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AEC RESEARCH AND DEVELOPMENT REPORT



ISSUED TO: C. T. Rucker

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OAK RIDGE NATIONAL LABORATORY
DIVISION OF
CARBIDE AND CARBON CHEMICALS CORPORATION
OAK RIDGE, TENNESSEE

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LABORATORY WEEKLY PROGRESS REPORT
WEEK ENDING JUNE 20, 1948

ADMINISTRATIVE, SERVICE AND OPERATING FUNCTIONS

THIS REPORT WAS PREVIOUSLY DECLASSIFIED by
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E. S. BAKER, ORNL/CC 38/487 3/24/80
REVIEWS DATE *****

Date Received: 6/24/48

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PART B. Division Reports

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PART A

I. OPERATIONS DIVISION

A. Pile Department

The pile operated normally at an average power level of 3595 KW, accumulating 603,949 KW for the week.

The total down time was 5.067 hours or 3.0 percent.

The excess pile reactivity at the present time is approximately 35 inhours at a power level of 3800 KW.

B. Chemical Separations Department

Lending of manpower to the Radioisotope Development Department continued through the week.

Fabrication of the slug carrier for transporting Hanford type slugs for the Rala Process is essentially complete. It will be turned over to the Technical Division for testing during the coming week.

C. Isotope Control Department

A considerable drop in number of isotope shipments occurred this week. Only 49 shipments were made, compared with 82 shipments the previous week. Most of the decrease was in irradiation units, only 3 being made compared with 17 for the previous week, and 24 for the week ending June 4.

Some decrease may be expected in isotope shipments during the summer months due to vacations. This is especially noticeable in orders from educational institutions. Indications are that this decrease will not continue for more than a week or so, because we have already received 135 new orders this month. This is the largest number we have received by the third week of any month to date.

While the number of shipments decreased somewhat this week, the actual amounts of P 32 and I 131 shipped held up very well. For example, 988 millicuries of P 32 in 18 shipments compares favorably with 442 millicuries in 16 shipments for the week ending June 11, and 750 millicuries in 20 shipments for the week ending June 4.

Considerably more I 131 could have been shipped had it been available, but due to the shortage of tellurium irradiated to a saturation activity, less than 1 curie was shipped.

C. Isotope Control Department (Cont'd)

The actual money value of this week's shipments was considerably enhanced by 90 millicuries of Cs 137 at \$134.70 per millicurie, which is a total of \$12,123.00 for this item alone.

Customers ordering S 35 in the form of sodium sulfide are being encouraged to take sulfate instead, pending the time when we can stabilize sulfide against oxidation.

II. HEALTH PHYSICS DIVISION

A. General Comments

River activity surveys continue to be held up for lack of a hood over the sample evaporation unit.

A special survey conducted for airborne particulate activity was very fruitful, both in gathering data on this hazard and as an opportunity to test the emergency organization operations. Having particles of many thousands of disintegrations per minute generously and continually dispersed over the plant site demonstrates that our background is quantized. Preliminary estimates are that lung damage from inhaling these particles is unlikely.

B. Instruments Group

Special calibrations were made of two Beckman chambers at 105 Bldg., a thimble chamber for Biology, and a special chamber for the Plant Instrument Group. Because of high background, the Beckman chambers will need to be recalibrated. A space layout for Laundry Monitoring was completed and submitted. Measurements for electroscope calibration were completed.

C. Personnel Monitoring Group

Film emulsion lot number 108 (defective) has been entirely removed from use and replaced.

D. Radiation Surveys Group

Site Survey: One Dayton truck which smeared 17,280 c/m alpha was sent to 101 wash rack. Two patients with hand lacerations were checked in building 719-A (no contamination detected.)

Y-12: Contamination was found on a truck used to transport heavy equipment on the third floor. This truck had been brought in from storage and had been used in 9206 building. It was generally contaminated on the platform and on the handle. The highest reading was 16,000 d/m (alpha) with less than 1 mr/hr beta. The truck was tagged and rolled into the B.T. Area.

HEALTH PHYSICS DIVISION (Cont'd)

D. Radiation Surveys Group (Cont'd)

100 Area: The survey around hole 52-S included a survey for thermal neutron flux, as well as gamma radiation. With the shield in place before the hole, readings taken in the beam at 4" from the pile face indicated that a leak of approximately 20 mr/hr of gamma plus 60% of 8 hour tolerance value for thermal neutron flux was coming through the shield. With the shield moved aside, readings taken approximately @ 1' to the left of the beam and 5' from the pile face showed 3.2 mr/hr gamma plus 58% of tolerance for thermal neutron flux, as scatter values.

200 Area: The side and base of a sample holder in the sample room which smeared 9,193 c/m (beta-gamma), has been cleaned. A sink and a cabinet removed from the south chemistry laboratory were sent to the burial ground.

706-A Building: A stack of pipe, valves, and blotter paper on the gravel driveway north of semiworks was found to be highly contaminated. The blotter paper read 1200 mr/hr @ 4". The contaminated material was immediately sent to the burial ground. A fire alarm in the west end of Bldg. 706-A was attended. No radiation hazard existed.

706-C Building: No salient or unusual events.

706-D Building: Removal and installation of the Settling Basin wooden framework continued. An employee suffered a puncture wound while working with a glass rod which broke and pierced his right palm after penetrating the rubber glove he was wearing. Contamination (chiefly beta-gamma) was found on both the rod and glove. No activity was detected in or about the wound.

E. Waste Monitoring Group:

Six more soil samples were taken for background and contamination studies. Algae was observed escaping from the Settling Basin into White Oak Creek and operations were requested to screen the discharge water waters since such algae represents clusters of high specific activity. With the cooperation of the Instruments and Radiation Surveys Groups, a special intensive search and study was made for data on the location and distribution of high activity particles Thursday and Friday covering representative areas. Findings to date indicate that they are airborne. Particle size, composition, and half life studies to establish their origin and indicate attendant hazards are underway.

