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HANFORD WORKS MONTHLY REPORT

FOR

MARCH 1952

44218

REPOSITORY DOE

COLLECTION Atmospheric Releases

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Compiled By
Department Managers

April 18, 1952

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HANFORD WORKS
RICHLAND, WASHINGTON

Operated for the Atomic Energy Commission
by the
General Electric Company
under
t # W-31-109-eng-52

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HANFORD WORKS MONTHLY REPORT

GENERAL SUMMARY

MARCH 1952

Production Operations

All production forecasts were exceeded during the month except one, which reached 99.3% of forecast. New high records were established in the reactor plants. The failure of only ten slug jackets during the month indicates a continuation of improvement in this difficulty.

Production operations were begun on the RMA line in the plutonium fabrication plant.

Engineering and Technology

The extraction of tritium was completed and the final shipment has been made.

The major design engineering effort during this month was applied to the new "X" type reactor. A preliminary plan for a major expansion of the plant was completed in the form of a project proposal.

Intensive studies of the condition of the graphite in the flooded portion of the F pile were made, as well as the concurrent corrosion of the outside of the tubes.

Development work and design engineering for a new separations plant based upon the Purex process was accelerated.

Expansion and Construction

Construction of buildings in the Works Laboratory Area was accelerated.

Jurisdictional labor union disputes continue to affect construction schedules adversely.

Major construction projects in the production areas are over 80% complete, except for 100-C, which is over 50% complete.

A substantial number of persons were transferred to the AEC as a consequence of the assumption by the AEC on April 1, 1952 of construction management functions.

Personnel and Services

A seventy-five year ground lease for the construction of 500 dwelling units was approved with a private contractor.

There were 685 applications for housing pending.

The plant roll decreased slightly to 8,955, while the turnover rate increased to 2.1%.

The Company and the HAMTC agreed to continue the contract for another year.

The slight upward trend in sickness absenteeism that has been apparent for several months reached a rate of 2.2%.

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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
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 MARCH, 1952

	EXEMPT		NON EXEMPT		TOTAL	
	2-29-52	3-31-52	2-29-52	3-31-52	2-29-52	3-31-52
GENERAL	27	23	40	35	67	58
LAW	2	2	4	4	6	6
ENGR. DEPARTMENT						
General	2	5	1	6	3	11
Design & Const. Section						
Construction	11	0	6	0	17	0
Design	211	0	384	0	595	0
No. Richland Realty	17	0	110	0	127	0
Proj. Engr.	78	0	12	0	90	0
Design Section	0	120	0	43	0	163
Project Section	0	181	0	440	0	621
Technical Section;						
Administrative	6	5	8	3	14	8
Pile Technology	173	173	175	177	348	350
Separations Tech.	108	109	62	66	170	175
Technical Services	30	30	154	148	184	178
Analytical Tech.	87	88	139	145	226	233
MANUFACTURING DEPARTMENT						
General	21	22	12	11	33	33
Reactor	190	193	944	951	1134	1144
Metal Preparations Sect.	76	66	388	395	464	461
Separations	268	268	1282	1254	1550	1522
MEDICAL	42	42	234	231	276	273
RADIOLOGICAL SCIENCES						
General	3	3	2	2	5	5
Records & Standards	24	24	144	140	168	164
Biophysics	46	46	64	64	110	110
Biology	38	37	44	46	82	83
FINANCIAL DEPARTMENT						
General	0	4	0	12	0	16
Engr. Acctg.	15	15	68	61	83	76
Mfg.Cost Sect.	6	8	32	31	38	39
General Acctg. Sect.	29	10	118	85	147	95
Payroll Section	10	11	94	90	104	101
General Cost Section	4	10	15	36	19	46
Internal Auditing	0	7	0	5	0	12
EMPLOYEE & PUBLIC RELATIONS	39	40	74	71	113	111
UTILITIES & GEN. SERV. DEPT.						
General	18	18	13	13	31	31
Elect. Dist. & Telephone	31	31	146	147	177	178
Transportation	42	41	470	460	512	501

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	EXEMPT		NON EXEMPT		TOTAL	
	2-29-52	3-31-52	2-29-52	3-31-52	2-29-52	3-31-52
Plant Sec. & Serv.						
Patrol & Security	56	57	601	594	657	651
Safety & Fire	42	42	107	107	149	149
Office Services	28	28	303	313	331	341
Purchasing & Stores	91	90	336	322	427	412
Stastical & Computing	16	17	46	46	62	63
COMM. REAL ESTATE & SERV.DEPT.	185	183	351	352	536	535
TOTAL	2072	2049	6983	6906	9055	8955

* Includes 56 Firemen:

