

## **BOOK 114R**

*Notes:*

"Early Hist. 1950" on spine

Blank pages: inside front cover, page opposite page 1, 10, 27, 86, 92-189, 192-197, page opposite 200, inside back cover

pages 73 thru 84 have been cut out of book  
pages 87 & 88 have sheet tape to each

*Scanned by:*

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*March 29, 2001*

Critical Experiments Log

Bldg. 9213

From: Nov 2, 1950

E-1



# Standard Blank Book

No. 38

Journals Double \$ and Cts. no Units

S. E. Ledgers " " "

D. E. Ledgers Full Page Form "

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A BOORUM & PEASE PRODUCT

Nov. 2, 1950 - Thursday

1. Intercom panel arrived and was installed. It is now working.
2. The painter was asked to paint the table (assembly) and terminal boxes<sup>(\*)</sup> in the assembly room battleship grey. The removable plate over the lead screw is to be painted red so it won't be left in by mistake. The conduits for the intercom in the assembly room will be painted the color of the wall.
3. The millwrights installed brackets for the control board ledge. Tomorrow the carpenters will install the ledge itself. The ledge is to be covered with "Flexboard". If it is not satisfactory in appearance, it can be painted a solid color.
4. The janitor promised to vacuum under the assembly table for the painter first thing tomorrow.
5. We cleaned the control room well this morning but you can't tell it now.

A. D. Mooneyhan

Friday - Nov. 3, 1950.

1. The carpenters installed the control panel desk.

2. The electricians added 1000 ohm resistors in series with the pilot lights on the scaler control panel and reinstalled it in rack. Work ~~performed~~ <sup>completed</sup> on the inspection and resoldering of cable connectors in the assembly room.

3. A recording hygrometer and 3 brackets for safety rod mounting were received.

4. The painters continued work on the table and honeycomb supports, + loading platform.

5. The millwrights prepared mounting brackets for shish-kalobs to be installed in the vault. One sample bracket was installed. It appears to be too high, and consideration is being given to lowering it 2".

6. A new power cord is being installed on the recording hygrometer.

7. Some identification tags are already on terminal boxes. Others are on order according to Boyd.

As of 4:05 p.m. The following items are still to be completed:

- (1.) Install handle on switch on thyatron rectifier.
- (2.) Install connectors on rear of linear amplifiers.
- (3.) Finish installing name tags on terminal boxes.
- (4.) Install grommets on scaler power cords.

E. Haake

Monday Nov. 6, 1950

1. Noise maker connected in Room 108.
  2. Plug installed plug on lin. amp.
  3. Safety-rods installed but did not fit well. Kroege is deciding what to do about it.
  4. Gun-racks in 909 to be lowered 2" with a bracket. A 1" hole to be drilled in center of bottom.
  5. Painter has been dabbing around. The brackets under control table to be dark gray. Term. box in middle of floor will be table gray as supports are not painted. ~~Yes~~  
The term. box on No. wall of 108 to be ~~dark~~ dark green same as building boxes.
  6. Sorry I did not do a better job on this log. Please do better.
  7. List jobs yet to be done on page 190. Just to keep an up-to-date list.
- JP

June Nov 7, 1950

Continued Instrument check. Found the following work to be done.

1. Noise Meter: Works properly from signal but oscillator for some dial settings. This could be very misleading in operation!
2. Scale #1: Full out - overload in Hi. Volt.?  
 a. Hi. Volt does not work.  
 b. Does not scale the same as #2 and #3. i.e.  $5 \times 128 + 48$  (#1)  
 v.s.  $6 \times 128 + 40$  (#2 & 3)
3. Scale #2: Behavior amp section does not work. If this will ever be needed it should be repaired. Rechecked - O.K. JH.
4. Scale #3: #2 scaling light does not operate. Bad light! JH  
 Now O.K.
5. Ampl #2: Disc output does not operate. Also Hi. Output. Was wired up incorrectly - changed & now O.K.

In addition it would be desirable to couple the fin Amps. to the scalars ~~at the rear~~ of the chassis. At present this is not possible. The G.M. H.V. terminal would be a logical place to make these connections but there is a resistor in series which prevents operation. Heaker says was decided to use this way since the scalars are to be replaced.

Note: The input sensitivity was checked as a possible cause of item 2.

Scale #1	1.8 V
Scale #2	0.35 V
Scale #3	1.0 V

This variation may be due to poor 6J6's in the first stages. The sensitivity should be 0.25 V and may be adjusted over narrow ranges by varying TP2.

Scale #1 (which the desk) has serious troubles in the H.V. supply. Connections are missing and also I suspect the H.V. transformer is burned out.



It shall be returned to NEPA for  
repairs

3 Amplifiers have arrived and should  
have Pbc output and High output  
brought out in rear of chassis on at  
least 2 instruments.

Also Mount Source Mechanism  
Jack Hunt

8 Nov 50 (Wed.)

1. Painter completed sundry touch-up jobs around assembly and other rooms.
2. Source drive ~~motor~~ panel wired in. Upon checking, several difficulties:
  - (1) Arcing on switch on panel.
  - (2) Motor turned over, then stopped, believed due to friction of armature on pole faces.
  - (3) Not certain limit switches wired correctly.

F.R.B.

Thursday Nov. 9, 1950

1. Went by the Y-12 Electrical Shop and checked on the control rod panel. They had two switches reversed. This will be corrected and the panel will probably be completed by Nov. 13.

2. The painter put a primer coat on the stick-balab racks. He will put an oil base green coat on next. This should not chip as badly as a water base paint.

3. The IDL scales (#77) was returned to NEPA, by Purney for repairs.

4. The millwrights did not do any significant work on the ANP end of the building.

5. The source drive is now working. Trouble-fuses too small. It is yet to be installed.

6. The electricians completed wiring of the source mechanism and control panel. They also removed panels from the front of the AIC linear amplifiers and prepared their chassis for terminals in the rear.

7. Visitors for the day were George Knoph, Mary Kettner, Donnie Doane, and Ed. Potter and a Dr. Chambers, U-T Prof. and ANP consultant.

Al. Mooneyhan

10 Nov. 50.

1. The electricians completed the alterations on the <sup>3rd</sup> linear amplifiers (204 B) and replaced the panels on two of same. One was mounted in its position in the control panel. The other two are (1) instrument shop and (2) spare for control room.
2. Two more pre-amplifiers (AIC 205B) were brought from NEPA with cables and adapter boxes. One of these was placed in the instrument shop. The other is a spare for instrument channel #3 (fission chamber).
3. The scaler (NICC 162)<sup>#77</sup> returned to NEPA on 11/9/50 was brought back after being repaired.
4. A beginning was made on an instrument & equipment file to contain instruction booklets, circuit diagrams and ~~set~~ maintenance notes for the various pieces of equipment in use in the east wing. The following have been included so far: Monitor (single unit - E 95), Scaler - NICC 162, scaler control panel, auditory monitor, photomultiplier, pile period meter, vibrating reed electrometer, pre-amplifier (AIC 205B).