III. HEALTH DIVISION

(See Part B)

IV. GENERAL OFFICE DIVISION

(See Part B)

V. SECURITY AND PROTECTION DEPARTMENT

(See Part B)

VI. PERSONNEL AND SERVICE DIVISION

A. Fire Protection

A Fire Protection Engineer has been added to the Safety and Fire Protection Department. He will follow all new building design and engineering plans for the proper integration of good fire protection measures. He is now working on a plant-wide fire alarm system.

B. Insurance

All bargaining unit employees currently reporting to work at the Laboratory will be contacted between June 17 and June 26, 1948 and offered an opportunity to sign up for the Carbide group insurance. During the first three days of this period, 475 employees were contacted; 84.6 per cent of them enrolled for the insurance.

C. Newspaper

An editor and an associate have been employed and it is planned that the first edition of our new Laboratory weekly paper will be delivered by mail to the home of each employee on Friday June 25.

D. Union Contract

Copies of the new Union Contract were prepared and assembled, and 500 of them were distributed.

E. Labor Relations

Union contract negotiation conferences continued on Monday, June 14, with an agreement being reached with the members of the Union negotiating committee on the morning of June 15, subject to ratification by bargaining unit members.

VII. ENGINEERING, MAINTENANCE AND CONSTRUCTION DIVISION

This week the Applications Group has assumed responsibility for the specification and requisitioning of instrumentation for the 1300 Area Semi-Works addition. It will also provide field engineering coverage during installation and start-up.

PART B

I. OPERATIONS DIVISION

A. File Department

1. Daily Operating Data:

<u>Date</u>	<u>Day No.</u>	<u>Accumulated Energy</u>	<u>Hours Operated</u>
6-14-48	1685	86,600	23.300
6-15-48	1686	77,347	21.233
6-16-48	1687	87,840	23.633
6-17-48	1688	89,540	24.000
6-18-48	1689	84,370	23.033
6-19-48	1690	89,232	23.917
6-20-48	1691	89,020	23.817

2. Samples Inserted in File:

	<u>Isotopes</u>		<u>Research</u>	
	<u>6-14/6-20</u>	<u>This Mo.</u>	<u>6-14/6-20</u>	<u>This Mo.</u>
Holes 13, 14 & 16 (Stringers)	15	64	21	52
Holes 18 & 21 (Sulfur)	2	7	0	0
Hole 22 (Pneumatic Tube)	0	0	6	16
Others	1	1	2	9
Total	18	72	29	77

3. Metal Inventory:

Storage Vault.	Not tested.	0 Slugs
	Class A & B.	28,328 Slugs
	Rejects.	11 Slugs
Mattress Plates.		3 Slugs
File.		37,766 Slugs
Canal & Deep Pit.		2,034 Slugs
Test Area.		0 Slugs
Underground Vault.		1,857 Slugs
Inlet Air Duct.		26 Slugs
Total Slugs on Hand.		70,025 Slugs

4. Pile Shutdowns:

The pile was shut down to insert and remove radioisotope samples and for other miscellaneous work for a total of 4.900 hours as listed below:

<u>Day</u>	<u>Date</u>	<u>Time Shut Down</u>	<u>Duration</u>
Monday	6-14-48	8:30 A.M.	0.700 hr.
Tuesday	6-15-48	9:06 A.M.	2.767 hrs.
Wednesday	6-16-48	7:00 A.M.	0.300 hr.
Friday	6-18-48	8:30 A.M.	0.967 hr.
Saturday	6-19-48	1:00 A.M.	0.083 hr.
Sunday	6-20-48	1:05 A.M.	0.083 hr.

The pile was accidently shut down for 0.167 hour as listed below:

<u>Day</u>	<u>Date</u>	<u>Time Shut Down</u>	<u>Duration</u>
Wednesday	6-16-48	12:38 A.M.	0.067 hr.
Sunday	6-20-48	7:09 P.M.	0.100 hr.

The cause of both of these shutdowns could not be determined, other than that both resulted from the Hole 36 low intensity trip circuit.

5. Ruptured Slugs:

There were no ruptured slugs during the past week.

6. Slug Discharges:

Three "X" slugs were discharged from Hole D on Wednesday, June 16, 1948, for the Chemistry Division. These had been charged into the pile at their request on the previous day.

7. Fan Operation:

Both fans have operated normally during the past week.

The No. 2 oil pump on No. 3 fan lubricating system developed a bad bearing on Friday, June 18, 1948, and was replaced.

B. Chemical Separations Department

1. ReLa Process

The next run is still tentatively scheduled to start on June 29, 1948. A confirmation of this date by Los Alamos is expected on June 24, 1948.

2. Radioisotopes

a. Iodine (I^{131} - 8d)

Eight cans of Te from Stringer 14B (approximately 70% flux) were processed to yield approximately 1040 mc. The product was within specifications.

b. Phosphorous (P^{32} - 14.3d)

The wastes from last week's run were processed to yield approximately 942 mc for the run.