1216308

PERSONNEL DISTRIBUTION - MARCH 1952

	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 Personnel	-	-	-	-	-	-	-	-	-	-	23	23
Cler.& Other Non Ex.	-	-	-	-	-	-	-	-	-	-	35	35
Total	-	-	-	-	-	-	-	-	-	-	58	58
LAW												
Exempt Personnel	-	-	-	-	-	-	-	-	-	-	2	2
Clerical	-	-	-	-	-	-	-	-	-	-	4	4
Total	-	-	-	-	-	-	-	-	-	-	6	6
ENGR. DEPT.												
GENERAL												
Supv.	-	-	-	-	-	-	-	-	-	-	5	5
Clerical	-	-	-	-	-	-	-	-	-	-	6	6
Total	-	-	-	-	-	-	-	-	-	-	11	11
DESIGN SECTION												
Supervisors	-	-	-	-	-	-	-	-	-	-	17	17
Other Exempt	-	-	-	-	-	-	-	5	-	-	98	103
Clerical	1	-	-	-	-	-	-	1	-	-	24	26
Others	-	-	-	-	-	-	-	-	-	-	17	17
Total	1	-	-	-	-	-	-	6	-	-	156	163
PROJECT SECTION												
Supervisors	29	-	-	-	2	-	-	-	-	15	32	78
Other Exempt	24	-	-	-	8	5	5	-	2	19	40	103
Draftsmen & Designers	2	7	-	-	-	3	8	8	-	1	92	121
Clerical	19	-	1	-	3	-	5	-	-	41	100	169
Others	24	-	-	-	15	-	-	-	2	83	26	150
Total	98	7	1	-	28	8	18	8	4	159	290	621
TECHNICAL SECTION												
GENERAL												
Supervisors	-	-	-	-	-	-	-	-	-	-	5	5
Clerical	-	-	-	-	-	-	-	-	-	-	3	3
Total	-	-	-	-	-	-	-	-	-	-	8	8

1215369

	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
PILE TECH.												
Supervisors	1	-	-	-	-	-	-	5	-	-	-	6
Metallurgists & Engrs.	12	6	-	5	20	-	3	36	-	-	1	83
Physicists	1	3	-	5	-	-	-	15	-	-	-	24
Engr. Asstsa.	8	4	1	7	12	-	-	28	-	-	-	60
Tech. Grads.	15	3	1	5	19	-	-	22	-	-	-	65
Technologists	4	-	1	5	6	-	-	7	-	-	-	23
Lab. Asstsa.	1	13	-	6	5	-	-	21	-	-	-	46
Clerical	6	1	-	7	3	-	-	20	-	-	-	37
Engr. Asstsa.	-	5	-	-	-	-	-	1	-	-	-	6
Total	48	35	3	40	65	-	3	155	-	-	1	350
SEPARATIONS TECH.												
Supv.	-	-	-	-	-	-	10	10	-	-	-	20
Chemists & Engrs.	-	-	-	-	-	4	46	39	-	-	-	89
Tech. Grads.	-	-	-	-	-	-	8	19	-	-	-	27
Clerical	-	-	-	-	-	-	5	10	-	-	-	15
Lab. Asstsa. & Tech.	-	-	-	-	-	-	7	8	-	-	-	15
Others	-	-	-	-	-	2	1	6	-	-	-	9
Total	-	-	-	-	-	6	77	92	-	-	-	175
TECH. SERVICES												
Supervisors	-	2	-	-	-	-	2	6	-	-	3	13
Other Exempt	-	6	-	-	-	-	2	5	-	3	1	17
Tech. & Tech. Grads.	-	8	-	-	-	-	-	3	-	-	-	11
Lab. Asstsa.	-	-	-	-	-	-	14	-	-	-	-	14
Clerical	-	4	1	-	-	-	4	30	-	1	48	88
Others	2	2	1	-	-	-	10	19	-	-	1	35
Total	2	22	2	-	-	-	32	63	-	4	53	178
ANALYTICAL TECH.												
Supervisors	1	-	-	-	-	-	17	11	-	-	-	29
Chemists & Engrs.	1	1	-	-	-	-	25	32	-	-	-	59
Tech., & Tech.Grads.	1	1	-	1	-	-	32	9	-	-	-	44
Lab. Asstsa.	2	-	-	2	-	-	67	21	-	-	-	92
Clerical	1	-	-	-	-	-	3	5	-	-	-	9
Total	6	2	-	3	-	-	144	78	-	-	-	233