5. Picked up 8 more safety rods at the Y-12 machine shop and brought them to 9213.
6. It was decided to install a further interlock on the table drive circuit so that the halves cannot be moved together without first removing the small raised portion of the loading platform to permit clearance.
7. The millwrights were given instructions for mounting the source mechanism and the personnel shield. This work will be started tomorrow 11/11/50.

E. V. Haake

11-13-50

1. The source mech. was mounted sat. WITH difficulty.
2. The columns for the personnel shield were mounted & interfered with source mech. so s.m. was taken down.
3. A plan was devised to circumvent having two masses occupying the same space at the same time. The personnel shield channel will be moved south about  $\frac{1}{4}$ " by moving east column. And track will be shimmed out about  $1\frac{1}{2}$ " to allow the source rod to stick up between the channel & the track.
4. Scram cord was partially installed.
5. Millwrights are mostly moved to west end now.
6. Elect. wiring up the control rod panel.

Small electrical jobs yet to be done

1. Replace switch on source mech.
2. Install diodes 1N34 in linear amp.
3. " connectors on safety rods.
4. Cover speaker cable box under staircase.
5. Remove monitor, reinstall meter, ship to NEPA.

( see page 14

TUES.

11.14.50

Electricians continued work on control rod panel & covers for control rod motors.

Millwrights worked on personnel shield for a while & also on gun racks in vault. (gun racks all mounted)

Monitor put into operation - given qualitative test only. O.K. Short bus was missing from external meter circuit.

Dr. Severett & Adm. Bolster & party were visitors.

JAB

15 Nov 50 (Wed)

1. Control & safety support frames removed from fixed half for return to vendors.
2. Raising of safety rod panel in order to correct pilot light sequence commenced.
3. ~~W~~illights installed horizontal members of personnel shield.
4. Relay in Thyrotrol unit welded shut during test of table drive. Table moved to out position, pulled stops from floor, and finally wedged against motor mount. Outer end of table was raised up off of track.

Possible Damage:

1. Stops pulled up
2. Possible misalignment in screw bearing & table.
3. Welded relay in thyrotrol should be replaced by heavier model.

Engell has been requested to determine cause of trouble. Danberg will run independent check. Stops



will be anchored more securely in  
same place. After breaking open  
relay, motor apparently functional  
satisfactorily.

F B L

THURS.  
11-16-50

1. Mellowright's started replacing stretchers on table assembly & worked on installation of some mechanism.
2. Olybhart & Alspaugh of Y-12 looked at V-5 drive unit & conferred with Wenley on methods of preventing recurrence. Kelly & Smith of Y-12 inspected motor and found no damage. They started replacing faulty relay in unit with larger contactor and changing overload relay contact to break C line.  
(See Memo - Wenley & ~~Thornton~~ <sup>Thornton</sup> this date)
3. Addison & Maxwell took control rod motors back to NEPA.
4. Electricians completed wiring of safety rod & Control Rod panels.

Friday Nov. 17, 1950

1. The source mechanism was tested and found to operate successfully except for some slipping which occurred occasionally on withdrawal. It is believed that cleaning the rubber on the driving wheels will remedy this.

2. The table stanchions were remounted and the table reconnected to the lead screw.

3. The sensitivities of the three scalars were remeasured and were found to be .36, 0.2, and 0.6 v. respectively for numbers 1, 2, and 3. This was done by connecting the NICC pulse generator thru a coax to the input and determining the lowest reading on the panel meter at which the scalars would count.

4. The noise level of the linear amplifiers was found to be higher than normal according to the discriminator setting, so a check of the linear amps was begun. So far no result.

5. Many visitors came thru because of the building being placed under security as of 11/20/50. Those from NEPA included: Nesbitt, MacDonald, Kanes, & Pade.

E. J. Haake

MON. NOV. 20, 1950

ing  
First day of security for 9213. All went fairly smoothly, except for one or two Class II passes which were noticeably interchanged but calls to Y-12 pass office remedied this.

No electricians or millwrights worked on their end today.

Adjustment was made on the <sup>disc.</sup> #506 linear amplifier to reduce its <sup>Slope</sup> noise level. <sup>act</sup>

E. V. Hake

re  
pa  
Ly

Tuesday, Nov 21, 1950

- ✓ 1. The personnel shield supports were found to interfere with the source mechanism. Shimming of the support was not sufficient, and it may be necessary to move one of the supports. The source mechanism is now torn down for improvement of the friction drive.
2. Control rod mechanism was tested. It was found that several of the leads to the telemetering system were reversed and must be changed.

J. B.ley

Wednesday, Nov 22, 1950

1. The control rack panel & the table control panel were sent to Y-12 instrument shop for adjustment of switch contacts.

Two wire-way tubes were removed from 5' wall Rm 108 by Dr. Callahan. Emergency loan.

J. H. H.

27 Nov 50 (Mon)

1. Driver Rained Kidd picked up the Brown from the control room for return to Y-12 shop.
2. First shipment of graphite from Y-12 arrived (13 boxes, ~50 pc./box)
3. No millwrights or electricians this end today.
4. Addison put some parts back on the source mechanism.

F. B. G.

TUES. NOV. 28, 1950

No electricians or millwrights today.

Addison attempted to reduce relay arcing in source control unit by placing R-C filters across coils. Noise of arcing was still quite audible in intercom. system.

Adjustment of discriminators of other two linear amplifiers (# 507 & #300) was completed and noise level is now down to about 0 on each with no pre-amp.

E. J. Haskin



WED NOV 29, 1950

No millwrights or electricians

Received table drive & control rod panels  
Installed same. Did not check operation  
& Winberg should check electrical  
connections first!

Addition worked on source control  
to prevent interference ~~of~~ with scalars  
& P.A. system.

J. N. H.

TIMERS NOV 30, 1950

1. No millwrights and no electricians
2. Weinberg checked the wiring connections of the table and control rod panels that were reinstalled by Hunter.
3. Addison continued working on the source control panel in an effort to eliminate counts on the scales due to switching on the source drive.
4. Conybear, Thornton, and Weinberg spent the afternoon seeking the cause of arcing and vibration overload in the table drive.
5. The four timers, three pre-set timers, and the extra ~~linear~~ amplifier were taken to the counting room. Three way plugs were put on the timers. The clock for the room was mounted.
6. It was discovered that the Brown recorders had not yet left NEPA Receiving after 8 days.

