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HW 22075-DEL

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HANFORD WORKS MONTHLY REPORT

FOR

AUGUST 1951

REPOSITORY PNL
COLLECTION Atmospheric Releases
BOX No. N/A
FOLDER N/A

Compiled By

Department Managers

Classification reviewed for declassification but not unchanged by J. F. Donovan (by M. Wacker) Date 5/12/73

September 24, 1951

Classification Cancelled (Change to Declassified with Deletions
By Authority of RLO-CG-4
WA Snyder 2/3/92
By PG Krusher 2/11/92
PM Eick 2-14-92

HANFORD WORKS

RICHLAND, WASHINGTON

Operated for the Atomic Energy Commission
by the
General Electric Company
under
Contract # [illegible]-31-109-eng-52

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HW 22075 DEL
September 24, 1951

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HANFORD WORKS MONTHLY REPORT

GENERAL SUMMARY

Production Operations

Failures of slugs were reduced slightly to: uranium - 9 and P-10 target - 3. The resulting loss of production time was reduced from 462 to 294 hours.

Operations in the various plants attained the following percentages of forecasts: canning 94%; pile discharge 102.7%; separations 107.3%; concentration 101%; isolation 100%.

Certain transportation and utilities functions were transferred from the Manufacturing Department. Within Manufacturing sections were established responsible, respectively, for Metal Preparation, Reactor and Separations Operations. Within the latter two, Radiation Monitoring is now a function of those sections.

Control of radioactive iodine emission from the separations plants was improved significantly.

Engineering and Technology

In a controlled carbon-dioxide atmosphere, burnout of graphite samples in the F pile was greatly decreased by a small addition of carbon monoxide.

Since 5 of 11 recent slug failures occurred in the end caps, a study is in progress utilizing longer (8") slugs with thicker end caps, as well as heavier walls.

Addition of mercuric nitrate to the uranium nitrate solution on a production test basis has effectively reduced the evolution of radio-iodine subsequent to the dissolving operation.

A rapid, convenient spectrographic method for determination of silicon in aluminum-silicon dip-baths (for uranium slugs) was developed, and found to be precise and accurate enough for routine application.

Design of Redox "analytical line" equipment is virtually complete; design is underway on multi-curie cell equipment for solvent process research.

Expansion and Construction

The Redox Production plant (202-S) was formally transferred to the Manufacturing Department August 16. The 241-S tank farm was essentially completed.

Design of "C" reactor was 77% complete; design of Waste Metal Recovery Facilities is essentially complete, and construction on schedule at 45% completion.

[redacted]

Personnel and Services

The plant turnover rate dropped from 2.48% in July to 2.05% in August. Total employment rose from 8,805 to 8,909.

Total housing applications increased from 659 to 714.

Hanford Guards' Union ratified its contract with the Company. A proposed contract was presented to the Firemen's Union. The electrical linemen returned to work August 14. The supply of ironworkers and plumbers has been increased.

One major (no sub-major) injury occurred during August.

Medical Department costs dropped 17% from June to July, the July costs being 16% under budget. Economies accounted for 10%, delayed billing for 6%.

A new high electrical demand for process work reached 70,650 KW. The area bus system carried 150,858 passengers, a new record.

A new agreement with Northern Pacific Railway provides free pickup and delivery of L.C.L. freight to and from Richland.

Financial

Financial reports for July operations of the Nucleonics Division reflect changes in cost accounting which became effective July 1.

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STAFF

General Manager . . . . . G. R. Prout

Manager, Schenectady Office . . . . . B. R. Prentice

Assistant General Manager . . . . . W. E. Johnson

Assistant to the General Manager, General Administration . . . G. G. Lail

Assistant to the General Manager, Technical . . . . . W. I. Patnode

Assistant to the General Manager, Salary Administration . . . . J. R. Rue

Counsel . . . . . G. C. Butler

Manager, Finance . . . . . W. W. Smith

Manager, Employee and Public Relations . . . . . H. E. Callahan

Director, Radiological Sciences . . . . . H. M. Parker

Director, Medical . . . . . W. D. Norwood

Manager, Engineering . . . . . A. B. Greninger

Manager, Manufacturing . . . . . C. N. Gross

Manager, Utilities and General Services . . . . . F. E. Baker

Manager, Community Real Estate and Services . . . . . L. F. Huck

FORCE REPORT AUGUST 1951

	EXEMPT		NON EXEMPT		TOTAL	
	7-31-51	8-31-51	7-31-51	8-31-51	7-31-51	8-31-51
GENERAL	22	24	137	57	159	81
LAW	2	2	9	11	11	13
ENGR. DEPT						
Design & Const. Section						
Const.	12	12	28	29	40	41
Design	239	227	297	323	536	550
No. Richland Realty	17	17	111	112	128	129
Project Engr.--MJ	19	25	24	22	43	47
Project Engr.--MD	49	50	90	87	139	137
Technical Section						
Administrative	6	7	3	4	9	11
Pile Tech.	118	149	137	154	255	303
Separations Tech.	104	117	58	53	162	170
Technical Services	37	36	137	151	174	187
Analytical	95	100	283	287	378	387
MANUFACTURING DEPT.						
General	15	35	5	20	20	55
Industrial Engr.	10	10	7	13	17	23
Production Divs.						
"P"	78	0	297	0	375	0
"S"	164	0	595	0	759	0
Plant Utilities & Maint.						
Power	91	0	478	0	569	0
Maintenance	56	0	318	0	374	0
Electrical	54	0	260	0	314	0
Instrument	56	0	259	0	315	0
Transportation	58	0	541	0	599	0
New Sections						
Reactor Section	0	171	0	853	0	1024
Metal Prep. Section	0	55	0	318	0	373
Separations Section	0	236	0	1021	0	1257
MEDICAL SERVICES	45	42	236	228	281	270
RADIOLOGICAL SCIENCES DEPT.						
General	6	5	3	2	9	7
Operational	56	58	180	185	236	243
Development	40	48	94	92	134	140
Biology	33	33	47	47	80	80
FINANCIAL DEPARTMENT						
D. & C. Acctg.	11	10	87	88	98	98
Mfg. Acctg.	9	9	70	70	79	79
Gen. Acctg.-Acctg.(Inc.Med. Acctg.)	19	22	101	107	120	129
Gen. Acctg.-Payroll	10	10	101	107	111	117
Comm. Acctg.*	0	6	0	26	0	32
EMPLOYEE & PUBLIC RELATIONS	38	37	82	78	120	115

*Totals for 7-31-51 shown with Comm. Real Estate & Serv.

Cont. Page # 2

	EXEMPT		NON EXEMPT		TOTAL	
	7-31-51	8-31-51	7-31-51	8-31-51	7-31-51	8-31-51
UTILITIES & GENERAL SERVICES						
Elect Dist. & Telephone Section	0	30	0	150	0	180
Transportation Section	0	46	0	448	0	494
Plant Sec. & Serv. Section						
Patrol & Security	58	57	570	586	628	643
Safety & Fire	41	42	108	110	149	152
Office Services	27	28	282	274	309	302
Purchasing & Stores Section						
Purchasing	68	67	120	122	188	189
Stores	20	19	199	206	219	225
COMM. REAL ESTATE & SERV. DEPT.	207	192	461	434	668	626
TOTAL	1990	2034	6815	6875	8805	8909

PERSONNEL DISTRIBUTION - AUGUST 1951

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
GENERAL												
Exempt Pers.	-	-	-	-	-	-	-	-	-	-	24	24
Cler.& other non-exempt	-	-	-	-	-	-	-	-	-	-	57	57
Total	-	-	-	-	-	-	-	-	-	-	81	81
LAW												
Exempt Pers.	-	-	-	-	-	-	-	-	-	-	2	2
Clerical	-	-	-	-	-	-	-	-	-	-	11	11
Total	-	-	-	-	-	-	-	-	-	-	13	13
ENGR. DEPT.												
Design & Const. Section												
Construction												
Supervisors	-	-	-	-	-	-	-	-	-	-	8	8
Inspectors & Analyst	-	-	-	-	-	-	-	-	-	-	4	4
Clerical	-	-	-	-	-	-	-	-	-	-	29	29
Total	-	-	-	-	-	-	-	-	-	-	41	41
Design												
Supervisors	-	-	-	-	-	-	30	-	-	12	40	82
Other Exempt	-	-	-	-	-	-	33	-	-	23	89	145
Draftsmen & Designers	-	-	-	-	-	-	2	-	-	10	61	73
Clerical	-	-	-	-	-	-	28	-	-	22	141	191
Others	-	-	-	-	-	-	23	-	-	3	33	59
Total	-	-	-	-	-	-	116	-	-	70	364	550

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
North Richland, Realty												
Supervisors	-	-	-	-	-	-	-	-	-	17	-	17
Janitors	-	-	-	-	-	-	-	-	-	14	-	14
Clerical	-	-	-	-	-	-	-	-	-	57	-	57
Others	-	-	-	-	-	-	-	-	-	41	-	41
Total	-	-	-	-	-	-	-	-	-	129	-	129
Project Engr.												
Supervisors	-	-	-	-	-	-	-	-	-	20	-	20
Engineers	-	-	-	-	-	-	-	-	-	55	-	55
Draftsmen & Designers	-	-	-	-	-	-	-	-	-	49	-	49
Clerical	-	-	-	-	-	-	-	-	-	38	-	38
Others	-	-	-	-	-	-	-	-	-	22	-	22
Total	-	-	-	-	-	-	-	-	-	184	-	184
Technical Section												
Tech. General												
Supervisors	-	-	-	-	-	-	-	-	-	-		7
Clerical	-	-	-	-	-	-	-	-	-	-	4	4
Total	-	-	-	-	-		-	-	-	-	11	11
Pile Tech.												
Supervisors	2	-	-	-	-	-	-	9	-	-	-	11
Metallurgists & Engrs.	19	4	1	5	17	-	2	34	-	-	2	84
Physicists	-	1	3	4	4	-	-	13	-	-	-	25
Engr. Asstsa.	17	1	2	2	4	-	-	3	-	-	-	29
Tech. Grads.	16	5	2	8	11	-	1	12	-	-	-	55
Technologists	7	-	-	3		-	-	1	-	-	-	11
Laboratory Asstsa.	19	2	-	6	9	-	-	16	-	-	3	55
Clerical	6	1	-	4	1	-	-	11	-	-	2	25
Engr. Asst.	-	2	-	-	2	-	-	4	-	-	-	8
Total	92	16	8	32	48	-	3	103	-	-	7	303

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	20 -W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
Separations Tech.												
Supervisors	-	-	-	-	-	1	5	14	-	-	-	20
Chemists & Chem. Engrs.		-	-	-	-	4	16	68	-	-	-	88
Other Exempt	-	-	-	-	-	-	-	9	-	-	-	9
Tech. Grads.	-	-	-	-	-	3	8	7	-	-	-	18
Clerical	-	-	-	-	-	-	6	9	-	-	1	16
Operators	-	-	-	-	-	-	1	[illegible]	-	-	-	1
Other non-exempt	-	-	-	-	-	-	4	14	-	-	-	18
Total	-	-	-	-	-	8	40	121	-	-	1	170
Technical Services												
Supervisors	-	-	-	-	2	-	1	8	-	-	[illegible]	14
Other Exempt	-	-	-	-	[illegible]	-	1	10	-	-	4	22
Technologists, Tech. Grads.	-	-	-	-	6	[illegible]	1	10	-	-	-	17
Clerical	-	-	1	-	3	-	3	44	-	-	4[illegible]	94
Others	-	-	-	-	9	-	6	23	-	-	2	40
Total	-	-	1	-	27	-	12	95	-	-	52	187
Analytical Tech.												
Supervisors	1	-	-	2	-	6	18	16	-	-	-	43
Chemists & Engrs.	7	1	1	1	-	-	10	37	-	-	-	57
Technologist, Tech. Grads.	4	-	[illegible]	2	-	10	40	40	-	-	-	98
Laboratory Assts.	4	-	-	8	-	35	93	35	-	-	-	175
Clerical	-	-	-	1	-	2	4	7	-	-	-	14
Total	16	1	1	14	-	53	167	135	-	-	-	387

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
MANUFACTURING DEPT.												
General												
Supv.	-	-	-	-	-	-	-	-	-	-	13	13
Other Exempt	1	-	-	1	-	-	1	-	1	2	16	22
Clerical	-	-	-	-	-	-	-	-	-	2	15	17
Tech. Grads.	-	-	-	-	-	-	-	-	-	-	1	1
Others	-	-	-	-	-	-	-	-	-	2	-	2
Total	1	-	-	1	-	-	1	-	1	6	45	55
Industrial Engr.												
Supv.	-	-	1	-	-	-	1	1	-	-	1	4
Other Exempt	-	-	1	-	-	-	1	4	-	-	-	6
Tech. Grads.	-	-	3	-	-	-	2	6	-	-	-	11
Clerical	-	-	-	-	-	-	-	-	-	-	1	1
Others	-	-	-	-	-	-	-	-	-	-	1	1
Total	-	-	5	-	-	-	4	11	-	-	3	23
Reactor Section												
Supv.	26	45	34	35	-	-	-	-	-	-	-	140
Non Supv. & Engrs.	3	5	3	7	-	-	-	1	3	-	6	28
Supv. In Training	2	1	-	-	-	-	-	-	-	-	-	3
Operators	35	62	32	33	-	-	-	-	-	-	-	162
Craftsmen	60	92	82	49	-	-	-	-	-	-	-	283
Power Operators	76	111	73	76	-	-	-	-	-	-	-	336
Clerical	7	9	9	10	-	-	-	-	-	-	4	39
Others	2	3	5	2	-	-	-	-	2	-	-	14
Tech. Grads.	4	8	3	3	-	-	-	-	-	-	1	19
Total	215	336	241	215	-	-	-	1	5	-	11	1024

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
Metal Preparation Section												
Supervisors	-	-	-	-	2	-	-	37	-	-	1	40
Non Supv. & Engrs.	-	-	-	-	-	-	-	13	-	-	-	13
Supv. In Training	-	-	-	-	-	-	-	2	-	-	-	2
Operators	-	-	-	-	-	-	-	123	-	-	-	123
Craftsmen	-	-	-	-	24	-	-	101	-	-	8	133
Power Operators	-	-	-	-	8	-	-	11	5	-	-	24
Clerical	-	-	-	-	1	-	-	20	-	-	1	22
Others	-	-	-	-	2	-	-	7	-	-	1	10
Tech. Grads.	-	-	-	-	1	-	-	5	-	-	-	6
Total	-	-	-	-	38	-	-	319	5	-	11	373
Separations Section												
Supv.	-	-	-	-	-	32	120	-	-	-	2	154
Non Supv. & Engrs.	-	-	-	-	-	2	57	-	-	-	4	63
Supv. In Training	-	-	-	-		2	17	-	-	-	-	19
Operators	-	-	-	-	-	200	375	-	-	-	-	575
Craftsmen	-	-		-	-	61	215	-	-	-	-	276
Power Opers.	-	-	-	-	-	22	79	-	-	-	-	101
Clerical	-	-	-	-	-	8	41	-	-	-	4	53
Others	-	-	-	-	-	4	5	-	-	-	-	9
Tech. Grads.	-	-	-	-	-	2	5	-	-	-	-	7
Total	-	-	-	-	-	333	914	-	-	-	10	1257
MEDICAL SERVICES DEPT.												
Supervisors	-	-	-	-	-	-	-	-	-	-	22	22
Physicians	-	-	-	-	-	-	-	-	2	2	8	12
Other Exempt	-	-	-	-	-	-	-	-	-	-	8	8
Technicians	-	-	-	-	-	-	-	-	2	3	12	17
Nurses	5	4	4	1	-	4	7	2	-	3	61	91
Clerical	1	-	-	-	-	-	-	-	4	6	36	47
Others	-	-	-	-	-	-	-	-	-	1	72	73
Total	6	4	4	1	-	4	7	2	8	15	219	270

RADIOLOGICAL SCIENCES	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
General												
Supervisors	-	-	-	-	-	-	-	-	-	-	3	3
Other Exempt	-	-	-	-	-	-	-	-	-	-	2	2
Clerical	-	-	-	-	-	-	-	-	-	-	2	2
Total	-	-	-	-	-	-	-	-	-	-		7
Operational												
Supervisors	1	1	1	2	-	1	5	8	-	-	2	21
Other Exempt	4	4	4	3	-	4	10	5	-	-	3	37
Clerical	-	-	-	1	-	-	1	1	-	-	1	4
Others	17	16	11	12	-	21	46	51	7	-		181
Total	22	21	16	18	-	26	62	65	7	-	6	243
Development												
Supervisors	-	-	-	-	-	2	7	4	-	-	1	14
Other Exempt	-	-	-	-	-	2	18	13	-	-	1	34
Clerical	-	-	-	-	-	1	2	2	-	-	-	5
Other non exempt	-	-	-	-	-	21	37	17	-	-	12	87
Total	-	-	-	-	-	26	64	36	-	-	13	140
Biology												
Supervisors	-	-	6	-			-	-	-	-	-	6
Other Exempt	-	-	27	-	-	-	-	-	-	-	-	27
Clerical	-	-	4	-	-	-	-	-	-	-	-	4
Others	-	-	43	-	-	-	-	-	-	-	-	43
Total	-	-	80	-	-	-	-	-	-	-	-	80

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
FINANCIAL DEPT.												
Gen. Acctg. (Inc.Med.Acctg.)												
Exempt	-	-	-	-	-	-	-	-	-	2	20	22
Clerical	-	-	-	-	-	-	-	-	4	22	81	107
Total	-	-	-	-	-	-	-	-	4	24	101	129
Gen. Acctg.-Payroll												
Supervisors	-	-	-	-	-	-	-	-	-	-	7	7
Other Exempt	-	-	-	-	-	-	-	-	-	-	3	3
Clerical	-	-	-	-	-	-	-	-	-	-	107	107
Total	-	-	-	-	-	-	-	-	-	-	117	117
D. & C. Acctg.												
Supervisors	-	-	-	-	-	-	-	-	-	-	10	10
Clerical	-	-	-	-	-	-	-	-	-	-	88	88
Total	-	-	-	-	-	-	-	-	-	-	98	98
Comm. Acctg.												
Supervisors	-	-	-	-	-	-	-		-	-	6	6
Clerical	-	-	-	-	-	-	-	-	-	-	26	26
Total	-	-	-	-	-	-	-	-	-	-	32	32
Mfg. Acctg.												
Supv.	-	-	-	-	-	-	-	-	-	-	8	8
Other Exempt	-	-	-	-	-	-	-	-	-	-	1	1
Clerical	-	-	-	-	-	-	-	-	-	-	70	70
Total	-	-	-	-	-	-	-	-	-	-	79	79

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
UTILITIES & GEN SERVICES												
Plant Sec. & Services												
Security & Patrol												
Supervisors	5	5	6	5	-	5	10	7	6	-	4	53
Other Exempt	-	-	-	-	-	-	-	-	4	-	-	4
Patrolmen	62	49	65	43	-	67	156	83	15	-	24	564
Clerical	-	-	-	-	-	-	-	-	19	-	1	20
Seamstress	-	-	-	-	-	-	-	-	2	-	-	2
Total	67	54	71	48	-	72	166	90	46	-	29	643
Safety & Fire												
Supervisors	14	-	-	-	4	-	4	4	8	-	-	34
Engineers	-	2	-	1	-	2	-	2	-	-	1	8
Firemen	47	-	-	-	8	-	20	16	13	-	-	104
Clerical	-	1	-	1	-	1	-	1	-	-	2	6
Total	61	3	-	2	12	3	24	23	21	-	3	152
Office Services												
Supervisors	-	-	1	-	-	1	3	1	1	-	19	26
Procedures Analysts	-	-	-	-	-	-	-	-	-	-	2	2
Laundry Operators	-	-	-	-	-	-	2	-	-	-	1	3
Janitors & Servicemen	9	4	6	5	2	5	20	13	4	-	[illegible]	113
Clerical	-	-	-	-	-	-	1	-	-	-	42	43
Others	-	-	-	-	-	-	41	-	-	-	74	115
Total	9	4	[illegible]	5	2	6	67	14	5	-	139	302
Purchasing & Stores												
Purchasing												
Supervisors	-	-	-	-	-	-	-	-	-	-	13	13
Other Exempt	-	-	-	-	-	-	-	-	26	-	28	54
Clerical	-	-	-	-	-	-	-	-	-	-	97	97
Rotational Trainee	-	-	-	-	-	-	-	-	24	-	1	25
Total	-	-	-	-	-	-	-	-	50	-	139	189

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
Stores												
Supervisors	1	-	-	-	-	-	-	-	-	2	16	19
Clerical	12	-	-	-	-	-	-	-	-	26	52	90
Others	21	-	-	-	-	-	1	1	-	7	86	[illegible]
Total	34	-	-	-	-	-	1	1	-	35	154	225
Elect. Dist. & Telephone Section												
Supv.	-	-	-	-	-	-	-		15	-	8	23
Other Exempt	-	-	-	-	-	-	-	-	3	-	4	7
Craftsmen	-	-	-	-	-	-		-	60	-	31	91
Clerical	-	-	-	-	-	-	-	-	4	-	24	28
Operators	4	4	4	4	-	-	-	-	12	-	-	28
Others	-	-	-	-	-	-	-	-	2	-	1	3
Total	4	4	4	-	-	-	-		96	-	68	[illegible]
Transportations Section												
Supv.	2	-	3	2	-	1	-	-	3	-	31	42
Other Exempt	-	-	-	-	-	-	-	-	-	-	4	4
Bus Drivers	-	-	-	-	-	-	-	-	-	-	165	165
Journeymen	3	-	-	8	-	-	-	-	6	-	62	79
Trainmen	-	-	-	-	-	-	-	-	26	-	-	26
Servicemen	7	-	2	-	1	-	-	-	1	-	17	28
Equipment Opers.	6	-	16	-	1	-	-	-	-	-	27	50
Clerical	-	-	1	-	-	-	-	-	-	-	23	24
Others	7	-	8	12	-	8	-	-	1	-	40	76
Total	25	-	30	22	2	9	-	-	37	-	369	494

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
EMPL. & PUBLIC RELATIONS DEPT.												
Supervisors	-	-	-	-	-	-	-	-	-	-	24	24
Empl. Rel. Counselor	-	-	-	-	-	-	-	-	-	-	1	1
Other Exempt	-	-	-	-	-	-	-		-	-	12	12
Clerical	-	-	-	-	-	-	-	-	-	-	63	63
Others	-	-	-	-	-	-	-	-	-	-	15	15
Total	-	-	-	-	-	-	-	-	-	-	115	115
COMM. REAL ESTATE & SERVICES DEPT.												
Supervisors	-	-	-	-	-	-	-	-	-	14	113	127
Other Exempt	-	-	-	-	-	-	-	-	-	-	10	10
Firemen	-	-	-	-	-	-	-	-	-	23	32	55
Patrolmen	-	-	-	-	-	-	-	-	-	15	23	38
Journeymen	-	-	-	-	-	-	-	-	-	-	160	160
Servicemen	-	-	-	-	-	-	-		-	-	45	45
Truck Drivers	-	-	-	-	-	-	-	-	-	-	33	33
Power Operators	-	-	-	-	-	-	-	-	-	-	34	34
Clerical	-	-	-	-	-	-	-	-	-	-	70	70
Others	-	-	-	-	-	-	-	-	-	-	54	54
Total	-	-	-	-	-	-	-	-	-	52	574	626
GRAND TOTAL	546	443	468	362	129	540	1648	1016	285	515	2957	8909

MANUFACTURING DEPARTMENT
AUGUST 1951

SUMMARY

Effective August 1, 1951 the Manufacturing Department was organized, continuing the activities of the previous Manufacturing Divisions, except for certain transportation and utilities functions. The area activities were established as the responsibility of a Section Manager for: the Metal Preparation Section, the Reactor Section, and the Separations Section. Each section was subdivided into appropriate units embracing the organizational components of Operations, Plant Engineering, and Process. Arrangements were completed for the inclusion of Radiation Monitoring Units within the Reactor and Separations Sections, with similar work being done as a staff function in the Metal Preparation Section. A Manufacturing Manager's Staff was created.

Concurrently, the organization nomenclature was revised in compliance with instructions from the Office of the President regarding application of organization nomenclature to the General Electric Company.

The Metal Preparation Section production of classified slugs was 94 per cent of forecast due to less than expected yield during training of new personnel. The significant yields were: canning, 71.5 per cent; machining, 76.7 per cent; melt plant, 90.2 per cent; and solid metal, 93.3 per cent.

Production of the Reactor Section was adversely affected by the failure of nine uranium and three P-10 target slugs, making a total of 42 uranium and 12 P-10 target slugs to months end. Despite the 294.4 hours outage for correction of slug failures, input production was 106.4 per cent of forecast and material discharged was 102.7 per cent. A total of 86.3 tons was discharged at the goal value.

Separations Section production in the canyon buildings was 7.3 per cent above schedule, and the concentration buildings exceeded schedule by 1.0 per cent. The isolation building production of 97 regular runs, 2 acid washes and 9 special charges represented 100 per cent of schedule. Average cooling time was 43 days, and average purity was 99.1 per cent.

The first cycle waste evaporator operated at 16 per cent above forecast at an average rate of 603 gallons of condensate per hour and 72.4 per cent volume reduction.

C. N. GROSS, MANAGER
MANUFACTURING DEPARTMENT

CN Gross:sj

MANUFACTURING DEPARTMENT

PATENT REPORT SUMMARY
FOR
MONTH OF AUGUST 1951

Richland, Washington
September 12, 1951

All persons engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work during the period covered by this report except as listed below. Such persons further advise that, for the period therein covered by this report, notebook records, if any, kept in the course of their work have been examined for possible inventions or discoveries.

INVENTOR	TITLE
F. D. Atkinson R. Overson	Semi-automatic Slug Canning Machine-Tower Model
R. H. Albright R. Overson	Slug Component Automatic Pre-heat Machine-Tower Model
R. H. Albright R. Overson	Slug Component Automatic Pre-heat Machine-Open Pot Model

C. N. GROSS, MANAGER

MANUFACTURING DEPARTMENT

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2.

[redacted]

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Section 10 Approved By [illegible]
S. F. Accountability

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HW-22075-DEL

MANUFACTURING DEPARTMENT
METAL PREPARATION SECTION
AUGUST 1951

I. RESPONSIBILITY

Concurrent with the reorganization of the Manufacturing Department, the Metal Preparation Section was established. The internal organization of this Section consists of the Operations Unit, a continuation of the former 300 Area P Division; Plant Engineering, consisting of the former Power, Maintenance, Instrument, Electrical and Transportation Divisions. In the Plant Engineering Unit, Power, Maintenance and local Transportation functions were combined under one head and Instrument, Electrical and Mechanical Development Shop functions were combined under another head.

II. ACHIEVEMENT - OPERATIONS UNIT

Operating Experience

1. Statistics

	July	August	To Date 1951
Billets Produced (Tons)	14	20	156
Bare Pieces Machined (Tons)	73	77	634
Briquettes Produced (Tons)	11	12	998
Oxide Burned (Weight Out Tons)	4	2	24
Acceptable Pieces Canned (Tons)	90	90	702
Melt Plant Billet Yield (%)	87.8	90.2	88.85
Melt Plant Solid Yield (%)	93.8	93.3	94.4
Machining Yield (%)	79.5	76.7	78.3
Chip Recovery Yield (%)	88.9	83.8	88.0
Canning Yield (%)	77.0	71.5	82.1
Autoclave Frequency (No./M)	.04	.06	.10

2. Activities

The decrease in the Melt Plant billet yield was largely the result of the continued use of a high proportion of briquettes in the material processed. The solid yield was made possible by a complete absence of broken stopper rods. The backlog of turnings which was accumulated during the outage of the chip recovery briquetting press in July was processed during August. At month end Chip Recovery and the Melt Plant were operating on a current basis.

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The uranium machined during the month was predominantly U type material which had been rolled during May and June. The general quality of this material was poor. Defects consisted of irregular surfaces, seams, cracks, and elipticity. It was necessary to scrap several rods because of severe radial cracks.

Canning production was 8% under the forecast due principally to the decreased yield. Factors adversely affecting the yield were: 7% rejects for deviation from standard process, 8% for marred surfaces, 5% for non seating, and 8% for miscellaneous reasons. The increase in the number of pieces rejected because of deviations from standard process and for marred surfaces is attributed to the training of a large number of new operators. The non seating difficulty was generally found to be due to temperature control difficulties in the canning pot.

None of the slugs tested for penetration during the month were found to be penetrated to within .015" of the outer surface of the can wall. Analysis of the three autoclave failures which occurred during the month revealed that two were the result of a defect in the closure and the third was caused by a defect near the base of the can.

The 305 test pile operated normally throughout the month. Sixty-six routine and 100 special tests were run. Approximately one week was devoted to control rod re-calibration.

3. Special Operations

During the month, 1956 prison pieces were canned. In addition 86 man hours were devoted to the fabrication of special request materials.

4. Schedule Variance

The production of machined bare slugs was approximately 9 per cent below the forecasted amount. Machining production was adversely affected by a failure to procure the forecasted manpower.

The canning production was 8% below the forecast, caused mainly by the decreased canning yield. To meet production schedules, operation of a canning line on the 4-12 shift was started on August 27.

Equipment Experience

Due to apparent increased porosity of the crucibles used in the bronze furnaces, the life of the heating elements in these furnaces has decreased alarmingly. The vendors were contacted but could not present any immediate remedy. Several methods of diluting and removing the corrosive chloride fumes which penetrate the crucibles are being investigated.

Improvements

All people in the Operations Unit engaged in work which might be expected to result in inventions or discoveries have reported that no inventions or discoveries were made during the period covered by this report.

[redacted]

[redacted]

ACHIEVEMENT - PLANT ENGINEERING UNIT

Operating Experience

1. Statistics - Power

384 Building

Maximum steam generated	15,000	lb/hr.
Steam generated - Total	7,209,700	lb.
Steam generated - Average rate	9,690	lb/hr.
Coal consumed - Total (estimate)	396	tons

300 Sanitary and Fire System

Sanitary water from 3000 Area	33,618,300	gal.
Well water pumped - Total	17,274,000	gal.
Average rate	1,140	gpm.
Chlorine residual	.44	ppm.

White Bluffs Ice Plant

Ice manufactured	1,362,000	lb.

101 Building

Coal consumed	80	tons

2. Statistics - Instrument

Current shop work loads consist of:

	Man Hours	Man Weeks
3717 Building Instrument Machine Shop	5424	9-1/2
3717 Building Electronic Fabrication Shop	3554	14
101 Building Mechanical Development Shop	4500	4-1/2

3. Activities

313 Building

A group of 100 aluminum slug cans were tested by the Instrument group. No leak rates greater than 10^{-6} cc. per second were found.

The overhaul and repair of the chip recovery press was completed. A steel sleeve, approximately 18 inches in diameter, was shrunk over the shouldered main lift piston to replace the scored and worn original surface. The main cylinder was machined and guide bearings were fabricated and installed.

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314 Building

The Class A overhaul of the Cochrane-Bly saw was completed. Two small leaks in the piping were found which allowed cutting oil to get into the hydraulic oil reservoir. This caused the saw to jump when a slug of cutting oil passed through the relief valve in the hydraulic oil lines.

When the gear box was taken down, one bearing and two gears were found to be in bad condition. They were restored to a workable condition and replaced. New parts are on order.

Equipment Experience

1. Operating Continuity

A broken post indicator valve on the Fire and Sanitary loop was replaced on August 18.

No. 1 Boiler was overhauled, inspected, and tested, and is now ready for winter service. A complete overhaul of No. 2 Boiler was started August 16, and is 50 per cent complete.

The process cycle clock was found to be incorrect when checked on August 9. Investigation disclosed that the drive motor was running in a reverse direction. A worn ratchet was repaired to minimize the possibility of a recurrence.

Improvements

1. Adoptions

The Worthington pump impellers in the Gisholt Lathe coolant pump in the 313 Building were repaired by turning the packing sleeve on the bronze impeller and shrinking on a stainless steel sleeve for packing to wear against. The bronze sleeve was rapidly cut by the coolant fluid, causing frequent shut-down to replace the impeller. By shrinking on the stainless steel sleeve, the working life is extended considerably.

A prototypic Logarithmic Beckman micro-microammeter has been completed and installed in the 108-B Building.

Plant Development and Expansion

1. Project Status

Approval of funds was received and moving of the 101 Building Mechanical Development Shop to temporary quarters in the 100-D Area was started on August 27.

Project C-433 - Addition to Power House and Pumping Station

A review of the proposed Combustion Control System for the two additional boilers was made, and comments were forwarded to the Plant Power Engineer.

[redacted]

2. Industrial Engineering and Studies

A tentative floor plan arrangement has been determined for the 105-C Building temperature mapping equipment. The assistance of the Schenectady Consulting Laboratory has been requested on the design and fabrication of the Mercury Jet Switch.

Reports Issued

Report No. HW-21748 had been prepared on the G. E. High Temperature Ionization Chamber tested in the 100-F Area pile.

III. PERSONNEL

Force Changes

	Monthly	Weekly	Total
Beginning of Month	53	295	348
End of Month	55	323	378
Net Increase	2	28	30

The following appointments were made effective during August, 1951:

W. M. Mathis, Manager, Metal Preparation Section
E. Hilgeman, Superintendent, Plant Engineering
W. W. Windsheimer, Superintendent, Operations

W. M. Mathis, Manager
Metal Preparation Section

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REACTOR SECTION
MANUFACTURING DEPARTMENT
AUGUST, 1951

I. RESPONSIBILITY

Effective August 1, 1951, concurrent with the reorganization of the Manufacturing Department and the application of the new organization nomenclature, the Reactor Section was established and assigned over-all responsibility for manufacturing activities in the 100 Areas. In discharging this responsibility, the Section organization is subdivided into the following three units:

Operations Unit: comprised of the production facilities and personnel formerly assigned to the P Division in the 100 Areas; operates the 100 Area reactors and directly associated facilities.

Plant Engineering Unit: comprised of the operating and service facilities and personnel in the 100 Areas formerly assigned to the Electrical, Instrument, Maintenance, Power, and Transportation Divisions, with the exception of the electric utility functions and personnel in Electric Distribution; operates the 100 Area water and power plant facilities; provides mechanical, electrical, instrument, transportation and general maintenance services for all 100 Area facilities.

Process Unit: comprised of the personnel formerly assigned to the P Division Process organization; controls Reactor Section processes to insure adherence to standard procedures and specifications; makes improvements by application of available information and know-how; administers section projects and provides related liaison services.

II. ACHIEVEMENT

Operating Experience

Total Reactor production (input) was 12.5% over that for July and 6.4% over the forecast. A total increase of 134 MW over previously established maximum operating levels in the reactor areas was achieved during the month of August. However, failure of nine uranium and three P-10 target slugs adversely affected total production and required a total outage time of 294.4 hours for correction.

[redacted]

Reactor Section
Manufacturing Department
August, 1951

Production Summary	B	D	DR	H	F	Total or Average
Reactor Time Operated Efficiency (%)	78.2	82.5	95.6	79.0	93.0	85.7
Reactor Outage Time (Hours						
Plutonium Production	158.4	119.5	27.1	53.8	45.7	404.5
H-10 Production	-	-	-	80.1	-	80.1
Production Tests	4.0	11.0	6.0	22.5	6.0	49.5
Total	162.4	130.5	33.1	156.4	51.7	534.1
Reactor Unscheduled Outage Time (Hours)	103.8	106.9	0	115.8	3.5	330.0
Metal Discharged (Tons)	14.68	7.16	13.17	24.45	26.84	86.3
Water Pumped - Bldg. 181 (GPM Average)	39,616	86,788	45,744	44,316		216,464
Steam Generated (M lbs.)	94,604	180,680	79,656	108,084		463,024
Coal Consumed (Tons)	6,018	11,780	5,056	7,248		30,102

A gain of 134 MW in maximum reactor levels was achieved during the month despite seasonal high inlet water temperatures. The gains resulted principally from the following:

a. The major portion of a program to increase water flows and reduce outlet water temperatures by installing orifices in the central zones of the B, D, DR and F Reactors was completed.

b. Process water pressure increases during the month at B, D, and F Reactors resulted in increased allowable delta temperatures for all tubes of these Reactors. This pressure increase was accomplished by increasing the Building 190 pump discharge pressures. The pressures at 100-B and 100-F were increased during August to the maximum allowable. Steam flows of up to 30,000 pounds per hour per area were necessary to attain these increases.

c. Increased flattening was achieved through improved poison distribution.

d. Further recovery of graphite thermal conductivity damage occurred.

e. Improved techniques in reactor operation reduced cyclic temperature distribution oscillations which had formerly resulted in minor power reductions.

Water treatment and chemical feeds followed a normal pattern in all 100 Areas during August with the exception of 100-B Area where construction activity near the River Pump House caused periodic water turbidity increases requiring the use of extra coagulant.

Special request material (including Chemical 68-56 but excluding H-10) was charged into 30 tubes and discharged from 12 tubes during the month.

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Reactor Section
Manufacturing Department
August, 1951

Equipment Experience

The general mechanical condition of the reactor components and equipment continued good throughout the month. A total of 32.1 hours unscheduled reactor outage time resulted from equipment failures as follows:

a. Faulty panellit gauge calibration resulted in an outage of 0.1 hour at B Reactor on August 7.

b. A partially plugged orifice screen resulted in an outage of 22.5 hours at H Reactor on August 12. The tube involved was #2376 which was being supplied with dichromate-free water, in accordance with PT-105-453-P (Sodium Dichromate Elimination Tests).

c. Parting of the lower ten feet of No. 10 VSR during withdrawal for a start-up resulted in an outage of 9.5 hours at B Reactor on August 29.

Repairs to eliminate erratic BGST temperature readings experienced at DR Reactor during July were initiated. Investigation revealed that all iron wires in the iron-constantan thermocouples were badly corroded.

Repairs to two 800 hp process pump motors, No. 6 at Building 190-B and No. 12 at Building 190-D which failed during July and May respectively, were completed during the month.

Temporary repairs to the expansion joint in the west half of 107-H basin were completed during Autust using oakum rope, asphalt and "Genesco" mastic sealer.

Increases in the Reactor power levels and process water pressures have necessitated considerable work in the recalibration of pressure monitoring gauges. In Building 105-B, new Bourdon tubes were installed in 160 gauges to convert them from 50 to 100 psi span. Power level calculators in all 100 Areas have reached the limit of their present design range and work is proceeding to redesign them for higher levels.

An annual inspection of one of the boiler units in each 100 Area was made by a certified inspector on August 2 and 3. All were reported in very good condition.

A service engineer of the Worthington Pump Company inspected the Building 190-DR process pump turbines and directed corrective measures necessary to make the governor mechanisms function properly.

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Reactor Section
Manufacturing Department
August, 1951

Equipment Experience (Continued)

Work of dismantling three barometric condensers located at Building 185-D and preparing them for shipment to another project was in progress during the month.

Improvements

The work of installing temperature deviation recorders in the Building 105-B and D water monitoring panels was completed. This recorder indicates how the center of activity in the unit changes with rod configuration.

No inventions or discoveries were made by personnel of the Reactor Section during August.

Plant Development and Expansion

The status of currently active Reactor Section projects is summarized below:

C-411 (J Slug Storage and Shipping Facilities)
Directive No. HW-230, Modification No. 1, was received from the Atomic Energy Commission. Modification of the 105-H Transfer Area is essentially complete. Procurement of special equipment for the project is complete with the exception of shipping casks.

C-420 (CO_2 Bulk Storage Facilities - 105-B, F, D-DR)
Work at F Area is approximately 30% complete. A stop-charge notice was issued August 11, suspending work as it was estimated that the project could not be completed with the funds authorized or within the directive completion date. The Atomic Energy Commission was advised of this action.

C-424 (Water Quality Experimental Program -D) - 80% complete.

C-431 (100-C Plant)
The design of the reactor and its associated equipment is approximately 85% complete and 70% approved. The Building 105-C design is approximately 75% complete and 55% approved.

Pouring of concrete for the various components of Building 105-C has reached levels of 0' to -18'.

C-438 (Ball 3X Facilities for B, D DR, H and F Piles)
(Engineering and Procurement of Critical Materials)

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Reactor Section
Manufacturing Department
August, 1951

Plant Development and Expansion (Continued)

C-438 (Ball 3X Facilities for B, D, DR, H and F Piles)(Cont'd.)
Plans for step plug and upper ball hopper castings were sent to prospective bidders during the month. The design for the ball recovery system and related equipment is progressing. The Read-Standard Corporation has contracted to supply the five vacuum producers necessary. A decision has been made to use plant forces for installation work during extended outages of approximately four weeks per pile. Preparation of the formal project proposal is near completion.

C-472 (Thermocouple Equipped VSR Thimbles, B and D)
The project was approved by the Atomic Energy Commission on August 17 and the authorization for work to proceed was issued on August 29.

M-608 (Differential Thermohm Systems for Power Level Measurements - B, D, DR, F and H)
The informal request was approved by the Atomic Energy Commission on August 10 and the authorization for work to proceed was issued August 27.

M-713 (VSR Design)
A free fall test was made on the revised test rod at Building 181-F on August 17. The rod failed in the rolled joint at the bottom end of the tie-rod supported section.

M-816 (Retention Basin Sumps)
Informal request approved by Atomic Energy Commission on July 30 and the authorization for work to proceed was issued August 27.

M-829 (105-D and DR Safety Circuit Interlock)
The tie-in of the safety circuits of D and DR Reactors is approximately 75% complete.

M-831 (Retention Basin Repairs B, D, F, (Project Preparation Only)
The project proposal is being drafted in final form. The most recent cost estimate for this project is approximately $1,275,000.

Following is a summary of significant studies active during the month:

Pile Control

A study was made of the pile control problem and of power level

Pile Control (Continued)

variations as related to the proposed method of achieving additional pile control through loading poison into process tubes during operation. Continued progress has been made in developing the latter method and the principle has been satisfactorily demonstrated in a flow laboratory test.

Elimination of Shutdown for Temporary Poison Push

A method of discharging temporary poison columns without shutting down the pile has been developed.

Slug Washing Studies

Flows required to seat the several types of slugs when charged hydraulically were determined and the flow required to wash out a regular metal charge was investigated.

Ruptured Slug Discharge

Ruptured slug discharge equipment is being developed which will permit discharge either by hydraulic washing or by pushing with controlled forces up to 2,000 pounds while any desired water flow is maintained through the tube.

Reports Issued

The following documents covering slug jacket failures during August provide detailed information related to each instance.

Date of Failure	Tube	Document	Date of Failure	Tube	Document
8-3-51	1572-D	HW-21843	8-23-51	2073-D	HW-22051
8-7-51	1963-B	HW-21994	8-24-51	0966-H	HW-22036
8-8-51	3782-H	HW-21961	8-25-51	1963-H	HW-22036
8-12-51	1485-B	HW-21995	8-28-51	2584-B	HW-22030
8-13-51	4086-H	HW-21962	8-29-51	1861-B	HW-22030
8-17-51	3658-D	HW-22050	8-30-51	2068-H	HW-22064

III. PERSONNEL

Organization Changes

Concurrent with the reorganization of the Manufacturing Department on August 1, the following appointments were made in the Reactor Section.

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Organization Changes (Cont'd.)

E. P. Lee, Superintendent of the former P Division, was appointed Manager - Reactor Section, Manufacturing Department.

R. O. Mehann, Assistant Superintendent - Process of the former P Division, was appointed Superintendent - Process Unit.

J. H. Warren, Assistant Superintendent - Production of the former P Division, was appointed Superintendent - Operations Unit.

E. E. Weyerts, Assistant Superintendent of the former Electrical Division, was appointed Superintendent - Plant Engineering Unit.

Supplemental shift crews were established in the Operations Unit effective August 27. The change represents a redistribution of available manpower to meet work requirements in a more effective manner.

Force Changes

Number of employees on the payroll during August, 1951:

	Section General	Plant Engineering	Operations	Process	Section Total
Beginning of Month	4	763	231	15	1013
End of Month	4	773	236	17	1030
Net Change	0	+ 10	+ 5	+ 2	+ 17

The changes during the month consisted of 14 terminations, 9 hires, 28 transfers into and 6 transfers out of the Section.

Safety Experience

There were no major or sub-major injuries in the Reactor Section during August.

Radiation Exposure

During the rear face work on August 8 at Building 105-H in connection with the removal of a ruptured P-10 slug from tube #3782, an irradiated enriched fuel slug washed to the rear of the tube resulting in an over-exposure of ten employees. A Class II Special Hazards Investigation was held on August 14, the results being reported in Document HW-22088. The recommendations of the investigating group have been put into effect.

[redacted]

[redacted]

Reactor Section
Manufacturing Department
August, 1951

Training

The program for procuring and training qualified supervisory personnel to fill future requirements was continued during August. Four trainees are receiving on-the-job experience and 17 Technical Graduates are on assignment under the Rotational Training Pool program.

Manager
REACTOR SECTION

EP Lee:ges

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Richland, Washington
September 7, 1951

SEPARATIONS SECTION

MANUFACTURING DEPARTMENT

AUGUST, 1951

I. RESPONSIBILITY

On August 16, 1951 the Separations Section of the Manufacturing Department accepted the newly constructed Redox Plant on a physical completion basis. However certain "exceptions" were noted which will be cleared up during September. Operation and utility equipment are being tested, calibrated and run-in preparatory to actual processing of material in the plant.

II. ACHIEVEMENT

A. Operating Experience

1. Production Statistics

a. Operations

	B Plant		T Plant		Combined	
	Normal	Acid Wash	Normal	Acid Wash	Normal	Acid Wash
Chgs. started-Canyon Bldg.	57	1	61	1	118	2
Chgs. completed-Conc. Bldg.	45	1	55	1	100	2
Special Chgs.-Conc. Bldg.	1				1	
Chgs. completed-Iso. Bldg.	44	1	53	1	97	2
Special Chgs.-Iso. Bldg.	-		-		9	
Avg. purity completed Chgs.					99.1	
Avg. cooling time Metal processed (days)					43	
Minimum cooling time Metal processed (days)					40	
Waste losses	2.1		2.0		2.1	
Material balance through Iso.					103.6	
Yield through process					102.6	

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b. Power

	July	August
Raw water pumped, gpm	5,054	3,798
Filtered water pumped, gpm	1,144	1,314
Steam generated, lbs/hr	72,411	70,053
Coal consumed; tons (estimated)	3,419	3,246

c. Waste Evaporation

	August	To Date
Gallons Evaporated	610,502	1,745,199
Percent Volume Reduction	72.4	73.5

The average overall evaporative rate was 603 gallons of condensate per hour.

d. Waste Storage

	Batches
Metal Waste Reserve Storage Capacity-T Plant	525
1st Cycle Reserve Storage Capacity-T Plant	907
Metal Waste Reserve Storage Capacity-B Plant	820
1st Cycle Reserve Storage Capacity-B Plant	365

2. Activities

a. Suppression of Radio-Iodine in Dissolver Solutions

The first phase of Production Test 221-T-15 has been completed. This phase consisted of the addition of mercuric nitrate to the metal solution produced by 15 dissolver charges to produce a concentration of approximately .001 M. During the processing of the 82 runs made up from treated metal solution, I^{131} activity in the Canyon Building ventilation exhaust air dropped from a pre-test average of 5.4 curies per day to 0.17 curies per day. No adverse effects on the overall separations process have been noted.

The next phase of the test is to test the effectiveness of .0001 M concentration.

b. Batch Size Control

In B Plant, the first run processed through Section 17 following the replacement of the spray in the precipitator

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tank picked up product sufficient to exceed normal (not critical) batch size, as did the succeeding four runs which required special handling.

As a result of these batch size control problems it will now be a standard practice to make a flush of the precipitator tanks after replacement of defective tank sprays before processing regular runs through the section involved.

3. Special Operations

a. Acid Washes

Data are tabulated below which indicate the percentage of product recovered from the completed acid washes in terms of a standard charge:

Run	Extraction	Section 12 and First Cycle	2nd Cycle	Total 221 Bldg.	Total thru Process	Preflush B, E & F Cells
B-11-07-AW1	4.27	57.16	7.62	69.05	69.65	14.60
T-11-07-AW2	11.10	9.76	26.48	47.34	53.14	25.71

Higher than normal pickups in the Canyon Building were attributed to defective sprays in the 17-1 precipitator tank in B Plant and the 19-1 precipitator tank in T Plant.

b. Boiler Test

On August 1, 1951, a special test was conducted on Boiler #1 in the 284-W power house to determine the pressure drop across the super-heater after the installation of three additional elements. The test revealed that the additional tubes will give the boiler an additional 10,000 lbs/hr capacity as anticipated.

4. Schedule Variance

Actual production of regular material through the Isolation Building exceeded the forecast by 30 units which is exceptionally close.

B. Equipment Experience

1. Operating Continuity

a. On August 3 at 11:25 a.m. an electrical outage occurred due to the accidental tripping of the C8XR breaker at the 251

sub-station. Power was restored within 15 minutes in the 200 East Area and within 30 minutes in the 200 West Area.

b. A partial outage occurred at 12:17 a.m. on August 18, when a construction crane boom touched one phase of the 200 West Area electrical distribution system. Service was restored almost immediately from the 251 sub-station where the fault was cleared.

The emergency equipment functioned as required in both instances and no adverse effects resulted in the operating buildings.

2. Inspections, Maintenance and Replacements

a. The #3 boiler in the 284 West Area was hydrostatically tested and inspected by an inspector from the Travelers Insurance Company. The unit was released as satisfactory for service.

b. The decreased rate of overflow from the 202-T Concentration Building Waste Effluent Settling Tank to the cribs was corrected by the removal of a glass sample bottle from a tee in the line. As a precaution against recurrence the tee was replaced by a bend and a steel cylindrical screen of 1" mesh was inserted in the overflow line so as to protrude approximately two feet inside the tank.

c. On 8-4-51, a slight cave-in was noted near the northeast riser of the north Isolation Building waste crib. Soundings of the crib indicated that the distance to the bottom of the crib had changed from 18' 7" to 17' 9". No liquid was detected in the north crib following jetting operations, but 3" of liquid was found in the south crib. In the past, the north crib had been receiving the liquid waste while the south crib remained dry. The reason for the change is unknown. Observation of subsequent jettings have indicated that the south crib is now satisfactorily handling the bulk of the liquid waste.

C. Improvements

1. Adoptions

a. A first cycle decontamination jet assembly was successfully decontaminated by remotely scrubbing with soap and solvent to a point where it could be repaired. A savings of $1,500 was realized and the adoption of this newly developed procedure in the future will permit the reuse of process equipment which heretofore has had to be discarded.

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b. A reduction of the sulfate concentration in the second precipitation cycle in the Isolation Building from 0.25 M to 0.15 M was adopted to eliminate most of the sludging effect in the final product assay and weigh tanks.

c. The chemical feed lines in the Water Filter Plant were relocated as a result of a suggestion made by a Power operator. This alteration will permit the cleaning of plugged lines without interrupting the operation of the Filter Plant.

2. Inventions or Discoveries

There were no inventions or discoveries of a patentable nature reported during the month.

C. Plant Development and Expansion

1. Project Status

a. Redox - Project C-187-D

With the exception of the calibration work on the metal solution centrifuge bowl (centrifuge not released by construction as yet), all vessel calibration work in the 202-S Building and its associated facilities is complete.

A priority list of work orders, to be revised weekly, was published noting the sequence in which attention should be given to completion of the more critical items.

The demineralized water units were placed in service and the filling of storage tanks started.

Chemicals are being received according to the initial delivery dates, and orders are being placed for future supplies on as accurate a basis as can be determined from present forecast figures.

b. TBP Project C-362

The project completion date has been revised by Atkinson and Jones from November 1, 1951 to February 15, 1952.

No directive has yet been issued authorizing the additional $6,100,000 indicated necessary by Part II of the Project Proposal which was requested in May, 1951.

c. UO_3 - Project C-361

Directive No. HW-158, Modifications 6 and 7, were received August 7th and 13th, respectively. These modifications authorize $2,200,000 for design and construction of the Uranium Conversion facility in addition to covering the cost of all work which was incurred with respect to the cancelled segregation facilities.

d. RMA - Project C-198

Completion of the RMA Line including modifications is anticipated during the month of September. A series of training lectures for operating personnel covering RMA operations was completed during the month. Present training is now directed to familiarizing individual operators with specific operations in preparation for the shakedown of the equipment.

e. Dissolver Off-Gas Filter and Silver Reactor - Projects C-337, C-378

The fifth dissolver off-gas filter and silver reactor assembly was completed and both projects were accepted and closed out on August 30, 1951. Originally estimated at $307,000 for four units, the final cost of the five units will be approximately $200,000.

E. Pertinent Reports Issued

Document	Title	Author
Unclassified	August Monthly Report - Separations, Instrument	P.E. Cunningham
Unclassified	August Monthly Report - Separations, Mechanical	K. K. Campbell
Unclassified	August Monthly Report - Separations, Electrical	C. C. Hinson
Unclassified	August Monthly Report - Separations, Power	F. P. Britson
HW-22102	August Monthly Report - Operations, B Plant	E. A. Foskett
HW-22101	August Monthly Report - Operations, T Plant	F.A.R. Stainken
HW-22100	August Monthly Report - Operations, 231 Bldg.	T. Prudich
HW-22103	August Monthly Report - Operations, 234-5	T. Prudich

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Document	Title	Author
HW-22107	Separations Operations - Expansion Section - Monthly Report	C. T. Groswith
HW-22002	Separations Operations - Expansion Section - Semi-Monthly Report	V. R. Chapman

III. PERSONNEL

A. Organization Changes

Effective August 1, 1951, concurrent with the reorganization of the Manufacturing Department into three major plant sections, R. S. Bell was appointed Manager of the Separations Section embracing all separations production activities in the 200 Areas. Coincidentally, the nomenclature of the S Division was changed to that of the Operations Unit - Separations Section and V. R. Chapman and R. C. Grant were appointed Superintendent and Assistant Superintendent, respectively. The functions of the Electrical, Instrument, Mechanical Maintenance and Power Divisions were combined into a Plant Engineering Unit - Separations Section and R. T. Jessen was appointed Superintendent.

B. Force Changes

1. Number of Employees on roll

	Monthly Roll	Weekly Roll	Total
Beginning of month	233	995	1228
End of month	237	1026	1263
Net Increase	+4	+31	+35

2. Personnel Changes

	Monthly Roll	Weekly Roll	Total
Transferred from other divisions	+7	+16	+23
Transferred to other divisions	-1	-9	-10
Reactivates	0	+1	+1
New hires	+2	+37	+39
Resigned	-4	-14	-18
Transferred from weekly to monthly	0	0	0
Other	0	0	0
Net Increase	+4	+31	+35

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3. Work Schedule

Approximately 86.5 percent of Operations personnel continued to work a six day week schedule for the month, the balance consisting of day supervision and clerical forces not essential to the continuation of production or follow-up of expansion activities.

Plant Engineering Instrument personnel, comprising 18.4 percent of personnel in Plant Engineering continued on a routine six day week schedule for the month. All other crafts worked on a six day basis as needed.

C. Safety Experience

There were no major or sub-major injuries incurred by Separations Section personnel during the month of August.

D. Radiation Exposure

During the installation of a connector in the 153-BX diversion box, contamination was spread to the area adjacent to the diversion box. Before the contamination could be cleaned up it was spread by wind currents over an area lying east and north east of the box and skirting close to a major construction area of the TBP project. At month end cleanup work was proceeding actively and means of immoblizing such contamination are being investigated.

The mishandling of a funnel by a helper during the cleaning of sampling equipment at T Plant resulted in contamination of the Beckman shield to an extent of 28 rep/hr, the operator's gloves to 500 mrep/hr, and the operator's hands to 5000 c/m. The gloves were removed immediately and no overexposure occurred. Hand contamination was easily removed and cleanup of the area was promptly completed.

R. S. Bell

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9-10-51

TECHNICAL SECTION

August, 1951

SUMMARY

Pile Technology Unit

The critical mass program dealing with plutonium solutions in a water reflector was completed. Over 200 critical assemblies were made to obtain the necessary data. The equipment is now being modified to accommodate bare spherical reactors.

An exponential pile with a seven-inch lattice has been erected and loaded with uranium in water-filled tubes.

Measurements of burnout of graphite samples, exposed in the F Pile with controlled atmospheres, demonstrate that small quantities of carbon monoxide in a carbon dioxide atmosphere greatly decrease the rate of burnout, and that an increase in temperature from 385°C to 395°C increases burnout in a carbon dioxide atmosphere by about a factor of three.

Calculations are in progress on various methods of using enriched materials in the Hanford Piles. Consideration is being given to enriched material costs, production gains, and operating conditions such as graphite temperatures, shield damage, etc.

Studies of improvements in the canning process were continued. These include studies of changes necessary to produce a test lot of eight-inch slugs having a heavier can wall and thicker end cap, improvements in welding procedures, and establishment of standards and techniques for bare slug inspection.

Underwater examination of eleven recently ruptured slugs indicates that five were caused by end cap failures and six apparently by defects in the uranium resulting in splitting of the uranium core.

Thorium is being substituted for lithium as flattening for all piles except the H Pile. As scheduled the transition will be accomplished in about six months.

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Separations Technology Unit

Addition of mercuric nitrate to the uranium nitrate solution on a production test basis has proven effective in reducing evolution of radio-iodine subsequent to the dissolving operation. Initial data from the combination of second cycle waste and cell drainage (5-6) at T and B Plants have indicated a significant reduction in amount of beta activity released to the ground.

Additional types and quantities of stored 234-5 Building wastes have been recycled to the Concentration Building. Direct plutonium assay on production castings has been started in order to establish sampling and analytical precision. It has been determined that the series of high density pressings during July was caused by temperatures below standard and procedures have been altered appropriately.

With the acceptance of the Redox Plant (major exceptions) by the Separations Section plant, assistance effort has been concentrated on the issuance of operating procedures. The TBP Technical Manual was brought to 66% of completion. Training of Separations Section personnel in solvent extraction operations in the 321 Building was completed. Construction of the Hot Semi-Works was indicated 19% complete. Installation of the 20-stage, Fenske Stacked Extractor in the 321 Building was completed, auxiliary equipment was modified, and development work was started on the new solvent-extraction process employing TBP to couple 224 Building and Redox plutonium product solutions to 234-5 Building as well as to recover plutonium from 234-5 Building slag and crucible residues.

Additional research laboratory effort on the coupling process described above has resulted in several extractions with low plutonium losses and fair to good yields of metal when the plutonium was precipitated, hydrofluorinated, and reduced. A Purex Process study showed decontamination adversely affected by an increase in IA Column temperature.

In the 234-5 Development Laboratory experiments were continued in Redox coupling via peroxide precipitations, slag and crucible dissolution, and reduction of hydriodic acid and oxalic acid requirements for the present 234 Building process. Direct hydrofluorination of plutonium turnings for recycling has been explored briefly with promising results.

Three plant silver reactors have been replaced and the fourth regenerated on a test basis. Monitoring of off-gases shows that radioiodine removal efficiency is again greater than 99.9%.

Analytical Unit

In preparation for the start-up of the Redox and Metal Recovery Processes, further work was done on the necessary analytical methods. Evaluation was completed and equipment ordered for determinations of bulk density and particle size of uranium oxide product. Draft procedures were prepared for the determination of freezing point of Metal Recovery streams and completeness of solution of Metal Recovery Process feed. A method developed at KAPL for the determination of methylisobutyl carbinol in hexone was tested and approved for use.

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It was shown that the automatic coulometric titration of uranium yields accurate results that are precise to about ± 1.5%. A method describing the pretreatment and titration technique was prepared, and five control analysts have been trained in conduct of the method. Research attention in the field of coulometric analysis has been given to the determination of plutonium. Using iron as a stand-in, sharp endpoint breaks were obtained, thus promising additional successes with this new technique.

The G. E. Mass Spectrometer purchased for analysis of P-10 samples was received during the month and installed in the 108-B Analytical Laboratory with the assistance of a field representative from the General Engineering Laboratory. From a mechanical and electronic point of view the instrument appears to be satisfactory, but successful accomplishment of the acceptance test awaits the introduction of a voltage stablizer and the shock mounting of the preamplifier.

A rapid and convenient spectrographic method for the determination of silicon in aluminum-silicon dip bath was developed and found to have suitable precision and accuracy for routine application.

For several months routine radiochemical plutonium assays have been carried out on stainless steel counting dishes. Prior experience showed that the intensity of back-scatter from steel and platinum were different and that it was consequently necessary to employ a correction, although experience indicated that no such correction existed when plutonium was counted in the presence of uranium, as in the dissolver solution assay. Evidence obtained from a large number of control analyses proved the latter conclusion to be in error, and subsequent investigation revealed that the original difficulty lay with the large variation in back-scatter from used plutonium discs. As a consequence, platinum discs have been completely replaced by stainless steel discs in routine alpha counting procedures, and it is also planned to eliminate use of platinum discs in standardizations.

An indication of high results in the routine determination of Am-Cm led to an investigation of the procedure and the analytical technique. It was found that the results were not in error as much as originally suspected and minor difficulties in one laboratory were quickly rectified.

A study of the production control data from the plutonium analysis of 26 samples of metal castings showed the chemical titration method employed to be without bias and precise to ± 0.54% overall or ± 0.45% for the reported average of one set of four titrations.

Technical Services Unit

Maximum attention continued on design and preparation of laboratory and multicurie cell equipment for the Redox Analytical and Plant Assistance Laboratory. Design of the "analytical line" apparatus is virtually complete and fabrication is well under way in the Technical Shops. Fabrication of equipment for operating accessories in the multicurie cells is nearing completion. Lead glass viewers, in-cell air hoists, and cell lights are now partially installed. Design of multicurie cell equipment for solvent process research was started.

AEC Informal Approval was received authorizing an expenditure of $10,500 to cover the cost of relocating the Technical Section activities in the main 101 Bldg., Hanford, to other 100 Area locations. This move was necessary in order to release Bldg. 101 to Design & Construction for graphite fabrication. The Technical Shops are being moved to Bldg. 1717 in 100-D Area, and Equipment Design to Bldg. 1707 in 100-D. These buildings will serve as temporary locations for these activities until permanent quarters in the Mechanical Development Bldg. in the Works Laboratory Area are available. The IBM Computing Laboratory was moved to the new permanent quarters recently provided in Bldg. 3707-C, 300 Area. Technical Section personnel engaged in Pile Technology programs are being relocated into other 100-Area space.

The ventilation system is still an exception to final acceptance of Bldg. 222-S, the Redox Analytical and Plant Assistance Laboratory. However, reinforcing of the hood exhaust damper baffle plates is now complete and balancing operations have been resumed. Investigation into the causes of the yellow discoloration of the marbelized white rubber tile floor covering continued but no conclusions have as yet been reached. Construction of the Aqueous Waste Retention & Neutralization Bldg. (219-S) was completed and accepted. All necessary main line tie-ins were made for the piping additions involved in the Phase II construction program.

Construction work on the Radiochemistry Bldg. in the Works Laboratory Area is progressing and was 2.1% complete at month-end.

Bids covering construction of the Library & Files Bldg. and the Badge House were opened on August 16. Award of the construction subcontract on these new Works Laboratory Area buildings to the L. H. Hoffman Construction Co. of Portland, Oregon, on their low bid of $533,500 was in process at month-end.

Final work in preparation for issuing bid invitations covering construction of the Plot Plan & Utilities for the Works Laboratory Area was delayed because minor revision of the drawings and specifications on these facilities as submitted by the Architect-Engineer was required. This work is now complete and bid assembly preparation has been resumed.

Phase I construction of the Mechanical Development Bldg. in the Works Laboratory Area is approximately 90% complete. Negotiations with the Dix Steel Co. for both design and construction of Phase II of this building were terminated when it became apparent that this work could not be completed in time to allow direct relocation of Bldg. 101 activities into this new facility. Negotiations now are underway with Dix Steel for only the Phase II design of this building, with final construction to be awarded on a competitive bid basis.

It was erroneously reported last month that invitations to bid for construction of the Radiometallurgy Bldg. were issued on July 19. Actually, the Radiometallurgy Bldg. invitations were held for combination with the Pile Technology Bldg. bid call, and invitations covering both of these Works Laboratory Area buildings were released on August 20. The bid opening date is scheduled for Oct. 3. Meanwhile, requests for quotations on the special multicurie cell equipment required for the Radiometallurgy Bldg. were sent to 20 prospective fabricators.

AEC Directive HW-246 was received authorizing $60,000 for construction of a Solvent Bldg. in the 300 Area. This building will incorporate one large laboratory for solvents study work, and space for the storage of solvent stocks to be used in Bldg. 3706. This new building is to be located east of the present 321 Bldg.

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HW-22075-DEL

August 7, 1951

PILE TECHNOLOGY UNIT

AUGUST, 1951

VISITORS AND BUSINESS TRIPS

Visitor	Date	Address	Purpose
H. H. Barschall	8-1/2-51	Los Alamos National Lab.	Consultation on Cross-Section Measurements
Alvin Glassner	8-1/5-51	ANL	P-10 Consultation

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Visitor	Date	Address	Purpose
C. V. Moore	8-1/4-51	KAPL	To observe fuel rod irradiation drop test and consult on in-pile creep test
J. W. Dickinson	8-8/10-51	Linde Air Products Co.	Demonstrate welding equipment
Dr. H. Poritsky	8-20/24-51	GEL	Discuss stress analysis problems
G. N. Inman G. H. Steele A. M. Stelle R. E. Chalker	8-21/23-51	North American Aviation, Inc.	Discuss In-Pile Experiments
P. M. Engle, Jr.	8-23/24-51	Mounds Lab.	Discussion of Special Irradiation
D. H. Marquis A. A. Batza C. W. George	8-24-51	GEL	P-10 Consultations

Name	Date	Place Visited	Purpose
R. H. Levse	8-1/31-51	KAPL and GEL	Follow C-410 assembly fuel testing and to discuss in-pile tests
J. F. Sullivan	8-1/4-51	KAPL and GEL	P-10 Consultation
H. F. Zuhr	8-1/4-51	KAPL and GEL	P-10 Consultation
L. R. Boyd	8-2/3-51	ORNL	Discuss ORNL-106
	8-6/18-51	KAPL	Discussion concerning Hanford irradiation
J. C. Wood	8-6-51	Pacific Coast Engineering Co.	Check on the final mock-up of the "postum" charging machine
P. H. Reinker	8-10/11-51	North American Aviation, Inc.	Technical discussions on graphite
L. P. Bupp	8-10/11-51	North American Aviation, Inc.	Technical discussions on graphite

Name	Date	Place Visited	Purpose
J. F. Music	8-10/11-51	North American Aviation, Inc.	Technical discussions on graphite
S. Goldsmith	8-31-51	A.C.S. Meeting	
L. D. Turner	8-16/17-51	ORNL	Metallurgical Inspection of J pieces
Raymond Ward	8-20/24-51	KAPL	Hanford Assistance Problems and attend G.E. Metallurgical Professors Conference
Wilbur T. Kattner	8-24-51	A.E.C., New York	Discuss rolling program.
P. F. Gast	8-25/29-51	ANL	Critical mass meeting
WJ J. Ozeroff	8-26/29-51	ANL	Critical mass meeting
F. E. Kruesi	8-26/29-51	ANL	Critical mass meeting
W. T. Kattner	8-27/29-51	ANL	Discuss metal fabrication
J. A. Ayres	8-27/31-51	KAPL	P-10 Discussions
W. M. Harty	8-27/29-51	KAPL	P-10 Discussions
P. A. Carlson	8-27/31-51	KAPL	P-10 Discussions

ORGANIZATION AND PERSONNEL

	July	August
Physics	38	43
Engineering	63	66
Metallurgy	42	43
Pile Applications	55	67
P-10 Project	71	72
Administrative	11	14
	280	305

The Physics Branch hired a physicist and one technical graduate transferred in from Management-General. A laboratory assistant returned from school and was re-activated and a general clerk and laboratory assistant transferred from the Administration Branch to the Physics Branch.

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In the Engineering Branch, a mechanical engineer and one laboratory assistant were hired. Four technical graduates transferred in from Management-General. A general clerk transferred to the Administrative Branch and a steno-typist and one engineer assistant transferred to Pile Applications.

A metallurgist and a technical graduate were hired for the Metallurgy Branch. One engineer transferred to the Metallurgy Branch from Pile Applications and a metallurgist terminated and one transferred to Purchasing and Stores.

A technical graduate was hired for the Pile Applications Branch. Four technical graduates transferred in from Management-General, one from Inspection Section, one from Design and Construction, and one from Project Engineering. An engineering assistant transferred in from Management-General, a fireman transferred in as a laboratory assistant from Richland Fire Section, and a steno-typist transferred in from Utilities and General Services. A laboratory assistant transferred in from the Administrative Branch, a steno-typist and engineer from the Engineering Branch. An engineer transferred from Pile Applications Branch to the Metallurgy Branch and one technical graduate transferred to Purchasing and Stores Section.

One technical graduate transferred from Design and Development and one from Management-General to the P-10 Branch. A laboratory assistant was hired for P-10. An engineer transferred from P-10 to the Administrative Branch and a chemist transferred to Technical Services.

One laboratory assistant and a general clerk were hired for the Pile Technology Unit and were placed in the Administrative Branch until they receive their "Q" clearance. A steno-typist transferred from Utilities and General Services to the Administrative Branch. An engineer transferred from P-10 and a general clerk from Engineering to the Administrative Branch. A general clerk transferred from the Administrative Branch to Physics and a laboratory assistant from Administrative to the Pile Applications Branch.

CRITICAL MASS

The phase of the critical mass program dealing with the criticality of plutonium solutions with water reflector was completed during the month of August. Over 200 critical assemblies have been made to obtain the necessary data. The equipment is currently being modified to accommodate bare spherical reactors. Measurements on these reactors are expected to begin early in September.

The experiments, mentioned last month, dealing with the effect of a neutron absorber on critical size have been completed. The results show that foreign atoms in plutonium water solutions affect the critical mass by an amount proportional to their thermal neutron absorption cross sections.

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It thus appears that, although these atoms displace water molecules in addition to absorbing neutrons and so increase the slowing down length, the effect of this increase is minor on the critical mass compared to the effect of absorption.

IMPROVED PILE STRUCTURE

Exponential Pile Experiments

The measurements in the eight inch lattice have been completed and the pile torn down. The values of the buckling of this lattice when loaded with standard Hanford slugs in normal process tubes are compared with the values measured in the eight and three-eighths inch lattice for both the wet and dry loadings in the table below:

Buckling (in microbucks)

	Wet	Dry
8" lattice	83 ± 2	112 ± 2
8-3/8" lattice	79 ± 3	117 ± 3

The uncertainty limits attached are merely estimates of the reliability based on the reproducibility of the measurements. These values are for the pile with an air atmosphere and should be corrected upward about eight microbucks for a helium or CO_2 atmosphere. This brings the buckling of the eight and three-eighths inch lattice 10 to 12 microbucks above the value calculated from critical measurements in DR and H. This discrepancy is still unexplained. Comparatively, however, the measurements indicate that the eight inch lattice is as good, reactivity-wise, as the eight and three-eighths inch lattice.

The seven inch lattice has been erected and loaded with uranium and the tubes filled with water for measurement next month. The graphite for the other size lattices is being packed for shipment to 189-D when the building remodeling is completed. It has been estimated that this will be about November 1.