1216370

	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	-	8	9
Clerical	-	-	-	-	-	-	-	-	-	-	10	10
Tech. Grads.	-	-	-	-	-	-	-	-	-	-	1	1
Total	-	-	-	-	-	-	-	-	1	-	32	33
REACTOR												
Supv.	28	45	34	32	-	-	-	-	-	-	-	139
Other Exempt	14	8	8	19	-	-	-	-	-	2	3	54
Supv. in trn.	3	1	-	5	-	-	-	-	-	-	-	9
Operators (Operations)	36	60	35	36	-	-	-	-	-	-	-	167
Operators (Power)	76	116	75	75	-	-	-	-	-	-	-	342
Craftsmen	63	112	90	54	-	-	-	-	-	-	-	319
Inspectors & Lab. Asst.	7	13	7	11	-	-	-	2	-	-	-	40
Clerical	6	13	9	16	-	-	-	1	-	-	1	46
Others	5	3	2	2	-	-	-	-	-	-	-	12
Tech. Grads.	3	5	3	4	-	-	-	-	-	1	-	16
Total	241	376	263	254	-	-	-	3	-	3	4	1144
METAL PREP.												
Supv.	-	2	-	-	-	-	-	40	-	-	-	42
Other Exempt	-	1	-	-	-	-	-	23	-	-	-	24
Supv. in Trn.	-	-	-	-	-	-	-	3	-	-	-	3
Operators (Operations)	-	-	-	-	-	-	-	176	-	-	-	176
Operators (Power	-	-	-	-	-	-	-	11	-	-	-	11
Craftsmen	-	28	-	-	-	-	-	121	-	-	2	151
Clerical	-	1	-	-	-	-	-	19	-	-	-	20
Others	-	2	-	-	-	-	-	8	-	-	-	10
Lab. Asst.	-	-	-	-	-	-	-	11	-	-	-	11
Tech. Grads.	-	1	-	-	-	-	-	12	-	-	-	13
Total	-	35	-	-	-	-	-	424	-	-	2	461

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	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
SEPARATIONS												
Supv.	-	-	-	-	-	27	184	-	-	-	-	211
Other Exempt	-	-	-	-	-	3	54	-	-	-	-	57
Operators (Operations)	-	-	-	-	-	97	486	-	-	-	-	583
Operators (Power)	-	-	-	-	-	23	91	-	-	-	-	114
Craftsmen	-	-	-	-	-	48	286	-	-	-	-	334
Inspectors & Lab. Assts.	-	-	-	-	-	7	103	-	-	-	-	110
Clerical	-	-	-	-	-	7	50	-	-	-	-	57
Supv. In Trn.	-	-	-	-	-	1	4	-	-	-	-	5
Tech. Grads.	-	-	-	-	-	1	27	-	-	-	-	28
Others	-	-	-	-	-	8	15	-	-	-	-	23
Total	-	-	-	-	-	222	1300	-	-	-	-	1522
MEDICAL												
Supervisors	-	-	-	-	-	-	-	-	-	-	23	23
Physicians	-	-	-	-	-	-	-	-	1	3	8	12
Other Exempt	-	-	-	-	-	-	-	-	-	-	7	7
Technicians	-	-	-	-	-	-	-	-	2	2	10	14
Nurses	5	4	4	1	1	4	7	2	-	3	65	96
Clerical	1	-	-	-	-	-	-	-	2	7	37	47
Others	-	-	-	-	-	-	-	-	-	1	73	74
Total	6	4	4	1	1	4	7	2	5	16	223	273
RADIOLOGICAL SCIENCE												
STAFF												
Supv.	-	-	-	-	-	-	-	-	-	-	2	2
Other Exempt	-	-	-	-	-	-	-	-	-	-	1	1
Clerical	-	-	-	-	-	-	-	-	-	-	2	2
Total	-	-	-	-	-	-	-	-	-	-	5	5
RECORDS & STANDARDS												
Supv.	-	-	-	-	-	-	-	10	-	-	3	13
Other Exempt	1	-	1	-	-	1	1	2	-	-	5	11
Clerical	-	-	-	-	-	-	-	2	-	-	1	3
Others	14	4	6	3	-	16	27	50	7	-	10	137
Total	15	4	7	3	-	17	28	64	7	-	19	164

1216372

	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
BIOPHYSICS												
Supervisors	-	-	-	-	-	1	6	1	-	-	-	8
Other Exempt	-	-	-	-	-	4	19	14	-	1	-	38
Clerical	-	-	-	-	-	1	2	2	-	-	-	5
Others	-	-	-	-	-	19	36	4	-	-	-	59
Total	-	-	-	-	-	25	63	21	-	1	-	110
BIOLOGY												
Supv.	-	-	3	-	-	-	-	-	-	-	-	3
Other Exempt	-	-	34	-	-	-	-	-	-	-	-	34
Clerical	-	-	5	-	-	-	-	-	-	-	-	5
Others	-	-	41	-	-	-	-	-	-	-	-	41
Total	-	-	83	-	-	-	-	-	-	-	-	83
FINANCIAL DEPT.												
Supv.	-	-	-	1	-	-	1	1	-	17	45	65
Clerical	2	-	-	1	-	2	-	-	-	81	234	320
Total	2	-	-	2	-	2	1	1	-	98	279	385
EMPLOYEE & PUBLIC REL.												
Supv.	-	-	-	-	-	-	-	-	-	-	25	25
Empl. Rel. Counselors	-	-	-	-	-	-	-	-	-	-	2	2
Other Exempt	-	-	-	-	-	-	-	-	-	-	13	13
Clerical	-	-	-	-	-	-	-	-	-	-	58	58
Others	-	-	-	-	-	-	-	-	-	-	13	13
Total	-	-	-	-	-	-	-	-	-	-	111	111
UTILITIES & GEN. SERVICES												
GENERAL												
Supv.	-	-	-	-	-	-	-	-	-	-	18	18
Clerical	-	-	-	-	-	-	-	-	-	-	13	13
Total	-	-	-	-	-	-	-	-	-	-	31	31
PLANT SEC. & SERVICES												
SEC. & PATROL												
Supervisors	6	6	6	5	-	5	9	7	5	-	4	53
Other Exempt	-	-	-	-	-	-	-	-	4	-	-	4
Patrolmen	91	48	62	46	-	72	149	72	3	-	26	569
Clerical	-	-	-	-	-	-	-	-	15	4	4	23
Seamstress	-	-	-	-	-	-	-	-	2	-	-	2
Total	97	54	68	51	-	77	158	79	29	4	34	651