AM.

Friday <sup>DEC 1,</sup> ~~Nov 30,~~ 1950

1. Haski brought over the following equipment
  - 2 D.C. Amplifiers
  - 2 Relay Amplifiers
  - 1 G.E. Recorder
  - 1 Power supply for the relay amplifier
  - 1 Ion chamber simulator
  - 2 Battery chargers
  - 1 Converter
  - 2 PM-Amplifiers
2. Y-12 sent over the cases for two G.E. recorders. The case for G.E. recorders to go in the control board will be sent over Monday.
3. Bolts for use in building the assembly table were ordered from Y-12 for Maxwell
4. The two D.C. amplifiers and the two relay amplifiers were placed in the control panel but not connected
5. No millwrights & no electricians
6. Addison took the source mechanism back to NE-RA for some alterations.

AMM

Wed. Dec. 6, 50

- ① ~~Have~~ brought over an air sampler and parked it in the vault.
- ② The hand counter was set up and Lovett (Y-12 Electronics shop) was requested to get it working. He is also the one to call if anything goes wrong in the future.
- ③ 2 electricians  $\frac{1}{2}$  day, no millwrights, etc.

Thurs  
Wed Dec 7, 1959

Raege completed the mounting of 2 safety rods and one control rod. The control rod was operated and one safety was operated from a temporary air line. Some minor imperfections (mechanical) were found in the control rod. The safety rods have a tendency to rotate the shish-petab, due to the spring. Also the metal plate upon which the shish rides is bowed in one safety & hence not satisfactory. It was noticed that when all the frames are in it will be very difficult to disconnect the core material from the actuators!

Wain-hay worked on table drive to eliminate table reversing troubles.

Haake checked the sensors & vib. med.

J. Hunter

Friday, Dec. 8, 1950.

All three counter channels were checked using the number 1 counter tube and shield and were found to have roughly the same sensitivities so that gain settings of 4 or 8 are sufficient to use for operation. At these gain settings, <sup>a rise time of  $8 \mu\text{s}$</sup>  and a discriminator level of 30 or 40 (typical operating conditions) no interference is noted in the counters due to source rod, control rods or table drive! At a gain of 16 a slight amount of interference is noted from the control rod switch <sup>and</sup> for relays but a gain of between 32 and 64 is needed for interference to be noted from the source mechanism. A large amount of pickup is introduced into the intercom. by the control rod, and it is felt that using R-C filters (as was done for the source drive) will eliminate this as well as counter interference.

Maxwell installed the source shield, and tested same. It will require a little more work.

Hunter brought over an A-E recorder and supplies for the G E recorders.

E. V. Stashe

12-8 (cont'd)

The safety rod magnet which burned out the power supply on 12-7 was found to be shorted to ground and have a low resistance of 4.5 ohms across the coil.

Kraeger worked on adjustment of the safety rod air cocking device.

E. V. Harker

Wed 13 Dec 50

- ① Grou Brown's fitted and installed, but not wired.
- ② Millwrights worked on ~~electricians~~ personnel shield, painters on safety rod frames. Electricians will be here mañana. Pipe fitters here late in PM.
- ③ Table scram cycled 200 times successfully.
- ④ Maxwell unsuccessfully attempted to cut out photomultiplier interference with intercom.

F. B. L.



Thurs. Dec. 14, 1950

1. The two electricians (Boyd + Cooper) did the three following items.
  - a. Wired the relays for the table control system
  - b. Started wiring in the Brown recorders.
  - c. Connected the control rod master relay panel
2. The millwright worked on the source shield
3. The following items were received
  - a. Four control rod frames - to be painted.
  - b. A HEPA classified was received and taken upstairs.
  - c. The C.E. recorder case was returned.
  - d. The materials dollies (6) were received.
4. Maxwell measured the source (#194<sup>3</sup>) strength.
5. Pressy and Mooneyham filled two dollies with graphite blocks - one with F-4 and one with F-1.
6. Hache worked on the fission chamber, etc.
7. Kroeger and Hunter put up the frames on the stationary hoist and put in ~~the~~ support bars.



Friday - Dec. 15, 1950

The electricians finished wiring in the Brown recorders. The  $\gamma$ -level recorder was tested and found to operate with the photomultiplier. The vibrating reed recorder was tested and found operable. The log N and period recorders were not tested because of an apparent lack of recorder output from the pile period amplifier.

A new switch was put in the table control panel.

The electricians began wiring the safety rods.

Kroeger worked on safety rods with Hunter. Haake reset the discriminator adjustments on the linear amplifiers.

An instrument data book for recording calibrations, adjustments, tube characteristics, etc. was started by Haake. This book contains one section for each of the 8 main instrument channels and all pertinent information should henceforth be entered under the proper section.

E. V. Haake

Sat. 16 Dec 50

- ① The following NEPA people were here off and on: Kroger (mounting safety rods), Weinberg (working with electricians), Thornton (worrying about table drive), Wake (~~power~~ amplifier), Conybear & Pressey (coordinating), and By (answering the telephone).
- ② Boyd & Coper wired the safety rods. I wired millwrights worked on personnel shield. Pipe fitters did something or other to air line.
- ③ Pressey finished loading graphite cart - one man can handle it with some difficulty.

F. By

Sun. Dec. 17, 1950.

1. Those present Pressey & Kroeger.
2. A control rod installed. # 3 on the panel & # B on cables. These should be consistent!
3. The motor turns in the wrong direction.  
IS the motor wired wrong or is the master change-over switch in wrong position? Increase draws rod out.
4. The Control rod "RUN" switch is too stiff; that is, there is too much friction. It is hard to push the switch in the decrease position & the switch will hold in on the increase position.
5. The "jog" switch is not properly adjusted. One can run the rod in by pressing the jog decrease; + Practically nothing happens on the jog increase unless the switch is pressed upward very rapidly.
6. Two of the tubes in the Soundsciber ~~was~~ <sup>tested</sup> bad. Will get replacements & try it (3525) & (125C7)

JP

38

MON.