The preparation of aluminum foils and a special uranium slug for the remeasurement of the distribution of fission-producing neutrons across a slug has been completed, and the measurement will be made in the Test Pile next month. A report is in preparation on the preliminary measurements.

Preliminary measurements have been made with U-238 foils in the Test Pile to determine the exposure that will be necessary to measure the distribution of resonance energy neutrons across a cell. Since the foils have a natural background of 10,000 counts a minute, an extended exposure is necessary. A peculiarity noted in the background was the fact that the background of the U-238 foil is at least 50% greater than that of a natural uranium foil of the same size. No explanation has been found for this difference.

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A calibration of the thermal neutron flux in the Test Pile is being made by comparing the activity induced in a gold foil in a given position of the Test Pile with the activity induced in a gold foil exposed in a calibrated slot of the standard pile. This calibration will have the limitations that it will be good only for the given configuration of shim and control rods. which limits the atmospheric pressure range over which it can be used, and depends on the stability of the power measuring instruments with time. The flux at other than the calibrated power level can be calculated simply from the ratio of the power levels assuming that the same rod configurations are used. If the reliability of the measurements and the stability of the instruments seem to warrant it, calibration over an extended pressure range can be made. The absolute accuracy of the calibration is probably of the order of 10% since the uncertainty of the calibration of the Argonne source, which was used to calibrate the standard pile source, is given as 7%.

General Lattice Design

Two production tests have been authorized for work in connection with the measurement of the xenon cross section. Production Test 105-465-P covers the irradiation of iodine samples in the pile in order to test the efficiency of removal of iodine by means of a charcoal column as described in last month's report. Production Test 105-451-P authorizes the operation of the neutron spectrometer at DR Pile on a permanent basis.

A measurement has been made of the energy spectrum of the fast neutrons emerging from a test hole at DR Pile. This will be described in a forthcoming report.

Large Scale Pile Structure

Calculations are in progress on various methods of using enriched materials in the Hanford piles. These are being done in order to determine which method can be best applied to the piles with consideration being given to enriched material costs, production gains, and operating conditions such as graphite temperatures, shield damage, etc. A report describing this work and outlining the conclusions will be issued in about six weeks.

SHIELDING STUDIES

Preliminary neutron traverses in Brookhaven concrete have been made at the DR testing facility. The data indicate that the C Pile top shield design is adequate. Further traverses are being made to confirm the preliminary data.

Some measurements of the changes in several physical properties of Brookhaven concrete caused by exposure to pile radiation have been made. The results indicate that this concrete is a satisfactory material but no reliable estimate of the shield lifetime can be made at present. These measurements are continuing.

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A mica window geiger counter has been designed for use with the magnetic spectrometer and is now being constructed.

OPERATIONAL PILE PHYSICS

The delayed neutron monitoring equipment for the detection of ruptured slugs was tested during the month with injection of uranium nitrate solution into the process water. Also tested at this time were the regular beta monitoring system, an improved beta system developed by Instrument Development, and a gamma scintillation spectrometer being developed by the du Pont Company. Results of the test indicate the delayed neutron detection device to be the most sensitive, giving an increase over background of a factor of 8.86 for an injection rate of 400 cc. of solution per minute (9.48 gms of U). However, this sensitivity is not the only criterion of performance and the merit of these systems requires further analysis. A report of the test results will be issued when data analysis is completed. Further investigation of equipment systems is planned, such as counting rate meters to furnish a continuous record of header activity, bucking systems to minimize background cycling, and alternate neutron sensitive elements of more stable behavior.

Document HW-21875, "Background Data for Supplementary Control", was issued as a basis for evaluating auxiliary reactivity and temperature moment control systems. Estimates have been made of the production gains possible at C Pile through the installation at startup of a supplementary moment control system.

A report of the results obtained to date on the testing of the GEL designed high temperature ion chamber have been reported in Document HW-21748. A saturation curve of current versus voltage is to be run during the F Pile shutdown of August 29, 1951.

Specifications for the C Pile automatic recording temperature traverse equipment have been prepared, with the recommendation that the fabrication be done by the vendor supplying the primary traverse equipment. Work has begun on a program for modifying the present installation at DR to determine scanning rates possible with the present switching system, and to determine the performance characteristics and maintenance requirements of the "Flexowriter" recording system, which is planned for C Pile. As part of this modification program, an eight channel data conversion device for use with the Brown amplifiers has been designed which has a decimal coded binary output suitable for use with the revised recording equipment.

GRAPHITE STUDIES

Pile Graphite Sampling

A two foot stringer of filler layer graphite was removed from the reflector adjacent to the "A" test hole at the D Pile in accordance with Production Test 105-409-P. Laboratory tests on this specimen will indicate the extent to which radiation damage of the graphite extends into the reflector.

Pile Graphite - Special Measurements

A traverse of the vertical height of the "A" test hole at the D Pile was completed on August 24, 1951, in accordance with Production Test 105-456-P. Interpretation of these data will be made shortly.

Pile Graphite - Thermal Conductivity

The first six of a series of thermal conductivity measurements on core samples removed from the tube blocks at the H Pile have been completed. The thermal conductivity of the tube block graphite varies with location in the fringe zone of the pile and also the termal conductivity varies from the tube bore to the tube block edge at any one core location. Data from initial measurements indicate a precision of ± 3 per cent for the values reported.

Pile Graphite - Stored Energy

The majority of developmental work on the technique of measuring the stored energy in irradiated graphite by means of a twin calorimeter has been completed. Initial determinations of the rate of stored energy release for samples heated 10°C. per minute have been completed. A series of determinations is planned for samples having variable exposure histories. Experimental precision remains to be evaluated.

Graphite Capsule Exposures

Two series of capsule exposed graphite, one of CS graphite with variable pitch impregnation with densities between 1.54 and 1.68, and the other set of lampblack samples heat treated at temperatures of 2000°C., 2500°C., and 2800°C., showed no variation in change in length or variation in Co axis expansion which could be attributed to the differenct density, impregnation, or heat treatment.

Controlled Temperature Exposure of Graphite - Production Test 105-403-P

Graphite sample temperatures for the month were 133°C., 164°C., 182°C., and 207°C. An automatic device to prevent excessive temperatures, which previously occurred when the pile shut down, is operating satisfactorily.

Gas Reaction Measurements

The second discharge of graphite samples exposed in the F Pile in atmospheres of CO_2, 95 per cent CO_2 and 5 per cent CO, CO, and N_2 at an average effective temperature of 395°C. indicated that this temperature, compared to the 385°C. of the previous exposure, had a pronounced effect on the rate of burnout of graphite in pure CO_2. Although temperature control was poor, it is apparent that this oxidation rate at 395°C. is approximately 5 per cent/1000 days. This is about three times the burnout rate at the lower temperature.

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Graphite samples in 95 per cent CO_2 and 5 per cent CO, exposed under idental conditions, indicated an average burnout rate about fifteen times less than those in pure CO_2; samples exposed in CO showed slight weight gains. Unfortunately, the extent of film build-up in the cooler fringe regions of the pile was not determined for this sample of CO gas because of mechanical difficulties encountered in charging the tube. These data show, however, that small amounts of carbon monoxide in a carbon dioxide atmosphere distinctly reduce the rate of burnout in the central portion of the pile.

Graphite samples exposed to commercial nitrogen containing small amounts of water and oxygen showed no unusual effects. The samples lost weight at about the same rate as similar samples in pure carbon dioxide. These weight losses in nitrogen may be attributed to the oxygen in the gas mixture. The experiment showed that, so far as affecting the graphite is concerned, commercial nitrogen may be added to the pile atmosphere.

Controlled Gas Atmosphere Experiment - Project C-410

The C-CO_2-CO reaction is to be investigated under pile irradiation and at controlled temperatures between 250° C. and 650° C.

The completion of the heater assembly at Schenectady was delayed by the shorting of a heater lead wire during a "bake out" test. The failure was shown by tests to have been caused by moisture and a procedure for drying the wire has been established.

The gas mockup system is 90 per cent complete and tests are in process to determine its operating characteristics.

HEAT TRANSFER STUDIES

Tube Boiling Considerations

A document discussing means for increasing the tube power output without exceeding boiling consideration limits on the present piles is being issued. In general, the document outlines the advantages and disadvantages of the use of larger tube outlet fittings and higher header pressures to increase the limits. In addition, a discussion is given of various changes which should be made in the pile water plant to achieve increased safety, production, and efficiency.

A second document on boiling considerations is also being prepared. The purpose of this document is to establish new tube boiling limits based on an extensive experimental and theoretical study of the problem.

C Pile Design Studies

Studies are being made of all designs for the C Pile which may affect the heat distribution within the pile. Calculations indicate that the spacing of the proposed biological cooling tubes must not be over one foot if the

masonite temperatures are to be kept below 100°C. This appears to be closer than practical from a construction standpoint, so the use of a thermal radiation reflector between the cast iron and biological shields has been considered. A maximum spacing of the cooling tubes of 3-1/2 feet will be adequate if, in addition to the thermal radiation reflector, a gap of approximately 1/4 inch is left to prevent conduction. These calculations were made for the case where radial flattening at power levels up to 1200 MW were used.

Because the thermal and biological shields of the C Pile are expected to operate at higher temperatures than in any of the present piles, it was felt that installation of more thermocouples in the shields than had been originally contemplated would be desirable. Accordingly, sketches were prepared showing the location of such additional couples, and at a meeting of the interested Technical, Design, and Instrument representatives, the proposed additions were agreed upon.

The proposal has been made that an insulating layer of ribbed cast iron blocks be substituted for the top and bottom graphite layers to insulate the graphite from the thermal shields. This is intended to decrease the heat load on the thermal shields and to increase the temperature of the reflector graphite. This proposal is being examined to determine if excessive temperatures might exist at high power levels.

Enrichment of Present Piles

A study is being made of the possible effects of enrichment on the shields of the presently operating piles. An attempt is being made to determine the permissible power levels and the extent of enrichment which could be obtained before excessive damage to the shields would result. This study is not yet complete and no results can be reported.

WATER STUDIES

Laboratory Construction

Construction of the 105-D Laboratory has progressed during the past month. As the material arrives, it is being assembled. The laboratory is approximately 80 per cent complete throughout and the remaining construction should proceed rapidly as the necessary materials become available. It is planned to have two cold water tests, one with process and the other with raw water, beginning about the first of September. Performance tests on the laboratory pressure filter indicate that this type filter will be satisfactory for experimental purposes. The entire laboratory should be in operation in late September or early October. The project on the 50 tube corrosion mock-up has not yet been approved by the Atomic Energy Commission.

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Slug Abrasion Tests

The first measurements from the slug abrasion test at the 100-F Flow Laboratory indicate there is negligible abrasion on slugs from flow rates up to 34 gallons per minute in a standard size process tube. These tests were run with a water temperature of 19°C.

Film Prevention Studies

The test on the two new water-repellent slug surface coatings has been underway for about 30 days. The flow rate on this tube is maintained at 20 gallons per minute and the outlet water temperature is about 90°C. No data will be available for approximately 60 more days. Although the can difference test is ready for discharge, it was decided to continue the test until a film thickness measuring device is available. Such a gauge has been ordered and delivery is expected during the month.

Production Test 105-450-P, "The Effects of In-Pile Conditions on Dri-Film Coatings Applied to Slug Surfaces," has been charged for about two months. Panellit data do not yet indicate any appreciable decrease in film formation rates or purge efficiencies.

High Temperature Corrosion

The construction of the high temperature corrosion apparatus at 105-D Laboratory has not yet been finished due to a lack of necessary materials. However, this work is scheduled to be completed during September. Tests to determine the corrosion rates in heated slugs have led to the investigation of using an induction heater to simulate in-pile conditions more closely. An excessed induction heater is available on site and an investigation is being made to determine if this particular heater will satisfy the requirements.

Sodium Dichromate Elimination Studies

A plugged cone screen on one of the tubes being cooled with filtered water under Production Test 105-453-P, "Dichromate Elimination Tests", caused an unscheduled pile outage on August 12, 1951. The heavy metal in the experimental tubes was discharged and the tubes recharged with solid aluminum dummies. Sufficient additional screens and strainers will be installed in the system to insure that no cone screen plugging will occur in the future. After it has been determined that the system is operating satisfactorily, heavy metal will be recharged in the tubes.

Filter Alum Tests

Production Test 105-473-P, "The Use of Commercial Aluminum Sulfate for 100 Areas Process Water Coagulation", is being processed and is scheduled to start September 6. This test will determine the feasibility of using

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filter alum as the process water coagulant. The objective of the test is to determine the effect of the residual aluminum on film formation rates and effluent activity.

MECHANICAL DEVELOPMENT

Charging and Discharging Program

The tests of pressurized C & D machines have been augmented by the addition of a lubrication system which provides for recirculating an oil-water mixture through the process tube. The effects of this system upon the "full-power" charging operation will be determined during September.

The unpressurized charging machine was received during the week of August 20, and will be installed in the existing test apparatus in 189-D during September.

Process Tubes, Gun Barrels, and Nozzle Connections

Tests were completed on the outlet gun barrels with the single tube deflection assembly. Although entry block slopes as high as 1.0 inch/foot were imposed, no permanent deformation occurred. Flexure tests of the C Pile pigtail design (Atlantic flexible connector) will be made within a few weeks.

An investigation of ruptured slug removal from cored C Pile graphite was carried out and completed with the nine tube mock-up during August. These tests demonstrated that slug removal and tube replacement will be no more difficult than with the existing uncored graphite. A formal report is being issued. This test is being followed by an investigation of improved methods of cast iron (thermal block) support. This is important for C Pile because of gun barrel replacement problems.

Horizontal Control Rods

The preliminary cycling test of the C Pile rod gland seal has not yet commenced, because of the need for alteration to the various parts. Originally specified clearances and fits required extensive revision.

Construction of the full scale horizontal rod mock-up will begin as soon as final AEC approval of the Project Proposal has been secured. All drawings are essentially completed, graphite machining has begun, structural steel is largely on hand, and fabrication of the prototype rod should be completed by October.

C Pile 3-X and VSR Development

The entire test assembly for the G Pile vertical rod and 3-X studies has been dismantled and stored. Graphite has been machined for the complete C Pile configuration and delivery is awaited on the C rod, winch, and shock strut assembly. Tests are proceeding upon several components of the Ball 3-X System; loading chute, removal duct, and orifices for regulating the flow of balls.

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3-X Replacement Program (Present Piles)

The development of a suitable material for filling the gaps between the ends of the vertical graphite blocks adjacent to the VSR holes has progressed satisfactorily. It has been found that a mixture of purified graphite and water glass make a cement which, when baked, forms a hard mass with good bonding properties. A mechanical applicator will be designed and built as part of Project D-438 and will be tested in the VSR mock-up in the 189-D laboratory. Tests will be run in the 305 Test Pile to determine how much reactivity such material will absorb, and samples will be exposed in the F Pile to check for radiation damage.

The temperature of VSR #20-D was measured on August 17 to check calculations on maximum rod temperatures. It was not possible to get a measurement until 71 minutes after shutdown and at that time the temperature was 210°C. This checks very well with the calculated temperature and indicates that the rod temperature will not be high enough to damage the silicone rubber seals.

Slug Can Studies

Production Test 105-468-P, which will determine damage to cans by mechanical abrasion from tube ribs, is approved and will be conducted in four process tubes in each of three piles. It will include newtubes, old tubes, standard slugs and anodized slugs. Nearly 800 slugs have been measured and inspected and will be returned to the 300 Area for re-inspection after the charging operation.

A supplementary investigation to study the damage to slug ends from charging machine battering will be done in the 105-F Flow Laboratory during September. Approximately 500 slugs have been gathered, tested, and inspected of a required total of 2000.

METALLURGY OF URANIUM

The general objectives of this program are the development of means of fabricating uranium which will be more resistant to distortion during irradiation, to develop tests to differentiate between various structures in uranium, and to develop more economical ways of fabricating uranium.

Fabrication

A natural uranium billet was hot worked at 600°C. by forgingfollowed by rolling. The degree of preferred orientation was less for both the forged and rolled rods than for the production rods currently received from Lockport. It has been found that a commercial salt bath is satisfactory for use as a medium for preheating uranium. The salt forms a protective coating around the uranium preventing excessive oxidation during rolling.

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The rolling of 1-1/16 and 13/16 inch diameter rods in a six stand continuous mill at the Lackawanna plant of the Bethlehem Steel Company was observed by a representative from Hanford. Samples of rods preheated in lead and in salt and finished at several temperatures were obtained for laboratory evaluation as a portion of Hanford's contribution toward developing a satisfactory fabricating process for the Fernald, Ohio, Feed Materials Preparation Center.

Physical Measurements

Previous tests have shown that dilatometric testing for the degree of transformation of canned slugs is feasible. A correlation between the results from the dilatometers developed for production and for laboratory experimentation has been completed showing mathematical relationships between expansion and volume per cent transformation as determined by both pieces of equipment. A new oil for use at higher temperatures is being tested in the slug dilatometer to provide a greater temperature range and consequently a greater expansion for any one slug tested.

Orientation Studies

Studies of two Lackawanna continuously rolled rods revealed that the orientation is slightly lower than that of regular as-rolled Hanford production rod. Metallographic studies showed that about 90 per cent recrystallization had occurred but that grain size varied markedly within each sample. The ratio of grain diameters within a single rod was as great as 10 to 1.

Orientation studies of rods cold drawn to final size showed that this material has a more strongly preferred orientation than Simonds rolled uranium.

Two high density uranium powder compacts prepared by the Sylvania Electric Products Company were examined. These powder compacts are superior to the triple dipped slugs cut from Simonds rolled rods in that they have a smaller grain size and a more randomized orientation (HW-21979).

Approval to conduct Production Test No. 313-117-M, "Lead Dip Canning and Irradiation of Uranium Slugs", HW-21782, was received. The purpose of this test is to determine the dimensional changes which occur during irradiation of uranium of known orientation.

METALLURGY OF PLUTONIUM

The objectives of this program for 1951 are to develop specialized laboratory equipment, to develop laboratory procedures necessary to the handling of plutonium, to make a study of the basic physical metallurgy primarily to determine the factors affecting the stability of structural forms of plutonium, and to conduct development work leading to simplification of the metallurgical phases of the present 234-5 process.

Hoods 1 through 12 are on site, and hoods 1 through 9 are installed. Hoods 13, 14, and 15 have been shipped, and hoods 16 and 17 are being constructed locally. Final design prints for the Tukon hardness tester hood have been approved. Instrument panels have been set for installation of instruments and wiring to hoods.

Efforts are being made to obtain early delivery of the specialized equipment which has not been received.

An accountability system is being worked out which will tie the Plutonium Metallurgy account in with existing 234-5 procedures.

Literature surveys are being made of techniques for precision casting, electroforming, cathodic vacuum etching, and high pressure forming which are applicable to materials used in the 234-5 process.

METALLURGY OF HANFORD STRUCTURAL MATERIALS

The objectives of this program are to establish the suitability of metallic materials under present and proposed operating conditions and to develop new structural materials for new piles and processes.

Materials for Process Tubes and Slug Jackets

Some zirconium sheet which has been annealed at KAPL will be sent to the Superior Tube Company for tube welding experiments. If these experiments are successful, sufficient sheet will be roll formed to make an experimental process tube. A pressure creep unit is being constructed to test the creep properties of new process tube designs. The design of equipment for working difficult metals such as zirconium has been started. A document giving details of some of this work was issued, viz., "Trip Report, Superior Tube Company, Radio Corporation of America, and BMI 7-14-51 to 7-25-51", HW-21979.

Pile Tube and Slug Corrosion

Preliminary tests of anodized dummy slugs exposed for 23 days in process water at 25°C. in the central zone of 105-H showed some protection of the slugs from film formation and some retention of the inorganic dyes during exposure.

Enough data from air weighing has now been obtained so that some general conclusions can be drawn. Corrosion rates measured by water weighing are 15% to 35% lower than rates based on air weighing. This is probably because the water weights are obtained with film on the slugs.

Plots of corrosion rate against slug surface temperature, calculated on the assumption that the slugs are clean, indicate a good correlation between these two variables up to slug surface temperatures of about

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40°C. Above this point the correlation is very poor, and the differences between slugs in different tubes suggest that at least two other mechanisms dependent on variables other than temperature influence the corrosion rate.

Recent borescopic examination of several tubes at 105-B revealed pitting corrosion on the Van Stone flanges. The attack was not so severe as to require reflanging of the tubes, but the condition warrants further study.

200 Area Corrosion

Investigation of the splash ring failures at 200 East revealed that the failed parts were fabricated from unstablilized stainless steel. Sensitization adjacent to the welds resulted in rapid failure by intergranular attack.

The first phase of a corrosion test program in support of the selection of materials of construction for the Recuplex Program is underway. Preliminary tests to date indicate that the solution employed is quite corrosive to stainless steels such as 309SCb and 304 ELC.

C Pile Corrosion Information

Recommendations were made for means of eliminating or detecting corrosion when stainless steel and mild carbon steel pipes are coupled. The horizontal control rod assembly was studied in detail, and recommendations were made for minimizing corrosion within the assembly.

CANNING DEVELOPMENT

The objectives of this program are the improvement of the present and the development of new canning processes to provide canned slugs of better quality.

Eight Inch Slug Cans and Caps

Drawings H-4-1786 and H-4-1787 of the can and cap for the proposed eight slugs were completed. The changes, from present production cans and caps, are the increased length of the can; the addition of .010 inch to the can wall thickness, reducing the inside diameter by .020 inches; the thickening of the cap from .250 to .425 inch; the thickening of the cap boss to one-half inch.

Canning Bath Temperature and Can Preheat

Data obtained in Metal Fabrication Request 142 indicated that a preheat time of was required for the can-sleeve assembly to reach an equilibrium temperature in a bath. After this test pointed out the desirability of using preheated cans, Metal Fabrication Request 145

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was run to evaluate such cans. Excellent results, including good wetting, good minimum can wall thickness at , and no non-seating resulted among the 50 slugs canned. Preliminary indications are that the use of a preheated can-sleeve assembly or a quickly heated can without a sleeve, but with a coat to protect the exterior from Al-Si, and a preheated cap will have several advantages: (1) reduction of non-seat rejects, (2) control of penetration, (3) extension of the usable canning temperature range, (4) reduction of canning time, and (5) simplification of the operator's procedure.

Can Welding Procedure

A final report on Production Test 313-116-M, "Reevaluation of Welding Procedures", HW-21729, has been issued. Welding at a slug rotation rate of 4 rpm, and at 80 amperes, using an arc positioning quadrant to locate the electrode, appears to be the best procedure. A production run of approximately 150 slugs made using this procedure is being evaluated.

About 70 slugs were welded after omitting the filing operation on the corner of the slugs after the facing operation. It appears that this deburring operation, which removes a small amount of aluminum at a point where it is needed to cover or diffuse with Al-Si, possibly may be omitted. A production run will be made to further evaluate this operation.

Dark Welds on the Slugs

A wide Al-Si braze in the slugs between the cap and the can causes a dark weld which contains a high percentage of Al-Si. It has been suggested that these slugs may be the ones which corrode raggedly around the cap. Selected slugs have been sent to the piles for a controlled test of these welds.

Inspection of Welds

Preliminary tests of "Dy-Chek" on 1000 slugs as a means of evaluating welding defects indicate that a good percentage of slugs now rejected for bad welds may be saved.

Autoclaving of Canned Slugs

Three hundred-seventy selected rejected slugs were thermally shocked by heating to 170°C. in the autoclave and water quenched. Failure in a ratio of 1 in 35 was induced in these defective slugs during the cycles at up to 20 cycles, indicating that some consideration can be given to including a more severe autoclave test. The bonding layers of slugs which did not fail apparently were not seriously damaged by this treatment.

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Establishment of Standards and Techniques for Bare Slug Inspection

Six canned slugs containing defective uranium cores were partially stripped in caustic, but no evidence appeared to indicate that the can wall interiors had been abraded or otherwise injured by the defective uranium slugs. It is proposed to strip more of these slugs in a further search for indications of interior can wall abrasion.

Beta Heat Treatment in Salt Baths

A commercial salt bath of acceptable purity has been successfully used for beta heat treatment of uranium slugs. Transformation was complete after one minute immersion in the bath at 750°C. No evidence of corrosion of the container, the bath, or the handling tongs was found during the test.

Beryllium Additions to Al-Si

It has been reported that very small additions of beryllium to aluminum alloys reduce the high temperature formation of dross on the surface of the molten metal. A program has been initiated to test the feasibility of making such additions of beryllium to the Al-Si baths used for canning uranium. Initial results indicate that a bath of Al-Si containing less than [redacted] beryllium forms but little dross at the surface when heated to canning temperatures [redacted] and allowed to stand in air. The effect of agitating a bath thus protected is being investigated.

Materials for Tools Exposed to Molten Al-Si

In connection with the development of a mechanized slug canning operation, a material will be required which will better withstand the corrosive action of the Al-Si bath than the stainless steel now being used for baskets and tongs. A special heat-resisting steel has been pack carburized to prepare for a test of such a high carbon surface in the molten Al-Si bath.

Mechanization of Slug Fabrication and Testing

An outline, indicating the scope of the proposed mechanization program, has been submitted for the approval of the Development Committee.

RADIOMETALLURGY

The objectives of this program are the development of laboratory techniques for the study of samples of irradiated materials and the metallurgical investigation of radioactive materials which are used in the present or are planned for use in the proposed Hanford reactors.

Ten slugs were shipped to the Westinghouse Atomic Power Division hot laboratories at Pittsburgh for study of the effect of irradiation upon normally discharged uranium slugs.

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Invitations for bids for the fabrication and construction of special equipment for the radiometallurgy Building 327 have been sent out, and some answers have been received. Invitations for bids for the construction of Building 327 were sent out at the end of August.

All radioactive samples stored in Building 111-B have been safely transferred to the dry-storage unit, thus releasing 200 square feet of floor space for other laboratory work.

A Bergsman micro-hardness tester has been received and installed on the Bausch and Lomb metallograph. This equipment makes it possible to obtain Vickers harness number for loads up to 200 grams, and possibly it may be used to make hardness tests on radioactive materials.

TRITIUM PRODUCTION

Operation of the metal line was beset by many minor difficulties resulting in the initiation of mechanical improvement studies in both Production and Development groups. The plungers of several Skinner valves had to be replaced to eliminate leakage and the shaft seal of the Gast compressors of the helium recycle system had to be modified to minimize leakage. The incidence of internal contamination of personnel with tritium oxide has increased concurrently with activation of the metal line and increased production. Though only one maintenance man exceeded the permissible internal concentration for tritium oxide during August, several people exceeded the arbitrarily established working limits. Current preventive procedures are concentrating on control of surface contamination and in education of personnel.

The first batch of air contaminated product was encountered in the metal line when a compression joint between the line and a product vacuum tank parted. Approximately 5,000 units of product were contaminated and had to be stored in two vacuum tanks for reclamation when the stripper addendum to the metal line is activated later in the year.

TRITIUM DEVELOPMENT

Metal Line Improvement Studies

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Investigation of mercury losses from Toepler pumps has resulted in the addition of a ball check valve in the pump service leg. Under exaggerated conditions of operation, the test pump with a ball check lost no mercury or gas through the service leg. Investigation of the mechanism by which process gas is lost to the service system has been initiated.

Ion chamber results and hydrogen isotope partial pressure determinations on the upstream side of the palladium separator appear increasingly promising as a means of establishing separation end points. Correlation between these data and mass spectrometer analyses has been established.

Experimental Extractions

It has been observed that the temperature at which tritium can be pumped from irradiated Li-Al alloy decreases with increased slug exposure (HW-21705). The tritium and helium content, of course, increase with increased slug exposure. Thus, slugs having low exposures which contain relatively small amounts of tritium and helium evolve the tritium at somewhat higher temperatures than those of higher exposures.

From the above, it may be postulated that gas evolution from the slug is related to the expansion of the metal alloy. When the metal lattice becomes disrupted sufficiently, tritium can be pumped off. Further expansion opens the lattice sufficiently for the helium to escape. Internal pressure, roughly proportional to the tritium and helium content, would assist in lattice disruption. When these pressures are low, more heat is required to bring about the lattice disruption necessary to permit tritium and helium release.

If the evolution of tritium from a slug is dependent upon the free expansion of the metal lattice as indicated above, it may have an important effect on the extraction of canned slugs. Any increase in temperature presents additional diffusional and sorption problems such that the extraction of canned slugs, even though the can is punctured, must be reconsidered in the light of the additional temperatures that will be needed for extraction.

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The incidence of oxide coated slugs has been steadily increasing. It has been observed that the lightly coated slugs yield product of higher than normal purity.

The oxide coating on the lightly coated slugs is a very thin film. It is not known whether this coating is $Al_2O_3 \cdot H_2O$ as on the heavily coated slugs, or some other compound, such as Li_2O. The mechanism of the phenomenon resulting in higher purities is not understood at present. It may be that the hydrogen sorbed on the surface of the slug is desorbed upon formation of the oxide layer. This surface hydrogen would then be released upon decanning or more easily released upon outgassing and consequently would not show up in the product. If this phenomenon can be conveniently reproduced artificially without the loss of significant amounts of product, it would be desirable to use it routinely to improve product purity.

Applied Research Activities

Through appropriate experiments using the quartz spring microbalance, it was determined that a pair of goatskin gloves, such as worn by the operators of the tritium production lines, could sorb 5.4 liters (STP) of water vapor or tritium oxide in one and one-half hours from a saturated atmosphere at room temperature. This indicates the necessity of wearing rubber gloves or other impermeable materials beneath goatskin gloves whenever wet mercury or glassware is handled.

Experiments on thermal conductivity have been completed and no further work is planned at this time since mass spectrometry and ion chambers provide required analytical tools. The thermal conductivity apparatus is capable of analyzing the entire concentration spectrum of tritium-hydrogen mixtures with a precision of $\pm$ 0.2 per cent when the cells are thermostatted and of detecting air contamination if appropriate accessory apparatus is used.

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Metallurgical Studies

The hydrogen analyses of solution heat treated Li-Al slugs will be reported in document HW-21922. These tests indicate that hydrogen pick-up from the atmosphere may be reduced as much as 40 per cent by solution heat treatment; in addition, solution heat treatment reduces noxious dusting of alloy during machining, may increase resistance to corrosion by water, and may provide more desirable tritium extraction characteristics.

Construction Liaison

Project C-399 was scheduled for completion on August 31, 1951. Inspections have been made indicating that "close-out" can be effected with several specific exceptions to be completed within 90 days.

On Project C-412, the air mask washing facilities, the miscellaneous storage area and the solvent storage building have been completed. Under active construction are the Metallurgical Laboratory and the new burial ground for contaminated materials.

SPECIAL IRRADIATIONS

High Pressure Water Channel - ANIM-140

The behavior of water prototype fuel and structural materials is being observed under conditions simulating those of the STR as closely as is possible in the Hanford piles.

During August, operation was routine On August 7, cartridges 12, 9, 11, 8, 7, 13, D and C were charged in that order for the start of Test Run III. A mono-bed ion exchanger was added to the system and, as a result, the specific resistance of the water has increased from an average of 150,000 ohms/cc to a value greater than 500,000 ohms/cc.

Measurement of Uranium Slug Temperatures

Two slugs with four surface welds over radial holes have been prepared and will be tested in a special automatic thermocycling autoclave.

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Special Irradiations

Monthly statistics on the Special Request Program are tabulated below:

P-10-A pieces charged	326
P-10-A pieces discharged	417
P-10-A pieces being irradiated (exclusive of H-10)	1462
Special Request samples charged	175
Special Request samples discharged	6
Samples on hand awaiting charging	681
Samples now being irradiated	581
Samples awaiting shipment	46
Samples shipped during August	33

100 AREA PLANT ASSISTANCE

New maximum power levels were reached during the month at B, D, DR, and F Piles, principally as the result of revisions of rod configuration, flattening patterns, and increased water flow in D, B, and DR Piles. The F Pile level was assisted by the higher graphite temperature limit. Thorium is now being substituted for P-10 target material for flattening in these piles in locations where the resulting decrease in flexibility will have the minimum effect on power level. As presently scheduled, the transition will be accomplished in about six months. P-10 material will continue to be used at H Pile as the H-10 load is displaced and flattening columns are required.

Ruptured Slugs

There were eight unscheduled shutdowns during the month directly caused by ruptured slugs. One of those at B Pile had to be extended to 117 hours, with the subsequent startup being especially difficult due to the extensive temporary poison loading required, and to the fact that one horizontal control rod was inoperable. In another instance at B Pile, the offending slug was removed and the pile was ready to start up fifty minutes after shutdown, but scram recovery time was not sufficient to permit startup. One of the outages at D Pile was caused by a ruptured slug in tube 2073. The effluent water monitoring system for the cross-header supplying this tube was arranged so that the activity observed at one end of the cross-header was bucked against that observed at the opposite end. Apparently this tube was so symmetrically located with respect to the two monitoring points that no significant indication was obtained.

Data on the twelve ruptured slugs which occurred during the month are tabulated below:

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Tube	Date	Time In-Pile Days	Slug Power KW	Local Water - °C.	Slug Position	Canning Date	Type of Failure
1572-D	8-3-51	128	6.3	64	45 (est.)	3-9-51	Cap
1963-B	8-7-51	125	6.6	47	25	3-14-51	Split
1485-B	8-12-51	201	4.6	45	41	1-4-51	Split
4086-H	8-14-51	103	4.3	55	40	11-3-50	Split
3658-D	8-17-51	403	5.5	53	37	6-7-50	Cap
2073-D	8-23-51	190	6.6	59	40	1-18-51	Cap
2584-B	8-28-51	217	6.9	70	40	1-5-51	Cap
1861-B	8-29-51	203	6.6	55	36	12-26-50	Side
2068-H	8-30-51	22	6.8	38 or 53	25 or 40*	7-7-51	Cap
3782-H	8-6-51	326	P-10 slug	49	33	----	P-10
0966-H	8-24-51	344	P-10 slug	51	36	----	P-10
1963-H	8-24-51	383	P-10 slug	52	37	----	P-10

Reactivity Status

A representative summary of the reactivity status of each of the operating piles for the end of August is given below:

Pile	B	D	DR	F	H	Totals
Control Rods	91	110	117	155	105	
Xenon	665	668	702	654	697	
Plant Assistance	24	20	0	13	21	78

* Position determined from weaseling.

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Pile	B	D	DR	F	H	Totals
"B" Program	86	114	60	83	0	343
Dummy Columns	14	24	11	31	55	
Hot Reactivity	1406	1416	1110	1378	1012	
C_o Allowance	-360	-390	-220	-466	-248	
Cold Reactivity	1046	1026	890	912	764	

Gains in reactivity were noted at D and DR as the result of increasing average product concentrations in these piles. There were no significant changes observed at B and F Piles, although the total reactivity figure given for B Pile is lower than last month due to adjustments made in the evaluation of special loadings and overall coefficient allowance. H Pile gained reactivity from the replacement of depleted H-10 loadings by virgin regular metal.

Graphite Temperatures

All but one of the graphite thermocouples in DR Pile continue to be inoperative, probably because of corroded iron wires inside the biological shield or in the junction box. Unless some of these thermocouples can be repaired, installation of thermocouples in bare process tube channels may be necessary to adequately monitor graphite temperatures.

Lattice conductance values in the B Pile showed a drop of five to eight per cent after an outage in which approximately 5,000 cubic feet of air diffused into the pile. This effect may be due to oxygen chemisorbption or a negative temperature coefficient of thermal conductivity as is shown by unirradiated graphite. If the latter, the B Pile operating level is now near the maximum power level attainable with the 380°C. graphite limit.

PLANT SERVICE WORK

A rod of normal uranium was rolled for the Separations Technology Unit.

The calibration of dynamometers, repaired by the Instrument Group of the Metal Preparations Section, was made against the laboratory's tensile testing equipment.

Hastelloy C welding electrode was rolled from rod to strip for A. & J. Construction Company.

A number of Debeye-Scherrer X-ray diffraction patterns were made to establish the identity of precipitates found in solutions purchased for the Redox program.

Standard Huey tests, conducted at the request of Design and Construction Unit, on samples of stablized stainless steel welded to unstablized stainless steel and subsequently annealed, indicated acceptable corrosion rates with no evidence of intergranular attack on the unstablized stainless steel.

The corrosion laboratory conducted 16 standard Huey tests on a routine basis during the past month.

INVENTIONS

All Pile Technology Unit personnel engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work during the period covered by this report. Such persons further advise that, for the period therein covered by this report, notebook records, if any, kept in the couse of their work have been examined for possible inventions or discoveries.

Signed _____
G. E. McCullough
Head, Pile Technology Unit

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September 6 1951

SEPARATIONS TECHNOLOGY UNIT

MONTHLY REPORT
AUGUST, 1951

VISITORS AND BUSINESS TRIPS

J. Haynor, AEC, Washington D. C., W. Bain and A. Soffel of the Kellex Corporation visited this site August 2 for dissolver off-gas consultations.

Stephen Lawroski, Argonne National Laboratory, visited Hanford August 20-22 to inspect the Redox Plant.

E. L. Zebroski, Knolls Atomic Power Laboratory, visited here August 20-23 to inspect the Redox Plant.

J. B. Work attended a meeting on product specifications and visited the DP West Plant at Los Alamos August 7-10.

B. Weidenbaum attended a Critical Mass Safety Review Meeting at Argonne National Laboratory August 27-28.

ORGANIZATION AND PERSONNEL

Personnel totals are as follows:

	July	August
Administration	2	2
Special Assignment	3	3
Research	38	41
Chemical Development	84	82
Process	41	44
	168	172

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Separations Technology Unit

Development: One Chemist was transferred from Analytical Unit, and one Steno-Typist A was transferred from the Law Department. One Chemical Engineer transferred to "S" Section. One Engineer Assistant, one draftsman and one General Clerk C was terminated.

Process: One Chemical Engineer was added as a new hire. Two Tech. Grads were transferred from Management General and one Clerk B was transferred from Construction Security. One Steno-Typist D was terminated.

Research: One Tech. Grad. transferred from Management General, one Chemist transferred from Purchasing-Inspection and one Lab. Assistant C transferred from Radiological Science.

200 AREAS PLANT ASSISTANCE

Canyon Buildings

At B Plant seventeen runs were processed at 2.5 g/l bismuth concentration in extraction and 42 and 49 volume percent of the September 1946 flowsheet volumes in the first and second decontamination cycles. The average Canyon Building waste loss corrected for americium and curium was 0.34% higher than for the recent standard control series. This loss is not significantly different from the series using the same extraction bismuth concentration with 49% and 56% volumes in the first and second decontamination cycles respectively. A series of fifteen runs were then processed at 2.5 g/l bismuth in extraction with 35% volume in the first cycle and 42% volume in the second cycle decontamination. Average Canyon Building waste loss for this series was only 0.09% greater than for the recent standard control series. However, serious process difficulties occurred as 60% of all of the product cake solutions required additional acid to obtain sufficient clarity. Canyon Building log gamma decontamination factor dropped to 4.77 for this series compared to 4.95 for the recent control series. Runs at B Plant are currently being processed at standard control volume (70% of the September 1, 1946 volume) to establish control losses and decontamination for approximately 600 MWD/T metal. At T Plant runs continue to be processed at 2.5 g/l bismuth in extraction, and 56% volume in both decontamination cycles.

Mercuric nitrate was added to the metal solution to 10^{-3} M just previous to transfer from the dissolver for 45 cuts starting with T-11-07-Dd-13 on July 16, 1951. Eighteen control samples of Canyon Building exhaust ventilation air from down stream of the sand filter were taken between June 1 and July 16, 1951. These samples averaged 5.4 curies of I^{131} per 24 hour period in the exhaust ventilation air for 1055 curies dissolved per 24 hour period. Fourteen similar samples taken since the introduction of mercuric nitrate averaged 0.40 curies of I^{131} per 24 hour period in the exhaust ventilation system. The average I^{131} content of the dissolved slugs was 1323 curies per 24 hour period. This indicates approximately 94% of the iodine formerly evolved from metal solution after leaving the dissolver is now retained by the mercuric complex. Mercuric nitrate is currently being added to a concentration of 10^{-4} M as prescribed in the production test procedure.

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Separations Technology Unit

Waste losses and decontamination in the Canyon Building for 647 MWD/T material were not significantly different from the preceding material (571 MWD/T) processed at the same concentrations and volumes as can be seen from the following tabulation.

Waste Losses and Decontamination
with 647 MWD/T Metal

		Percent Waste Loss(Total alpha counts)							
			1st Cycle		2nd Cycle				
Push	No. Runs	Extraction	By-prod	Prod.	By-prod	Prod.	% AMCMTC	% Pu Loss	Canyon LGDF
6-6 DR 571 MWD/T	6	2.20	0.80	0.45	0.15	0.28	2.04	1.84	4.99
6-12 H 647 MWD/T	6	5.17	0.84	0.76	0.28	0.21	5.36	1.90	5.05

The average product concentration based on the total plutonium alpha count per ton of uranium at batch make up was 564 grams of Pu per standard ton of uranium for this 647 MWD/T material.

With the advent of 600 MWD/T material a revised extraction waste loss value based upon a statistical study of the Am-Cm content of the dissolved metal solution and the radio assay of the extraction waste was instituted. This resulted in raising the rework limit on extraction waste to 4.37 percent of the total alpha activity. This value is subject to revision as further analytical data are procured.

Second cycle waste and cell drainage have been combined for storage at both B and T Plants. Cell drainage was diverted to the second cycle cascade system starting July 7, 1951 at B Plant and June 25, 1951 at T Plant. The cascade systems are now sampled twice monthly to determine the amount of activity going to the ground. The data indicate the combination of cell drainage and second cycle waste has reduced the curies of beta activity per liter of waste solution released to the ground by approximately 98%, largely through decontamination of cell drainage.

Concentration Buildings

Master recycle run B-11-08-MRC-1 consisting of 234 Building permanganate solution from equipment flushes and 231 Building recycle was processed through Building 224-B with a total percentage waste loss of 0.42 percent. Sixteen cans of SN-3 solution (peroxide treated supernate from oxalate precipitation) from 234-5 Building were blended into 224 Building and processed uneventfully. The total loss in LaF_3 by product, product and metathesis operations averaged 0.31 percent for the 29 runs that were made.

Recycled material consisting of B-1-S, B-2-S, COS and SN-3 solutions blended with normal recycle and added to seven runs T-11-08-F-DR-29 through B-35 resulted in increased lanthanum fluoride by-product waste losses. The average D-4-BP loss for these runs was 0.21% compared to 0.05% for ten preceding runs to which no recycle was added. No increase in the lanthanum fluoride product or metathesis wastes occurred.

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Separations Technology Unit

Seven runs were processed through the Concentration Building at B Plant at 42% volume as a result of the 221 Building production test. An apparent increase in the lanthanum fluoride product waste loss occurred. The results are shown below.

		Average - % Waste Loss			
No. of Runs	Volume, %	A-4-BP	D-4-BP	B-3-WS E-3-WS	F-8-WS
7	42	0.14	0.07	0.35	0.03
10	70	0.15	0.10	0.18	0.04

Decontamination has been poorer at both B and T Plants during the month. The average PR can bottom Beckman reading (mr/hr) and Log DF for 30 runs B-11-08-H-1 through H-DR-F-30 was 230 and 6.39 compared to 95 and 6.76 for 28 runs last month at B Plant. At T Plant the average PR can bottom Beckman and Log DF for 30 runs T-11-08-H-DR-1 through F-DR-30 was 182 and 6.47 compared to 79 and 6.91 for 55 runs last month.

Isolation Building

Four runs were processed by filtration following the second peroxide precipitation as a part of Production Test 234-3. The filtration proceeded satisfactorily with the exception of one run in which a leak developed between the filter plate and the filter body permitting 22 percent of the product to by pass the filter plate.

The use of 0.15 vs. 0.25 M sulfate concentration for the second peroxide strike has apparently been successful in reducing the amount of holdup (attributed to plutonium sulfate) in the AT and WT tank system. Four system flushes subsequent to the reduction in sulfate concentration yielded from 3 to 14 percent of a standard run whereas 15 flushes following the higher sulfate concentration yielded from 4 to 38 percent of a standard run.

Special runs to recover product contained in Analytical Laboratories recovered and partially purified wastes and in solutions from the P-11 program, which were contaminated with lithium, were carried out employing a single peroxide precipitation according to second cycle conditions. These runs were within the normal range of variation with respect to recycle and time cycles.

Waste Evaporator

The unit performed satisfactorily although sludge accumulation continues to be troublesome. Evaporation rates varied from 450 to 750 gals/hr and volume reduction from 68 to 82 percent while maintaining beta activity in the condensate in the range 0-19 counts/min/ml.

Citric acid (0.5 wt percent) flushing with air sparging removed approximately 20 percent of the sludge. A further flush with 1.0 percent citric acid removed another 20 percent of the accumulated sludge. Operation was resumed without removing the entire accumulation. The subsequent runs (T-11-08-W-13) employed

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constant air sparging during evaporation. This reduced the sludge from 600 to 450 gallons. Because of the additional pressure in the evaporator as a result of air sparging this practice was discontinued. In order to maintain closer control of the volume reduction factor, operations are now relying upon the condensate volume as the control basis.

Purification and Fabrication Building Plant Assistance

The effectiveness of the Aloxite filter between the purification vessel and the SNHT tank (supernate collection) in Hood 5 is apparent from a comparison of the Pu removed from the supernatant systems in Hoods 5 and 7 (no filter) during permanganate flushes in August. Flushes after a comparable number of purification runs recovered 4.4 percent of a batch from the SNHT in Hood 5 and 16.9 percent of a batch from the SNHT in Hood 7.

Production Test 234-1, Supplement A, a procedure for destroying oxalate and removing iodine by the use of hydrogen peroxide, has been informally adopted as standard operating procedure. A summary report (HW-21902) based on the foregoing test has been completed which will formally recommend the adoption of the procedure. Supplement B of Production Test 234-1, a procedure for the destruction of oxalate in previously stored SN-3 solutions (oxalate supernatants) by combination and simultaneous processing with current SN-2 solutions, has been tested on three runs. In two of the runs one lot of previously concentrated SN-3 was combined with one lot (eight batches) of SN-2 (current process supernates) and in the third run two lots of SN-3 were combined with one lot SN-2. The procedure resulted in essentially complete destruction of the oxalate but the results are anomalous with respect to iodien as 1.5 to 10 gm/liter of iodate coexisting with 3.0 to 11.0 gm of iodide/liter have been reported. A reduction in the amount of peroxide added is expected to correct the situation.

Material returned from the P-11 program with a high lithium content was successfully purified in the 231 and 234 Buildings. This material was delivered to the 234 Building containing 10 to 40 ppm lithium (normal 2 ppm). The plutonium oxalate produced from this contained 2 ppm lithium (normal 2 ppm).

A fused powder was produced during the hydrofluorination of batch X-11-8-82. The high temperature responsible for the fusion resulted when a control thermocouple was inadvertently dislodged from its normal position. The powder appearance remained the same throughout 32 hours of rehydrofluorination after which it was transferred to reduction. A reduction yield of 99 percent was obtained for the run containing this material.

Production Test 234-3 (Hydrofluorination of P-2 cakes) has been completed. The following conclusions are among those drawn from the data obtained:

1. Two 500 cc methanol washes should be carried out as a final filter-cake treatment in the 231 Building.

2. The alcohol-washed cake should be dried in an inert atmosphere prior to hydrofluorination.

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3. Plutonium of adequate purity is obtained by the procedures tested.

4. Plutonium tetrafluoride bulk densities (when alcohol washed peroxides were used) are ca. 0.6 g/cc.

5. Reduction yeilds of 90-97.6% were obtained. (The higher figure is expected on routine plant runs).

The minor equipment and process changes required for the incorporation of the alcohol washing and drying operations mentioned above are being made.

The average c/q summation for light element impurities (exclusive of oxygen) for castings produced during July is 0.38.

Plutonium analyses of machined castings were started with . The following data were available at months end:

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REDOX AND METAL WASTE RECOVERY DEVELOPMENT

Redox Plant Assistance

The Redox Plant was officially accepted by the Separations Section (formerly the "S" Division) from Construction on August 15, with exceptions which include such major items as alterations to the Silo and canyon cranes, completion of K panel installations, and silver reactors. A small crew of construction personnel is being retained to complete these items.

Minutes of the third Redox Program Committee meeting, held on August 9, 1951, were issued in Document HW-21893, by O. C. Schroeder.

Work on the Redox operating procedures was continued. These procedures will be issued as two separate documents entitled: "Detailed Redox Operating Procedures", and "Condensed Redox Operating Procedures". Rough draft portions of the detailed procedures are approximately 85% complete and issuance is expected by September 15. The condensed procedures are about 40% complete in rough draft form and are scheduled for issuance by September 30.

Water calibration of all vessels has been essentially completed by the Separations Section. Line flushing and checking with water is currently in progress in preparation for boil-up tests.

Uranium Recovery Plant Assistance

The Uranium Recovery Plant Assistance group was formally activated during the month with eight men being assigned to the group. To date, the greater portion of the group's effort has been concentrated on the preparation of a portion of the Uranium Recovery Technical Manual. Some aqueous makeup, 221-U, 241-WR, and 224-U Building procedures as written by the Separations Section have been reviewed and commented upon.

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Uranium Recovery Technical Manual

On August 25 the preparation of this manual was about 66% complete. Eight chapters, the first to be finished, were completed during the month. Limited rough draft editions of the following chapters were issued for use by the Manufacturing Department prior to issuance of the completed manual:

II. Uranium Removal From Underground Storage (as Document HW-21675).

III. Feed Preparation (as Document HW-21945).

Process Studies

The calculation of a Redox material balance flowsheet based on ORNL #1 Flowsheet conditions, a 2.5-ton/day uranium processing rate, a 530-g/ton enrichment level, and ANN-dilution for critical mass control in the plutonium cycles was begun.

321 Building Operations Training

The program of training Separations Section personnel to operate the solvent-extraction equipment in the new Redox and Uranium Recovery Plants, was terminated August 5 when the fifth cycle of trainess (24 operators and 4 supervisors) completed their training.

321 Building Operation and Maintenance

During the period of August 6 to 19, three-shift/day coverage was continued to place the Scale-Up solvent-extraction equipment and auxiliaries in stand-by condition and to prepare the Demonstration Unit auxiliaries to be used in operating the new Fenske Stacked Extractor (see below).

The installation of the 20-stage, Fenske Stacked Extractor was completed and necessary piping to the Demonstration Unit feed tanks, pumps, rotameters, and receivers was provided so that the extractor could be operated with either hydrocarbon or CCl_4 as a diluent for the TBP extractant. Work was initiated to convert F-4 tank to a dissolver for the dissolution of slag and crucibles in the Recuplex program (see below).

The Recuplex Process

Development work was initiated during the month on a new solvent-extraction process provisionally named the "Recuplex" process. Employing tributyl phosphate (TBP) solvent in hydrocarbon or CCl_4 diluent, this process would probably be located in Room 221 of Building 234, and would couple 224 Building plutonium product and Redox plutonium product solutions directly to 234-5 Building, as well as recovering plutonium from slag and crucibles (from 234-5 Building) and from miscellaneous other recycle solutions. Objectives of the process are to produce pure plutonium solution in a concentration range from 40 to 60 g.Pu/l and suitable as feed to the 234 Building operation. Development work on this new process is being conducted by Process Assistance, Chemical Research, and

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Chemical Development - all three of the Separations Technology Unit.

Chemical Development activities in working out the Recuplex process embrace (a) solvent-extraction studies on a semiworks scale, (b) studies of the filtration of silica from slag and crucible dissolver solution, and (c) corrosion studies (actual corrosion tests being conducted by the Metallurgy Section of the Pile Technology Unit). All of the above testing is being conducted using uranium as a stand-in for plutonium.

Equipment Development

Recuplex Solvent-Extraction Studies. A 20-stage Fenske Stacked Extractor is being employed as the contactor for the preliminary Recuplex solvent-extraction studies on a semiworks scale. The selection of the Fenske extractor is based on its compact size (90 in. high by 22 in. wide by 15 in. deep), and consequently, the facility with which it could be fitted into existing space in the 234 Building. The extractor, designed and buklt by the Petroleum Refining Laboratory, Pennsylvania State College, for the Standard Oil Development Company is described in Petroleum Refining Laboratory Report No. S.O.-7-49, dated May 16, 1949. The Fenske Stacked Extractor is a mixer-settler type contactor which employs vertically reciprocating perforated plates in each mixing chamber to accomplish phase mixing.

Based primarily on exploratory work by Chemical Research, a tentative flowsheet has been established for the Recuplex process semiworks studies using uranium as a stand-in for plutonium, and employing CCl_4 as a diluent for TBP. This flowsheet, designed to establish the feasibility of the solvent-extraction process, utilizes one contactor (CA) to extract the uranium from other components in the aqueous feeds into the organic phase, and one contactor (CC) to strip the uranium from the organic phase back into the aqueous phase.

The capacity and solvent-extraction effectiveness of the Fenske Stacked Extractor will be determined by operating the unit as both a CA and a CC contactor.

Three initial scouting runs were made during the month under simulated CA conditions to demonstrate the operability of the Stacked Extractor, detect and correct leaks in the system, and obtain an indication of the flooding capacity under simulated conditions. All three aqueous feed streams (CAS, CAF, and CAF) were aluminum nitrate solutions containing 390 g/l of ANN. The CAX (extractant) was CCl_4 containing no TBP. Although some instability of the interface position was encountered, this behavior was believed primarily due to unfamiliarity with operation of the extractor. In the first two scouting runs, flooding of the extractor was experienced at total feed rates (sum of all aqueous and organic feed rates) of approximately 1000 ml/min. However, in the third run, during which flow rates were increased more slowly, a total feed rate of 1740 ml/min was attained without flooding (maximum rotameter capacity). Each time the flow rates were raised, a second interface appeared in the lower bulls-eye(indicating momentary flooding) but disappeared after approximately 10 to 15 minutes operation.

Filtration of Slag and Crucible Solution. This portion of the Recuplex program is divided into two phases. The first phase is concerned with the removal of silica from the dissolved slag and crucible solution so that the feed to the solvent-extraction contactor will have good disengaging characteristics and will not form emulsions with the extractant.

The second phase of the program is concerned with the preparation of slag and crucible feed solutions for the semiworks solvent-extraction studies.

Filtration is being studied as a method for silica removal. The use of a filter aid (Filter Cel or diatomaceous earth) has been previously investigated and found to be effective in removing silica from Redox dissolver solution. Laboratory filtration studies of slag and crucible dissolver solution are in progress, and preliminary results are reported under Process Chemistry, below.

Corrosion Studies. Initial results are available on the effect of slag and crucible dissolving conditions on Type 304 ELC, 347, and 309 SCb stainless steels. In these tests, representative portions of slag and crucible are dissolved in the presence of the metal corrosion test specimens (in liquid and in vapor space) and the solution is refluxed for 24 hours. This is repeated daily except Sunday. All metal samples were polished. The sensitized samples were held at 1250°F. for 1 hour and water quenched. The corrosion rates obtained in inches penetration per month (average of 5 dissolution and digestion cycles) are as follows:

	Corrosion Rate, In./Mo.			
	Parent Metal		Parent Metal Sensitized	
Metal	Vapor	Liquid	Vapor	Liquid
309SCb	0.0009	0.0005	0.0082	0.0015
304ELC	0.0017	0.0013	0.0028	0.0014
347	0.0029	0.0012	0.0032	0.0014

The samples exposed to vapors corroded more rapidly than the samples exposed to the liquid, but generally the rates are not considered excessive.

Johnston Production Pump, TBP process, P-8-2, one of the production plant deep-well turbine pumps equipped with graphitar 41 process lubricated bearing material and a Type 304 stainless shaft, has been in operation in concentrated neutralized RAW at 82°C. to evaluate the wear resistance of graphitar when running in a slurry. Based upon high initial wear rates encountered in this pump over the first 30 and 60 days, boron carbide was specified as the bearing material for all production plant pumps which were required to handle the neutralized, concentrated RAW. In order to gain information regarding the expected life of graphitar, operation of this pump has been continued with the objective of running to destruction. The pump has operated continuously for 77 days at 1750 rev/min (except for periods of shut down for inspection). Over the last 20 days of operation a series of rattles developed which were cyclic in nature and which varied in frequency and intensity from hour to hour. Inspection of the bearings and journals at the end of this period revealed an increase in bearing clearance from the previous measurements. The rate of bearing wear has decreased.

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Johnston Production Pump, TBP Process, Pump 221-U-P-8-6, a 14-ft. shaft deepwell turbine pump for service in concentrated neutralized RAW, was assembled with boron carbide bearing elements at the Johnston Plant. Bearing elements of boron carbide were the suction bell bearing, intermediate bowl bearing, throttle bushing, and two line shaft bearings. As of August 24, the pump has operated continuously and uneventfully for 5 days at the Johnston plant. The pump will be dismantled for inspection and wear measurement on September 5. A representative of the Technical Section will be present at this inspection.

Submerged Motor-Pump, a 5 horsepower stainless-steel-encased electric motor directly close-coupled to a Roth 147 regenerative turbine pump has been received from the General Engineering Laboratories. The motor operates at 1750 rev/min and is cooled by pumped fluid which passes upward through the motor between the rotor and stator windings which are protected by a thin stainless steel diaphragm. The motor bearings are graphitar No. 2, process solution lubricated. The motor was installed in a test stand and has operated smoothly and uneventfully in water for 242 hours. Inspection of the bearings after 168 hours revealed no significant wear.

Minnesota Mining Co. Thiokol Acid Putty No. 176513-A & B resisted 60% HNO_3 for 15 days.

Resistance of Neoprene to Radiation. A neoprene sleeve bearing was exposed to gamma radiation (2×10^9 r/hr) for 84 days. The Shore Durometer "A" scale reading increased from 69 to 80. A similar bearing exposed to a field of 4.2 r/hr increased in hardness from 69 to 73 (Shore A scale).

Hot Semi-Works

Construction of the Hot Semiworks is 19 percent complete. During the month concrete was poured for A and C Cell ceiling slabs, Hot Process Building labyrinth, ventilation air duct from the Fan House to stack, and floor slab and equipment pads in the Gas Preparation Building. Steel framing for the Solvent Building is 80 percent complete. Partitions have been erected and asbestos shingle siding has been completed on the Office and Change House.

Process Chemistry

Laboratory experiments are in progress to furnish information which will permit the design of a filter unit for the semiworks Recuplex program. Slag and crucibles (using U in place of Pu) have been dissolved by the procedure as outlined in HW-21464. A series of filtration runs is being made in which this slag and crucible solution, containing from 0 to 10 grams per liter of Hyflo Super Cel, is filtered under 300 mm. Hg vacuum, through a sintered stainless-steel filter plate (3" diam., "D" porosity) which was given a precoat of 1/4" of this same filter aid.

Two of the four projected runs have been completed. The solution containing 5 grams per liter of "Hyflo" exhibited an initial rate (the first 100 ml.) of 240 liters/(hour)(sq.ft.) of filter area, as contrasted with 104 liters/(hour)(sq.ft.) for the solution containing 10 grams per liter of "Hyflo".

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After 2.3 liters of each solution had been filtered, the rates had dropped to 64 and 25 liters/(hour)(sq.ft.), respectively, and for these filtrate volumes, the times required were 24 and 53 minutes, respectively.

The two remaining runs will employ 0 and 2.5 grams of "Hyflo" per liter, respectively. An additional experiment may be required to determine optimum pre-coat thickness.

Three new samples of iron powder were received and tested for use in the preparation of ferrous sulfamate for the Redox Plant (Ekstrand #2394 Sponge Iron, Pyron Lot #P-780, and Pyron Lot #P-781).

All three powders dissolved much more slowly at 25°C. than the Mallinckrodt hydrogen-reduced material, the most reactive of the three (Ekstrand) requiring 5 to 6 hours to reach the same Fe^{++} concentration as the Mallinckrodt powder after one hour. At 50 to 60°C., the least reactive of the three (Lot #P-780) required 3 to 4 hours to reach the concentration given by the Mallinckrodt sample at 25° after one hour. The Ekstrand sponge iron is considered satisfactory for ferrous sulfamate preparation in the Redox Plant. The details of this work have been reported in a memorandum to R. E. Smith dated August 22, 1951.

A 1/4-in.-size "Mini" mixer-settler (K.A.P.L. type) has been fabricated, along with associated feed auxiliaries, and is being put through preliminary shakedown tests. A "cold" uranium run (Redox Flowsheet No. 4) is now in progress to test the operability, rangeability, and stage efficiency of the unit. Following this, exploratory runs are planned for Recuplex systems, to define flowsheet conditions and obtain equilibrium data.

Prints for the new model "Mini" (3/8") have been received from K.A.P.L., and the cost of fabrication of one of these units is currently being estimated.

The ventilation balancing and air-conditioning for Bldg. 222-S is scheduled to be completed by September 17, 1951. Decontamination room facilities will probably not be available before October 1, 1951.

The design of the dissolver and head-end treatment assembly for the 222-S cubicle, has been drawn up, including the control panel arrangement. Sketches have been prepared for each of the component parts and are currently being checked for design detail.

SEPARATIONS PROCESS RESEARCH

The Recuplex Process - Flowsheet Studies

The solvent extraction system which was described last month for the combined recovery and isolation of plutonium from IIBP, F-10-P and slag and crucible solution has been termed the Recuplex Process. The most attractive of the flowsheets which have been proposed (flowsheet #8, HW-21773) has been tested as follows: Using 38 volumes IIBP, 19 volumes F-10-P and 33 volumes slag and crucible solution as feed, 10 volumes of 1 M HNO_3 as scrub and 25 volumes of

30% TBP in AMSCO 125-90W as the solvent, seven extractions and one scrub gave a 0.014% plutonium loss. Stripping the rich organic with one-third volume of 0.6 M $(NH_4)_2SO_4$, 0.05 M H_2SO_4 recovered the plutonium at 53.4 g/l Pu with 0.03% loss in four stages. Stripping the rich organic with one-third volume 0,6 M H_2SO_4 gave 0.3% loss.

The replacement of 30% TBP-AMSCO 125-90W by 30% TBP-CCl_4 in the above flowsheet is not feasible because of insufficient density difference between the phases. However, using 50 volumes of 15% TBP in carbon tetrachloride (as compared to 25 volumes 30% TBP-AMSCO) a successful run was made with a plutonium loss of 0.008%. Stripping with 0.6 M $(NH_4)_2SO_4$ in four stages gave a 0.015% plutonium loss. The disengaging times for phase separation was noted to be about two or three minutes at the slag and crucible feed plate. When the plutonium from the rich aqueous phase was precipitated as the peroxide, hydrofluorinated and reduced to the metal by the 234-5 Development group, a yield of 90.6% was obtained.

In another run made with composite feeds (IIBP, F-10-P and slag and crucible solution) using 30% TBP in carbon tetrachloride instead of AMSCO 125-90W, but with the aqueous feeds diluted with a half volume of water to give lower aqueous densities a 0.01% plutonium loss in seven extraction stages and 0.01% loss in six stripping stages were obtained. Water was used for the scrub solution and a 0.6 M $(NH_4)_2SO_4$-0.05 M H_2SO_4 solution used for stripping. When the plutonium from this aqueous product stream was precipitated as the +3 oxalate, hydrofluorinated and reduced to the metal, a yield of 84% was obtained. Since the time of this reduction experiment the 234-5 Development group has made an additional reduction run using a synthetic solution of the above composition and obtained a plutonium yield of 96% which is considered quite satisfactory.

Recovery of Plutonium from Slag and Crucible

One additional countercurrent extraction was run on slag and crucible solution prepared by the Los Alamos technique (see HW-20817). Six extraction stages and one scrub stage at feed:solvent: scrub volumes 10:1:1 extracted the plutonium into 30% TBP-AMSCO 125-90W with 0.5% loss. Three stripping techniques were used in a four stage countercurrent extractor. Two volumes of 0.1 M HNO_3 (per volume rich organic) gave 1.81% loss, one-fifth volume of 0.4 M H_2SO_4 gave 1.0% loss and one-fifth volume of a solution 0.2 M $(NH_4)_2SO_4$, 0.01 M H_2SO_4 gave 1.1% loss.

Neutralization of CAW Waste

Neutralization of CAW waste (flowsheet #8, HW-21773), the CA column raffinate in the Recuplex Process, produces a large amount of gelatinous, slow-settling solid whose volume, even after centrifugation, is more than half that of the acidic waste. Although a total alpha decontamination factor of about 1000 is obtained on removing the solid from the alkaline slurry, the supernatant contains about ten times more alpha activity than is present in solutions customarily cribbed at Hanford.

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Decontamination of Second Cycle Wastes

Because the cascade of small tanks now used as a settling basin for Concentration Building waste will be full of sludge in the relatively near future, attention is being given to routing this stream to the middle tank of the cascade now used as a settling basin for 5-6 and Second Cycle wastes. Laboratory investigations simulating combination of the streams in this manner indicate a small decrease in the total amount of beta activity in the supernatant from the combined streams as compared to that in the separate supernatants as now handled.

Iodine in Dissolver Solution

Efforts to find conditions under which iodine may be successfully sparged from dissolver solution have been discontinued in view of the favorable results coming from the plant production test on the use of mercuric nitrate to prevent evolution of iodine from process solutions in operations subsequent to dissolving. Studies are under way on the use of mercuric salts to prevent iodine evolution during dissolving, but insufficient data are available to predict the effectiveness of mercury under these conditions.

Iodine in the Redox Process

During dissolution of a MnO_2 cake containing radioactive iodine prepared by simulating the Head-End treatment, less than 0.05% of the iodine was evolved. Dissolution was by the proposed 10% nitric acid, 20% ferrous ammonium sulfate solution. An air stream flowing over the slurry during dissolution served to carry any evolved iodine into a caustic trap.

Preliminary studies of the evaporative concentration of simulated IAW containing radioactive iodine showed little, if any, evolution of the iodine beyond that expected as entrainment for the particular evaporator used. Entrainment during these studies was followed by spiking the IAW with plutonium. Of the iodine which did appear in the overhead gas stream, only a very small fraction ($<0.5\%$) was found in a scrubber placed downstream from the condensate receiver.

Purex Decontamination as a Function of Temperature

A series of kinetics experiments were carried out to determine whether operation of the IA column of the Purex Process at elevated temperature would lead to improved decontamination from fission products. Parallel batch extraction studies were run at 25° and 60°C. It was found that the higher temperature gave inferior decontamination (higher extraction of beta-gamma activity). This was apparently due entirely to poorer zirconium decontamination arising from hydrolysis of TBP. That the latter was the case, and not decomposition of some impurity in the AMSCO 125-90W diluent, was shown by a run with bromobenzene as diluent. With either diluent, the extraction of zirconium activity increased ten-fold over a period of several hours and by a factor of five hundred in seventeen hours. The behavior of ruthenium and cerium was not significantly different at the two temperatures.

One set of experiments was performed on the first IA scrub stage. Elevated temperatures gave the same result here as in the extraction step.

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Effect of Isotopic Dilution on Decontamination in Purex

An investigation has been undertaken to determine the effect of isotopic dilution on the decontamination behavior of the troublesome fission product elements (Ru, Zr, Nb and Ce) under essentially Purex conditions. It is expected that the high acidity of the Purex feed may lead to more rapid exchange between the isotopic species than is the case with Redox solutions. Preliminary experiments (1/6 Hanford level) on the addition of inactive ruthenium appear promising. Thus, feed plate distribution ratios for ruthenium activity of 0.0034, 0.0023 and 0.00094 were obtained for feeds containing no added ruthenium, 1 g/l Ru (as sulfate), and 1 g/l Ru (as chloride), respectively. The over-all gamma decontamination factor for one extraction and three scrubs was 2×10^5 for the two feeds containing added inactive ruthenium and 2×10^4 for the control.

Miscellaneous Extraction Experiments

Several experiments were performed to determine how well uranium could be extracted from media other than nitric acid. An effort was made to extract from alkaline media (pH 13) by stabilizing the uranium with glycerine. No extraction was observed into any of the organic media tried including benzene, AMSCO, TBP, hexone, butyl alcohol, freon.

Uranium extraction into TBP from different acid media was scouted briefly. Visible extraction was obtained from sulfuric and hydrochloric acids, none from phosphoric or hydrofluoric. Acetic acid solubilized the organic and yielded a one phase system. The sulfate media gave little or no extraction below about 8 M and yielded three phases above about 11 M.

Continued fundamental studies on solvents have indicated that the phosphonates are considerably better extractants for uranium than are the orthophosphates. Halogenated furans and pyrans are poor extractants for uranium, probably a result of the strong inductive effect of the halogen which reduces the basicity of the oxygen. On the other hand, the non-halogenated furans and pyrans are excellent extractants.

Pulse Column Research

The valve-actuated pulse column has given uranium HETS values of 8 inches at 600 gal/sq ft/hr total flow and 25°C. for IA operation under Purex #2 Flowsheet conditions. This low stage height was attained by using 0.027 inch diameter holes and 18% free area. The HETS was further dropped to 6 inches by raising the temperature of operation to 60°C.

234-5 DEVELOPMENT

Redox Coupling

Two additional runs simulating the coupling of the Redox and Purification Building processes by two successive plutonium peroxide precipitations (the first from 10 g/l of plutonium solution with acidity reduced from 5.0 to 2.0 M H^+ with potassium hydroxide, the second from 40 g/l of plutonium) have

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indicated that this process, when followed by filtration, aqueous-washing, and alcohol-washing of the peroxide, is feasible although not necessarily optimum. Reduction of the fluorides prepared from the perozides in the two runs gave metal of satisfactory purity, with yields of 87.0 and 91.5%.

Plutonium Peroxide Process

A formal report (Document HW-21751) relating to the direct coupling of plutonium peroxide for the preparation of plutonium tetrafluoride vs. present practice of employing an oxalate precipitation procedure between peroxide precipitation and hydrofluorination was issued during this period.

Plutonium(III) Oxalate Process

Four laboratory runs to study the effect of a 50% reduction in the amount of hydriodic acid used in each oxalate strike at the 234 Building indicated that buttons produced from such a process will be high (100 - 2000 ppm) in lanthanum and that an increase (122 percent of flowsheet) in the oxalic acid used will be accompanied by objectionable increases in the aluminum content of button metal. Appreciable savings in the consumption of hydriodic acid and oxalic acid continue to appear feasible, but some further work will be required to determine strike conditions which will insure adequate removal of lanthanum from the plutonium.

Recuplex Process Studies

Plutonium(III) oxalate precipitated from a solution containing 0.6 M ammonium sulfate, subsequently hydrofluorinated to the tetrafluoride and reduced to metal gave yields at each step comparable to those of the normal oxalate process flowsheet. As compared to a control run made simultaneously at standard flowsheet conditions, solubility of Pu in the supernate (0.032 g/l as compared to 0.33 g/l for the control run), conversion to PuF_4(100% in both cases) bulk density of the fluoride (0.96 g/cc compared to 1.1 g/cc), and reduction yield (95.5% compared to 94.8%) were all satisfactory. It is concluded that the 0.6 M $(NH_4)_2SO_4$ resulting from the stripping operation should not be harmful to subsequent processing via the present oxalate flowsheet and that the somewhat low reduction yield obtained in one run (Run No. 118) can not be explained on this basis.