1210313

	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
SAFETY & FIRE												
Supervisors	15	-	-	4	-	-	4	4	7	-	-	34
Engineers	-	2	1	-	-	2	2	-	-	-	1	8
Firemen	51	-	-	-	8	-	16	16	10	-	-	101
Clerical	-	1	1	-	-	1	-	1	-	-	2	6
Total	66	3	2	4	8	3	22	21	17	-	3	149
OFFICE SERVICES												
Supervisors	-	-	1	-	-	1	3	1	1	1	18	26
Procedures Analysts	-	-	-	-	-	-	-	-	-	-	2	2
Ldry. Operators	-	-	-	-	-	-	2	-	-	-	1	3
Janitors & Servicemen	8	5	6	5	-	6	27	14	-	-	45	116
Clerical	-	-	-	-	-	-	1	-	-	2	46	49
Tech. Grads.	-	-	-	-	-	-	-	-	-	-	1	1
Others	-	-	-	1	-	-	60	8	-	2	73	144
Total	8	5	7	6	-	7	93	23	1	5	186	341
PURCHASING & STORES												
Supervisors	1	-	-	-	-	-	-	-	-	4	29	34
Other Exempt	-	-	-	-	-	-	-	-	24	-	32	56
Clerical	7	-	-	-	-	-	-	-	-	35	138	180
Others	16	3	1	-	2	-	4	1	-	37	73	137
Rotational Trainees	-	-	-	-	-	-	-	-	5	-	-	5
Total	24	3	1	-	2	-	4	1	29	76	272	412
ELECTRICAL DIST. & TELEPHONE												
Supv.	-	-	-	-	-	9	-	-	3	-	10	22
Other Exempt	-	-	-	-	-	3	-	-	-	-	6	9
Craftsmen	-	-	-	-	-	27	-	-	11	-	51	89
Clerical	-	-	-	-	-	3	-	-	[illegible]	-	23	26
Operators	4	4	4	4	-	-	-	-	14	-	-	30
Others	-	-	-	-	-	2	-	-	-	-	-	2
Total	4	4	4	4	-	44	-	-	28	-	90	178
TRANSPORTATION												
Supv.	2	-	2	2	-	1	1	-	3	-	26	37
Other Exempt	-	-	-	-	-	-	-	-	-	-	4	4
Bus Drivers	-	-	-	-	-	-	-	-	-	-	167	167
Journeymen	4	1	1	8	-	-	3	-	6	-	61	84
Trainmen	-	-	-	-	-	-	-	-	26	-	-	26
Servicemen	7	-	2	-	-	-	-	-	1	-	20	30
Equip. Opers.	7	-	11	-	-	1	-	-	-	-	28	47
Clerical	-	-	1	1	-	-	-	1	-	-	25	[illegible]
Others	8	-	8	13	-	10	4	-	1	-	34	[illegible]
Total	28	1	25	24	-	12	8	1	37	-	365	501

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	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
STATISTICAL & COMP. SERVICES												
Supv.	-	-	-	-	-	-	-	1	-	-	10	11
Mathematicians	-	-	-	-	-	-	-	5	-	-	1	6
Clerical	-	-	-	-	-	-	1	2	-	-	30	33
Technologists	-	-	-	-	-	-	-	2	-	-	-	2
Business & Tech. Grads.	-	-	-	-	-	-	-	2	-	-	9	11
Total	-	-	-	-	-	-	1	12	-	-	50	63
COMM. REAL ESTATE & SERVICES												
Supervisors	-	-	-	-	-	-	-	-	-	14	103	117
Other Exempt	-	-	-	-	-	-	-	-	-	-	10	10
Firemen	-	-	-	-	-	-	-	-	-	24	32	56
Patrolmen	-	-	-	-	-	-	-	-	-	16	21	37
Journeymen	-	-	-	-	-	-	-	-	-	-	143	143
Servicemen	-	-	-	-	-	-	-	-	-	-	17	17
Truck Drivers	-	-	-	-	-	-	-	-	-	-	24	24
Power Operators	-	-	-	-	-	-	-	-	-	-	32	32
Clerical	-	-	-	-	-	-	-	-	-	-	57	57
Others	-	-	-	-	-	-	-	-	-	-	42	42
Total	-	-	-	-	-	-	-	-	-	54	481	535
GRAND TOTAL	646	555	470	392	104	427	1959	1054	158	420	2770	8955