12-18-50

1. Brown's on pile period & Log N working.
2. Two DC Amp's set up for operation. 1 OK - 1 doubtful.
3. Surface plate for sub-assembly table arrived & installed.
4. Panel strips under Brown's in.
5. Control rod circuit debugged?
6. " & safety rods wired up.
7. Three rods straightened & returned here.
8. Short wheeled dolly fixed.
9. Ion chamber in 109 installed.
10. Micrometer indicator arrived. To be installed first thing in the morning so panel can be sent to shop for modification.
11. Agreed to use SB-1 type switch for table drive under strong advisement of Thornton & Danberg. The Coreybear modification of the Mossman switch is still preferred, and will be used on the control rod panel & source.
12. More vinylite arrived so rest of Graphite can be put on truck.
13. Monitor cabinet should be painted smooth (Give to Elephant.)
14. Persons here. Weinberg, Haake, Hunter, Addison, & Prosser full time. Maxwell, Kroege, Thornton, K~~...~~ afterwards

DP

Just Dec 19

1. Electricians continued work on control + safety rods
2. " started work on emergency power supply
3. Kroger worked on straightening safety rods -  
2 more were corrected & adjusted to 9213.
4. Hooks picked up in chamber from X-10
5. Micrometer indicator unsatisfactory. Rotor inertia  
apparently too large!
6. Monitor cabinet sent to paint shop.
7. Screen cord under water window connected.
8. Electricians cut holes in control rack to permit  
connection of GE channel cables.

Persons here: Pressey Hooks Hunter Weinberg  
full time. Part time Addison Maxwell

J.H.

Wed Dec 20, 50 ~~Dec 20, 50~~

1. Remainder of F-1's stacked & cover & unistrut cut for mg.
  2. Work on safety's continued, mounting & wiring
  3. GE recorder wired in
  4. Personnel present: Ply, Weinberg, full time.  
Addison, Kroger, Pressey, Hunter <sup>only here</sup> part time.
- fl

Dec 21 1958 Thur

1. Kroeger has now installed & aligned 4 safety & 2 control rods in fixed half. The lights for position of safeties did not seem to work?
2. The control rods run the wrong direction
3. Air line to safeties completed on fixed half
4. New modified relay installed in V5 drive & the conversion of the control system has been started but not completed.
5. Installation of air clamps on sub-assembly table started.
6. A new ion chamber has picked up from X-11 & has been given qualitative test (OK).
7. Another chamber was taken to X-11 for BF<sub>3</sub> filling.

Present: Full time Money here  
 Part time Thornton, Straker, Perry  
 Addison Maxwell Kroeger Hunter

~~125~~

J.A.K.

5:50 PM



Thurs. Dec. 21, 1950 (cont.)

18. All graphite is now on the cart.

9. Present inventory

	No.	% of total	
F-4	948	36%	60%
F-1	2183	94	
F-4	3176	100	100%
Q-4	1636	100	100%
Q-1	0	0	?
Q-4	1780	16	100%

thin

21

turn

5

FRI. DEC 22?

PERSONS AT 9213

HANKE — DUTY DAY

PRESSEY

THORNTON

WEINBERG

KROEGER

CONYBETA

1. SAFETY ROPS BEING WIRED  
ONE S ROD INSTALLED MOVABLE CH

2. WORK DONE EMERGENCY INST.  
POWER SUPPLY

3. WORK GETTING OUT OF  
GE AMPLIF.

4. WIRING TO MICROMETER & SOURCE  
MECH. BEING RUN

5. RECEIVED GRANITE.

(P)

SAT. Dec 23

DUTY MAN SPLIT → PREJEST &amp; HUNTER

SHOWED UP

QUMEXSEN

WARRLES

KROGGER

Made a try on the safety rods. The "in" limit switches are wired up wrong so that they are always on. Relay on Safety rod G chatters like hell.

Solenoid valves could not be energized.

MERRY CHRISTMAS! JP.

12-26-50 Tuesday.

1. Analysis of wax pencils came thru from X-10 spec. lab. (Notified Carlson stop not to use any more pencil, but what No Cd or Li. we had was prob. ok.

Trace of Boron estimated  $< .01\%$

Also present in small amounts. Ca, Mg, Mn, Si, Fe, Pb, & Ni.

2. Received cabinet for #109 MONITOR & squeezed it in

3. Hooked up Monitor in 109 after shortening the cable ( $\frac{1}{2}$ ). It seems to be working OK but have no sources to check it. Please check in morning.

4. Need 4 more MALE 5 prong Amphenol connectors for SAFETY RODS. These can be gotten from K-25 stores.

5. CHIEF bottlenecks seem to be:

- (a) TEST SAFETY & CONTROL RODS.

- b. Fix & Test TABLE DRIVE.

- c. Debug D.C. Amp channel.

- d. Install & test micrometer gauges.

- e. Sub-ASSEMBLY TABLE. install parallel.

- f. Install personell shield.

- g. Procurement & testing of BF<sub>3</sub> chamber.

6. Please check with Ralph Lumen (X-10) phone 6316 on status of BF<sub>3</sub> chamber in HAAKE'S ABSENCE.

7. Replace the ~~noise~~ noise box on L & N controller. Have asked ~~to~~ to get new relay but will probably need reminding.

Those present: PRESSEY ; 3 MILLWRIGHTS ; 3 ELECTRICIANS  
PRESSEY WILL BE AT NEPA TOMORROW - 8-9:30 AM. DP

27 Dec 50 (Wed)

1. Those present: Bull time: Rly, Weinberg  
Part: Kroeger, Hunter, Maxwell  
Thornton
2. Five more boxes of graphite arrived
3. Elevator for work on crane catwalk arrived, but couldn't be unloaded. If and when it arrives tomorrow be sure the loose dust & dirt on it is knocked off, as it is slightly hot (~2 m.p.)
4. Electricians worked on emergency power supply & wiring safety rods.
5. Safety rod alignment cont'd.
6. Thornton continued debugging table drive.
7. Hunter worked on G.F. system. Apparently there is a poor connection somewhere in same.
8. Maxwell worked on <sup>sub-</sup>assembly table clamps.

See items 3-7 yesterday. Gibbons might have calibrated source for item 3 - make doesn't.

Thurs. Dec. 28

Mooneyham, Where is it?

1. Millwrights received an electric crane for use in repairing water windows & adding carriage to crane. Was swept before entry!
2. 9  $\frac{1}{2}$  amp channels working ok. There is still some 60 c noise but addition of a two stage feed back emulsifier does not permit its passage. Relay chassis #1 needs to be realigned & especially the magnet current setting checked!
- 3.