Plutonium Peroxide Precipitation

Hydrofluorination of sample of alcohol washed plutonium peroxide received from the Chemical Research Branch which had been precipitated in the presence of 0.6 M $(NH_4)_2SO_4$, from the product solution resulting from a Recuplex experiment gave a fluoride with a bulk density of 0.9 g/cc (PuF_4), and a yield upon reduction of 90.7%. Slag spattering and a rough button were observed.

Slag and Crucible Dissolution

Product in slag and crucible wastes from the laboratory reduction of fluorides prepared from plutonium peroxide cakes was recovered in a series of six runs using the "one-step" dissolution procedure outlined in Document HW-20817.

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About one-third of the amount of plutonium charged to the waste by a difference calculation was recovered. This observation supports the inference, drawn from the high weights of the fluorides obtained from other peroxide samples, that the normal hydrofluorination procedure for plutonium peroxide does not give complete conversion to PuF_4, and that the metal reduction yields from hydrofluorinated peroxides appear to be lower than they actually are.

A limited study of the corrosion resistance of Carpenter 20 and 309 SCb stainless steels was made in conjunction with the slag and crucible recovery runs. Only the liquid phase corrosion rate was measured and extremely low results were obtained for both types with a maximum of 10 mils per year and 13 mils per year for type 309 SCb and Carpenter 20 respectively during the iodine removal period.

Engineering Survey

Engineering flow diagrams, based on present process knowledge, have been prepared and equipment lay out studies for installation of facilities in room 221 of the 234-5 Building are in progress.

Materials Testing

Laboratory tests indicate that vinylite mitten material has sufficient resistance to methanol liquid and vapor for normal service in a peroxide process using methanol for drying.

Metal Reduction

The laboratory study indicating the feasibility of the bomb reduction of plutonium tetrafluoride to metal in charges containing calcium and sulfur has been concluded with the issuance of a report (Document HW-21897) which recommends plant production testing of the process.

Hydrofluorination of Metal Turnings

Two small scale preliminary runs exploring the possibility of directly hydrofluorinating metal turnings as a means of recycling this material give promise that this reaction may be safely controlled by using a mixture of HF together with an inert gas. After treatment for one hour at 100°C., using partial pressures of 1/2 and 1/3 atmosphere HF (maintained by metering argon and HF mixtures to the furnace), a powder was obtained in each case which could be readily converted to PuF_4 by a two hour treatment at 500°C. with a mixture of HF and oxygen. The products obtained after the low temperature reaction corresponded very closely in weights to the calculated theoretical weights for PuF_3, although the colors were somewhat darker, possibly indicating some oxide formation. The fluorides obtained after the high temperature treatment agreed in weight precisely with the calculated values for PuF_4. They had a bulk density of 2.0 g/cc, were free-flowing, and comparable in color to the fluoride obtained from oxide.

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Neutron/gram/second values increased with MWDT as predicted.

Stand in pieces formed by direct machining were gaged and found to be within a narrow range on dimensional spread but the dimensions did not correspond to those desired. Cutting tool design and machining technique will require additional work before satisfactory pieces can be produced.

An RM Line die component was radiographed and found to contain three large cracks. These cracks were located after heat treating and before final grinding, therefore affording a considerable savings of man-hours since no grinding time was applied to a faulty component.

STACK GAS DEVELOPMENT

Plant Silver Reactor

Monitoring measurements of the dissolver vent gases downstream from the 3-5R-B Plant unit (reactivated by spraying silver nitrate solution through the top thermohm port as described in document HW-21957) have indicated an efficiency of 99.9+%. The installation of the 3-5R-T Plant replacement reactor was completed on July 31, 1951 and all units are now operating satisfactorily.

The control set temperature of all plant reactors is now established at 375°F. and the overheat relays have been adjusted to turn off the heaters if the temperature should rise to 390°F. at B Plant or 400°F. at T Plant. The close adjustment at B Plant has resulted in occasional difficulty in the form of cyclic controller action when a surge has caused the overheat relay to shut off the heaters. Future operation will be observed to determine whether the overheat relays should be changed to a higher setting. T Plant has not experienced this difficulty with the overheat relay set at 400°F.

The audible alarms, which were installed on all dissolver boards to warn when the airflow through the offgas system dropped to a low enough rate to cause overheating of the heater, have been placed in operation.

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INVENTIONS

All persons engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work during the period covered by this report except as listed below. Such persons further advise that, for the period therein covered by this report, notebook records, if any, kept in the course of their work have been examined for possible inventions or discoveries.

Inventor	
W. S. Figg	Apparatus for separation by solvent extraction - the turbo-extractor.

R. B. Richards
Separations Technology Unit

9/5/51

RBR/fmf

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HW-22075-DEL

ANALYTICAL UNIT

AUGUST 1951

VISITORS AND BUSINESS TRIPS

A. F. Wells of the General Electric Company, Schenectady, spent August 1-29 installing a new spectrometer and giving operating instructions.

Bjorn Englehardt of the Perkin Elmer Corporation, Norwalk, Connecticut, spent August 1 installing a new infra-red spectrometer.

N. Wallace of the General Chemical Division, Allied Chemical and Dye Corporation, Kennewick, spent August 28 reviewing methods employed for the specification analysis of aluminum nitrate.

E. Zebroski, KAPL, spent August 22 discussing analytical methods.

Business trips of Analytical Unit personnel were as follows:

H. R. Schmidt spent August 6-10 attending the Gordon Research Conference, New Hampton, New Hampshire. August 10-11 was spent at KAPL discussing analytical methods.

ORGANIZATION AND PERSONNEL

Personnel totals in the subdivisions are summarized as follows:

	July 31	August 31
Analytical Service	339	344
Analytical Research	36	38
Administrative	3	3
Division Totals	378	385

Five additional personnel added to the Analytical Service branch during the month, supplementing 73 previously added from April through July, have nearly completed the staff required for operation of the new 222-S Bldg. Laboratory.

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Analytical Unit

Two new Technical Graduates were assigned to Analytical Research.

ANALYTICAL SERVICE

General

In order to eliminate the backlog of analytical work and improve the efficiency of the 234-5 Building spectrographic facility, the eight personnel trained in this work were transferred from a four to two-shift working schedule, effective August 20. The two crews will be under the direct guidance of an experienced spectroscopist reporting in turn to the Shift Supervisor on duty. Other minor changes in shift coverage were made in the 200 Area Control and Chemical Development Service Laboratories to accommodate six-day/week and two-shift production schedules.

Of the 57 Technical Graduates assigned to the unclassified laboratory training program in the 3706 Building, only 15 remained at month's end still awaiting formal security clearance. The rest have been given area assignments.

Work Volume Statistics

The following tabulation shows the source and volume statistics for samples on which analyses were completed:

	July		August	
	Samples	Determinations	Samples	Determinations
Process Control - 200	3,654	8,892	4,501	10,550
Process Control - 300	480	892	618	967
Water Control - 100, 700	1,007	3,650	1,011	3,827
Research & Dev. Programs	1,921	3,818	1,860	3,550
P-10 Control	260	2,576	388	3,899
Process Reagents	1,306	1,722	1,761	2,118
Essential Materials	1,481	2,017	1,030	2,040
Special Samples	613	6,780	426	7,664
Totals	10,722	30,347	11,595	34,615

A 50% increase in B Plant production rates coupled with many test samples and the reporting of a large backlog of special spectrographic analyses in the 200 Area was the main cause for the increase in analytical work. The P-10 control work load returned to normal after the ten day shut down last month.

100 Areas Control

Several changes in water analysis service were made during the month. The sampling schedule for the Naval Reactor (P-13) Project was reduced to normal on August 9 upon completion of the special test described in the previous report of this series. The necessary equipment and chemicals were set up in Building 384, 300 Area and a procedure provided for routine determination of water hardness by Manufacturing Dept. personnel. Water from the Richland

Analytical Unit

swimming pool is now being analyzed weekly for phenolphthalein and methyl orange alkalinity, sulfate, chloride, hardness and free chlorine. In order to provide the high sensitivity required for determination of hydrogen peroxide in P-13 water samples (0 - 0.20 ppm), Water Method WH-2a, spectrophotometric determination of hydrogen peroxide with KI, has been improved. By adding starch reagent to permit identification of the end point by the intense blue color of the starch-iodine complex rather than the light brown of the iodine per se, the lower limit of detection was reduced from 0.17 to 0.01 ppm.

Design details have been completed for installation of a direct "in-line sampling tube" leading from the P-10 production line to the Consolidated mass spectrometer in the P-10 Laboratory. The Consolidated instrument was inoperable for a short period during the month due to overheating and subsequent burn out of the magnet drive motor. The cause was an overload due to a "drag" in the transmission gear box mechanism. The motor was rewound and the gear box repaired.

A statistical survey of the precision obtained on routine analysis of duplicate P-10 product samples was made by the Technical Services Unit, comparing results obtained before and after April 15, 1951. The results from early analytical research studies have been included with the former group. A marked improvement in precision is evident, which may be attributed to improvements in both sampling techniques and analytical skill. The precision for each constituent studied is expressed as ± percent of the corresponding percentage present in an average sample.

Constituent	H_2	T	N_2	HT
Period 12/1/50 - 4/15/51 (103 duplicates)				
Average Value	4.98	94.4	0.40	8.49
% Precision	27.8	1.60	55.0	22.5
Period 4/15/51 - 8/15/51 (70 duplicates)				
Average Value	5.21	94.7	0.078	9.50
% Precision	5.7	0.33	63.	4.1

200 Areas Control

The recovery of old AT retain samples was resumed at the 231 Building Laboratory on August 13. Thus far a total of 240 samples have been processed from the backlog of roughly 1200 samples. A reduction in the holding time from 12 to three months caused the large backlog.

On August 9, the plutonium assay of cast metal samples was initiated on a routine basis in the 234-5 Building Laboratory. Twelve castings have been analyzed to date requiring the full time of one man. The precision and accuracy of the method as employed for control purposes is reported in the Methods Control section of this report.

On August 21 the multi-source unit, which supplies power to the spectrograph in the 234-5 Building Laboratory, was observed to be sparking between the two

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points of the high voltage rotor rather than between the rotor and the spator points. After a three-day shut down period service was restored through elimination of a short between a transformer and a rectifier tube in the high voltage section and installation of a light to indicate proper phasing. The changes in wiring incident to the installation of the large selector switch and controls in the two glove boxes as well as on the optical bench somewhat complicated analysis of the difficulties. It is planned to prepare "as built" drawings on the wiring circuits to facilitate future maintenance.

Eighteen control samples have been analyzed by the modified cupferron procedure discussed in HW-21154, and observations made of the behavior of the method. Results to date have been less favorable than expected. It appears reasonably certain that erratic results have in part resulted from reference to standards prepared from solutions containing markedly dissimilar ratios of the alkali elements (Na, Li, K) to the other elements of interest (La, Cr, Ni, etc.) than obtained in the process samples. Use of standards in which elements are present in ratios approximating those of process samples is being considered. Another apparent cause of poor results is an excessive time for drying the sample on the electrodes and a poor, uneven quality of the deposit. It is yet to be determined whether these difficulties are due to lack of experience with the procedure, to a deleterious effect of the apiezon grease (added to prevent spreading of the solution) or to the presence of excessive organic material in the deposit due to deletion of the HNO_3 evaporation step in the present procedure.

Spectrographic analytical service was provided in support of a number of development studies. Two plutonium peroxide cake solutions and four button samples which were manufactured from Redox starting material were submitted for complete spectrographic analyses. Primary interest was in the corrosion products iron, chromium and aluminum. Eight samples of plutonium oxalate slurry from P-11 material previously containing lithium as a contaminant, were analyzed to determine impurity levels as compared to normal operations. Four samples of plutonium peroxide slurry, 231 Building, were taken to evaluate the purity of the material prior to direct hydrofluorination (Production Test 234-3). Three filter block leaches (231 Building) were taken for fluoride analysis to determine if there was any correlation between the fluoride and plutonium hold-up in the filter blocks. Six plutonium oxalate slurries obtained from a solution which was the aqueous strip of a TBP-extracted slag and crucible solution were submitted for impurity analyses in order to compare the material with normal process material.

A total of 420 units of plutonium recovered from 234-5 Building Laboratory wastes were shipped to the 231 Building. No difficulties were encountered in the processing of this material by the S Unit. Processing of all fluoride waste solutions now held in storage in the laboratory is essentially complete. Standard procedures for laboratory recovery and shipping operations have been written.

Chemical Development Service Laboratory and 222-S Building

Arrangements were made to provide analytical service for the Recuplex Process studies which are divided into three parts (1) dissolution and filtration of

slag and crucibles, (2) corrosion effect of solutions involved in the process and (3) column extraction studies using uranium as a stand-in for plutonium. Analytical work for the first two and part of the third has been assigned to the 300 Area Control and Special Services group inasmuch as the chemical manipulations are exacting and difficult, require some development work, and do not lend themselves to control operation. Micro scale equipment is being prepared to handle the hot simulated Redox Process Runs from the Mini Extractor of the Process Chemistry group.

Equipment is being received in the 222-S Building and is being assembled in preparation for start-up. It is currently estimated that the air conditioning system will be accepted by September 15.

300 Control and Special Services

Upon receipt of information from Pile Technology and Accountability representatives that "J" slug canning operations would probably be done at Hanford Works in the near future, the laboratory made arrangements to provide the following data: the absolute density of the slugs for correlation with the 305 test pile results; spectrographic analysis of canning materials for process control of U-235 buildup; determination of U-235 in scrap bath material for accountability purposes. For the latter, the chlorination procedure will be used which consists of passing anhydrous Cl_2 gas over the material, collecting the volatized chloride and determining uranium titrametrically or fluorimetrically. The method is precise to ± 0.3%.

In order to (1) accumulate a background of information pertaining to uranium buildup in various streams of the Metal Preparation Process for future accountability use and (2) test the applicable analytical methods, the laboratory has taken the initiative to arrange for sampling of all (ca. 20) such sites by methods giving representative samples.

In the canning operation, at the junction of the surface of the molten tin with the pot liners sludge formation causes undercutting of the liner with eventual penetration and burning out of the heating elements. A melting point determination was made on a sample of this sludge; the material never did melt but softened at approximately 600° C, or about 100° above operating temperature. Heating to this temperature would appear to offer a feasible means for removal of this sludge and minimization of corrosion.

In the assay of the 72% $Al(NO_3)_3 \cdot 9H_2O$ it was found that Hanford results were consistently lower than the vendors by .5 - 1%. A great deal of work was expended investigating various procedures in an attempt to resolve disagreement. The oxine precipitation procedure currently in use showed good results on test samples but was biased with respect to the vendors assay of this essential material. Employing refractive index, KF potentiometric titration, ignition, NH_4OH precipitation on the General Chemical Company's sodium hydroxide titration method results were 1 - 5% high based on a standard. It was subsequently found that the vendor's calculation was slightly in error and the bias disappeared, thus establishing that the oxine method was satisfactory.

Several of the more unusual analytical problems handled in these laboratories are noted. Determination of H_2, C, halogens and general spectrographic analysis

Analytical Unit

on a synthetic resin Synco X-31, before and after radiation was made for the Pile Technology Unit. The density of several boron carbides and boron powders were determined. For these materials, being considered for pile control use, a density of 80 mg. of B/cm^2 by 1/16" is desired. By fabricating a dye and compressing a mixture of boron powder and water at 10,000 psi a density of 159 mg./cm^2 at a 1/16" thickness is obtained. In conjunction with this problem, segregation studies of boron was made on several samples of stainless steel pipe and bolts. The usual distillation volumetric method was applied.

A large increase in the number of fission product analyses was realized in the Chemical Research Service Laboratory in support of the research group's studies. Considerable difficulty was encountered in determining plutonium in aqueous wastes from simulated Recuplex Process streams. Gross amounts of Ca, Mg and Al caused the customary ceric sulfate method to be inaccurate. At the suggestion of the analytical research group a separation of Pu IV with TTA in xylene was made giving satisfactory results. Another service in support of the same process involved laboratory reduction of uranium to provide crucibles simulating those which would be found in 234-5 Building operations. These crucibles will be used by the Chemical Development group.

In a cooperative effort with the analytical research and 200 Area plant assistance groups to determine the MWD level of uranium pushed from the region adjacent to the H Pile loading, four samples of 40-day cooled dissolver solution were analyzed for uranium by the Cr SO_4 titration method. Despite radiation readings of 500 mr through 2 1/2" of stainless steel the work was completed without exceeding daily radiation tolerances.

Methods Control

Standard Sample Analyses

The following table summarizes the results of the routine geometry determinations made on all of the ASP and IDL counters in the Area control laboratories. The accepted value is 50.5% for the ASP unit. The IDL's are maintained on the best operating plateaus, since the geometry level is specific for each instrument. A satisfactory counter performance for routine control is indicated by the results.

Alpha Counter Standardizations

		July		August	
Laboratory	Instrument	Avg. Geometry	No. Tests	Avg. Geometry	No. Tests
3706	ASP	50.49	42	50.43	29
222-B	IDL	50.54	21	50.53	18
222-T	ASP	50.51	104	50.48	82
231	ASP	50.51	105	50.49	83
234-5	ASP	50.48	84	50.46	51
	IDL-1	50.59	26	50.99	11
	IDL-2	51.18	27	51.16	9
	IDL-3	50.58	26	51.18	14
	ASP	-----	--	50.43	10

Analytical Unit

A summary of the analytical results obtained by chemical titration of synthetic AT sample in the 231 Building Laboratory are presented:

	To Date		August 1951	
% Average Recovery	99.74		100.05	
Error Source	No.	% Precision	No.	% Precision
Analysts	57	± 1.14	18	± 1.31
Titrations	114	± 1.56	36	± 1.56
Total		± 1.93		± 2.04

Comparison of CA/RA Ratio Obtained on AT Samples to that Calculated from TPC/TU

Run Series	B-11-07	T-11-07	B+T-11-07
No. Determinations	28	43	71
Avg. % Difference*	+ 2.41	+ 2.21	+ 2.29
% Precision Individual	± 5.08	± 5.03	± 5.06
% Precision Average	± 0.96	± 0.77	± 0.60

* CA/RA obtained from analysis of AT - CA/RA from TPC/TU

The investigation of the precision and accuracy of Method PuA-6b (direct mount of plutonium sample on stainless steel) and the validity of the 2% correction factor is being continued and will be reported at a later date.

New or Revised Methods

Five analysts in the 234-5 Bldg. Laboratory have been trained in the analysis of metal castings for plutonium. The precision of the reported answers was calculated to be ± 0.45% which includes within and between chemists error, the former being the greater. The average summation of the chemical 70-58, impurity and plutonium content was 100.05% ± 0.09%, indicating no bias in the method.

The rough draft manuals of the Redox procedures was revised during the month in accordance with various changes in analytical methods, requirements, samples, and equipment. The manual, however, is still not in its final form for issuance. To evaluate the work load at various points in the 222-S Bldg. Laboratory a tentative estimate was compiled of the number of individual determinations per day of radioactive samples required in each gloved box, including the frequency of special operations such as preparing dilutions, sample pipetting, disc flaming, container transfers out of gloved boxes, and samples to be opened in junior caves.

The combination centrifuge-magnetic stirrer was tested and found to be satisfactory for stirring precipitates and two-phase systems and for centrifugation work. This equipment will be installed in all fission product analysis gloved boxes (except iodine which uses an H extractor) and all plutonium analysis gloved boxes except for the direct mount procedure PuA-6b.

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Analytical Unit

The dual titration assembly (consiting of two 1 ml. Gilmont displacement burettes modified with stopcocks and mounted together for use with magnetic stirrers), which will be used for most of the volumetric methods in 222-S, was tested, used to train a member of each shift, and to check the precision of Methods AlV-3c (volumetric aluminum) and HV-2d (nitric acid in UNH). The precision of the methods, calculated from the results obtained during the training program, was ± 1.5% for AlV-3c and ± 3.25% for HV-2d. Operation of equipment and ease of training were satisfactory.

The oil displacement sampler buret was tested for precision of measurement of 10 microliter samples. This was found to be ± 1.18% which is satisfactory since it includes the precision of the titration apparatus used. The aliquoting was made by delivering the sample into water in a small beaker and not rinsing the buret tip being dri-filmed.

Safety and Special Hazards Control

Eight of the sixteen minor injuries occurring in the control laboratories were sustained by personnel with less than three months service; the frequency rate, however, is still satisfactorily low.

At the request of the 200 Area Safety Engineer the area immediately adjacent to the gas storage sheds at the 222-B, 222-T, and 231 Buildings has had asphalt surfacing applied in order to facilitate loading and unloading gas cylinders by the Transportation Division.

All laboratory personnel in the 200 West Area attended a fire extinguisher demonstration during the month and each person actually put out a fire under the supervision of a member of the Fire Protection group. A similar program will be instituted in the near future for all laboratory personnel in the 200 East Area.

Contamination and survey data for the service laboratories are summarized below:

	222-B	222-T	231	234-5	CDSL
No. Days N. C. W.	30	77	46	21	5
% No Contamination Work	3.3	6.3	6.3	1.9	1.5
Survey Work (Hours)	186	231	102	93	20
Non-Regulated Items Contaminated	99	71	269	101	0
No. Cases Floor Contamination	21	12	18	24	0
Air Contamination - No. Above Tolerance					
Alpha	0	0	0	1*	0
Beta, Gamma	0	0	0	0	0

*This case of above tolerance air contamination apparently occurred during the processing of analytical waste for plutonium recovery. This may have occurred during the changing of the reactor tank, but no unusual conditions were observed at the time.

Final thyroid checks were made on the two people showing above background counts as a result of the high air contamination from the 292 stack on June 27 (July

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report). All personnel now have thyroid counts below background.

While training a chemist in the analysis of plutonium in metal castings in the 234-5 Building Laboratory, instructing the chemist on the titration procedure, the trainee accidently turned the nitrogen valve full open, splattering the sample out of the titration vessel onto the chemist's coveralls and the instructor's lab coat and trousers. Neither person received skin contamination; the trousers had two spots at 2,000 and 5,000 d/m which was washed out. Precautionary signs will be hung on these valves to prevent recurrence.

ANALYTICAL RESEARCH

Metal Recovery Process

In the continuing investigation of methods for determining fission product activity in recovered uranium oxide, it was reported last month that an effective separation of fission products and uranium was obtained by a chromatographic technique in which uranium was washed from a paper pulp column, leaving the fission products adsorbed on the pulp. Further work has shown that the fission products may be subsequently washed from the column with a solution of acid and Versene, thereby eliminating the time-consuming step of igniting the pulp to recover the fission products. The procedure is effective, as indicated by a 96% recovery of fission products from a synthetic mixture, and eliminates the serious interfering effect of U-237 on fission product activity measurement. Uncertainty still exists regarding the completeness of separation from uranium daughters in the Metal Recovery Process. As a consequence, effort is being expended to devise an analytical separation to eliminate this possible interference. Preliminary work has shown that it may be possible to separately elute UX_1 from the adsorbed fission product mixture in the column by the use of certain ketones. At present it is found that approximately half of the UX_1 can be removed in this manner. If the technique can be developed to a quantitative basis it will be possible to make fission product beta determinations on the final Redox and Metal Recovery streams and/or the blend tank and/or the UO_3 product, as desired.

The techniques described are not suitable for use with gamma measurements since a large sample is necessary for measurement on the Shonka Counter. It may be possible to measure the beta activity of the separated uranium daughter and U-237 fractions and apply experimentally determined beta/gamma factors to obtain corrections to the measured total gamma activity. The combined correction would be more than 50%. To evaluate the beta/gamma counting ratio for U-237, a portion of uranium free from plutonium and fission products has been obtained from a special dissolver sample being analyzed for plutonium isotopes. Solvent extraction passes six chromatographic separations yielded a plutonium-free product decontaminated from fission products by a factor of greater than 10^9. It was found that the U-237 content agreed with previously determined values and that the attenuation factor for U-237 on the Shonka Counter agreed with the previously calculated value. A beta/gamma ratio has been similarly established for the uranium daughter elements. As a substitute for this rather indirect method for determining gamma activity, consideration is being given to the use of a gamma scintillation counter. A commercial instrument marketed by General Electric has been ordered with the thought that the higher counting efficiency

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may allow direct gamma measurement on the fission product disc prepared for beta counting.

Examination of the ASTM procedures for determination of bulk density and particle size has shown them to be satisfactory for application to uranium oxide product. Apparatus for routine conduct of these determinations has been ordered. Final development work has been completed, and methods have been drawn up for the determination of completeness of solution of Metal Recovery Process feed and of freezing point determinations of Metal Recovery streams.

Redox Process

Evaluation of the precision of automatic coulometric uranium titrations has shown that 5 to 10 micrograms of uranium may be titrated with a precision of ± 15%, that 1 milligram can be determined with ± 1.5%, and that slightly better precision is obtained with 10 milligram samples. Titration of samples containing more than 10 milligrams is awkward and time-consuming. Titration of samples containing only several micrograms lacks precision because of the blank correction. A procedure for destruction of nitrate prior to titration and for conduct of the titration has been drawn up, and five control analysts have been trained in the use of the method. The experimental model of the titrator will be used for routine work, and at a later date a final model will be designed and constructed for permanent routine use.

Preliminary work with the coulometric titration of plutonium has shown that an effective procedure is one in which plutonium is titrated from the tri- to the tetravalent state in the presence of a high concentration of cerous ion. Using iron as a stand-in for plutonium, very sharp and definite endpoint potential breaks are obtained. As in the investigation of the uranium system, it was found that impurities in the reagent present troublesome interferences that must be eliminated.

The X-Ray Photometer purchased for use in the Redox Control Laboratory has been tested and calibrated, and will be ready for transfer as soon as instability of the indicating meter is remedied. Information obtained from the General Engineering Laboratory reveals that a new model of the X-Ray Photometer is currently under construction. Since photometers used at Hanford have required considerable modification, contact has been made with the Engineering Laboratory in order to learn the details of the new design and to suggest several improvements which we have incorporated in the Hanford instruments. Investigations at Hanford have shown that the instrument may be positioned on its side or back, giving a more efficient design, and that the fluorescent screen is not sufficiently uniform.

A procedure developed at KAPL for the determination of MIBC in hexone has been checked and will be used in the control laboratory. The method involves treatment of the sample with dichromate under controlled time and temperature conditions. Although a slow reaction between reagent and hexone occurs, the method is sensitive to about 0.05% and has a precision of ± 0.04%. It is thus suitable for the analysis of purchased hexone in which case the specified maximum is 0.6%, but it is not too satisfactory for the analysis of pretreated hexone.

Analytical Unit

P-10 Process

The G. E. Mass Spectrometer for the analysis of P-10 materials arrived on plant site August 6, and has been installed in the 108-B Analytical Laboratory under the direction of a G.E.L. field representative. The mechanical and electronic components of the instrument appear to operate satisfactorily, and the spectrometer tube was shown to be vacuum tight. Analyses of gas standards prepared on the newly constructed sample preparation train show acceptable resolution but indicate that a compromise between resolution and sensitivity is necessary for best results. The instrument is designed to automatically provide optimum ion focus for one particular mass in the range 1 to 6. This arrangement is unsatisfactory since the focus for other ions in this range is not optimum, and inadequate sensitivity is obtained. G.E.L. has been requested to provide an improved focusing system. It was found that voltage stabilization of the source is necessary, and equipment has been ordered for this purpose. Shock mounting of the preamplifier tubes is also necessary because of the excessive building vibration. Conduct of the final acceptance tests awaits these modifications.

A metal manifold for use with the mass spectrometer that offers the advantages of nonbreakability and absence of stopcocks and grease has been designed and tested. Several mechanical difficulties and design defects have been revealed and have provided information to allow re-design of the device.

Pile Technology Problems

In assistance to a Pile Technology problem, determination of the exposure level of slugs obtained from the H pile end loading, a sample of solution from the dissolved slugs has been obtained for plutonium isotope analysis. The high exposure level and the relatively short cooling period resulted in extremely high activity in the 100 ml. of solution obtained. Three portions of the solution were subjected to repeated extractions to effect decontamination and to separate uranium. One sample has been adequately decontaminated, and the other two require further treatment before employing spontaneous fission counting to determine Pu-240 and alpha pulse analysis to determine Pu-238. The uranium recovered from the sample has been used to determine the gamma counting efficiency of the Shonka chamber for U-237, as described previously.

The apparatus constructed for preparation of standard CO_2-CO mixtures has been employed for the preparation of three samples. These are to be used for calibrating the infrared analyzer used in conjunction with in-pile studies of the graphite-CO_2-CO equilibrium.

General

For several months the control laboratories have used disposable stainless steel discs in the radioassay of plutonium. Prior experimental work showed that the stainless discs produced less back-scattering than platinum discs and that a 2% correction was therefore necessary. The work also indicated that plutonium samples counted in the presence of uranium --as in the direct mount of dissolver solution -- exhibited no such back-scattering difference. It was assumed

that this resulted from the presence of the heavy uranium salt so that no correction was applied in this case. During the past month evidence accumulated from the central laboratory results that the latter conclusion was in error. An investigation verified this and revealed that the original conclusion was false because of the variation in back-scatter from used platinum discs employed for the reference assays. In one experiment it was found that the second use of a disc after cleaning yielded a result that was 2% less than that obtained with the new disc. As a result of this observation, the 2% back-scattering correction has been applied to dissolver solution analyses, and steps are under way to eliminate the practice of calibrating all counting operations in terms of primary data obtained on platinum discs, instead conducting both standardizations and routine assays on stainless discs.

Another problem arising from central laboratory analyses concerned apparent high results in some of the routine determinations of Am-Cm in dissolver solution. Attempted use of the alpha pulse analyzer to determine if there was incomplete analytical separation of Am-Cm and plutonium failed because of the interfering effect of the high beta-gamma activity. A comparison of the Am-Cm results with slug exposure levels and with the alpha content of metal waste solution indicated that one group of analyses by the 222-B Laboratory was approximately 20% high. Careful adherence to procedural details eliminated this error in further analyses, as confirmed by satisfactory results on standard americium samples.

Three new analytical instruments have been installed and tested. The split beam Perkin Elmer Infrared Spectrophotometer was installed by a factory representative and successfully passed acceptance tests. The Leeds and Northrup Direct Reading Spectrochemical Analyzer that had been employed for P-10 method research has been relocated in the 3706 Building; a variety of new parts supplied by the manufacturer has been received and are being installed so as to eliminate mechanical defects previously observed. An alpha scintillation counter, designed and constructed by the Instrument Unit, has been employed for preliminary tests. It was found to have a very low background which promises to make it exceptionally valuable for determining low levels of alpha emitters.

A rapid and convenient spectrographic procedure has been developed for the determination of silicon in Al-Si canning bath. The method offers a relative precision of ± 2%; it was found that most of this variation results from a slight segregation of silicon at the sample surface.

More promising results have been obtained in the investigation of the porous cup spectrographic excitation technique as a result of using graphite electrodes of greater porosity; this leads to a greater flow of liquid, greater sensitivity, better reproducibility, reduction of background, and the elimination of sample boiling in the crater. A group of elements of particular interest in 234-5 Process analyses have been used in the investigation. At the present state of development the technique is not sufficiently sensitive for the present purposes, but modifications of technique are expected to improve this sensitivity. The technique shows better precision than the copper spark method and is much less subject to interferences from plutonium and high solids content in the sample.

Two minor jobs receiving attention are the recovery of pure Am-Cm for experimental purposes and the calibration of a G.E. Leak Detector to be employed for

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monitoring carbon tetrachloride contamination in the 321 Building atmosphere.

INVENTIONS

All Analytical Unit personnel engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work during August 1951 except as listed below. Such persons further advise that, for the period therein covered by this report, notebook records, if any, kept in the course of their work have been examined for possible inventions or discoveries.

INVENTOR(S)	TITLE
W. N. Carson, Jr.	Scrubbing Method for Dissolver Off-Gas
W. N. Carson, Jr.	A Current Integrator

Signed: F. W. Albaugh
F. W. Albaugh, Unit Head

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TECHNICAL SERVICES UNIT

AUGUST 1951

VISITORS & BUSINESS TRIPS

There were two off-site visitors during the month. Paul Kofmehl and F. W. Wuest of the Oak Ridge National Laboratory visited Hanford on August 29-31, to investigate all types of remote control handling equipment available here.

Business trips of Technical Services Unit personnel were as follows:

P. M. Thompson spent August 17-22 attending a Seminar on Computing at the International Business Machine Corporation offices in New York City.

P. M. Anselone spent August 20-28 attending mathematical meetings sponsored by the Institute of Numerical Analysis at the University of California at Los Angeles, California.

C. G. Stevenson spent August 29-31 attending a meeting of the Pacific Northwest Library Association in Spokane, since he is the Program Chairman of this organization.

ORGANIZATION AND PERSONNEL

Personnel totals in the several subdivisions are summarized as follows:

	July 31	August 31
Engineering	66	70
Technical Information	81	82
Mathematics	31	31
Administrative	3	3
Division Totals	181	186

Included in the above figures are nine rotational trainees; six being assigned to Laboratory Equipment Design of Engineering and three to Computing of Mathematics.

ENGINEERING SERVICES

Mechanical Shops (Bldgs. 101, 3706 and 222-S)

Work volume statistics for the Mechanical Shops are as follows:

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Technical Services Unit

	Customer Division or Program	July No. of Jobs	July Man-Hours	August No. of Jobs	August Man-Hours
Work Done on Jobs Completed	P-10	14	411	12	199
	Pile Tech. (Incl. P-12) (a)	68	1,000	34	507
	Separations Tech.	24	429	18	490
	Analytical	29	530	26	580
	Technical Services	8	252	12	267
	Other Divisions	2	16	2	278
	Sub-Total	145	2,638	104	2,321
Work Done on Jobs Not Completed	P-10	3	64	8	277
	Pile Tech. (Incl. P-12)	4	32	16	40
	Separations Tech.	2	4	4	251
	Analytical	8	367	22	524
	Technical Services	4	196	19	80
	Other Divisions	2	208	1	8
	Sub-Total	23	871	70	1,180
Total Work Done			3,509		3,612
Work Backlog:					Man-Hours to Complete
Jobs Started:	P-10	3	281	2	227
	Pile Tech. (Incl. P-12)	4	1,278	4	1,252
	Separations Tech.	2	10	3	186
	Analytical	8	421	12	269
	Technical Services	4	371	5	335
	Other Divisions	2	362	1	0
	Sub-Total	23	2,723	27	2,269
Jobs Not Yet Started	P-10	4	56	6	163
	Pile Tech. (Incl. P-12)	11	264	11	401
	Separations Tech.	6	706	1	80
	Analytical	7	362	10	934
	Technical Services	6	341	14	423
	Other Divisions	1	84	0	0
	Sub-Total	35	1,813	42	2,001
Total Backlog			4,536		4,270 (b)

(a) P-12 designates the Exponential Pile Project.
(b) Does not include 332 hours cross-ordered to Maintenance, nor 24 hours cross-ordered to Electrical during the month.

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Technical Services Unit

The continuing large backlog of work has required Technical to request the Metal Preparation Section to continue the six-day work week for their craftsmen assigned to Bldg. 101. Manufacturing Department machine shops are on a similar schedule as a result of their own work volume increases, and now can give only occasional assistance on Technical cross-orders.

Work has been temporarily suspended on fabrication of a metal transfer pump for P-10 due to the low priority of this job. Work has also been suspended on the metal transfer systems for P-10 pending receipt of valves required.

Fabrication of the metal transfer manifold for the P-10 program received top priority during the month. This manifold consists of stainless steel piping, flanges, special valves and a diffusion pump which required vacuum tight assembly and necessitates heliarc welding throughout. The job was originally estimated at 250 man-hours and was to be completed by August 27. In order to meet the required completion schedule for this manifold, five machinists and one welder were assigned to the job for a full week.

Approximately 100 man-hours were expended on graphite and other machine shop fabrication for the P-12 Exponential Pile program.

Eight large graphite crucibles approximately 12" in diameter and 24" long (with valves, lids and spare parts) were completed for Separations Technology. Fabrication of a special steady-rest to hold the rough graphite castings required for this work was necessary due to the dimensions of the graphite pieces involved.

A second miniature mixer-settler has been started for Chemical Research. The new model will differ from the earlier model built for Chemical Development in several details; notably, the feed system for the new unit will be twice as large and the mixing-settling chambers will be larger and will involve fewer stages.

Work continued on the development of a 15-cell variable speed, counter current batch extractor for Chemical Development. Development of a remote control pipetter for the Bldg. 222-S analytical line is in progress for Analytical Services. Interesting design features of this pipetter are a low friction drive, accurate precise motions, and a positive displacement pipetting device which is expected to eliminate some of the troubles encountered in the use of air column operated pipetters.

AEC Informal Approval was received on August 25 authorizing the expenditure involved in relocating Technical Section activities from the 101 Area, Hanford, to other 100 Area locations. The Mechanical Development Shops will move into the 1717 Bldg., 100-D Area. All phases of this move were scheduled with the various servicing groups involved, and the actual moving operation was begun on August 27. This work was approximately 75% complete at month end. An agreement between the Mechanical Development Shops and the Reactor Section, Manufacturing Department, regarding the loan of necessary tools has been reached, and it is expected that both shops will be able to function satisfactorily while the Technical shops are operating in this temporary location. This 100-D location will serve the Technical Shops

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until permanent quarters become available in the new Mechanical Development Bldg.

During the month the one-man service shop in Bldg. 222-S was set up and staffed. Some work has been done on multicurie cell installations.

Glass Shop

Work volume statistics for the Glass Shop (exclusive of P-10 services) are as follows:

	July	August
Jobs Completed		
New	48	71
Repairs	10	16
Revisions	7	11
Total	65	98
Job Backlog	16	10

One P-10 glass blower was withdrawn from work in the hood room at Bldg. 108-B because of exposure above the working limit. He has been assigned to other duties and a replacement has been made. There are approximately four quartz jobs on the Glass Shop backlog, including fabrication of a quartz dilatometer. These are awaiting the arrival of quartz standard taper grindings.

Equipment Design

Work volume statistics for Equipment Design, expressed in man-hours, are summarized as follows:

	July		August	
	Engineering	Drafting & Misc.	Engineering	Drafting & Misc.
Pile Technology				
Engineering	20	269	25	234
Metallurgy	17	4	29	85
Separations Technology				
Development	48	-	48	-
Research	152	6	233	41
Analytical				
Service	344	522	600	695
Research	-	8	-	-
Technical Services				
Engineering	-	31	-	9

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	July		August	
	Engineering	Drafting & Misc.	Engineering	Drafting & Misc.
Laboratory Equipment Development (WDA #TC-5)	179	72	60	350
Totals	730	912	995	1,414

High work loads in connection with the completion of design for the multicurie cells and other special equipment for Bldg. 222-S, as well as for various Pile Engineering programs, resulted in continuation of the planned six-day work schedule for a few of the engineers and for all designers and draftsmen.

Arrangements were completed for the relocation of those Laboratory Equipment Design activities from Bldg. 101 to temporary space in an idle Mfg. Dept. change house (Bldg. 1707-D) in 100-D Area. This will serve until permanent quarters become available in the new Mechanical Development Bldg.

The following work was done for the various customer groups, as indicated:

Pile Engineering

Drawings were made of the ceramics tester, transfer chamber, "W" cooler, displacement time recorder, graphite support, piping and orifice design, deformed process tube removal data sheet, and various graphs.

Metallurgy

The design was completed on a vacuum furnace to check, at 600° C., a stainless to palladium weld. Drawings were made of the sugar loaf carrier, radiometallurgy manipulator, cell pallet and the uniscan.

Chemical Development

Assistance was given on the outfitting of the multicure cells in the Redox Analytical and Plant Assistance Laboratory (Bldg. 222-S).

Chemical Research

Assistance was given on the outfitting of the multicurie facilities in Bldg. 222-S. A column gloved box to go inside the cell was designed. The design was completed on an explosion-proof gloved box to withstand BrF_3.

Drawings were made of the Junior Cave ventilation system, radiochemistry hoods and sample blister. A die for forming platinum crucibles was designed.

Analytical Services

A flame ionization type fuel shutoff device was designed and installed on a Beckman Flame Photometer enclosed in a gloved box. A photo-electric

type falling detector-counter-timer apparatus was set up and tested experimentally. Additional tests were run on a heavy work coil for use with an induction heater. Assistance was given on the outfitting of analytical laboratories in Bldg. 222-S. The pipet head for the falling drop apparatus was designed. Engineering and design were essentially completed on all equipment components of the sample handling line in Bldg. 222-S. Drawings were made of the shielded forceps.

Laboratory Equipment Development (RDA #TC-5)

Development of multicurie cell equipment continued with the successful design and fabrication of a cask cell-entry mechanism, and design of equipment hangers, wall rails and equipment cell-entry dolly.

A very successful model of a "remote release pipetter" was developed and was being formally drafted for commercial procurement. This device allows a chemist to remotely engage or disengage a glass pipet over a wide range of sizes.

The "Catalog of Hot Laboratory Equipment" was completed, and assembled copies are about ready for distribution.

New Laboratory Planning

Planned six-day schedules for the three contact engineers assigned to this work were discontinued on August 25, as most of the design liaison work in connection with the Works Laboratory Area is now complete.

Redox Analytical and Plant Assistance Laboratory, Proj. C-187-E

The Waste Disposal facility (Bldg. 219-S) was completed and accepted.

The ventilating system is still an exception to the acceptance of Bldg. 222-S. However, the reinforced dampers have now been installed in the hood exhaust ducts and air system balancing operations have been resumed.

Investigation into the cause(s) of the yellow discoloration in the marbelized white rubber tile used as a floor covering in this building continued. The manufacturer (Robbins Tire and Rubber Co., Inc.) reported that their tests failed to disclose any weakness in their tile or incompatability between tile and mastic. Penetration of the tile by the solvent in the mastic still is evident, and tests now being conducted are expected to verify this action, and establish the effect of the surface waxing applied by Construction after the tile was laid.

Mechanical Development Bldg., Proj. C-406

Phase I construction of the Mechanical Development Bldg. is approximately 90% complete. Negotiations with the Dix Steel Co. for both design and construction of Phase II of this building were terminated when it became apparent that this work could not be completed in time to allow direct

relocation of Bldg. 101 Technical activities into this new facility before Sept. 15. Negotiations now are underway with Dix Steel for only the Phase II design of this building, with final construction to be awarded on a competitive bid basis.

Radiochemistry Bldg., Proj. C-381

Construction work on the Radiochemistry Bldg. is progressing and was 2.1% complete at month end.

Plot Plan & Utilities, Proj. C-394

Final work in preparation for issuing bid invitations covering construction of the Plot Plan & Utilities was delayed because minor revision of the drawings and specifications on these facilities, as submitted by the Architect-Engineer, was required. This work is now complete and bid assembly preparation has been resumed.

Construction of the concreting facilities for hot waste disposal has been included in the current re-negotiation of the Radiochemistry Bldg. subcontract with the Sound Construction and Engineering Co.

Radiometallurgy Bldg., Proj. C-385

In July it was erroneously reported that invitations to bid for construction of the Radiometallurgy Bldg. were issued on July 19. Actually, the Radiometallurgy Bldg. invitations were held for combination with the Pile Technology Bldg. bid call, and invitations covering both of these buildings were released on August 20. The bid opening date is scheduled for October 3.

The plans for the high level and intermediate level cells and other major pieces of equipment to be purchased by General Electric but installed by the subcontractor have been issued to vendors for quotation.

Pile Technology Bldg., Proj. C-414

The bid assembly for the Pile Technology Bldg. was completed and available for bidders on August 31, as provided in the invitation to bid issued on August 20.

Addendum No. 1 to Specification HW-4701 for the Pile Technology Bldg. was issued August 28. This change incorporates the preparation and placing of some high density concrete originally to be written as a separate specification. The high density concrete is to be used in the walls of a particle counting room. Weight of 220 lbs. per cu. ft. will be achieved by the use of magnetite ores in the concrete.

Complete take-offs of equipment lists for the Pile Technology Bldg. were finished and were submitted together with similar lists for the other Laboratory Area buildings.

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Library and Files Bldg., Proj. C-421

Bids for construction of this facility and for the Area Badge House were opened on August 16. Award of this construction subcontract to the L. H. Hoffman Construction Co., on their low bid of $533,500, was in process at month-end.

Laboratory Services

Building 3706

Normal Bldg. 3706 services continued routinely. Material control, stockroom and work order activity is summarized as follows:

	July	August
Purchase Requisitions		
Total number processed	54	79
Number requiring special expediting	12	26
Number requiring emergency handling	0	0
Stores Stock Requests Processed	0	4
Store Orders		
Total number processed	1,050	1,554
Number requiring emergency pick-up and delivery	14	15
Work Orders Processed	73	55

The remodeling of locker rooms in Bldg. 3707-C was completed and the IBM Computing Laboratory equipment and personnel were moved from Bldg. 101 into this new space on August 22. Work on the remodeling of Room 59, Bldg. 3706, for use as a gas laboratory is progressing and is scheduled for completion in September.

The typing of purchase requisition information on the Kardex cards continued. As soon as this work is completed the cards will be alphabetized and placed in the Kardex file for reference use.

The painting of Bldg. 3707-C lunchroom was completed. The Freon compression unit on the ice box in back of Bldg. 3706 was turned on for the first time. This reduced the temperature on the inside of the ice box from 45°F to 25°F, and is expected to result in an annual savings of $250 in ice and handling costs.

Building 222-S

Installation and testing of piping to the "pipe chases" of the Phase II laboratories being built in multicurie section 1-G of Bldg. 222-S was completed August 19. This work finished the installation requiring connection to services in the regulated tunnel, and will reduce the interference with building operation when subsequent Phase II construction work

on the additional laboratories is started.

Materials are being received and shelved in the Bldg. 222-S Stockroom in preparation for laboratory occupation by operating personnel. Operating requirements were surveyed and used as a basis for placement of initial orders. A total of 24 work orders were issued in August for fabrication and modification of equipment. Routine orders to the 200 Area servicing groups of the Manufacturing Department for maintenance of the building services also were issued.

Flushing of all waste lines and tanks is in process. Several flushes of the Hot Waste Storage system will be made when the 202-S system can process the flush water. These systems were originally flushed and checked by Construction, but it is possible that sediment may have accumulated in them since that time.

MATHEMATICAL SERVICES

Statistical Services

Using the statistically derived calibration reported in Document HW-21686 (Relationship Between U_{235} Content and 305 Test Pile Results for Fuel Slugs), good agreement between Oak Ridge and Hanford values are being obtained on an overall basis, although considerable variation is noted in some individual shipments. The abnormal deviations are being investigated. At the request of the Accountability Unit, an experiment was designed to determine the errors that enter into the weighing of uranium rods. This is the first step in an extensive study to provide estimates of the reliability of inventories listed in monthly Hanford S. F. Accountability reports.

For the Production Unit of the Metal Preparation Section, a sampling procedure is being devised to be used for measuring aluminum cans for can wall thickness, inside diameter, outside diameter, and length. The first phase of this study, a sampling procedure for can wall thickness, has been completed. An analysis of data on dimensions of steel sleeves used for canning uranium slugs indicated an increase in dimensional variations with increasing sleeve usage. Based upon this fact, an experiment was designed for the Production Unit to study the effect of sleeve size and use on canning rejects. For the Pile Technology Unit, assistance was given in designing the following metallurgy experiments:

1. To determine the effect of canning bath compositions, temperatures, and submerge times on the base thickness (non-seat rejects), and minimum can wall thickness (penetration of aluminum-silicon) of canned uranium slugs;

2. To compare uranium metal currently used with metal that will be supplied by a new AEC installation in regard to 300 and 100 Area process effects; and

3. To determine the dimensional stability of uranium slugs transformed by a hot salt bath.

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At the request of Metallurgy, a comparison was made of the yield of good slugs and scrap losses obtained during the machining of uranium rods to slugs representing metal produced in the old and new plants of the Mallinckrodt Chemical Works. A comparison will be made between the Test Pile results with material from the two plants.

For the Analytical Unit, a comparison of data obtained by use of two analytical methods (direct coulometric titration, and chromatographic separation followed by radiometric assay) showed definite evidence of a systematic difference between methods. These two methods are being developed for detecting uranium in aluminum-silicon scrap. An analysis of data on uranium billet egg wafers indicated that two wafers taken from the same egg do not give similar analytical results. An experiment was designed to test this further.

Assistance is being rendered to the Plant Industrial Engineers in establishing the norm for each reject cause in the canning operation. Also for the Industrial Engineers, an investigation is being made to determine the magnitude of various errors that affect the final analysis of coal.

Considerable work was done for the Pile Technology Unit in a study of the effect of exposure and power on slug failure in the 100 Area piles. Analyses were made of the breaking strength of, and the stored energy in, samples of irradiated graphite.

The study of unit costs for the Reactor Section at 100-B Area has been temporarily discontinued due to the revision of cost accounting procedures. It will be necessary to build up new cost experience before statistical controls can be applied again.

For the Separations Technology Unit, a comprehensive study of effects of process variables in the casting and pressing operations in Building 234-5 on the density of cast pieces was begun. Non-orthogonal analysis of variance procedures are being applied to separate and evaluate the effects of furnaces, furnace liners, length of casting heating cycle, length of casting cooling cycle, model, type of charge to casting furnace, maximum temperature during pressing, and other pressing conditions.

Rework and resample limits for the separations process extraction waste (7-3WS, 8-3WS) were statistically derived and reported in Document HW-22008. Results were based on diagonal regression analyses of extraction waste losses and starting Am-Cm assays, begun last month. Rework limits were derived on the assumption that reworking of the extraction waste is economically feasible if better than ninety percent confidence exists that at least 0.3% of the starting plutonium can be recovered. These limits were placed in effect on August 25.

A survey was made of the feasibility of calculating the Am-Cm content of metal solution from pile and cooling data on a routine basis, as a control on analytical Am-Cm assays. It was concluded that such a calculation can reasonably become a routine computation, suitable for IBM, providing the necessary equation can be firmed up.

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For Chemical Research, Separations Technology Unit, complete solutions of a system of sixteen simultaneous equations relating to solvent extraction were obtained.

Based on seventy-four runs since a change in sulphate addition in Building 231 process was adopted, a new relationship between AT chemical assay and specific gravity of AT solutions was established for use by the Analytical Unit. Overall precisions of mass spectrometer determinations on P-10 product samples were estimated for the Analytical Unit. The regular report of 200 Area Analytical Laboratory performance was issued.

The regular reports of certain Kr-85 calculations were completed and forwarded to the AEC. In addition, a change in calculation procedure resulting in a substantial saving in calculating time was introduced. Also, in anticipation of a forthcoming request from the AEC, a survey of the feasibility of a different basis for these computations was begun.

Exponential curves representing the uptake of T_2O by plants grown in both the presence and absence of light in nutrient solutions of different activity density were completed for the Biology Section of the Radiological Sciences Department. Statistical study of further radiological experiments to ascertain the reasons for the effects of pile effluent water on plant weights was undertaken.

Regression analyses were performed on wage survey data for the Salary Administration Staff. A study was made for the Employee and Public Relations Department to determine the effectiveness of predicting the performance of prospective employees on the basis of personnel tests. Work was started on a study of missing documents for the Classified Files.

Mathematical Technique Development (RDA #TC-6)

All articles published in the Annals of Mathematical Statistics since 1942 have been reviewed. Abstracts have been prepared of those articles dealing with tests of statistical hypothesis, parameter estimation, statistical quality control, design of experiments, analysis of variance, and curve fitting. This file will be kept up to date to provide ready access to current developments for the solution of statistical problems which do not fall into one of the many familiar statistical patterns now employed at Hanford.

Computing Services

Programming of the cosine series curve fitting process was revised according to modifications requested by Pile Technology for the P-12 project. Programming of the uranium metal quality calculations was revised to include all cross products of the eight variables. Programming has been completed for diffusion length calculations based on fast source theory.

Routine computing was completed for graphite temperature calculations; for metal quality studies; for special request exposures at H Pile; for P-12 data reduction; for aquatic biology and sheep experiment calculations; and for daily panellit pressure analyses. Meteorological data were processed for the months of January through May 1951. This work is being continued routinely on a monthly basis.

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Two temperature maps for B Pile were punched, and the tube-by-tube power distribution calculated. Slug corrosion calculations were made for five tubes. A table of a special mathematical functions was prepared for Chemical Research, Separations Technology Unit. Work is under way on an extension of the library of general mathematical functions programmed for IBM.

On August 22, this Computing Laboratory moved from Bldg. 101 (Hanford) into its new quarters in Bldg. 3707-C, 300 Area. This converted locker room space affords room for the addition of IBM equipment scheduled for delivery this fall and winter.

The press of work in this laboratory required most of its personnel to continue on a 6-day work week.

TECHNICAL INFORMATION SERVICES

Plant Library

Library work volume and book statistics were as follows:

	July	August
Number of books on order received	152	182
Number of books fully cataloged	153	327
Number of bound periodicals processed but not fully cataloged	95	173
Pamphlets added to the pamphlet file	66	49
Miscellaneous material received, processed and routed (Including maps, photostats, patents, etc.)	91	97
Books and periodicals circulated	3,592	3,702
Unclassified reports processed	160	150
Unclassified reports circulated	299	275
Reference services rendered	1,036	1,464
Inter-library loans	16	40
Photostats from offsite	52	17

	Main Library	W-10 Library	108-F Library	Total
Number of books	7,814	3,337	378	11,529
Number of bound periodicals	4,782	0	611	5,393
Totals	12,596	3,337	989	16,922

Attention is called to the two new items given in the Library statistics, above. A considerable volume of interlibrary loans is now handled monthly, books being borrowed from scholarly and university libraries throughout the United States. Although the growth of the Library's periodical collection has substantially reduced the number of photostats requested from offsite, there is still a steady demand for articles from unusual and obscure periodicals not in the local holdings. These are generally obtained from the American Chemical Society Photocopying Service in Washington, D. C.

Activities in the Library proceeded routinely, with a wide variety of reference questions covering many fields of technical literature. A sampling of typical reference questions is given below:

Can thorium fluoride be oxidized directly to thorium oxide?
The chemical formula for Freon-312.
The chemical properties of neodymium, samarium and promethium.
The specific heat of boron carbide.
The density of $K_2B_4O_7 \cdot 5H_2O$.
The electrical characteristics of silicone insulated wires at high temperatures.
A method of analysis for plutonium using $BiPO_4$.
Use of aluminum in alloys for heat exchanger construction.
A list of projects supported by AEC unclassified research.
Treatment of plutonium poisoning.
Articles on the temperature of the earth.
Effect of radiation upon silicone-rubber.
Solubility of aluminum and chromium oxalates.
Resistance of Koroseal to methanol.
Amount of $K_2Cr_2O_7$ in H_2O for rust prevention.
Properties of salicylaldazine.
Separation, purification and analysis of lanthanum.
Kohlenoxyd und zigarettenrauchen - translation from German.
Computation of thermal stresses in metals.
Thermal conductivity of boron.
Metal to ceramic seals.
Der gasanalytische Nachweis von Kohlenoxyd im Blut, insbesondere bei Rauchern - translation.
Tyler No. 100R wire mesh specifications.
Specific gravity of ethylene glycol.
Methods of analysis of tantalum.
Specifications for CP and technical grade methanol.
Chemical composition of asbestos.
Occupational problems of the aged.
Thermometer for radiant heat measurements.

An interesting leaflet explaining the services available to plant personnel through the Plant Library was designed and published with assistance from Public Relations. It received plant-wide distribution to all exempt employees, and additional copies are available for use in orientation.

Two borrowed viewers, one for microcards and one for microfilm, were returned to their vendors. As previously reported, the U. S. Atomic Energy Commission contracted to rent these viewers for field trial before decision was made to purchase. A summary of the reactions of our technical staff to the two units was prepared for the Technical Information Panel meeting in October.

Classified Files

Work volume statistics for the Classified Files were as follows:

Technical Services Unit

	July	August
Documents routed	14,578	13,528
Documents issued	6,058	6,576
Reference services rendered	4,775	4,800
Registered packages prepared for offsite	278	505
Inter-area mail sent via transmittal	33,919	39,922
Holders of Classified documents whose files were inventoried:		
(a) Because of normal perpetual inventory procedure	1	1
(b) Because of transfer of work assignment	4	7
(c) Because of termination	2	2
Inventory reductions:		
Copies of documents destroyed	4,942	5,355
Copies of documents downgraded	251	284
Copies of documents declassified	64	186
Classified documents located which were unaccounted for in previous inventory	42	24
Standard storage cartons of material retired to the Records Center:		
Unclassified and Official Use Only	0	0
Classified	0	87

Work on the inventory of classified documents in the Central Files proceeded satisfactorily, and the document check is scheduled for completion in three weeks. A final summary report was prepared on the recently completed inventory of the Design and Construction Sections Classified Files for the local AEC Security Division. In addition, a copy was mailed to the Technical Information Services at Oak Ridge for circulation to other sites. Local checking of similar lists originated offsite has located five missing classified documents in the Hanford files.

Retirement of substantially all classified technical notebooks and logbooks to the Records Center was completed. These notebooks represent an accumulation since the inception of the Project, and retirement will make available needed files space. Recent statistics indicate that the notebooks are infrequently referred to, and a procedure has been developed which will make them readily available when required.

Overtime work was required to process for destruction a large backlog of surplus classified documents, which will materially reduce the classified document inventory. The backlog accumulated due to the field activities of the Audit and Inventory unit (with resultant return of many classified documents to the Classified Files) and the continuing program of centralizing documents presently dispersed throughout the subject file into a single numerical filing system.

Space limitations have necessitated working some members of the 700 Area Classified Files staff in the lower files vault of Bldg. 703. To improve this unsatisfactory work location, new fluorescent lighting has been

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installed, and a large fan set up to provide temporary cooling. Plans have been completed for extending the duct work of the upper vault ventilation system to include this lower room.

A fair start has been made on the preparation of a needed "Manual of Classified Files Procedures." The first draft of the procedures for classified document issuance, one of the key Files assignments, has been completed.

At a meeting attended by site representatives of the DuPont liaison staff, the local AEC Security Division, and Classified Files personnel, a procedure was drafted for the handling of classified documents received and issued by DuPont personnel in residence at Hanford. It is anticipated that this procedure may be applied (with modifications) to all offsite personnel on temporary assignment at Hanford.

A continuing effort to coordinate the work of the Classified Files and the Records Control Program led to reconsideration of the usefulness of the copies of unclassified and "Official Use Only" material which presently are required for the 700 and 300 Area Classified Files. While it was felt that these copy requirements were consistent with the past function of these files (as central repositories for record copies of certain Hanford-written matter), it was necessary to reevaluate this requirement in the light of HW Instructions Letter No. 2, Section VII, which transferred this repository function to the Records Service Center.

Studies were accordingly undertaken some months ago regarding the reference use made of the large volume of unclassified and "Official Use Only" material processed by these files. The studies indicated that little reference use was made of the material which could not be adequately made by the Pink File alone. It was, therefore, decided to eliminate the present requirements for 700 and 300 Area file copies of unclassified and "Official Use Only" material with the exception of that clearly of reference value, e. g., Research and Development reports. The various Units interested were circularized regarding the proposed change and, no objection being expressed, the change was officially incorporated in Office Letter No. 124 on 8-20-51.

Central Reporting Service

Work volume statistics for this service were as follows:

	July	August
Ditto masters run	515	621
Mimeograph stencils run	1,109	1,425
Ditto copies prepared	21,203	22,697
Mimeograph copies prepared	108,868	115,504
Multilith masters typed	—	530
Multilithed copies handled	—	33,304
Formal Research and Development Reports issued	11	24
Formal Reports in Process	15	12
Reports abstracted	194	204
Volume of unclassified mail handled by the 300 Area Mail Room	29,913	27,007

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Technical Services Unit

Attention is called to two added categories in the statistics reported above. These represent (1) multilith stencils prepared by the Central Reporting Service in current formal reporting, and (2) the collation and assembly of copies by the duplicating staff after they have been run by the 700 Area Print Shop of Office Services. These figures will be included in future reports, since they represent a considerable fraction of the total work volume.

Donald F. Mastick, Scientific Advisor, Technical Information Service of the AEC, Washington, visited Hanford on August 16. He reviewed current problems in the organization of technical information, and particularly commended the bibliographies being issued by the Hanford abstracters as a sample of high quality work in this important field. He indicated the Commission's need for additional copies of the Hanford Works Technical Manual, and was assured that a Series C would be available shortly.

INVENTIONS

All Technical Services Division personnel engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work during August 1951 except as listed below. Such persons further advise that, for the period therein covered by this report, notebook records, if any, kept in the course of their work have been examined for possible inventions or discoveries.

Inventor(s)	Title
D. C. Kaulitz	Remote Release Pipetter

Signed T W Hauff
T. W. Hauff, Unit Head

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DESIGN AND CONSTRUCTION SECTION

I. SUMMARY

A. ORGANIZATION

In line with the company-wide adoption of revised nomenclature, the Engineering and Construction Divisions became the Design and Construction Section and the component organizations were changed as follows:

FROM	TO
Project Engineering Division	Project Engineering Unit
Design and Development Division	Design and Development Unit
Reactor Division	Reactor Unit
Separations Division	Separations Unit
Power and Mechanical Division	Power and Mechanical Unit
Minor Construction Division	Minor Construction Unit
Contract Division	Contract Unit
Engineering and Construction Services Division	Design and Construction Services Unit

B. SCOPE

At the end of the month the Design and Construction Section was engaged in 64 projects with authorized funds in excess of $20,000 and 4 projects with authorized funds ranging between $5,000 and $20,000. In addition, preliminary work was being performed on 37 projects estimated in excess of $20,000 and 6 projects estimated between $5,000 and $20,000. Significant activity is discussed in the following statistical section of this report.

C. ACCOMPLISHMENTS

During the month four projects and one informal request were transferred to the sponsors.

C-187-D - Redox Production Facility

Official transfer of the Redox Production Plant to the Manufacturing Department took place at 8:00 A.M., August 16, 1951. The 241-S Tank Farm is 99.8 per cent complete and would have been transferred at the same time except for a labor dispute which has prevented final installation of the condensers.

C-337 - Dissolver Off-Gas Filtration for Building 221 T and B
C-378 - Iodine Removal Facilities for Dissolver Off-Gases

These two projects were closely coordinated to accomplish the purification of the dissolver off-gases in the 221 T and B Buildings. Though originally planned for separate installation outside the building, it was found possible through re-design, together with careful coordination and mock-up trials in 221-U Building, to place all equipment in a standard dissolver cell. This resulted in

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C-337 and C-378 (Continued)

considerable financial saving and prpvided an installation on which the canyon building crane could be utilized in the same manner as on the cell vessels and connectors. The exhaust gas filters, consisting of a fiber glass unit to entrap entrained particulate contamination from the dissolving operation and the silver nitrate reactor, proved successful in removing the radio-iodine from the gas stream. As a result of installation of these facilities, the contamination level in the vicinity of the 200 Areas has been greatly reduced thereby eliminating a serious operational hazard.

C-399 - P-10-D Part II - Hot Development Facilities

This project provided the Pile Technology Unit with the metal extraction lines and auxiliaries for the extraction of tritium from lithium aluminum alloy slugs. Included in the auxiliaries are improved health hazard controls such as the 300' stack, improved methods for measuring and recording the tritium content of the building air as well as major increases in analytical facilities. Certain improvements and conversions have also been accomplished on the glass lines. However, the basic glass line installation remains in essentially its original condition in order to permit it to function as a standby process unit.

Certain phases of the work on this project were revised and others omitted in conformance with later planned work being presented under C-412 funds. These phases are minor and in no way interfere with the ultimate goal for this particular phase of the P-10 program.

M-602 - HF Filters for Hood and Exhaust System, Bldg. 234-5 (Informal Request)

Six small filters (activated charcoal plus glass wool media) were installed in the exhaust air piping of Hood 8 to filter out the HF fumes which prior thereto had been expelled into the exhaust air stream and through the filter rooms. The fumes had been corroding the filter frames and attacking the filter media, thereby causing excessive maintenance in the air exchange system.

D. MATERIAL PROCUREMENT AND FABRICATION

A group consisting of representatives of the Atomic Energy Commission, Purchasing and Stores Section and the Design and Construction Section visited Foster Wheeler Company to better the fabrication schedules for concentrator units for TBP. Problems of design and fabrication were discussed and relaxations were allowed wherever possible. To further accelerate fabrication schedules, the Atomic Energy Commission decided to obtain an N.P.A. directive immediately.

E. CRAFT LABOR

As reported in July, the failure of the Plumbers and Steamfitters Union to provide craftsmen created a critical situation. During this report period the situation was relieved somewhat; however, a shortage of steamfitter-welders continued to exist. In addition, a shortage of reinforcing iron workers caused delay on certain projects.

The voluntary terminations of C.P.F.F. construction subcontractor personnel equalled 3.7 per cent of the average force for the month.

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F. SAFETY

There were four major, 21 sub-major and 868 minor injuries among construction subcontractor personnel reported during the month. Nine automobile accidents and two fires were also reported. 383 Safety and Security meetings were held and attended by 11,522 employees.

G. MISCELLANEOUS

Work continued through the month on the "Report on Additional Production Capacity of Hanford Works." The basic research and writing had been accomplished but reproduction and assembly remained to be completed.

Construction plans and specifications were completed for the Hanford Works Laboratory Areas, with the exception of the Boiler House Extension and the 300 Area Sanitary Sewage System.

Bids were received for the Library and Files Building (Project C-421) and Badge House (Project C-394), and it was recommended that the construction contract be awarded to L. H. Hoffman. Bid invitations were issued on the Radiometallurgy (Project C-385) and Pile Technology (Project C-414) Buildings. After receipt of authorization for the requested additional funds, it was recommended that the construction of the Aquatic Biology Laboratory (Project C-364) be awarded to the Erwen Construction Company.

The design of the water plant and outside facilities for the 100-C Area is 70 per cent complete as compared to 72 per cent scheduled.

All excavation for the 100-C Reactor is completed, except for miscellaneous foundations, and a total of approximately 4000 cubic yards of concrete is in place. Test table settings have been completed. Construction is two weeks behind schedule due to a shortage of pipefitters and reinforcing iron workers. Construction is about 1.5 per cent complete. Design is 77 per cent complete, with Vitro Corporation design approximately 75 per cent complete and General Electric Company design about 85 per cent complete.

All major equipment for Project C-361, Metal Conversion for Part "A", is on the plant site except ten decomposition pots. Construction is 71.3 per cent complete.

Construction for Project C-362, Waste Metal Recovery Facilities, is 45.18 per cent complete against a scheduled 44.66 per cent. Design is 99 per cent complete.

Construction for Project C-413, Expansion of 234-5, is 25.6 per cent complete for the Richland portion and 68 per cent for Schenectady.

The Minor Construction Unit completed arrangements for the movement of its offices from the 3000 Area to White Bluffs to obtain increased efficiency.

Hanley and Company, C.P.F.F. mechanical subcontractor, Redox Program, had completed its field work and had no manual employees on the payroll at the end of the month.

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G. MISCELLANEOUS (Continued)

During August, the Design and Construction Chart Room was re-established in the 760 Building. The room contains over 100 charts showing progress on elements of project costs, together with progress and status on items of a general nature.

The work load of the Drafting and Reproduction groups continues at a high level.

H. MONTHLY REPORT OF INVENTIONS AND DISCOVERIES

All persons in the Design and Construction Section engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work covered by this period of this report, except as listed below. Such persons further advise that, for the period therein covered by such report, notebooks, records, if any, kept in the course of their work, have been examined for possible inventions or discoveries.

Inventor	Subject	Report of Invention Date
J. P. Cooke and R. B. Sturges	Laminated Wood and Steel Panels	8/24/51
H. Radow	Suction Float for Transfer Pump	Report being prepared
H. J. Bellarts	Van Stone Joint Tube Rolling Device	Report being prepared

PERIOD COVERED BY THIS REPORT August 1 through August 31, 1951.

J. S. McMahon, Manager
Design and Construction Section

Date: August 31, 1951

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II. STATISTICAL AND GENERAL

A. STATISTICAL

C-187-D - Redox Production Facility

Field work follow-up on instrumentation is virtually completed. The design work is complete except for problems arising during inspection of equipment in the field, and certain minor additional facilities recently requested by the operating unit. Vitro "as-built" drawings are in the process of preparation in the New York office.

Information for the "as-built" revision of all General Electric designed facilities was received from the construction subcontractor.

All equipment required for canyon installation has been received and installed, with the exception of pump P-158 spare which is to be installed as P-159.

The lump sum construction work on the 241-S tank farm and associated facilities is 99.8 per cent complete. Final work involves setting the air condensers in place which is being delayed by a labor dispute.

Official transfer of the facility (with exception of 241-S tank farm) to the operating section was accomplished August 16. The plant was physically complete at this time with minor exceptions noted in the formal inspection reports.

C-187-E - Part II Alterations to Redox Laboratory

These alterations encompass conversion of unassigned space for use as a Radiochemistry Laboratory. Preliminary construction work was completed during the month. Design work is 20 per cent complete.

Twenty-eight mechanical items were scheduled for requisitioning of which requisitions for seven have been issued.

C-192 - Biology Laboratory, Part III

The design and specifications are completed for the additional work. Preparations are underway for sending out invitations to bid on construction.

C-198 - 234-5 Facility

Due to necessary field deviations and unforeseen difficulties in obtaining proper functioning of the equipment. The RMA line will not be fully accepted until October 15, 1951.

A demonstration of operability was given by the General Engineering Laboratory task engineer on Balances 2, 5A and 5B. Balance 3B is still causing trouble and was not included. Balance 2 performed satisfactorily. The others (and 3B, which was not included in the demonstration) require additional work and adjustment to put them in proper and reliable operating condition.

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C-199 - Expansion of 300 Area Sanitary Sewer Disposal System

The preparation of final plans and specifications for this project was delayed because of the shifting of personnel to work on the "Report on Additional Production Capacity of Hanford Works." Design completion (presently 80 per cent) is now rescheduled for October 1, 1951.

C-204-B - Additions and Alterations to Kadlec Hospital and Medical Arts Building

Overall construction is 86 per cent complete which is 4 per cent behind schedule.

C-257 - Health Instrument Control Laboratory

Construction is 34 per cent complete and 21 per cent behind schedule resulting from the late delivery of structural steel. Of approximately $150,000 worth of material and equipment to be purchased by General Electric, over 99 per cent is on order.

C-295 - Enlarging 251 Substation

Phase I, consisting of the first half of the duplicate equipment, was substantially completed this month.

C-340 - P-11 Project

Spheres were installed during the last week of August. This completes the work on phase III of this project except for installation of a silent chain and decontamination of the facilities.

C-341 - Addition to Richland Village Electrical Distribution System

Work by the Lump-sum subcontractor is now complete. Final tie-ins remain to be done by Plant forces.

C-349 - Hot Semiworks

Construction work is approximately 30 per cent complete, about 5 per cent behind schedule. Difficulty in procurement of stainless steel fittings and specialties is the main contributing factor. The preparation of Acceptance Test Procedures for electrical work was continued.

C-361 - Metal Conversion Facilities

Notification of the cancellation of the segregation facilities (Part B) was received during the month and cancellation charges on existing orders for the cancelled portion of the work are being determined.