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MANUFACTURING DEPARTMENT

MARCH, 1952

METAL PREPARATION SECTION

The total production for the month from Metal Preparation was 144 tons resulting in 99.3 percent of forecast. This total production represents 69 tons of 8-inch pieces and 75 tons of 4-inch pieces. The machining yield was 80.9 percent and 80.7 percent, respectively, for 4-inch and 8-inch pieces, reflecting the continued receipt of good quality rods.

The canning yield was 74.0 percent for 4-inch pieces and 58.6 percent for 8-inch pieces. The decrease in canning yield of 6.6 percent for both types of pieces resulted when more stringent inspection standards were adopted in final inspection. Specifically, a 6.5 percent reduction was realized from corrosion and outside stains obtained in the autoclave operation.

The Melt Plant produced 68 tons of billets and represents a new high record for this operation. The billet yield was 86.5 percent and the solid yield was 94.4 percent. This improvement was attributed to better operational control and efficiency.

REACTOR SECTION

The reactor input was 109.3 percent of forecast which included an increase of 54 units in the per diem production due to continued graphite annealing and recalibration of B reactor graphite thermocouples. Both the total input production and the per diem production represent new high records. The reactor output was 22 percent over forecast due to rescheduling of discharges.

There were 10 uranium slug jacket failures during March, of which six were Group 8 material. This required 128.8 outage hours for removal operations which is the best performance on this basis since June, 1951. Four failures were discharged within the scram recovery time avoiding approximately 100 hours of potential outage time.

The operating efficiency for the reactors was 83.9 percent. The operating efficiencies of B, D, DR, and H increased because of the lower frequency of ruptured pieces. However, the F reactor, with an operating efficiency of 51.4 percent, was not in operation until March 15 for evaluation and removal where necessary, of tubes and tube channels, brought about by water leaks into the graphite moderator.

The H reactor had a water leak into the graphite moderator resulting from a ruptured piece in tube 3565-H.

SEPARATIONS SECTION

A total of 122 runs and 2 acid washes was started, representing 106 percent of forecast. Seventy-eight runs were started in Redox for 169 percent of

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SEPARATIONS SECTION (Cont'd)

forecast. A total of 177 runs and 2 acid washes was processed in the Isolation Building which was 125 percent of forecast and represents a new high record of production.

The average cooling time was 49 days with a minimum of 40 day material being used. The average purity of the completed charges was 99 percent.

A continuation of the emulsion problem in all columns in Redox at various times during this period resulted in a major modification of the head end treatment, temporarily eliminating the MnO_2 scavenging. Evaluation of this effort is still in progress at this time. The decontamination of the plutonium streams decreased with resultant high gamma readings on PR containers up to 2000 mr/hr reported, necessitating special handling in the Isolation Building. Several sample cans processed through isolation were too high in gamma radiation to process in 234-5 Building and were set aside for observation of decay rates.

A total of 42 tons of uranium as UO_3 was produced this month, with 20 tons being shipped.

Considerable mechanical and electrical trouble experienced with the Nagle sludge pumps at the 241-U tank farm, coupled with mechanical difficulties with associated equipment curtailed progress in the waste metal removal facilities.

GENERAL

Personnel

Total on Roll February 29, 1952	3192
Accessions	65
Separations	103
Total on Roll March 31, 1952	3154

C. N. GROSS, MANAGER
MANUFACTURING DEPARTMENT

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MANUFACTURING DEPARTMENT

PATENT REPORT SUMMARY
FOR

MONTH OF MARCH, 1952

Richland, Washington
April 8, 1952

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
J. H. Rector	Vacuum method of holding material while machining or finishing.
R. Willing	The Application of Ion-Exchange Principle to Pile Effluent Water Monitoring.

(This invention was inadvertently omitted from the November, 1951 issue of this report. It was reported in "Report of Invention", (HW-22850) dated November 30, 1951.)

C. N. GROSS, MANAGER
MANUFACTURING DEPARTMENT

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V. D. Donihee

V. D. Donihee
Accountability Representative

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MANUFACTURING DEPARTMENT
METAL PREPARATION SECTION
MARCH 1952

I. RESPONSIBILITY

The instrument engineering staff, consisting of nine engineers and a steno-typist, was transferred to the Engineering Department, with responsibility for instrument development activities, effective March 1, 1952.