J. H.

Friday Dec. 29, 1950

Present: Murray, Horton, S. Mearns, Winberg  
 Past Tens: Hunter, Haaker, Maxwell, Kroger  
 3 Electricians, Millwrights

1. Received BF<sub>3</sub> chamber from X-10. Tested  
 O.K.
2. Worked on linear amplifier #2 (At Invt. Co)
3. Checked auditory Monitor & found still  
 has oscillation for certain settings of  
 Time constant. also affects grading  
rate due to excessive loading of  
 linear amplifier.
4. Calculation on first reactor.
5. Work continued on table control relays.
6. Checked Brown recorders & found  
 that none of them have the zero set  
 at 0.1 F-5 as required for Log N.  
 Also the 3 new Browns were to  
 have a manual zero check not  
automatic. None have this feature!
7. 3 boxes of F-4 graphite blocks arrived

JAX

Saturday Dec. 30, 1950

1. Those present: Thornton, O'Neary, Mooneyham,  
Wimberg, Hunter, Haaker, Maxwell, Kroeger, Bly  
2. Electricians, 2 Millwrights.

1. continued work on Initial assembly cabinet
2. " " " " V.S. Drive
3. " " " " sub assembly Table
3. " calibration of instruments
4. " work on water windows
5. completed mechanical part of vacuum  
cord on control panel
6. Worked on cables to movable table half

Jaff.



Drapelite status

	Order		On Hand		% of Order
	No.	Lb.	No.	Lb.	
F-4	2600	5080	1600	3120	61.5%
F-1	2320	1125	2183	1060	94
F-1/2	3170	390	3176	390	100
Q-4	1600	790	1636	790	100
Q-1	1480	180	1486	180	100
Q-1/2	3880	120	3880	120	100
Total	14,950	7,685 lb.	13,955	5,660 lb.	
			93.5% by no.	73.6% by wt.	

SUNDAY JAN. 1, 1951

HAPPY & CRITICAL NEW YEAR 200

Tue. Jan 2, 1951

Present: <sup>Thornton</sup> Murnaghan, Full Time

Part Time: Kroger, Perry, Haake, Hunter  
 Thornton, B. Wainberg, Maxwell, O'Meara

1. Worked on VS Drive
2. Worked on Safety Rods
3. Worked on Chimney (2-12)
4. Worked on GE Relay amplifier
5. " " Water Windows
6. Received 6 Boxes graphite
7. " Frames for Personnel Shield
8. Worked on 1st. Mem. calculation.
9. Received 4 Crates High Density graphite

J.A.H.

Wed. Jan. 3, 1951

Check on H.D. Graphite

Sample No.	L	L	D
1.	2.875	2.874	0.255
2.	2.874	2.8745	0.256
3	2.874	2.874	0.253
4	2.874	2.873	0.254
5	2.874	2.8735	0.257
6	2.8755	2.8756	1.013
7	2.873	2.873	1.011
8	2.874	2.874	1.011
9.	2.874	2.8745	1.006
10	2.874	2.8735	1.010

1. High density graphite unloaded + put on cart.  
There are 720 F-1's and 2844 F-1/4's.
2. 3-AIC scalars arrived.
3. Frame for personnel shield was mounted
4. Millwrights worked on W. windows
5. Haake, Hunter, + Rohrer worked on GE channel
6. KROEGER on rods.
7. Maxwell on sub-ass. table.
8. 40 pcs. of Be. here.
9. Mooneyham, Bly, O'Meara, + Addiam worked on cable
10. Danberg + Thornton also worked. Pressey too!

NOTE TO D. WEINBERG

1-4-50

Please note that Safety Rod cables on the stationary should be cut to  $11\frac{1}{2}$  feet from conduit. Control rod cables should be cut to  $10\frac{1}{2}$  feet from conduit. For the movable half safety rod cables should be cut to  $11\frac{1}{2}$  feet from bushing and control rod cables cut to  $10\frac{1}{2}$  feet from bushing.

A. R. Kroeger

Those present full time. Hunter, MOONEYHAM, O'NEARA, Weinberg, Kroeger. & PRESSEY UNTIL 7pm.

Part time: Thornton, Addison, CONEYBEAR, HAAKE

$2\frac{1}{2}$  electricians & 5 millwrights.

1. 2 more scalers here. 5 total.
2. Hunter modified 1 scaler to fit panel.
3. Loop for movable half cables nearly complete.
4. 4 more storage trucks here. Total now 10.
5. Wires installed to hang vinylite on, on 6 trucks.
6. According to Bass, 750 Be blocks have been shipped.

FRI.

1-5-51

53

[SECTION MEETING MONDAY 8:30 AM]

Those present full time: Kroege, Weinberg,  
Addison, O'Meara, Thornton, Proorupham, Haake  
Part time: Pussey, Hunter, Maxwell.  
Electricians & millwrights.

Control cables were completed to movable  
half.

The coax cable was installed from #1 linear  
amplifier to auditory monitor.

An 11 ohm dynamic braking resistor  
was installed.

The screen cord on ~~the~~ control panel  
was connected & wired in.

Safety rods on the stationary half  
are now ready to go.

Connectors were rewired for safety and  
control rods.

The table drive was completed except  
for new indicator on panel.

E.V.A.

SAT.

Present: Kroeger, Weinberg, Addison, O'Meara  
 Mooneyham, Thornton, Haake  
 Electricians + millwrights.

Corrections were made in Table drive  
 and scram circuits to make operation  
 correct. Table now reverse after delay  
 when scram<sup>cord</sup> is tripped.

Kroeger, Weinberg + Thornton worked  
 on safety rods. A magnet power  
 supply selenium rectifier burned  
 out.

Robner + Haake worked on G.E.  
 relay amplifiers. Replaced slides in  
 #1 channel and readjusted same it  
 now seems to operate ok. Other one  
 still has low output.

EVA

Sun. JAN. 7, 1951

Hunter + PRESSEY

1. FIXED up (Modified) 2 Atomic scalars. & installed in panel.

MONDAY JAN 8, 1951

1. RECEIVED 300 more Carbon blocks. F-4
2. Checked operation of Brown Recorder associated with Photomultiplier. Excess hunting has been eliminated by increasing values of resistors in "Zero Adj. - Brown Recorder" network of Photomultiplier. HM
3. Completed sub-assembly table. HM
4. Rec. 4 scalars. Last of the 9.
5. Stacked Q-1/4 pcs. of Graphite.
6. Blower installed on rack #4
7. Rod jog circuit done.
8. Safety rod power supply wired.
9. Master air valve ~~is~~ indicator and light installed. but light is on when pressure is off. should be v.v.

