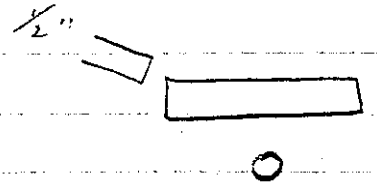
IT-11-250 PULSE NEUTRON

9/6/66

11" OD 2.5" THICK

START 11:30

STOP 1:30



½" det. is ½" from the surface and is tilted so there is no direct shine on same. The PN source is 7½" below the center of the bottom of the fuel.

voltage = 1375 CPS = 2000

256 5 n-sec channels.

~~Started~~ 11:30 6 Sept 66

~~Stopped~~ 1:30 6 Sept 66

Run time = 120 min.

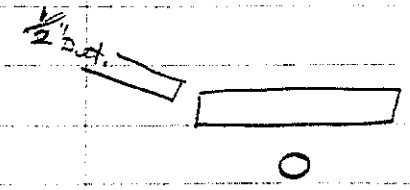
Decades = ——

Peak ct: 307486 in chan # 245

Peak bkg: 21.9

Before) = 29.52

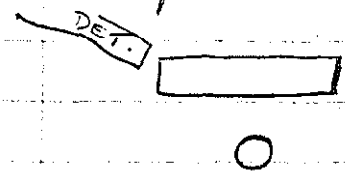
6 Sept 66 IT-11-2.25 PULSE NEUTRON



→ Same set up as Pg 26
Inst voltage = 1440 @ 2000 CPS

Start data = 1.41 6 Sept 66 1.85 x 10⁷ A
STOP data = 4.52
Run Time = 169 min
Decades = 1.85×10^7
Peak Ct. = ~46000
Peak/Aftg = 23.6
Before = 37.0

7 Sept 66 IT-11-2.00 PULSED NEUTRON



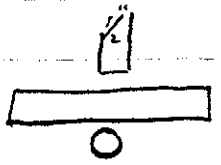
The 1/2" detector is 1/2" from the surface of the fuel and is tilted so there is no direct shine on same. The accelerator target is 8" below the bottom of the core of the fuel. Voltage @ 1450 @ ≈ 2000 cps.

	7 Sept 66	8 Sept 66
START =	11 47 AM 7 Sept 66	9 20 AM
STOP =	4 00 PM 7 Sept 66	11 12
Run time =	253 min	112 min
Decades =	2.4×10^7	1.09×10^7
Peak ct =	444634	348447
Peak ct/kg =	14.5	32.3
Before ct =	40.0	36.3

Source here is 8" below

NOTES: Source now 4" below. all else same. Slit was narrowed 1 turn from closed.

8 Sept 66 1T-11-2.00 Pulsed Neutron

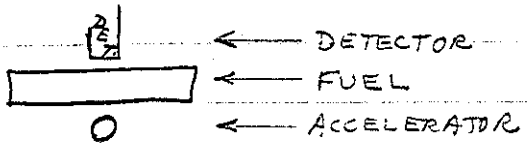


11" dia. cyl., 2.00" thick. ½" detector is 1" above center of fuel vertically. PN Source is 4" below bottom of fuel. HV: 1250 @ ≈ 2000 cps (est). 256 - 5 μsec channels.

Start = 11 $\frac{29}{AM}$ 8 Sept 66
Stop = 4 $\frac{03}{PM}$ 8 Sept 66
Runtime = 274 min.
Decades = 2.49×10^7
Peak cts = 840168
Peak/thg = 38.9
Before λ = 48.0

34 (9-13-14) Sept runs.

9 SEPT 66 IT-11-1.75 PULSED NEUTRON



11" dia. cyl.; 1.75" thick. The ½" detector is 1" above the center of the fuel vertically. Pulse Neutron source is 4" below center of the bottom of the fuel. WV = 1280 @ ≈ 2000 CPS. 256 Channels at 5 m-sec.