Design Scope and Detailed Plans of Part A are 100 per cent complete, construction is 74 per cent complete. All major equipment for Part A is on the plant site or in transit with the exception of ten decomposition pots. No construction work has been accomplished on Part B for which Scope is 100 per cent complete and Design Detailed Plans 25 per cent complete. Overall completion: Scope 100 per cent, Design Detailed Plans 93.3 per cent and construction 71.3 per cent.

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C-362 - Waste Metal Removal and Recovery Plant

As of August 31, construction of the C-362 Project is 45.18 per cent complete which is essentially on schedule with the revised composite construction schedule. To date 34,554 cu. yds. of concrete have been poured representing 82.3 per cent of the estimated total required.

Progress statistics for the month are:

	PHASE:							
	I	II	III	IV	V	VI	T.C.	TOTAL
Per Cent Scope	100	100	100	100	100	100	---	100
Per Cent Design	100	98	100	99.9	100	99	---	99.0
Per Cent Construction								
Actual - M.C.*	67.6	16.0						
Actual - A.J.	73.0	37.0	90.6	34.3	100	58.0	81.0	45.18
Scheduled - M.C.*	68.4	22.0						
Scheduled - A.J.	72.0	32.0	92.0	34.0	100	66.0	82.0	44.66

*Minor Construction Forces

A group consisting of representatives of the Atomic Energy Commission, Purchasing and Stores Section and Design and Construction Section visited Foster Wheeler Company to better the fabrication schedules for concentrator unit. Problems of design and fabrication were discussed and relaxations were allowed wherever possible.

Management was advised of revised end dates resulting from material and equipment delays and insufficient manpower in critical crafts. A review meeting was held August 22 to present the project status to all interested parties.

C-364 - Aquatic Biology Laboratory

A recommendation for award of lump sum contract on Parts I and II was forwarded to the Atomic Energy Commission for approval. Work orders have been issued to Minor Construction and Operations for work to be performed by their forces.

C-380 - Electricity Metering - Village of Richland

Plant forces have calibration tested 2500 meters and are continuing at the rate of approximately 100 per day. Meter base installations are now complete on the prefabs, and a total of 904 meters have been installed on various other types of houses. Installation is progressing at the rate of approximately 30 meters per day.

C-381 - Radiochemistry Building

The architectural design work in connection with alterations to Room 4-7-A of Building No. 235 is completed. Excavation is 72 per cent complete and concrete work is 15 per cent complete. Overall construction is 2 per cent complete, which is substantially on schedule. 71 per cent of a total of $170,000 worth of material and equipment to be purchased by General Electric is on order.

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C-385 - Radiometallurgy Building

The invitations to bid were issued. Requisitions have been placed for 91 per cent of $523,000 worth of material and equipment to be purchased by General Electric.

C-394 - Plot Plan and Utilities

Design work was completed during the month. L. H. Hoffman was recommended for award of construction contract on the Badge House. Plans and specifications for the Hot Waste Disposal were submitted to Sound Construction and Engineering Company for a quotation as a proposed modification to the Radiochemistry Building subcontract. About 45 per cent of a total of $200,000 worth of material and equipment which is to be purchased by General Electric has been requisitioned.

C-398 - Experimental Coating Hood, Building 235

Construction work is approximately 67 per cent complete.

C-399 - P-10-C - Metal Prototype Unit
P-10-D - Hot Development Facilities

Construction has been completed with the exception of items to be completed on "punch" list.

C-404 - Primary Electrical Power Lines for Hanford Works Laboratory Area

Design work is complete. Aerial cable is in transit. Part II of the project proposal, covering minor rescoping and requesting additional funds, was submitted to the Atomic Energy Commission.

C-406 - Mechanical Development Building

Construction of Phase I is 90 per cent complete. Negotiations are now under way for a fixed price design subcontract with Dix Steel Building Company. Construction subcontract will be awarded on the basis of competitive bidding. Over 99 per cent of the $66,000 worth of material and equipment to be purchased by General Electric has been requisitioned.

C-411 - "J" Slug Storage and Shipping Facilities

A trial run was performed with the use of the off-site cask in the 105-H transfer pit on August 27. The test revealed some operating problems, necessitating a postponement of the heat test and trial run. Slight modifications and minor additions to the cask to accomplish an efficient operating procedure are being investigated. Fabrication work on the other off-site casks is proceeding without delay. The installation of cask handling and decontamination facilities at 105-H is essentially complete.

DECLASSIFIED

C-412 - P-10-X Extraction Facilities

Mechanical design has been completed on all phases of the P-10-X program with the exception of: (1) The Metallurgical Laboratory; (2) The Stripper Unit Installation and (3) The Air Contaminated Product Line. Drawings for the major phases of the structural work and of the exhaust ventilation are complete. Additional information from the Pile Technology and General Engineering Laboratories is necessary before design work on the stripper unit can be completed. Electrical design completion is contingent upon information which is not yet available. Ninety per cent of materials for instrument fabrication has been received.

The construction of the miscellaneous storage area, the women's lounge, and the alterations to the solvent storage building is complete. Work is progressing on the air mask system, air monitoring system, burial ground, metallurgical laboratory, H.I. Laboratory, fourth floor partitions, the laboratory work shop and underground drainage piping.

Work was begun on the Product Storage Facility.

C-413 - Expansion of 234-5 Capacity

Drawings covering the subfloor conduit installation for RMB line issued prior to the start of this work were revised to eliminate interferences with other equipment. New and revised drawings covering the electrical duct work were issued. Design work is progressing on the electrical run sheets for all tasks and on the Zone 2 and 3 details. Design work on mechanical items is progressing. All engineered instrument items were received with the exception of one recorder. Drawings for RMB line are 50 per cent complete. Piping of the Hopcalite CO Detector is 95 per cent complete.

Progress statistics for the month are as follows:

	Percent Complete		
	Basic Design	Overall Design	Construction
Richland	71.5	66.0	25.6
Schenectady	----	64	68

The status of RMA was reviewed with the Manufacturing Department and it was agreed that the equipment will be accepted by the Manufacturing Department by tasks as the Acceptance Tests are completed. The Manufacturing Department has taken beneficial occupancy of RMA, acceptance testing and property transfer being completed on Tasks III and V. Of the 46 modifications to be accomplished on C-198 and C-413, 24 have been completed, 19 are being worked on, and 3 have not yet been started. Overall, the modifications are estimated at 72 per cent physical completion.

C-414 - Pile Technology Building

Plans and specifications for this work were issued to bidders during the month as a part of the Radiometallurgy (Project C-385) Building bid invitations. Orders have been placed for 85 per cent of the $26,000 worth of material and equipment to be purchased by General Electric.

C-418 - Additional Waste Storage Facilities - 241-TY

The design program on this project is 96 per cent complete and on schedule. The resurvey of the locations of sacrificial anodes in the cathodic protection system continued.

A bid of $39,375 (compared to a fair cost estimate of $37,500) was received from Fred J. Early, Jr., Company covering revisions to the sluice pits and pump pits on two of the 241-TY Tanks to bring them into conformity with requirements established by Project C-362.

Placing of steel for the tank liners is complete and welding is in progress. The first x-ray inspection of one of the tanks is complete, repairs to welds have been made where necessary, and re-inspection of the repairs is under way. First x-ray of a second tank is also in progress.

Overall construction progress was 39.7 per cent compared with a scheduled completion of 36.6 per cent.

C-420 - CO_2 Bulk Storage Facilities

Work was stopped due to insufficient funds on August 10, 1951, with the project approximately 60 per cent complete. The sponsoring group will request an additional appropriation.

C-421 - Library and Files Building

Bids were received and it was recommended that L. H. Hoffman, with a low bid of $483,600, be awarded the construction contract. No material or equipment is scheduled for General Electric procurement.

C-422 - Skull Recovery Building 234-5

Construction is approximately 33 per cent complete.

C-423 - Additional Waste Evaporation Facilities

All instrument items are on order. Construction work is in progress on underground process sanitary water lines, foundation and floor slab installation. Construction progress reached 10 per cent.

C-424 - Water Quality Experimental Program

Project is approximately 85 per cent complete.

C-431-A - 100-C Water Works Facility

Design progress is scheduled for 72 per cent completion; actual overall design completion is 70 per cent. General Electric purchase orders have been issued for $6,200,000 worth of material and equipment.

Temporary construction buildings have been completed; TC utilities are nearing completion. Preliminary work for enlargement of River Pump House is 30 per cent complete. Excavation for the Filter Plant and Clearwells is 85 per cent complete, and placement of concrete for footings, flumes, etc., is underway. Excavation for 190-C, Pump House, and Pipe Tunnels is nearly complete, and concrete is being placed in the basement area. Excavation has been started for the main sewer.

C-431-B - Production Facility

Completion percentages are: General Electric design 85 per cent, Vitro Corporation design 75 per cent (15 per cent behind schedule) and overall design 77 per cent; construction 1.5 per cent.

Work is progressing on the design of a transition section in the 105-C effluent line which is necessary to connect the portion designed by the Vitro Corporation and that portion designed by Chas. T. Main, Inc.

Electrical design and requisitioning of material is in progress on the third safety system. Additional requisitions were prepared for special control equipment. Design has started on the electrical modifications to the 115-B Building.

The drafting work for the two mechanical process drawings required for this project has been completed.

The critical structural drawings for the storage and transfer area were received from Vitro Corporation. Action has been taken to expedite drawing revisions from Vitro which are not being received as quickly as is necessary.

Rehabilitation of the graphite machining facilities in the 101 Building at Hanford was started. Graphite shop drawings for the 105-C and du Pont reactors have been completed. Control data and inspection procedures are being established. Special tests were completed on the setting and alignment of the base cast iron. Drawings of the left and right side "T" sections and masonite were approved. The concrete top shield arrangement and detail drawings were issued for comment. These drawings were not complete but illustrate the basic design features.

A requisition for the large shield test facility was issued. The basic design is now proceeding satisfactorily.

Additional cooling tubes were added to the biological and thermal shields to accommodate the very high power level design objective recently established for this reactor.

C-431-B (Continued)

The vendor has been having trouble making the centrifugal castings for the vertical safety rod sections. The cause is believed to be excessive boron content in the mix. This is now being checked in the laboratory.

A vertical safety rod was dropped into a partially filled rod slot at the White Bluffs test tower to determine the damage that might be caused to the "C" moderator in event of malfunctioning of the 3X control system.

The tests performed to date in the 189-D Building on the pressurized continuous charging equipment show encouraging possibilities for continuous charging of full process tubes with segmented discharge.

In view of anticipated very high power level operating conditions in the "C" reactor, changes have been initiated to add additional thermocouples to obtain important operating data.

C-432 - Air Raid Warning System, Richland - North Richland

Electrical design was completed during the past month.

C-433 - 384 Steam Plant Addition

Design is estimated to be 10 per cent complete. No material or equipment is scheduled for General Electric procurement.

C-434 - New Bio-Assay Laboratory

Radiological Sciences group has requested that all work on the new laboratory be discontinued. Present plans are to re-scope the project to include an addition and the rehabilitation of the existing laboratory.

C-438 - Ball Third Safety System

The overall design of this project is approximately 80 per cent complete. The ball hoppers, hopper gates and trip mechanisms are all completely designed. Several items remain to be completed such as the ball recovery system, equipment to dismantle the existing 3X system and a device to fill cracks in the graphite blocks. Negotiations are under way with Reed Standard Company to fabricate the hopper and step plug assembly. It has been determined that the installation for the Ball Third Safety System will be performed by plant forces.

The battery rooms at B, D and F Areas are defined as construction work, consequently this phase will be performed by the minor construction forces.

C-440 - Alterations to 712-A Hutment

Authorization was received for construction of Part II of this project. Design and specifications have been completed.

C-441 - Solvent Building

Design is approximately 45 per cent complete.

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C-443 - Additional Trunking Capacity - Richland Telephone Exchange

Atomic Energy Commission Directive has been received authorizing $60,000 for purchase of additional telephone equipment from North Electric Company. Part II of the Project Proposal is now being written requesting additional funds.

C-444 - Additional Unit to Supplement Hood #26

Construction work on this project is in its final stage.

C-445 - B-Y Telephone Exchange Additions and Changes

Exchange Trunking Equipment is being ordered, and specifications are in preparation for incorporation into a bid assembly.

C-446 - Additional Effluent Disposal Facilities Bldg. 234-5

All work has been completed except cleaning out two well casings and the installation of instruments.

C-447 - Portable Meteorological Mast

Overall design is 20 per cent complete.

C-451 - 300 Area Underground Feeder System

Electrical design for this project was completed during the month. Overall design is about 75 per cent complete.

C-452 - Meteorology Tower Elevator

Specifications are complete for the design, fabrication and installation.

C-457 - Pile Technology Office Building, 100-D Area

Design and specifications are complete for this project. Bids are now being requested.

C-466 - 230 KV Disconnect Servicing Devices

Design is 90 per cent complete. Minor Construction will provide concrete footings. Procurement, installation and adjustment of all demountable parts will be performed by General Electric forces.

C-468 - Horizontal Rod Mock-up

Fabrication and installation work will proceed on a suspense code basis until directive is received.

C-470 - 200-W Badge House Addition

Authorization has been received for this project. The low bid of L. H. Hoffman Company has been accepted, and construction is scheduled to start immediately.

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C-471 - Renovation of Pasco Type Barracks for Office Buildings-North Richland

The work released on this project has been limited to Building 179 pending completion of certain office space studies.

C-472 - Thermocouple Equipped VSR Thimbles

A directive to proceed with the work on the Thermocouple VSR Thimbles has been received from the Atomic Energy Commission and plans are being made to execute the program.

C-474 - Relocation of Exponential Facilities

Work to relocate the exponential facilities in the 189-D Building is proceeding under suspense code. The three refrigeration units are being removed to excess.

ER A-691 - Positive Ion Accelerator

Preliminary scoping is progressing satisfactorily.

ER A-693 - Install Gutters on 700 Area Buildings

Preliminary designs for Project Proposal and estimating purposes are in progress for the installation of gutters on 700 Area buildings. This work is required to protect new asbestos exterior shingles.

ER A-1159 - Differential Thermohms

Approval has been received from the Atomic Energy Commission to proceed with the installation work on differential thermohms. Final design work is in progress to incorporate higher instrument ranges.

ER A-1172 - Ink Facilities

Work is being rescoped, as the result of recent studies, and equipment is being installed in the inner red rooms of the Pile building.

ER E-459 - Electrical Service - New 703 Building Wing

Design is 95 per cent complete. Contract is being prepared to cover electrical power and telephone.

ER E-460 - Telephone Line - Benton Switching Station

The design is 100 per cent complete.

ER E-465 - 100-B Automatic Dial Telephone Exchange

Design is approximately 75 per cent complete.

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ER 2562 - Oxidation and Fluorination Equipment, Hood #8, Bldg. 234-5

A Project Proposal has been prepared covering the installation of specially designed furnaces at this hood in order to obtain savings in manpower and chemicals. The proposed installation would permit the RG line to be operated in parallel with the RMA line, thereby contributing to operating flexibility.

ER 2588 - Increased Steam Supply - 200-W

A recommendation has been submitted to the Atomic Energy Commission for a new boiler and auxiliaries to be added to the present power house. A letter project proposal is being prepared requesting advance funds for engineering and ordering of materials.

ER 2600 - Duct Level Safety Showers - Bldg. 234-5

The design drawings are being circulated for approvals. The project proposal is being prepared.

ER 3094 - 313 Mechanization

A three man Working Committee has been appointed to work with the Development Committee on mechanization of the 300 Area slug canning, finishing, and inspection facilities. A description of work, outlining the phases to be mechanized, has been submitted for approval by the Development Committee.

ER 6001 - E & C Vehicle Survey

The second phase of this study relating to "Rental of Government Owned Buses to Lump Sum Subcontractors" has been completed and the report published.

ER 6006 - Project Records Microfilming Cost Study

This study was completed and the report published.

ER 6007 - White Bluffs Ice Plant Operation Study

This study was performed to determine the economics of operating the Ice Plant with subcontractor personnel as compared with purchase of ice from commercial manufacturers. The completed report has been approved and is being prepared for publication.

ER 6008 - Production Facilities Expansion-Supporting Facilities and Personnel Requirements

As a part of the Report on Expansion of Production Facilities, a study was completed analyzing the effect of the various plans on village expansion.

67000- Production Facilities Expansion Study - 300 Area Phases

Scope engineering and cost estimates for the 300 Area Production Facilities required for each case under the proposed plant expansion program were completed.

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A-672 - Remodeling 722-C Building for Office Equipment Repair

Preliminary design has been completed.

A-690 - Soil Science Laboratory

Preliminary design work is progressing for a 31' x 60' addition to the new H. I. Control and Development Building.

B. GENERAL

Drafting production increased approximately 6.4 per cent over preceding month. There was an increase in the population of North Richland of one hundred and seventeen; not including the U.S. Army personnel.

Changes in procedure for the operation of the North Richland garbage and trash disposal pits has been initiated to comply with recommendations of Public Health.

Eleven Contract items showing a net increase of $83,403.00 were completed. Additional commitments totaled $91,720.26, one reduction was negotiated for $8,317.26 and three items were concluded with no change in contract price.

III. ORGANIZATION AND PERSONNEL

Revised organizational nomenclature in conformity with company-wide policy was adopted.

Mr. R. T. Gardner was transferred from Separations Unit to the Power and Mechanical Unit to assume responsibility as Construction Engineer on Project C-431-A (100-C Water Works)

	Beginning of Month	End of Month	Net Change
Employees on Payroll	844	854	+ 10
Technical Graduates Rotational Trainees	45	38	- 7
Business Graduates Rotational Trainees	4	3	- 1
Employees on Loan from:			
Purchasing & Stores Section	1	1	0
Manufacturing Department	11	12	+ 1
Technical Section	2	0	- 2
Schenectady	4	4	0
	911	912	+ 1

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MEDICAL DEPARTMENT

AUGUST 1951

General

Personnel Changes

The roll increased from 281 to 282.

Visits

Visits were made to the Public Health Section by Miss C. Vavra, University of Washington, Mr. J. Matthews and Miss M. Eastabrooks of the State Department of Public Instruction; Dr. A. Bicunis, Central Washington Tuberculosis Hospital and Mr. W. Fitch, State Hearing Consultant.

Industrial

Employee physical examinations increased from 2554 to 3293 largely due to increased sub-contractor employment.

Dispensary treatments increased from 9715 to 10,928. Four major and 16 sub major injuries were treated. One major and no sub major injuries were sustained by G. E. employees.

"Athletes Foot" was the monthly health topic.

Sickness absenteeism (weekly roll) for August increased by .22% to 1.64% while that for monthly roll employees decreased by .02% to .73 %.

The chemical hazards committee continued studies on solvents and their usage on this plant. The committee is also investigating heat conditions in the canning and dipping operations in the 300 area.

Kadlec Hospital

The average daily census increased slightly from 87.8 to 88.9 (75.9 adults, 13 infants).

The census was 82.0 a year ago.

The occupancy rate for mixed services (all services except Obstetrics) was 75.8%.

Nursing hours per patient day were 3.80 for the mixed services and 4.14 for obstetrics.

The ratio of inpatient hospital employees to patients (excluding newborn) for July was 2.08.

Hospital construction program progressed satisfactorily. The major space additions - obstetrics and laboratories and x-ray were completed.

Public Health

Communicable disease incidence continued low.

One mild case of Polio was reported. Polio is following last years trends closely both locally and statewide. On this basis further cases are expected but not to the great extent as in 1949.

A six weeks Public Health field course was completed by four local school teachers and continuation of this each year will serve as an excellent means of acquainting teachers with the health and welfare facilities available to their pupils.

MEDICAL DEPARTMENT

AUGUST 1951

General (Continued)

Costs (July)

Medical Departments costs, before assessments to other departments were as follows:

	June	July	July Budget
Industrial Medicine (Oper.)	$ 41,729	$ 35,195	$ 39,027
Public Health (Oper.)	11,605	9,941	11,939
Kadlec Hospital (Net)	30,057	20,146	34,395
Hospital expense credits	3,643	4,954	2,625
Subtotal - Medical Dept. - Operations	87,034	70,236	87,986
Construction Medical (Industrial and Public Health)	14,452	14,402	12,878
Total Operations and Construction	101,486	84,638	100,864

The net cost of operating the Medical Department before assessments to other departments was $85,089. a decrease of $16,396. and $15,775. below the budget.

Kadlec Hospital showed a gross cost decrease of $8,077. While salaries increased by $4,504. due to a longer month and laundry charges were up by $619. due to credit adjustments booked in June. These increases were more than offset by reductions of $793. in continuity of service, $2,931. in food supplies, $6,502. in pharmacy supplies and $617. in mail, stationery and miscellaneous items. The large reduction in supply costs were due to holding the ledgers open longer in June allowing as many items as possible to clear in F. Y. 1951.

The decreased cost of Public Health Operations was largely due to lowered charges to mosquito control.

Industrial Medical - Operations costs were reduced by $6,682. due largely to salary and continuity of service reductions and to reduction of service charges by $3,060.

Industrial Medical - Operations is no longer being charged for general accounting service, mail, H. I. Development service, etc., these now being charged directly to Protection of Plant and Personnel. Total of these discontinued service charges approximate $2,000.

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MEDICAL DEPARTMENT

AUGUST 1951

Industrial Medical Section

General

The total number of physical examinations increased over the previous month, 3293 as compared to 2554. General Electric employees sustained one major and no sub-major injuries. Sub-contractor employees sustained 3 major and 16 sub-major injuries. First Aid treatments increased over previous month from 9715 to 10,928. First Aid service in the 100-C construction area began on August 21st.

Two industrial physicians have been obtained to fill two existing vacancies. They will report for work on September 4th. They are Dr. W. E. Russell and Dr. M. L. Weitz.

Effective August 27th new employees will be permitted to begin work in any plant location after completing their pre-employment medical examination rather than waiting for Medical Clearance as has been the practice. This will permit saving of lost time of new employees assigned to area work and allow them to begin their duties immediately after examination. After eompletion of the laboratory work, employees found not suitable for work will be immediately removed from the roll. Since our rejection rate runs less than 2% it is believed that any risk involved in this new practice will be outweighed by the savings effected in time loss.

Several Department of Labor hearings were held during the month which required testimony of industrial physicians. These cases included one fatal case as a result of heart disease where it was alleged that the death was a result of carbon monoxide exposure. Another case occurring during the month was a severe heart attack sustained by a construction worker where it is alleged that the cause was exposure to argonne gas. Another heart case during the month which was fatal was sustained by a fireman who at the time was on duty, died at the Kadlec Hospital First Aid station shortly after application of heat by a nurse for a complaint of shoulder pain.

The chemical hazards committee met on August 24th. Reports were made on the use of mercury and mercury salts, type cleaner, ditto machine operation and stencil correction fluid, ammonia, F.O. 128 solvent, welding, and heat exposure in the 313 building. It was decided to make detailed temperature and humidity studies of the working environment at the canning and dipping operation during the coming month, since complaints from workers about working conditions in this location have recently been quite frequent. Recommendations will be made at the completion of the study.

The Health Activities Committee met on August 16th and the topic on "Athletes Foot" was presented. Material on this subject was prepared for distribution to all employees. Investigation of the frequency of health discussions at safety meetings revealed that discussion takes place in the majority of meetings but continued emphasis in this regard is necessary for some groups.

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MEDICAL DEPARTMENT

AUGUST 1951

Industrial Medical Section

General (Continued)

Absenteeism for weekly employees due to all causes increased by .39% to 2.65%, while absenteeism due to sickness increased .22% to 1.64%. Absenteeism for monthly employees due to all causes increased by .17% to 1.17 %, while absenteeism due to sickness decreased by .02% to .73 %.

Gross costs of operations were reduced by $6,682 due to the following reasons:

(1) Salaries were reduced $1,495 due to a reduction in personnel and reduced overtime,

(2) Continuity of Service costs were decreased $897 due to the accrual being reduced from 12½% to 10% of gross salaries,

(3) Purchase of Medical Records supplies decreased $395, X-ray supplies decreased $344, and other miscellaneous supplies decreased $309.

Service charges were reduced by $3,060 since Industrial Medical - Operations is no longer being charged for General Accounting service, Mail service, H. I. Development service etc.; these costs are now charged directly to Protection of Plant and Personnel. Total of these discontinued service charges approximate $2,000. The balance of $1,242 represents reduced costs of Household & Property items such as steam and maintenance of Buildings and Grounds.

Industrial Medical Costs:

	Increase or (Decrease) over Previous Month	July	June	July Budget
Administration	$ (867)	$ 7343	$ 9199	$ 8670
Household & Property	2567	4215	5003	4966
Professional Services	(2915)	24458	28496	26440
Total Direct Expense	(6682)	36016	42698	40076
Less: Revenue	(148)	821	969	500
Net Cost of Operations	(6534)	35195	41729	39576

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MEDICAL DEPARTMENT

AUGUST 1951

Industrial Medical Section (Continued)

Physical Examinations	July	August	Year to Date
Operations			
Pre-employment	339	278	2462
Rehire	47	37	424
Annual	23	16	1877
Interval	235	365	2318
Visitor	2	1	7
A. E. C.	4	4	144
Re-examination and rechecks	136	102	1139
Termination	189	186	1335
Sub-total	975	989	9706
Sub-contractors			
Pre-employment	356	581	2896
Rehire	382	671	2987
Recheck	87	119	742
Termination & Transfer	754	933	5269
Sub-total	1579	2304	11894
Total Physical Examinations	2554	3293	21600
Laboratory Examinations			
Clinical Laboratory			
Government	30	20	626
Pre-employment, termination, transfer	7236	8688	54875
Annual	133	89	9836
Recheck (Area)	1199	1850	11979
First Aid	20	24	144
Clinic	552	612	14070
Hospital	4301	3986	35051
Public Health	14	29	197
Total	13485	15298	126778
X-Ray			
Government	3	3	89
Pre-employment, termination, transfer	1079	1407	8746
Annual	27	20	1869
First Aid	214	258	1606
Clinic	323	402	2395
Hospital	325	348	2413
Public Health	6	0	46
Total	1977	2438	17164
Electrocardiographs			
Industrial	6	7	145
Clinic	8	11	46
Hospital	26	33	259
Total	40	51	450
Allergy			
Skin Tests	0	0	17

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MEDICAL DEPARTMENT

AUGUST 1951

Industrial Medical Section (Continued)

First Aid Treatments	July	August	Year to Date
Operations			
New Occupational Cases	389	406	2731
Occupational Case Retreatments	1180	1102	8622
Non-occupational Treatments	2432	2955	22468
Sub-total	4001	4463	33821
Construction			
New Occupational Cases	1135	1240	7584
Occupational Case Retreatments	3620	4096	26664
Non-occupational Treatments	929	1075	8257
Sub-total	5684	6411	42505
Facility Operators	30	54	298
Total First Aid Treatments	9715	10928	76624
Major Injuries			
General Electric	0	1	4
Sub-contractors	2	3	27
Total	2	4	31
Sub-major Injuries			
General Electric	1	0	12
Sub-contractors	12	16	90
Total	13	16	102
Absenteeism Investigation			
Total No. calls requested	9	13	96
Total No. calls made	9	13	96
No. absent due to illness in family . . .	0	0	0
No. not at home when call was made	1	4	20

HANFORD WORKS

ABSENTEEISM REPORT

AUGUST 1951

ABSENTEEISM ALL CAUSES BY DIVISION

WEEKLY

	%
Manufacturing	2.14
Utilities & General Services	2.62
Medical	2.73
Community R.E. & Services	2.82
Radiological Services	3.06
Employee & Public Relations	3.17
Engineering	3.17
Financial	3.82

MONTHLY

	%
Medical	.75
Radiological Sciences	.85
Engineering	.98
Manufacturing	1.08
Community R.E. & Services	1.13
Financial	1.45
Utilities & General Services	1.88
Employee & Public Relations	4.32

	ALL CAUSES					SICKNESS ONLY					AVERAGE DAYS LOST DUE TO SICKNESS BY EACH EMPLOYEE		
	Male	Female	Total	%	Inc (Dec)	Male	Female	Total	%	Inc (Dec)	Male	Female	Total
WEEKLY ROLL 8-5-51 to 9-2-51	2773	1750	4523	2.65	.39%	1601	1190	2791	1.64	.22%	.32	.66	.41
MONTHLY ROLL August 1951	443	13	456	1.17	.17%	277	6	283	.73	(.02%)	.14	.11	.14

Comparison of previous year to date total absenteeism figure with the 1950 figure shows an increase of .58% (weekly).

Combined total weekly and monthly 2.35%.

MEDICAL DEPARTMENT

AUGUST 1951

Hospital Section

General

The Medical Department's roll increased from 281 to 282.

The average daily adult census increased from 75.0 to 75.9, as compared to 71.1 a year ago. This represents an occupancy percentage of 73.7% broken down as follows: Mixed Service (Medical, Surgical and Pediatrics) 75.8%; Obstetrical Service 65%. The minimum and maximum daily census during the month ranged as follows:

	Minimum	Maximum
Mixed Service	46	77
Obstetrical Service	7	18
Total Adult	58	92

The average daily newborn census increased from 12.8 to 13.0, as compared to 10.9 a year ago.

Nursing hours per patient per day:

Medical, Surgical, Pediatrics . . .	3.80
Obstetrical	4.14

The ratio of in-patient hospital employees to patients (excluding newborn) for the month of July was 2.08. When newborn infants are included, the ratio is 1.77.

The net expense of the Richland community medical program for July 1951 was $20,146., as compared to $30,057. for June. Summary is as follows:

Kadlec Hospital net expense $20,146.

This is a decrease of approximately $9900. which resulted from the following: Expenses increased due to higher salaries ($4500.), credit adjustment in laundry ($600) and a new charge from Employee & Community Relations ($650.); but were more than offset by decrease in Continuity of Service ($800), Supplies ($10,000.), Purchasing & Stores, Maintenance and other charges ($3000.) and increased revenue ($525.).

Installation of the softwater line from the 700 area to Kadlec Hospital was successfully completed during the month. Savings in equipment maintenance due to hard water damage and savings in soap are anticipated as a result of this installation.

In order to place ambulance service on a basis comparable to other communities, it was transferred from the Medical Department to the Fire Department where men are on emergency duty every hour of the day. This change was effective on August 6th and is working very well.

The new addition to the hospital's obstetrical wing was completed with few exceptions and patients have been occupying rooms in this section during the past month. The first birth in the new delivery room suite occurred on August 10th. Remodeling of the original portion of the obstetrical wing has begun which will result in a new, modern nursery and more convenient patient rooms.

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MEDICAL DEPARTMENT

AUGUST 1951

Hospital Section (Continued)	July	August	Year to Date
Kadlec Hospital			
Average Daily Adult Census	75.0	75.9	83.2
Medical	21.0	29.3	26.1
Surgical	30.4	22.7	30.4
Pediatrics	10.5	10.9	14.4
Obstetrical	13.1	13.0	12.3
Average Daily Newborn Census	12.8	13.0	12.0
Maximum Daily Census:			
Mixed Services	75	77	
Obstetrical Service	17	18	
Total Adult Census	85	92	
Minimum Daily Census:			
Mixed Services	50	46	
Obstetrical Service	9	7	
Total Adult Census	62	58	
Admissions: Adults	480	461	4132
Discharges: Adults	463	464	4123
Newborn	80	79	578
Patient Days: Adult	2323	2354	20247
Newborn	397	403	2926
Total	2720	2757	23173
Average Length of Stay: Adults	5.0	5.1	4.9
Newborn	5.0	5.1	5.1
Occupancy Percentage: Adults	72.8	73.7	80.8
Newborn	91.4	92.9	85.4
(Occupancy Percentage based on 103 adult beds and 14 bassinets.)			
Avg. Nursing Hours per Patient Day:			
Medical, Surgical, Pediatrics	3.80	3.80	
Obstetrics	4.06	4.14	
Avg. No. Employees per Patient (excluding newborn)	2.08		
Operations: Major	69	57	618
Minor	100	57	686
E.E.N.T.	38	53	562
Dental	3	3	28
Births: Live	81	82	574
Still	0	0	2
Deaths	6	6	39
Hospital Net Death Rate	.37%	.76%	.36%
Net Autopsy Rate	33.3	16.7	28.3
Discharged against advice	1	1	9
One-day Cases	90	94	840
Admission Sources:			
Richland	76.6	71.6	75.1
North Richland	9.7	14.7	11.6
Other	13.7	13.7	13.3

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MEDICAL DEPARTMENT

AUGUST 1951

Kadlec Hospital (Continued)	July	August	Year to Date
Admissions by Employment:			
General Electric	71.0	68.1	71.9
Government	2.1	3.2	2.6
Facility	3.9	4.1	4.4
Sub-contractors	17.9	20.0	15.8
Schools	1.3	.9	1.5
Military	.6	1.7	1.9
Others	3.1	2.0	1.9
Hospital Outpatients Treated	426	509	3621
Physical Therapy Treatments			
Clinic	40	58	996
Hospital	75	78	619
Industrial: Plant	88	125	1074
Personal	33	25	172
Total	236	286	2861
Pharmacy			
No. of Prescriptions Filled	2884	3032	24979
No. of Store Orders Filled	686	673	5600
Patient Meals			
Regulars	4133	4218	32651
Specials	1340	1332	10145
Lights	0	7	110
Softs	747	739	10475
Tonsils & Adenoids	56	92	1192
Liquids	167	201	1600
Surgical Liquids	52	78	618
Total	6495	6667	56791
Cafeteria Meals			
Noon	1529	1783	11820
Night	252	267	1875
Total	1781	2050	13695

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MEDICAL DEPARTMENT

AUGUST 1951

Public Health Section

General

A sharp decrease in the communicable diseases was noted. However, our first case of poliomyelitis was reported. This is similar to the 1950 polio season to date, both locally and statewide. If the same pattern is followed, we can expect a rise in the number of polio cases, although we do not expect to reach the high elevation of the 1949 incidence.

The total home nursing visits dropped approximately fifteen percent due to the low incidence of communicable diseases and time off due to staff vacations. Tuberculosis control visits increased due to preparation of patients for our first local Tuberculosis Clinic held by Dr. A. Bicunis of Central Washington Tuberculosis Hospital.

A conference was held between representatives of the University of Washington School of Public Health, State Department of Health, State Department of Public Instruction and local school administration, local health department and four teacher extension students. The results indicated acceptance of the course with credit granted to teachers. The need was pointed out to further correlate the school health program with community health facilities.

A preschool round-up was held for John Ball School.

Visits were made to this section by Miss Catherine Vavra, University of Washington; Mr. Jack Matthews, State Department of Public Instruction; Miss Marjorie Eastabrooks, State Department of Public Instruction; Dr. A. Bicunis, Central Washington Tuberculosis Hospital; and Mr. Waring Fitch, State Hearing Consultant.

The social service counselors devoted most of their time during August to preschool planning with parents and children. Work was done with several youngsters who were upset about entering kindergarten and it is anticipated that this preliminary preparation will enable them to more constructively use their new experience.

The new Carnation fresh milk plant at Sunnyside, Washington was put into operation this month and is equipped with the latest sanitary equipment. It has a capacity for processing 15,000 gallons of fresh milk daily; however, the demand now only calls for 6,000 gallons. Pasteurization equipment, which includes a short time high temperature process, was inspected and approved by a representative of the State Department of Health.

Seventy-five dairy farms were inspected this month and results indicated all to be operating satisfactorily. More frequent inspections have resulted in better cleaning of equipment. Proper care of milk utensils is continually being stressed.

Restaurant operators are cooperating well in maintaining sanitation standards; however, one establishment was degraded this month. Flies seem to be the most prevalent problem and advice was given relative to control.

Public Health Section (Continued)

General (Continued)

Several residential areas have been baited for control of rodents. Warfarin -- compound 42 -- is being used. Baiting of the North Richland garbage dump has decreased the infestation of rodents present. A sanitary and fill method of garbage and refuse disposal is now being used instead of the open pit method which was previously employed in North Richland.

Bacteriological results of samples which are taken on a weekly basis from the swimming and wading pools have indicated an acceptable operation.

Water samples are taken from all new houses being completed and bacteriological results thus far have been satisfactory.

Mosquito control operations have consisted mostly of spraying residential areas. The airplane has been used in the periphery of the village. The incidence of adult mosquitoes has increased during the month. DDT is still being used. Several new insecticides have been developed; however, their expense limits use of same at present. A representative of the State Fish and Game Department was called in to remove some beavers which have been causing a drainage problem.

MEDICAL DEPARTMENT

AUGUST 1951

Public Health Section (Continued)	July	August	Year to Date
Education			
Pamphlets distributed	10000	10000	80591
News Releases	0	0	0
Staff Meetings	0	0	10
Classes	12	0	21
Attendance	48	0	256
Lectures & Talks	0	3	38
Attendance	0	155	1045
Films Shown	3	1	26
Attendance	25	12	1146
Community Conferences	25	26	237
Radio Broadcasts	0	0	0
Immunizations			
Diphtheria	1	24	127
Diphtheria Booster	7	16	288
Tetanus	2	26	618
Tetanus Booster	7	17	433
Pertussis	1	22	41
Pertussis Booster	7	15	260
Rocky Mountain Spotted Fever	0	0	8
Rocky Mountain Spotted Fever Booster	0	0	2
Typhoid	0	0	17
Typhoid Booster	0	0	0
Smallpox	1	6	54
Smallpox Revaccination	5	13	251
Tuberculin Test	3	4	31
Social Service			
Cases carried over	94	83	674
Cases admitted	7	9	125
Cases closed	18	17	130
Remaining case load	83	75	669
Activities:			
Home Visits	12	28	192
Office Interviews	194	158	1705
Conferences	44	57	552
Meetings	6	8	109
Sanitation			
Inspections made	148	193	1139
Conferences held	16	20	99
Bacteriological Laboratory			
Treated water samples	231	280	1644
Milk samples (inc. cream & ice cream)	14	11	101
Other bacteriological tests	195	236	1979
Total	440	527	3724

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MEDICAL DEPARTMENT

AUGUST 1951

Public Health Section (Continued)	July	August	Year to Date
Communicable Diseases			
Amoebic Dysentery	0	0	1
Chickenpox	1	1	375
Erysipelas	0	0	7
German Measles	12	9	87
Gonorrhea	1	0	1
Histoplasmosis	0	0	1
Impetigo	0	0	3
Influenza (Upper Respiratory Infection)	0	0	3092
Measles	14	0	1115
Meningitis	0	0	2
Mumps	6	4	17
Salmonellosis	0	0	2
Pinkeye	0	0	13
Poliomyelitis		1	1
Rheumatic Fever	0	0	2
Ringworm	2	4	20
Roseola	0	0	14
Scabies	1	0	4
Scarlet Fever	2	0	50
Syphilis	1	0	21
Tuberculosis	1	0	8
Vincents Infection		2	2
Whooping Cough	3	1	8
Total	44	22	4846
Total No. Nursing Field Visits	596	544	6497
Total No. Nursing Office Visits	57	72	951

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MEDICAL DEPARTMENT'S PERSONNEL SUMMARY

August 31, 1951

		Physicians	Nurses	Anesthetists	Nurse Aides	Orderly & Amb. Dr.	Technicians - Clin. Laboratory	Tech. - X-Ray	Tech. - Bact. Lab.	Tech. - Phys. Ther.	Secretary	Clerical - Other	Steno. & Typist	Office Mach. Oper.	Telephone Oper.	General Clerk	Pharmacist	Dietition	Cook	Kitchen Worker	Soc. Serv. Couns.	Sanitarian	Health Educator	Janitors	Records Supv.	Accounting Supv.	Adm. & Assistant	Others	TOTAL
1100 Area	Department Admin.	2	2								2	1	1	1	3	11									1	3	2	2	31.0
	Industrial	3	9										2	1		7.375								4.4					26.8
	Hospital	2	56	3	*24	6	8	4	1	1			4			10.5	3	2	5	11				9				7	156.5
TB	Public Health	1	7										2			1.125					3	2	1	.6					17.7
	Industrial	2.7	1		1		2	1								6								.7					14.4
Outlying Areas	Public Health		2																					.3					2.3
	M.J. - 4		1													.5													1.5
	100-B	.1	1				.2									.25													1.5
	100-D	.1	4													.25													4.4
	100-F	.1	4				.2									.25													4.6
	100-H	.1	1													.25													1.4
	241-S		1																										1.0
	200-E	.2	4				.2									.333													4.7
	200-W	.3	5													.333													5.6
	300	.2	2				1.4									.333													3.9
	100-C	.2	3													.5													3.7
	White Bluffs		1																										1.0
	T O T A L	12	104	3	25	6	12	5	1	1	2	1	9	2	3	39	3	2	5	11	3	2	1	15	1	3	2	9	282

* 4 part-time and temporary nurses included

Number of employees on roll:

Beginning of month	281
End of month	282
Net increase	1

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RADIOLOGICAL SCIENCES DEPARTMENT

AUGUST 1951

Summary

There were five informal, one Class I, and one Class II special hazards incident investigations. The Class II incident was the most extensive to date; it involved the exposure of ten men in the range of 0.5 to 1.5 roentgens.

The control of I^{131} emission from the separations plants improved significantly.

No definitive solution of the origin of recent anomalous active particle concentrations in the western states was obtained. No significant reduction in plutonium dissemination from Concentration Buildings was effected.

New possibilities in charting the underground movement of cribbed waste, after removal of virtually all radioactivity, developed from successful tracer use of the nitrate ion.

In other phases of control, research, and development, there was no exceptional finding.

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RADIOLOGICAL SCIENCES DEPARTMENT

AUGUST 1951

Organization

Concurrent with the general reorganization of the Nucleonics Division, the former Health Instrument Divisions became a staff department known as the Radiological Sciences Department. The activities of the department will be carried out by three sections - Biophysics, Biology, and Radiological Records and Standards. The third section was in the embryo state this month. Also the functions of radiation monitoring in manufacturing facilities were not transferred to the Manufacturing Department until September 1. Therefore, the work is reported under the title "Operational Section" which will persist for this month only.

The composition and distribution of the force as of 8/31/51 was as follows:

	100-B	100-D	100-F	100-H	200-E	200-W	300	700	P.G.	Total
Supervisors	1	1	7	2	3	12	12	6	-	44
Engineers *	4	4	30	3	6	27	18	6	-	98
Clerical	-	-	4	1	1	3	3	4	-	16
Others	17	16	54	12	42	83	63	12	7	306
Total	22	21	95	18	52	125	96	28	7	464

* includes chemists, biologists, etc.

Number of employees on Payroll	August 1951
Beginning of month	463
End of month	464
Net increase	1

Added to the roll were an engineer, 5 technical graduates (rotational), 5 inspectors, and 2 laboratory assistants.

Removed from the roll were a biological scientist, 2 inspectors, a technologist, 4 laboratory assistants, and 4 personnel meters clerks.

General

There were five informal and two formal investigations of special hazards incidents. The single Class II investigation concerned the overexposure of ten men during removal of a ruptured piece. Exposures were on the order of one roentgen. The Class I investigation resulted from tritium concentrations

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above the warning level in the urine of six persons, probably arising from three separate exposure incidents.

Corrective measures applied to the I^{131} emission problem were generally successful, and the widespread deposition of I^{131} off the site fell to or approached satisfactory levels.

The concentration of active particles in the atmosphere over a wide area also fell, but no conclusive evidence of the real nature or origin was developed.

No progress was made toward the abatement of the hazard of plutonium dissemination from cell vents of the Concentration Buildings.

The following trips were reported:

L.K. Bustad - Veterinarian Meeting, Milwaukee and ANL, Chicago.
M.E. Getzendaner - A.C.S. Meeting, New York.
A.R. Keene - U. of Washington, Seattle.
D.W. Rhodes - US Dept. of Agriculture, Beltsville, Md.

During the period covered by this report, all persons in the Radiological Sciences Department engaged in work which might reasonably be expected to result in inventions, or discoveries, advised that to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work except as listed below. Such persons further advised that for the period therein covered by this report, notebook records if any kept in the course of their work have been examined for possible inventions or discoveries.

Inventor	Title
C.C. Gamertsfelder	A method of simulating certain human respiratory breathing cycles by the application of overlapping first and third harmonic cycles produced by separate pumping systems.

Radiological Sciences Department

OPERATIONAL SECTION

100 Areas

General Statistics

	July					August					1951 to Date
	B	D	F	H	Total	B	D	F	H	Total	
Special Work Permits	604	1032	743	755	3134	714	1057	561	644	2976	24691
Routine & Spec.Surveys	477	676	574	483	2210	772	693	443	456	2364	18987
Retention Basin	80	227	56	98	461	119	189	99	87	494	4530
Air Monitoring Samples	210	28	119	57	414	162	20	133	47	362	4000

Retention Basin Effluent

The activity of the water leaving the retention basin was as follows:

	100-B	100-D	100-DR	100-F	100-H
Power Level (MW)	420	450-485	530	495	550
Average beta dosage-rate (mrep/hr)	2.3	1.9	2.8	1.9	1.6
Average gamma dosage-rate (mr/hr)	5.2	3.8	5.2	5.9	4.0
Average total dosage-rate (mrep/hr)	7.5	5.7	8.0	7.8	5.6
Average integrated dose in 24 hrs. (mrep)	180	137	192	187	134
Maximum integrated dose in 24 hrs. (mrep)	298	166	226	221	160
Maximum integrated dose in 24 hrs. (mrep) (1951)	298	214	331	225	230

100-B Area

Pile and Associated Buildings

Three ruptured uranium pieces were removed from the pile without incident. Contamination levels in the discharge area increased noticeably and in spite of decontamination efforts. Thirty-eight cases of skin contamination were reported.

Air samples taken in the #2 Drier room showed a maximum concentration of 8.5×10^{-5} µc tritium oxide/cc.

P-10 Operations - 108-B Building

Two metal line operators, a glass blower, a mechanic, and two Minor Construction employees gave urine samples showing concentrations greater than 20 µc tritium oxide/liter. The maintenance mechanic showed the maximum concentration of 71 µc tritium oxide/liter.

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Metallurgical Laboratory - 111 Building

No unusual radiation condition was reported.

100-D Area

105-D Pile and Associated Buildings

Four ruptured uranium pieces were removed from the pile. After flushing the downstream pieces from one of the tubes involved, the dosage rate at the labyrinth opening into the discharge area was 15 r/hr, caused by three pieces in the nozzle of the tube. The pieces were pushed back into the pile at a maximum exposure rate of 100 r/hr. No overexposure resulted.

High level contamination in the discharge area was prevalent following removal of ruptured pieces. In one instance this contamination was spread through corridors to the work area.

105-DR Pile and Associated Buildings

Contamination was spread from the discharge area to the clothing change rooms and adjacent corridors as a result of failure to observe the step-off pad procedure. Other contamination spread resulted from highly contaminated dummy slugs and boxes stored in the work area and from failure of a radiation engineer to appraise a contamination source on the minus 9' level.

100-F Area

Pile and Associated Buildings

One ruptured uranium piece was removed from the pile without incident. The storage area was isolated as a radiation danger zone after bucket yokes and sections of the floor were found contaminated.

Biology Facilities

No unusual radiation condition was reported.

P-11 Operations

No unusual radiation condition was reported.

100-H Area

Two ruptured uranium pieces and five ruptured P-10 pieces were removed from the pile. During preparation for cutting the ribs out of the downstream portion of one of the tubes involved, ten persons were overexposed when an irradiated aluminum alloy piece suddenly slipped down the tube and into the nozzle. The highest exposure was 1265 mr.

Radiological Sciences Department

200 Areas - T and B Plants

General Statistics

	July					August					1951
	T	B	231	234-235	Total	T	B	231	234-235	Total	50 Date
Special Work Permits	519	265	48	279	1111	482	193	25	344	1044	8948
Routine & Spec.Surveys	498	482	471	351	1802	593	495	275	472	1835	14944
Air Monitoring Samples	1155	457	382	1033	3027	1017	589	356	1211	3173	24113
Thyroid Checks	249	42	--	--	291	74	32	--	--	106	1189

Air Sample Results

In the T-Plant, 575 of 1017 air samples showed results above 10^{-12} µg Pu/cc, with a maximum of 4.8×10^{-8} µg Pu/cc taken at the B cell vent. Two hundred and twenty-nine samples were above 10^{-10} µc f.p./cc, with a maximum of 4.6×10^{-8} µc f.p./cc taken during inspection of cells 16 and 17.

In the B-Plant, 234 of 589 air samples showed results above 10^{-12} µg Pu/cc, with a maximum of 2.9×10^{-9} µc Pu/cc taken at the D cell vent. Ninety-seven samples were above 10^{-10} µc f.p./cc, with a maximum of 1.9×10^{-4} µc f.p./cc taken during crane work in cells.

Canyon Buildings

In the T-Plant, several cases of skin contamination occurred due to poor technique or improper removal of protective clothing. The maximum I^{131} concentration in canyon air was 7.8×10^{-10} µc/cc.

In the B-Plant, no unusual radiation condition was reported.

Concentration Buildings

In the T-Plant, a leak in the B-2 centrifuge caused gross contamination spread to the tank,frame, associated equipment, and the pipe gallery floor. Two cases of shoe contamination lead to the discovery. The B cell air exhaust showed 4×10^{-8} µg Pu/cc during this period. Ground level air samples in the vicinity of the building continued to show undesirable levels of plutonium contamination.

In the B Plant, PR cans were routinely above 100 mr/hr with a maximum of 500 mr/hr at the bottom of the cans.

Cell roof vents indicated the following average discharge rates:

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Cell Vent	μg Pu/24 hours 224-B	224-T
A	59	-
B	93	431
C	-	398
D	109	345

Waste Areas

No unusual radiation incident was reported.

Construction Areas

In the 200 East Area, decontamination of the 241-CR tank farm progressed with good success.

Plant Laundry

Thirty-three of 59 air filter samples showed positive results with a maximum of 1.1×10^{-11} μg Pu/cc while processing Separations Section clothing. Special monitoring was required during processing of 100-B laundry which showed dosage rates up to 2 rep/hr. One canvas boot from the 234-5 Building showed 2.8×10^{5} d/m after washing.

General

All thyroid checks were below the warning level. In the 200 West Area I^{131} contamination of the atmosphere and terrain continued to show general improvement.

Isolation Building

Two hundred twenty-five of 356 air samples taken showed results above 10^{-12} μg Pu/cc, with a maximum of 1.5×10^{-9} in the E-leg of the cell 4 duct. Seventy-nine unregulated items and 24 floor locations were found contaminated. Twenty-six contaminated items of SWP clothing and plant shoes were found in the women's locker room. The maximum levels of gamma radiation encountered were 225 mr/hr on PR containers, 35 mr/hr at process hoods and 10 mr/hr on SC's.

Purification Building

Air Sample Results

Three hundred ninety seven of 1217 air samples taken showed results above 10^{-12} μg Pu/cc, with a maximum of 1.2×10^{-7} in ducts after primary filtering.

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Radiological Sciences Department

Operating Section

Improper handling of contaminated waste caused floor contamination in room 171. A carton of contaminated waste including clothing and intended for the Burial Grounds, was laundered at the Process Laundry. The D-6 drain backed up into process rooms including some locations now occupied by Construction forces. There was no spread of the contamination which was promptly detected and removed.

General Building

No unusual radiation condition was reported.

200 Area Control Laboratories

	T	B	231	234-235
Items contaminated - not regulated	128	157	135	98
Skin contamination - alpha	1	2	5	7
Skin contamination - beta	4	3	--	--
Contaminated floor locations	17	66	15	28

In the T Plant, inadequate contamination control caused a spread of plutonium in rooms 6 and 7. Shoe and floor contamination up to 40,000 d/m and air contamination up to 1.9×10^{-10} μg Pu/cc resulted.

In the B Plant, highly contaminated coveralls of a laboratory assistant caused an exposure rate of approximately 20 rep/hr, including 180 mr/hr for an undetermined period up to 45 minutes.

Particulate contamination in particles per 1000 cubic meters was as follows:

Location		July	August
222-T	Outside	190	280
	Hallway	140	260
	Room 7	810	680
222-B	Outside	56	95
	Hallway	190	140
	Room 7	840	3050

300 Area

General Statistics	July	August	1951 to Date
Special Work Permits	154	138	1027
Routine and Special Surveys	332	371	2567
Air Samples	244	203	1757

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Metal Fabrication Plant

Twenty-two of 60 air samples taken gave results above 5×10^{-5} µg U/cc with a maximum of 213×10^{-3} during rod straightening. Uranium bio-assay results indicated continued problems during the unloading of rods from cars.

Technical Building

Two of 125 air samples taken gave results above 10^{-11} µg Pu/cc, with a maximum of 2.6×10^{-11} µg Pu/cc taken during the dismantling of a hood in room 53. One sample gave a result of 2.1×10^{-10} µc f.p./cc during remodeling of a hood and ducts in room 17.

Twenty-one items not regulated with respect to handling were found on routine surveys of laboratories. Seventy-one regulated items were discovered to have dosage rates and contamination above acceptable limits.

Hand Score Summary

There were 43,941 alpha and 53,429 beta hand scores reported. About 0.13% of the alpha and about 0.04% of the beta scores were high. Two high beta scores at 105-H were reported with no attempt to reduce. Where decontamination was attempted it was successful.

PERSONNEL METERS

Pencils

	100-B	100-D	100-F	100-H	E&N 200	200-W Const.* 200-W	300	Total	1951 To Date
Pencils read	19,645	17,447	15,214	10,901	34,469	12,048* 43,584	29,267	182,575	1,312,874
Single readings (100 to 280 mr)	18	18	35	6	36	9* 38	16	176	1,659
Paired readings (100 to 280 mr)	0	2	1	2	0	1	0	6	36
Single Readings (Over 280 mr)	43	43	64	25	73	30* 119	48	445	2,385
Paired Readings (Over 280 mr)	1	0	3	9	1	1* 0	0	15	45
Lost Readings	3	0	0	1	1	1	1	7	48

Of the 21 significant pencil readings reported, 10 were confirmed by the badge results.

Investigation of the 7 lost readings indicate no possibility of an overexposure.

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Radiological Sciences Department

Badges

	100-B	100-D	P-11 101-P 100-F	100-H	200-E	R.R.T. 200-N	200-W	300	Total	1951 to Date
Badges Processed	3,927	2,471	2,458	2,131	3,707	784	7,165	8,713	31,356	209,264
Number readings (100 to 300 mrep)	101	97	35	46	87	0	94	110	570	3,438
Number readings (300 to 500 mrep)	21	5	0	3	4	0	0	0	33	231
Number readings (500 to 1,000 mrep)	5	2	0	1*	1	0	0	0	9	79
Number readings (over 1,000 mrep)	0	0	0	8*	0	0	0	0	8	18
Lost readings	4	1	3	1	4	0	7	2	22	85

*Over 300 mr gamma

Lost readings were accounted for as follows:

Badge lost in area	2
Light struck	14
Stuck film	1
Lost in processing	1
Packet lost in area	3
Contaminated badge	1
Total	22

Investigation of the above lost readings indicate no possibility of an overexposure.

Badge Resume, Contruction Areas

	200-W Const.	200-E Const.	Total	1951 to Date
Badges Processed	5,240	3,771	9,011	61,927
Number Readings (100 to 300 mrep)	1	19	20	192
Number Readings (300 to 500 mrep)	0	0	0	24
Number Readings (500 to 1,000 mrep)	0	0	0	11
Number Readings (Over 1,000 mrep)	0	0	0	1
Lost Readings	0	4	4	20

Total badges processed 1951:

Operation	209,264
Construction	61,927
Total	271,191

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Radiological Sciences Department

In addition to the badge program, a total of 2,018 items of a non-routine nature were processed during the month.

Slow Neutron Pencil Summary

	100-B	100-D	100-DR	100-F	100-H	Total	1951 to Date
Number of pairs issued	12	38	122	0	114	286	3,335
Number of significant readings	0	3	23	0	6	32	218
Number of significant readings (above 50 mrem)	0	0	1	0	0	1	3

Neutron Film

Badges Processed	100-B	100-D	100-F	100-H	200-W	300	Total	1951 To Date
Personnel	8	127	63	153	66	6	423	2,685
Special	0	11	4	0	19	3	37	206

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Radiological Sciences Department

BIOPHYSICS SECTION

CONTROL GROUPS

Site Survey

Drinking water supplies which showed the activity density from alpha emitters to exceed 6 dis/min/liter were essentially confined to the Richland, North Richland, and Benton City region. Maximum measurements were found at Benton City where 2 wells showed 33 and 32 dis/min/liter; the mean activity in these wells was 25 dis/min/liter. Uranium measurements averaged 20 μg U/liter in these supplies. The activity density from alpha emitters in wells of the Richland and North Richland systems averaged 11 dis/min/liter with the maximum measurement of 23 dis/min/liter noted at Richland Durand #5. Trace quantities of uranium were found in all Richland and North Richland wells.

The only drinking water supplies in which the activity density from beta emitters averaged greater than 5×10^{-8} μc/cc were at Pasco, Kennewich, 200 West Area, 100-F Area, and the 300 North Area well. Maximum measurements were 4.3×10^{-7} μc/cc and 1.7×10^{-7} μc/cc at Kennewick and Pasco. Weekly samples obtained at the Pasco Filter Plant showed the following average results: sand filter backwash (liquid) 2.1×10^{-7} μc/cc; sand filter backwash (solid) 3.0×10^{-3} μc/gram; coal filter backwash (liquid) 2.9×10^{-7} μc/cc; coal filter backwash (solid) 5.0×10^{-3} μc/gram. A detailed survey to determine the activity density from beta emitters in the storage basins, mixing basins, and filter basins showed results comparable in magnitude to those summarized above.

Results from the test well monitoring program showed a significant increase in the activity density from alpha emitters in the 300 North Area well; the average activity density from alpha emitters of uranium was 9.0×10^{3} μg U/liter, including a maximum measurement of 1.3×10^{4} μg U/liter as compared with a previous average of 3.4×10^{3} μg U/liter.

Increases by a factor of 2 to 4 were noted in the activity density from beta emitters in the Columbia River at locations between Richland and the 100-D Area; smaller increases were noted at locations below Richland. These increases were associated with the reduced flow rate of the Columbia River during the month. The maximum activity density from beta emitters was detected along the south bank at Hanford where the average of 3.8×10^{-6} μc/cc included a maximum measurement of 7.3×10^{-6} μc/cc. Samples from the Pasco-Kennewick Bridge averaged 8.3×10^{-7} μc/cc with maximum measurements on the order of 1.2×10^{-6} μc/cc.

The results from the radiochemical analysis of mud samples for the activity density from alpha and beta emitters showed no change from previous measurements.

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Monitoring of raw water supplies in the operating areas indicated small increases in the activity density from beta emitters. Locations such as the 100-DR, 100-F, 100-H, 200-East, and 200-West Areas, at which the activity density was less than 5×10^{-8} μc/cc during July, showed averages on the order of 1.0×10^{-7} μc/cc, with maximum measurements of 4.2×10^{-7} μc/cc.

The average daily emission of I^{131} at the 200-West Area stack decreased from 232 curies/day during July to 3.0 curies/day during August; maximum daily emission was 12.0 curies. The average percent of the dissolved I^{131} emitted was 0.21%, as compared with a previous average of 19.4%. Monitoring at the downstream side of the sand filter showed that an average of 0.12 curie was emitted from this source daily. Maximum daily emission from the sand filter was 2.6 curies. Only 0.008% of the I^{131} processed in the dissolver passed through the sand filter during the month of August.

Air radiation levels as measured by M and S type detachable ionization chambers showed decreases approaching a factor of 2 in the region where high measurements were observed during July. Daily dosage-rates exceeded 2.0 mrep inside the 200-East Semi-Works, in the Military encampment near 200-East Area, and at Route 4S, Mile 16. Dosage-rates were on the order of background at the plant perimeter and in residential areas.

Decreases on the order of a factor of 2 to 5 were observed when comparing the average activity density from filterable beta emitters in the atmosphere during August with similar measurements during July. Maximum measurements occurred in the 200-East Area where the average activity density at the Semi-Works was 1.0×10^{-12} μc/cc including a maximum one-week average of 1.4×10^{-12} μc/cc. Weekly averages were also on the order of 1.3×10^{-12} μc/cc at Tower #16 and Tower #15 in the 200-East Area. In general, the over-all decrease was not as pronounced in the 200-East Area as it was at stations in and near the 200-West Area.

The activity density from I^{131} in the atmosphere as measured by fixed scrubbers showed decreases at all locations except the 200-East Area; in extreme cases, such as at the 200-West Area gatehouse, the decrease was by a factor of 50 and in residential communities such as Richland, by a factor of 3. At Tower #16 in the 200-East Area, the average activity density increased from an average of 1.4×10^{-10} μc/cc during July to 2.8×10^{-10} μc/cc during August. The maximum average measured over a one-week period in the 200-East Area was 1.9×10^{-9} μc/cc.

Small, but for the most part non-significant, decreases were noted when reviewing the particle concentration in the atmosphere at locations in and near the 200 Areas. In general, averages ranged from 4×10^{-2} to 0.2 particles/meter^3 in the separation areas. Off-area particle monitoring showed small decreases in the number of particles in the atmosphere toward the latter part of the month; most averages were lower by about a factor of 2: however, an increase was noted at Lewiston where the August average was 2.7×10^{-2} particles/meter^3. The number of particles averaged 8.4×10^{-2} particles/meter^3 during the one-week period ending August 3 at Lewiston.

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The activity density from I^{131} on vegetation decreased by a factor of 10 to 15 in the region of higher contamination near the 200-West Area gate and the Meteorology Tower. The maximum deposition continued to exist around the 200-West gatehouse where the average activity density from I^{131} was 2.4×10^{-4} µc/gram; maximum measurements at this location were 1.0×10^{-3} µc/gram. Comparable decreases were noted at all remaining monitoring locations except those in the 200-East Area where the magnitude of decrease was only by a factor of 2. Measurements toward the latter part of the period were slightly higher than those during the early part of the month in the 200-East Area. The average activity density in residential regions adjacent to the plant barely exceeded the detection limit of 3×10^{-6} µc/gram during August; maximum measurements observed at Pasco were on the order of 1.7×10^{-5} µc/gram. Remote off-area surveys which were performed during the first week of August showed trace deposition from I^{131} near Pomeroy and Dixie, Washington (3.3×10^{-5} uc/gram). Surveys in this same region and in the Goldendale-The Dalles region toward the latter part of the period showed negligible deposition from I^{131}. Samples of wheat collected in the Rattlesnake region and in the Kennewick Highlands showed the activity density from I^{131} to be less than 3×10^{-6} µc/cc in all samples.

An increase from 9.6×10^{-4} µc/cc to 1.3×10^{-3} µc/cc in the average activity density of the 107-F waste effluent was presumably due to an increase in power level of the pile in that area. No significant change was noted from monitoring the remaining 107 effluent wastes. The average amount of I^{131} discharged into the Columbia River from the Biology Farm decreased from 1.25 mc/day to 0.35 mc/day during August. Trace quantities of this activity were detected along the south bank of the river near Hanford where the average activity density from I^{131} was 2.3×10^{-7} µc/cc. No significant change was observed when reviewing the results from the waste monitoring program in the 200 and 300 Areas.

Three hundred and seventy-nine air samples were taken for tritium oxide determinations. Eight air samples taken on the 16th gave slightly positive results (maximum 5.9×10^{-8} µc/cc at 100-D SE 614 Building); all other values were below the detection limit of 2×10^{-8} µc/cc.

Bioassay

Six hundred and seventy-one urine samples were analyzed for plutonium, with 124 spiked and blank urine samples as controls. Alpha activity measured in the urine samples by the present TTA procedure averaged 0.03 dis/min. There were 2 urine samples showing alpha activity above the present detection limit of 0.33 dis/min. They were 0.34 and 0.47 dis/min, respectively. The average recovery yield of the plutonium spiked controls for the month was 94%. No sample result was discharded due to low recovery of spiked control samples.

Six hundred and eighty urine samples were analyzed for fission product isotopes; 123 were processed as controls. No sample indicated beta activity above the

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resample limit of 10 counts/minute.

One hundred and fifty-four urine samples were analyzed for uranium by the fluorophotometric procedure. Samples were submitted after 4 days of possible exposure to uranium contamination, and again after 1 exposure-free day. A tabulation of the results by job classification follows:

Job Description	END 4TH DAY OF EXPOSURE μg/liter Maximum	Average	Number Samples	END ONE DAY, NO EXPOSURE μg/liter Maximum	Average	Number Samples
Canning	5	3	20	6	2	9
Machining	25	7	25	7	3	14
Melt Plant	37	18	9	18	11	7
Material Handling	14	10	2	4	3	2
Inspection	13	5	12	10	4	6
305 Building	4	4	2	2	2	1
Coverage	28	7	7	5	3	5
Clerical	2	2	5	3	1	4
Special Services	23	9	6	9	6	6

Urine samples of employees relatively free from possible uranium contamination were analyzed for comparative purposes. The results of these random samples follows:

	Maximum μg/liter	Average μg/liter	Number Samples
Random	2	1	24

One thousand one hundred and seventy-six urine samples were analyzed for tritium oxide with 262 blank and spike samples run for control. Two hundred and fifty-seven samples were redone to confirm previous high values. A breakdown of activity densities found is given below:

No. Samples	Activity Density μc/cc x 10^3 <2	2-5	5-10	10-20	20-35	35-65	>65
No. Samples-Operating Personnel	717	141	54	22	28	4	2
No. Personnel involved	130	29	15	6	7	3	1
No. Samples-Construction Personnel	196	1	0	2	9	0	0
No. Personnel involved	60	1	0	1	2	0	0

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Analytical Control Laboratory

A summary of the work carried out during the month and for the year to date is given below:

Laboratory

Type Sample	August 1951	1951 To Date
Vegetation	2061	13228
Water	2230	15717
Solids	506	2528
Fluorophotometer	523	4726
Special Survey Analyses	29	244
Air Sample Analyses	744	2428
Total	5783	38563

Counting Room

Beta measurements (recounts included)	5853	41503
Alpha measurements (recounts included)	3818	29078
Control points (beta and alpha)	2560	18715
Decay curve points	4304	20605
Absorption curve points	324	2216
Total	16859	112117

Twenty-nine survey samples and eight 107 effluent water samples were analyzed during the month. Activity density of the latter samples was comparable to those reported previously.

A discrepancy between Bureau of Standards sources used by Biology Section and Control was resolved by mounting the protective cellophane covering at equal distances from each source, thus, equalizing scatter from the cellophane. Back-scatter corrections from stainless steel plates for activity from isotopes of Mn, Cu, and "total sample" for 107 waters have been determined.

A GE scintillation counter and a PC C-10 (Nuclear) were tested for geometry of point, 1/2 inch, 1 inch, and 1.5 inch sources. Counting response was equal for all sizes on both counters; observed geometries were 45% and 49.2%, respectively.

An investigation of the possibility of separating Pu from large (3-gallon) water samples by ion exchange was made. Preliminary results were encouraging. Investigations of a discrepancy between the results found in U analyses between the ether extraction methods and fluorophotometric methods were made. The reason for the consistently lower values by fluorophotometric methods was still unsolved. It should be noted that samples from Benton City were analyzed for other possible alpha particle emitters, Pu and Ra, with negative results.

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A new metal unit (weatherhead drier) for sampling tritium oxide was tested for efficiency of collection at flow rates of 0.5 cfm, and found to have approximately 90% efficiency.

Two purge samples, taken during reduced "up" (PL = 390 MW) conditions were completed with analyses run on both the insoluble residue and the water. Total activity density of the water (approximately 1.3×10^{-2} μc/cc) increased by a factor of 5 to 10 over normal 107 effluent; the residue had activities of approximately 6×10^{-2} μc/gram. The spectrum of beta particle emitters was considerably distorted from the normal, with Cu^{64} as the prime contaminant (50%), in both the water and the residue during purge.

Calibrations

Radium Calibrations:	Number of Routine Calibrations July	August	1951 To Date
Fixed Instruments			
Gamma	259	242	2,079
Portable Instruments			
Alpha	281	297	2,370
Beta	584	636	4,906
Gamma (radium)	1,168	1,276	9,539
X-ray	15	12	48
Neutron	2	1	17
Total	2,050	2,222	16,880
Personnel Meters			
Beta	845	946	6,526
Gamma (radium)	3,780	4,086	49,719
X-ray	4,028	3,876	30,709
Neutron	28	42	258
Total	8,681	8,950	87,212
Grand Total	10,990	11,414	106,171

Synoptic Meteorology

Forecasts	August 1951 Number made	Percent Reliability
Production	93	87.7
24-hour	62	88.2
Special	27	74.1

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Radiological Sciences Department

Synoptic Meteorology - Continued

Clear, dry weather with high daytime temperatures prevailed during the first 27 days. These conditions were followed by considerable cloudiness with showers and thunderstorms and by temperatures averaging much below normal during the last four days.

During the month as a whole, temperatures averaged 74.2, or 0.2 degrees above normal. Precipitation totaled 0.15, or 0.05 inch below normal.

DEVELOPMENT GROUPS

Experimental Meteorology

The entire network of 10 meteorological field stations was in operation. The construction of streamlines of air flow during light winds was difficult because of an apparent variability in wind vector from station to station which may be real or due to subjectivity in the reading of the wind direction. Another difficulty was the existence of large "holes" in the reservation from which data were unavailable.

Four field tests with smoke bombs and oil fog were conducted during the month. The first was to study variations in the vertical diffusion of smoke emitted from a vertically moving source. The second was conducted during light wind conditions and a super adiabatic lapse rate which showed that many puffs of oil fog emitted from a height of 183 feet touched the ground within 500 feet. The third was designed to measure average height and width of an oil fog plume during NW drainage flow. The last test was conducted during stronger winds and showed puffs of oil fog touching the ground at distances of 500 to 1000 feet.

Industrial Hygiene

A series of tests was made of fume production from freely burning uranium using the filter testing apparatus. These will have direct application to the metal fabrication and remelt plants.

Basic requirements and design have been developed for equipment to test respiratory devices against radioactive atmospheres.

Non-radioactive work included studies of carbon tetrachloride uses in the 321 Building, mercury exposures in the 3706 Building, toxic atmospheres around slug can welding operations, ammonia exposures in the 242-T Building, and continued studies of Ditto machines and type cleaners.

Geology

Activity densities in the wells in and near the contaminated ground water zones in the 200 Areas did not change significantly except for a marked increase in wells 361-T-16 and 361-T-18 which indicated a southeastward motion of the

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Geology - Continued

ground water. As indicated in the Soil Science report, it has proven feasible to check the pattern of effluents in the ground by analyses for the nitrate ion. Results obtained in this manner agree with the radioactivity determinations, and may be slightly more sensitive.

The peak levels of radioactive contamination of the ground water in the 300 Area have moved back toward the Columbia in a southeastward direction following the ebb of the river from high water level conditions. The peak levels are now found near well 300-1 and 2.

Two wells, 361-T-20 and 21 were drilled to a depth of 75 feet at locations 64 feet s. 60°W, and 100 feet s. 40°W, respectively, from the 361-T No. 1 crib. Four sediment samples were taken from well 361-T-20, and only one at a depth of 40 feet was contaminated; it had an activity density of 51 micro-microcuries per gram. Twenty-one samples from well 361-T-21 were all contaminated; the maximum being 660 micro-microcuries per gram.

Soil Science

Soil samples obtained at 5-foot intervals from Well 361-T-15 have all been sieved and sealed in sample jars. These samples represent a profile extending from the surface downward to a depth of 320 feet.