This week, two cans of sulfur from hole 21 (approximately 70% flux) were processed to yield approximately 720 mc. The sulfur drawoff line from P3 to P4 plugged during the run and it was necessary to draw off the sulfur through P-5. High losses also occurred in the calcite column; this waste is being reprocessed and results will be reported next week. The column losses seem to be due to low acidity in the column feed; an adjustment is being made in the procedure to correct this condition.

c. Carbon (C^{14} - 5100y)

No runs were made.

d. Strontium ($Sr^{89,90}$ - 55d, 30y)

No runs were made.

e. Ruthenium (Ru^{106} - 1yr)

Thirteen concentrates were made utilizing 3600 gallons of metal waste supernatant.

f. Production Summary

Isotope	gms/ can	No. of cans	Average pile	Average Flux	mc isolated	mc/ can	mc shipped	No. of Shipments
			Exposure time - Weeks -					
I^{131}	75	8	5½	70%	1040	130	894	20
P^{32}	2000	2	6	70%	Run not completed		988	18
Week ending 6/13/48								
P^{32}	2000	2	6½	70%	942	471	442	16

3. Tank Farm and Burial Ground

a. Special Wastes:

Other than routine disposal of plant wastes, the following special wastes were handled.

- (1) The Ruthenium Process used 3600 gallons of metal waste supernatant containing an average of .00±6% uranium.
- (2) A shipment of alpha contaminated waste from Dayton was buried 170' to 190' west in the West Burial Ground.
- (3) Five pots and one drum were received from Chicago this week. The pots contained solutions with fission products. The drum contained hexone.
- (4) The Hot Pilot Plant transferred 11.23 kg of uranium to W4 tank.

b. Wastes Discharged to White Oak Creek

During this week, work to rebuild the woodwork at the Settling Basin necessitated stopping the flow of water to the Settling Basin by diverting it through the East Pond.

On Wednesday, June 15, 1948, in order to replace the inlet and exit weir boxes in the Basin, the level was lowered by removing the exit weirs and draining the Basin to the invert of the discharge pipes. This lowered the level about eight inches. Pumps were then installed on Thursday, June 16, 1948, and approximately ten more inches of water were pumped out. It is estimated that about 750,000 gallons of water were removed during this operation.

The last day the Settling Basin was operating, the average count was 174 beta c/min/ml. On this basis, 1.76 curies of activity were discharged to the White Oak Creek during the draining and pumping operation. This figure does not take into account the activity carried by algae, which was unavoidably discharged during the draining.

(1) Discharged from the Settling Basin

Date	6/13	6/14	6/15	6/16	6/17	6/18	6/19	Total
Flow in Thousands of Gallons	605	378	750	-	-	-	-	1733
Average Activity in beta counts/ min/ml	192	174	174	-	-	-	-	
Approximate Number of Curies	1.57	.9	1.75*					4.23

* Draining and pumping operation

3. Tank Farm and Burial Ground (Cont'd)

(2) Discharged from the East Pond

Date	6/13	6/14	6/15	6/16	6/17	6/18	6/19	Total
Flow in Thousands of Gallons	-	227	605	605	605	605	605	3252
Average Activity in beta counts/ min/ml	-	613	436	492	186	150	334	
Approximate Number of Curies		1.88	3.56	4.02	1.52	1.23	2.73	14.94

(3) The Retention Pond discharged 46,700 gallons of water carrying .01 curies of beta activity.

c. Waste Tank Inventory

The following is the inventory of the waste tanks as of June 19, 1948.

<u>Chemical Waste</u>	<u>Capacity</u>	<u>Gallons In</u>	<u>Gallons out</u>	<u>Free Space</u>
W-1	4,400	40,259	40,259	4,400
W-2	4,400	28,340	28,340	4,400
W-5	170,000	2,400	42,000	123,600
W-6	170,000	44,400	0	63,600

<u>Metal Waste</u>	<u>Capacity</u>	<u>Gallons In</u>	<u>Gallons Out</u>	<u>Free Space</u>
W-4	41,200	592	0	26,344
W-7	166,800	0	3,600	92,400
W-8	170,000	0	0	4,800
W-9	165,000	0	0	52,200
W-10	170,000	0	0	14,400

Al-Pu Waste

W-3	41,300	0	0	38,776
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d. Maintenance

(1) Work to replace all the old woodwork at the Settling Basin is about 50% complete. The old weirs have been removed and timbers to hold the new weirs are being put in place.

(2) Work on the new transfer line project in the Tank Farm is about 20% complete.

(3) Excavation was begun this week on the project to bypass W5 diversion box. All the lines to and from the box were located.

C. Isotope Control Department

1. Shipments for Week

Domestic	37
Foreign	4
Project	<u>8</u>

Total 49

Processed Isotopes	46
Irradiated Units	<u>3</u>

Total 49

<u>Material</u>	<u>No. of Shipments</u>	<u>Amount</u>
C 14 (BaCO ₃)	4	9.1 mc
C 14 (high specific act.)	1	3.9 mc
Na 24	1	1 unit
P 32	18	988 mc
S 35	1	25 mc
Mo 99	1	1 unit
I 131	20	894 mc
Ba 131	1	1 unit
Cs 137	<u>2</u>	90 mc
Total Shipments	49	

2. Receipts and Shipments of Source and Fissionable Material

a. Receipts

<u>Received From</u>	<u>Material</u>	<u>S. F. Content</u>
General Electric Co.	12 Uranium Slugs	9.30 grams Pu
K-25 Area	Hanford Waste Scrap	less 0.020 grams Pu

b. Shipments

None

II. HEALTH PHYSICS DIVISION

A. Instrument Group

Calibration of Instruments		38
Portable	19	
Fixed	<u>19</u>	
Instruments Repaired and Adjusted		11
Counting Service Items		2,585
Air Samples	116	
Mud, Water and Smear Samples	2,333	
Graphical Data and Special	<u>136</u>	
Laundry Decontamination Measurements		3,951
Garments Checked	2,065	
Other Clothing and Special		
Items	1,842	
Shoes (pr.) checked	36	
Water Samples Counted	<u>8</u>	
New Instruments Received		12
Sources on Hand		33
Hand and Foot Counters Operation - Reliability		
Inoperative	21.6%	
Grossly Inaccurate	10.0%	