Present. Bly, Weinberg, Maxwell, Addison, Hunter, Haake,  
 Pressey, O'Meara? 2 Elect., 5 Millwrights, Mooneyhan  
 Coveyhan

Full Time: Wainberg, 2 Electricians, Haake Pressing

Part Time: Kroeger, Hunter,

1. Found that the pressure differential on the air compressor on start & stop is 30#. This affects the rod cocking operation. Kroeger will see that the pressure switch is altered or changed.
2. Haake says that one GE relay amplifier has been readjusted and is now operative & installed in the relay rack. The second amplifier is in process of readjustment.
3. The safety rods were worked on & 7 will cock. The right has a short in the magnet.
4. The work on the V.S. drive continued,
5. 8 Boxes of large graphite blocks.
6. The cut off switch on the air compressor failed. The electrician fixed it.
7. Some misunderstanding is in existence concerning the bell for the west end room. It appears likely that the outside bell on the west end would



be a likely starting point. The wall  
it is mounted on is 12" & the depth of the  
box will be subtracted from this!

8. ~~Since it is essential to operate a GE~~  
~~channel from the emergency power supply~~  
~~there should be an outlet for this in relay~~  
~~rack~~

JAK 545PM

Wed 10 Jan 50

Present: Bly, Weinberg, Mooneyham, Addison, O'Meara, Krosgall  
 Part time: Thornton, Hunter, Pressey, Mapwell, Haake

- ① The safety rods are now capable of being cocked either individually or collectively. The pathway has been hooked up ready for test (firing) tomorrow.
- ② The electricians traced wires for alarm bell (other end scream) and are engaged in installing duplicate in control room.
- ③ Checks of sealers continued (Haake) counter channel #1. OK.
- ④ Mill wrights worked on catwalk and cage on crane.
- ⑤ The log m amplifier ~~received~~ arrived from NEPA, installed, and checks commenced.
- ⑥ ~~Compressor~~ Pressure switch on air compressor replaced today.
- ⑦ Various & sundry calculations by Moon., Alf., O'M. & Bly

*[Signature]*

- 11  
64
- ⑧ Modification of counting room scalars.
  - ⑨ GF amplifier still doesn't work.
  - ⑩ Hunter did something else, but couldn't remember what it was.

11

J. P. H.

12  
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Thurs. Jan. 11, 1951

1. Requested Brush to supply 400 - F-1/4 tapped blocks instead of 120 thru Larkin. Also pointed out we needed 200 - F-1/4 tapped & 200 - F-1/4 not tapped, and 1700 - F-1's to start.
2. Present: Bly, Haake, Presney, Hunter, O'Meara, Weinberg, & Mooneyham. Part day: Kroeger, Addison & Maxwell Electricians and Millwrights.
3. Millwrights began repairing the personnel shield and continued working on the platform for the cranes.
4. Haake continued work on the G.E. amplifiers.
5. Hunter " " " modifying the scalars for the counting rooms.
6. Presney headed a clean-up campaign of the control assembly rooms.
7. The electricians completed installing the alarm bell in the ANP control room.
8. Maxwell, <sup>& Kroeger</sup> measured the removal time of the safety rods.
9. Addison took the damaged portion of the safety mechanism back to NEPA for repairs.
10. Weinberg watched the electricians.
11. Mooneyham and O'Meara calculated the first assembly with heterogeneity.
12. Bly worked on heterogeneity calculations.
13. Several dozen high density graphite blocks were ruined when they fell over in the cart.

ADM.

Fri. Jan. 12, 1951.

Present: Bly, Pressey, Hunter, Mooneyham,  
Addison, Hake;

Part Time: Weinberg, Kroeger, Maxwell  
Also: Electricians + millwrights.

1. The pile period meter was returned to NEPA for service. The spare G.E. relay amplifier, d-c amplifier, and pre-amplifier were brought to 9213. One complete G.E. channel was turned on including recorder and allowed to stabilize. Drift does not seem to be excessive after about 2 hr. warm up period.
2. Hunter continued work on modification of <sup>atomic 1010</sup> f<sub>A</sub> scalars for use with auto-timer.
3. Calculation of initial assembly characteristics continued. A plot was made of neutron spectra for homogeneous + heterogeneous reactors.
4. The personnel shield was completed, but it was found to leak borax at the bottom.
5. The electricians worked on safety rods and alarm system for the building.
6. More hi-density graphite was stacked.
7. Safety rod time tests were run using Hathaway oscillograph.

E. V. H.

Sat. Jan 13, 1957

Present, Full time Pussey - part time Thornton.

1. Millwrights worked on crane walk & showed all with debris.
2. Welded shut a center hole on bottom of personnel shield panels & doors.
3. Vacuum cleaned area where there might still be brax.
4. Elec. worked on room 106.
5. Finished re-stacking H.D. graphite.

JP

Monday Jan 15, 1951

Full time: Preasey, Hunter, Haake, Bly, Mooneyham, O'Meara, Weibing.

Part time: Addison, Tol, Kroeger, Maxwell

1. Electrician finished! I hope!
2. 1 G.E. channel operating.
3. Personnel shield to go to a shop for complete overhaul to be made leakproof. Tol to see how soon NEPA shop can handle, if not soon, Y-12 millwrights will fix.
4. Sub-assembly table to arrive today but did not.
5. Pile period meter re-installed but
6. Ed Velton of Cleveland A.E.C. called and agreed that the hole on the Be block from now on will be #8 (.199) and it is to be centered within .003. The  $1.437 \pm .002$  dimension was eliminated.
7. All instruments are operating except 1 scaler & 1 G.E. relay chassis.

Tues. Jan 16, 1951

1. Dr. Snyder, of G.E. will be here Thurs & Fri this week. Please try to have things working by then. W.
2. Dodds of Brush Beryllium called & said they could not tap 1" pcd & come out true. Some as much as 10/1000 off. Was told he could ream out the bad side with a # 8 drill to a depth of  $\frac{1}{2}$ ".
3. 2<sup>nd</sup> GE relay amplifier repaired & op.
4. ~~System~~ rechecked as to drop time.
5. 2<sup>nd</sup> ~~board~~ sub-assembly table delivered.
6. Crane carriage painted
7. Pre-set time control unit for counter room now operating
8. All interlocks tested & o.k.

Present: Pressny, B Meara, Moomy, Wernberg, Hunter Hooker! Part time: Kruger, Maxwell

JAK

9. Result obtained on 1<sup>st</sup> reactor using fiss spectrum instead of 2.24 Mev.



Wed Jan 17, 51

- ① Electricians spliced 20' extensions on cables for one G.E. channel.
- ② Relay amplifier for #2 G.E. amplifier was tested, found satisfactory and installed.
- ③ D.C. amplifier on #1 G.E. channel burned out resistor - has been replaced.
- ④ Calculations of first system continued.
- ⑤ Brackets in vault were numbered.
- ⑥ Cart of C stacked.
- ⑦ Satisfactory times on safety rods were obtained.
- ⑧ 910 discs now available.
- ⑨ Subassembly table to be completed.
- ⑩ Honeycomb tubes still to be labeled; same for slits in personnel shield.