The method for determining carbonate in soil by means of a hypodermic needle-manometric technique proved entirely acceptable. Results of duplicate samples agreed within 0.2%. Sixty-four samples from 361-T-15 Well, which were analyzed by this technique, gave values ranging from 0% to 14% $CaCO_3$. The carbonate distribution showed the existence of a definite zone of calcification between the 100 to 150 foot levels.

It was found possible to detect process effluent, which had been discharged underground, in the ground water by analyzing for the nitrate ion. Samples analyzed to date indicate that ground water not contaminated with process effluent contains less than 1 ppm of NO_3^-, whereas ground water which does contain process effluent has nitrate contents ranging from 2 ppm up to 1700 ppm NO_3^-. The nitrate ion has been detected in wells which have shown no activity as yet. It is planned to analyze samples from all wells now in use in order to obtain a better picture of the movement of the process waste effluent underground.

Methods Development

Tests were continued on the effects of active impurities on the electrodeposition-nuclear film techniques for plutonium analysis. A series of samples was run with varying amounts of unpurified lanthanum, and is being exposed to nuclear track film. Measurements of these plates on the low background alpha counters were too low to be conclusive. Analyses with thorium added indicated

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Methods Development - Continued

a carrying of about 2% on the electrodeposition step, and about 0.2% for the over-all process.

Several modifications and tests of the internal counter procedures gave results comparable to those obtained in the past with yields on the order of 50%. A complete new procedure is being tried in an attempt to eliminate the possibility of error.

I^{131} concentrations in the 200-West stack have now dropped to the point where the present ion chamber monitoring unit will indicate no reading. A new monitor using a Victoreen "Thyrode" GM tube surrounded by 75 ml of the solution from the continuous scrubber has been installed on a trial basis using a decade scaler and a chronolog to record the counting rates. This unit does not have the required sensitivity,and difficulties are encountered with background increases over the evolution period. Estimation of the total I^{131} evolution with this unit appears practical although the present calibration gives results that are high by about 60%. The 75 ml volume continuous scrubber was tested by placing a static scrubber in series with it for 7 runs. Analyses of both solutions indicated that the efficiency of the continuous scrubber was between 94% and 96%.

Several Xe^{133} samples were taken from the stack for evaluation of methods for the calibration of samples and for decay studies. Calculated estimates of the counting rates on Victoreen "Thyrode" GM tubes at 200 meters from the stack under conditions of large inversion indicate that the gamma and beta components from Xe^{133} should each contribute about 10^5 c/m at the axis of the cloud.

Several 6-volt air pumps were tested as possible mobile air samplers. A Trico vacuum booster pump appeared to give the most promise with flow rates of one cfm at one lb/in^2 back pressure. The current drain is 10 amperes at maximum load which would indicate a life of about 10 hours with a storage battery.

Difficulties with the thorium procedure were traced to a possible complex of the thorium formed in the fluoride preceipitation step. Replacing this step with an oxalate precipitation and using radiochemical techniques resulted in apparent high recoveries although the calibration of the effect of daughter products on the counting has not been completed.

Studies of possible procedures for the electrodeposition of ruthenium continued. Difficulties were largely concerned with the formation of ruthenium oxide and subsequent precipitation on gaskets and walls of the plating cell. Separation of the anode and cathode by a semi-permeable membrane appeared to eliminate this difficulty. A procedure for plating the oxide on a filter paper covering the cathode gave good recoveries on a macro-scale but low yield of active tracers.

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Methods Development - Continued

A method of analyzing for the oil used in the smoke generator in the Meteorology Group has been obtained. The oil is deposited on a plate and the fluorescence read on the fluorophotometer. It is estimated that about 10 micrograms may be detected.

The sampling equipment for the Columbia River survey is being rebuilt to serve both the needs of the Biology Section and this survey. Testing of the water curtain monitor at 107-H indicated that the drop-off noted in the reading during the process water cycle may be due to actual change in activity density of the water rather than to a temperature effect on the GM tube. An estimate of the calibration of the equipment indicated a value of 3×10^{-5} $\mu c/cc$ per c/m.

Physics

The most used gamma instruments were exposed to the In-114 gamma source (average energy 0.19 Mev) and their readings compared to the measured dose-rate as determined by the standard graphite and aluminum ion chambers. The results were:

Instrument	Reading
Standard ion chambers	1.00
CP	
With shield	1.03
Without shield	0.94
Juno	
With gamma shield	1.16
With beta shield	1.03
With alpha shield	0.98
Pencils	1.14
Film badges	
Open window	1.19
Shielded	1.04

The 1.14 for pencils may be compared to 1.10 as obtained by Day (NP-1729) with heavily filtered X-rays.

It has been realized for some time that the sensitivity, tracks per neutron, of "A" film computed considering only recoils formed in the emulsion was too low. Calculations have now been carried out which allow for tracks which start in the film base. These tracks become equal in number to those from the emulsion at about 2 Mev and at higher energies are much more numerous. The observed sensitivity figures are now lower than the calculated ones and indicate that the microscopists work at about 75% efficiency. Combining these sensitivity figures with calculations of the dose-rate from various neutron sources indicates that the dose per track decreases with increasing average energy of the neutrons.

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Physics - Continued

The difference of a factor of 2 in the calibration of the moderated BF_3 due to scattering from the floor is confirmed.

The asymmetry of emission of PB-182 has been measured with "A" film. It was found that the emission from the bottom was 50% less than that from the sides, and that from the bail end was 31% less. Considering the statistics of this measurement, it can be said to be in fair agreement with moderated BF_3 measurements. The exposure was made high in the air but some of the films were within 50 cm of a wooden platform attached to the wall. These indicated a 10% increase in tracks over films exposed at a symmetric position but not close to a wall.

Source PB-182 was checked with indium foils again and gave $4.62 \times 10^7 \pm 1.2\%$ on August 21, 1951. This is 4% lower than would have been predicted from the half-life so the measurement will be repeated soon.

Instrument Development

Some of the 5819 type photomultiplier tubes which gave erratic results because of loose dust inside the tube envelope have been made operable by using them with the cathode at ground potential which is directly contrary to the manufacturer's recommendations.

The Kanne chambers used on the P-10 project have been giving results which made it appear as though the deionizers were not working properly. Tests indicate that the deionizer will not operate properly if there is smoke or other solid material in the air, but they do operate properly with ordinary ionized air.

Erratic operation of one of the hydrogen counter quench circuits was traced to biasing of the tubes. A thorough study of the characteristics of the circuit has been made and optimum operating condition established. When properly set up, the counters have voltage plateaus of at least 200 volts. A unit is being designed including this quench circuit, a 300 volt B + supply and a high voltage (about 3000 volts) power supply for the counters which will then be usable with any of the ordinary scalers.

A device is being built to permit more accurate testing of counter statistics. It is designed to measure the rate at which counts occur within a predetermined interval following another count. If the counts are being obtained in a statistically random manner, the number of counts obtained within a given time period following another count depends upon the average counting rate as indicated by the formula $N - a(1-e^{-at})$ (where a is average counting rate and t is the time interval). If the actual number of such counts varies from this calculated number, the counter is not operating correctly.

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BIOLOGY SECTION

AQUATIC BIOLOGY UNIT

Biological Chains

1. Algae-Trout Relationship

Subjection of adult trout to 5% pile effluent with feeding of algae reared in pile effluent water progressed with no indication of adverse effect. The feeding of algae from actively growing cultures on the walls of laboratory ponds more than doubled the level of activity density in the scales of the fish.

2. Retention Basin Algae Control

The long awaited shipment of anti-fouling paint from the U.S. Naval Shipyard, Mare Island, California, has been received and a test section of the 107-F Basin will be painted as soon as such work can be scheduled by the Reactor Section.

Ecology

1. Survey of the Columbia River

The river level receded rapidly during the month with a vertical drop of about 7 ft. This afforded excellent conditions for the study and collection of benthonic organisms from the shore.

With increased water temperatures and reduced river flow, the activity densities of most forms were at least double those observed last month. The following average values were recorded for the Hanford station. Plankton, 11.2×10^{-3} μc/g; algae, 2.7×10^{-3} μc/g; caddis fly larvae, 5.1×10^{-3} μc/g; small fish, 2.5×10^{-3} μc/g. For large fish a maximum of 3.4×10^{-3} μc/g was found in the scales of a chiselmouth; this was associated with 5×10^{-4} μc/g in the flesh.

Ecological studies included the collection of 12 samples and the intiation of an intensified study of a small area located about 1/2 mile below the 100-F area.

Effluent Monitoring

1. Effect of Pile Effluent Water on Rainbow Trout

Routine monitoring of the pile area effluent water and supplemental studies with cooled area effluent, pile influent, and pile effluent continued without unusual findings. Continued prophylactic measures were necessary to prevent

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a serious outbreak of bacterial disease encouraged by higher river water temperatures. Significantly increased mortality occurred only in the 5% and 10% area effluent lots, and probably resulted from an aggravation of the disease conditions by further increased temperatures.

BIOLOGICAL SERVICES UNIT

Biological Monitoring

1. Waterfowl

Activity densities in all tissues of a duck sampled from 200 North Area were lower by a factor of 2 than last month, resulting from a decline in activity density of the waste water at that location. Maximum activity density detected was 3.7×10^{-2} μc/g in the cranium.

Bone samples from a duck taken at Hanford exhibited a maximum activity density of 10^{-3} μc/g in the cranium. Brain and gonad activity densities also were slightly higher than last month, while other tissues declined in activity.

2. Upland Wildlife

Thyroid activity densities continued to decrease during the month. Rabbit thyroids sampled in the vicinity of the 200 Areas decreased at parallel rates, while those taken near the Prosser Barricade exhibited a tendency to level off, maintaining an average activity density equal to that of organs sampled near the 200-East Area. Thyroid activity densities from several stations are tabulated below:

Locality	Specimen	Maximum (μc/g)	Average (μc/g)
200-East	Jackrabbit (6)	0.017	0.012
200-West	Jackrabbit (5)	0.034	0.019
	Feral Cat (2)	0.009	0.008
300 Area	Coyote (1)	0.005	--
100-F	Coyote (1)	0.001	--
	Pipistrelle (1)	0.010	--
Prosser Barricade	Jackrabbit (5)	0.018	0.012
Richland	Short-eared Owl (1)	0.007	--
	Pacific Nighthawk (1)	0.008	--

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Clinical Laboratory

During the month the clinical laboratory was geared to the new set-up at the Experimental Animal Farm. Only those procedures found, after one year's observations, to provide a significant index of the chronic toxicity of I^{131} in sheep are being used.

Microscopy

No progress other than routine histological preparations.

Radiochemistry Laboratory

1. Radioactivity in Carcasses

The physical method for determining radon appeared to be under control, with trial runs on cadaver aliquots yielding consistent results.

2. Analytical Services

The hydrogen counter for tritium analyses worked satisfactorily, due largely to assistance provided by the Radiation Measurement Unit of the Biophysics Section, and to improved preparation of samples submitted for analyses. Troublesome traces of benzene in aqueous samples were effectively removed by extraction with mineral oil.

METABOLISM UNIT

Animal Metabolism

1. Low Level Chronic Plutonium Absorption in the Rat

Routine daily feedings of plutonium continued at the rate of 3 per day. The accumulated total doses now exceed 300, with feedings to be continued until the end of this year. A control rat sacrificed during the past month showed negligible amounts of plutonium.

2. Percutaneous Absorption of Plutonium

Preliminary scouting experiments involving the application of acidic plutonium nitrate solutions to the shaved abdominal skin of mice indicate 1 - 10% absorption over a 1-hour period. One mouse under anaesthesia that was observed to scratch the area of plutonium application showed an absorption of about 30%. About 2% absorption was obtained in the case of a mouse killed 2 hours before application.

3. Therapy for Internally Deposited Plutonium

26 Only a literature survey is in progress.

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4. Distribution and Retention of Tritium in the Rat. I. Serial Sacrifice

Complete analytical data on the 4 rats killed 193 days after injection of tritium oxide indicated that 0.055% of the injected activity remained in the bound state.

Body water tritium accounted for 7.7% of the total activity remaining in the animals. Distribution of the bound tritium was as follows:

skin	42%	fat	10%
muscle	33%	viscera	3%
bone	12%	blood	0.15%

5. Distribution and Retention of Tritium in the Rat. II. Compound Separation.

The residual carcass, fat, and skin fractions, from the 15 pooled rats, killed about 4 months after injection with 0.1 curie of tritium oxide, have been separated into various protein and fat fractions.

6. Distribution and Retention of Tritium in the Rat. III. Effect of Growth

No result.

7. Percutaneous Absorption of Tritium Oxide

No result.

8. Percutaneous Absorption of Tritium Gas

A method for exposing an area of rat skin to circulating tritium gas was developed.

Microbiology

1. Destruction of Metabolites by Radiation

Preliminary studies were made on the effect of radiation on riboflavin (0.010 μg/ml), pantothenic acid (0.2 μg/ml), and biotin (5 mμg/ml), with tritium under nitrogen atmosphere. Ninety-five percent destruction of the riboflavin was obtained with an exposure of 13,500 rep. This corresponded roughly with the destruction due to X-irradiation which was complete at 12,000 r. Biotin and pantothenic acid proved much more resistant, negligible destruction being obtained with doses of 153,000 rep.

2. Tritium Fixation by Bacteria

Of 6 bacterial species suspended in Burk's glucose medium and exposed to tritium

gas, 3 showed negligible conversion of the gas to the oxide while the other 3 showed a very marked ability to catalyze the conversion. The rate of tritium fixation showed a decrease after the first 5 to 6 hours of exposure, as did the hydrogenase activity of the organism; the respiration rates remained constant over the whole exposure, thus clearly linking the fixation of tritium with the hydrogenase activity.

Plant Nutrition

1. Absorption and Translocation of Fission Product and Pile Effluent Radioactivities

Red kidney bean plants grown in a standard nutrient solution concentrated cesium by a factor of 2 to 3 times the activity density in the nutrient solution. Varying the pH of the nutrient environment in the range 4.0 to 7.0 did not exert a significant effect on the uptake of this element. Phloem injection experiments indicated that the pH of the nutrient medium, the cesium concentration of the nutrient solution up to 100 ppm, the potassium concentration up to 0.005 M, and the calcium concentration up to 0.005 M, exert no marked effect on the translocation of injected cesium. Cesium was very mobile under all experimental conditions imposed.

2. Absorption and Metabolism of Tritium Oxide by Vascular Plants

Forty-eight bean plants were grown in a nutrient solution containing tritium oxide. Plants were removed at intervals, and the various plant parts processed to separate tritium in plant water and in the tissue bound state. Analyses are incomplete, but within 12 hours, plant water in the stems, the heart leaves, and trifoliate leaves had attained, respectively, 75%, 45%, and 52% of the tritium activity density of the nutrient solution in which the plants were grown.

Plant Metabolism

1. Metabolism of Tritium Oxide

The rate of incorporation of tritium into the tissue compounds of algae suspended in a nutrient solution containing 1.4 mc tritium oxide per milliliter was measured. Uptake of tritium still occurred after up to 48 hours incubation, at which time the concentration of bound tritium was 2.8 $\mu c/g$ algae.

2. Effect of Pile Effluent Water on Higher Plants

Red kidney bean plants were grown in the presence of pile effluent, pre-pile, pre-chromate treated, river and distilled water. From these studies, it was deduced that the chlorosis observed in plants grown in pile effluent water was due to the presence of chromate added in the pre-pile water treatment process. This has been confirmed by duplicating the chlorotic effect by growing bean plants

in nutrient solutions containing various dilutions of sodium dichromate. The appearance of the chlorotic plants was considerably improved by spraying with either 2% $MnSO_4$, or 1% $FeSO_4$, indicating that part or all of the toxicity of the chromate is due to its interference with the metabolism of iron and manganese in these plants.

TOXICOLOGY UNIT

Experimental Animal Farm (Toxicology of I^{131})

1. Low Level Chronic Effects

Weaning of all lambs was completed. Duplicating previous experimental procedure, 6 ewe lambs in each group were placed on the same feeding regimen as their dams at the control, 0.15 μc/day, and 5 μc/day level. Five yearling ewes were placed in each of the 3 new groups at 15, 45, and 135 μc/day. All animals that are to be excessed have been transported to the F.F.A. farm at North Richland. The 240 μc ewes have been moved there also for continued observation.

Three to four lambs from each group were sacrificed at weaning. No gross lesion was observed in animals whose dams received 5 μc/day or less. The two surviving members of the yearlings in the 240 μc/day group expired during this period.

Necropsy revealed thin white fibrous thyroid glands and vascular damage in jugular veins, pulmonary artery, and to a lesser extent in the aorta. The fat in one animal was exceedingly yellow, while the other animal exhibited a complete replacement of all fat with a clear gelatinous material.

2. Prophylaxes by Inert Iodine and Dessicated Thyroid

All animals in this supplemental study have been removed from the daily feeding of 480 μc/day. Protein-bound iodine values are being determined weekly.

3. Effect on Gonadal Function

Three ram lambs were placed on 45 μc and 135 μc/day in preparation for sperm studies.

Physiology

1. Toxicology of Active Particles

Fifty-seven strain A mice are now on hand, and several of the breeding females are exhibiting mammary tumors which are quite common in this strain of mice. Virgin females, not breeding females, however, will be utilized for this study, thus partially avoiding this complication.

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2. Plutonium Toxicology

The test animal fed Pu^{239} ninety days ago displayed daily urinary excretion of about 50 d/m/ml, after 50 days. Preliminary calculations indicated that the animal still contained about 1.5 mc of the 2 mc originally administered. At 30 days, a section of the rib removed from the animal contained 1.8×10^5 d/m/gm.

3. Pulmonary Absorption of Tritium

The present method of tracheal introduction appeared satisfactory, while consistency of analytical results was something less than adequate. About 2% of the activity present in the lung was retained in the animal, with a possible conversion of one-half this amount to the oxide form.

FINANCIAL DEPARTMENT
MONTHLY REPORT

AUGUST, 1951

Four meetings of the Hanford Works Cost Accounting Committee were held during August.

Operating reports for the month of July were issued August 15 through August 17, and general financial statements for the Nucleonics Division for the month of July were issued August 21, 1951. These reports and statements reflected changes in cost accounting made effective as of July 1, 1951.

Advances from AEC were increased from $5 000 000 as of July 31, 1951 to $5 500 000 as of August 31, 1951 and may be summarized as follows:

	August	July
Cash in Bank - Contract Accounts	$ 4 682 946	$ 4 199 193
Cash in Bank - Salary Accounts	50 000	60 561
Cash in Transit	367 054	340 246
Advances to Subcontractors	300 000	300 000
Travel Advance Funds	100 000	100 000
Total	$ 5 500 000	$ 5 000 000

A summary of total cash disbursements and cash receipts (excluding advances from AEC) for the months of August and July, 1951 is shown below:

	August	July
Disbursements		
Payments to Subcontractors	$ 5 739 046	$ 4 967 865
Material and Freight - GE	2 481 781	2 360 656
Payrolls - GE (Net)	2 885 305	2 841 385
Payroll Tax	665 431	723 258
General & Administrative Expenses	200 000	200 000
U. S. Savings Bonds	190 525	92 536
Other	329 877	360 792
Total	$12 491 965	$11 546 492
Receipts		
Rents	$ 145 644	$ 146 845
Hospital	57 041	49 065
Miscellaneous Accounts Receivable	10 831	53 746
Telephone	16 158	17 463
Bus Fares	10 196	9 683
Refunds From Vendors	4 447	3 533
Scrap Sales	3 934	1 077
Sales to AEC Cost-type Contractors	380 249	25 784
Other	6 972	5 280
Total	$ 635 472	$ 312 476
Net Disbursements	$11 856 493	$11 234 016

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A summary of personnel changes in the Financial Department during the month of August is shown below:

Personnel at August 1, 1951, transferred as of that date from:	
General Accounting Division	231
Manufacturing Accounting Division	78
Technical, Engineering and Construction Accounting Division	100
Municipal, Real Estate and General Services Accounting Division	30
Medical Accounting Division	11
General Administrative	8
Total	458
Changes during August:	
Acquisitions	22
Terminations and transfers out	(23)
Personnel at August 31, 1951	457

The monthly reports of the four sections of the Financial Department are shown on the following pages.

GENERAL ACCOUNTING SECTION
MONTHLY REPORT

August, 1951

July operating reports, issued on August 15, 1951, conformed to revised cost accounting procedures, and reflected revisions and recommendations which had been developed during the past several months by the Cost Accounting Committee. Considerable time was spent in determining methods of allocating general administrative and other overheads, and in establishing new cost codes in order that costs could be accumulated and reported in accordance with revised procedures.

Plant Accounting Annual Report detailing changes in Plant Accounts during Fiscal Year 1951 was issued this month. This report reflected net additions to Plant Accounts during Fiscal Year 1951 of $69 million, and a gross valuation of total plant at June 30, 1951, of $650 million, with a reserve for depreciation of $163 million.

An "Application of Funds" report was issued showing where all Nuclonics Division funds originated in Fiscal Year 1951 and how such funds were applied. Total funds provided during the fiscal year amounted to $127.7 million.

A concentrated effort was made in August to clear as many paid accounts payable vouchers as possible which could not be forwarded to the Atomic Energy Commission for final approval due to lack of required supporting data. As a result, the number of vouchers on hand which were paid prior to the past sixty days was reduced by over 60 per cent.

During August, approximately 99 per cent of all housing wage deduction authorizations, which were distributed on July 30, 1951, were returned to the payroll unit for employees who preferred the convenience of paying their rent through payroll deductions. The authorizations were transmitted to the respective Department Managers or their representatives with the request that they obtain, through supervision, the signature of the employee on the reverse side of the form for those employees who desired that their payroll deductions for rent continue, or a statement withdrawing the deduction authorization in case they no longer desired this method of payment.

Individual Insurance certificates and identification cards for approximately 8500 insured employees were delivered on August 10, 1951, to the respective Departments for distribution to employees.

Semi-annual analysis of base rates of monthly paid employees and salary adjustments during the six-month period ending June 30, 1951, segregated by salary brackets, was completed and forwarded to General Office.

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General Accounting Section

STATISTICS

Employees and Payroll	Total	Monthly Payroll	Weekly Payroll
Employees on payroll at beginning of month	8 804	1 985	6 819
Additions and transfers in	286	19	267
Removals and transfers out	(205)	(32)	(173)
Transfers from weekly to monthly payroll	-0-	60	(60)
Transfers from monthly to weekly payroll	-0-	(1)	1
Employees on payroll at end of month	8 885	2 031	6 854

Number of Employees	August	July
Bargaining group - HAMTC	3 143	3 261
Bargaining group - Building Services	67	70
Bargaining group - Hanford Guards - Local # 21	603	3 488
Other Weekly	3 041	
Two platoon firemen	55	57
Executive, administrative and operating	1 409	1 364
Professional	538	541
Other monthly	29	23
Total	8 885	8 804

Number of Employees*		
Engineering	1 944	
Manufacturing	2 744	
Utilities & General Services	2 190	
Community	256	
Real Estate & Services	365	
Financial	457	
Employee & Public Relations	114	
Radiological Sciences	464	
Medical Services	267	
General	16	
Law	13	
Accountability	18	
Technical Personnel	37	
Total	8 885	8 804

Overtime Payments		
Weekly paid employees	$ 190 480	$ 224 380
Monthly paid employees	60 731 (1)	68 109(2)
Total	$ 251 211	$ 292 489

Number of Changes in Salary Rates and Job Classifications	1 689	1 662

Gross Amount of Payroll*		
Engineering	$ 772 777	
Manufacturing	1 156 014	
Utilities & General Services	747 256	
Community, Real Estate and Services	222 996	
Other	495 044	
Total	$3 394 087	$3 945 913

(1) Payments cover period August 1 through August 31, except in the case of Patrolmen in the Plant Security & Service Section of the Utilities & General Services Department.

(2) Payments cover period July 1, 1951 through July 31, 1951, except in the case of Patrolmen in the Plant Security and Service Section of the Utilities & General Services Department.

* Segregation of statistics for the month of July not readily available.

General Accounting Section

Annual Going Rate of Payroll	August	July
Base	$ 38 612 935	$ 38 286 038
Overtime	3 391 973	3 850 561
Isolation Pay	1 224 579	1 168 211
Shift Differential	490 705	483 738
Other	49 286	76 884
Total	$ 43 769 478	$ 43 865 432

Average Hourly Base Rates	August	July
Bargaining group - HAMTC	$ 2.007	$ 2.062
Bargaining group - Building Services	1.579	1.582
Hanford Guards - Local # 21	1.744	1.700
Other weekly	1.691	
Two platoon firemen	1.877	1.882
Executive, administrative and operating	2.934	2.967
Professional	2.955	2.907
Other monthly	2.394	2.349
Total	$ 2.083	$ 2.084

Average Earnings Rate Per Hour (1)*	August			July		
	Weekly	Monthly	Total	Weekly	Monthly	Total
Engineering	$1.772	$ 2.975	$2.209	$	$	$
Manufacturing	2.213	3.019	2.347			
Utilities & General Services	1.912	2.701	2.010			
Community,Real Estate & Services	1.934	2.449	2.088			
Other	1.727	3.016	1.994			
Total	$1.963	$ 2.903	$2.164	$1.960	$2.912	$2.158

% Absenteeism	August	July
Weekly - Men	2.26	1.91
Weekly - Women	3.82	3.27
Total Weekly	2.68	2.27
Monthly	1.17	1.00
Grand Total	2.35	2.07

(1) Includes shift differential and isolation pay. Excludes overtime premiums, commissions, suggestion awards, etc.

* Segregation of statistics for the month of July not readily available.

Employee Benefit Plans	August	July
Pension Plan		
Number participating at beginning of month	6 401	6 412
New participants and transfers in	56	84
Removals and transfers out	(76)	(95)
Number participating at end of month	6 381	6 401
% of eligible employees participating	94.6%	94.7%

General Accounting Section

Employee Benefit Plans (continued)

Pension Plan (continued)

Employees Retired	August	Total to Date
Number	4	173-a)
Aggregate Annual Pensions Including Supplemental Payments	$ 579	$39 854-b)
Amount contributed by employees retired	$1 448	$29 883

(a- Includes 6 employees who died after reaching optional retirement age but before actual retirement. Lump sum settlements of death benefits were paid to beneficiaries in these cases.

(b- Amount before commutation of pensions in those cases of employees who received lump sum settlement.

Insurance Plan (1)

Personal Coverage	August	July
Number participating at beginning of month	8 729	8 562
New participants and transfers in	252	320
Cancellations	(6)	(19)
Removals and transfers out	(136)	(134)
Number participating at end of month	8 839	8 729
% of eligible employees participating	97.9%	97.8%

Dependent Coverage		
Number participating at beginning of month	5 287	5 234
Additions and transfers in	55	125
Cancellations	(7)	(3)
Removals and transfers out	(58)	(69)
Number participating at end of month	5 277	5 287

Claims - Disability Benefits (2)

Number of claims paid by insurance company:		
Employee Benefits		
Weekly Sickness and Accident	139	109
Daily Hospital Expense Benefits	180	108
Special Hospital Services	202	124
Surgical Operations Benefits	157	90
Dependent Benefits		
Daily Hospital Expense Benefits	225	202
Special Hospital Services	286	238
Surgical Operations Benefits	218	171
Amount of claims paid by insurance company:		
Employee Benefits	$39 959	$18 642
Dependent Benefits	27 022	26 168
Total	$66 981	$44 810

Claims - Death Benefits (3)	August	Total to Date
Number	-0-	66
Amount	-0-	$349 812

(1) The new Insurance Plan was made effective on December 1, 1950.
(2) Statistics cover only claims paid and not all claims incurred during the month.
(3) Total to date includes all claims under the old and new Insurance Plans and two deaths resulting from accidents.

Employee Benefit Plans (continued)

Group Life Insurance

The Group Life Insurance Plan was discontinued November 30, 1950. As of August 31, 1951, 7 employees who are absent with continuous service are still participating in the Group Life Insurance Plan. They were not actively at work on December 1, 1950, and therefore were not eligible to participate in the new Insurance Plan. However, they will become eligible upon their return to work.

Group Disability Insurance

The Group Disability Insurance Plan was discontinued November 30, 1949 for all employees actively at work. However, one employee who has been absent from work since September 15, 1949, is still insured under the Group Disability Insurance Plan.

Group Health Insurance

The Group Health Insurance Plan was made effective December 1, 1949 and was discontinued on November 30, 1950. As of August 31, 1951, 1 employee who is absent with continuous service is still participating in the Group Health Insurance Plan. He was not actively at work on December 1, 1950, and therefore was not eligible to participate in the new Insurance Plan. However, he will become eligible upon his return to work. During August, 80 checks in payment of benefits of $5,322 on 53 Group Health Insurance claims were received from Metropolitan Life Insurance Company.

Vacation Plan

Number of employees granted permission to defer one week of their 1951 vacation to 1952

	August			Total to Date		
	Weekly	Monthly	Total	Weekly	Monthly	Total
Engineering	3	9	12	23	44	67
Manufacturing	8	3	11	114	57	171 -a)
Utilities and General Services	7	2	9	78	27	105
Community Real Estate and Services	5	4	9	28	15	43
Financial	1	-0-	1	6	2	8
Employee and Public Relations	-0-	-0-	-0-	1	1	2
Radiological Sciences	-0-	-0-	-0-	1	-0-	1
Medical	2	-0-	2	6	-0-	6
General	-0-	1	1	-0-	3	3
Total	26	19	45	257	149	406

(a- Total to date reduced by one cancellation.

General Accounting Section

Employee Benefit Plans (continued)

U. S. Savings Bonds	Engineering	Mfg.	Utilities and General Services	Community Real Estate and Services	Other	Total
Number participating at beginning of month	702	1 190	814	239	625	3 570
New authorizations	33	27	29	3	19	111
Voluntary cancellations	(5)	(11)	(13)	(3)	(5)	(37)
Removals and transfers out	(5)	(6)	(8)	(-)	(25)	(44)
Transfers in	11	3	6	1	5	26
Number participating at end of month	736	1 203	828	240	619	3 626
Percentage of Participation						
G. E. Employees Savings and Stock Bonus Plan	33.9%	38.3%	31.7%	34.4%	39.4%	35.7%
G. E. Savings Plan	7.2%	11.9%	10.0%	9.0%	18.3%	9.9%
Both Plans	37.9%	43.8%	37.8%	38.6%	44.7%	40.8%
Bonds issued						
Maturity value	$ 34 950	$ 70 275	$44 200	$ 11 775	$ 24 875	$ 186 075
Number	670	1 366	912	230	489	3 667
Refunds issued	11	16	23	3	8	61
Revisions in authorizations	29	25	15	5	6	80
Annual going rate of deductions						
G. E. Employees Savings and Stock Bonus Plan	$291 242	$497 602	$52 733	$ 85 783	$461 898	$1 389 258
G. E. Savings Plan	69 348	180 055	14 317	30 142	143 642	437 504
Total	$360 590	$677 657	$67 050	$115 925	$605 540	$1 826 762

Annuity Certificates (For duPont Service)	August	Total to Date
Number issued	1	80

Suggestion Awards		
Number of awards	23	1 082
Total amount of awards	$350	$17 840

Employee Sales Plan

	August		
	Major Appliances	Traffic Appliances	Total
Certificates issued	42	343	385
Certificates voided	4	9	13

Salary Checks Deposited	August		July	
	Weekly	Monthly	Weekly	Monthly
Richland Branch - Seattle-First National Bank	688	822	742	822
North Richland Area Office - Seattle-First National Bank	8	8	11	8
Richland Branch - National Bank of Commerce	314	228	307	205
Out of state banks (Schenectady Staff)	-	3	-	3
Total	1 010*	1 061	1 060**	1 038

*Week ended 8-19-51
**Week ended 7-15-51

Special Absence Allowance Requests	August	July
Number submitted to Pension Board	6	1

Absenteeism (Weekly Paid Employees)	1951	1950
January 1 to August 19	2.88%	2.29%

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General Accounting Section

PERSONNEL AND ORGANIZATION

Number of Employees	August	July
On Payroll at beginning of month	231	214
Removals and transfers out	(10)	(6)
Additions and transfers in	24	23
Number at end of month	245	231
Net increase (or decrease) during month	14	17
% of terminations and transfers out	4.3%	2.8%
% of absenteeism	3.42%	2.04%

Changes by unit in number of Accounting Section employees during August, 1951 were as follows:

	Name
General: No Change	
Accounts Payable: No Change	
One new hire	Helen H. Bruce
One transfer to Manufacturing	Betty A. Grier
Cost: No Change	
General Accounts: Decrease of two employees	
One transfer to Engineering	Ruth J. Swanson
One termination	June K. Posner
Plant Accounting: No Change	
Weekly Payroll: Decrease of one employee	
Four new hires	Dorena D. Crosby
	Erma L. Scott
	Barbara J. Weldron
	Jean M. Watrus
Four illness removals	Margaret L. Clouse
	V. B. Larson
	Betty H. Nield
	Lois B. Stroup
One termination	LaVerne G. Mandell
Monthly Payroll: Decrease of one employee	
One termination	Leta B. Fowler
Special Assignment: Increase of eight employees	
Eight new hires	Frances E. Ames
	Mary S. Doyle
	Dorothy P. Ehret
	Martha H. Holt
	Arlene C. Kennedy
	Martha L. Learock
	Laura B. Meyer
	Margarethe Wright
Budgets: No Change	
Internal Audit: No Change	
Rotational Training Program: Decrease of one employee	
One termination	G. D. Don

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General Accounting Section

PERSONNEL AND ORGANIZATION (continued)

Medical Accounting: Increase of eleven employees
Eleven transfers from Medical Department

M. J. Smith
J. R. Woodhead
C. J. Kramer
Marjorie W. Vinyard
Mildred W. Reed
Margaret Z. Barber
Geraldine D. Robertson
Maryn G. Crawford
Janet S. Hostetter
Hazel H. Weiland
Salvator Hunter

Injuries	August	July
Major	-0-	-0-
Sub-Major	-0-	-0-
Minor	-0-	-0-

Number of Accounting Section employees as of August 31, 1951 were as follows:

	Number of Employees		
	Non-Exempt	Exempt	Total
General	3	6	9
Accounts Payable	19	1	20
Cost	12	1	13
General Accounts	16	1	17
Plant Accounting	26	2	28
Weekly Payroll	68	6	74
Monthly Payroll	18	2	20
Special Assignment	21	2	23
Budgets	2	1	3
Internal Audit	3	7	10
Rotational Training Program	17	-0-	17
Medical Accounting	8	3	11
Total	213	32	245

Non-exempt employees may be summarized as follows:

Classification	Number as of 8-31-51	Number as of 7-31-51
Accounting A	2	2
Accounting B	3	3
Accounting C	8	8
Accounting D	7	7
Business Graduate	25	26
Clerical Working Leader	7	8
Cost Clerk A	2	2
Cost Clerk B	1	1
Cost Clerk C	2	2
Cost Clerk D	3	3
Field Clerk B	3	3
Field Clerk C	3	3
General Clerk A	24	20
General Clerk B	42	43
General Clerk C	39	30
General Clerk D	7	8
General Clerk E	2	2

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General Accounting Section

PERSONNEL AND ORGANIZATION (continued)

Classification	Number as of 8-31-51	Number as of 7-31-51
Office Machine Operator A	1	10
Office Machine Operator B	6	6
Secretary B	1	1
Steno-Typist A	2	2
Steno-Typist B	7	8
Steno-Typist C	5	4
Steno-Typist D	1	1
Total	213	203

Open employment requests as of August 31, 1951 were as follows:

Accounting B	1
Business Graduate	1
General Clerk B	1
General Clerk C	1
Office Machine Operator A	1
	5

General Accounting Section

	August	July
Accounts Payable*		
Balance at Beginning of Month	$ 111 469	$ 164 135
Vouchers Entered	1 441 875	1 511 582
Cash Disbursements	1 451 939 DR	1 564 530 DR
Cash Receipts	1 599	282
Balance at end of month	$ 103 004	$ 111 469
Number of Vouchers Entered	1 835	1 808
Number of Checks Issued	1 139	1 184
Number of Freight Bills Paid	254	235
Amount of Freight Bills Paid	$ 4 950	$ 5 000
Number of Purchase Orders Received	784	872
Value of Purchase Orders Received	$ 299 642	$ 222 032
Cash Disbursements		
Community, Real Estate & Services	291 922	297 555
Engineering	7 008 171	6 218 361
General	4 527 769	4 509 012
Manufacturing	664 103	521 564
Total	$12 491 965	$11 546 492
Material and Freight	$ 2 481 781	$ 2 360 656
Lump Sum and Unit Price Subcontracts	779 786	1 012 450
CPFF Subcontracts		
Labor	4 121 827	3 381 693
Others	837 433	573 722
Payrolls (Net)	2 885 305	2 841 385
Payroll Taxes	665 431	723 258
U. S. Savings Bonds	190 525	92 536
General & Administrative Expenses	200 000	200 000
All Other	329 877	360 792
Total	$12 491 965	$11 546 492
Cash Receipts		
Community, Real Estate & Services	$ 116 812	$ 115 637
Engineering	58 613	67 997
General	12 761 981	111 337
Manufacturing	38 312	17 655
	$12 975 718	$ 312 626

* General Departments Only

General Accounting Section

	August	July
Detail of Cash Receipts		
Advances from AEC	$12 340 246	$ -0-
Rents	145 644	146 845
Hospital	57 041	49 065
Telephone	16 158	17 463
Scrap Sales	3 934	1 077
Bus Fares	10 196	9 683
Miscellaneous Accounts Receivable	10 831	53 746
Sales to AEC Cost-type Contractors	380 249	25 784
Refunds from Vendors	4 447	3 533
Employee Sales	739	806
Educational Program	12	-0-
All Other	6 221	4 624
Total	$12 975 718	$ 312 626
Number of Checks Written		
Community, Real Estate & Services	223	265
Engineering	1 122	1 220
General	1 139	1 184
Manufacturing	586	589
Total	3 070	3 258
Bank Balances At End of Month		
Chemical Bank & Trust Company - New York		
Contract Account	$ 1 809 408	$ 1 471 344
Seattle First National Bank - Richland		
Contract Account	2 231 533	2 179 820
U. S. Savings Bond Account	188 071	147 167
Salary Account No. 1	20 000	20 000
Salary Account No. 2	30 000	40 561
Travel Advance Account	47 739	55 053
Seattle First National Bank - Seattle		
Escrow Account	31 685	31 685
National Bank of Commerce - Richland		
Contract Account - Manufacturing	387 393	491 495
Contract Account - Community, Real Estate & Services	254 611	56 534
Total	$ 5 000 440	$ 4 493 659
Travel Advances and Expense Accounts		
Cash Advance balance at end of month*	$ 23 261	$ 24 258
Cash Advance balance outstanding over one month*	5 297	7 913
Traveling and Living Expenses:		
Paid Employees	36 810	35 267
Billed to Government	31 481	31 934
Balance in Variation Account at end of month	8 661	3 333 DR

* General Departments Only

General Accounting Section

	August	July
Hospital Accounting		
Accounts Receivable		
Balance at Beginning of Month	$ 124 722	$ 123 356
Invoices Issued	57 563	55 193
Refunds	443	782
Cash Receipts	57 041 CR	49 065 CR
Payroll Deductions	3 947 CR	5 465 CR
Bad Debts Written Off	2 229 CR	-0-
Adjustments	97	79 CR
Balance at End of Month	$ 119 608	$ 124 722

	August	Total to Date
Scrap Sales		
Number of Sales	400	5
Revenue (excluding Sales Tax):		
Scrap Sales	$ 368 573	$ 3 934
Tract House Sales		
Revenue to AEC	33 449	-0-
Revenue to GE	14 498	-0-
Total	$ 416 520	$ 3 934

1219224

General Accounting Section

ACCOUNTS PAYABLE

Volume of work decreased slightly in August as compared with July. In August, 1 835 vouchers amounting to $1 441 874 were booked as compared with 1 808 amounting to $1 511 582 in July.

During August, 1 879 vouchers were paid, compared to 2 003 in July, a decrease of 6%. The number of checks issued also decreased from 1 184 in July to 1 139 in August. The average number of vouchers paid per check varied only slightly, however, from 1.69 in July to 1.65 in August.

The number of vouchers on hand requiring additional supporting data before being considered complete decreased 23% as indicated below:

	August	July
Number on Hand - Paid	209	266
Number on Hand - Not Paid	904	1 177
Total	1 113	1 443

A concentrated effort was made to reduce the number of paid vouchers on hand which for various reasons could not be submitted to AEC for approval. With the close cooperation of Purchasing and Stores, it was possible to effect the substantial reduction in the number of old vouchers on hand.

COST

Cost reports for the month of July were issued on August 15, 1951 and detailed reports of Research and Development costs for Radiological Sciences programs were issued on August 17, 1951.

The form of cost reports was changed to conform to the revised cost coding system made effective July 1.

In connection with revised cost accounting procedures, considerable time was spent in determining proper methods of allocating expenses of a general overhead nature. Cost statements for the month of July were prepared and issued summarizing plant operating costs and detailing the various elements of cost which comprise the totals. In establishing the forms of the various statements, consideration was given to affording comparisons in future months in order that variations in cost will be readily apparent.

Letters were issued to managers analyzing costs incurred by their departments or sections in July. As a result of the new cost accounting procedures, it was possible to analyze costs in considerably greater detail than was previously possible.

General Accounting Section

COST (CONT'D)

With the establishment of the Financial Department as of August 1, provisions were made to consolidate all costs incurred by the various accounting sections. In addition, costs for the month of July were recast in order to provide a comparison with costs recorded in August.

As a result of the reorganization of the Purchasing and Stores Section, separate cost codes were established for the Purchasing Units and July costs were recast accordingly. New unit codes were also established for the reorganized Radiological Sciences Department effective September 1.

GENERAL ACCOUNTS

Advances from A.E.C. increased from $5 000 000 as of July 31, 1951 to $5 500 000 as of August 31, 1951. This increase was the result of a larger cash balance at the end of August. Details of these advances may be summarized as follows:

	August	July
Cash in Bank	$ 4 682 946	$ 4 199 193
Cash in Transit	367 054	340 246
Cash in Bank-Salary Accounts	50 000	60 561
Travel Advance Funds	100 000	100 000
Advances to Subcontractors	300 000	300 000
Total	$ 5 500 000	$ 5 000 000

Travel activity for August, 1951 may be compared with July, 1951 as follows:

	August	July
Number of Travel Reports Processed	182	165
Amount Reimbursed Employees	$ 24 706	$ 22 791
Amount Reimbursed by A.E.C.	22 237	20 845
Difference Charged to Variation Account	$ 2 469	$ 1 946

Fiscal Year to Date, total Nucleonics Division charges to the Travel and Living Expense Variation Account have been $8 661. Current month charges in the amount of $5 329 represent entertainment expenses of $2 049 and the difference between the amount spent by traveling employees and the amount reimbursed by A.E.C. of $3 280.

Charges in the amount of $411 658 were transferred from the General Engineering Laboratory in connection with the Assistance to Hanford Program. No charges were transferred from K.A.P.L. or Research Laboratory.

GENERAL ACCOUNTS (CONT'D)

General Ledger Trial Balances were received from all sections August 15, 1951. General Financial Statements and Consolidated Financial Statements were issued on August 21, 1951 and August 27, 1951 respectively.

A new report, "Consolidated Inventories by Captions", was issued for the first time this month. This report consolidated all inventories into commodity classes. Inventories were segregated by Current Inventories, Spare Parts, Inventories Held For Possible Future Use, and Excess Materials and Equipment. The number of months' supply on hand was computed for Current Inventories by dividing the ending inventory balance by average consumption for the past six months.

An "Application of Funds" statement for Fiscal Year 1951 was completed and issued. Funds provided and applied amounted to $127.7 millions during Fiscal Year 1951.

Considerable time was devoted to descriptive write-ups of General Ledger Accounts. This work is expected to be completed in the near future.

INTERNAL AUDITS

During August, several internal auditors undertook various timekeeping studies relating to the personnel check of all General Electric employees on the job at Hanford Works which began June 29, 1951. The results of these studies will be reported to management at a later date.

One internal auditor was assigned to personally observe the procedure followed by Purchasing and Stores Section in taking physical inventories of items in stock. Data from this study will be used (1) in the verification, on a test-check basis, of physical inventory working papers and requests for inventory adjustments prepared by Purchasing and Stores Section, and (2) in the preparation of a uniform physical inventory procedure for Hanford Works.

A follow-up study of procedures followed by Community Real Estate and Services Department in handling and accounting for personal-type supplies and equipment was made as the result of an inquiry by the Accountant for that department. He was subsequently issued a letter embodying the results of the study.

An internal audit report covering the "Verification and Analysis of Certain Trial Balance Accounts as of June 30, 1951" was issued in connection with the audit by A.E.C. Finance Division of General Electric Company 1951 fiscal-year-end trial balance accounts. The following phases of this audit were included in the report:

1. Verification of June 30, 1951 balances of several cash deposit accounts.

1219344

General Accounting Section

INTERNAL AUDITS (CONT'D)

2. Investigation of the physical inventory write-off of Inventory Account 10.1, Spare Parts Inventory.

3. Analysis of the use of Account 47.12, Accrued Liabilities - Unusual Maintenance Expense.

MEDICAL ACCOUNTING

The balance in Accounts Receivable decreased $5 114 during the month; from $124 722 in July to $119 608 in August. This is due primarily to an increase of $7 976 in cash receipts.

Bad debts in the amount of $2 229 were written off; the greater part of these accounts represented services rendered during 1948 and the first six months of 1949. Payroll deductions decreased $1 518 from the previous month due to one less weekly roll during the month.

Out-patient invoices numbered 2 178 and amounted to $10 394 as compared to 2 009 invoices amounting to $9 766 in July. This represents an increase of 169 invoices and $628 in amount. In-patient revenue increased $1 742 in August, due primarily to the increase in the adult patient day census from 75.0 in July to 75.9 in August. Total sales increased $2 370 during the month.

A total of 45 claims in the amount of $1 421 were submitted this month to Fort Lewis for services rendered Military Personnel. Reimbursement on 40 claims in the amount of $1 410 on prior months billings was received during the month.

Blue Cross claims paid during the month numbered 45 and amounted to $3 909.

Listed below is a summary of activity to date on accounts submitted to credit agencies for collection.

	Number	Amount
Accounts Submitted	190	$33 143
Uncollectible Accounts Returned	48	10 195
Collections	56*	3 296
Accounts Recalled (10% basis)	8	756
Accounts at Agencies 8/31/51	101	18 896

* Includes 33 accounts paid in full and 23 accounts partially collected.

On June 28, 1951 an agreement was entered into with the Benton-Franklin Counties Credit Bureau at Pasco, Washington. Their services were secured as it was felt that they could more effectively handle our bad accounts. Delinquent accounts are no longer being sent to Yakima Adjustment Service for collection.

General Accounting Section

MEDICAL ACCOUNTING (CONT'D)

Beginning with the month of August, Public Health costs will no longer be transferred to Community Real Estate and Services Department but actual costs will be included in the Community report as a line item in the same manner as Kadlec Hospital costs are now reported. Industrial Medical - Operations expense will be reported as an element of Protection of Plant and Personnel expense in consolidated operating cost statements. The necessary journal entries have been made so that year-to-date cost will reflect total net costs of Hospital, Public Health - Operations and Industrial Medical - Operations. The costs of operating Construction Public Health and Industrial Medical programs will still be transferred to Engineering Department the same as in the past.

PLANT ACCOUNTING

The annual Plant Accounting Statement summarizing changes in Plant Accounts for Fiscal Year 1951 was issued and distributed August 29, 1951.

A study of the possibility of converting the manual ledger posting operation to a machine posting system is underway. At the time the present Plant Accounts and Plant Ledgers were established, the estimated volume of entries did not indicate the need for machine posting. Experience has indicated that the volume is too great to be handled manually and the study has indicated that a machine posting operation would permit a reduction of two clerks.

Preliminary work was started regarding the transfer of Major Construction Program Asset and Reserve Accounts from Engineering Accounting books to Plant Accounting. Special consideration was given the distribution of depreciation to projects. Office Furniture and Fixtures was selected as the first category of equipment to be transferred.

Since Building 101 at Hanford again will be utilized in connection with construction of C Area, depreciation on Graphite Fabrication Equipment will be charged to the construction of the new production facilities in the approximate amount of $1 250 monthly.

During the month Plant Accounting field representatives continued to inventory selected categories of equipment. Numerous instances were discovered where discrepancies existed between the physical property and the Plant Records. As these discrepancies are reported, appropriate steps are being taken to correct the records.

General Accounting Section

PAYROLLS

During the month of August there were 205 removals from payroll, which includes 8 leaves of absence and 6 transfers to other departments of the Company. There were 286 additions to the payroll, including 27 employees re-engaged with continuous service. The result is a net increase of 81 employees on the payroll.

Individual insurance certificates and identification cards for approximately 8,500 insured employees were delivered on August 10, 1951 to the respective departments for distribution to employees.

Semi-annual analysis of base rates of monthly paid employees and salary adjustments during the six-month period ending June 30, 1951, segregated by salary brackets, was completed and forwarded to General Office.

Military Duty Allowance of $936.12 was paid in August to three weekly paid employees. No Military Duty Allowance was paid to employees on the monthly payroll in August. To date, Military Duty Allowance of $21,156.63 has been paid to 59 weekly paid employees and 7 monthly paid employees.

As of August 31, 1951, 180 Nucleonics Division employees (9 monthly, 171 weekly) had entered Military Service, as follows:

	Called To Duty	Volunteered For Duty	Total
Reserve Officers	12	3	15
Enlisted Reserve	48	6	54
National Guard	6	-0-	6
Selective Service	37	-0-	37
Voluntary Enlistments	-0-	68	68
Total	103	77	180

Housing wage deduction authorizations for employees who preferred the convenience of paying their rent through payroll deductions were transmitted to the respective Department Managers or their representatives on July 30, 1951, with the request that they obtain, through supervision, the signature of the employee on the reverse side of the form for these employees who desired that their payroll deductions for rent continue, or a statement withdrawing the deduction authorization in case they no longer desired this method of payment. Approximately 99% of authorizations were returned to Payroll at August 31, 1951.

New authorization cards for check-off of union dues were received for 26 employee members of seven unions affiliated with the Hanford Atomic Metal Trades Council and one employee member of the Building Service Employees International Union, Local 201.

As of August 31, check-off of union dues was in effect for 900 employee members of 12 unions affiliated with the Hanford Atomic Metal Trades Council and 27 employee members of the Building Service Employees International Union, Local 201.

1219387

Twenty-four weekly salary time cards were received late in Weekly Payroll during the five weeks ended August 26, 1951 as follows:

Week Ended	Number
7-29-51	10
8- 5-51	2
8-12-51	2
8-19-51	4
8-26-51	6
Total	24

In addition to routine payroll work, approximately 117,450 items were addressographed for other divisions in August.

Special work completed by Addressograph during August included the following:

1. An addressograph file was set up consisting of 225 names and office addresses of individuals comprising List #1 and #2 for distribution of Organization and Policy Guides.
2. Changing addresses in the employees' home address file resulting from the annual survey of employees' home and office addresses which is now being made.
3. Rearranging addressograph plates in the housing file due to the reorganization of the Nucleonics Division.
4. Changing suffix codes on clock card plates for employees of the Purchasing and Stores Section.

733 U. S. Savings Bonds and 2,790 Custody Receipts for U. S. Savings Bonds, having a maturity value of $196,675, covering purchases by employees through payroll deductions in July were delivered to employees on August 31, 1951.

During August, 81 employees withdrew from the G. E. Employees Savings and Stock Bonus Plan 702 U. S. Savings Bonds having a maturity value of $36,725. Checks were delivered to 11 participants in the G. E. Employees Savings and Stock Bonus Plan who withdrew during 1951 U. S. Savings Bonds purchased in 1948 or 1949. These checks cover income for the years 1949 and 1950 on General Electric Company common stock which has been credited to their accounts.

Replacements were requested for 6 Custody Receipts which were reported lost by 6 employees during the month of August.

The number of participants in the G. E. Savings Plans increased 56 during the month of August.

Authorization to deduct the cost of safety shoes from salaries were received from 185 employees in August.

1219346

In August, 6,538 items covering rents and telephone charges to be deducted from salaries were submitted to payroll as follows:

House Rents	3 250
Dormitory Rents	752
Trailer Rents	116
Barracks Rents	270
Telephone Accounts	2 150
Total	6 538

At the request of Department Managers or their authorized representatives, approximately 300 salary checks were held in the Payroll Unit for delivery to employees who are scheduled off on Thursday and Friday and who called at the Payroll Unit for their checks.

Approximately 100 salary checks were picked up by a representative of Employee and Community Relations for delivery to employees absent due to illness. Sixty-three salary checks and 700 U. S. Withholding Statements were mailed direct to employees who have been removed from the payroll.

One garnishment was pending at July 31, 1951. Two garnishments were received in August. These three cases were dismissed in August without payment to the court.

At July 31, 1951, there were three lost salary checks which had not yet been reissued. Three salary checks were reported lost during August, one of which was later located by the employee. There were five salary checks reported lost which were not yet reissued at August 31, 1951.

A total of 886 employees were scheduled to begin their 1951 vacation in August. Approvals were received to defer one week of the 1951 vacation to 1952 for 26 weekly paid employees and 19 employees on the monthly payroll. As of August 31, 1951, 257 weekly paid employees and 149 monthly paid employees had deferred one week of their 1951 vacation to 1952.

In August, 67 employees became eligible for participation in the General Electric Pension Plan. Of these, 46 employees applied for participation and 21 elected not to participate. As of August 31, 1951, there are 26 participants who have suspended contributions to the Pension Plan.

Continuity of service, for 5 weekly paid employees, was restored by the Pension Board in August.

At August 31, 1951, there were approximately 975 employees having preferential rates as a result of the salary rate revision made effective July 19, 1948. During August, preferential rates were eliminated in 20 cases where employees were transferred or reclassified.

In August, 730 claims for disability benefits, surgical benefits and hospital benefits under the insurance plan were processed and forwarded to the Metropolitan Life Insurance Company. 1,190 checks were received in August in payment of benefits amounting to $72,303 covering 899 claims, and were forwarded to the employees or to hospitals and surgeons in accordance with authorization of the employee.

Bank reconciliations completed:
- Weekly Salary through #258, week ended August 5, 1951
- Weekly Salary Vacation through #258, week ended August 5, 1951
- Bond Account - July
- Monthly Payroll #59, July 1951

1 2 1 9 2 1 5

MANUFACTURING ACCOUNTING SECTION
AUGUST, 1951

REORGANIZATION AND ACCOUNTING CHANGES

Increased activity in the month of August resulted from changes in procedure and coding made necessary by the reorganization of the Manufacturing Department. Unusual burdens were placed on cost and budget personnel in reworking forms and figures preparatory to re flecting organization changes on August reports.

To provide a comparison with July operating costs useful to operating management, June operating reports were recast to reflect cost accounting changes made effective July 1, 1951.

Complete recoding of Manufacturing Sections, Units and sub-units has been postponed until the reorganization has become more firmly established and the possibility of further changes is remote.

COMPLETED PROJECTS COST STUDY

An analysis of completed projects was begun to determine whether estimated annual savings as stated in project proposals, have materialized.

BUS CASH CONTROL

During the first month of operation of the Bus Cash Control System there was a steady decline in the variance between actual revenue and revenue indicated by passenger count. From a beginning figure of 4%, variance decreased to less than 1%. In the past actual revenue turned in had invariably exceeded passenger count due to missing trip tickets and general laxness on the part of drivers in taking passenger count. The remaining variance of less than 1% still reflects an excess of revenue over passenger count. We are confident this percent will be further reduced. An effective control over the amounts turned in by individual cashiers has been established. Transportation operating personnel have cooperated fully.

It is anticipated that within a period of 6 or 8 weeks the accounting clerk who is presently maintaining cash control records may be assigned other duties for approximately one-half of his time.

AUTOMOTIVE EQUIPMENT

A card index has been established for each piece of automotive equipment to show a comparison between the actual cost of operating and the amount liquidated through the use of standards. This comparison will give us a basis for revising standards and will indicate the effective use of the equipment. After the procedure has been in operation a reasonable time it will be analyzed to be sure the benefits derived are consistent with the clerical effort expended.

SPECIAL REQUESTS

As a result of preliminary studies made with the assistance of the Technical Special Requests Administrative group, the Manufacturing and Engineering Accounting Sections will collaborate in setting standards on Special Request work performed by the Technical Sections. The Reactor Section of the Manufacturing Department has submitted an estimating manual to cover Manufacturing costs on Special Requests and it is desirable for accuracy in estimates, audit, and billing that similar information be prepared for the technical portion of the program.

REPORT FORM CHANGES

To establish uniformity in type of report and supply necessary information to production control personnel, recasting of Power and Production Operating Cost Statements were undertaken in August.

Operating report forms were altered to accommodate the new organization of the Manufacturing Department.

ACCIDENT DAMAGE CONTROL

At our suggestion the Administrative Unit of Security Patrol issued a memorandum to field patrolmen requesting that they be on the look out for any damaged government vehicles. The driver of the vehicle is to be interviewed to determine whether an accident damage report had been filed. A report will then be made to Transportation Equipment Control and to Manufacturing Accounting. The purpose of this is to encourage submission of Accident Reports in all instances of damage to govenment vehicles so that private parties responsible for damage may be promptly billed for repair costs.

STATISTICS

IBM control panels have been completed which will make it possible to utilize the same cards for motorized equipment reports and manufacturing cost distribution, effecting a very real economy in labor and machine time.

Instruction classes in IBM operation and control panel wiring were continued and considerable interest was displayed.

ORGANIZATION AND PERSONNEL

Beginning of month	78
Acquisitions	4
Transfers out	6
End of Month	76
Transfers Out Fiscal Year to Date	8

New personnel acquired in the month of August consisted entirely of IBM clerks to strengthen the night shift in the statistics operation. Personnel leaving the section consisted of cost and budget clerks and key punch operator. Reasons given for terminations were illness in two cases, better paying jobs in two other cases, and desire to get into another type of work in the fifth case.

1219552

ENGINEERING ACCOUNTING SECTION

MONTHLY REPORT FOR AUGUST, 1951

I Summary

During August a new set of cost codes for the Technical Section was developed. After preliminary drafts had been given adequate distribution and discussion, the codes finally decided upon were distributed on August 27 for use effective September 1, 1951. It is believed that the new coding system will provide improved cost accounting information with respect to cost of product classes.

The responsibility for reporting financial status of minor projects on a weekly basis was taken over by Engineering Accounting Section from Project Engineering during the month. The first reports covered the week ended August 12, 1951 and are to be issued approximately five days after the close of each week.

II Statistical and General

Total cash disbursed during the month of August was $7,008,171 compared with $6,218,361 disbursed during July.

Accounts Payable Distribution Summary follows:

	August	July
General Electric Purchases	$ 1 505 414	$ 1 779 834
Reimbursement - Atkinson-Jones CPFF Subcontract - Construction	2 907 445	3 019 876
Reimbursement - Atkinson-Jones CPFF Subcontract - Service	458 372	395 611
Reimbursement - Other CPFF Subcontracts (Architect Engineers)	222 211	258 696
Partial Payments to Lump Sum Subcontracts	540 262	765 277
Travel (General Electric)	12 990	7 207
Miscellaneous	969 849	102 991
Total Credited to Accounts Payable	$ 6 616 543	$ 6 329 492

Subcontractors Payroll Statistics:

Average number of employees reported by CPFF Subcontractors (Including Service Contract)	5 754	5 553
CPFF Construction Subcontractors Payrolls	$ 2 458 048	$ 2 389 635
CPFF Service Contract Payrolls	366 299	343 330
Architect Engineer Payrolls	192 703	162 435
Total CPFF Payrolls	$ 3 017 050	$ 2 895 400

	August	July
Average per week (4 week period excluding Architect Engineers	$ 706 087	$ 683 241
Average Weekly Earnings	$ 122.71	$ 123.03

III Organization and Personnel

During the month, one employee was transferred from another Department, five terminated and two new employees were added to the payroll.

August	July
98	100

COMMUNITY REAL ESTATE AND SERVICES
ACCOUNTING SECTION
MONTHLY REPORT FOR AUGUST, 1951

ORGANIZATION

Employees-Beginning of month	30	Exempt	5	Male	8
Transfers In		Non-exempt	26	Female	23
Transfers Out			31		31
New Hires	1				
Terminations					
Total - End of Month	31				

RENTS

House Leases Processed	August	July
Total active leases beginning of month	5693	5671
New leases	182	151
Cancellations	163	129
Total active leases end of month	5712	5693
Modifications	12	15

Dormitory		
Total occupancy beginning of month	1076	1056
New assignments	126	124
Removals	122	104
Total occupancy end of month	1080	1076

Rental Revenue was as follows:

Equipment	$ 12.45	$ 12.45
House:		
Basic rent	200 992.20	198.025.22
Electricity	48.793.56	48,028.84
Water	8,077.58	7,955.32
Facility:		
Basic rent	41,929.12	47,510.66
Electricity	3,433.92	3,433.92
Water	490.00	490.00
Dormitory	14,972.28	15,303.41
Utilities-Electrical	428.55	402.15
	$319,129.66	$321.161.97

TELEPHONE

Number of work orders processed	305	273
Number of working telephones	5164	5159
Revenue including services	$ 19,125.52	$ 19,155.40

1.

Community Real Estate
& Services Accounting

MISCELLANEOUS	August	July
Invoices prepared during month	378	273
Revenue derived from invoices	$ 2,272.27	$ 1,380.09
Collection Agency Accounts		
Yakima Adjustment Service:		
Total submitted (64 accounts)	$905.50	
Collected by Yakima Adjust. Serv.	196.86	
Collected by General Electric Co.	113.63	
Returned - Written Off	87.67	
Recalled - No Charge	4.00	$503.34
Credit Bureau of Benton & Franklin Co's.		
Total submitted to 8-31-51 (6 accounts)	$ 99.23	
Collected by Credit Bureau	-0-	
Collected by General Electric Co.	-0-	
Returned - Written Off	-0-	
Recalled - No Charge	-0-	99.23
Balance - Agency Accounts 8-31-51		$602.57

ACCOUNTS PAYABLE

Statistics

Accounts Payable Vouchers	287	320
Freight Bills Processed	11	11
Purchase Orders Received	69	66
Net Amount of Purchase Orders	$ 18,904.16	$ 14,530.99
Receiving Reports Received	84	115
Net Amount Disbursed	$291,922.28	$297,555.23
Number of Checks Issued	217	252

A summary of Active Subcontracts is shown below:

Subcontractor	Subcontract Number	Amount Awarded	Paid This Month	Total Paid	Amount Retained
Newland Cafeteria	-----	$ 219.98	$ 9.55	$ 219.98	$ -0-
Richland Maintenance Co.	-----	213,231.03	7,678.38	213,231.03	-0-
Associated Engineers, Inc.	G-305	173,552.80	2,708.61	163,713.78	8,677.64
Packard Pipe & Pump Co.	G-326	14,314.00	-0-	13,792.34	725.91
C & E Construction Co.	G-328	180,375.20	-0-	175,540.30	9,238.96
F. O. Repine Co.	G-329	29,263.00	2,341.04	29,263.00	-0-
Edmund P. Erwen	G-334	16,000.00	1,148.68	1,148.68	127.63
Baldwin-Dunham Co.	G-343	1,380,139.60	178,520.84	1,251,522.31	36,436.73
Roof Service, Inc.	G-350	61,319.00	3,000.00	34,434.05	3,065.95
Motorola, Inc.	G-364	8,242.00	-0-	-0-	-0-
Weston Plumbing Co.	G-372	49,907.65	24,923.13	47,379.52	2,495.38
R. A. Neuman & Son	G-373	76,453.16	-0-	53,909.88	3,822.66
F. O. Repine Co.	G-375	42,700.00	8,165.16	42,700.00	-0-

Community Real Estate
& Services Accounting

Subcontracts (Con't)

Subcontractor	Subcontract Number	Amount Awarded	Paid This Month	Total Paid	Amount Retained
C. T. Malcom & Co.	G-377	$ 12,087.80	$ 11,483.41	$ 11,483.41	$ 604.39
American Steel & Wire Co.	G-378	12,114.66	-0-	-0-	-0-
Associated Engineers, Inc.	G-381	26,878.75	-0-	-0-	-0-
Erwen Construction Co.	G-387	9,844.50	8,977.27	8,977.27	492.23
D - H Paving Co.	G-390	220,197.83	-0-	-0-	-0-
Algot Carl Grant	G-394	2,340.00	-0-	-0-	-0-
Baldwin-Dunham Co.	G-397	8,464.00	-0-	-0-	-0-
Royal Company, Inc.	G-399	3,362.00	-0-	-0-	-0-
		$2,541,006.96	$248,956.07	$2,047,315.55	$65,687.48

COST

Reports

The July Operating Report was issued August 17, 1951. The Comptrollers Appropriations Report and Supplemental Report was issued August 15, 1951.

SERVICE ORDER

Service Order Charges

	QUANTITY (A)		LABOR COST		MATERIAL COST		TOTAL COST	
Code	July	August	July	August	July	August	July	August
1	443	1,221	$ 815.65	$2,331.60	$ 870.14	$1,839.59	$1,685.79	$ 4,171.19
2	538	1,759	641.20	2,572.75	700.00	2,174.79	1,341.20	4,747.54
3	21	124	89.95	313.60	9.67	153.27	99.62	466.87
4	19	124	87.50	256.55	34.53	158.84	122.03	415.39
5	115	279	148.15	576.45	145.07	372.48	293.22	948.93
6	143	400	261.45	1,048.95	69.74	251.08	331.19	1,300.03
	1,279	3,907	$2,043.90	$7,099.90	$1,829.15	$4,950.05	$3,873.05	$12,049.95
(B)		+2,628		+5,056.00		+3,120.90		+ 8,176.90
(C)			1.60	1.82	1.43	1.27	3.03	3.09

(A) Quantity covers the number of Service Charges made since some Service Orders include several changes.
(B) Over (+) or Under (-) Previous Month.
(C) Average Costs per job, labor, material, and total.

Increase in Service Calls is attributed to the fact that the July Report covers only a three week period, and August Report covers a four week period.

1	Plumbing	3	Heating & Ventilating	5	Lock & Key
2	Electrical	4	Glazing	6	Carpentry

Community Real Estate
& Services Accounting

WORK ORDERS

	June	July	August	
Active Routine	258	261	263	+ 2
Active Normal	2,714	2,706	1,926	-780
	2,972	2,967	2,189	-778
W. O. Received	1,596	967	1,567	
W. O. Completed	1,184	972	2,345	
	- 412	+ 5	+ 778	

GENERAL LEDGER	No.	Debit	Credit
Second Class Invoices Received	115	$864,981.99	$854,455.93*
Second Class Invoices Issued	72	214,761.13	715.50

* Includes $609,268.74 transfer of fiscal year costs to AEC.

PLANT SECURITY AND SERVICES SECTION

MONTHLY REPORT - AUGUST 1951

SUMMARY

There was one major injury during the month making a total of five for the year to date and a frequency rate of 0.43.

There were six minor fires during the month. Total loss was $1.00.

Procedures Analysis and Forms Control activities resulted in savings of $12,984, of which $5,136 is on an annual recurring basis.

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PLANT SECURITY AND SERVICES SECTION

MONTHLY REPORT - AUGUST 1951

ORGANIZATION AND PERSONNEL:

Number of employees on payroll:

	Beginning of Month	End of Month	Increase	Decrease
Staff	3	6	3 (a)	
Patrol and Security	628	644	16 (b)	
Safety and Fire Protection	149	151	2 (c)	
Office Services (Building and Laundry Service, Clerical Services, Records Control and Procedures Analysis)	302	296		6 (d)
TOTALS	1,082	1,097	21	6

NET INCREASE: 15

(a) - Staff

3 - Transferred to Staff from Clerical Services

(b) - Patrol and Security

25 - New Hires
4 - Reactivated
4 - Transferred to other Departments
4 - Deactivated, personal illness
5 - Terminations

(c) - Safety & Fire Protection

5 - New Hires
2 - Reactivated
3 - Transferred to other Departments
2 - Terminations

(d) - Building and Laundry Service

7 - New Hires
4 - Reactivated
3 - Deactivated, personal illness
1 - Transferred to another Department
6 - Terminations

Clerical Services

7 - New Hires
1 - Reactivated
1 - Transferred from Engineering
3 - Transferred to Staff
9 - Transferred to other Departments
2 - Deactivated, personal illness
3 - Terminations

Plant Security and Services Section

Organization and Personnel (Contin.)

Records Control

1 - New Hire
1 - Deactivated, personal illness

Procedures Analysis

1 - New Hire

SAFETY AND FIRE PROTECTION

Injury Statistics

Days since last Major Injury	23
Accumulated Exposure Hours since last Major Injury	1,158,386
Major Injury Frequency Rate (1/1/44 through 8/31/51)	0.78

	July	August	Year To Date	Comparative Period, 1950
Major Injuries	0	1	5	2
Sub-Major Injuries	1	0	11	18
Minor Injuries	329	362	2,512	2,539
Exposure Hours	1,530,625	1,561,303	11,539,237	9,968,055
Major Injury F/R	0.00	0.64	0.43	0.20
Major Injury S/R	0.00	0.012	0.04	0.002
Penalty Days	0	0	450	0
Actual Days Lost	0	19	56	15
Minor Injury F/R	2.16	2.32	2.19	2.55
ESTIMATED MEDICAL TREATMENT TIME REQUIRED	1,350 hours	1,592 hours	10,478 hours	

Major Injury No. 76

As a result of injuries sustained in an automobile accident on August 8, 1951 an employee of the Transportation Division was hospitalized for treatment.

Safety Activities

Conferences were held this month with members of the Technical Development Unit in the 300 Area to review contemplated operations to be started by the group. Safety measures and safety equipment were outlined for predictable hazards that may be encountered on the two new projects.

A new plan for correcting the traffic and parking problem in front of the 300 Area is being developed.

Progress is reported in the development of an all-purpose face mask. Representatives of three manufacturers were interviewed. The development will involve about four months work by these vendors.

Orientation of new personnel continues heavy due to increase in new hires.

Plant Security and Services Section

Safety Activities (Contin)

Effective September 4, 1951, investigations of injuries involving strains, sprains and back cases are to be conducted at the Sub-Major Injury level as outlined under Safety Bulletin No. A-1. Several recent cases have resulted in this necessary action.

Fire Protection Activities

Building surveys were completed for Buildings 1704-D, 1707-D, M & P, 1713-D, 1715-D, 2715-W, Riggers' Loft in 200-W, and 305.

Sixteen new Patrolmen were given training on the operation of the fire alarm system and first aid fire extinguishers at the Patrol Training School.

Ten fire hydrants have been installed and put into service in the 100-C Area.

Fifty employees of the new 202-S Building were given instructions on the fire alarm system and first aid appliances.

Forty new employees of the 200-East and West Areas were orientated on Fire Protection.

A practice evacuation of the 3703 Building was held.

Plans were made for special activities to be held during October, National Fire Prevention Month.

Twenty-seven members of the Technical Unit were given a demonstration of first aid fire extinguishers at the 200-W Fire Station.

The Drill School conducted 246 drills during the month.