B. Personnel Monitoring Group

Pocket Meters Worn		9,762
Pocket Meters Read		9,754
Expected Off-Scale Pairs		0.090
Non-Readable Meters		8
Lost Caps	2	
Lost Meters	6	
Damaged Meters	0	

D. Waste Monitoring Group

Meteorological Data

Average wind velocity 5.7 m.p.h.
 Prevailing wind direction S.W. (46%)
 Rainfall 0.6 in.
 Temperature Inversions 6

Air Activity Measurements

Instances above 10% Tolerance 1
 Instrument Data Loss 26%

Water Activity Measurements

	<u>Beta</u>	<u>Gamma</u>
Settling Basin	0.62 mrep/hr	0.21 mr/hr
White Oak Dam	0.04 mrep/hr	0.01 mr/hr

Mud Activity Survey

Samples Studied 6

III. HEALTH DIVISION

	<u>June 13, 1948</u>	<u>June 20, 1948</u>
Total visits for occupational injuries	103	163
1st visit	25	36
Repeat visit	78	127
Total visits for occupational illnesses	2	5
1st visit	1	1
Repeat visit	1	4
Total visits for non-occupational injuries	61	62
1st visit	36	31
Repeat visit	25	31
Total visits for non-occupational illnesses	294	294
1st visit	183	190
Repeat visit	111	104
Total number of physical examinations	153	152
Absentee examination	63	57
Pre-placement examination	8	16
Periodic examination	0	2
Termination examination	19	12
Medical rehabilitation interviews	72	65
Total number of immunizing procedures	90	79
Total number of laboratory procedures	344	478
Total number of x-ray films taken	112	103
Total miscellaneous procedures (interviews, survey procedures, etc)	75	106
Grand Total	1234	1442

IV. GENERAL OFFICE DIVISION

<u>A. Accounting Department</u>		
Cafeteria Gross Sales		\$ 3,648.20
<u>B. Reproduction Department</u>		
No. of Reproduction Orders		231
Total Reproductions		154,053
<u>C. Mail Department</u>		
Teletype Messages Handled		246
Received	97	
Transmitted	149	
Number of pieces of outgoing mail		1149
First Class	1016	
Registered	93	
Parcel Post	40	
Cost of Postage		\$ 319.18½
<u>D. Traffic Department</u>		
Itineraries completed		61
Itineraries checked		80
Tickets picked up		58
Hotel Reservations completed		15
Shipments traced		7
Isotope Shipments		49
<u>E. Property Department</u>		
Inventory Section:		
Property Numbers applied		1748
Percent of B property inventories		3.2%
Records Section:		
Vouchers assigned		173
Receiving Reports		34
Special Shipping Orders		1
Other documents		138
Property items on vouchers		2435
Vouchers posted		173
Debit items posted		2483
Credit items posted		48
Total vouchers posted to date		1315
X-10 items posted to date (debits only)		17,306
Property Transfer Permits		126
Number of items on Property transfer Permits		320

IV. GENERAL OFFICE DIVISION (Cont'd)

F. Receiving Department

Records Section:		
Receiving Reports written		479
Coal	6	
Memo changes written for week		38
Receiving and Delivery Section:		
Shipments Received		573
Truck Loads	98	
Coal	98	
Carloads	3	
Coal	0	
Miscellaneous Shipments	472	
Shipments tallied in		465
Shipments tallied out		493

G. Shipping Department

Shipping Section:		
Shipments made		43
Area Contractors	3	
Atomic Energy Commission	3	
Vendors	3	
Others	34	
Number of items involved		83
Returnable containers shipped		105
Excess Material Section:		
Lists published to date		9
Lists disposed of to date		4
Lists undisposed of		5
Value of excess material including WSOP-1 items		\$ 10,967.89
Value of items disposed of to date		\$ 92,057.36
Number of excess items disposed of		0

H. Stores Department

Items inventoried to date		7019
Percent complete		20%
Purchase requisitions received		193
Forwarded to Purchasing Department	190	
Forwarded to Receiving Department	3	
Recapitulation of Stores Issues		
Old Balance		0
Received		6331
Posted		6110
Balance on Hand		221

I. Tool Department

Items reported lost this year	41
Value of items reported lost	\$ 53.67
Relief from responsibility granted for	
Items	12
Value	\$ 22.47
Items inventoried to date	0
Percent complete	0
Purchase requisitions received	
Forwarded to Purchasing Department	2
Forwarded to Receiving Department	0

V. SECURITY AND PROTECTION DEPARTMENT

The total number of employees awaiting personnel clearance as of June 18, 1948 is 144. Total number of PSQ Forms submitted for personnel clearance during the week is 9. About 87% of the employees at X-10 have received "Q" clearance under the reinvestigation program. During the past week 162 visitors were registered at the Laboratory.

During the past week the Sub-Contract Section has made final arrangements with the Security Divisions of K-25 and Y-12 in preparation for the handling of sub-contracts, security-wise at the other areas, through the X-10 office. In the past week two expired sub-contracts were deleted and one new contract was set up on file.

A bulletin was issued during the week to secretaries outlining the proper procedure in documenting restricted data.

During the past week security orientation of ten new employees was completed. Contacts were made upon the return of unprotected documents, which were left exposed in the working areas. Ten filing cabinets were found open and unattended by Patrol making their routine nightly check, and three documents were found unprotected. Various offices were visited by the Security Education Representative whereby personnel were interviewed, and the following subjects discussed; marking of documents, material and package passes, and other information and instructions relating to the care of restricted data. Combinations were changed on 35 filing cabinets and 8 new classified filing safes were distributed with proper instructions as to their correct usage. Five bar-locked files were replaced with built-in combination lock safes.