Complete relief of responsibility for the White Bluffs ice plant was effected March 1, 1952 by the transfer of that property to the Atomic Energy Commission.

II. ACHIEVEMENT

A. Operating Experience

1. Statistics

	February	March	Year To Date
Bare Pieces Machined (Tons 4")	102	94	304
Machining Yield (%, 4")	80.9	80.9	79.2
Bare Pieces Machined (Tons, 8")	51	75	159
Machining Yield (%, 8")	80.9	80.7	79.9
Acceptable Pieces Canned (Tons 4")	106	75	309
Canning Yield (%, 4")	79.1	74.0	76.7
Acceptable Pieces Canned (Tons 8")	37	69	116

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	February	March	Year To Date
Canning Yield (%, 8")	66.7	58.6	60.8
Acceptable Pieces Canned (% forecast, 4" & 8")	102.1	99.3	100.9
Autoclave Failures (No./M, 4")	.07	.09	.08
Autoclave Failures (No./M, 8")	.10	.09	.09
Briquettes Produced (Tons)	28	27	79
Chip Recovery Yield (%)	86.3	87.8	86.6
Billets Produced (Tons)	49	68	160
Billet Yield (%)	82.3	86.5	84.6
Solid Yield (%)	91.6	94.4	93.0
Oxide Burned (Weight Out Tons)	7	8	22
Poison Canned (No. Pieces)	1081	3196	5277
Chemical 68-56 Canned (No.Pcs.)	0	0	296
Chemical 10-66 Canned (No.Pcs.)	699	0	1357
Poison, Chemical 68-56, 10-66 Canning (Man hours)	268	450	898
Special Requests (Man hours)	195	396	906
305 Routine Tests (Man hours)	53	156	209
305 Special Tests (Man hours)	313	327	640
Maximum Steam Generated (M lb/hr)	35.00	28.00	
Total Steam Generated (M lbs.)	18,239	16,093	
Average Rate Generated (M lb/hr)	26.20	21.60	
Total Coal Consumed (Tons)	1,226	883	
Sanitary Water from 3000 Area (Million gal.)	23.5	27.50	
Well Water Pumped (Million gal.)	6.6	5.75	
Total Water Average Rate (gpm)	722	617	
Chlorine Residual (ppm)	.32	.32	

2. Activities

Approximately 74% of the uranium machined during the month was from virgin type material that was rolled during January and February. The machining yield was comparable to that of February because of the continued good rod quality.

The decreased overall canning yield of four and eight inch slugs is attributable to adoption of more stringent inspection standards at final inspection.

Defects classified as corrosion and stains accounted for approximately 6.5% reduction in the final yield. The cause of this condition has not been determined. However, it does appear that the prevalence of stain is affected by the manner in which steam is added at the beginning of the autoclave operation. Study of this condition is being continued.

Of the four autoclave failures of four inch slugs, all were believed attributable to operator techniques. The four failures of eight inch slugs were attributed to defective cans.

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Better supervisory control in the Chip Recovery operation resulted in better quality briquettes. This reflected in higher solid yield in the Melt Plant. The increased billet yield resulted from higher solid yield and improved operational efficiency.

The Badge House, Building 3701, was remodeled to permit the installation of clock alleys and time clocks. The installation was completed and ready for service at month end.

A complete survey of 300 Area buildings was completed early in the month and an analysis of occupancy and space utilization made. Two man-months were required to accomplish this with an approximately equal amount of time expended by the Engineering Department. The information will be compiled into the semi-annual report of landlord responsibilities.

3. Special Operations

Production Test 313-105-2M - "Triple Dip Canning and Irradiation of Eight Inch Uranium Slugs Fabricated in Heavy Walled Aluminum Cans," (HW-22463). Approximately 15,000 acceptable slugs were fabricated in accordance with this test during the month. Non-seating continues to be the major cause for rejection.

Production Test 313-105-3M - "Fabrication of Alpha Lead Dip Canning and Irradiation of Salt Bath Treated Alpha Rolled Uranium Slugs," (HW-22770). Due to wetting difficulties, no slugs were lead-dip canned during March. Efforts to chemically remove the oxide coating formed in the carbonate salt bath have not been successful. At month end a batch of 50 slugs was heat treated in the normal trichloride salt presently used as a flux on the bronze bath. It is planned to can these pieces early in April and evaluate the effect of the oxide formed on slugs heat-treated in a chloride bath.

Five hundred and ten simulated "J" slugs were canned for the Atomic Energy Commission by the regular "J" slug canning process.

4. Schedule Variance

Machining production was 12.4% above forecast. This is attributable to a change in schedule in transferring personnel to the 100 Areas for C-431 project.

Canning production was 0.7% below forecast, attributable to decreased yield in both four and eight inch material.