Industrial Fires

Division	Area	No. of Fires	Cause	Loss
Patrol and H.I.	100-D	1	Overheating of electric motor.	None
None	Outer	1	Grass fire probably caused by carelessly discarded smoking material.	None
E & C	Outside 100-B	1	Friction from shaft turning ignited tumble weeds.	None
Transportation	Riverland	1	High pressure fuel tubing ruptured; causing vapors to flash & ignite rubber grommet.	$1.00
Pile Technology	100-B	1	Welding sparks falling through crack ignited hydrogen gas.	None
None	Outer	1	Grass and sage brush fire caused by lightning.	None
TOTAL INDUSTRIAL FIRES		6	TOTAL LOSS	$1.00

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Plant Security and Services Section

OFFICE SERVICES

Building and Laundry Service

Plant Laundry (200-W)

	July	August
Pounds Delivered	162,841	170,630
Pounds Rewash	37,133	26,967
Total Dry Weight	199,974	197,597

700 Laundry

Flatwork - Pounds	57,200	68,991
Rough Dry - Pounds	18,207	20,650
Finished - Pounds	2,584	3,003
Estimated Pieces	102,168	121,364
Total Dry Weight - Pounds	77,991	92,644

Monitoring Section (200-W Laundry)

Poppy Check - Pieces	104,912	126,950
Scaler Check - Pieces	112,492	155,978
Total Pieces	216,404	282,928

Clerical Services

Overtime in most activities was practically eliminated during August and will continue to be held to a bare minimum.

Central Mail

The volume of mail decreased slightly this month while teletype deliveries increased somewhat. Several large distributions of Organization & Policy Guides were made, together with annual Rating Sheets and Company Magazines.

Because of numerous moves taking place subsequent to extensive organization changes, mail runs had to be revised in the 703 Building. This was accomplished with uninterrupted mail service.

Types and Pieces of Mail Handled	August	July
Internal	850,556	961,759
Postal	83,173	81,272
Registered	1,677	1,407
Insured	388	412
Special Delivery	261	258
Total Mail Handled	916,055	1,045,108

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Plant Security and Services Section

Central Mail (Contin)

	August	July
Total Postage Used	$2,266.05	$2,743.67
Total Teletypes Handled	7,336	6,728
Total Store Orders Handled	345	318

Office Equipment

Instruction in the maintenance and repair of Remington-Rand and Royal Typewriters was given our mechanics by factory representatives of these respective companies.

A large shipment of two-hundred five-drawer files was received and found to be unacceptable. After inspection by the representative from Federal Bureau of Supply in Seattle they were shipped out and will be ultimately replaced by acceptable files. An emergency purchase of one-hundred and twenty-five four-drawer files was expedited to provide a limited supply during this period.

Machine Repair	August	July
Office Machines repaired in shop	249	272
Office Machine service calls	567	561
Total Machines Serviced	816	833

Furniture and Moves

Office Moves	126
Pickups for Records Center, etc.	50
Desks refinished	5
Chairs refinished	45
Store Orders filled	493
Pieces of furniture delivered	891
Property transfers completed	68

Central Printing

The backlog of work in Printing has been greatly reduced during the month. Orders are currently being produced within 24 hours to 3 days after receipt of work.

A new pricing schedule is being compiled to standardize printing costs.

First proofs of classified work for Schenectady were rendered and returned to Schenectady for comment.

Multilith Orders	August	July
Received	437	385
Completed - Day Shift	319	191
Completed - Night Shift	138	173
On hand	72	92

Plant Security and Services Section

Stenographic Services

Personnel in this section was transferred out quite rapidly during the month. The volume of work remained firm with loan requests heavier than usual.

Breakdown of Hours	August	July
Dictation and transcription	:00	8:30
Machine Transcription	:00	21:20
Letters	20:45	47:20
Rough Drafts	20:00	31:30
Stencils, Dittos, and Duplimats	343:05	718:20
Miscellaneous	767:25	661:15
Meeting Time	:00	18:45
Training	17:15	161:00
Holiday and Vacation	8:00	:00
Unassigned Time	64:00	24:00
Total	1,240:30	1,692:00
Employees loaned to other Departments	1,547:00	1,296:00
Total Hours Available	2,787:30	2,988:00

Duplicating Services

Approval has not been obtained to date from the U. S. Bureau of Printing for purchase of offset duplicating equipment.

The volume of work fell off somewhat as compared to the previous month.

Stencil and Fluid Duplicating	August	July
Orders received	875	996
Orders completed	891	1,013
Orders on hand	10	26
Number of stencils	3,137	3,317
Number of copies	387,503	597,966
Number of dittos	1,414	1,658
Number of copies	61,933	53,226
Collated Orders	27	33
Collated Copies	137,739	106,210

Records Control

Quantity of records received, processed and stored:

Community, Real Estate & Services Department	28	Standard	Storage	Cartons
Employee & Public Relations Department	11	"	"	"
Engineering Department	135	"	"	"
Financial Department	60	"	"	"
General Administrative Department	2	"	"	"
Legal Department	4	"	"	"
Manufacturing Department	130	"	"	"

Plant Security and Services Section

Records Control (Contin)

Medical Department	63	Standard	Storage	Cartons
Radiological Sciences Department	22	"	"	"
Sub-Contractors	1	"	"	"
Utilities & General Services Department	48	"	"	"
	504	Standard	Storage	Cartons

Persons provided records services:	682
Records Cartons issued:	302
Filing Serviced provided:	139 records filed in with records already in storage.
Percentage of the Records Service Center Vault occupied by records, excluding Civilian Defense portion:	72%

In addition to the individual services, 172 man hours were spent providing records service for the Financial Department.

Recommendations of the Records Committee concerning Yellow File Copy coverage were approved. A draft of an Organization and Policy Guide, putting the recommendations into effect, was prepared and submitted for approval for issuance.

The printer's proofs of the file manual were received and checked for necessary corrections. Uniform filing was established in fifteen offices in August.

Procedures Analysis

	July	August
Printing Orders received	405	511
Printing Orders cancelled	15	32
New Numbers assigned	109	86
Forms Designed	51	62

The survey concerning the use of the prefix and suffix designation on the photo identification pass has been completed. Organization and Policy Guide No. 18.15, entitled "Employee's Payroll Number" has been issued as a result of this survey. In the future, the prefix and suffix letters of the payroll number will not appear on the photo pass. No new passes will be issued as a result of this survey. Total saving for the first year will be $9100. The annual recurring savings will be $2000.

Proofs of the Uniform Filing Procedure Manual have been received from the printer. All proofs have been approved by the proper source and returned to the printer for final printing. Promised date for shipment is September 17, 1951.

At the present time, the Procedures Analysis group is actively engaged in thirteen separate procedure surveys. Four other surveys have been requested but have not been scheduled due to the present work load.

Plant Security and Services Section

Procedures Analysis (Contin.)

Savings realized this month are as follows:

	One Time	Annual Recurring
Forms Control	$ 748	$3136
Procedures	$7100	$2000
TOTAL	$7848	$5136

Total Savings for August: $12,984.

PATROL AND SECURITY

There were 257 General Electric employees given orientation talks which dealt with plant safety and security rules, also a brief resume of plans and policies of the General Electric Company for its employees.

One hundred and thirty-four General Electric employees were given termination interviews, at which time the terminated employees were asked to sign Security Termination Statement and Security Acknowledgment, Atomic Energy Forms No. 136 and 15 respectively. Both of these forms and their meanings were discussed with the employees.

There were 258 security meetings held and attended by 3,806 employees during the month.

The following security education items were issued during the month:

Eleven items appeared in the Works NEWS concerning the subject of security.

A representative of the Security Group showed the following security films:

"Sabotage" at 17 meetings.
"Case of the Smokeless Chimney" at 18 meetings.
"On Guard" at five meetings.
"Fitting 'U' Into Security" at four meetings.

A total of 880 employees saw one of the movies at their security meetings mentioned above.

Ten thousand copies of the "A-B-C" pamphlet of security entitled "Going Places This Summer?" were distributed to residences in the Village of Richland.

Five hundred copies of the poster with the inscription "Loose Talk Like Russian Roulette Can be Fatal" were posted in busses and in the plant areas.

Two hundred and thirty-three employees received a "?" orientation talk from a representative of the Security Unit during the month of August.

Plant Security and Services Section

Patrol and Security (Contin.)

The following emergency plans were placed into effect during the month throughout the plant areas:

Number of practice evacuations held:	3
Number of practice blackouts:	14
Number of practice mobilizations:	18

At 4:00 A.M., August 6, the following posts were discontinued in the 200-W Area:

202-S Canyon Badge House	202-S Silo Badge House (1st level)
202-S East Canyon Badge House	202-S Silo Badge House (6th level)
202-S Canyon Rover	202-S Silo Rover

Effective August 6, at 4:01 A.M., the following posts were activated in the 200-W Area:

202-S Main Badge House (requiring two Patrolmen)
202-S Main Vehicle Gate
202-S Escorts (one man for 24 hours and one man extra on No. 2 shift)

On the No. 1 and No. 3 shifts, the No. Badge House Patrolman and the escort Patrolman will maintain a constant roving foot patrol of the 202-S Area.

On August 7, the 101 Area, Hanford, fence was reconditioned.

On August 8, the Mechanical Laboratory Section, 234-5 Building, was withdrawn from the Top Secret zone at 3:00 P.M. to facilitate completion of construction work in Rooms 179 and 186. This was accomplished by the rearrangement of seals on existing doors.

On August 8, a serious accident occurred near the 100-F Area between a government dump truck and a private passenger car on Route 2N, near Mile Post No. 1. As a result of the accident, ambulances were dispatched from 100-B, 100-D, 100-F and White Bluffs Areas and seven men hospitalized.

On August 9, representatives of the Security Unit visited Puget Sound Navy Shipyard, Bremerton, Washington, for the purpose of making a security survey of this facility in connection with its sub-contract on fabrication of "B" blocks for the 100-C Area.

Two new posts were activated on August 12, 200-E Area, at railroad crossings 16 and 17, and they will be manned during shift change hours.

The Atomic Energy Commission Security Office granted permission on August 13 to utilize tower men from the 231 and 234-5 Areas, 200-W, during shift change on day shift when necessary due to manpower shortage. The fence is to be patrolled by roving car coverage during such periods.

On August 14, the Room 170, 234-5 Building, was excluded from the operating section of the building and opened to construction forces from outside the building. This room is sealed off from corridor 6 by wire seals and tape.

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Plant Security and Services Section

Patrol and Security (Contin.)

Operations officially took over responsibility and operation of the Redox Area, 200-W, on August 15, 1951. Construction Type badges are still in use and will be until approximately October 15, 1951 when it will be classified as a health area. Health badges will then be issued at the Redox Badge House as access via 200-W Area will not be practiced yet due to the incomplete status of the TBP project.

A meeting was held with Construction Transportation on August 15 relative to a complaint from a subcontractor employee that identification passes were not being properly checked on construction busses, and access could be made at any time without display of a pass. As a result of an investigation, it was determined that satisfactory pass checking procedures are being maintained and continued spot checks of construction busses at the barricade revealed no employees on busses without proper credentials.

On August 15, a meeting was held with General Electric and Atkinson and Jones personnel regarding the 115-B tunnel work in connection with the 100-C Project. An agreeable solution was worked out for control of Construction personnel working within the 115 Building. Part of the building is to be fenced into the 100-B "limited" area.

Work was started on August 20 to remodel the vault building at Hanford. It will be used by Security Patrol as an arsenal.

At the request of the Atomic Energy Commission, the Security Unit conducted a survey on August 20 of all "Q" cleared employees of the General Electric Company, its subcontractors and licensees.

A meeting was held August 23 with the Radiological Sciences Department, Separations-Manufacturing and Security Units wherein it was determined that the Redox Area will be classified as a health area about October 1, 1951.

A memorandum was prepared by the Security Unit and issed on August 24 concerning the annual inventory of blueprints and reproductions on a plantwide basis.

Security Field Inspection Activities:

Contacts made regarding unaccounted for documents	37
Physical searches conducted for unaccounted for documents	9
Documents and prints located	20
Searches made for documents unaccounted for by terminating personnel	5
Notices issued to change file combinations	23
File combinations changed	15
Classified scrap burning details	8
Security meetings conducted by a representative of the Security Field Inspection Unit	3

A survey was made of double lock bar file cabinets during the month.

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Plant Security and Services Section

Patrol and Security (Contin.)

During the month of August, 317 Security Patrolmen attended classes at the Training School with the following schedule:

Pistol	1 hour
Hazards Disclosure	1 hour
Health	1/4 hour
Security	3/4 hour
Safety	1/4 hour
M-8	4 3/4 hours

A total of 708 pat searches were made during the month. Escorts handled totalled 880.

Patrol made 17 ambulance runs during the month.

There were 4,010 badge transactions completed during August including "A", "B", "C" and temporary type badges.

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HANFORD WORKS
General Electric Company
Richland, Washington

REPORT OF VISITORS FOR PERIOD ENDING AUGUST 31, 1951

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
ENGINEERING AND CONSTRUCTION DIVISIONS							
I. Visitors to this Works							
A. A. Batza General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	4-2-51	1-1-52	X		200-W 234, 235 200-W Const 234-5 Const
J. E. Brown, Jr. General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	7-24-51	8-3-51	X		200-W 234, 235 200-W Const. 234-5 Const
C. D. Carroll General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	8-3-51	8-31-51	X		200-W 234, 235 200-W Const 234-5 Const
F. E. Crever General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	8-21-51	8-25-51	X		200-W 234, 235 200-W Const 234-5 Const
F. J. Champlin, Jr. General Engineering Lab. Schenectady, New York	Consultation and installation of equip-	W. P. Ingalls	6-4-51 9-5-51	7-31-51 11-4-51	X		200-W 234, 235 200-W Const 234-5 Const

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
E. P. Diehl General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	7-24-51	8-4-51	X		200-W 234, 235 200-W Const 234-5 Const
A. E. Drevos General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	7-23-51	8-27-51	X		200-W 234, 235 200-W Const 234-5 Const
C. W. George General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	8-14-51	8-24-51	X		200-W 234, 235 200-W Const 234-5 Const
F. K. Glasbrenner General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	8-14-51	9-8-51	X		200-W 234, 235 200-W Const 234-5 Const
W. A. Hartman General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	4-2-51 9-11-51	7-31-51 1-52	X		200-W 234, 235 200-W Const 234-5 Const
M. W. Hively General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	7-24-51 9-5-51	8-3-51 9-15-51	X		200-W 234, 235 200-W Const 234-5 Const
G. W. Loos General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	8-21-51	8-27-51	X		200-W 234, 235 200-W Const 234-5 Const
E. Long General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project [redacted]	W. P. Ingalls	6-26-51	9-15-51	X		200-W 234, 235 200-W Const 234-5 Const

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
D. H. Marquis General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	8-21-51	9-1-51	X		200-W 234, 235 200-W Const 234-5 Const
P. P. Palker General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	7-8-51	9-2-51	X		200-W 234, 235 200-W Const 234-5 Const
R. N. Poole General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	5-1-51	8-22-51	X		200-W 234, 235 200-W Const 234-5 Const
R. J. Walsh General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	8-8-51	9-1-51	X		200-W 234, 235 200-W Const 234-5 Const
N. H. Wood General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	4-2-51	1-23-52	X		200-W 234, 235 200-W Const 234-5 Const
J. N. Hall General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	7-24-51	9-15-51	X		200-W 234, 235 200-W Const 234-5 Const
A. F. Wells General Engineering Lab. Schenectady, New York	Installation of GE mass spectrometer	W. M. Harty (Pile Tech) W. R. Felts R. J. Brouns	7-30-51	8-30-51	X		100-B 108
R. J. Schier General Electric Company Schenectady, New York	Consultation on Project C-431-B	V. D. Nixon	8-6-51	8-6-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
B. R. Prentice General Electric Company Schenectady, New York	Consultation on Project C-431-B	V. D. Nixon	8-13-51	8-16-51		X	
A. B. Bell Charles T. Main Co., Inc. Boston, Massachusetts	Liaison on sub-contract G-363	J. R. Kelly J. W. Conley	8-7-51	8-11-51		X	
R. A. Moncrieff Charles T. Main Co.,Inc. Boston, Massachusetts	Liaison on sub-contract G-363	J. R. Kelly	8-13-51	8-14-51		X	
E. G. McKay Charles T. Main Co., Inc. Boston, Massachusetts	Liaison on sub-contract C-363	J. L. Boyd O. W. Priebe	8-12-51	8-15-51		X	
G. White, Jr. Kellex Corporation New York, New York	Consultation on Project C-431-B	V. D. Nixon	8-3-51	8-3-51		X	
C. W. Leverton Los Alamos Scientific Lab. Los Alamos, New Mexico	Obtain information on engineering materials in nuclear shielding	R. T. Jaske	8-17-51	8-23-51	X		100-H 105
F. E. Crever General Engineering Lab. Schenectady, New York	Observe canning process and Redox	H. P. Shaw J. S. Parker	8-22-51	8-23-51	X		202-S 300 303
D. H. Marquis General Engineering Lab. Schenectady, New York	Observe canning process and Redox	H. P. Shaw J. S. Parker	8-22-51	8-23-51	X		202-S 300 303
C. W. George General Engineering Lab. Schenectady, New York	Observe redox process	J. S. Parker	8-23-51	8-23-51	X		202-S

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
II. Visits to other Installations							
J. L. Boyd to: Bumstead-Woolford Seattle, Washington	Liaison on sub-contract G-382	O. H. Woolford	8-24-51	8-26-51		X	
O. W. Priebe to: Bumstead-Woolford Seattle, Washington	Liaison on sub-contract C-382	O. H. Woolford	8-24-51	8-26-51		X	
C. H. Holt. to: Knolls Atomic Power Lab. Schenectady, New York	Interview for employment	W. W. Kuyper	8-27-51	8-29-51	X		
D. A. Hoover to: General Engineering Lab. Schenectady, New York	Consultation on 234-5 Program and observe testing on Task VI	C. W. George E. S. Baker	8-7-51	8-14-51	X		
R. C. Mann to: Foxboro Company Foxboro, Massachusetts	Expedite material on order	S. U. Kirk	8-20-51	8-21-51		X	
R. C. Mann to: Kellex Corporation New York, New York	Consultation on Project C-362	J. S. Atwood	8-22-51	8-22-51	X		
G. M. Roy to: Oak Ridge National Lab. Oak Ridge, Tennessee	Discuss various types of metals and development work on heavy concrete and pile radiation	H. M. Glen E. G. Tirpak	8-27-51	9-7-51	X		
J. R. Wolcott to: Kellex Corporation New York, New York	Engineering consultation	G. White, Jr.	8-6-51	8-8-51	X		
T. Williams to: Stearns-Rogers Mfg. co. Denver, Colorado	Engineering consultation	P. M. Weiss	8-2-51	8-4-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
R. C. Hollingshead to: Johnston Pump Company Los Angeles, California	Design consultation and observation of equipment testing	Mr. Brown	8-6-51	8-10-51		X	
R. C. Hollingshead to: Stearns-Rogers Denver, Colorado	Design consultation and observation of equipment testing	Mr. Rosengren	8-13-51	8-15-51		X	
A. J. Karnie to: Oscar Krenz Company Berkeley, California	Inspect equipment at vendor's plant	C. G. Mumford	8-21-51	8-23-51		X	
P. M. Murphy to: Foster-Wheeler New York, New York	Engineering consultation	Mr. Dodd	8-27-51	8-29-51		X	
R. C. Hollingshead to: Searns-Rogers Mfg. Co. Denver, Colorado	Witness assembly and initial run of pulse generator	Mr. Rosengren	8-27-51	8-31-51		X	
C. W. Harrison to: Puget Sound Navy Shipyard Bremerton, Washington	Consultation on fabrication of "B" blocks	S. L. Allison S. L. Allison	8-1-51 8-15-51	8-3-51 8-15-51	X X		
B. R. Elder to: Pacific Car & Foundry Seattle, Washington	Consultation on structural steel	G. F. Bintz	8-6-51	8-6-51		X	
J. B. Modlin to: Pacific Coast Eng. Co. Alameda, California	Witness tests	- -	8-6-51	8-8-51		X	

ELECTRICAL DISTRIBUTION

I. Visitors to this Works

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
L. C. Ford General Electric Company Spokane, Washington	Correct defect in transformer purchased from Apparatus Div.	O. Magechon L. H. Holden	8-21-51	8-22-51		X	251 Sub-station
RADIOLOGICAL SCIENCES DEPARTMENT							
I. Visits to other Installations							
D. W. Rhodes to: U.S. Dept. of Agriculture Beltsville, Maryland	Discuss soil science techniques	L. T. Alexander	8-30-51	9-1-51	X		
MANUFACTURING INSTRUMENT UNIT							
I. Visitors to this Works							
W. A. Burke Minneapolis-Honeywell Co. Portland, Oregon	Adjust instruments on ventilating system	E. Hilgeman J. H. Kelly	8-7-51	8-7-51		X	300 3717
II. Visits to other Installations							
R. S. Hammond to: Lennox Instrument Co. Philadelphia, Pennsylvania	Discuss borescope to be used in process tube	G. Crampton	8-14-51	8-16-51		X	
H. L. Libby to: General Engineering Lab. Knolls Atomic Power Lab. Schenectady, New York	Discuss non-destructive testing techniques and apparatus related to making inspections	R. J. Schier L. G. Gitzendanner D. E. Garr	8-6-51	8-17-51	X		
PLANT ENGINEERING DESIGN AND CONSTRUCTION							
I. Visitors to this Works							
A. F. Wells General Engineering Lab. Schenectady, New York	Installation of mass spectrometer	S. F. Schure H. P. Shaw	8-13-51	8-30-51	X		300 3706 100-B 108-B

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
MANUFACTURING MANAGEMENT							
I. Visits to other Installations							
C. N. Gross to: General Engineering Lab. Schenectady, New York	Consultation on HW matters and inspection of RM Line	L. L. Ferguson	8-14-51	8-16-51	X		
C. N. Gross to: Knolls Atomic Power Lab. Schenectady, New York	Consultation onHW matters and inspection of facility	B. R. Prentice	8-14-51	8-16-51	X		
MANAGEMENT							
I. Visits to other Installations							
W. I. Patnode to: Knolls Atomic Power Lab. Schenectady, New York	Consultation on liaison work for Hanford Assistance Program	K. H. Kingdon	8-27-51	8-28-51	X		
II. Visitors to this Works							
W. K. Davis Cal. Research & Deve. Company Berkeley, California	Discuss personnel problems	D. W. McLenegan	8-20-51	8-21-51	X		
J. B. Cravath Cal. Research & Deve. Company Berkeley, California	Discuss personnel problems	D. W. McLenegan	8-20-51	8-21-51	X		
I. Visits (cont'd)							
T. G. Marshall to: Knolls Atomic Power Lab. Schenectady, New York	Discuss engineering problems	W. W. Kuyper W. H. Milton K. H. Kingdon D. E. Irwin	9-4-51	9-5-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Class.	Restricted Data Unclass	Restricted Data Areas
MANUFACTURING-METAL PREPARATION SECTION							
I. Visits to other Installations							
E.W. O'Rorke to: General Engineering Lab. Knolls Atomic Power Lab. Schenectady, New York	Discuss non-Destructive testing techniques and apparatus and related inspections	P.J. Schier L.G. Gitzendanner D.E. Garr	8-15-51	8-17-51	X		
E. W. O'Rorke To: Mass. Inst. of Technology Cambridge, Massachusetts	Investigation of inspection equipment	L. Kaufman	8-20-51	8-21-51	X		
E. W. O'Rorke To: Battelle Memorial Inst. Columbus, Ohio	Investigation of inspection equipment	H.R. Nelson	8-21-51	8-22-51	X		
E. W. O'Rorke To: Argonne National Lab. Chicago, Illinois	Investigation of inspection equipment	F. Foote	8-22-51	8-23-51	X		
MANUFACTURING REACTOR SECTION							
I. Visitors to this Works							
A.R. Whittlesey Travellers Insurance Company Seattle, Washington	Inspect boiler houses	A. Frow	8-2-51	8-3-51		X	100-B XXX 100-D XXX 100-F XXX 200-E XXX 200-W XXX 101 300 XXX 700
UTILITIES AND GENERAL SERVICES-Plant Security & Services							
I. Visitors to this Work							
R.E. White General Electric Company Schenectady, New York	Check on security	T. B. Farley	8-1-51	8-2-51	X		Redox

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
UTILITIES AND GENERAL SERVICES-Purchasing and Stores							
I. Visitors to this Works							
G. Hixon Inland Motor Freight Kennewick, Washington	Deliver material on order HW 83035	H. H. Hart	8-2-51	8-2-51		X	100-B 185
B. V. Brown Inland Motor Freight Kennewick, Washington	Deliver material on order HW 83035	H. H. Hart	8-2-51	8-2-51		X	100-B 185
N. Schmitt Inland Motor Freight Kennewick, Washington	Deliver material on order HW 83035	H. H. Hart	8-2-51	8-2-51		X	100-h 190
F. Colbert United Truck Lines Kennewick, Washington	Deliver material on order HW 83028	H. H. Hart	8-2-51	8-2-51		X	200-W 275
R. Thorne United Truck Lines Kennewick, Washington	Deliver material on order HW 83028	H. H. Hart	8-2-51	8-2-51		X	200-W 275
D. A. Westermeyer Consolidated Freightways Kennewick, Washington	Deliver material on order HW 83029-M	H.H. Hart	8-3-51	8-3-51		X	100-F 105 X 100-D 105 X 100-B 105
G. Hixon Inland Motor Freight Kennewick, Washington	Deliver material on order HW 83029-M	H. H. Hart	8-3-51	8-3-51		X	100-H 190
	Deliver material on order HW 88381	H. H. Hart	8-8-51	8-8-51		X	100-D 105
D. A. Westermeyer Consolidated Freightways Kennewick, Washington	Deliver material on order HW 83029	H. H. Hart	8-10-51	8-10-51		X	100-B 105 100-D 105 100-F 105
	Deliver material on order HW 86095-M	H. H. Hart				X	300 303-J

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
L. White Richland Transfer Richland, Washington	Deliver material on order HWC 15312	H. H. Hart	8-17-51	8-17-51		X	100-B 108
D. A. Westermeyer Consolidated Freightways Kennewick, Washington	Deliver material on order HW 83029-M	H. H. Hart	8-22-51	8-22-51		X	100-D 105
	Deliver material on order HW 83029-M	H. H. Hart	8-23-51	8-23-51		X	100-D 105
	Deliver material on order HW 83029-M	H. H. Hart	8-24-51	8-24-51		X	100-B 105 100-F 105
	Deliver material on order HW 83029-M	H. H. Hart	8-30-51	8-30-51		X	100-F 105 100-B 105
S. Jackson Consolidated Freighways Kennewick, Washington	Deliver material on order HW 83029-M	H. H. Hart	8-28-51	8-28-51		X	100-D 105
O. P. Martell Northern Pacific Railroad Pasco, Washington	Inspect damaged cars for equipment received	D. H. Knapp	9-6-51	9-6-51		X	100-B XXX
S. W. Larson Union Pacific Railroad Kennewick, Washington	Inspect cars of damaged equipment received	J. A. McSwigan	8-30-51	8-30-51		X	White Bluff
R. A. Carroll Union Pacific Railroad Kennewick, Washington	Inspect cars of damaged equipment received	J. A. McSwigan	8-30-51	8-30-51		X	White Bluff
N . Wallace Allied Chem. & Dye Corp. Kennewick, Washington	Inspect site for equipment delivery	W. M. Hunt	9-7-51	9-7-51		X	Redox 200-W XXX
G. W. Ogden Baird Associates, Inc. Cambridge, Massachusetts	Supervise installation of infra red gas analyzer purchased on order HW 70075-M	G. J. Hayward	8-27-51	9-4-51		X	100-D 1704 300 3706

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
L. Penberthy Penberthy Instrument Company Seattle, Washington	Discuss drawings	C. Frantz	9-4-51	9-4-51		X	300 3706
C. V. Gardner Republic Steel Corporation Seattle, Washington	Inspect defective steel pipe	- -	8-14-51	8-14-51		X	White Bluffs
R. H. Sommers Hevi-Duty Electric Co. Milwaukee, Wisconsin	Supervise installation of furnaces	- -	8-27-51	8-31-51		X	MJ-5 Whse.
R. D. Wilson Vernon Tool Co Alhambra, California	Supervise installation of pumping units	- -	8-14-51	8-16-51		X	White Bluffs
II. Visitors to other Installations							
R. R. Wall to: Electric Machinery Minneapolis, Minnesota	Expedite order	R. K. Hemphill	7-31-51 8-25-51	8-1-51 8-25-51		X	
R. R. Wall to: American Blower Corp. Detroit, Michigan	Expedite order	Mr. Raglund	8-2-51	8-5-51		X	
R. R. Wall to: E. W. Bliss Company Canton, Ohio	Inspect order	Mr. Moss	8-4-51 8-12-51	8-8-51 8-24-51		X	
R. R. Wall to: Masonite Corporation Laurel, Mississippi	Inspect order	R. Warren	8-8-51	8-12-51		X	
J. C. Hamilton to: Foster-Wheeler Corp Carteret, New Jersey	Expedite order	Mr. Voght	8-28-51	8-29-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
J. C. Hamilton to; Newport News Shipbuilding Newport News, Virginia	Settlement of claim on HW orders	Mr. Dean	8-30-51	8-30-51		X	
G. Q. Mathews to: U.S. Atomic Energy Comm. Washington, D. C.	Obtain directives for steel and aluminum	F. Warren	8-6-51	8-8-51		X	
H. A. Hauser to: Columbia Steel Seattle, Washington	Procurement of bulk steel C-431-B	Mr. Winship	8-20-51	8-20-51		X	
H. A. Hauser to: Foster-Wheeler Corp. Cartaret, New Jersey	Settle cost of additional work	Mr. Wenz	8-28-51	8-29-51		X	
H. A. Hauser to: Newport News Shipbuilding Newport News, Virginia	Settle cost of additional work	Mr. Fred Horn	8-30-51	8-30-51		X	
W. M. Hunt to: Foxboro Company Foxboro, Massachusetts	Inspect material on order HWC-10549-AJ	J. G. Dobson	7-30-51	8-2-51		X	
W. M. Hunt to: American Agricultural Co. New York, New York	Ammonium silice fluoride	H. A. Stoll	8-3-51	8-3-51		X	
W. M. Hunt Allied Chem. & Dye Corp. New York, New York	Various essential materials	L. J. Wolfe	8-3-51	8-3-51		X	
W. M. Hunt to: E. I. du Pont de Nemours & Co. Wilmington, Delaware	Nitric acid	H. R. Woodall	8-6-51	8-6-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
W. M. Hunt to: American Smelting & Refining Co. New York, New York	Bismuth copper	D. K. Wright	8-6-51	8-6-51		X	
W. M. Hunt to: International Nickel Co. New York, New York	Liquid nickel carbonyl	C. L. Howarth	8-6-51	8-6-51		X	
UTILITIES AND GENERAL SERVICES-TRANSPORTATION							
I. Visitors to this Works							
J. W. Guimond Modern Machinery Co Spokane, Washington	Inspect equipment	M. F. Rice	8-20-51	8-31-51		X	White Bluffs
F. D. Robinson Modern Machinery Co. Spokane, Washington	Inspect equipment	M. F. Rice	8-20-51	8-31-51		X	White Bluffs
ENGINEERING DEPARTMENT - Technical Section							
I. Visitors to this Works							
H. H. Barschall Los Alamos Scientific Lab. Los Alamos, New Mexico	Consultation on cross-section measurements	P. F. Gast	8-1-51	8-2-51	X		300 305 200-W 222-S Redox 101 100-H 105 100-D 105, 105-DR
A. Glassner Argonne National Laboratory Chicago, Illinois	P-10 consultation	E. A. Eschbach J. C. L. Chatten W. L. Schalliol	8-1-51	8-5-51	X		700, 300 XXX 100-B 105, 108

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
C. V. Moore Knolls Atomic Power Lab. Schenectady, New York	Observe fuel rod irradiation drop test and consult on in-pile creep	R. E. Nather J. B. Lambert H. L. Henry	8-1-51	8-4-51	X		300 303, 700 100-D 105 100-H 105 100-F 105 100-B 105
J. W. Dickinson Linde Air Products Company Berkeley, California	Demonstrate welding equipment	E. A. Smith	8-8-51	8-10-51		X	300 XXX
P. M. Engle, Jr. Mound Laboratory Miamisburg, Ohio	Discuss canning and irradiation matters	R. E. Nather	8-23-51	8-24-51	X		700, 300 XXX 101 100-D 105 100-H 105
H. Poritsky General Engineering Lab. Schenectady, New York	Consultation on thermal stress problem	W. K. Woods	8-20-51	8-24-51	X		100-B 105 100-D 105 100-F 105
R. G. Chalker North American Aviation Co. Downey, California	Discuss in-pile experiment	J. B. Lambert R. E. Nather H. L. Henry	8-21-51	8-23-51	X		300, 700 101 100-B 105 100-D 105 100-H 105
G. M. Inman North American Aviation Co. Downey, California	Discuss in-pile experiment	J. B. Lambert R. E. Nather H. L. Henry	8-21-51	8-23-51	X		300, 700 101 100-B 105 100-D 105 100-H 105
G. N. Steele North American Aviation Co. Downey, California	Discuss in-pile experiment	J. B. Lambert R. E. Nather H. L. Henry	8-21-51	8-23-51	X		300, 700 101 100-B 105 100-D 105 100-H 105

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
A. M. Stelle North American Aviation Co. Downey, California	Discuss in-pile experiment	J. B. Lambert R. E. Nather H. L. Henry	8-21-51	8-23-51	X		300, 700 101 100-B 105 100-D 105
A. ". Batza General Engineering Lab. Schenectady, New York	P-10 consultation	G. E. McCullough H. F. Zuhr	8-23-51	8-24-51	X		100-H 105 300 3706 100-B 105,108
C. W. George General Engineering Lab. Schenectady, New York	P-10 consultation	G. E. MCCullough H. F. Zuhr	8-23-51	8-24-51	X		300 3706 100-B 105,108
D. H. Marquis General Engineering Lab. Schenectady, New York	P-10 consultation	G. E. McCullough H. F. Zuhr	8-23-51	8-24-51	X		300 3706 100-B 108,105
J. H. Haynor Atomic Energy Commission Washington, D. C.	Consultation on dissolver off-gasses	B. Weidenbaum A. G. Blasewitz	8-2-51	8-2-51	X		200-W 2704-Z
W. Bain Kellex Corporation New York, New York	Consultation on dissolver gasses	B. Weidenbaum A. G. Blasewitz	8-2-51	8-2-51	X		200-W 2704-Z
A. Soffol Kellex Corporation New York, New York	Consultation on dissolver gasses	B. Weibenbaum A. G. Blasewitz	8-2-51	8-2-51	X		200-W 2704-Z
S. Lawroski Argonne National Laboratory Chicago, Illinois	Discuss and review separations process and degasification work	R. B. Richards	8-20-51	8-22-51	X		300, 700 Redox, 277-S 221-U,224-U 200-W, 234, 235,241-U 100-B 108
E. L. Zebroski Knolls Atomic Power Lab.	Inspection of Redox Plant	R. B. Richards F. W. Woodfield	8-20-51	8-23-51	X		700, 300 Redox, 277-S 200-W 231 221-U, 224-U

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
J. F. Flagg Knolls Atomic Power Lab. Schenectady, New York	Inspection of Redox Plant	R. B. Richards F. W. Woodfield O. F. Hill	8-20-51	8-23-51	X		700, 300 Redox, 277-S 200-W 231 221-U, 224-U
A. F. Wells General Engineering Lab. Schenectady, New York	Install mass spectrometer	R. J. Brouns G. J. Alkire	8-1-51	8-29-51	X		300 3706 100-B 108
B. Englehardt Perkin Elmer Corporation Norwalk, Connecticut	Install infra-red spectrometer	R. H. Moore	8-1-51	8-4-51		X	300 3706
N. Wallace Allied Chem. & Dye Corp. Kennewick, Washington	Review analytical methods	E. W. Rebol	8-28-51	8-28-51		X	300 3706
E. L. Zebroski Knolls Atomic Power Lab. Schenectady, New York	Review analytical research methods	F. W. Albaugh A. H. Bushey D. F. Shepard	8-22-51	8-22-51	X		300 3706
P. Kofmehl Oak Ridge National Lab. Oak Ridge, Tennessee	Investigate remote control handling equipment of all kinds	J. F. Gifford	8-28-51	8-31-51	X		300 3706 101 100-H 105 221-U
F. W. Wuest Oak Ridge National Lab. Oak Ridge, Tennessee	Investigate remote control handling equipment of all kinds	J. F. Gifford	8-28-51	8-31-51	X		300 3706 101 100-H 105 221-U

II. Visits to other Installations

J. A. Ayres to: Knolls Atomic Power Lab. Schenectady, New York	P-10 discussions	D. H. Ahmann	8-27-51	8-31-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
J. H. Bach to: Westinghouse Atomic Power Div. Bettis Field, Pennsylvania	Metallurgical consultation on zirconium program	W. A. Johnson	9-4-51	9-7-51	X		
R. H. Beaton to: E. I. du Pont de Nemours Wilmington, Delaware	Process design and organization meetings	R. P. Genereaux G. P. Church	8-8-51	8-11-51	X		
L. R. Boyd to: Oak Ridge National Lab. Oak Ridge, Tennessee	Discuss ORNM-106	J. H. Gillotte	8-1-51	8-4-51	X		
L. R. Boyd to: Knolls Atomic Power Lab. Schenectady, New York	Discussion concerning Hanford irradiation	C. E. Weber	8-6-51	8-18-51	X		
L. P. Bupp to: North American Aviation Downey, California	Technical discussion on graphite	C. Starr	8-10-51	8-11-51	X		
P. A. Carlson to: Knolls Atomic Power Lab. Schenectady, New York	P-10 consultation	C. Mannal	8-25-51	9-3-51	X		
P. A. Carlson to: General Engineering Lab. Schenectady, New York	P-10 consultation	H. W. Bousman	8-25-51	9-3-51	X		
P. F. Gast to: Argonne National Lab. Chicago, Illinois	Critical mass meeting	R. C. Hageman	8-25-51	8-29-51	X		
O. H. Greager to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Attend meeting on specification	M. F. Roy	8-7-51	8-9-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
O. H. Greager to: North American Aviation Downey, California	Technical discussion on graphite	C. Starr	8-10-51	8-11-51	X		
W. M. Harty to: Knolls Atomic Power Lab. Schenectady, New York	P-10 consultation	C. Mannal	8-25-51	8-30-51	X		
W. M. Harty to: General Engineering Lab. Schenectady, New York	P-10 consultation	H. W. Bousman	8-25-51	8-30-51	X		
W. T. Kattner to: U.S. Atomic Energy Comm. New York, New York	Discuss rolling program	W. Kelly F. M. Belmore	8-24-51	8-24-51	X		
W. T. Kattner to: Argonne National Lab. Chicago, Illinois	Discuss metal fabrication	F. Foote	8-27-51	8-29-51	X		
F. E. Kruesi to: Argonne National Lab. Chicago, Illinois	Critical mass meeting	R. C. Hageman	8-26-51	8-29-51	X		
R. H. Leyse to: Knolls Atomic Power Lab. Schenectady, New York	Follow C-410 assembly fuel testing and discuss in-pile tests	E. L. Grundige R. Cumerow	7-14-51	9-17-51	X		
R. H. Leyse to: General Engineering Lab. Schenectady, New York	Follow C-410 assembly fuel testing and discuss in-pile tests	C. D. Carroll	7-14-51	9-17-51	X		
J. F. Music to: North American Aviation Downey, California	Technical discussion on graphite	C. Starr	8-10-51	8-11-51	X		
W. J. Ozeroff to: Argonne National Lab. Chicago, Illinois	Critical mass meeting	R. C. Hageman	8-26-51	8-29-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
P. H. Reinker to: North American Aviation Downey, California	Technical discussion on graphite	C. Starr	8-10-51	8-11-51	X		
H. R. Schmidt to: Knolls Atomic Power Lab. Schenectady, New York	Discuss analytical methods	J. F. Flagg	8-9-51	8-11-51	X		
J. F. Sullivan to: Knolls Atomic Power Lab. Schenectady, New York	P-10 consultation	J. Marsden C. Mannal	8-1-51	8-4-51	X		
J. F. Sullivan to: General Engineering Lab. Schenectady, New York	P-10 consultation	D. H. Marquis	8-1-51	8-4-51	X		
L. D. Turner to: Oak Ridge National Lab. Oak Ridge, Tennessee	Metallurgical inspection of "J" pieces	E. J. Boyle	8-16-51	8-17-51	X		
R. Ward to: Knolls Atomic Power Lab. Schenectady, New York	Hanford Assistance problems	J. P. Howe	8-20-51	8-24-51	X		
B. Weidenbaum to: Museum of Science & Ind. Chicago, Illinois	Critical mass safety review meeting	- -	8-27-51	8-28-51	X		
J. B. Work to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Attend meeting on specifications and visit DP West	M. F. Roy	8-7-51	8-10-51	X		
H. F. Zuhr to: Knolls Atomic Power Lab. Schenectady, New York	P-10 consultation	J. Marsden C. Mannal	8-1-51	8-4-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
H. F. Zuhr to: General Engineering Lab. Schenectady, New York	P-10 consultation	D. H. Marquis	8-1-51	8-4-51	X		
J. C. Wood to: Pacific Coast Eng. Co. Alameda, California	Check on final mock-up of "postum" charging machine	- -	8-6-51	8-6-51		X	

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PURCHASING AND STORES SECTION
UTILITIES AND GENERAL SERVICES DEPARTMENT
SUMMARY - AUGUST 1951

Personnel of the Purchasing and Stores Section showed a net decrease of four as noted below:

TOTAL PERSONNEL

	7-31-51	8-31-51	Net Change
Exempt	88	85	-3
Non-Exempt	322	321	-1
	410	406*	-4

*Not included on our rolls: Manager and 1 Trainee.

The National Production Authority directed Bethlehem Steel, Columbia Steel, and Kaiser Steel to produce the "B" Block steel requirements for September and October.

The Atomic Energy Commission formally rejected General Electric's recommendation for settlement of claims made by Newport News Shipbuilding and Dry Dock Company regarding vessels produced for the Redox program. A later agreement was reached with the vendor and upon receipt of written confirmation, the claims will again be presented to the Atomic Energy Commission.

Cancellation by the Atomic Energy Commission of Part "B" of Project C-361 has, to date, resulted in cancellation charges of $1,311.10 with possible charges still due on three additional orders.

The requisition for the 105-C Reactor Tool Dolly was cancelled. Accordingly, negotiations with the Schenectady office of the Nucleonics Division for its procurement has been terminated.

New contracts have been negotiated for the following essential materials:

1. Ferrous Ammonium Sulphate - General Chemical Division, Allied Chemical & Dye Corporation
2. Sulfamic Acid - Van Waters & Rogers, Inc.

The Aluminum Nitrate plant at Hedges, Washington, is in production and reserve stock of material is being stored in the Redox tanks.

The Superintendent of the Inspection-Expediting Unit, with representatives of the Purchasing Unit, Engineering Section, A.E.C. and of A.E.C. in Washington, made a trip to the Foster Wheeler Corporation on the East coast. The main purpose of the trip was to improve delivery of the order for stainless steel vessels for the TBP Program. It is believed that the trip will result in a two to four week improvement in deliver.

Although a large number of items for TBP remain on the critical list, the number which will effect actual start-up are few. Every effort is being made to bring delivery dates of these items into line.

The assembly of "B" Blocks is under way at the Bremerton Navy Yard, and it appears that full operation will be in effect September 7 on a one-shift basis, with a schedule of three shifts by September 15.

PURCHASING AND STORES SECTION
SUMMARY

A suggestion originated by a technical inspector and presented to design regarding re-use of shipping containers for the Reactor 3X System was accepted and resulted in a direct saving of $3,600.00.

Negotiations with the Northern Pacific Railway resulted in their agreement to establish free pickup and delivery service on less than carload freight consigned to or from Richland effective August 9, 1951. This service will effect considerable savings to both Hanford Works and the community.

Representatives of the Priorities and Allocations group and the A.E.C. visited N.P.A. offices in Washington, D.C. Three directives for steel needed for Project C-431 and two directives for aluminum ingots were obtained.

2731 Purchase requisitions were processed through screening. 1293 items were furnished from plant sources. 64 items of stainless steel were furnished for fabricators from plant inventories.

During the month seven formal excess lists totaling $368,007.37 were submitted to the Commission for disposition.

Complete plans and specifications of the proposed Stores Warehouse were received from the Commission for review.

PURCHASING AND STORES SECTION
STAFF
AUGUST 1951

Effective August 27, 1951, the general clerical personnel, formerly included as part of the Construction Procurement Unit, were reassigned as part of the Office Services, Priorities and Allocations, and Inventory-Audit Unit reporting to the Administrative Assistant.

Catalogs for Spare Parts, Caption 904, have been completed. Distribution is made on request by Section Superintendents.

Representatives of Priorities and Allocations and of the Commission visited the N.P.A. offices in Washington, D.C. This visit resulted in three directives for steel and two for aluminum ingots.

At the request of the Commission, letters were written to 36 suppliers of electronics items informing them that specially designed items were changed from "B" to "A" products. Instructions for obtaining controlled materials for manufacture were included.

Supplemental allotments for aluminum and copper base alloys have been received.

Eleven requests for N.P.A. directives and eight requests for vendor assistance were received. Seven N.P.A. directives, one DO-E-3 rating for privately owned facilities, and one melt schedule approval were received.

PERSONNEL

	As of 7-31-51			As of 8-31-51			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
Staff	5	3	8	3	3	6	-2	0	-2
Priorities & Allocations	1	14	15	1	14	15	0	0	0
Inventory-Audits	2	11	13	2	10	12	0	-1	-1
Office Services	1	31	32	1	28	29	0	-3	-3
	9	59	68	7	55	62	-2	-4	-6

SAFETY AND SECURITY

Safety and Secutiry Meetings Scheduled	1
Number of employees attending	53

STATISTICS

The following schedule reflects August allotments received and allotments used or extended to suppliers and subcontractors during August. Top figures under each item number indicate allotment received from the Atomic Energy Commission. Lower figures under each item number reflect material allotment used or allotted for the quarter indicated:

1219394

PURCHASING AND STORES SECTION
STAFF

STATISTICS (Cont.)

OPERATIONS

Controlled Material	Unit Measure	3rd Quarter 1951	4th Quarter 1951	1st Quarter 1952	2nd Quarter 1952
Carbon Steel (Including Wrought Iron)	Short Tons	33.00 27.21	66.00 16.44	78.00 7.68	82.00 0
Alloy Steel (Excluding Stainless Steel)	Short Tons	2.00 1.10	1.00 .50	1.00 .50	1.00 0
Stainless Steel	Lbs.	14,800 8,217	30,000 5,004	30,000 963	30,000 0
Copper and Copper Base Alloy Brass Mill Products	Lbs.	10,000 9,059	10,000 2,364	10,000 163	5,000 0
Copper Wire & Mill Products	Lbs.	9,000 8,125	6,000 5,064	6,000 6	4,000 0
Copper; Copper Base Alloy; Foundry Products; Powder	Lbs.	500 0	4,000 0	2,500 0	1,200 0
Aluminum	Lbs.	251,000 226,667	160,000 121,959	114,000 90,000	114,000 90,000

CONSTRUCTION

Carbon Steel (Including (Wrought Iron)	Short Tons	7,000.00 6,037.22	12,000.00 10,411.77	2,000.00 123.63	800.00 25.00
Alloy Steel (Excluding Stainless Steel)	Short Tons	25.00 13.04	32.00 6.05	12.00 1.00	12.00 0
Stainless Steel	Lbs.	633,200 603,552	289,000 200,953	169,000 79,152	199,000 0
Copper & Copper Base Alloy Brass Mill Products	Lbs.	19,000 12,112	35,000 6,250	13,000 12,250	8,000 0
Copper Wire and Mill Products	Lbs.	70,000 58,983	68,000 57,193	31,000 4,499	8,000 0
Copper; Copper Base Alloy; Foundry Products; Powder	Lbs.	4,500 2,925	3,000 1,560	2,000 100	1,200 0
Aluminum	Lbs.	38,000 37,519	83,000 80,185	26,000 2,160	12,000 0

STATISTICS

	G	D	TOTAL
Requisitions on hand 8-1-51 (includes 77 assigned to Gov't)	539	337	876
Requisitions assigned during August	1785	929	2714
Requisitions placed during August	1633	886	2519
Requisitions on hand 8-31-51 (includes 158 assigned to Gov't)	691	380	1071

PURCHASING AND STORES SECTION
STAFF

STATISTICS (Cont.)

		NUMBER	VALUE	
H. W. Orders Placed		1193	$705,699.19	
H. W. Alterations Placed		119	3,110.19	CR.
	Total	1312	$702,589.00	
H. W. C. Orders Placed		687	$1,046,037.64	
H. W. C. Alterations Placed		147	41,671.78	
	Total	834	$1,087,709.42	
A. E. C. Orders Placed		100	$ 96,153.64	
D. C. Orders Placed		47	128,285.38	
Gov't. Transfers				
OR----------0				
ORC----------0				
Return Orders Issued		131		

PURCHASING AND STORES SECTION
CONSTRUCTION PROCUREMENT UNIT
AUGUST 1951

The National Production Authority directed Bethlehem Steel, Columbia Steel and Kaiser Steel Corporations to produce the "B" block steel requirements for September and October. These directives became necessary after the Bethlehem Steel Corporation had returned our order for the September and October portion of the "B" block steel requirements.

The Atomic Energy Commission formally rejected General Electric's recommendation for settlement of claims made by Newport News Shipbuilding & Drydock Company with respect to vessels produced for the Redox program. The Atomic Energy Commission's rejection of our recommendation resulted in the arrangement for a meeting with officals of the Newport News Shipbuilding & Drydock Company in Newport News, Virginia, on August 30. An agreement was reached at this meeting on the extra charges which would be acceptable, and upon receipt of written confirmation from Newport News Shipbuilding & Drydock Company, their claims will again be presented to the Atomic Energy Commission for approval.

Formal request for the cancellation of eight purchase orders and six open requisitions was received as a result of the cancellation of Part "B" or project C-361, by the AEC. Cancellation charges of $1,311.10 have been paid on one cancelled order to date with possible charges still due on three additional orders. The balance of the orders and requisitions were cancelled without charge.

Negotiations with Southwest Welding & Manufacturing Company on orders for Redox vessels have been completed except for establishing credits General Electric will receive for material furnished to the vendor on these orders.

The order with Electric Steel Foundry Company for the development of cast stainless steel decomposition pots for project C-361 is now complete. Four useable pots were produced on this development order and the special alloy developed has been accepted and will be used in manufacturing the pots on the production order.

The requisition received from the Reactor Unit for the 105-C Reactor Tool Dolly was cancelled and negotiations with the Schenectady office of the Nucleonics Division for its procurement has been terminated.

Five man days were required in preparing estimates of the time required for delivery of material and equipment for proposed new construction at Hanford Works.

1219397

PURCHASING AND STORES SECTION
CONSTRUCTION PROCUREMENT UNIT

PERSONNEL

As of 7-31-51			As of 8-31-51			Net Change		
Ex.	Non-Ex	Total	Ex.	Non-Ex.	Total	Ex.	Non. Ex.	Total
10	12	22	9	11	20	-1	-1	-2

Note: Clerical has been transferred to the staff group.

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	1
Number of employees attending	18
Minor Injuries	1

September 10, 1951

PURCHASING AND STORES SECTION

OPERATIONS PROCUREMENT UNIT

AUGUST - 1951

New contracts have been negotiated for essential materials as follows:

1. Ferrous Ammonium Sulphate - General Chemical Division, Allied Chemical & Dye Corporation
2. Sulfamic Acid - Van Waters & Rogers, Inc. (Agents for E. I. duPont deNemours, Inc.)

Bids have been requested for our requirements for the following essential materials for the next 12 months:

1. Lime
2. Liquid Chlorine
3. Ferric Sulphate

New essential materials for Redox and TBP are being purchased and scheduled in as rapidly as firm information is available on the completion dates for the various storage facilities. The Aluminum Nitrate plant at Hedges, Washington is in production and reserve stock of this material is being built up in the Redox tanks.

A test is in progress to determine the possibility of replacing Ferric Sulphate with Aluminum Sulphate for water treatment at Hanford Works. If this proves successful a considerable saving will result as Aluminum Sulphate is much cheaper than Ferric Sulphate.

Requisitions for maintenance and other operating supplies remained at a low numerical level during the early part of the month. This was apparently due to the reorganization of the Manufacturing Divisions. The level has been climbing since the middle of the month and is approaching a normal buying load.

It is anticipated that our normal load of approximately 1,000 open requisitions will be reached by the 15th of September.

PERSONNEL	7-31-51	8-31-51	Net Change
EXEMPT	7	8	+ 1
NON-EXEMPT	17	16	- 1
	24	24	0

SAFETY & SECURITY

24

1219399

PURCHASING AND STORES SECTION
INSPECTION-EXPEDITING UNIT
AUGUST 1951

GENERAL - The Superintendent of Inspection-Expediting completed a visit to the Foster-Wheeler Corporation on the East Coast along with members from the Purchasing Unit, Engineering Section, A.E.C. - Richland, and A.E.C. - Washington. The main purpose was to improve delivery of the order for stainless steel vessels for the TBP Program. Although definite results of this trip are not known, it is believed that a two to four weeks' improvement in delivery will be made. The A.E.C. Representative from Washington agreed that delivery would be expedited by the issuance of a NPA Directive. On 7/21 a request had been forwarded to the A.E.C. for the issuance of a directive.

Although a large number of items for TBP still remain on the critical list, the number which will affect actual start-up are few. Every effort is being expended to bring the delivery dates of these items in line with start-up requirements.

It is believed that the work load of the Inspection-Expediting Unit has reached its peak insofar as present active projects are concerned.

A change of procedure in advancing expense funds to inspectors and expeditors has been put into effect. This procedure results in a better control in the amount of unaccounted funds in the hands of inspectors and expeditors.

INSPECTION UNIT - A technical inspector from the Richland Office spent two weeks in the east and southeast areas during the past month. This assignment was necessary to coordinate and furnish instructions to inspectors on the major components for Project C-431-A and B. His report indicates that satisfactory performance can be expected from those fabricators and suppliers visited.

The assembly of B Blocks is now underway at the Bremerton Navy Yard, and it appears full scale operation will be in effect September 7th on a one-shift basis with assembling and machining on three shifts underway by September 15th. Probable cause of delay on this job is the shortage of one milling machine. This fact has been previously brought to the attention of the interested unit. Additional inspection personnel are being assigned to this job.

Supervisor - Inspection, personally directed an extensive program of testing through the Project Metallurgical Staff on a quantity of stainless steel pipe which was reported unusable for the TBP Program. The ultimate result of this investigation was that 90% of the pipe was satisfactory and usable, and the 10% rejected will be replaced by the supplier at no cost. If all of the pipe had been rejected a very serious delay in the construction program would have resulted.

A number of reassignments in inspectors' locations is being made. These changes are necessary because of the completion of certain Separations fabrication orders and the beginning of Reactor Units fabrication orders. The transfer of an engineer from Pile Technology to the Inspection Unit was accomplished last month and assigned to this Project.

A suggestion originated by a technical inspector and presented to the Design Division regarding re-use of shipping containers for the Reactor 3X System was accepted and put into effect resulting in a direct saving of $3600.00.

PURCHASING AND STORES SECTION
INSPECTION-EXPEDITING UNIT

Personnel:

	7-31-51	8-31-51	Net Change
Exempt	29½	30½	+1
Non-Exempt	25	24	-1
TOTAL	54½	54½	0

Statistics:

Number of open orders requiring inspection	532
Number of open orders being inspected	423
Number of new orders requiring inspection	60
Number of open requisitions requiring inspection	114
Number of completed orders (cancelled, waived)	100
Number of open orders requiring inspection - sub-vendor	27
Number of open orders being inspected - sub-vendor	21
Number of completed orders - sub-vendor	0

EXPEDITING UNIT - During the past month operation purchase orders were segregated from construction purchase orders, and reassignments to expeditors accomplished in order to assure that both operating and construction orders would have the same expeditious handling.

It was necessary to assign one expeditor in the office to correlate material status information being supplied to the Bremerton Navy Yard for the B Block Program. This will result in more efficient handling of information to and from the Bremerton Naval Shipyard. This expeditor will also make a visit to the Naval Shipyard in order that he become familiar with personnel and the operation on this large order.

It was necessary to assign one field expeditor to the Johnston Pump Company on a full-time basis. This vendor appears to be one of the major "bottlenecks" for the TBP Program, and it is believed that worthwhile results will be received from this assignment.

A great amount of time is being spent arranging for special shipments of materials for the C-431 Project in order that we do not delay early concrete pours. To date we have been able to prevent any serious delays in this phase of the work.

A major part of the work load of this Unit still is the sub-vendor orders, which must be expedited into the vendors' plants in order that delivery schedules can be met. In many instances the sub-vendor orders are far more critical and require more expediting time than the vendor phase of an order.

Satisfactory delivery promises have been obtained for the limiting materials for all of the shielding phase of the C-431-A Project. Since practically all of these orders are for critical and controlled materials, it is necessary that close follow-up be exercised to prevent any possible slippage in these promise dates.

PURCHASING AND STORES SECTION
INSPECTION-EXPEDITING UNIT

Personnel:

	7-31-51	8-31-51	Net Change
Exempt	15½	14½	-1
Non-Exempt	14	12	-2
TOTAL	29½	26½	-3

Statistics:

HW Orders expedited in August (active)	531
HW orders expedited in August (routine)	1018
HWC orders expedited in August	1433
Sub-vendor orders expedited in August	2250*
HW orders completed in August	1402
HWC orders completed in August	784

*Estimated

1219402

PURCHASING AND STORES SECTION
STORES UNIT
AUGUST, 1951

GENERAL

2731 purchase requisitions were processed through screening and 1293 items were furnished from plant sources. 64 items of stainless steel not immediately available on open market were furnished to fabricators from plant inventories.

Maintenance materials and supplies disbursed from operation's inventories were valued at $277,576.64.

Materials and equipment valued at $170,674.04 from 17 captions in the 10.20 Account (Construction Held Materials) were disbursed to construction forces during the month. In addition to the foregoing, materials valued at $4,479.28 were withdrawn for use by operations' forces and materials valued at $3,171.06 were shipped as directed by the Commission. Materials declared excess from the above account totaled $19,684.61.

Materials and equipment valued at $65,810.96 were withdrawn from the 10.10 Account (Excess) for use on the Project. Of this amount, construction forces' withdrawals were valued at $36,529.91.

During the month, seven formal excess lists totaling $368,007.37 were submitted to the Commission for disposition. Excess materials and equipment valued at $51,084.85 were shipped from the Project as directed by the Commission. Scrap Sale revenue for the month amounted to $2,061.90.

36 representatives of government and private businesses were escorted through our warehouses and scrap yards for the purpose of negotiating the sale of scrap and transfer of excess property.

Two Salvage Sales have been completed during the month and two sales are now in process.

Complete plans and specifications of the Proposed New Stores Warehouse were received from the Commission for review and checking.

The program to dispose of, through excess or sale, a major portion of our surplus materials has gained momentum during the month. A decision has been made to hire additional checkers and clerical help in order to take care of the large amount of detail work required.

PURCHASING AND STORES SECTION
STORES UNIT

PERSONNEL

	As of 7-31-51			As of 8-31-51			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
Administrative	5		5	6		6	+1		+1
Construction Materials	2	30	32	1	28	29	-1	-2	-3
Operations Materials	4	112	116	4	122	126		+10	+10
Surplus, Salvage & Scrap Materials	4	46	50	3	45	48	-1	-1	-2
TOTALS	15	188	203	14	195	209	-1	+7	+6

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	7
Number of Employees Attending	198
Minor Injuries	1

STATISTICS

Construction Materials

Items in Stores Stock	45,070
Items added to stock	547
Items Completely Liquidated from Stock	2,298
Store Orders Posted (Items)	2,218
Number of Requisitions Screened - A.J.	614
Number of Items Screened - G. E.	4,797
Number of Items Furnished from Stock	930
Value of Disbursements	$178,192.62*
Inventory Valuation at Month End - Materials	5,881,650.56
Value of Materials Received	24,663.68
Value of Materials Declared Excess	19,684.61

*Includes $170,674.04 disbursed to Construction and CPFF Subcontractors
4,479.28 disbursed to Operations' forces
3,171.06 shipped at the Commission's direction

Operations Materials

Number of Items Added to Stores Stock	449
Number of Items Deleted from Stores Stock	144
Items in Stores Stock at Month End	48,553
Store Orders Posted	24,018
Number of Requisitions Screened This Month - G.E.	2,117
Number of Items Furnished from Plant Sources This Month	363
Inventory Valuation at Month End (903-All Captions, 906 & 912)	$1,505,322.56
Inventory Valuation at Month End (Spare Parts)	1,326,302.35
Inventory Valuation at Month End (Special Materials)	3,139,033.82
Inventory Valuation at Month End (Spare Equipment Held in Storage)	277,425.67
Total Value Inventory Accounts	6,248,084.40
Value of Disbursements, not including Cash Sale Items	274,819.42*

PURCHASING AND STORES SECTION
STORES UNIT

STATISTICS (Continued)

Value of Cash Sales			625.21
Value of Sales, Payroll Deduction			2,132.01
Value of Materials Declared Excess			2,675.85
Value of Materials Returned to Stores Stock for Credit			3,127.89

*Includes $62,853.96 disbursed to Construction and CPFF Subcontractors

Surplus, Salvage & Scrap Materials

Balance of Account 10.10 as of 7-31-51			$4,997,642.89
Receipts 7-31-51 to 8-31-51			
Lumber	10,494.96		
Automotive Equipment	47,954.25		
Office Furniture	1,858.82		
Material and Supplies	136,839.38		
Miscellaneous Equipment	74,978.27		
Household Furniture & Equipt.	283.53		
Machine Tools and Equipment	2,616.37		275,025.58
Adjustments - Classes and Current Market Prices			(cr) 18,080.12
			5,254,588.35
Disbursements 7-31-51 to 8-31-51			
On Project			
Lumber	7,548.28		
Machine Tools & Equipment	467.64		
Office Furniture	656.60		
Materials and Supplies	39,195.56		
Miscellaneous Equipment	17,942.88	65,810.96*	
Stores Material Transfers		1,374.64	
Off Project			
Automotive Equipment	35,509.66		
Material and Supplies	3,098.83		
Miscellaneous Equipment	4,267.82		
Office Furniture	75.20		
Machine Tools & Equipment	8,133.34		
		51,084.85	118,270.45
Balance of Account 10.10 as of 8-31-51			$5,136,317.90

*Includes Disbursements to Construction & CPFF Subcontractors - $36,529.91

Total Receipts to Date	36,006,466.29
Total Disbursements to Date	30,870,148.39

Scrap and Salvage Disbursed

Scrap Sales Completed	9	
Scrap Sales in Process	1	
Scrap Sales Revenue for Month of August		$ 2,061.90
Total Scrap Sales Revenue to Date		$72,714.04

1219405

PURCHASING AND STORES SECTION
STORES UNIT

STATISTICS (Continued)

Construction Materials	
Store Orders Filled	2,454
Items Filled for Shipping	12
Items Binned	434
Items Excessed	2,036
Operations Materials	
Receiving Reports Issued	5,251
Emergency Store Orders Filled	4
Shipments Processed (Containers & Materials)	344
Shipments Received	5,081
Store Orders Registered	25,611
Surplus, Salvage & Scrap Materials	
Store Orders Filled	554
Truckloads of Materials Shipped	27
Carloads of Material Shipped	9

CONSTRUCTION STORES

Account No.	Balance 7-31-51	Purchases	Disbursements	Balance 8-31-51
10.16-101 Cement	Cr. 116.92	283.83	19.34	147.57
10.16-102 Sand, Blasting Sand Gravel	71.50	-0-	-0-	71.50
10.16-103 Plaster, etc.	31.16	-0-	-0-	31.16
10.16-104 Lumber	22,502.52	2,432.78	678.01	24,257.29
10.16-105 Reinforced Steel	6,525.99	6,103.79	-0-	12,629.78
10.16-106 Miscellaneous	30,317.25	5,921.01	2,051.60	34,186.66
10.16-107 Plumbing	68,855.55	11,581.15	1,903.47	78,533.23
10.16-108 Electrical	97,187.68	5,173.18	Cr 695.90	103,056.76
10.16-109 Vitrified Clay Pipe	2.52	-0-	-0-	2.52
10.16-110 Paint, Glass	4,277.84	1,506.37	254.22	5,529.99
10.16-111 Welding Rod	2,440.09	1,757.30	247.90	3,949.49
10.16-112 Structural Steel	54,070.97	2,392.79	Cr 3,890.96	60,354.72
10.16-113 Concrete & Masonry Supplies	Cr 682.82	854.46	-0-	171.64
10.16-114 Thermal Insulation	45.99	-0-	-0-	45.99
10.16-115 Roofing Supplies	380.95	295.25	180.03	496.17
10.16-116 Transformers	1,606.55	175.00	118.00	1,663.55
10.16-118 Automotive	38,425.08	14,095.16	2,881.94	49,638.30
10.16-133 Small Tool Repair Parts	1,175.68	1,400.05	565.69	2,010.04
10.16-134 Clothing	8,773.26	2,863.78	4,428.35	7,208.69
Total	$335,890.84	$56,835.90	$8,741.69	$383,985.05

1219436

PURCHASING & STORES SECTION
TRAFFIC UNIT
August, 1951

GENERAL

On August 9, 1951, the Interstate Commerce Commission released its Report and Orders on Increased Freight Rates, Ex Parte No. 175 Proceedings. Briefly, freight charges are authorized to be increased as follows: within Eastern territory, 9%; within Southern and Western territories, and interterritorially between the three territories, 6%. Maximum increases are allowed on certain commodities, such as coal, which may be increased 6%, subject to a maximum of 20¢ per net ton. Since all coal for Hanford works originates at either Kemmerer, Wyoming, or Roundup, Montana, the increase in rates from these points will be limited to 20¢ per net ton.

The increases outlined above became effective August 28 on interstate traffic via rail and carloading companies and on August 30 on interstate traffic via Northwest truck lines. These increases supersede all increases which became effective April 4, 1951.

Extended negotiations with the Northern Pacific Railway resulted in their agreement to establish free Pickup and Delivery service on less than carload freight consigned to or from Richland, Washington, effective August 9, 1951. This new service will eliminate the handling of less than carload freight by trap car, project trucks or common carrier truck lines between Pasco and Richland, Washington, effecting considerable savings not only to Hanford Works but to the community as a whole.

Upon recommendations of this Unit it was agreed that shipment via common carrier truck lines would be the most feasible method to use in effecting delivery to Hanford of the B-Blocks which are being fabricated and assembled by the Puget Sound Naval Shipyard at Bremerton, Washington, for use on project C-431-B. The lowest freight rate applicable was $1.23 per cwt., which was too high when considering such factors as the volume of the movement, the method of packing, the carrier's risk of dammage or loss and potential competition if shipped by rail. On July 24, 1951, proposal was submitted to the truck lines to publish a rate of 71¢ per cwt. on this commodity, which will be described as Carbon Steel Blocks. The carriers agreed that this rate would be satisfactory and Section 22 Quotation No. 75-A was issued by the Pacific Inland Tariff Bureau, effective August 20, 1951. This results in a reduction in the freight rate of 52¢ per cwt., and will effect savings in freight charges of approximately $19,000 on this movement.

Upon advice from the Purchasing Unit that there would be a regular carload movement of Limestone from Aragonite, Utah, to Hanford Works it was necessary to request the rail lines to establish a through freight rate to Hanford and Richland, as the only rate applicable was 91¢ per cwt., which was entirely out of line in comparison with rates on the same commodity from other origins. It appeared that a rate of around 50¢ per cwt. would be fair and reasonable. The carriers finally agreed to establish a rate of 51¢ per cwt., which became effective on short notice publication on August 11, 1951. The reduction of 40¢ per cwt. will effect savings of $320 per car and estimated annual savings in freight charges of approximately $1,600.

1219407

PURCHASING & STORES SECTION
TRAFFIC UNIT
August, 1951

GENERAL (CONTINUED)

As a result of rate reductions obtained from the carriers there was a total savings in freight charges for the month of August amounting to $20,407.91. This makes a total savings from September 1, 1946, to date of $1,622,642.88.