The Patrol Section will soon assume occupancy of a portion of Building 707-D, and work has begun on the transfer of lockers and other equipment from Patrol Headquarters to this new location. Thirty-two hours were spent guarding classified materials and 172 trips were made escorting visitors, and for delivering classified or restricted data throughout the Laboratory. General plant inspection was made by supervision during the night shift, checking on lighting and other night shift security problems. One call was made by the ambulance.

VI. PERSONNEL AND SERVICE DIVISION

	<u>Total for Week</u> <u>Ending 6-20-48</u>	<u>Previous</u> <u>Week</u>
Active Employees (Entire Laboratory)	2329	2328
Employment Interviews	112	103
Employment Requisitions Open	12	13
Employment Requisitions Filled Awaiting Clearance	65	51
Number Hired	14	9
Transferred to Other C&CCC Installations	0	0
Transferred from Other C&CCC Installations	0	0
Resignations	12	21
Discharges	1	0
Layoffs	0	0
Accidents, Major (Lost Time)	0	0
Accidents, Sub-Major (Restricted Duties)	0	1
Grievances Received	0	0
Grievances Pending	1	1
Grievances Disposed of	0	0
Disciplinary Action (Reprimands, Suspensions, and Hearings)	0	0
Housing Units Occupied (All Types)	1160	1160
On Housing Waiting List	205	209
Houses Assigned to the Laboratory by AEC	7	12
Participation in Recreational Activities	236	203
Cafeteria and Canteen Transactions	16,683	15,945
Laundered, Number of Items	5431	5213
Laundered, Weight of Items	5275 lbs.	6075 lbs.
Dry Cleaning at ORNL Laundry (Coats, Caps, Pants)	0	2
Dry Cleaning at DeLuxe Cleaners (Pants, Coats, Jackets)	132	127
Sewing (Garments Repaired, Altered or Made)	555	501
Field Trips for Pictures	10	3
Lantern Slides Made	39	13
Prints Made (8 x 10)	70	146
Photographs for Photo Badges	167	120
Studio Setups	6	0
Attendance Orientation Training	13	10
Attendance Pre-Employment Test	4	2
Attendance Training Session	0	52
Fire Department Group Training	41 hrs.	48 hrs.
Detailed (Building) Fire Prevention Inspections	68	106
Spot (Building) Fire Prevention Inspections	42	49
Fire Alarms	1	2

PERSONNEL AND SERVICE DIVISION (Cont'd)

	<u>Total for Week Ending 6-20-48</u>	<u>Previous Week</u>
Absences, Non-exempt Employees, for Non-occup. Disab. (S)	158	165
Absences, Non-exempt Employees, Occup. Disability (D)	10	9
Absences, Non-exempt Employees, On Leave (L)	39	38
Absences, Non-exempt Employees, Personal (P)	125	113
Absences, Non-exempt Employees, Unexcused (U)	12	13
Insurance Claims Filed	4	5
Insurance Claims Closed	4	3
Insurance Claims Active	16	16
Insurance Applications	4	2
Insurance Cancellations	0	0
Hospitalization Enrollments	7	3
Hospitalization Cancellations	0	2
Medical Reports Received	88	64
Injury Reports Filed with Carrier	1	5
Reported Injuries Discharged	13	5
Active Reported Injury Cases	13	25
Compensation Claims Pending	4	4
Welfare Visits	10	6
Insurance Claims Handled	2	2
Investigations	2	7
Deliveries of Checks	19	16

Personnel-Analysis

The following analysis is for the week ending June 20, 1948:

	<u>Total Person. 6-13-48</u>	<u>Dept. Trans- fers</u>	<u>Hires</u>	<u>Termi- nations</u>	<u>Gain or Loss</u>	<u>Total Person. 6-20-48</u>	<u>Absen- tees*</u>
<u>Operations</u>							
M50C (Chem. Opr.)	32	0	0	0	0	32	0
M50D (Isotope Div.)	11	0	0	0	0	11	0
M50E (Services)	9	0	0	0	0	9	3
M50P (Pile Oper.)	28	0	0	0	0	28	2
	<u>80</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>80</u>	<u>5</u>
<u>Physics</u>							
H200L	85	0	0	0	0	85	4
<u>Chemistry</u>							
H300L	208	0	0	0	0	208	14
<u>Technical</u>							
H400L	180	0	0	1	-1	179	20
<u>Power Pile</u>							
H500L	49	0	0	0	0	49	1
<u>Biology</u>							
H600L	80	0	0	0	0	80	2

Personnel - Analysis (Cont'd)