	Run A	Run B	Run C	Run D
start	11 45 AM 9 SEPT 66	2 40 PM 13 SEPT 66	9 54 AM	12 18 PM 14 Sept 66
STOP	1 03 PM 9 SEPT 66	4 15 PM 13 SEPT 66	11 54 PM	4 02 PM
Run time	78 min.	95 min.	120 min	224 min
Decades	8.94×10^6	8.99×10^6	8.3×10^6	2.27×10^7
Peak cts	215026	222050	Had	643745
Peak/bkg	23.8	19.9	Peak	20.0
Before D	44.7 to 73.5	≈ Same	shift	≈ 60.0
	POOR STATICS			
			14 Sept 66	

15 Sept 66

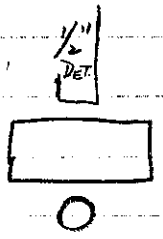
No fuel on diaphragm

Look at Pulse shape

Run A. is shape of all previous measurements (11" dia)

Run B is shape of "all" future measurements until further notice. (7" dia)

15 SEPT 66 IT-7-400 PULSED NEUTRON



7" dia. cyl.; 4.00" thick on a 10 mil thick stainless steel diaphragm which is 20 ft above the floor. The ½" detector is 1" above the center of the top of the fuel. The accelerator target is 4" below the bottom of the fuel. HV @ 1300 @ ~ 2000 CPS. 256 channels at 5 n-sec.

Start = 9^{46}_{AM} 15 Sept 66
STOP = 10^{43}_{AM} 15 Sept 66
Runtime = 57 min
Decades = 6.0×10^6
Peak cts = 73230
Peak/bkg = 8.7
τ Before = 16.38

15 Sept 66 IT-7-3.625 Pulsed Neutron

Conditions same as ~~Pg 38~~

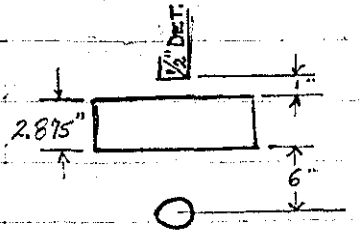
Start = 11 45 AM 15 Sept 66
Stop = 1 34 PM 15 Sept 66
Time = 109 min
Decades = 1.49×10^6
Peak cts = 262246
Peak/Bkg = 14.5
before) ± 22.4

15 Sept 66 IT-7-3.25 Pulsed Neutron

Conditions same as pg 38

Start = 1 $\frac{50}{PM}$ 15 Sept 66
Stop = 3 $\frac{57}{PM}$ 15 Sept 66
Time = 127 min
Decades = 1.10×10^7
Counts = 232946
Counts/kbg = 17.2
kbg = 29.4

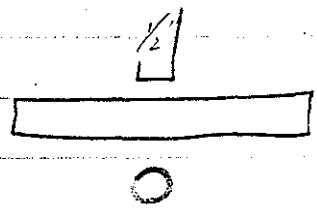
6 OCT 66 IT-7-2.875 Pulsed Neutron



7" dia. cyl.; 2.875" thick. The ½" det. is 1" above the center of the top of the fuel in a vertical pos. The accelerator target is 6" below the bottom of the fuel. P.V. = 1370 V @ ∃ 2000 cps
256 channels at 5 μ-sec.

START = 8 $\frac{53}{AM}$
STOP = 1 $\frac{05}{PM}$
Time = 252 min.
Readds = 2.99×10^7
Peakcts = 880932 in # 238
Peak/bkg = 24.4
Before) = 38.4

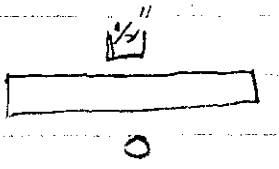
6 OCT 66 IT-15-2.375 Pulsed Neutron



Conditions same as Pg 45 I_{AV} = 1395
except dia. & Lt.

START = 1^{30}_{PM}
STOP = 3^{45}_{PM}
Time = 135 min.
Decades = 1.83×10^7
Pulse cts = 363998
Pulse/Lb/g = 15.0
Before = 24.9

7 Oct 66 IT-15-2.125 Pulsed Neutron



Conditions same as p. 45 HV = 1350
except ht + dia.

start 10:14 AM
stop 12:44 PM

Time 150 min
Decades 2.36 x 10⁷
pk cts 576,129
pk/Bgd 20.7
before λ = 26.2