NOTE TO HAAKE.

TRIP LEVEL CONTROL ON DC Amp #1 loused up by running off end of ~~the~~ rack. Let's put stops ~~off~~ on this so it cannot run off. Also needle gets hung up on paper on G.E. recorder #1 after it goes off scale.

Those present: Weinberg, Hunter, Haack, Addison,  
Part time: Preecey, Woodyman, Bly, Kroeger, Maxwell

(8am - 5:30pm & 8pm - 11pm)

O. M. W. W.

Thurs. Jan 18, 1951.

1. Changed lights on Source panel
2. Placed chambers & counters in final? location
3. Air supplies being installed.
4. All the graphite to date loaded on trucks
5. Painter painted.
6. Controls checked over 3 or 4 times and all worked except when air pressure got low. (reducer on Rod 8 replaced.) Control rod #1 screw was not driven by motor again! Set screw loose. 2nd time.

Those present: Full time - Bracey, Hunter, Bly, Haska, Mangler  
Part time - O'Meara, Conybear.

AMH.

Fri. Jan. 19

The 6SC7 tube in P.A. system amplifier is found to be weak. It should be replaced as soon as Bohrer's stock of tubes comes in. E.U.H.

Rough calibration measurements were made on the photomutron using the  $^{252}\text{Cf}$  neutron source. Counter channels 1 and 2 were checked for relative sensitivities and operating points for equal sensitivities were found.

A panel for the personnel shield was brought over inspected and OK'd.

The source shield was tried out and found unsatisfactory - returned to NEPA.

A section meeting was held at NEPA.

The electricians worked on installing the air sampler in 109.

The painter worked on the conduits in 107.

Those present: Pussey, Hunter, Hoake  
part time: Weinberg, Addison, Maxwell.

Fri. Jan. 19.

Visitors were: Dr. Snyder of G.E., Dr. Hurd of K-25, Mr. Keller of AEC.

E. V. Hoake

Sat Jan 20 Present: Hunt

1. Pipe Fitters did not show up. Karpovich said that there was security trouble & that they would be here Mon morning.
2. Repaired GE amplifier #2. Bravo!!

JH

Monday Jan 22, 1951

Present: Pessay & Hunter.

1. Got spacers made for short control rods.
2. " 2 " " " " safety rods.  
Green light on safety rods stay on on short shaft.
3. After leaving magnets on (cocked) all day, screw seemed very slow. We had better check.
4. Straightened out Be shop on inspection again.
5. Brought up 2 boxes of Be.
6. Air sampler line installed. JP.

Tues. Jan. 23, 1951

1. Pete Rinderer of shop called & said they must order stainless for .1" blocks. Sheet would be .096" thick. with factory smooth finish. Must order, so will probably be 30 days before delivery to 7-12 shop.
2. Selwyn on C.R.#2 did not work continuously yesterday. Fussed with it some & seems to work OK now.
- 3.

Wed, JAN. 24, 1951

PRESENT - Hunter, Bly, Pressey (Kroeger, C'bear, Weinberg)<sup>Maxwell</sup>

1. Completed construction in 109.
2. Cleaned 109.
3. RECEIVED FIRST shipment of 25.
4. Checked in 25 until 11:00pm.
5. Hunter claims: G.E channels now working.
6. INSTALLED buzzer on screen.
7. Re " Table drive panel.
8. Took mire readings on HATHAWAY.
9. Bad pickup on INSTRUMENTS may be from various & sundry power cords in instrument wire way. These should be moved at first chance.

SAT.

1. Source #174 put in assembly.

well  
erga

orking

3

4

Sunday Feb 4, 1951

- Done ✓ 1. Repair screen adjust on Photomultiplier
2. Repair or replace vacuum relay on  
GE channel #1.
- Done ✓ 3. Insulate limit switches on safety  
& control rods.
- Done ✓ 4. Make temporary log scale for period records. <sup>log V.</sup>
- Done ✓ 5. Repair bearing of GE control unit #2.
6. Change Vibe Reed
7. New set screw for CR. 3
8. GE #2 trips when change from  
low to high current run with reset  
button in; also when control rod #1  
was operated.
- Done ✓ 9. Insulate lead in cover to GE recorder.
10. Log Switch on #2 CR gave false screen.
11. Max direction of pot rotation for chg in sensitivity - P.M. #102 <sup>DC</sup>
12. Pen loose on Reed recorder.
13. Lights in Reed recorder
14. Replace noisy relay

Pages 73-84  
inclusive trans-  
ferred to Book  
Y-NB-1321  
2/8/51 Calkins



8/17/51

DISPOSITION OF Stainless (No) Boxes.

8/16/51 01531 to MORETT for Hf.

8/17/51 { 01501 → 01525 (except 01507) EMPTY TO MANLY-X10 for K & NaK.  
 01514 01519 01521 } leaked when filled with Na at X-10 and  
 11/6/51 { 18 20 01525 } were discarded.  
 01501, 2, 3, 6, 11 filled K at X10 01504, 5, 8, 9, 10, 12, 13 not from X-10 empty.  
 01515, 16, 17, 22, 23, 24 filled Na X-10.

8/17/51 00152 - Na filled to Manly - sample. Ret 11/5/51

8/17/51 00434 - unassembled to Manly.

8/17 01135, 01152, 01198, 01207  
 01460  
 01309, 01432, ~~01432~~, 01472  
 01480, 01482, 01484, 01485  
 01489, 01490, 01491, 01492  
 01494, 01495 → 01498inc  
 01500  
 00429 unassembled

EMPTY } To Grimes for NaF, KF

00432 - filled with Plexiglas, Cd lined.

01528 - B+C.

Beryllium F-1 Block weight check.

Date: 24 Jan 51 By: fth

Balance: large chem. balance West End (C+ccc #180)

Groups of 5 blocks weighed.