	Total Person. 6-13-48	Dept Trans- fers	Hires	Termi- nations	Gain or Loss	Total Person. 6-20-48	Absen- tees*
<u>Metallurgy</u>							
H700L	16	1	0	0	1	17	0
<u>Training Program</u>							
H800L (Training)	2	0	0	0	0	2	0
<u>Health Physics</u>							
A50H (H.P.)	31	0	1	0	1	32	5
A51H (Instru. Ser)	17	0	1	0	1	18	1
A52H (Person. Mont.)	30	0	0	2	-2	28	5
A53H (Survey)	<u>23</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>23</u>	<u>0</u>
	101	0	2	2	0	101	11
<u>Engin. Maint. & Const.</u>							
A50E (Instruments)	40	1	0	0	1	41	12
A50N (Mach.Mtnce)	404	1	0	4	-3	401	60
A50T (Transportation)	58	0	0	0	0	58	9
A51T (Maint.Auto)	23	0	0	1	-1	22	10
A50U (Power)	2	0	0	0	0	2	0
A50W (Plant Design)	123	0	3	1	2	125	12
A60N (Research Shop)	1	0	0	0	0	1	0
M50S (Steam Plant)	14	0	0	0	0	14	2
M50T (Water Treat.)	5	0	0	0	0	5	0
A51W (R.E.Shops)	<u>124</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>-1</u>	<u>123</u>	<u>24</u>
	794	2	3	7	-2	792	129
<u>Personnel & Service</u>							
A50I (Janitor)	90	0	0	0	0	90	15
A52G (Fire)	43	-1	1	0	0	43	4
A53G (Safety)	5	0	0	0	0	5	2
A50J (Emp.Service)	14	0	0	0	0	14	5
A51J (Recreation)	2	0	0	0	0	2	5
A50L (Emp.& Pers.)	30	-3	0	0	-3	27	4
A50R (Cafeteria)	40	0	0	0	0	40	23
A57L (Labor Relations)	4	0	0	0	0	4	0
A60L (Emp.Training)	7	0	0	0	0	7	0
A53J (Spec. Serv.)	2	0	0	0	0	2	0
A52J (Laundry)	<u>24</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>24</u>	<u>12</u>
	261	-4	1	0	-3	258	70
<u>Medical</u>							
A50D	36	0	0	0	0	36	6
<u>General Office</u>							
A50M (Gen.Office)	62	0	2	1	1	63	7
A50S (Stores)	66	0	1	1	0	66	14
A51S (Rec. & Shipping)	37	0	0	0	0	37	13
A52S (Tools)	<u>16</u>	<u>-1</u>	<u>0</u>	<u>1</u>	<u>-2</u>	<u>14</u>	<u>11</u>
	181	-1	3	3	-1	180	45

Personnel - Analysis (Cont'd)

	Total Person. <u>6-13-48</u>	Dept. Trans- fers	Hires	Termi- nations	Gain or Loss	Total Person. <u>6-20-48</u>	Absen- tees*
<u>Security</u>							
A50G (Plant Prot.)	69	-1	1	0	0	69	14
A51G (Guard)	<u>152</u>	<u>0</u>	<u>2</u>	<u>0</u>	<u>2</u>	<u>154</u>	<u>27</u>
	221	-1	3	0	2	223	41
<u>Library</u>							
H100L (Library)	13	0	1	0	1	14	3
<u>Res. Dev. Ov'h.</u>							
H50L (Res. Dev. Ov'h)	6	0	0	0	0	6	0
B52A (Wage Standard)	1	3	0	0	3	4	0
<u>Superintendent</u>							
B50A	14	0	1	0	1	15	0
TOTALS	2328	0	14	13	1	2329	351

*NOTE: Absences are given for non-exempt employees only.

VII. ENGINEERING, MAINTENANCE AND CONSTRUCTION DIVISION

A. Mechanical Department

1. Work Orders:

Orders on hand June 14	656
Orders received during period	138
Orders completed during period	160
Balance on hand June 21	634

2. Project Progress Report

Project No.	Title	Date Authorized	Work Started	% Comp.	Est. Comp. Date	Remarks
W50P171R	Lab Rolling Mill 101-B	7-30-47	4-6-48	98%	6-25-48	Holding for additional work on controls Jamison
W50P173R	Shield for Neutron Cryostat	8-20-47	- - -	- -	10-15-48	Waiting final design Gissel
W50P174P	Algae baffles, bridges, etc. for Settling Basin	10-16-47	4-12-48	45%	8-15-48	Work progressing Nichol
W50P208P	Solvent Column Building	2-10-48	2-16-48	- -	6-30-48	Jones project Lewis
W50P210P	Revision to 2nd flr 9207 Y-12	2-10-48	3-22-48	66%	6-30-48	J.A.Jones. Work in progress Hornbaker
W50P198P	Remodel 707-B for colored women's change house	2-25-48	3-1-48	98%	6-30-48	Work in progress Ricker
W50P213P	Painting and renovation of cafeteria, Bldg 708	3-8-48	3-15-48	99%	6-30-48	Canteen painting remains Ricker
W50P220P	Misc. work at Bldg. 104-B H.P. Quonset	3-8-48	3-15-48	96%	6-30-48	Work in progress Ricker
W50P238P	Fume Hood for Bldg 717-P	4-16-48	4-19-48	80%	6-30-48	Work progressing Jackson
W50P253P	Radioisotopes shipping cont.	4-16-48	4-19-48	100%		Complete Nichol
W50P230P	Foundation for corrosion apparatus	4-19-48	4-26-48	80%	7-15-48	Awaiting material Jamison
A50XZ-21	Concrete catch basin 205 Bldg.	4-19-48	4-28-48	100%		Complete Jamison
W50P261R	Carrier for large slugs 706-D	4-21-48	5-10-48	45%	6-30-48	Work progressing Nichol
C-386-MP	Alterations to medical bldg. 719-A	4-27-48	5-3-48	20%	9-1-48	Held up until further notice Ricker
C-419-CR	Thermal Neutron Exposure Chamber	5-6-48	5-10-48	100%	6-30-48	Fabrication 100% complete. Field work to begin 6-21-48 Greens

(Continued on next page)