PERSONNEL

	Total Personnel as of 7-31-51	Total Personnel as of 8-31-51	Net Change
Exempt	2	2	0
Non-Exempt	9	8	1
	11	10	-1

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	1
Meetings Held	1
Minor Injuries	0

STATISTICS

Savings Report

1. Rate reductions obtained from the Carriers:

Commodity	Origin	Savings for August	Savings 9-1-46 thru July, 1951	Total Savings 9-1-46 to date
Coal	Roundup, Mont.	$ 6,034.28		
Lime	Evans, Wash.	74.00		
Phosphoric Acid	South Gate, Cal.	482.75		
Iron Ore	Apex, Mont.	3,690.85		
Salt, Crude	Newark, Cal.	135.86		
Caustic Soda	Tacoma, Wash.	1,460.26		
Soda Ash	Trona, Cal.	202.00		
Iron & Steel	Los Angeles, Cal.	3,468.87		
Iron & Steel	San Francisco, Cal.	1,994.63		
Phosphoric Acid	Newark, Cal.	370.80		
Castings, Rough	Los Angeles, Cal.	1,250.00		
Railway Express	Various	779.78		
Hydrocarbon Gas	Various	161.49		
Truck	Various	302.34		
		$20,407.91	$1,602,234.97	$1,622,642.88
2. Freight Bill Audit		2,620.89	69,329.41	71,950.30
3. Loss & Damage & Overcharge Claims		351.21	107,717.28	108,068.49
4. Ticket Refund Claims		1,267.18	16,722.00	17,989.18
5. Household Goods Claims		74.84	15,471.41	15,546.25
		$24,722.03	$1,811,475.07	$1,836,197.10

1219400

PURCHASING & STORES SECTION
TRAFFIC UNIT
August, 1951

STATISTICS (CONTINUED)

Work Volume Report

Reservations Made	Rail	102	
	Air	182	
	Hotel	136	
Expense Accounts Checked		171	
Household Goods & Automobiles		Movements Arranged Inbound	2
		Movements Arranged Outbound	5
		Insurance Riders Issued	6
		Furniture Repair Orders	3
		Claims Filed	1
		Claims Collected - Number	4
		Claims Collected - Amount	$74.84
Ticket Refund Claims		Filed	38
		Collected - Number	34
		Collected - Amount	$1,267.18
Freight Claims		Filed	11
		Collected - Number	11
		Collected - Amount	$351.21
		Over & Shorts Processed	11
		Damage Reports Processed	11
Freight Bill Audit Savings			$2,620.89
Freight Shipments Traced			148
Quotations		Freight Rates	223
		Routes	228
Bills Approved		Air Freight	12
		Air Express	33
		Boat	4
		Carloading	273
		Express	167
		Rail	823
		Truck	370
Return Orders Processed			81
Carload Shipments		Inbound - GE - AEC	824
		Others	116
		Outbound - GE - AEC	9
		Others	8

1219409

PURCHASING AND STORES SECTION
TRAFFIC UNIT
August, 1951

STATISTICS (CONTINUED)

Report of Carloads Received

	CMSTP&P	N.P.	U.P.	TOTAL
General Electric Company				
Asphalt	1		1	2
Bath Tubs			1	1
Boiler Ends		1		1
Boiler Parts		2		2
Caustic Soda	7	7	7	21
Coal	109		531	640
Chlorine, Liquid	2		3	5
Ferric Sulphate	2	1		3
Fibreboard		2		2
Furnaces	2			2
Ingots, Aluminum			1	1
Iron Blocks			1	1
Iron Ore	2	2	9	13
Lime	3			3
Machinery	4			4
Nitrate of Soda		2		2
Nitric Acid	5		11	16
Paint		1		1
Phosphoric Acid	1		1	2
Pipe, Steel		2	8	10
Plumbers Goods			2	2
Punchings	1			1
Roofing			1	1
Salt		1		1
Sand			1	1
Soda Ash	1	1	2	4
Sodium Nitrate			1	1
Steel Bars	20	8	2	30
Steel Plates		3		3
Steel Tubing	1	1		2
Solvent	1			1
Sulphuric Acid	1			1
Tanks			6	6
Valves		1		1
Express Cars	3			3
Merchandise	1	1		2
TOTAL	167	36	589	792
A.E.C.				
Ambulances		1		1
Autos		6		6
Helium Gas			1	1
Machinery		1		1
Lumber	5	5	3	13
Pipe, Conduit		1		1
Plywood	1	3		4

1219410

PURCHASING AND STORES SECTION
TRAFFIC UNIT
August, 1951

STATISTICS (CONTINUED)

Report of Carloads Received (Continued)

		C.&S.TP&P	N.P.	U.P.	TOTAL
A.E.C. (Continued)					
Poles		2			2
Ties		2			2
Express		1			1
	TOTAL	11	17	4	32
Atkinson & Jones Construction Co.					
Aggregate, Filter Bed		2	1		3
Asphalt		2	2		4
Cement		16	14	11	41
Insulating Material		1		1	2
Lumber		1			1
Pipe, Soil			1		1
Pipe, Steel		1	2		3
Pipe, Cement			2		2
Sand		4	2		6
Steel Bars		3	1	4	8
Steel Plates		2			2
Merchandise		1			1
	TOTAL	33	25	16	74
L. E. Baldwin, Inc.					
Furnaces				1	1
Plasterboard				2	2
Wallboard			2	3	5
	TOTAL		2	6	8
Bergman Lampson Company					
Ties		2			2
	TOTAL	2			2
F. J. Early Company					
Asphalt		1			1
Steel Bars			1		1
	TOTAL	1	1		2
L. H. Hoffman					
Paint				1	1
	TOTAL			1	1
R. C. Larson					
Pipe			1		1
Receptors				1	1
Showers				1	1
	TOTAL		1	2	3
Richland Fuel Company					
Coal				4	4
	TOTAL			4	4

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PURCHASING AND STORES SECTION
TRAFFIC UNIT
August, 1951

STATISTICS (CONTINUED)

Report of Carloads Received (Continued)

		CMSTP&P	N.P.	U.P.	TOTAL
Royal Company					
Siding			1		1
	TOTAL		1		1
Seattle Insulation Company					
Insulation				1	1
	TOTAL			1	1
Seldon, Inc.					
Flooring				3	3
	TOTAL			3	3
Sound Construction Company					
Plaster		1			1
Merchandise		1			1
	TOTAL	2			2
U. S. Army					
Autos, Freight			3		3
Buses		5			5
Canned Goods			2		2
Generators			1		1
Graders			1		1
Trucks			2		2
Wallboard				1	1
	TOTAL	5	9	1	15
TOTAL - SUBCONTRACTORS		43	39	34	116
TOTAL - ENTIRE PROJECT		221	92	627	940

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TRANSPORTATION SECTION
MONTHLY REPORT
August 1951

GENERAL

Transportation Section personnel forces were decreased from 599 to 494 employees during the month by 11 new hires, 1 transfer in, 2 reactivations - personal illness, 110 transfers out, 8 terminations, and 1 deactivation - personal illness.

Effective August 1,1951, concurrent with the reorganization of the Nucleonic Division, 100 employees were transferred from the Transportation Section to the Reactor, Separations, and Metal Preparation Sections of the Manufacturing Department.

RAILROAD ACTIVITIES

Commercial cars handled during August increased 98.1% over July with the resumption of normal coal shipments following the National Coal Miners' Holiday, receipt of construction materials for 100-C Area and Additional essential materials for the initial stocking of 202-S.

Process movements during August were slightly above normal with an increase of 87.4% over July after being below normal for two months.

Cars handled during August including process movements totaled 2,321 compared to 1,275 in July; 2,226 in June; 2,443 in May; 2,078 in April; 1,984 in March; 1,793 in February; and 2,625 in January.

The following recapitulation indicates the number of commercial cars handled:

Carload Movements -	Loads In	Empties In	Loads Out	Empties Out
General Electric Company	824	14	12	811
Subcontractors and Others:				
Atkinson & Jones Co.	75	-	-	70
L. E. Baldwin & Associates	12	-	-	10
Bergman & Lampson	2	-	-	2
Day Bros.	1	-	-	1
F. J. Early	3	-	-	4
J. P. Head	0	-	-	1
L. H. Hoffman	1	-	-	1
McPhail Engineering Co.	3	-	-	3
Modern Machinery Co.	-	5	-	2
Richland Fuel Co.	4	-	-	4
Sound Construction Co.	1	-	-	1
U. S. Army	14	-	-	15

Completed annual inspection and major repairs on 80-ton diesel electric locomotive 39-3722 which had been out of service since February.

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Classification Cancelled
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Transportation Section

Railroad track maintenance and rehabilitation work returned to a normal basis with the completion of the six-day week schedule on August 25. Surfacing and related work was in progress throughout Section I, 221-T, 221-B, May Junction, Ruth Wye, 700 Area main lead coal track, mileposts 39, 40, 41, 42, 43, 44, 45, and 46, requiring 5,070 man-hours. Replacement of ties at the tank farm turnout, 221-T warehouse, tunnel and burial ground track required 718 man-hours. Relay of rail at May Junction and between mileposts A-21 and A-22 required 778 man-hours. Handling and distribution of track materials required 909 man-hours.

AUTOMOTIVE ACTIVITIES

The Area Bus System transported 11.4% more passengers in August than in July. The August area passenger volume of 154,858 surpassed the previous recorded high of 143,260 in January 1951 which exceeded the 139,498 in March 1949. The following tabulation indicates the August passenger volume by shifts and the total revenue received:

No. 1 outbound and No. 3 inbound	28,482
No. 2 outbound and No. 1 inbound	64,756
No. 3 outbound and No. 2 inbound	61,620
Total	154,858
Revenue	$ 7,742.90

The following is a comparative breakdown of average daily bus trips to the Plant Areas:

Passenger busses - 100-B	11
Passenger busses - 100-D	12
Passenger busses - 100-F	10
Passenger busses - 100-H	10
Passenger busses - Hanford	4
Passenger busses - 200-West	26
Passenger busses - 200-East	12
Passenger busses - 300 Area	7
Passenger busses - Riverland	3
Passenger busses - Pistol Range	1
Passenger busses - White Bluffs	4
Passenger busses - North Richland	3
700-300 Area Shuttle Service	23
Inter-Area Passenger Service	3
Inter-Area Express Service	1
Inter-Area Mail Service	1

Following a recent audit by Internal Audit personnel and an exchange of recommendations, a new bus revenue accountability procedure for the Richland Local and Area Bus Systems was placed into effect. Procedure adoption insures more effective control.

Bus loading lanes in 200-West Area were revamped to accommodate a greater number of busses which greatly facilitates the handling of increasing passenger volume.

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Transportation Section

The Richland Local Bus System transported approximately 1% more passengers in August than in July - volume of service rendered is indicated in the following statistics:

Total passengers including transfers	32,516
Total bus trips	3,586
Total bus miles	19,723
Total revenue	$ 2,454.55

The following tabulation indicates the volume of fuel distribution by Equipment Maintenance personnel:

	Gasoline	Diesel Fuel	50 Cetane	Kerosene	White Gas
Stock at start of month	39,187	12,726	15,817	1,588	194
Received during month	118,079	22,650	23,973	585	0
Total	157,266	35,376	39,790	2,173	194
Delivered to Areas	120,839	19,464	25,673	1,662	116
Stock at end of month	36,427	15,917	14,117	511	78

The following tabulation indicates the volume of inspection and maintenance service rendered to Hanford Works automotive and heavy equipment by Equipment Maintenance personnel: 14 motor overhauls; 103 Class A Inspections and Repairs; 1,034 Class B Inspections and Lubrications; 1,744 other routine maintenance repair and service calls; 624 tire repairs; and 582 wash jobs.

Off-Plant automobile trips (Company business and/or official visitors) totaled 147.

The following tabulation indicates the volume of Drivers Test Service rendered, which includes the new permits issued in compliance with AEC Bulletin No. GM-181 and HW Instructions Letter No. 15:

Applicants:	Male	223	Number rejected	0
	Female	18	Number tests given	241
		241		
Permits issued:	Limited to driving with glasses			192
	Unlimited			49
Permits reissued:	Routine	43		
	New AEC	2,100		

The following tabulation indicates the Plantwide usage of automotive equipment:

Code	Type	No. of Units	Total Mileage
1A	Sedans	321	548,319
1B	Busses	157	222,746
1C	Pickup Trucks	468	292,866
1D	Panel, Carryall, Sta. Wagon	113	128,723
1E	Armored Cars	12	989
68 Series	Trucks	293	82,286
		1,364	1,276,129

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Transportation Section [redacted]

Received 9 of 11 replacement sedans which are to be assigned to the Security and Patrol Unit; 7 replacement ambulances; and replacement rock crushing plant.

The new crushing plant was assembled, checked, equipped with safety guards, and placed in operation.

Received approval of an Appropriation and Budget Request for the replacement of 50 sedans and prepared purchase requisition for procurement.

Four trucks, 2 moto mowers, and 1 rock crusher were excessed.

LABOR ACTIVITIES

The following tabulation indicates in gallons the volume of asphalt road material handled by Transportation Services personnel:

	MC 1	MC 3	MC 4	MC 5
Stock at start of month	0	18,184	0	14,332
Received during month	0	18,713	0	28,610
Dispensed during month	0	24,175	0	40,139
Stock at end of month	0	12,722	0	2,803

Seal coating of area roads required 1,728 man-hours, 74,970 gallons of road asphalt material, and 3,160 cubic yards of crushed rock.

Handling of miscellaneous materials for the Stores Unit at White Bluffs required 1,921 man-hours.

Handling of materials for the Stores Unit in the 700 and 1100 Areas required 604 man-hours.

Handling of Area deliveries required 1,591 man-hours; Stores deliveries 349 man-hours; and office furniture 1,745 man-hours.

Handling and loading of 3 carloads of rail, 4 carloads of steel, 2 carloads of equipment, 2 carloads of ore, 1 carload of scrap, 63 truckloads of equipment and 104 truckloads of material required 2,746 man-hours.

Labor and transportation equipment were furnished for the following Projects: P-349, P-402, P-412, P-423 and P-432.

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Classification Cancelled
(Changed to RESTRICTED)
By Authority of HC Tom Lab. Dir. Review Board
By Marjorie Lacy 2-1-52
Date 12-18-51

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ELECTRICAL DISTRIBUTION AND TELEPHONE SECTION

AUGUST, 1951

GENERAL

The scheduled work backlog at month end was 4800.6 mandays. This was equal to 52.5 mandays per craftsmen for the Electrical Distribution Unit and 51.7 for the Telephone Unit. Replacements for terminated linemen remain difficult to locate, but a slight reduction of work backlog is being achieved making it possible to consider resuming a five instead of six day week during the coming month.

The power demands for the month were:

	Date	August KW Demand	Comparative July Demand
Process Load	8-31-51 (8-9 A.M.)	70,650	69,000
Village Load	8-30-51 (7-9 A.M.)	14,500	11,950

The process peak demand is at an all time high , slightly exceeding the peaks during the last winter season, reflecting new minor facility additions and increasing production demands. The Village load is at or near seasonal low but 20% above August 1950.

The principal co-ordinating activities with other groups were:

1) Development of data for the Engineering and Construction Divisions for a report preparation covering the power and telephone requirements of a major work area expansion program.

2) Provided comments, and approved preliminary 183-C and 151-C substation plans.

3) An assignment engineer of the Distribution Unit, R. F. Haynes spent several days in Portland consulting with BPA relative to a new bus arrangement at Midway Station and to studies relating to our 220 KV oil circuit breaker interrupting duties.

4) A set of rules and regulations were prepared for the AEC as applicable to rendering electric service in Richland Village.

ELECTRICAL DISTRIBUTION UNIT

Maintenance and Operation

An error during testing of relays associated with cutting into service a new 20,000 KVA 220 KV transformer bank at 251 substation on August 3 caused a 13.8 KV incoming line to trip resulting in total outage of one minute to the 200 Areas. Fortunately no production loss resulted.

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On August 27, an arcing fire was reported on the 66 KV Hanford - White Bluffs line. A broken bonding wire was repaired during a pre-arranged outage with White Bluffs and C-431 construction.

Inspection and acceptance for operation was made of the 13.8 KV lines to the Redox and 221-U Areas.

A temporary construction substation for Project C-431 has been energized, as well as temporary construction connection to electric shovel at 181-B.

In Richland, newly installed lines and transformers for Fourth Housing sites G 1 and F-3 were accepted and energized. The new Stevens Drive feeder from the 1131 Area to Spangler Road was similarly accepted and energized.

System Expansion and Planning

Project C-295 (Expand 251 substation 200-E-W). Initial tests after installation of the new 230 KV 20,000 KVA transformer indicated unbalanced 13.8 KV low side voltage conditions. Investigation indicated that the operating rod to one of the tap changers had become disengaged. Repairs have been completed, the new transformer is now carrying the 200 Area load, and the East bay and transformer have been de-energized to permit the subcontractor to proceed with removing all wood structure and replacing with steel.

Project C-404 (Primary Power Lines for EW Laboratory Area) work has been suspended due to substantial financial overrun; Part II has been prepared and presented for approval.

Subcontractor work relating to C-341-R (Additions to Richland Village Electrical Distribution System) has been completed; phase balancing and tie in by operations forces is in progress.

Project C-380 (Electric Metering-Village of Richland); 709 meter installations have been accepted.

TELEPHONE UNIT

Maintenance and Operation

All installation work associated with a manual switchboard to serve the C-431 has been completed.

Additional cable terminals were provided in 100-H Area for Manufacturing Department personnel temporarily located in 1704-H and 1709-H Buildings.

Installation of a 100 line dial exchange to replace the manually operated PBX system in 234-5 Building is under way.

Telephone work associated with Project C-363 (Rehabilitation of Prefabs) has been completed.

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The following is a summary of current telephone service rendered by the Project Telephone System:

	Lines In Service	Stations in Service	Extensions in Service	Vacant Lines
Richland	4284	6682	1322	316
Process Areas	1115	1190	616	436
Project Totals	5399	7875	1938	752

A total of 252 pieces of radio equipment were overhauled or serviced during the month.

Because of recent plant re-organizational changes, the periodic issue of the Richland Telephone Directory will be delayed from November to December.

System Expansion and Planning

AEC concurrence was requested for the installation of a 13 quad cable, BY to Hanford to permit adequate telephone coverage for the Manufacturing Divisions personnel to be located at Hanford.

Layout was made and work completed for telephone cable additions and rearrangements to the new Chief Joseph High School.

Layout was completed for additional telephone cable to the new wing, 703 Building; similarly for a proposed Pile Technology Building in 100-D Area.

The first of a series of proposed Telephone Standards drawings relating to Pole Stepping Arrangements, Loading Coil Arrangements, Gas Pressure Valve Installation, and Gas Pressure Contactor Installations were completed.

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POWER STATISTICS
ELECTRICAL DISTRIBUTION AND TELEPHONE SECTION
FOR MONTH ENDING AUGUST 31, 1951

ITEM	ENERGY - MW HRS. July	ENERGY - MW HRS. August	MAX. DEMAND - KW July	MAX. DEMAND - KW August	LOAD FACTOR - % July	LOAD FACTOR - % August
230 KV SYSTEM						
A-2 Out (100-B)	7,550	7,400	12,100	13,100	83.9	75.9
A-4 Out (100-D)	13,450	13,830	21,900	21,700	82.5	85.7
A-5 Out (100-H)	8,676	7,992	19,900	14,400	58.6	74.6
A-6 Out (100-F)	5,150	8,160	10,300	12,500	67.2	87.7
A-8 Out (200 Areas)	4,104	4,140	6,840	7,920	80.6	70.3
TOTAL OUT	38,930	41,522	71,040**	69,620**	73.7	80.2
MIDWAY IN	39,649	42,276	63,600*	65,600*	83.8	86.6
Transm. Loss	719	754				
Percent Loss	1.8	1.8				
115 KV SYSTEM						
B1-S4 Out (N. Rich.)	2,069	2,088	3,514	3,513	79.1	79.9
BB1-S1 Out (Richland)	3,418	3,756	7,470	8,370	61.5	60.3
BB1-S2 Out "	2,862	2,646	6,390	6,480	60.2	54.9
BB1-S3 Out (300 Area)	752	744	1,760	1,840	57.4	54.3
TOTAL OUT	9,101	9,234	19,134**	20,203**	63.9	61.4
Benton In	1,390	780	37,200*	38,000*	50.2	27.6
So.Richland In	7,880	8,600	15,300*	17,700*	69.2	65.3
TOTAL IN	9,270	9,380	52,500**	55,700**	23.7	22.6
Transm. Loss	169	146				
Percent Loss	1.8	1.6				
66 KV SYSTEM						
B7-S10 Out (W.Bluffs)	489	510	1,328	1,373	49.5	49.9
Hanford Out	351	299	600	600	78.6	67.0
TOTAL OUT	840	809	1,928**	1,973**	58.6	55.1
HANFORD IN	837	793	1,700*	1,800*	66.2	59.2
Transm, Loss	+ 3	+ 16				
Percent Loss	+ .4	+2.0				
PROJECT TOTAL						
230 KV Out	38,930	41,522	71,040**	69,620**	73.7	80.2
115 KV Out	9,101	9,234	19,134**	20,203**	63.9	61.4
66 KV Out	840	809	1,928**	1,973**	58.6	55.1
TOTAL OUT	48,871	51,565	92,102**	91,796**		
230 KV In	39,649	42,276	63,600*	65,600	83.8	86.6
115 KV In	9,270	9,380	52,500**	55,700**	23.7	22.6
66 KV In	837	793	1,700**	1,800**	66.2	59.2
TOTAL IN	49,756	52,449				
Transm. Loss	919	884				
Percent Loss	1.8	1.7				

* Denotes Coincidental Demand
** Denotes Non-Coincidental Demand

Average Power Factor - 230 KV System 94.0
Average Power Factor - 115 KV System 88.2
Average Power Factor - 66 KV System 70

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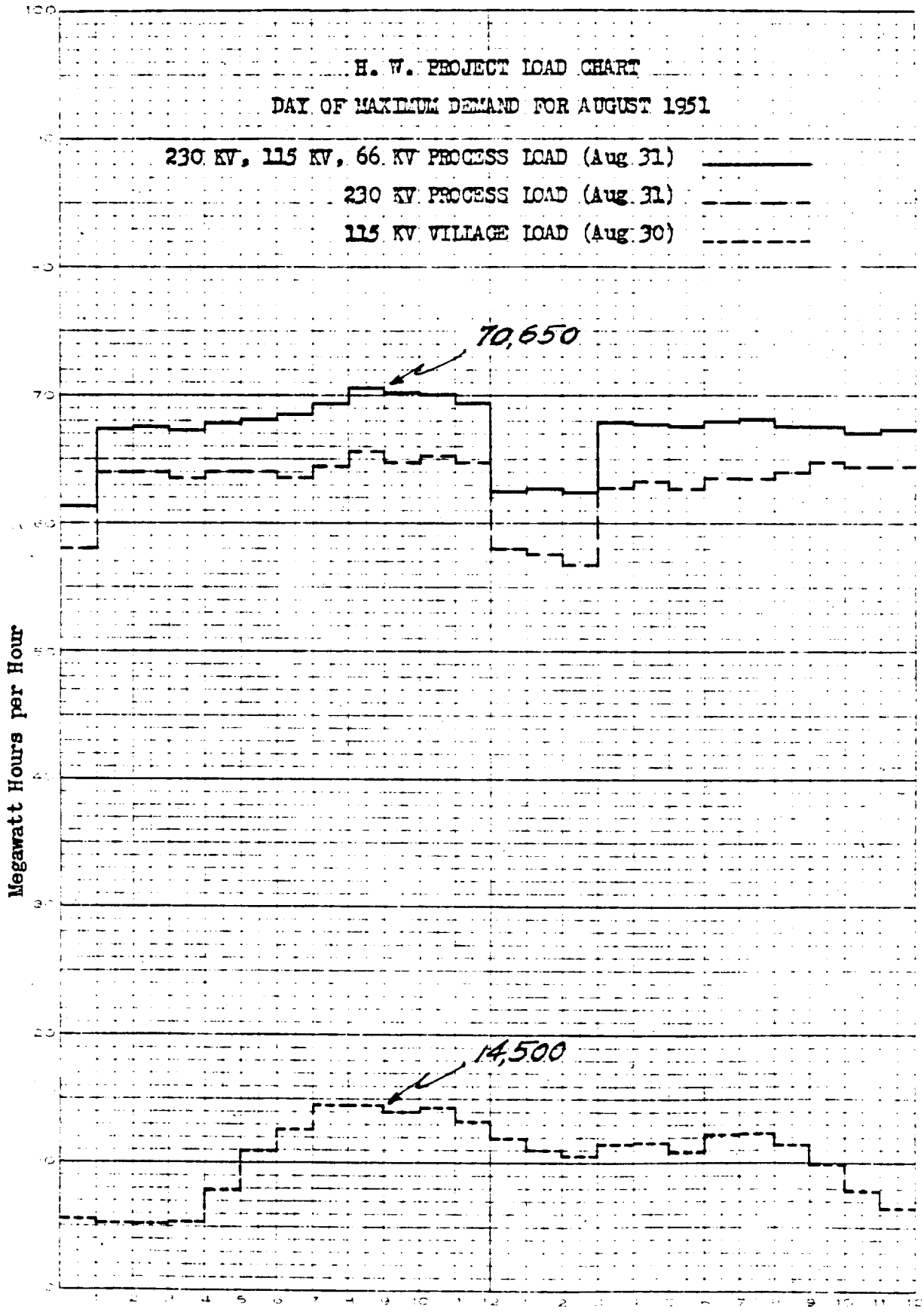
H. W. PROJECT LOAD CHART
DAY OF MAXIMUM DEMAND FOR AUGUST 1951
230 KV, 115 KV, 66 KV PROCESS LOAD (Aug 31)
230 KV PROCESS LOAD (Aug 31)
115 KV VILLAGE LOAD (Aug 30)
70,650
14,500
Megawatt Hours per Hour

EMPLOYEE AND PUBLIC RELATIONS DEPARTMENT

SUMMARY -- AUGUST, 1951

The number of applicants interviewed in August was 1,574 as compared to 1,598 interviewed in July. Of these applicants, 509 were individuals who applied for employment with General Electric for the first time. In addition, 215 new applications were submitted through the mail. Open, nonexempt, nontechnical requisitions decreased from 513 at the beginning of the month to 414 at month end. Total plant roll increased from 8,805 to 8,909. Turnover rate decreased from 2.48% in July to 2.05% in August. During August, 52 new requests for transfers were effected. During August a member of this Section spent the week of August 10 to 17 visiting numerous technical institutes in the Middle West and East. During these contacts 240 graduating students were given an opportunity to hear the Hanford Works story and the need for personnel with their qualifications at this site. As a result we have received applications from 43 of the students contacted. Attendance recognition award pins and wallet cards were distributed and presented to 90 employees during August, who qualified for the 1-year awards during July. Transmittal letters to superintendents and department heads who had employees qualifying for awards, suggested that the occasion of presentations should be an excellent opportunity for improving employee relations.

One employee death occurred during August, and three employees retired. Two hundred and seventy-one visits were made to employees confined to Kadlec Hospital and 38 salary checks were delivered to employees either confined at home or in the hospital. During the month identification cards explaining the type of coverage for participating employees was mailed to all participants in the Insurance Plan along with making arrangements for distribution of the insurance certificates for the new Insurance Plan. At month end, participation in the Pension Plan was 94.6%, in the Insurance Plan 97.9% and in the Employee Savings and Stock Bonus Plan 40.9%. As of the end of August, there were 1,042 employees registered under the Selective Service Act, and 727 military reservists on the rolls. Since August 1, 1950, 160 employees have terminated to enter military service.

Surveys and studies conducted included an evaluation of possible uses here for the G. E. Opinion Meter and a complete listing of the types and availability of 35 m.m. sound slide projection equipment at this location.

Announcement letters, quotas and enrollment material have been prepared and mailed to each Department covering the 40-hour Supervisors' Program for September, PMS Groups 17, 18, 19, and 20, and "You and Labor Law". The 40-Hour Program is scheduled for September 10 to 14, and both PMS and Labor Law are scheduled to start September 17. All exempt personnel will be enrolled through departmental channels with the exception of senior management personnel, each of whom have received personal invitations to attend a particular conference.

Two issues of SAGE were prepared and mailed during the report period.

Employee and Public Relations Department
Summary

Approximately 8,800 HOBSO booklets and transmittal letters were mailed to the homes of all Nucleonics Division personnel.

Thirty-one Supervisor's Handbooks were brought up to date and re-issued. Total to date 1,495.

Requests for Training information were received from Morrison-Knutsen Company of Boise, Idaho, and Dean T. A. Sherman of the University of Idaho. Packets of sample Training material were made available in response.

An 8-Hour Program for non-exempt personnel was held at the request of the Separations Section on August 11, and again on August 25. Total attendance 63.

A total of 258 employees received Orientation during the month and 91.1% elected to participate in the Group Insurance Plan.

In response to a request, V. J. Byron met with the Unitarian Church Study Group and presented the Appreciation Version of HOBSO.

A total of 58 news releases were distributed during the month. The editor of MONOGRAM spent two days in Richland and arrangements were made to send him a list of stories for use in the MONOGRAM.

Publicizing of the Odd-Even Watering Plan was brought to a close during August. A news story was released commending residents for co-operation and success of the plan.

The local American Red Cross flood-disaster fund campaign was aided through publicity and radio spot announcements.

A total of 8,018 photographic prints were produced during the month in completing 111 assignments. Of the total prints produced, 6,100 were for employee identification and area admittance badges.

Arrangements for presenting the G. E. "House of Magic" show to Hanford Works people, their families, and to residents of neighboring towns.

Two slide films, one entitled "Our Secretary, Miss Jones," and the other, "Awards on Parade," were completed.

A four-page leaflet explaining plant technical library services and facilities, and a leaflet entitled "Classes for Expectant Parents" was developed. These leaflets were printed in the plant shop.

A Monthly Health Bulletin on "Athlete's Foot" was developed and printed for distribution to all employees.

Four employee relations posters were posted on a weekly basis in 35 key locations throughout the plant.

2 Eight manuscripts and papers written for presentation or publication were submitted for clearance and processed.

Employee and Public Relations Department
Summary

The Works NEWS carried news and features including such subjects as Atomic Frontier Days, security, Red Cross blood program and the G. E. School of Nuclear Engineering.

Four women's pages appeared in five issues of the Works NEWS during the month.

Hanford Guards Union ratified its contract with the Company, effective August 3, 1951. Final contract draft was presented to the Firemen's Union on August 23. On August 28, a proposed cost-of-living wage adjustment was discussed with the three certified unions and the day following, notification was received from these unions of the reopening of their contracts on the wage issue. The NLRB conducted a hearing on August 30 and 31 regarding the HAMTC's objections to the UA election. Election for Chief Operators was scheduled for September 11 and 12.

Master Agreement extended 30 days. USW and Plumbers Union agreed to a 50-cent increase in isolation pay subject to GE and AEC approval. This office will continue to resist any increase. Negotiations are now in progress with Sheet Metal Workers, Technical Engineers and Office Employees. No agreement has been reached. Machinist Union membership rejected A-J's offer of a 13½-cent increase. Federal Mediation and Conciliation Service attended the last meeting on August 29. No agreement reached. The Boilermakers have indicated their desire to establish all provisions of the Seven Western States Agreement on the Project. Electrician (Linemen) granted a ten-cent increase; similar increase extended to Electrician (Wiremen) in compliance with Project parity agreement. Members of the Union committee investigating work under special hazard conditions were conducted on a tour of the 241-U Tank Farm. All Electrician (Linemen) back on the job by August 14. Ironworkers now supplying "Rodbusters" after refusal in objection to Saturday work at time and one-half. Plumbers Union now supplying men; no concessions were made. To date, USW has received 179 men and has 109 on requisition.

On August 8, 1951, notification was received from the Wage Stabilization Board that our petition to increase the rates of Draftsmen and Designers was approved, and on August 24, our Salary Administrator received similar notice from the Salary Stabilization Board for an increase in rates of exempt supervisors of these employees.

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EMPLOYEE AND PUBLIC RELATIONS DEPARTMENT

AUGUST, 1951

ORGANIZATION AND PERSONNEL

Employment and Employee Services

Effective August 1, 1951, an Employment Interviewer and Investigator "A" of the Investigation Files Unit was upgraded to a Supervisor and transferred to Industrial Insurance and Suggestion System Unit.

Effective August 13, 1951, a Steno-Typist "B" in the Investigation and Files Unit was upgraded to a Steno-Typist "A".

Effective August 13, 1951, a Steno-Typist "C" in the Investigation and Files Unit was upgraded to a Steno-Typist "B".

Effective August 27, 1951, a General Clerk "D" in the Investigation and Files Unit was reclassified and upgraded to a Steno-Typist "C" to replace a Steno-Typist "C" who was scheduled for Leave of Absence to begin August 31, 1951.

Effective August 13, 1951, a Messenger was assigned to the Investigation and Files Unit to replace a Messenger who terminated on August 3, 1951.

Effective August 31, 1951, a Steno-Typist "A" in the Employee Services Unit terminated from the employ of the Company.

Effective August 27, 1951, a General Clerk "D" of the Employment Unit was upgraded to a General Clerk "B".

Effective August 27, 1951, a General Clerk "B" in the Employment Unit was granted a Leave of Absence due to Pregnancy.

Effective August 3, 1951, an Employment Interviewer "B" terminated from the Company to seek employment elsewhere.

Effective August 27, 1951, a Steno-Typist "C" was upgraded to an Interviewer "B".

Training and Program Development

No organizational changes.

Public Relations

Effective August 13, 1951, one General Clerk "B" assigned to Radio and Special Events transferred to the Hanford Works NEWS as a replacement.

Effective August 15, 1951, one General Clerk "B" was reactivated to replace the position vacant in Radio and Special Events.

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Employee and Public Relations Department
Organization and Personnel

Effective August 24, 1951, one General Clerk "B" assigned to the Works NEWS terminated voluntarily.

Effective August 27, 1951, one General Clerk "C" was transferred into the News Bureau as a replacement for the General Clerk "C" who will be upgraded within Public Relations to replace the Secretary "B" when she terminates.

Union Relations

Effective August 1, 1951, a Staff Assistant was added to Insurance and Suggestions Unit.

Effective August 3, 1951, a General Clerk "C" was added to the Insurance and Suggestions Unit.

Effective August 13, 1951, a General Clerk "D" transferred from Insurance and Suggestions Unit to Technical Department.

Effective August 27, 1951, the Manager, Union Relations, resigned from the employ of the General Electric Company.

Number of employees on roll	August
Beginning of month	116
End of month	113
Net decrease	3

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Employee and Public Relations

ACTIVITIES

Employment and Employee Services

	July, 1951	August, 1951
Applicants interviewed	1,598	1,574

509 of the above applicants interviewed during August were individuals who applied for employment with the Company for the first time. In addition, 215 new applications were received through the mail.

Open requisitions	July, 1951	August, 1951
Exempt	6	4
Nonexempt	513	414

Of the 513 open, nonexempt, nontechnical requisitions at the beginning of the month, 373 were covered by interim commitments. Of the 414 open, nonexempt, nontechnical requisitions at month end, 270 were covered by interim commitments. During August, 92 new requisitions were received requesting the employment of 181 nonexempt employees.

	July, 1951	August, 1951
Employees added to the rolls	348	348
Employees removed from the rolls	217	244
NET GAIN OR LOSS	+131	+104

Of the 244 employees removed from the rolls, none were removed due to lack of work.

Turnover:	July, 1951		August, 1951	
	Male	Female	Male	Female
	2.06%	4.05%	1.06%	3.69%

Over-all Turnover:	July, 1951	August, 1951
	2.48%	2.05%

During August, 39 employees terminated voluntarily to accept other employment, 13 terminated to leave this vicinity, and 12 terminated to return to school.

At month end there were only 5 employees in lack of work status.

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Employee and Public Relations

Transfer Data

Accumulative total of requests for transfer received since 1-1-51	456
No. of requests for transfer received during August	52
No. interviewed in August, including promotional transfers	53
Trans. effected in August, including promotional transfers	35
Trans. effected to date since 1-1-51, including promotional trans.	321
Transfer requests active at month end	65
No. of stenos trans. out of steno pool in August	11

During August, 19 people whose continuity of service was broken while in an inactive status were so informed by letter.

During the month an AUTO-TYPIST was delivered to the Employment Unit which made it possible to cancel a requisition for a Steno-Typist "C".

Due to the acute shortage of Instrument Mechanics and because of the stepped up program at this location a member of this Section visited four technical institutes in the Middle West and East in an attempt to attract some of their graduating students to accept employment with the General Electric Company at this Works. The schools visited were:
Valparaiso Institute, Valparaiso, Indiana
Dunwoodie Industrial Institute, Minneapolis, Minnesota
Milwaukee Institute of Engineering, Milwaukee, Wisconsin
Crystal Research Laboratory, Hartford, Connecticut
During these contacts 240 graduating students were given an opportunity to hear the Hanford Works story and at month end applications have been received from 43 of the students contacted.

During the month 90 employees at Hanford Works became eligible for one year emblems and wallet cards in recognition of perfect attendance. The one year emblems and wallet cards were forwarded to the various departments in order that they may be presented to their employees.

During the month 199 persons who did not submit birth certificates or military discarge papers at the time of sign-up brought this evidence of proof of birth and service discharge to this section for proper record.

Employment Statistics:

	7-31-1951	8-31-1951
Number of employees on rolls		
Exempt - Male	1,935	1,978
Female	55	56
	1,990	2,034
Nonexempt - Male	4,988	5,031
Female	1,827	1,844
	6,815	6,875
TOTAL	8,805	8,909

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Employee and Public Relations

ADDITIONS TO THE ROLLS

	Exempt	Nonexempt	Total
New Hires	14	243	257
Re-engaged	0	0	0
Reactivations	2	27	29
Transfers (from other plants)	0	0	0
Actual additions	16	270	286
Payroll exchanges	61[a]	1[b]	62
GROSS ADDITIONS	77	271	348

TERMINATIONS FROM THE ROLLS

Actual Terminations	28	106	134
Removals from the rolls (deactivations)	4	44	48
Payroll exchanges	1[c]	61[d]	62
GROSS TERMINATIONS	33	211	244

GENERAL

	7-1951	8-1951
Applicants interviewed	1,598	1,574
Photographs taken	508	395
Fingerprint impressions (taken in duplicate)	466	493

ABSENTEEISM STATISTICS
(Weekly Salary Roll)[e]

Male	1.82%	2.07%
Female	3.30	3.64
Total Plant average	2.21	2.57

INVESTIGATION STATISTICS

Cases received during the month	426	343
Cases closed	680	349
Cases found satisfactory for employment	361	350
Cases found unsatisfactory for employment	7	16
Cases closed before investigations completed	38	21
Special investigations conducted	21	15

PERFECT ATTENDANCE RECOGNITION AWARDS

Total 1-year awards to date	1,485
1-year awards made during August for those qualifying in July	90

a Transferred from Weekly Payroll
b Transferred from Monthly Payroll
c Transferred to Weekly Payroll
d Transferred to Monthly Payroll
e Statistics furnished by Weekly Payroll

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PRIVACY ACT MATERIAL REMOVED

Employee and Public Relations

Employee Services:

The following visits were made with employees during the month by a representative of Employee Services:

Employees visited at Kadlec Hospital	271
Salary checks delivered to employees at Kadlec Hospital	36
Salary checks delivered to employees confined at home	2

As of the end of August, participation in Company Benefit Plans was as follows:

Pension Plan	94.6%
Insurance Plan	97.9
Employee Savings and Stock Bonus Plan	40.5

During the month identification cards explaining the type of coverage carried by participating employees was mailed to all participants in the Insurance Plan. In addition arrangements were made by Employee Services for distribution of the new insurance certificates to all participants in the Insurance Plan.

During August a feature article covering the Insurance Plan was prepared for publication in the Works News.

In the past month one letter was written to a member of a deceased employee's family concerning payment of money due them from the Company, as well as answering other pertinent questions for them.

One employee died during August, namely:

, Community Real Estate and Services

Three employees retired during the month, namely:

C. G. Skillin, Community Real Estate and Services
R. S. Williamson, Manufacturing
R. M. Elliott, Utilities and General Services

During August 5 letters were written to retired employees providing them with information of a general nature in which they would be interested.

Five stories regarding the activities of retired employees were prepared for publication in the Works News during August, together with photographs.

During the month considerable time was spent with our Payroll Section in making proper interpretation of certain phases of our Insurance Plan. As a result of these conferences we are correcting the method of payment of disability benefits for those employees who continue to receive salary during a disability period even though salary is paid beyond 20 working days. In addition, Payroll will review our past payments of disability and correct all errors in payment of disability claims which have been submitted in the past.

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PRIVACY ACT MATERIAL REMOVED

Employee and Public Relations

Military Reserve and Selective Service:

The statistics with respect to employees registered under the Selective Service Act are as follows:

Employees registered under the Act	1,042
Employees registered who are veterans	519
Employees registered who are nonveterans	523
Employees classified as 1-A	275
Deferments requested to date	261
Deferments granted	159
Deferments denied and appealed at state levels	18
Deferments denied and appealed at national levels	6
Deferments requested, employees later reclassified	32
Deferments requested, later withdrawn	2
Deferments pending	44

Statistics with respect to employees who are members of the military reserve are as follows:

Number of reservists on the roll	727
Number who returned to active duty to date	82
Number who returned to active duty in August	7
Deferments requested to date	87
Deferments granted	79
Deferments pending	2
Deferments denied	3
Deferment requests recalled	3

Military terminations since 8-1-1950 are as follows:

Reservists recalled	82
Selective Service	76
Female employees enlisted	2
TOTAL	160

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Employee and Public Relations

TRAINING AND PROGRAM DEVELOPMENT

In consideration of the fact that the Training and Program Development Section assumed heavy responsibilities in connection with the Introductory Program for Technical Personnel throughout June and July, it has been necessary to devote the month of August to preparation for fall programs. As a consequence, no major programs were scheduled or conducted during this report period. Nevertheless, a high degree of accomplishment was achieved in the following fields of activity.

I. STUDIES CONDUCTED

1. Members of the Training Section met with Dr. Wayne Marshall of 300 Area Technical for the purpose of viewing the General Electric Opinion Meter. Thought is being given to possible uses of this apparatus throughout the Nucleonics Division.

2. A complete survey was made to determine the types and availability of 35 m.m. sound slide projection equipment here at the Hanford Works. This information is on record and available to interested parties.

3. Considerable time was spent in analyzing space for conducting fall programs. Although the space allocation secured is not satisfactory, it does provide the wherewithal for going ahead with our fall schedule.

II. PROGRAM PLANNING AND PREPARATION

1. The announcements and enrollment quotas have been mailed to all Department Managers covering the 40-Hour Supervisors' Program for September. This program is scheduled for September 10 to 14, and for one week in each of the three succeeding months — October, November and December, 1951.

2. Announcement letters, quotas, and enrollment request forms have been prepared and mailed to all Department Managers covering the start-up of PMS Groups 17, 18, 19, and 20. These four groups will start their meetings during the week of September 17. D. G. Dayton is the certified instructor responsible for these four groups.

3. The necessary preparation work has been completed sufficient to meet the request of the Records Control Section for a Uniform Filing System Program. Actual start-up of this program is entirely dependent upon the originators of the request for the program.

4. The necessary development work has been completed to meet the start-up dates of September 17 for the "You and Labor Law" Program. Announcements and schedules have been made up and distributed in such a manner as to stimulate maximum attendance at this program. All senior management have been personally invited to attend a particular conference. All enrollment of personnel is strictly on a departmental basis for exempt personnel with the exception of senior management.

5. The entire staff reviewed Section 3 of the Supervisor's Handbook with two basic purposes in mind.

   (1) To assure maximum coverage in revising this section on a current basis.
   (2) To assist in "in-service training" of staff personnel.

III. RESULTS AND ACCOMPLISHMENTS (In Training Work)

1. Two issues of SAGE were prepared and mailed during the report period.

2. Approximately 8,800 HOBSO booklets and transmittal letters were prepared for mailing and mailed to the homes of Nucleonics Division personnel.

3. During the month of August, 31 Supervisor's Handbooks were brought up to date and re-issued, making the total issued to date 1,495. Rough drafts for 32 pages of the Handbook have been prepared and are being proof read by interested members of senior management.

4. At the request of P. A. Bundy critical appraisal was made of paragraphs to be used in conjunction with the new Auto-Typist. W. W. Chamberlain and D. V. Smith collaborated in this study.

5. Two requests for information with respect to Training activities here at the Hanford Works were received during the report period. In response, a packet of sample Training material was sent to the Morrison-Knutsen Company of Boise, Idaho and to T. A. Sherman of the University of Idaho.

IV. PROGRAMS CONDUCTED

1. At the request of the Separations Section, an 8-Hour Program for non-exempt personnel was held in 200-W Area on August 11, and again on August 25. A total of 63 people attended these two meetings.

2. A preview of the fall Labor Law Program was held for members of senior management of the Employee and Public Relations Department.

V. ORIENTATION OF NEW EMPLOYEES

During the report period, Orientation was given to a total of 258 employees. Of this number, 91.1% elected to participate in the Group Insurance Plan.

In addition to material previously being covered in this program, two or three minutes are now being devoted to a discussion of the possibilities of overpayment on the part of employees to Social Security. This can and does occur in those instances where people

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may be employed by more than one organization under covered employment.

VI. COMPANY REPRESENTATION OF COMMUNITY

In accordance with a request made to Public Functions and Services and subsequently forwarded to the Training Section, V. J. Byron met with the Unitarian Church Study Group and presented the Appreciation Version of HOBSO.

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Employee and Public Relations

Public Relations

PUBLIC INFORMATION

A total of 58 releases were distributed during the month. Of these, 35 were sent to the "local list". Fourteen stories were sent to the daily list. The other eight were answers to special requests.

Twenty stories and cut lines were written for Richland and North Richland Recreation groups, including a full page round-up in the Works NEWS, stories on the adult play area at Columbia Playfield, and a North Richland Carnival.

Opening of a new obstetrical wing at Kadlec Hospital was publicized via photos and captions released to local newspapers.

Announcement of Richland's first polio victim of 1951 was made in a news story.

Don Carlson, Walla Walla Union-Bulletin roving reporter, interviewed Thor Hauff, Manager of Technical Services. The subject of the interview was the Hanford Works Laboratory. Carlson wrote a story on the laboratory area and it was cleared with Mr. Hauff.

Barry Havens, Monogram Editor, visited Richland during the month. Arrangements were made to send him a list of story subjects for the MONOGRAM.

Hill Williams, Tri-City Herald reporter, interviewed Community Manager Huck on the subject of Richland's Budget. The Tri-City Herald was given, in answer to a request, a statement of services avvilable through Kadlec Hospital First Aid.

The Spokane Chronicle reporter was given information for a news story on the "suit inititated by Hanford Works patrolmen."

Look Magazine was furnished a number of photographs to illustrate a story they plan to publish on Richland. Photographs of the "One Armed Robot" and "Electronic Brain" were given to Life Magazine at the request of the AEC.

Catholic Northwest Progress were given background information and photographs on Richland homes.

Mimeographed programs for the Atomic Frontier Days production "Orchards to Atoms" were produced as a community service.

At the request of the Benton County Chapter, American Red Cross, the local flood-disaster fund campaign was aided through preparing appeal letters for the signature of the campaign chairman, Works NEWS publicity, news stories for local newspapers and radio-spot announcements.

Publicizing of the "Odd-Even" Watering Plan was brought to a close during August, final month of the plan, through announcing the Limerick contest winner in the Works NEWS and local newspapers, and by developing a news story commending residents for co-operation and success of the plan.

Employee and Public Relations

A letter in reply to a petition for extension of Area Bus Service via the Prosser-Benton city barricade, which explained why the request could not be granted, was prepared.

Wallet cards and certificates for distribution to members of the Junior Police Athletic League were produced.

Eight manuscripts and papers written for presentation or publication were submitted for clearance and were processed.

CD Bulletins four and five were prepared in copy and layout form. They are scheduled to be produced and ready for distribution around the middle of September.

CD news stories and photos were released on the following: progress being made in constructing support towers for air raid sirens; contents of CD Bulletin No. 3, which will be released when the bulletin is distributed; the roll of ham radio operators in Richland's Civil Defense Communications Network was the subject of a feature story.

CD movies were shown to about fifty G-E employees at Company safety meetings.

Tours of the civil defense control center were completed by approximately sixty people. Nearly 400 Richlanders have now gone through the center.

A display of recommended CD home supplies was exhibited in Richland's Community House and the lobby of the G-E administration building.

Talks on civil defense were delivered by the North Richland civil defense director. He addressed approximately 150 employees at Company safety meetings.

Three spot announcements aimed at Civil Defense recruitment were recorded with a member of this unit supplying organ introduction and background. The announcements are filed for future release.

A four-page leaflet explaining plant technical library services and facilities was developed.

A leaflet entitled "Classes for Expectant Parents" was developed and printed at the request of Public Health.

Three one minute and three fifteen second spot announcements on nurse recruitment were developed from nationally released material and presented to three local stations for one week's broadcast.

PHOTOGRAPHIC SERVICES

A total of 8,018 prints of photos were produced during the month, with an increase of 26 assignments and 98 negatives over last month. Of the total prints produced, 6,100 were for employee identification and area admittance badges.

Photographs of high speed motinn of instruments and equipments were produced for Chemical Research Division.

A statistical report of Photo House work during August is attached.

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Employee and Public Relations

PROGRAM DEVELOPMENT

Arrangements for presenting the G-E "House of Magic" show to plant personnel and community residents in this area were completed. This included planning of the overall publicity campaign, auditorium reservations, printing and distribution of tickets, poster placement and technical arrangements. Four one-minute spot announcements were written and released to local stations for one week's broadcast.

Three one minute spot announcements on Red Cross Flood Relief were written, recorded and released for one week's broadcast by the three local stations.

The community Atomic Frontier Days show, sponsored by the Junior Chamber of Commerce, was written, produced and staged by members of Public Relations who performed the work on their own time as a service to the community.

The Sound truck, music, and written announcements were provided to the Hi-Spot Club for use in advertising their dance benefit for the Richland United Nations Committee.

Monthly Health Bulletin on "Athlete's Foot" was developed and printed for distribution to all employees during September. In addition, a discussion guide for this topic was produced and distributed to all supervisors.

"Our Secretary , Miss Jones", the slide-film on typical office expressions, was completed and given a preview showing to groups of employees.

A sound-slide film in color, "Awards on Parade", was produced and completed as a service to the Nucleonics Division's Safety people, the A.E.C., and the Kellex Corporation.

Color and B & W motion pictures were made of the Atomic Frontier Days program and parade.

EMPLOYEE INFORMATION

The "House of Magic" show promotion in the Works NEWS was begun, and was featured throughout the month.

Special security promotion was given to security films in the form of advertisements in the Works NEWS.

A complete revamping of the safety page, with special emphasis on recognition of small group safety accomplishments, was made, and the style of the page changed to promote greater interest.

Red Feather groups and their activities were publicized in the Works NEWS. This was done as part of a continuing overall promotion plan.

Atomic Frontier Days was given complete coverage and concluded by review of weekend's activities by a full page feature.

16 The Red Cross Blood Program was publicized during the month.

The G-E School of Nuclear Engineering, and a complete listing of all courses being presented in the fall and spring terms, was publicized.

Employee and Public Relations

Four women's pages appeared in five issues of the Works NEWS during the month of August.

Wardrobe shopping tips for career girls appeared in the August 10 issue of the Works News. A companion feature story discussed the hazards of canning at home. Another story gave housewives hints on what the judges look for when viewing needlework entries at the Benton County Fair.

More than 90 free patterns, publicized in the August 17 issue, were mailed to readers who requested them.

"Backyard barbecues" and "New Hunches on Box Lunches", G.E. Consumer's Institute booklets, featured in the August 31 issue were made available to readers.

A Pension Plan sales letter to be sent to all employees not participating in the Plan was developed.

A letter to all supervisors explaining how "Adventures Ahead" subscriptions can be obtained and renewed for teen-age children of Hanford Works employees was developed for the signatute of the Manager, Employee and Public Relations.

Hanford Works posting service activites during August included posting special employee relations posters numbers 6 through 9 on a weekly basis in 35 key-locations throughout the plant; installing suggestion system posters and several new boxes, G-E Photo News Service Posters, notices of change to standard time, and "House of Magic" posters. In addition, a survey was made to determine locations for area information racks.

Information on correct use of the G-E monogram and standard signature was supplied to Purchasing.

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H. W. Photo House
August, 1951

	2 x 2"	2 x 4"	5 x 7"	8 x 10"	Negatives	Slides	16 M. M.	35 M. M.
Nucleonics Dept., N.Y.				44	16			
Employment	1165				379			
Training			16	4	18			
News Bureau			135	109	93			
Special Programs			42		25			
Works News			116	23	124			
Public Events			42	2		31	900ft.	
Project Engineering				12	8			
Police Department			223	10	16			
Civil Defense			14		8			
G. E. Security	3968	939		2	2			
Municipal				152	115			
Rotational Training		28			7			
Parks and Recreation			18	47	32			
Purchasing and Stores			4	30	11			
Library				20				
Electrical Distribution						7		
Engineering and Const.			20	6		5		
Design and Construction				14	11			
P.E. Design			81					
Instrument				172	36			
Pile Technology			10	62		30		
Redox				330	33			
H.I. Operational								30
H. I. Survey			14					
TOTAL	5133	967	735	1183	954	73	900 ft.	30

	June	July	August
Total Prints	8,955	8,584	8,018
Total Negatives	774	856	954
Total Assignments	89	85	111

Employee and Public Relations

Union Relations

Union Relations - Operations Personnel:

The Hanford Guards Union, Local 21, ratified their contract with the Company, the effective date being August 3, 1951.

One negotiation meeting was held with the Community Firemen during the month and on August 23 the Company presented to the Union a contract proposal. The Company was advised informally that the contract as presented was satisfactory to the Firemen but formal ratification and acceptance had not been received at month-end.

On August 28, the Company discussed with the several union representatives a proposed wage adjustment geared to the BLS Cost-of-Living increase and explained to the Unions that whatever treatment was accorded to employees at General Electric plants in the East would be similarly proffered to Hanford Works people. On the day following this meeting notification of their desire to open their contracts for wage discussions was received from the Hanford Atomic Metal Trades Council, the Hanford Guards Union, and the Building Service Employees International Union, Local 201.

The NLRB conducted a hearing on August 30 and 31 to determine the propriety of the recent union shop election held in behalf of HAMTC personnel. Official results and decision on this hearing are not expected for approximately forty-five days.

The NLRB advised the Company that the representation election for production Chief Operators would be conducted on the plant on September 11 and 12, 1951.

Grievance Statistics:

Twelve grievances were received during the month, bringing the total received this year to 97.

Grievances were sent in this month from the following departments:

Radiological Sciences	1
Community Real Estate and Services	
Real Estate Section	2
Manufacturing	
Reactor Section	4
Separations Section	4
Utilities and General Services	
Transportation Section	1
Total	12

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Employee and Publice Relations

Employee grievance reports were received regarding the following subjects:

Recognition	1
Hours of Work	1
Overtime Rates	1
Sick Leave	2
Seniority	1
Wage Rates	6
Total	12

The status of grievances received in 1951 as compared to those received during the sameperiod in 1950 is as follows:

	1951	1950
Received in August	12	14
Received thru August 31	97	140
Settled satisfactorily, Step I thru Aug. 31	39	91
Pending at Step I thru August 31	6	--
Settled Step II thru August 31	21	21
Pending at Step II thru August 31	37*	28
At Arbitration	4**	--

*Including nine grievances received in 1950.
**Including one grievance received in 1950.

Nine per cent of the total grievances received this year have been submitted by employees outside the bargaining unit.

Two meetings were held during the month for the purpose of processing grievances at the Step II level.

Union Relations - Subcontractor Personnel:

Master Agreement negotiations were conducted on August 10 at which time a thirty-day extension (September 9) was agreed upon in order that the status and authority of the Project Negotiating Committee might be clarified.

Negotiations with the Plumbers Union began on August 15; after several meetings, Urban, Smyth and Warren agreed to a 50-cent increase in isolation pay. The Union and USW attorneys are at this time preparing a proposed Hanford Works Addendum to the Washington State Agreement which will be sent to Atkinson-Jones. Present thinking is that A-J will submit the Addendum to General Electric "without recommendation." This office will continue to resist any increase in isolation pay.

Four negotiation meetings were held with the Machinists during August. The last meeting on August 29 was attended by a representative of the Federal

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Employee and Public Relations

Mediation and Conciliation Service at the request of the Union who had previously rejected the Employer's proposal of August 14, which granted an increase of 13½ cents ($2.45 to $2.585). No agreement has been reached.

Negotiations with the Sheet Metal Workers, Technical Engineers and Office Employees began in August. No agreement has been reached with any of the parties.

The Blacksmiths filed notice of their desire to negotiate a wage increase. They have not received a wage adjustment since April 17, 1949.

In view of the removal of Project controls (reported last month), the Boilermakers have verbally served notice of their desire to establish the provisions of the Seven Western States Agreement on the Project. This will mean their normal travel time and subsistence allowance and will be a difficult demand to reject unless the Construction Industry Stabilization Commission definition of "area" is interpreted to mean conditions prevailing locally rather than the area covered by the Seven Western States.

Increases of ten cents per hour ($2.65 to $2.75, Journeymen) were approved for all classifications of Electrician (Linemen). Similar increases for certain classifications of Electrician (Wiremen) were placed into effect concurrently with the Linemen (August 20) on the verbal approval of the Atomic Energy Commission. This action was necessary in order to comply with the Project parity agreement between these crafts.

On August 3, members of the Union committee investigating work under special hazard conditions were conducted on a tour of the 241-U tank farm by representatives of A-J, GE Minor Construction, Radiological Services and this office. The labor representatives indicated their belief that the first-hand knowledge received would be very beneficial in future dealings with the men involved.

Requests for Reimbursement Authorizations handled during the month:

1. Electrician (Linemen) - Overtime
2. Painters - Classification and rate
3. Plasterers - Wage rate
4. Carpenters - Meal Time Duty
5. Elec. (Linemen) - Wage Rates
6. Elec. (Wiremen) - Wage Rates

Reimbursement Authorizations received during the month:

1. Electrician (Linemen) - Wage rates

Work Stoppages - Actual or Threatened:

The Electrician (Linemen) work stoppage reported last month was completely resolved by August 14, at which time Newbery-Neon Electric had regained their normal complement of men on the job.

21

2

Employee and Public Relations

The failure of the Ironworkers Union to supply "Roadusters" because of their objection to Saturday work at time and one-half was settled on August 16, with the establishment of a Federally approved apprenticeship program for this classification. It is believed that the Plumber's concession regarding Saturday overtime influenced this Union's thinking on the matter.

On August 6, the Plumbers Union dispatched six men to USW, which constituted the first dispatch of Fitters since June 26, in spite of layoffs by Hanley & Company of approximately 200 men during that period. No concessions were made to the Union. To date, USW has received 179 men and has 109 on requisition.

Wage Rates:

Visits were made during August to participants of General Electric Company's Northwest Area Wage Survey. While the purpose of the visits was primarily to maintain contacts, discussions were held with representatives of each firm visited concerning recent wage increases. It was learned that petitions were pending before the Wage Stabilization Board, requesting permission to grant general increases for practically all of those plants which had not granted increases prior to the January 25 wage freeze. As a result of General Electric Company's nine cents increase on March 19, 1951, we have been able to maintain a comfortable margin over and above the regional wage rate level.

A request for a ruling was submitted to the Wage and Hour Division and Public Contracts of the Department of Labor on the proposed new working schedule for Patrolmen. The new schedule calls for these employees to work an eight-hour day and eat their lunch while on duty.

On August 8, 1951, official notification was received from the Wage Stabilization Board that our petition to increase the rates of Draftsmen and Designers was approved. Steps are now being taken to obtain reimbursement for these new rates, which will, when put in effect, allow us to pay competitive rates with those of the major architectural and engineering concerns on the West Coast.

The Division was informed on August 24, 1951, that J. R. Rue, Salary Administrator, received a similar notice from the Salary Stabilization Board to the effect that approval had been given the General Electric Company to increase the rates of exempt supervisors of Designers and Draftsmen employees.

As a result of the above approvals, reimbursement from the Atomic Energy Commission was requested. The new rates will be retroactive to April 1, 1951.

A job review was made of the Air Balancing Crew in the 200 West Area, as a result of a request by the HAMTC Business Agent. Further discussion on job classifications for Air Balancing personnel is continuing with 200 Area Supervision. In addition, in other divisions several grievances with regard to wage and job classification were resolved with the employees and supervisors concerned.

22

Employee and Public Relations

Job classification reviews were made throughout the month as a part of the continuing wage and job classification analyses. Changes in work assignments, reorganization with divisions and increased work loads resulted in revisions of job classifications and realignment of duties and work responsibilities.

The Wage Rate Records Office continued the work on the "debaset" program.

The Business Manager of the Richland Public Schools was given information and assistance in getting clerical jobs relationship established for school employees.

Insurance, Workmen's Compensation and Suggestion System:

Insurance Statistics

	July, 1951	August, 1951	Total Since Sept.,1946
Claims reported to the Department of Labor and Industries	138	144	4945
Claims reported to Travelers Insurance Company	6	12*	538

* Of the above claims reported during August to the Travelers Insurance Company, 10 were property damage, 1 bodily injury and 1 both property damage and bodily injury.

Suggestion System

	July, 1951	August, 1951	Total Since July 15,1947
Suggestions Received	166	134	7203
Investigation Reports Completed	124	158	
Awards granted by Suggestion Committee	23	30	
Cash Awards	$ 345.00	$ 440.00	
Estimated Savings	1,887.25	5,891.60	

An employee in the Metal Preparations Section received one of the highest awards for proposing a special Black Inked Ribbon to be used on the Chronolog Recorders in the 614 Building monitoring stations, making the print more legible and the reading job easier.

Another employee in the Metal Preparations Section received the other highest award for his suggestion concerning the use of a screw to replace the present soldered joint in the fabrication of Poppy cables, Signal cables, etc., to give more rigid connection, and fabrication can be made in less time.

Workmen's Compensation

One case under litigation closed during the month.

Employee and Public Relations

Liability Insurance

One case under litigation closed during the month.

Life Insurance

Code information which is known only to Home Office Life Underwriters Association has been furnished 42 insurance companies and investigation agencies during the month of August, 1951. This is in accordance with an arrangement with the Underwriters whereby employees on this project might be insured on the same basis as those working elsewhere.

COMMUNITY REAL ESTATE AND SERVICES
DEPARTMENT
SUMMARY-AUGUST, 1951

ORGANIZATION AND PERSONNEL

Number of employees on roll:	Beg. of month	End of month
Administration	21	22
Community Services Section (Total 254)		
Public Works	104	123
Parks & Recreation	49	44
Police (Richland)	41	43
Fire (Richland)	52	50
Public Safety	3	2
Engineering	14	12
Community Real Estate Section (Total 232)		
Housing and Maintenance	230	219
Commercial Property	13	13
700-1100-3000 Area Services Section (Total 113)		
700-1100 Maintenance	58	61
Patrol (North Richland)	19	20
Fire (North Richland)	32	32
	666	621*

* Due to the reorganization effective August 1, 1951, the Accounting personnel will not be shown in the Community total.

There was a decrease of fifteen employees in the Department during the month of August, 1951, in addition to the thirty employees which are deducted from our total due to the fact that Accounting is no longer included.

GENERAL

Total housing applications pending - 714.

During the month the responsibility for the operation of ambulance service was transferred from Kadlec Hospital to the Fire Unit.

HARobt/jak
9/12/51

Contract Section

Contract Number	Subcontractor	Title & Status	Project Number
G-305	Associated Engineers, Inc.	Irrigation System & Seeding, Parks & Playgrounds. Water Service Alteration to approximately 709 Prefab Houses. Awaiting AEC approval of contract modification to adjust final quantities. Final payment will be made and contract will be closed out in September.	C-323 S-255-B C-233 C-351 C-233-A C-449 S-255-A C-376 C-282-R
G-326	Packard Pipe & Pump Co.	1100-D Well. Contract being modified to adjust final quantities and time. Awaiting AEC approval. Final payment to be made and contract closed out in September.	C-382
G-328	C & E Construction Co.	Street Improvements. Subcontract modified to adjust final quantities. Final payment to be made and contract will be closed out in September.	S-255-D C-359 C-374 C-386 S-432 K-535
G-329	F. O. Repine	Exterior Painting 141 Houses, 24 Dorms, 770, 770A and 770B. Final payment made and contract closed out Aug. 3, 1951.	C-372
G-334	Edmund P. Erwen	Additions to Sewage Lift Station. Two pieces electrical equipment delayed in delivery by 3 to 4 months. Anticipated all work will be done except for that portion, by Sept. 15.	C-357
G-343	Baldwin & Dunham	Rehabilitation of Prefabs. 1013 units complete and the balance of 328 are 93.3% complete. Loops and sockets for electric meters on 709 units complete. Burned prefab 1313 Potter complete.	C-448 C-380 L-483
G-350	Roof Service Inc.	Rehabilitation of 700 Area Buildings. Contract work complete, exceptions cleaned up August 28. Contract to be closed out in September.	C-400

1219947

Contract Number	Subcontractor	Title & Status	Project Number
G-364	Motorola, Inc.	Radio Communications System. Job completed August 10, 1951 with one exception -- co-axial cable at main station to be installed and moving speaker in one fire truck. Contract to be closed out in September.	S-299
G-372	Weston Plumbing Co.	Installation Tileboard, Linoleum, 206 Houses. Work completed July 14. Contract being modified to adjust final quantities. Minor exceptions being completed. Contract to be closed out in September.	C-407
G-373	R. A. Neuman & Son	Interior Painting 676 Prefabs. All work completed June 30. Exceptions July 17. Awaiting verification of final quantities from field engineer.	S-379
G-375	F. O. Repine Co.	Exterior Painting 243 Houses. Contract complete June 30, few exceptions cleaned up July 7. Final payment made and contract closed out August 3, 1951.	S-485
G-377	C. T. Malcolm Co.	Soft Water Line to Hospital and Guthrie-Williams water line. Work completed August 1, 1951. Contract to be closed out in September.	S-415
G-378	Cyclone Fence Division American Steel & Wire	Fencing Wright to Van Giesen, Columbia Ballfield, Barth Playlot. Work completed August 24. Contract in process of being closed out.	S-244 C-356-R-2 S-406
G-381	Associated Engineers Inc.	Shelterbelt Planting. Approximately 90% complete. Modifying contract to install by-pass loops in three irrigation lines located on Swift Blvd.	C-408
G-387	Erwen Construction Co.	Alterations to 712-A. Work completed August 17. Exceptions cleaned up. Modification being processed for S-469, water line to 704 Building.	C-400
G-390	D & H Paving Company	1951 Street Improvement. Work started July 16, 1951. Contract work progressing on schedule.	S-426

1219446

G-394	A. C. Grant Company	Construction Handball Court. Notice to Proceed given August 9. Contract to be completed September 8, 1951.	C-356
G-397	Baldwin & Dunham Co.	Access Panels for Precut Houses. Notice to Proceed given August 9, 1951. Contract to be completed October 8, 1951. (Started work August 15.)	S-477
G-399	Royal Company Inc.	Replacement Furnaces "T" Type Houses. Notice to Proceed given August 17. Contract to be completed October 16, 1951.	L-330
G-405	Weston Plumbing Co.	Steam Pit Rearrangement at Dormitories. Contract in process of being approved.	S-321
G-409	Erwen Construction Co.	Tract House NN-1040. Award recommendation August 23, 1951 to Erwen Construction. Contract in process of being approved.	L-017

During the month of August, ninteen contracts were active, six of which were completed, two closed out, and two new ones are in process for approval. Payments to subcontractors during the month was approximately $241,268.00.

COMMUNITY SERVICES SECTION

SUMMARY

AUGUST, 1951

ORGANIZATION AND PERSONNEL:

	BEGINNING OF MONTH		END OF MONTH	
	Exempt	Non-Exempt	Exempt	Non-Exempt
ENGINEERING	9	5	7	5
FIRE	52	0	50	0
PARKS & RECREATION	13	36	13	31
POLICE	16	25	16	27
PUBLIC WORKS	16	88	16	87
PUBLIC SAFETY	2	1	1	1
	108	155	103	151

Effective August 6, 1951, the responsibility for the operation of ambulance service was transferred from Kadlec Hospital to the Fire Department.

A mobile radio unit corresponding to the Benton County Sheriff's frequency was installed in one of the police cars on August 2, 1951. This equipment will be used to monitor radio traffic on Sheriff's cars, etc. and will be used in other situations when working in conjunction with Sheriff's officers. The equipment will also be used as an aid in civilian defense activities. Call letters have been assigned to the unit by the Federal Communications Commission.

COMMUNITY REAL ESTATE AND SERVICES DEPARTMENT

PUBLIC WORKS UNIT

AUGUST, 1951

ORGANIZATION AND PERSONNEL

	Exempt	Non-Exempt
Employees - Beginning of Month	16	88
Transfers In	-	-
Transfers Out	-	2
New Hires	-	2
Terminations	-	1
Total - End of Month	16	87

SANITATION

A total weight of 1,706 tons of garbage and trash was collected and disposed of during August as compared to 1,399 tons in July.

EROSION CONTROL

Installation of bubble-head type irrigation systems in the new shelter-belt areas included in Project C-408 is now in progress. The placing of top-soil and planting of trees in these areas had originally been assigned to General Electric forces, but a decision from the Work Determination Committee requires that this work will be done by a sub-contractor. A revised project proposal covering this change in method of performance, and requesting additional funds has been submitted.

Routine maintenance of plantings and weed control was continued in all areas assigned to this group. Irrigation of shelter-belts, which had been carried out on the midnight shift during the peak water consumption period, will be done on day shift, effective September 4, 1951.

1219451

Community Real Estate and Services Department
Public Works Unit

SEWERAGE SYSTEM

An overloaded condition in the Swift Boulevard 18" sewer line has been relieved by diverting the flow of the George Washington 18" line from the Swift Boulevard line to the 30" trunk line from North Richland. This was accomplished by installing a man-hole at the point where the George Washington Way line crossed over the 30" line, about 400' north of the intersection of George Washington and Swift. This arrangement, also, allows the Swift line to flow north through the George Washington line and into the 30" trunk. It should be noted, however, that any substantial additions to the load being carried by the Swift Boulevard sewer line will overload the line beyond its capacity.

Construction work on C-357, "Additional Pumping Capacity, Sewage Lift Station", has continued and by the end of August all pump discharge piping had been completed, and one electrical pump and one combination electrical and diesel pump had been installed. The drive on the remaining combination electric and diesel pump rotates in the wrong direction, and this may cause delay in completion of the project.

Normal operation and maintenance of the treatment plants, lift station and collection system were carried out during the month.

Sewage flow records for August are as follows:

Sewerage

	Total Sewage Flow Million Gallons	Average Daily Flow Million G. P. D.	Average Rate Flow Gals. per Min.
Plant No. 1	56.180	1.813	1,259
Plant No. 2	81.746	2.637	1,831
Totals	137.926	4.450	3,090

IRRIGATION SYSTEM

Routine operation and maintenance of the pressure irrigation systems and gravity flow canals were continued without incident.

Project S-244, Irrigation Ditch Fencing from Wright to Van Giesen, was completed on August 14 and acceptance inspection was held on August 16, 1951.

1219452

Community Real Estate and Services Department
Public Works Unit

ROADS AND STREETS

The Fiscal Year 1951 Street Improvement Program is progressing about on schedule. Concrete work on Wright Avenue is nearly complete, and pavement has been laid on Wright from Swift to Williams & with the exception of the aprons at intersections. Concrete work is in progress on Van Giesen and Swift Boulevard, and the base course is being laid on the George Washington Way fill.

A Manager's Appropriation Request covering the replacement of existing 10' radius curb and gutter returns at the intersections of Swift and Goethals, and Swift and Stevens, with 25' radius returns was approved on September 4, 1951, and has been assigned to the Engineering Unit for performance.

Routine maintenance of streets and sidewalks, storm and surface drainage systems, and street sweeping was continued per schedule.

DOMESTIC WATER

Average daily water consumption for August was 18.74 million gallons, which is a decrease of 1.6 million gallons from the daily average during July.

The production and consumption record for August is as follows:

Domestic Water System

	Well Production Million Gallons	Avg. Daily Production	Total Consumption Million Gallons	Avg. Daily Consumption
Richland	191.5386	6.1787	435.5540	14.0501
North Richland	236.2320	7.6204	111.1468	3.5853
Columbia Field	154.9505	4.9984		
300 Area			34.3142	1.1069
Totals	582.7211	18.7975	581.0150	18.7423

Project S-307, The Williams-Guthrie Water Line, was totally completed on August 31, 1951.

1219453

PARKS AND RECREATION UNIT
MONTHLY REPORT
August, 1951

ORGANIZATION AND PERSONNEL

	Exempt	Non-Exempt
Beginning of Month	13	36
New Hires	0	1
Terminations	0	6 *
Transfers - IN	0	0
OUT	0	0
	13	31

*One leave of absence

SCHOOLS

The following is a tabulation of full-time paid School District #400 personnel as of August 31, 1951:

Administration	6
Principals & Supervisors	14
Clerical	22
Teachers	0
Health Audiometer	0
Building Custodians	50
Cooks	10
Nursery School & Extended Day Care	10
Bus Drivers	0
Farm Manager	1
	103

CLUBS AND ORGANIZATIONS

As of August 31, 1951, organizations' personnel, exclusive of those included in the Real Estate Commercial Facilities Unit report, include:

Youth Council - Chest	1
Boy Scouts	1
Camp Fire Girls	1
Hi-Spot Club	2
Girl Scouts	2
Justice of the Peace	1
Y. W. C. A.	2
	10

The Fourth Annual Atomic Frontier Days sponsored by the Richland Junior Chamber of Commerce was held on August 10, 11, and 12, with most of the activities taking place at Riverside Park. The concession midway was located on Lee Boulevard adjacent to the Park with 26 local groups operating booths. On Friday, August 10, the Atomic Frontier Days show and crowning of the queen ceremony was held on the bandstand in the Park. After the show a fireworks display was presented to the public and which took place at the north end of the Park. Approximately 10,000 persons attended the show and fireworks display.