B. Equipment Experience

Heating elements failed on two bronze furnaces during the month. The service period of these elements represented a 50% improvement in element life and may be attributable to improved methods of ventilating the area housing the elements.

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The slug marking fluoroscope was out of service for three days due to failure of the transformer. Delivery of a spare assembly, which was on order, was expedited to return the equipment to service without curtailing production.

C. Improvements

1. Adoptions

A frame was designed and fabricated for carrying two autoclave loads. This has resulted in a reduction of carrying time by approximately 50% in this operation and represents a saving of one hour per day in operation of the fork lift truck.

2. Inventions and Discoveries

All people in the Metal Preparation Section 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.

D. Plant Development and Expansion

1. Project Status

Project C-199 - 300 Area Sewage Disposal System. Concrete slabs have been poured for septic tanks and forms were erected for piers in sludge bed.

Project C-433 - Expansion of 300 Area Power House and Pumping Facilities. Design is essentially complete. Construction was started on March 3.

Project C-481 - Equipment for 8" Slug Manufacture. Fabrication of equipment is approximately 85% complete.

2. Plant Engineering

A Manufacturing Standard Manual (HW-23249) was issued during the month, consolidating all previously issued cost standards for operating labor and process materials.

Engineering studies were conducted on the following items:

1. Evaluation of the feasibility of spinning rather than crimping aluminum cans in the canning operation. Results appear encouraging.

2. Design an improved canning jack. One has been fabricated for trial.

3. Redesign bronze agitator for 8" slug canning to give a more reliable performance.

4. Determine the most economical method of machining slugs for lead dip canning. Study was completed and report issued.

5. Standardization of machine and miscellaneous operating tools.

6. Survey buildings in 300 Area for the purpose of revising as-built drawings to reflect structural changes.

E. Non-Routine Reports Issued

Number	Title	Author	Date
HW-23721	Suspected SF Discrepancy in Production Lot 283	JA Cowan & WK Wright	3-6-52
HW-23674	Bare Slug Erosion	JE Bergman	3-3-52
HW-23676	Study of Proposed Well Type Cap	RC Aungst	2-27-52
HW-23704	Results of Roller-Turner Tool Test at Increased Feed Rate	RH Albright & BB Bradford	2-29-52

III. PERSONNEL

A. Organization

None

B. Force Changes

	Monthly	Weekly	Total
Beginning of Month	75	394	469
End of Month	66	401	467
Net Change	- 9	7	- 2

C. Safety Experience

There were no major and two sub-major injuries during the month.

D. Radiation Exposure

Four exposures in excess of 300 mrep per week were recorded by weekly badge films. Three of the exposures occurred in the Melt Plant and were due to operators' failure to use the vacuum attachment provided for oxide unloading. These operations are now being continuously monitored to assure compliance with control procedures and to determine if procedures may be improved. An inexperienced operator received an exposure of 320 mrep while machining eight inch pieces on a six day work week. The average normal exposure for machining eight inch pieces six days per week is approaching 300 mrep per week.

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MANUFACTURING DEPARTMENT
REACTOR SECTION
MARCH, 1952

I. RESPONSIBILITY

Assigned responsibilities of the Reactor Section were not changed during March.

II. ACHIEVEMENT

A. Operating Experience

The total reactor input production was 109.3% of forecast and 9.6% greater than for February. The per diem production and the month's total production both represent new record achievements. The per diem production exceeded that of February, 1952, by 54 units per day. These achievements are the result of power level increases which have occurred over the past several months coupled with a decrease in the number of ruptured slugs and were made despite an extended outage at 100-F Area for removal of stuck charges. The reactor output production was 22% over forecast due to rescheduling of discharges.

Established maximum levels were increased 20 MW during the month due principally to continued graphite annealing and the recalibration of B Reactor graphite thermocouples.

There were 10 uranium slug jacket failures during March. Four were discharged within the scram recovery time limitation permitting immediate resumption of operation. It is estimated that these "fast" discharges made it possible to avoid approximately 100 hours of potential outage time.

Operating Experience (Cont'd)

1. Statistics

	B	D	DR	F	H	Total or Average
Reactor Time Operated Efficiency (%)	94.1	91.1	94.4	51.4	88.6	83.9
Reactor Outage Time (Hrs.)						
Plutonium Production Reg.	43.1	65.6	37.5	356.6	70.8	573.6
Production Tests	-	-	3.5	5.0	13.5	22.0
Power Interruption	0.5	0.7	0.9	-	0.5	2.6
Total	43.6	66.3	41.9	361.6	84.8	598.2
Reactor Unscheduled Outage Time (Hrs.)	43.6	30.5	0.9	361.6	84.8	521.4
Metal Discharged (Tons)	13.80	20.05	33.62	19.05	38.47	124.99
Water Pumped (MM gals.)						
Bldg. 190 to Reactor	1523	1577	1742	1111	1816	7769
Bldg. 181	1942	4244		1335	2216	9737
Steam Generated (MM lbs.)	134.1	216.3		81.7	91.0	523.1
Coal Consumed (Tons)	8800	14,781		5638	6216	35,435