2. Project Progress Report (Cont'd)

Project No.	Title	Date Authorized	Work Started	% Comp.	Est. Comp. Date	Remarks	
W50P231P	Ambulance Garage, Bldg. 720	5-18-48	5-24-48	35%	7-19-48	Work in progress	Ricker
C-437-CP	Construction of 12 vertical shields	5-21-48	5-28-48	20%	7-23-48	Work progressing	Baker
W50P246P	Electroplating bench and hood	5-19-48	6-7-48	80%	7-1-48	Work in progress	Gissel
C-441-CP	Addition to Bldg. 104	5-19-48	5-24-48	95%	7-19-48	Painting remains undone	Ricker
DS2-19	Women's rest rooms Bldgs. 706-C and 706-D	5-20-48	5-26-48	75%	7-30-48	Work progressing	Nichol
DS2-24	Alteration to liquid waste lines, 206 area	5-20-48	5-26-48	45%	7-30-48	Work progressing	Nichol
W50P278	Installation of M-g in 719-B	5-28-48	6-7-48	75%	6-30-48	Work in progress	Ricker
CR-5	Partition alterations 703-C	6-7-48	5-15-48	90%	6-30-48	Painting remains undone	Ricker
D-50P240	Test cores from Pile	6-8-48	- -	- -	6-23-48	Aligning equipment	Gissel
D52CE-48	Alter waste transfer lines	6-11-48	6-14-48	5%	7-30-48	Work progressing	Nichol
W50P279R	Jug Carrier	6-17-48	- -	- -	7-30-48	To start this week	Nichol
W50P237P	Plant water line connections to New Reservoir (Work to be done by ORNL)	6-17-48	- -	- -	8-30-48	Waiting on J.A.Jones Const. Co. to complete their part of the work	Jackson

3. Filter Plant

a. Water:

Total water metered to Filter Plant	5,364,700 gals.
Total water to waste from Filter Plant	150,050 gals.
Total water to System	5,214,650 gals.

b. Softened Water:

Total water metered to Softeners	396,700 gals.
Total water to waste from Softeners	26,900 gals.
Total softened water to boilers	369,800 gals.

c. Coal:

Coal on hand beginning of week	8,077,419 lbs.
Coal received during week	1,586,630 lbs.
Sub-total	9,664,049 lbs.
Coal burned during week	387,728 lbs.
Coal on hand for week ending June 20, 1948	9,276,321 lbs.

d. Steam:

	<u>No. 1 Boiler</u>	<u>No. 2 Boiler</u>
Hours operated	168 hrs.	168 hrs.
Steam generated	1,643,525 lbs.	879,125 lbs.
Average boiler pressure	92.5 lbs.	92.5 lbs.
Average feedwater temp.	217.4 degs.	217.4 degs.
Average steam temp.	371.1 degs.	369.4 degs.
Pounds blowdown	147,000 lbs.	232,824 lbs.
Total steam generated		2,522,650 lbs.
Maximum demand		24,000 lbs.
Average header pressure		90.7 lbs.

e. Air:

An average of 98# psi was maintained in the Boiler House Receiver.

Average consumption	(est.)	500 CFM
Maximum demand	(est.)	500 CFM

Hours Operated:

No. 1 (Small) Air Compressor	None
No. 2 (Large) Air Compressor	168 hrs.

f. Electricity:

Total power consumed	443,000 KWH
Average plant electric load	2,636.8 kw/hr
Maximum plant demand	(est.) 3,500 KW - 4,100 KVA

No outages on Electric System during week.

4. Authorized Man Days of Work

DIVISION	CRAFT	Carpenters	Sheet Metal	Machinists	Millwrights	Electricians	Pipefitters	Painters	Laborers	Riggers	Util. Mech.	Lead Burn's	Operators	TOTAL
PHYSICS														
Completed this wk.		12	8	1	17	9	3	27	5	4		6		92
Future		12	19	12	48	7	32	103	15			18		266
CHEMISTRY														
Completed this wk.		9	13	6	7	16	11	60	15	1		5		143
Future		102	58	18	47	16	39	47	40			14		381
TECHNICAL														
Completed this wk.		2	2	2	18	16	25	6	3					74
Future		24	4	14	33	19	102	55	8					259
POWER PILE														
Completed this wk.		3	1	9	3	9	9		5					38
Future			11	8	10	14		4	13					60
BIOLOGY														
Completed this wk.		23	9	5	11	23	10	6	3	1		10		101
Future		108	20	37	101	45	40	47		9		64		471
METALLURGY														
Completed this wk.				1	10		1		2		15			29
Future			12	14	20	8	35		4	12				105
OPERATIONS														
Completed this wk.		36	9	25	41	11	44	12	10		2	8	2	200
Future		222	32	37	128	10	92	123	38		49	32	9	772
HEALTH PHYSICS														
Completed this wk.		20	2	4		8	13	12				1		60
Future		96	14	14	12	80	209	65		25				515
HEALTH														
Completed this wk.		20			1			1	13					35
Future		175	14			1	50	159	25					424
GENERAL OFFICES														
Completed this wk.		35	3		1	17		19	44	18			4	141
Future		135	5	1	13	26		80	93		2	40	16	411
SECURITY														
Completed this wk.		9						8						17
Future		29				6		23						58
PERSONNEL & SERVICE														
Completed this wk.		5	10		7	10		9	7					48
Future		47	11		3	34	12	66						173
ENGR., MNT. & CONST.														
Completed this wk.		85	11	10	49	36	54	55	223	6	24		18	571
Future		150	31	42	257	78	49	345	372		65		22	1411
A.E.C.														
Completed this wk.			2											2
Future			10	2										12
DIRECTOR														
Completed this wk.								1						1
Future		3						1						4
Total Completed This Week														1552
Total Future Back Log														5306

B. Engineering Department

1. Special Work Orders Requiring Engineering Service:

DIVISION	Previous Jobs on Hand		Jobs Received During Week		Jobs Complete During Week		Jobs Remaining on Hand		Summary Backlog in Man Days	
	No. of Jobs	Est. Man Days	No. of Job	Est. Man Days	No. of Jobs	Est. Man Days	No. of Jobs	Est. Man Days	Const.	Equip.
Biology	20	1259	2	175	5	185	17	1249	585	664
Chemistry	47	5928	5	490	15	1660	37	4758	1946	2812
E.M.C.	13	2896	4	1790	--	--	28	5574*	5574	--
General Office	1	5	--	--	--	--	1	5	5	--
Health Physics	8	1716	3	280	--	571	11	1425	1145	280
Instrument	2	210	--	70	--	17	2	263	263	--
Mechanical	3	952	--	--	2	910	1	42	--	42
Medical	3	532	--	--	1	16	2	516	516	--
Metallurgy	4	809	1	70	1	70	4	809	733	76
O.R.I.N.S.	4	43	1	14	3	32	2	25	--	25
Operations	16	11943	1	14	--	279	17	11678	10336	1342
Pers. & Service	2	350	2	280	2	347	2	283	283	--
Physics	15	5459	4	154	--	125	19	5488	2472	3016
Plant Protection	2	560	2	350	--	--	4	910	910	--
Power File	18	5047	--	--	2	277	16	4770	1030	3740
Power	11	888	*All jobs shown under E.M.C.							