Group	Wt. (g.)	wt(g) / block	Deviation (g.)	Deviation (%)
1	1254.18	250.8	+ .3	+ .012%
2	1251.49	250.3	- .2	- .008%
3	1251.98	250.4	- .1	- .004%
4	1252.18	250.4	- .1	- .004%
5	1253.65	250.7	+ .2	+ .008%
Total	6263.48	250.5		

Note added

by Callahan 1/16/52 -

Above measured &amp;

recorded by Bly

probably Jan or

Feb 1951

# Spot Check of High-density graphite

Nominal  $1\frac{1}{2} \times 1\frac{1}{2} \times \frac{1}{4}$

1.438  
1.436 x 1.437 x .247 .246  
1.437 x .247 .247

1.436  
1.436 x 1.437 x .247 .247  
1.437 x .247 .248

1.436  
1.436 x 1.437 x .250 .251  
1.438 x .250 .250

1.436  
1.437 x 1.437 x .251 .251  
1.438 x .251 .250

1.436  
1.437 x 1.437 x .256 .255  
1.437 x .256 .255

1.436  
1.437 x 1.438 x .258 .258  
1.437 x .258 .259

Nominal  $1\frac{1}{2} \times 1\frac{1}{2} \times 1$

1.439  
1.438 x 1.439 x 1.005 1.008  
1.438 1.439 1.006 1.008

1.437  
1.439 x 1.439 x 1.001 1.000  
1.440 1.439 1.001 0.998

1.438  
1.440 x 1.439 x 1.009 1.009  
1.438 1.437 1.009 1.009

(over)

NOTE ADDED BY  
CALLIHAN- 1/8/52:

These dimensions,  
received by Hunter,  
were probably  
measured in

January or February 1951

Thickness

.003

.003

## MEASUREMENTS ON HIGH DENSITY GRAPHITE -

An endeavor to determine the dimensional stability of the graphite by comparing measured dimensions with those of almost a year ago and with specifications - Blocks randomly selected -

Specifications: Thickness  $1.00 \pm 0.01$ "

Measured:	1.012	1.006"	} Block B.
Block A	1.012	1.007	
	1.012	1.008	
	1.010	1.006	
	1.011	1.005	
	1.010	1.003	

Specification - Thickness  $0.250 \pm 0.010$ "

measured:	0.252	0.251	} Block $1\frac{7}{16} \times 1\frac{7}{16}$
Block $2\frac{7}{8} \times 2\frac{7}{8}$	0.253	0.251	
	0.253	0.251	
	0.252		
	0.254		

Twenty measurements of the  $2\frac{7}{8}$ " dimension of four blocks were between 2.873 and 2.875 - only one being 2.873.

Specification  $2.875 \pm 0.005$ " -

No indication of dimensional change. (over.)

11-8-52 Density - Hi density graphite  
~~80~~

To measure the density of the graphite  
 4 -  $2\frac{7}{8} \times 2\frac{7}{8} \times 1$ " blocks were weighed  
 on large analytical balance:

Mass: 1093.960 grams

Dimension: Thickness

1.002"	1.000"	0.998"	1.011"
1.001	1.000	0.998	1.009

ave 1.003"

other dimensions taken as 2.875" (see preceding page).

Diameter of hole = 0.146"

$$\begin{aligned} \text{Volume} &= 4 \left[ (2.875 \times 2.875 \times 1.003) - \left( \frac{\pi}{4} (0.146)^2 \right) \right] \\ &= 33.043 \text{ in}^3 \\ &= 544.50 \text{ cm}^3 \end{aligned}$$

$$\rho = \frac{1093.960}{544.50} = 2.009 \text{ gm/cm}^3$$

As a check the mass of a  $1\frac{7}{8} \times 1\frac{7}{8} \times \frac{1}{4}$ " pc of hi-density graphite was compared with that of a piece of regular (AGOT) of same dimensions.

	AGOT	Hi-density
Mass	14.1876 gm	16.7059 gm

$$\frac{16.71}{14.19} \times 1.7 = 2.0 \text{ gm/cm}^3 \text{ density of "hi density"}$$

based on AGOT being  $1.78/\text{cm}^2$  -

This value of density to be compared (or contrasted!) with  $2.19 \text{ gm}/\text{cm}^3$  given on pg. 36 of Report NEPA 1829 and the nominal value of 2.2 which has been given to lots of 9213 visitors! -

There is, however, no evidence of dimensional change - so probably 2.2 has always been in error. It is not known where the 2.19 in above report originated. —

1. Replace needle valve on air line west end control room with cock.
2. Install PERSONNEL SHIELD - (~~IN SHEET METAL SHOP Y-12~~)
- ~~3. INSTALL GUN RACKS in 109 (BEING PAINTED IN 103)~~
4. INSTALL sub-assembly TABLES IN 109 need parallels.
5. " AIR SAMPLERS in 108 + 109. (Coordinate with HAASE)
- ~~6. " Neutron MONITOR IN 109~~
- ~~7. " BALANCE IN 109 (NOT until all other work in 109 complete)~~
- ~~8. " SOURCE MECHANISM~~
- ~~9. " SAFETY rods & TEST~~
- ~~10. " CONTROL " " "~~
11. Check INSTRUMENTS.
  - ~~a. vib. REED~~
  - ~~b. Log n & period~~
  - ~~c. Photom~~
  - d. Scales 2 OK.
  - ~~e. monitor~~
  - f. D.C. Amp.
- ~~12. Install G.E. D.C. Amp channels~~
- ~~13. MAKE CABINET for G.E. recorders.~~
- ~~14. Install Brown recorders.~~
15. " Chambers. including wax pots.
16. " scram cord. & large scram button
17. " Micrometer indicators ON STAT HALF.

- 2nd
18. ~~Install table & Control Rod Control Panels  
& Run Cable E~~
- X-12)
19. ~~W in Safety Rods Item 9~~
- )
20. ~~W in Control Rods Item 10~~
21. ~~Install emergency power supply~~
22. ~~Cover W in way above T B 1~~
- SE)
23. ~~Cover switches in panel EPH~~
24. ~~Install Circuit Breaker in motor Rectifier~~
- 69 complete)
25. ~~Repair runway in 108 on 5' wall~~
26. ~~to cover speaker cable box under  
staircase in 108.~~
27. ~~Paint table of hand cranes.~~
28. ~~Drill holes in relay racks & run C.E. amp.  
cables.~~
29. ~~Install bell-horn etc in existing bldg.  
scram circuits so either scram is audible  
in Rm. 107.~~
30. ~~Install ladder & catwalk for crane & light  
servicing. Work order in.~~
31. ~~Change power plugs on vault (109) Monitor and  
recorder.~~
32. ~~Make power cords for C.E. recorders.~~
33. ~~Loaden bell for West end scram~~
34. ~~Put buzzer on east " "~~
35. ~~Install straight edge on top of hallies.~~



## Be Shipments.

369

F-1

10

S-F-1/4 &amp; S-Q-1

323

1-3-51

248

1-9-51

1015

No.	PRINTS SENT OUT.		MATL.
8	res. #201c & 202c	AEC (LARKIN)	Beryllium.
1	res. " "	Y-12 INSP. (JONES)	"
3	res. " "	CALLIHAN	STAINLESS.

1 200

CAL'S. Bill Richards F-06

Knoff

WALLACE

1-

1-