Parks and Recreation

On Saturday, August 11, the Atomic Frontier Days Parade was held in the morning and a dance and drawing for an automobile was held in the evening. Approximately 4,000 persons attended the dance and drawing.

On Sunday, August 12, the last event of the celebration was held at the Community House where an art and hobby exhibit was on display.

Arrangements made by the Parks and Recreation Unit in assisting the sponsoring group of the Atomic Frontier Days were as follows:

1. Arranged for street barricades to be provided for parade and midway.
2. Arranged for additional electrical power to be provided for concession lighting.
3. Arranged for alterations to bandstand, both carpentry and electrical, for show.
4. Arranged for the procurement and loan of government trucks to be used in the parade.
5. Arranged for police and fire clearances of parade route.
6. Arranged for necessary labor and transportation to clean up park and parade route.
7. Arranged for the loan of salvage materials for firework display.
8. Provided necessary piano, electric organ, tables, and chairs for use during show and dance.
9. Arranged for trash wagons and containers to be made available on midway. Also pick up of same as needed.

The number and types of organizations presently served by the Parks and Recreation Unit include:

Business & Professional Clubs	21
Churches and Church Organizations	26
Civic Organizations	17
Schools	13
Fraternal Societies	24
Political Organizations	5
Recreation and Social Clubs - Alumni	3
Art, Music & Theatre	9
Bridge	2
Dance	4
Garden	2
Hobby	9
Social	9
Sports	18
Veteran and Military Organizations	14
Welfare Groups	7
Youth - Boy Scouts	20
Camp Fire Girls	36
Girl Scouts	49
Miscellaneous	10
	288

Parks and Recreation

RECREATION

Pet show and parade, a special event of the Summer Recreation Program, was held at Riverside Park on August 1, 1951, with 145 in attendance.

A jump rope contest was held at Riverside Park on August 8, for boys and girls with 55 children participating in the event.

The football pass-catch contest sponsored by the Parks and Recreation Unit and held at Riverside Park on August 15, had a total of 68 entries.

Assistance was given by the Parks and Recreation Unit in the programming and aiding in the Catholic Church picnic held on Sunday, August 19, at Riverside Park. Approximately 200 persons attended this picnic.

The last of the special event activities of the Summer Recreation Program was held at Riverside Park on August 23, 1951, in the form of a Demonstration Night. About 60 persons participated in the event with approximately 425 spectators. Two band concerts, the last of the summer season, were held at Riverside Park on August 8, and August 22. Approximately 750 persons were in attendance at these concerts.

On Tuesday, August 28, a program and party was sponsored by the Parks and Recreation Unit at the Community House for 60 persons of the Community Band in appreciation of their services during the summer concert series.

The Triple-O League softball games sponsored and organized by the Parks and Recreation Unit, were played each Wednesday throughout August and championship games were played on August 22, at Memorial Softball Field.

On August 26, the Triple-O League inter-district playoff games were played between the North Richland Triple-O League winners and the Richland Triple-O League winners.

Attendance figures for August, 1951, at Riverside Park are as follows:

	Children	Adults	Total
General Attendance	12,295	10,553	22,848
Sepcial Events - Participants	1,041	479	1,520
Spectators	881	1,044	1,925
Assisted Activities	475	514	989
Totals for Month	14,692	12,590	27,282
At end of previous Month	23,905	17,483	41,388
	38,597	30,073	68,670

1219456

Parks and Recreation

Below is listed organized groups and classes using the Riverside Park facilities during August, 1951

	Children	Adults	Total
Employee Relations Picnic	60	70	130
Foresters Picnic	69	36	105
Demonstration Night	317	177	494
Cub Scout Pack 28	75	41	116
Catholic Church Picnic	100	100	200
Projecteers Picnic	25	65	90
Kellex Corp. Picnic	43	59	102
Jewish Congregational Picnic	30	37	67
TOTALS	719	585	1,304

COMMUNITY HOUSE

All excess equipment in the kitchen was removed and arrangements made to have the kitchen cleaned and painted. A small dining room is to be provided at the west end of the kitchen.

A transfer of equipment was made from the Richland Riders Club and the Masonic Hall to the Community House. Items included were kitchen material and furniture.

A minor fire in a switch box located in the kitchen was experienced on August 26, at the Community House due to overload condition of electrical line servicing the building. Arrangements have been made to have this condition remedied by the installation of separate electrical service lines to the Community House and the Recreation Hall.

Arrangements were made to have individual thermostatic heat controls installed in the east social room and the craft room.

Work was begun on the installation of a sink in the craftroom.

All recreational office equipment and other excess items not being used were removed from the 1125 Building and sent to the Excess Yards.

The Fall Program for the Community House is complete and will be ready for publication on September 11, 1951.

Attendance - Community House	Children	Adults	Total
General Attendance	3,308	3,116	6,424
Special Events - Participants	125	158	283
Spectators	561	1,107	1,668
Assisted Activities	0	432	432
Totals for Month	3,994	4,813	8,807
At end of previous Month	7,036	5,899	12,935
	11,030	10,712	21,742

Indoor attendance to date - 21,742
Outdoor attendance to date - 58,366

Parks and Recreation

Below is listed organized groups and classes using the Community House facilities during August, 1951

	Children	Adults	Total
Hi-Spot	298	19	317
Crafts	376	18	394
Elementary Program	187	3	190
Servicemen's Center	0	238	238
Open Drop In	1,183	223	1,406
Summer Band	68	120	188
TOTAL	2,112	621	2,733

The following number of bookings were made during August, 1951:

Bomber Bowl	3
Burlin Camp	16
Softball Fields	122
Parks	20
Community House	9

MAINTENANCE

A trophy case was made for the Public Safety Unit and installed in the main entrance way at the Richland Public Library.

Night irrigation of the Parks and Recreation assigned areas was discontinued on August 31, 1951.

An additional ticket booth was procured and installed outside the northwest entrance to the Bomber Bowl.

Arrangements were made to have the electric football scoreboard, purchased by the Key Club of Columbia High School, installed at the north end of the Bomber Bowl.

Work was continued on preparing the playfield turf at the Bomber Bowl for the coming football season.

There were 38 Work Orders issued to the Parks and Recreation Unit and other Units during August, 1951.

PARK DEVELOPMENT

Progress Report

Proposed Work	Percentage Complete
1. Playground Equipment Installation:	
a. Project C-356-R	100%
b. Project C-425 (equipment on hand)	None

1219459

Parks and Recreation

Proposed Work (continued)	Percentage Complete
2. Fence Installations:	
a. Columbia Playfield (children's area) Project S-245	None
Columbia Playfield (tennis courts) Project S-425	None
Columbia Playfield (baseball field) Project L-406	100%
b. Barth Playlot - Project L-406	100%
c. Riverside Park - Project S-450	None
3. Columbia Playfield Recreation Facilities:	
a. Shuffleboard Courts - Project C-356-R	98%
b. Handball courts - Project C-356-R	25%

PUBLIC LIBRARY

Total circulation for the month was 14,076. The breakdown of the circulation is as follows:

Books	Magazines	Records	Inter-Library Loans	Pamphlets
Adult - 7,231 Juvenile-5,457 12,688	313	976	79	20

Total new registration was 579. (Adult - 459 - Juvenile - 120.)

Books added to the collection was 2,144. The increase in the number of books added this month over July is due to the assistance of twenty "Tech Grads" who were temporarily assigned to the Library while waiting for area clearances.

The Head Librarian attended the Pacific Northwest Library Association Conference in Spokane during the month.

The Library Board met August 1, 1951. The Reference Librarian reported on the American Library Association 75th Anniversary Conference which she attended in Chicago, July 8 - 14.

The Hanford Works Supervisor's Association is to sponsor a party on September 8, for the children who have finished their ten books for the summer reading program. Prizes and awards will be given to the children.

1219959

Parks and Recreation

MAJOR EVENTS DURING THE MONTH

August 7 - 8	Little League Baseball Playoffs (Local)	Jefferson Playground
6,7 & 8	City Softball Playoffs	Memorial Softball Fld.
8	Community Band Concert	Riverside Park
10, 11 & 12	Atomic Frontier Days	Riverside Park
13 - 20	District Softball Playoffs	Memorial Softball Fld.
22	Community Band Concert	Riverside Park
23	Summer Recreation Demonstration	Riverside Park

COMMUNITY SERVICES

RICHLAND POLICE DEPARTMENT

AUGUST 1951

ORGANIZATION AND PERSONNEL

	Exempt	Non-exempt
Employees - Beginning of Month	16	25
Transfers In	0	0
Transfers Out	0	0
New Hires	0	2
Terminations	0	0
Total - End of Month	16	27

GENERAL

The responsibility for ambulance assistance was transferred to the Richland Fire Department on August 6.

A mobile radio unit corresponding to the Benton County Sheriff's frequency was installed in one of our police cars on August 2. This equipment will be used to monitor radio traffic of Sheriff's cars, etc., and will be used in other situations when working in conjunction with Sheriff's officers. The equipment will also be used as an aid in civilian defense activities, and will provide a quick line of communication to the Benton County Sheriff's Office in Kennewick. Call letters have been assigned to the unit by the Federal Communications Commission.

A new fire proof safe was obtained during the month for storing of valuables held by Police.

A new 3" X 5" reference card file was installed at the Police Desk, providing for easy reference to wanted and missing persons and stolen automobiles.

New type police identification cards were issued to each member of the department. The new cards are designed along the lines of standard police identification cards, showing picture, description, thumb print, etc. This identification will assist in dealing with other police agencies.

During the month, a total of 164 letters were received, compared to 242 last month. These consisted of 155 inquiries on arrests and 9 requests for assistance.

During the month, 41 prisoners were processed through the Richland Jail. Twenty-nine of these were from North Richland.

During the month, 39 gun registrations were recorded.

During the month, 179 bicycle registrations were recorded.

During the month, 273 traffic violation reports were received. These consisted mainly of speeding, illegal parking and stop sign violations and

negligent driving. A total of 111 other reports were received. These consisted mainly of larceny and public intoxication cases.

TRAFFIC

There were 22 reportable accidents in Richland during the month of August. These accidents resulted in minor injuries to five persons. There were no major injuries or fatalities this month. There were eight more reportable accidents this month than last month but there were three less injuries than during the preceeding month. There were 13 reportable accidents for the month of August, 1950. There have been 152 reportable accidents this year to date as compared to 124 for the same period last year. There have been 41 persons injured in automobile accidents and one fatality this year to date as compared to 21 injuries for the same period last year.

Sixteen of the above accidents were investigated by members of the Richland Police Department. Six of the above drivers were arrested as a result of these investigations. Property damage averaged $111.19 per accident this month as compared to $388.20 per accident for the month of July this year.

Driving violations which contributed to the 22 accidents this month were:

Negligent Driving	7
Failure to Yield Right of Way	7
Disregarding Traffic Light	2
Improper Backing	2
Following Too Close	1
Improper Turn	1
One Driver Struck an Animal	

During the month of August members of the Traffic Section were requested to speak at four safety lectures. Traffic safety films were shown to these groups which were attended by approximately 85 employees.

Most of the arterials in town were center lined during the month, but due to construction work in progress or to be started in the near future, Van Giesen, Wright Avenue, George Washington Way and part of Swift Boulevard were not painted at this time. A work order has been issued and painting of crosswalks should be started in the near future but it is doubtful that they will be completed prior to the start of school.

Due to construction on several streets it has been necessary to remove many traffic signs and they have been replaced with portable signs. Work has progressed on Wright Avenue to the point that several signs have been permanently installed.

There was some congestion on the road from Richland to the "Y", due to the necessity of changing traffic flow so that constructions would not be held up. Traffic was directed over the new bridge Monday, August 27. Two lanes of blacktop were completed for travel Tuesday evening at which time two lanes of uninterrupted traffic was established from Richland to the "Y". Mr. Kinder, Benton County Engineer, expects to have the other two lanes completed for striping and open to traffic by September 12, 1951. Traffic control on the Richland "Y" road was discontinued August 25 with the opening of the new Yakima River bridge.

Richland Police Department - Continued

A quantity of ear muffs were received during the month and will be distributed to members of the School Boy Patrol for use this winter.

TRAINING

The subjects for classroom training for the month were Police Procedures in Handling Crimes and Complaints.

Training at the small arms range for the period in field instruction was as follows:

Pistol 2 hours

Qualifications on the Army-L course were as follows:

Score	No. Men	Per Cent
Expert	9	41%
Sharpshooter	7	32%
Marksman	4	18%
Unqualified	2	9%

A total of 22 men reported for police training.

ACTIVITIES AND SERVICES

	June	July	August
Doors and windows found open	65	49	45
Children lost or found	13	14	20
Ambulance runs assisted	24	37	6
Ambulance driver provided	3	7	1
Dogs, cats reported lost or found	11	10	32
Dog, cat, loose stock complaints	36	30	29
Persons injured by dogs	5	5	3
Bank escorts & details	0	0	0
Fires investigated	17	23	20
Miscellaneous escorts	6	6	11
Complaints investigated (no enforcement action)	40	29	54
Deaths reported	2	0	1
Articles lost or found	28	25	44
Records inquiries	222	187	162
Law enforcement agencies assisted	21	3	16
Private individuals assisted	30	17	23
Plant divisions assisted	45	45	54
Emergency messages delivered	50	60	48
Totals	618	547	569

RICHIAND POLICE DEPARTMENT
RICHLAND JUSTICE COURT CASES
AUGUST 1951

VIOLATION	NO OF CASES	NO OF CONV.	NO OF FORF.	CASES CONT.	CASES DISM.	WARR ISS.	SENT JAIL	SENT SUSP	LIC REV	CASES ORIG. PREV. MON.	CASES INCL. OTHER VIOL.	BAIL FORF.	FINES	FINES SUSP.
Def. equipment	2		1			1					2			
Drkn driving	3			2	1									
Dr. lic.	14	5	6		1	2		4		2	6	$ 24.50	$ 20.00	$ 15.00
F.T.S. & I.	1	1											12.50	
F.T.Y.R.O.W.	4	2		1		1				1	1		11.00	
Ill. parking	99	22	55	1	2	19		19				189.00	73.50	63.00
Ill. passing	2	1	1								1	7.50		
Impr. lic. plates	1	1						1						
Neg. driving	23	14	3	2	3	1		1		1		72.50	392.50	15.00
Reckless driving	3	1		1	1			1	1				40.10	40.10
Speeding	58	14	35	2	4	3		2		5		463.00	185.50	22.50
Stop sign	32	9	23					2			3	119.00	34.50	5.00
Larceny by check	2	2											75.00	
Petit larceny	1	1											12.50	
Drinking in public	1			1										
Throwing & dropping glass objects from a moving vehicle.	1	1											7.50	
Public intoxication	10	3	6	1								100.00	50.00	
Public nuisance	2	2											45.00	17.50
Rape	1					1								
Vagrancy	4	4											95.00	
Removing barricade	1	1							1	1			12.50	12.50
TOTAL:	265	84	130	11	12	28		30	2	10	13	$975.50	$1067.10	$190.60

NOTE: (Two reckless driving cases amended to negligent driving.)

POLICE DIVISION - TRAFFIC CONTROL STATISTICS
AUGUST, 1951

MOTOR VEHICLE ACCIDENTS:

	Total Number		Fatalities		Major Injuries		Minor Injuries	
	July	Aug.	July	Aug.	July	Aug.	July	Aug.
Richland	14	22	1	0	1	0	2	5

ACCIDENT CAUSES:

	Negligent Driving		Failure to Yield Right of Way		Reckless & Drunken Driving		Other Causes	
	July	Aug.	July	Aug.	July	Aug.	July	Aug.
Richland	6	7	4	7	0	0	4	8

PLANT WARNING TRAFFIC TICKETS ISSUED:

Richland: NO WARNING TICKETS ISSUED FOR JULY AND AUGUST, 1951.

TRAFFIC CHARGES AND COURT CITATION TRAFFIC TICKETS ISSUED:

	Speeding		"Stop Sign"		Drunken Dr.		Reckless Dr.		Right of Way V.		Neg. Dr.		Parking V.		Other V.		Totals	
	July	Aug.	July	Aug.	July	Aug.	July	Aug.	July	Aug.	July	Aug.	July	Aug.	July	Aug.	July	Aug.
Richland	49	44	35	31	1	2	7	4	3	2	8	13	33	95	43	15	179	206

TRAFFIC VOLUME: Average 24-Hour Traffic Volume Count for week ending on August 24, 1951, Goethals north of Williams-1698 cars.

NOTE: Traffic Control Statistics show ORIGINAL CHARGES ONLY.

MONTHLY REPORT
RICHLAND POLICE DEPARTMENT
AUGUST 1951

OFFENSES	KNOWN	UNFOUNDED	CLEARED ARREST	CLEARED OTHER*
PART I				
1. Murder	0	0	0	0
2. Rape	0	0	0	0
3. Robbery	0	0	0	0
4. Aggravated Assault	0	0	0	0
5. Burglary--Break & Ent.	4	0	2	1
6. Larceny--Over $50.00	5	1	1	2
Larceny--Under $50.00	18	0	2	5
Bike Theft	17	0	0	17
7. Auto Theft	0	0	0	0
TOTAL PART I CASES	44	1	5	25
PART II				
8. Other Assaults	1	0	0	1
9. Forgery	0	0	0	0
10. Embezzlement & Fraud	2	0	2	0
11. Stolen Prop:Buy:Rec.Poss.	0	0	0	0
12. Weapons:Carry:Poss:	0	0	0	0
13. Prostitution	0	0	0	0
14. Sex Offense	2	0	2	0
15. Off. Ag.Fam. & Child	1	0	0	1
16. Narcotics-Drug Laws	0	0	0	0
17. Liquor Laws	0	0	0	0
18. Drunkenness	9	0	9	0
19. Disorderly Conduct	12	0	5	5
20. Vagrancy	1	0	1	0
21. Gambling	0	0	0	0
22. Driving While Intox.	3	0	3	0
23. Violation Rd. & Dr. Laws:				
Speeding	56	0	56	0
Stop sign	32	0	29	0
Reckless Driving	4	0	4	0
Right of Way	0	0	0	0
Negligent Driving	18	0	16	0
Defective Equipment	0	0	0	0
24. Parking	103	0	103	0
25. All Other Traffic	21	0	20	1
26. All Other Offenses:				
Public Nuisance	2	0	2	0
Dest. of Pers. Prop.	3	0	0	2
Dest. of Govt. Prop.	0	0	0	0
Malicious Mischief	6	1	0	4
Vandalism	6	0	0	4
Dog Nuisance	2	0	0	2
Car Prowl	3	0	0	1
Prowlers	6	0	0	4
Illeg. Use of Firearms	1	0	0	1
Investigation	7	0	0	7
Arson	2	0	2	0
Pick Up For Outside Ag.	1	0	1	0
27. Suspicion	4	0	0	0
TOTAL PART II CASES	308	1	255	33

(Continued on Page Two)

OFFENSES	KNOWN	UNFOUNDED	CLEARED ARREST	CLEARED OTHER*
PART III				
28. Missing Persons	2	0	0	2
Lost Persons	6	0	0	6
Lost Animals	19	0	0	19
Lost Property	16	0	0	16
29. Found Persons	5	0	0	5
Found Animals	5	0	0	5
Found Property	30	0	0	30
TOTAL PART III CASES	83	0	0	83
PART IV				
30. Fatal Not.Veh.Traf.Acc.	0	0	0	0
31. Pers.Inj.Mot.Veh.Traf.Acc.	5	0	0	0
32. Prop.Dam.Mot.Veh.Acc.	17	0	0	0
33. Other Traffic Acc.	0	0	0	0
34. Public Accidents				
35. Home Accidents	No Accurate Statistics Kept			
36. Occupational Accidents				
37. Firearms Accidents	0	0	0	0
38. Dog Bites	2	0	0	2
39. Suicides	0	0	0	0
40. Suicide Attempts	0	0	0	0
41. Sudden Death & Bodies Fd.	0	0	0	0
42. Sick Cared For	0	0	0	0
43. Mental Cases	1	0	0	1
TOTAL PART IV CASES	25	0	0	3
COMPOSITE TOTALS PARTS I,II,III,IV CASES	460	2	260	144

*Cases listed under "Cleared Other" are those cleared by various means other than arrest, such as: orders from prosecutor, juvenile probation officer or other situations in which a mutual agreement is obtained. They are definitely "cleared" cases and differ from the arrest column in that there were no arrests.

Property Reported Stolen During Month..$912.00 (17 bikes)
Property Recovered During Month..$680.00 (17 bikes)

SEE PAGE THREE FOR JUVENILES INVOLVED

One Larceny under $50.00 occurred last month cleared this month.

PAGE THREE RICHLAND POLICE DEPARTMENT MONTHLY REPORT FOR AUGUST, 1951 OF JUVENILES INVOLVED

OFFENSES	NO.	JUVENILES	SEX	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	TOTAL
Petit Larceny	1	1	M																1	1
Public Nuisance	2	3	M														1	1	1	3
Burglary	2	3	M						1	1	1									3
Arson	2	3	M						1	1	1									3
Disturbance	1	1	M														1			1
Investigation	3	6	M									1		1		1	2	1		6
Malicious Mischief	1	1	M									1								1
Molesting	1	1	M														1			1
TOTALS	13	19							2	2	2	2		1		1	5	2	2	19

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Number of offenses known to police per 25,000 inhabitants in cities of 25,000 persons:

	Wash. Ore. & Calif. Six Months (July-Dec.1950)	One Month Average	Richland (July-Dec.1950)	Richland July 1951	Richland August 1951
Murder	.76	.13	0	0	0
Robbery	19.8	3.3	0	0	0
Agg. Assault	14.9	2.4	0	0	0
Burglary	128.1	21.3	12	3	4
Larceny	392.	65.3	155	21	22
Auto Theft	57.	9.5	12	1	0
Bike Theft			134	18	17

Number of offenses known to police per 25,000 inhabitants regardless of whether offenses occurred in cities or rural districts:

	State of Washington Six Months (July-Dec.1950)	One Month Average	Richland (July-Dec.1950)	Richland July 1951	Richland August 1951
Murder	.74	.12	0	0	0
Robbery	16.7	2.8	0	0	0
Agg. Assault-	5.0	.8	0	0	0
Burglary	120.4	20.0	12	3	4
Larceny	377.6	62.9	155	21	22
Auto Theft	54.5	9.0	12	1	0
Bike Theft			134	18	17

The portion of offenses committed by persons under the age of 25 years is shown:

	National Average(Percentage of Cases)(July-Dec.1950)	Wash.Ore.Cal.(Actual Cases July-Dec.1950)	Richland (July-Dec.1950)	Richland July 1951	Richland August 1951
Robbery	54.1	.23	0	0	0
Burglary	61.6	6.0	1	0	2
Larceny	45.4	4.5	24	1	1
Auto Theft	67.3	17.3	0	0	0

Note: Statistics of juvenile offenses throughout the United States were taken from the Uniform Crime Report published by the Federal Bureau of Investigation, which states: "It should be remembered that the number of arrests recorded is doubtless incomplete in the lower group becuase of the practice of some jurisdictions not to fingerprint youthful offenders."

COMMUNITY SERVICES

RICHLAND FIRE DEPARTMENT

AUGUST, 1951

ORGANIZATION AND PERSONNEL:	Exempt	Non-Exempt
Employees - Beginning of Month	52	0
Transfers In	0	0
Transfers Out	1	0
New Hires	0	0
Terminations	1	0
Total End of Month	50	0

Fire Protection:

Response to Alarms	18
Fire Loss (Estimated): Government	$ 10.00
Personal	$ 12.50
Investigation of Minor Fires and Incidents	14
Ambulance Responses	29
Safety Meetings	8
Security Meetings	4
Inside Drills or Schools	48
Outside Drills	47
Fire Alarm Boxes Tested	186

Ambulance service was taken over from the Medical Department on August 6th. Two of the twenty-nine calls handled during the month required first aid treatment prior to transportation.

Fire apparatus was dispatched five times to stand by at the A.E.C. Airport for aircraft landings and takeoffs.

A fireman was detailed August 19th to stand by during welding operations on 703 Building sprinkler systems.

On August 25th, firemen extricated a six year old boy from a cold air duct in a ranch type residence.

Operation of three fire hydrants were tested during August.

Sub-contractor completed installation on August 6 of seven mobile units and central station for exclusive Fire Department radio network.

Fire Prevention:

A total of 351 fire inspections were made during August, resulting in 28 written hazard reports.

During the month 593 fire extinguishers were inspected. Fifty required service and nine were excessed. Three were reported missing.

RICHLAND FIRE DEPARTMENT August, 1951

Misuse of fire extinguishers at the Civil Air Patrol airport was reported to Real Estate and A. E. C. Safety offices.

A number of empty and defective fire extinguishers in Richland schools were reported to school officials.

Fourteen lengths of 1 1/2 inch linen fire hose and eleven 1 1/2 inch brass nozzels were excessed.

A total of 245 manhours and $32.47 in material costs for fire prevention work were charged to other operating divisions.

A fire extinguisher demonstration was given August 8 to 16 employees of the Real Estate Section. A fire prevention talk and demonstration was given August 23 to 42 employees of the Stores Division.

On August 20 a meeting was held with the Chairman of the Chamber of Commerce Fire Prevention Committee on initial plans for Fire Prevention Week. Several contacts were made later in the month in an effort to speed up preparations for the campaign.

Inspection of the Mart alterations was made with a representative of Commercial Relations and the facility operator.

Many weed hazard conditions were reported to personnel responsible for abating the hazards.

The supervisor of the 703 Building was advised of the hazards of storing oily mops in closets.

New sprinkler heads blocked by fluorescent light fixtures in Kadlec Hospital were reported to D & C Engineers and hospital officials.

Requested that leaks in Hospital sprinkler system be repaired.

Advised A. E. C. Engineering that subcontractors were using Stilson wrenches on fire hydrants.

Noted that all fire door fusible links in Chief Joseph Junior High School painted with two coats of paint. Referred this to the painting contractor.

Advised Kadlec Hospital Administrator that the new post indicator valves at the Hospital should be painted red and that each should be numbered.

Gas cylinders outside the Medical Arts Building that are not protected from weather were reported to Public Safety office for correction.

Defective fire door in third wing, second floor of the 703 Building referred to 703 Building Supervisor.

A. E. C. Community Management office contacted on repair of holes through firewalls under Columbia High School and was advised correction would be made starting September 17.

RICHLAND FIRE DEPARTMENT August, 1951

Investigated a near serious incident in the Recreation Hall where overloaded circuits burned out a primary main switch and considerable amount of 220 volt wiring before kicking out the pole transformer. Report submitted advising that other facilities are believed to be dangerously overloaded.

Ordered 43,700 pieces of Fire Prevention Week promotional material. An additional 9,800 pieces were ordered by AEC Safety branch at our request.

Sample of overloaded wiring removed from the Recreation Hall was displayed for Realty and Community Engineering representatives. Pictures of the wiring were taken for future reference.

COMMUNITY SERVICES

PUBLIC SAFETY UNIT

August 1951

Organization and Personnel:	Exempt	Non-exempt
EMPLOYEES - BEGINNING OF MONTH	2*	1
Transfers In	0	0
Transfers Out	0	0
New Hires	0	0
Terminations	1	0
Total - End of month	1*	1

*One exempt employee charged full time to Civil Defense

Statistical and General:

Publicity for the August safety theme entitled "Signs of Life" was handled by the Hanford Safety Council representative of the Richland Safety Council, with seven radio interviews, radio spot announcements and many newspaper releases. Column inches of newspaper space for the month totalled 125.

Cards notifying clubs, organizations, the Army and Richland Public Schools of safety films which will be in the Public Safety office during the month of September, were sent out this month.

Safety films in this office during the month of August were:

A Closed Book	Safe As You Think	Back to Life
A Safe Day	Reckless or Wreckless	X Marks the Spot
Heedless Hurry	Once Upon A Time	Ladders, Scaffolds and Floor Openings

These films had an audience of approximately 500.

Several reports of "unsafe conditions" in various parts of the city have been turned over to the proper division for correction, and all have been handled by this time.

Application for Charter for the Richland Safety Council in the National Safety Council is being prepared, ready for mailing.

A meeting of the Traffic Control Committee was held at which time the Bridle Path crossings, taxi stalls and loading zones for the Richland Yacht Club were discussed and acted upon.

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AUGUST, 1951

MONTHLY REPORT - ENGINEERING UNIT

Personnel

Number of employees on payroll:

	Exempt	Non-exempt	Total
July 31, 1951	9	5	14
August 31, 1951	7	5	12

The Status of Active Projects is as follows:

K-562 - Automatic Irrigation System Levee 2-C - Plans and specifications are ready for subcontracting.

L-262 - Water and Sewer - Assembly of God Church - Design complete. Bid package being prepared for contract.

L-406 - Installation of Cyclone Fence around Barth Playlot - Work 100% complete August 24, 1951.

S-244 - Irrigation Ditch Fencing - Wright to Van Giesen - Work 100% complete August 14, 1951.

S-299 - Radio Communication System - Fire Division - 100% Complete except for reinstallation of one speaker in fire truck. Work is accepted.

S-405 - Street Tree Planting - Additional Erosion Control - Discontinued until fall.

S-450 - Fencing Riverside Park - Design Complete, bid opening by Contract Div. August 15, 1951, waiting for Notice to Proceed to subcontractor.

S-469 - Site Preparation - New Wing 703 Building - 100% Complete, August 18, 1951.

S-479 - Fire Protection - Chief Joseph School - Plans and Specifications are being reviewed by Contract Section.

S-356 - 1. Fencing of Baseball Park at Columbia Playfield - Completed August 24, 1951. Final Acceptance report on August 27, 1951 - No exceptions 100% comp.

2. Hand Ball Court at Columbia Playfield - Started construction on August 17, 1951. Pouring center wall. 25% complete.

3. Playground Equipment at Columbia Playfield is 85% installed.

Engr. Unit Monthly Report

C-357 - Alteration to Sewage Lift Station - All equipment to be furnished by GE Company is on Project site. Subcontractor has new header line installed, and pumps connected. Installing 1st motor - combination diesel engine and Electric motor. Forming valve pit and completing all piping. Electrical work 70% complete. Two pieces of electrical equipment purchased by subcontractor will hold up completion of job approximately 90 days. Preparing Change Orders on floor clamps for pumps, concrete stand for diesel tank, and piping for water jacket cooler for motor drives. These items were not included in original design of project.

C-400 - Reroofing, painting, siding - 700 Area Buildings - 100 % complete and accepted August 28, 1951.

C-407 - Replace Bathtub, Tileboard, and Linoleum Installation - Project went to W. D. Byrd.

C-408 - Additional Erosion Control - Irrigation of Public Grounds and Shelter Belt Planting - Subcontract work for site grading and the installation of irrigation is approximately 50% completed.

C-425 - 1951 Park Development Program - Design has been completed and plans and specifications are being reviewed by the Contract Division.

C-4257 - Sewer Line to Comfort Station at Columbia Playfield - Design 100% comp.

C-4256 - Fencing at Columbia Playfield - Out for Contract - Notice to Proceed not given to contractor.

C-4261 - Van Giesen Street - Improvement well under way. Concrete work is estimated at approximately 75% complete. The base for asphalt surfacing should be completed by the middle of September.

C-4262 - Wright Avenue - Concrete work is estimated at approximately 90% complete. Base material and leveling mostly completed. Asphalt surfacing started this week. The improvement on this street is retarded to coordinate with curb work.for the Fourth Addition to Housing.

C-4263 - Symons Street - Construction not started.

C-4265 - Swift Boulevard - Concrete catch basins and storm pipe mostly finished. Excavation for concrete curb started this week. Work has been delayed by recent decisions regarding the Davis-Bacon Act.

C-4264 - George Washington Way South - Extension of sanitary sewer manholes 50% complete borrow and fill 75% complete.

C-4266 - George Washington Way North - Concrete catch basins and storm sewer pipe finished. Excavation for curbs to start September 4, 1951.

C-4267 - Chief Joseph School - Concrete work 50% complete.

C-440 - Alteration of 712-A Building - Phase one is 100% complete-August 18, 1951. T.E.&C. has been assigned any additional phases.

Status of Active ESR's is as follows:

176-CA Northwest United Protestand Church - Final Inspection to be made.

235-PW Town Planning Board Work - Def. for other work.

369-CA Site Map CAP Field - Def. for other work.

496-RC Richland Lutheran Church - Front Addition - 95% complete, Work Progressing

510-M Roads and Streets Drawings - 1950 Const. - Def. for other work.

529-SS Remodeling 722-C Building - ESR returned to BR Hennigar for reassignment

547-MD Fixed Irrigation System - Medical Division Grounds - Def. for other work

552-MF Fire Protection - Desert Inn and Richland Theater - 90% complete. Sending report to Public Works for approval.

561-SD -Chief Joseph Grounds - Def. for other work

562-MU Hi-Spot Estimate for Water Expansion - Completed 8-31-51

563-RC Plot plan east of Laundry - ESR was cancelled.

565-RC Site South of Tract House 0-1224 - Def. for other work.

566-RC Site - Standard Oil Company of California #2 - Design and legal description completed August 31, and transmitted to HH Smith for approval

567-MU Cost Estimate for Water System - Completed 8-1-51

568-PR Drainage Carmichael Tennis Courts - Completed 8-7-51 - Sketch sent to CF Barnes

571-M Free Methodist Church - Prepared work orders for hook-up of water and electric service to church site. Completed 8-15-51

572-M First Baptist Church - Work progressing - 15% complete

573-M Westside United Protestant Church - Work temporarily delayed. Information concerning a major exception has been forwarded to the Architect.

575-RC Parking Lots - Facilities - Design has been completed and submitted to HH Smith August 9.

576-RC -Reorganized Latter Day Saints Church - Legal Description - Completed to ET Johnson August 23

577-RC All Saint's Episcopal Church - Legal Description - ESR 90% Complete

578-PR Inspection on Underpinning - Social Hall - Community House - Work temporarily delayed.

579-MS Goethals Drive to Williams Boulevard - Def. for other work.

581-RC As Builts for LDS Church - Plans returned to Building Committee for correction.

Engr. Unit Monthly Report

582-PR Columbia Playfield - Community Swimming Pool - Being scoped for new project.

583-RC Commercial Development (East of railroad, west of 1125 Warehouse, and south of Lee Boulevard) Study being made.

584-AEC New Central Fire Station - Checking of plans and specifications for Code Compliance completed.

585-M Anderson Motors Addition - Construction work progressing - 20% complete

586-M Standard Oil Station - Plan Checking complete - awaiting issue of Building Permit.

587-M Central Stores Warehouse Plans - Plans checking materially complete.

589-M Estimate for Increased Radii at Swift and Goethals - Bid package largely completed.

590-PR Rehabilitation of Bomber Bowl Fence - Work temporarily delayed.

REAL ESTATE SECTION

SUMMARY

AUGUST

ORGANIZATION AND PERSONNEL:

	BEGINNING OF MONTH		END OF MONTH	
	Exempt	Non-Exempt	Exempt	Non-Exempt
Commercial & Other Property Unit	7	6	7	6
Housing & Real Estate Maintenance Unit	24	206	23	196
	31	212	30	202

Net decrease of employees for month of August 11

GENERAL

The following sublessees opened offices in the Spencer-Kirkpatrick Insurance Building:

United Finance Company
Americana Corporation of Los Angeles
Walla Walla District Engineers

The "Mademoiselle Beauty Parlor", commenced operation as a sublessee in a portion of the building occupied by Lil-Dale's sewing center.

HOUSING AND REAL ESTATE MAINTENANCE UNIT

August, 1951

ORGANIZATION AND PERSONNEL		August
Number of employees on payroll		
Beginning of month	24 Exempt Employees 206 Non-Exempt Employees	
	230	230
End of Month	23 Exempt Employees 196 Non-Exempt Employees	
	219	219

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RICHLAND HOUSING

Housing Utilization as of Month Ending August 31, 1951

Houses Occupied by Family Groups	Conventional	Block	T	Pre Cut	Ranch	Pre Fab	Apt	4 th Add.	Tract	Total
G. E. Employees	2218	254	9	381	828	1149	59	38	38	4974
Commercial Facilities	89	10	1	28	74	65	6	1	5	279
Community Activities	9			1	7	3			1	21
Medical Facilities	5	15		1	1	1		1		24
Post Office	7			1	3	10			4	25
A. E. C. and other Government	90	29		15	40	18	1	3	4	200
School District	45	1		5	12	54	1			118
Kellex Corporation	7	3		6	10	6	1			33
Atkinson Jones	9	13		4	12	4	1			43
Newberry Neon	3	1		1			1			6
Vernita Orchards									4	4
J. G. Turnbull					1	1				2
Robert's Filter Mfg. Co.	1									1
V. S. Jenkins					1					1
Hanley Company					1		2			3
Urban Smythe & Warren		1					1	1		3
Charles T. Main Inc.				1	3	7				11
Dupont	1									1
Total Houses Occupied	2484	327	10	444	993	1318	73	44	56	5749
Houses assigned-Leases written	4	2			3	4		10		23
Houses Assigned-Leases unwritten	1	2		1	3	4				11
Houses available for assignment	11	2		5	1	16	1	13		49
Total Houses	2500	333	10	450	1000	1342	74	67	56	5832

	Begin Month	Moved In	Moved Out	Month End	Difference
Conventional Type	2476	57	49	2484	Plus 8
Block Type	331	9	13	327	Minus 4
"T" Type	10	1	1	10	
Precut Type	445	12	13	444	Minus 1
Ranch Type	992	26	25	993	Plus 1
Prefab Type	1317	52	51	1318	Plus 1
Apartments	73	4	4	73	
4 th Addition	9	36	1	44	Plus 35
Tract	56	1	1	56	
Total	5689	198	158	5749	Plus 40

DORMITORY STATISTICS

Dormitories

		Occupants	Vacancies	Total Beds
Men Occupied	15	*616	0	616
Men Unoccupied	0			
Women Occupied	12	**481	0	481*
Women Unoccupied	0			

Women's Dormitories
Occupied by:

G.E. Office	2
Education	1
Apartments	1

*This includes 50 beds in W-17. This dormitory was opened for Men employees on March 12, 1951.

**This includes space of 2 beds in W-9 used for supply rooms and dormitory offices.

There are 219 men waiting for rooms in Richland.
There are 26 women waiting for rooms in Richland.

GENERAL

Houses Allocated to new tenants	95
Exchanged Houses	11
Moves (Within the Village)	64
Turnovers	9
Total Leases Signed	198
Terminations	71
Total Cancellations	158
Applications Pending	714

ALLOCATION SECTION STATISTICS

Voluntary Terminations	43
R.O.F.	--
Discharge	1
Transfers	13
Retirement-Divorce-Misc.	3
Houses Assigned "As Is"	70
Move Off Project	9
Houses sent to Renovation	54

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DORMITORY REPORT FOR AUGUST 1951

129	MINOR REPAIRS TO FUSES, PLUMBING, ETC.
17	WORK ORDERS STEAM, GLASS, EQUIPMENT, ETC.
132	PIECES OF FURNITURE REPAIRED
50	HOUSEKEEPING CONTACTS
368	LIGHT GLOBES REPLACED
84	ROOMS VACATED

LINENS LAUNDERED

10,761	SHEETS
5,823	PILLOW CASES
395	BED SPREADS
85	BED PADS
286	SHOWER CURTAINS
21	PAIRS DRAPES

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MISCELLANEOUS STORES WAREHOUSE INVENTORY SUMMARY
MONTH ENDING AUGUST 31, 1951

	EXPENDABLE ITEMS	FURNITURE (GEN.LEDGER)	FURNITURE (KARDEX CONT.)	PLANT ITEMS	TOTAL
BEGINNING BALANCE	$42,947.15	$25,275.22	($22,130.71)	$ 46,494.85	$114,717.22
RECEIPTS:					
On Purchase Orders	1046.15				
On Store Orders	535.17				
From Excess					
From Housing	120.25		499.99	4290.13	
From Dormitories			580.97		
From Other (Misc.)				201.00	
TOTAL RECEIPTS	$1,701.57	$	$1,080.96	$4,491.13	$
TOTAL AVAILABLE	$44,648.72	$25,275.22	$23,211.67	$50,985.98	$
DISBURSEMENTS:					
Cash Sales (Backcharge)	70.73				
To Excess					
To Salvage					
To Housing	2,145.23		16.75	2,465.72	
To Dormitories	228.75		606.18		
To Dormitories-Linens	37.36				
Dorm-Shades and Reflectors	46.13				
To Warehouse Supplies	16.03				
To Other (Misc.)	56.00	423.40	428.12	3,178.50	
TOTAL DISBURSEMENTS	$ 2,600.23	$ 423.40	($1,051.05)	$5,644.22	$
ENDING BALANCE (1)(2)(4)	$42,048.49 (1)	$ 24,851.82 (2)	($22,160.62) (3)	$45,341.76 (4)	$112,242.07
NET CHANGE	$ 898.66	$ 423.40	$ 29.91	$ 1,153.09	$ 2,475.15

ENDING BALANCE GENERAL LEDGER(BALANCE-COL. 1 PLUS COL. 2) $66,900.31

COLUMN 3 FOR LOCATION CONTROL ONLY-COLUMN 4 MEMO ACCOUNT ONLY

EXCHANGED:	PIECES
Dorm. Furniture	107
Ranges	4
Refrigerators	4
Prefab Heaters	23
Sent to Maintenance	36
From Maintenance	87

TENANT RELATIONS WORK ORDER AND PROGRESS REPORT - MONTH OF AUGUST, 1951

Processing of Service Orders, Work Orders & Service Charges

	Orders Incomplete as of July 31	Orders Issued 7-31- to 8-31	Total Orders Incomplete as of August 31, 1951
Service Orders	220	2086	275
Work Orders	2810	847	2741
Service Charges	73	350	21

Principal Work Order Loads

	Incomplete as of July 31, 1951	Incomplete as of August 31, 1951
Laundry tub replacements	182	205
Bathroom Renovations(tub-lino-tile)	201	167
Tileboard Only (Bathroom)	11	1
Kitchen Cabinet Linoleum	161	140
Kitchen Floor Linoleum	42	21
Shower Stalls	101	106

Alteration Permits Issued During the Month of August totaled 90 compared to 114 issued in July.

Installation air conditioners	23	Remove broom closet	1
Expand door in basement	1	Install cooling pads	1
Glaze porch	1	Excavation of basement	6
Install tool shed	2	Install partition in basement	3
Installation of fence	11	Install clothes poles	2
Paint bathroom windows	1	Construct dog house	1
Install gas range	1	Install glass in window on porch	1
Install automatic dryer	3	Install oil burner	1
Install automatic washer	15	Install back door	1
Reverse position of range & refrig.	2	Install coal stoker	1
Install oil furnace	2	Install patio	4
Move kitchen wall	1	Install asphalt driveway	3
Sand & refinish floors	2		

2470 Inspections were made during the month of August compared to 1,316 made during July.

Alteration permits	26	Sidewalks	410
Bathtubs	131	Sinks	21
Cupboards	8	Tileboard	116
Floor Boards	23	Toilet Seats	12
Drainage	14	Top Soil	30
Grass Seed	45	Cancellations	181
Jack & Shim	2	Renovations	242
Leaking basement	40	New Tenants	203
Linoleum	234	Miscellaneous	339
Lot Lines	71	Walls	13
Paint	140	Windows	12
Porch and Steps	49	Screen doors	93
Shower stalls	15		

HOUSING AND REAL ESTATE MAINTENANCE.

AUGUST, 1951.

I. ORGANIZATION AND PERSONNEL:

	Exempt	Non-exempt	Total
A. Beginning of month:	13	163	176
B. End of Month:	13	147	160

II. MAINTENANCE STATISTICS: (BACKLOG)

JOB CLASSIFICATION	CRAFT CREW		MAN HR. BACKLOG	CREW DAYS
Carpenter Shop and * Field Installation	Carpen. Jrn.	12	3172	26
	Painter Jrn.	2		
	Upholsterer	1		
	Subtotal:	15		
* Heavy Field Carpentry	Carpen. Jrn.	12	3567	30
	Carpen. Trs.	2		
	Lt. Tr. Dr.	1		
	Subtotal:	15		
* Lino & Tile Field Carpen.	Carpen. Jrn.	22	7163	39
	Painter Jrn.	1		
	Subtotal:	23		
Mechanical	S. M. Jrn.	4	1363	21
	Millwrights	4		
	Subtotal:	8		
Plumbing & Steam	Plumber Jrn.	9	3594	41
	Plumb. Hlpr.	2		
	Subtotal:	11		
Cycle & Misc. Painting	Painter Jrn.	25	2758	12
	Carpen. Jrn.	2		
	Lt. Tr. Dr.	1		
	Subtotal:	28		
Service Section	Ser. Men	8	2055	20
	Lt. Tr. Dr.	5		
	Subtotal:	13		
Renovation	Painters Jrn.	14	3649	23
	Carpen. Jrn.	1		
	Janitress	4		
	Lt. Tr. Dr.	1		
	Subtotal:	20		
Service Order	Electr. Jrn.	6	763	7
	Plumber Jrn.	4		
	Carpen. Jrn.	2		
	Locksmith Jrn.	1		
	Glazier Jrn.	1		
	Subtotal:	14		
TOTAL:		147	40	

* The 6739 hours backlog of work shown against the Carpenter Shop, Field installation, and Heavy Field Carpenter crews is generally work that is being done in advance of actual work needs, and is an untrue backlog to this extent.

Also the backlog of 7163 man hours against Linoleum and Tile Field Carpentry is curtailed in its completion due to the lack of sufficient plumbing help to offset the carpenter help available.

III. MAINTENANCE TRANSPORTATION FACILITIES

HEAVY MAINTENANCE	NO. IN POSSESSION	CRAFT
TRUCK TYPE		
1½ Ton Flatbed	11	Carpenters
Cushman Scooter	1	Carpenters
½ Ton Pickups	7	Carpenters
3/4 Ton Power Wagon	1	Carpenters
3½ Ton Dump Trucks	3	Labor
1½ Ton Pickup	1	Labor
1½ Ton with Monorail	1	Millwrights
Panel	1	Sheetmetal
3/4 Ton Walkin	1	Millwrights
½ Ton Pickups	2	Millwrights
Panels	3	Painters
1½ Ton Flatbed	1	Painters
½ Ton Pickups	5	Plumbers
3/4 Ton Pickup	4	Plumbers
Subtotal	41	
SERVICE ORDERS		
½ Ton Pickup	3	Plumbers
½ Ton Pickup	4	Electricians
½ Ton Pickup	1	Glazier
½ Ton Pickup	1	Locksmith
½ Ton Pickup	2	Carpenters
Subtotal	11	
RENOVATIONS		
Bus	1	Painters (Temp. Idle)
Chev. Carryall	1	Painters, Janitress
½ Ton Pickup	2	Carpenters
Subtotal	4	
GENERAL		
Sedans	2	Supervision
Subtotal	2	
GRAND TOTAL	58	

IV. PROGRESS REPORT

A. PAINTING:

78 houses had minor carpenter repairs and received a paint job throughout.
2 kitchens in A & J section were enameled.
24 basements were coated with water proof material.
1 house in Division I had trim painted.

157 miscellaneous paint jobs were completed in various sections of city, or village.

B. CARPENTRY:

185 floors had new linoleum.
140 table tops had new linoleum.
113 bathrooms had tile board installed.
805 units had sinks and tubs chempointed.
30 new screen doors were installed
30 porches were repaired.
14 houses had roof coating applied.
12 houses had roofs repaired.
17 Prefabs had sliding doors replaced.
3 units had clothes poles reset.
3 houses had plywood soffits replaced with flooring material.
10 houses had sticking windows loosened.
15 units had thresholds replaced.
18 Prefab doors were repaired or replaced.
6 units had door slabs raised.
70 window screens were repaired or replaced.
38 screen doors were repaired.

C. UPHOLSTERY & FURNITURE REPAIR:

13 KV chairs were reupholstered.
1 KC chair was reupholstered.
2 office chairs were reupholstered.
3 tarpaulins were made.
2 FIRO orders were completed.

Routine work such as repair of ladders, filing of saws, shop service for Field carpenters and approximately 40 miscellaneous small jobs throughout the village were completed.

D. PLUMBING:

A total of 86 bathtubs, 12 shower stalls and 16 hot water heaters were installed this month.
The Plumbing crew cleaned out and removed tree roots from 16 sewers in conventional and Prefab houses.
Repaired 126 bathtub faucets.
Completed 22 miscellaneous plumbing orders.
Completed 208 lino repairs such as removing and replacing sink faucets, sinks and toilet bowls for carpenters.
Reconditioned 9 water heaters which consists of replacing leaking boilers and replacing insulation.
Completed 30 miscellaneous steam and routine steam orders.
Inspected steam in Dorms and Commercial facilities.

Worked 11.5 hours on Service Orders.

E. MECHANICAL, SHEETMETAL:

Sheetmetal gutters have been installed on 30 houses in Division--3 in preparation for exterior paint program next summer.
Work completed on installation of sheetmetal gutter on front of Recreation Hall Tavern.
12 Prefab shower stalls were installed.
Approximately 50 complete shower stalls and 300 bottoms to shower stalls were fabricated in the shop this month.

F. MILLWRIGHTS:

This group has been on routine assignment inspecting new house furnaces--lubrication and changing filters on furnaces of A&J houses.
One leaking oil tank was replaced at 1617 Mahan.
Work is progressing on routine inspection of air conditioners throughout Dorms and Medical Dental Building, as requested.

G. RENOVATION:

Interior Paint Program:

During the month of August an average of 8 painters completed painting in 13 B type houses, 4 H type, 1 F type, 1 L type and 7 A type houses.

Renovation of Vacant Houses:

An average of 5 painters, 5 Janitresses and one carpenter completed a total of 59 houses this month; of these, 18 houses were painted from a partial paint job to a complete interior job. 41 houses were cleaned only. All necessary carpentry work plus electrical repairs and plumbing was completed in addition to necessary painting and cleaning. Renovations on hand to date: 23.

H. SERVICE ORDER GROUP:

The following is a status report of Service Orders:

On hand at the beginning of the month:	220
Received during the month:	2141
Completed during the month:	2086
On hand at the end of the month:	275

Plumbing was approximately 250 Service Orders and 17 Renovation Orders on Backlog and this is showing a steady increase. This increase is due to the shortage of Plumbers, sickness, vacations, and most of all, the tenants idea that the houses will be sold in the very near future.

Statements have been made by the tenants, to Housing Unit personnel , that they want the work done now before the houses are sold or that we are not doing anything to the houses because they are going to be sold.

The 220 Service Order Backlog we had at the end of July took in most of the Crafts but this month 90% constitutes Plumbing alone.

Locksmith work carries approximately 235 hours Backlog on combination Lock and key orders.

There has been a constant increase on combination files and vaults due to increase in new Areas, old locks wearing out and a certain amount of faulty settings of combinations by the responsible individual.

I. LABOR GROUP:

A. Grounds Maintenance: Mow and Water Lawns. Routine.

B. Weekly Routine Work Orders: Haul Ashes, clean Grease traps.

C. Semi-monthly routine Work Orders: Pick up waste oil.

D. Non-routine Work Orders:

Loads of top soil delivered:	13
Blacktop walks replaced:	8
Blacktop walks repaired:	21
Concrete steps backfilled:	18
Concrete walks backfilled:	17
Cave-ins and holes backfilled:	10
Cleaned paint from windows: 1308 Torbett, 1444 Thayer:	2
Septic Tanks pumped:	1
Trees removed:	6
Sewers excavated and backfilled:	6
Water service excavated and backfilled:	5
Blow sand removed from lawn:	1
Fences removed:	1
Foundations backfilled:	11
Basements cl aned and disinfected:	5
Oil tanks excavated and backfilled:	2
Raise sod, dig drain, relay sod:	1
Raise sod, backfill, relay sod:	1
Remove weeds, fill for seeding:	2
Remove excess grave dirt:	4
Misc. hauling for other divisions:	2
Trash pick-ups from vacant houses:	105

Cleaned, backfilled and seeded ditch in rear of 1402 Perkins.
Back filled and seeded retaining walls on Casey & Goethals.
Cleaned up and hauled away excess from 1006 Gillespie.
Cut and hauled weeds from 761-762 Parking lot, 700 Area and old Labor Yard.
Cleaned up around Castle Club.
Repaired driveways and compounds in Division I.

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REAL ESTATE ENGINEERING UNIT
AUGUST 31, 1951

Following is the status of projects being handled by this unit:

L-330, Heating Equipment in "T" Type Houses (Subcontract No. G-399)

The Royal Company, Inc. at Kennewick was awarded the subcontract. Notice to Proceed issued August 17, 1951. Field Release (2) issued August 23, 1951. Subcontractor started work August 20, 1951. The project is approximately 75% complete.

L-483, Rehabilitation of Burned Prefab - 1313 Potter

Work completed except for painting and cleanup.

S-321, Rearrangement of Steam Valve Pits at Dormitories

Subcontract has been forwarded to the Weston Plumbing Company of Spokane for signature. Notice to Proceed has not been issued.

S-379, Interior Painting Prefabs

Work completed 6-30-51. Final Estimate for payment to Subcontractor being prepared.

S-477, Service Access Panels in "U" and "V" Type Houses

L. E. Baldwin, Inc. and Frank Dunham Company were awarded the subcontract. Notice to Proceed issued August 9, 1951. Field Release (2) issued August 15, 1951. Work started August 13, 1951. Project is approximately 10% complete.

C-407, Replacement of Bathtubs, Tileboard and Linoleum

Work complete. Final inspection in progress.

C-448, Rehabilitation of 1341 Prefab Houses

Project is 98% complete. Subcontractor ahead of schedule.

COMMERCIAL AND OTHER PROPERTY
REAL ESTATE SECTION

AUGUST, 1951

PERSONNEL - COMMERCIAL AND OTHER PROPERTY:

	August
Beginning of month	13
End of month	13
Net difference	0

PERSONNEL - COMMERCIAL AND NONCOMMERCIAL FACILITIES:

	Commercial	Noncommercial	Total
July	1,222	97	1,319
August	1,286	104	1,390
Net increase			71

SUMMARY OF ROUTINE ITEMS PROCESSED:

Work Orders	20	2	22
Back Charges	1	1	2
Service Orders	27	1	28

CONTRACTS AND NEGOTIATIONS:

A. Commercial:

1. Assignment of Lease:

Starlite Roller Rink - by Mr. Seldon Mason, assignor, to Mr. Donald M. Lone, assignee, for continued operation of the business.

2. Letters of Authorization:

(a) Automatic Laundry Company - to permit Dale Kubik, a sublessee of Investment Building #1, to further sublet a portion of Lil-Dale's sewing center to Larelle Smith for the establishment and operation of a beauty parlor.

(b) Spencer-Kirkpatrick Insurance - to sublet portions of its investment building to the following firms, for use as office space:

United Finance Company
Americana Corporation of Los Angeles

(c) Johnson & Reutlinger - to sell its retail merchandise business and repair shop service, including stock and fixtures, and to assign its lease to M. R. Petersen, an Individual, for the continued operation of a hobby and gift shop and appliance repair service.

B. Noncommercial:

Contract of Sale:

Richland Lutheran Church - covering the sale of Government-owned fixtures and equipment.

SUMMARY OF OCCUPANCY AND EXPANSION STATUS:

A. Commercial:	July	August
1. Number of Government-owned buildings	37	37
(a) Number of businesses operated by prime lessees	41	41
(b) Number of businesses operated by sublessees	15	15
(c) Total businesses operating in Government-owned buildings	56	56
2. Number of privately-owned buildings	41	41
(a) Number of businesses operated by prime lessees	38	38
(b) Number of businesses operated by sublessees	29	32
(c) Total businesses operating in privately-owned buildings	67	70
3. Total Number of businesses in operation	123	126
4. Doctors and dentists in private practice, leasing space in Government-owned buildings	21	21
5. Privately-owned buildings under construction	0	0

COMMERCIAL AND OTHER PROPERTY
REAL ESTATE SECTION

AUGUST, 1951

B. Noncommercial:	July	August
1. Government-owned buildings		
(a) Churches	4	4
(b) Clubs and organizations	9	9
(c) Government agencies	3	3
Total	16	16
2. Privately-owned buildings		
(a) Completed and in use	6	6
(b) Under construction	5	6
(c) Sites tentatively allocated or leases in process of negotiation	8	7
Total	19	19
3. Pasture Land Assignments	35	35

GENERAL:

A. Commercial:

1. The following sublessees opened offices in the Spencer-Kirkpatrick Insurance Building:

   United Finance Company
   Americana Corporation of Los Angeles
   Walla Walla District Engineers

2. Construction work was started on an addition to the Anderson Motors building, 941 Stevens Drive.

3. Larelle Smith, d/b/a "Mademoiselle Beauty Parlor", commenced operation of a beauty shop in a portion of the space sub-leased by Automatic Laundry Company to Lil-Dale's sewing center.

4. Mr. Donald M. Lone assumed the management, under an assignment of lease, of Starlite Roller Rink, for the continued operation of the facility.

B. Noncommercial:

Construction work was started on a new building for the Free Methodist Church, to be located at the southwest intersection of Wright Avenue and Symons Street.

COMMERCIAL AND OTHER PROPERTY
REAL ESTATE SECTION

AUGUST, 1951

COMMERCIAL PROSPECTS:

A number of applicants, the majority of whom were not interested in constructing privately-owned buildings, expressed an interest during the month in establishing and operating businesses in Richland. Inquiries were received concerning the following types of commercial enterprises:

Drive-in theater
Ice cream store
Motel
Service station

49

700-1100-3000 AREA SERVICES SECTION
MONTHLY REPORT
AUGUST, 1951

STEAM AND GENERAL MAINTENANCE:

General Maintenance:

Night lawn watering was continued during the month with gratifying results; more watering was accomplished with less labor and more effective results. This program will continue until approximately September 15.

Routine and preventive maintenance program was continued during the month.

Control panels for the Civil Defense air raid sirens are being made up in the shops.

Solenoid valves have been installed in the water supply lines to the desert coolers at Kadlec Hospital so that soft water will be conserved when coolers are not in operation.

The exhaust air passages on the first floor of the 703 Building have been sheeted with sheet rock and the sprinkler system extended to serve these passages in case of fire.

Annual inspection and repair of steam distribution system completed; overhaul of No. 2 boiler complete and No. 3 boiler 90% complete. No. 2 coal conveyor rebuilt.

Steam Operation:

No. 4 boiler remained in service for the entire month.

The annual shutdown of the 784 Boiler Plant took place on August 1, with the system being out of service 4 hours. Steamfitters, electricians, instrument mechanics, and Electrical Distribution men performed that part of their work which can be done only on a complete shutdown.

On August 3, the Boiler Inspector from Travelers Insurance Company inspected No. 1 and 3 boilers at the 784 Plant and both boilers at the 1131 Bus Terminal Boiler Plant. This completes the inspection of all the boilers for 1951.

The soft water line to Kadlec Hospital was placed in full-time operation on August 16 after several short trial runs on preceding days. The initial consumption averaged about 100 gallons per minute (144,000 gallons per day) for the first week of operation, during which period hot weather prevailed. On August 23, the installation of solenoid valves on the evaporative coolers at the hospital was started. A reduction of 200 to 300 gallons per hour during the cool night hours was effected. With the advent of cooler weather during the latter part of the month, the consumption of soft water steadily decreased to the minimum daily figure of 104,900 gallons on August 30.

It was necessary to turn heating steam into a number of 700 Area buildings during the latter part of the month because of unseasonably cool, damp weather.

Steam generated - 8,318.7 M. lbs.: steam leaving plant - 7,070.9 M. lbs.; steam delivered - 5,173.7 M. lbs.: coal consumed - 639.9 net tons; total water softened - 3,221,300 gals.: soft water sent to Kadlec Hospital - 1,993,900 gals.; soft water used at 784 Boiler Plant - 1,227,700 gals.

700-1100-3000 AREA SERVICES SECTION

NORTH RICHLAND PATROL

Twelve traffic citation tickets were issued by North Richland Patrol during the month. These included 3 for "no driver's license", 1 for "illegal parking", 1 for "driving on public sidewalk", 1 for "removing barricades", 2 for "negligent operation", 2 for "stop sign violation", 1 for "passing in no-passing zone", and 1 for "improper license plates".

Fifty-seven traffic warning tickets were issued. The majority of these were issued for "illegal parking".

There were four automobile accidents in the North Richland Area during the month.

All facilities, buildings, warehouses and the John Ball School were checked on the No. 1 and No. 3 shifts daily and on all shifts on Sundays.

The following hours were spent on escort service from Pasco during the month of August: Monthly Payroll - 10 hours; Weekly Payroll - 30 hours.

All fire, traffic and safety hazards observed by the North Richland Patrol were reported to the proper authorities.

Twenty-five inquiries regarding formerly employed personnel were answered. These inquiries came from the U. S. Navy, U. S. Army, Civil Service Commission and the E. I. du Pont de Nemours Company.

On each Thursday, an Appearance Officer was assigned to Judge E. W. Brown's court in Richland to appear against persons cited to court by North Richland Patrol.

On August 20, the North Richland Patrol returned to a five-day work schedule.

Twenty-eight persons were incarcerated in the Richland jail by North Richland. These people were incarcerated for the following reasons: 14 for public intoxication, 4 for public nuisance, 5 for drunken driving, 1 for reckless driving, 1 for public intoxication and lewdness, 1 for drunk and disorderly conduct, and 2 for vagrancy.

Three firearms were registered with the Arsenal Officer in Richland, during the month. Twenty-three firearms belonging to personnel living in North Richland were registered and checked into the Contraband Room.

During August a concentrated effort was put forth by Patrol to apprehend dogs that have been causing a nuisance in the Trailer Camp. As a result, 22 dogs and 1 cat were impounded.

Population in North Richland is as follows: Bremerton Houses - 660 persons; Trailer Camp - 3,532 persons: Men's Barracks - 1,445; Women's Barracks - 1,254; total population - 5,721 persons. There are 1,254 trailer lots occupied and 195 Bremerton Houses.

There are five fixed posts and five reposts in the North Richland Area at the present time.

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700-1100-3000 AREA SERVICES SECTION

Unusual Incidents:

Public Intoxication	14	Vagrancy	2
Public Nuisance	4	Driving Without License	1
Public Nuisance & Lewdness	1	Negligent Operation & Faulty Equipment	1
Drunk & Disorderly Conduct	1	Auto Accident (2 Private Cars)	4
Drinking in Public Place	1	Auto Accident (1 Gov't. and one Private Car)	1
Drunken Driving	4	Petit Larceny	1
Negligent Driving	4	Wild Party (Disturbing Neighbors)	1
Reckless Driving	2	Assualt	1
Hit & Run Driver	1		
Drunken Driving & Public Intoxication	1		

Special Services Performed:

Emergency Messages Delivered	64	Dogs Impounded	22
Emergency Long Distance Calls	116	Billfolds Turned in to Patrol	1
Western Union Telegrams	4	Billfolds Returned to Owner	1
Pacific Telegraph Telegrams	3	Disturbances Investigated	8
Fires (Sig. 12)	6	Suspicious Persons Investigated	6
False Fire Alarms	6	Personnel Locked out of Rooms	2
Conditions Reported to Maintenance	4	Cats Impounded	1
Escorts to First Aid	2	Pick-up for Benton County Sheriff's Department	1
Bicycles Found	3	J. P. Warrants Served by Patrol	4
Bicycles Returned to Owner	2	Escort for Public Healty Nurse	1
Dog Complaints (Trailer Camp)	4	Escorts for Wide & High Loads	1
Children Bitten by Dog	1		

Complaints:

Grand Larceny - 7; Petit Larceny - 2; Miscellaneous - 2.

NORTH RICHLAND FIRE

Alarm No.	Location of Fire	Cause For Alarm	How Received
89	Geo. Wash. Way, F.F.A Farm	Unnecessary Alarm	Phone
90	Hospital at 5th & "M"	Unnecessary Alarm	Box
91	Grass fire, 6th & "Q"	Filament of St. light broke and ignited grass	Box
92	Bks. 216-D, Rm. 1	Smoker's Carelessness	Phone
93	Between Bks. 216-A & 216-D	Smoker's Carelessness	Verbal
94	Auto at 400 "I"	Smoker's Carelessness	Box
95	1/2 Mi. south of Barricade	Unnecessary Alarm	Phone
96	Hospital at 5th & "M"	Accidental Alarm	Box
97	5th St. west of Theater	Accidental Alarm	Box
98	Pasco Bks. No. 185	Accidental Alarm	Box
99	Auto at Bks. 126-D	Backfire through carburetor	Box
100	Bks. 200 on Stevens Drive	False Alarm	Box
101	Between "W" & Stevens Drive south of equipment yard	Slag from welding torch ignited grass	Box
102	North of Burning Pit	Embers from Pit ignited grass	Verbal
103	4th St. and "W"	Accidental Alarm	Box

700-1100-3000 AREA SERVICES SECTION

Investigations:	Location and Cause
8-1-51	Automobile in front of Fire Station; driving with emergency brake on.
8-12-51	Trailer at 505 "H". Gas fumes from oven of Kitchen range.
8-15-51	Barracks 238-D, Rm. 17. Smoker's carelessness.
8-15-51	Trailer at 815 "K". Defective pilot light in gas cook stove.
8-21-51	Barracks 226-D, Rm. 4. Smoker's carelessness.
8-25-51	Barracks 236-D, Rm. 16. Smoker's carelessness.
8-25-51	Barracks 236-D, Rm. 20. Smoker's carelessness.

Personal Loss as Result of Alarms and Investigations:

Alarm No. 92	$ 18.98
Alarm No. 94	300.00
Alarm No. 99	50.00
Investigation on 8-15, Bks. 238-D	18.54
Investigation on 8-15, Trailer	200.00
Investigation on 8-21	22.61
Investigation on 8-25, Bks. 236-D	10.77
Investigation on 8-25, Bks. 236-D	6.70
Total Loss	$628.60

General:

There were 3 safety and security meetings, 7 inside drills, 40 outside drills; 75 alarm boxes were tested during the month.

Hydrants were tested around new Army buildings.

Electricians tested auxiliary system in 220 Barracks.

ORGANIZATION AND PERSONNEL

	Beginning of Month			End of Month		
Number of Employees on Roll:	Exempt	Non-Exempt	Total	Exempt	Non-Exempt	Total
Maintenance & Operation	8	50	58	8	53	61
North Richland Patrol	5	14	19	5	15	20
North Richland Fire	32	—	32	32	—	32
Total	45	64	109	45	68	113

Personnel Changes During Month:

Transferred from Manufacturing	2
New Hires	3
Terminations	2
Re-Activated Employee	1

NORTH RICHLAND PATROL COURT CASES
AUGUST, 1951

VIOLATION	NO. OF CASES	NO. OF CONV.	NO. OF FORF.	CASES DISM.	CASES CONT'D.	SENT. SUSP.	LIC. RVKD.	TOTAL FINES	TOTAL SUSP.	TOTAL BAIL FORF.
Public Intoxication	8	3	5					$ 67.50	$	$ 97.50
3rd Degree Assault	1	1				1				
Drunk & Disorderly Conduct	1	1						22.50		
Public Nuisance	1		1							27.50
Vagrancy	1				1					
No Driver's License	5	1	3	1				3.50		20.00
Drunken Driving	4	3			1		3	207.50		
Reckless Driving	3	1		2				52.50		
Negligent Driving	7	3	4			1		15.00	27.50	85.00
Stop Sign	5	1	4					5.00		35.00
Speeding	1		1							15.00
Illegal Parking	2	1	1			1			3.50	3.50
Barricade Violation	3	2	1					7.00		5.00
Defective Equipment	1			1						
Improper Passing	1		1							7.50
TOTALS	44	17	21	4	2	3	3	$380.50	$31.00	$296.00

PROJECT & RELATED PERSONNEL

August 1951

	7-31-51		8-31-51	
GOVERNMENT EMPLOYEES				
Civilian Personnel-Atomic Energy Comm.	342		335	
Civilian Personnel-G. A. O.	7		7	
Total		349		342
RICHLAND VILLAGE PERSONNEL				
Comm. Facilities (Inc. No. Richland)	1222		1286	
Govn. Agency, Churches, Clubs, etc.	97		104	
Schools	99		103	
Organizations	10		10	
Total		1428		1503
CONSTRUCTION SUB CONTRACTORS				
Atkinson & Jones	4342		5018	
Newberry Neon	348		378	
Urban Smyth Warren Co.	448		668	
Hanley & Co.	272		16	
Kellex Corp.	260		250	
No. Elect. Mfg. Co.	2		1	
J. Gordon Turnbull	4		4	
Erwin Const. Co.	2		14	
J. P. Head	14		16	
Royal Co. Inc.	10		1	
Fred J. Early Jr.	107		62	
Steel Const. Co.	3		0	
V. S. Jenkins	60		22	
Empire Electric Co.	6		2	
Associated Engrs. Inc.	11		13	
Johnson Service	4		3	
Monterey Co. Plumbing Co.	10		0	
Thorgaard Plumbing & Heating Co.	3		1	
L. E. Baldwin & Frank Dunham Co.	53		19	
X-Ray Products	6		8	
Judd Co. Inc.	6		1	
Marlarkey & Moore	14		10	
Dix Steel Bldg. Co.	10		13	
Montgomery Electric Co.	19		0	
Sound Const. & Engr. Co.	26		22	
J. G Shotwell	7		9	
Lewis & Queen	6		0	
J. C Whitacre Dec. Co.	16		10	
West Coast Heating U Plumbing Co.	14		15	
Electric Smith Inc.	6		10	
Roof Service Inc.	11		0	
L. H. Hoffman	45		71	
Stier Shelton & Schick	0		2	
Charles T Main	196		200	
Mpls. Honeywell Regulator Co.	6		1	
Chem. Proof Const. Co.	6		0	
The Bay Co.	26		28	
J. A Brunzell	8		13	
Acme Elect Co. Inc.	2		2	
Olympic Pipe Fabricators Co.	1		0	

Continued Page # 2

	7-31-51	8-31-51
Sub Contractors Cont.		
Day Brothers	3	8
Cyclone Fence	7	20
Peter Kiewett Sons Co.	7	0
Puget Sound Sheetmetal Works	18	16
Valley Roofing	8	0
Cement Gun Const. Co.	5	0
National Blower Sheetmetal Co.	5	0
Holliday & Edworthy	5	11
Industrial Electric Co.	3	8
D H. Paving Co.	66	52
Steel Const. Co. of Oregon	44	65
Paul Berg	9	3
L. H. Clawson Co.	2	0
G. W. Paulson Co.	2	3
Puget Sound Naval Shipyard	720	710
Calif. Wire Cloth Corp.	0	3
E. J. Bartell	0	2
A. H. Barbour & Sons	0	4
Noise Control of Seattle	0	2
Charles B. Brower	0	3
Anderson Dec. Co.	0	2
Soule Steel Co.	0	5
Northwest Bridge & Tank Co.	0	6
A. C. Grant	0	5
Leland S. Rosener	0	2
Total	7294	7833
General Electric Total	8805	8909
GRAND TOTAL	17,876	18,587