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B. Engineering Dept. (Cont'd)

DIVISION	Previous Jobs on Hand		Jobs Received During Week		Jobs Complete During Week		Jobs Remaining on Hand		Summary Backlog in Man Days	
	No. of Jobs	Est. Man Days	No. of Jobs	Est. Man Days	No. of Jobs	Est. Man Days	No. of Jobs	Est. Man Days	Const.	Eqpt.
Technical	28	8958	--	--	1	39	27	8919	6102	2817
Training	1	105	--	--	--	--	1	105	105	
TOTAL	198	47660	25	3687	32	4528	191	46819	32005	14814

Available man days per day 108
 Backlog by Department day 433

2. Orders Received in Engineering:

	Emergency	Blanket	Normal	Special	Total
Orders on Hand	0	4	6	105	115
Orders Rec'd During Week	9	19	132	25	185
Orders Processed During Week	9	7	129	44	189
Orders Remaining on Hand	0	16	9	86	111
Orders Completed in Field	9	1	96	18	124

C. Instrument Department

Distribution of Instrument Work (Man Days) Among Divisions:

DIVISION	Instrument Development								Instrument Fabrication							
	Beginning of Week		Received This Wk.		Completed This Wk.		Backlog		Beginning of Week		Received This Wk.		Completed This Wk.		Backlog	
	No. of Jobs	Man Days	No. of Jobs	Man Days	No. of Jobs	Man Days	No. of Jobs	Man Days	No. of Jobs	Man Days	No. of Jobs	Man Days	No. of Jobs	Man Days	No. of Jobs	Man Days
Chemistry	12	258	2	5	3	20	11	243	34	370½	1	12½	2	27	33	356
Biology	7	107	1	3	1	9	7	101	25	161	0	0	0	7	25	154
Physics	4	42	2	32	1	15	5	59	32	184½	0	0	2	15½	30	169
Metallurgy	3	29	0	0	0	2	3	27	0	0	0	0	0	0	0	0
Health Physics	2	29	0	0	0	1	2	28	17	81	0	0	0	4	17	77
Technical	17	156	1	90	1	8	17	258	3	28	0	0	0	2	3	26
Operations	4	86	1	2	0	5	5	83	6	56½	0	0	0	2	6	54½
Power File	6	90	0	0	0	5	6	85	0	0	0	0	0	0	0	0
A.E.C.	1	20	0	0	0	0	1	20	9	38½	0	0	1	3½	8	35
Other	0	1	0	0	0	1	0	0	4	47½	0	0	0	0	4	47½
TOTALS	56	838	7	132	6	66	57	904	130	967½	1	12½	5	61	126	919

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C. Instrument Department (Cont'd)

DIVISION	Instrument Maintenance									
	Beginning of Week		Received This Week		Completed This Week		Backlog		Backlog Summary	
	No. of Jobs	Man Days	No. of Jobs	Man Days	No. of Jobs	Man Days	No. of Jobs	Man Days	No. of Jobs	Man Days
Chemistry	19	20½	44	29	45	31	18	18½	62	617½
Biology	21	19	21	9	19	8	23	20	55	275
Physics	5	6½	5	4	5	4	5	6½	40	234½
Metallurgy	0	0	0	0	0	0	0	0	3	27
Health Physics	23	26½	36	21	39	23	20	24½	39	129½
Technical	23	46	21	17	22	18	22	45	42	329
Operations	33	66½	19	11	18	10	34	67½	45	205
Power Pile	0	0	0	0	0	0	0	0	6	85
A.E.C.	0	0	0	0	0	0	0	0	9	55
Other	0	0	0	0	0	0	0	0	4	47½
TOTALS	124	185	146	91	148	94	122	182	305	2005

Total jobs received during week 154
 Total jobs completed during week 159
 Department Backlog - Instrument Development 65 days
 Department Backlog - Instrument Fabrication 131 days
 Department Backlog - Instrument Maintenance 9½ days

D. Research Shops Department

DIVISION	Beginning of Week		Received During Week		Executed During Week		Status at End of Week	
	No. of Jobs	Estimated Man Hours	No. of Jobs	Estimated Man Hours	No. Jobs Completed	No. Actual Man Hours	Jobs	Estimated
Physics	9	840	10	552	4	476	15	916
Chemistry	20	817	7	524	4	541	23	800
Technical	20	402	4	612	3	410	21	604
Power Pile	11	249	2	377	4	332	9	294
Biology	4	98	3	284	0	80	7	302
Metallurgy	6	399	1	394	1	307	6	486
Health Physics	13	482	5	232	4	238	14	476
Medical	0	0	0	0	0	0	0	0
Operations	1	109	2	306	0	0	3	415
O.R.I.N.S.	2	58	1	120	2	32	1	146
Other AEC Contrs.	3	152	0	0	1	16	2	136
TOTALS	89	3606	35	3401	23	2432	101	4575

Approximately 10 department days backlog.