2. Activities

The outage begun on February 28 for removal of 21 stuck charges from F Reactor continued until March 15. The removal operation and evaluation of the condition of the tube channels required 347.9 hours of outage time during March. (Document HW-23915 contains pertinent information regarding the removal of charges.) From investigations conducted to date it appears that the stuck charges resulted from formation of corrosion products between the tube walls and the graphite moderator. This caused pressure to be applied to the tubes in such a manner that the tube cross section was reduced. The corrosion apparently results when water leaks into the graphite. Investigation of this problem is continuing.

In connection with the above investigations, an inspection was made of tubes 1265-DR and 3561-DR which had been removed to determine possible adverse effects of the leaks which previously had occurred in tube 1368-DR on May 15, 1951, and tube 3763-DR on January 7, 1952. A grayish white deposit, approximately 30 inches long, was observed on tube 1265-DR. This section had been in the last downstream tube block. There was no evidence of any extensive white deposit on tube 3561-DR. Both tubes showed some evidence of pitting on the tube.

At H Reactor, on March 27, a decrease in reactivity and a sudden increase in the reactor atmosphere pressure led to the detection of a rupture in tube 3565-H along with a slug jacket failure in the same tube, although there was no activity indication on the water monitoring equipment. Following corrective action, 260 gallons of water were removed by month end from the reactor.

Instability of the BPA system on March 14 caused a "Critical Y" power condition of approximately 30 minutes duration on the Hanford Works electrical system and resulted in a total of 2.6 hours reactor outage. The difficulty

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Activities (Cont'd)

was attributed to flooding of equipment at Grand Coulee.

Due to construction activity in the vicinity of Building 181-B, intermittent peaks in raw water turbidity of up to 345 ppm were encountered at Building 182-B inlet house. This turbidity, which normally is relatively stable at approximately 6 ppm, required the use of additional coagulant and closer operating attention in order to maintain the quality of process water.

In 100-B Area, continuous water drainage of approximately 2,000 gpm from the export system was discontinued on March 17. This practice was started during January in order to prevent freezing of a section of pipe which was exposed for 100-C Area construction.

B. Equipment Experience

The general mechanical condition of the reactor components and equipment continued good throughout the month. There were no unscheduled reactor outages from equipment failure.

At D Reactor, B rod, which had been partially stuck, was successfully withdrawn, repaired, and returned to operation during March. Inspection of No. 8 horizontal rod and thimble revealed a water leak in the junction block of the rod tip and a gas leak in the thimble. At month end, the rod is out of service, and preparations are being made to replace the thimble and return the repaired rod to service.

Two process pump motor failures occurred during March, No. 5 at 190-B on March 3 and No. 3 at 190-F on March 28. A spare stator was installed on No. 5 and the unit returned to service. During a routine inspection of No. 3 a stator winding failure was discovered. An unsuccessful attempt was made to repair the damage without rewinding the stator. The motor was replaced with a spare and the unit returned to service. No. 8 pump motor at 190-H, which failed on February 2, was also returned to service during March, after the stator had been rewound.

Investigation of ground settling at a location approximately 50 feet southwest of Building 190-DR led to discovery of a break in the 48-inch steel condenser water effluent line on March 18. Excavation revealed a break in a very light weld caused by settling of the fill. The line was rewelded and returned to service on March 19. While repairs were being made, the condenser water was diverted to Building 183-DR by using the 190-DR reuse pumps.

The overspeed trips and governors on the Building 190-DR turbines were tested on March 21. All performed satisfactorily. This was the first routine check of these units since they were serviced by the Worthington Pump and Machinery Company's engineer during January. The governors had failed to operate satisfactorily on checks prior to this servicing.

C. Improvements

The low porosity of the crib adjacent to the 107-H Retention Basin has precluded the pumping of water from the retention basin into the crib at a sat-

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Improvements (Cont(d)

isfactory rate. A long, shallow extension was added to the crib during the month to provide sufficient drainage capacity. Initial tests of the revised crib indicate that the crib now has a satisfactory drainage capacity.

A tool was fabricated for removal of those stuck process tubes which cannot be pushed from the tube channels through use of force applied against an expanding mandrel. The tool is designed to cut the tube walls and fold the cut edges inside the tube causing a reduction of the tube diameter without changing the shape of the graphite channel. During the 100-F Area outage, 4 tubes were removed in 10 hours using this tool.

In order to remove some of the dummies from the stuck process tube charges at 100-F Area, it was necessary to drill out the dummies. A drill, powered by a 2 hp air motor, was designed and fabricated for this work.

There were no inventions or discoveries reported by Reactor Section personnel during March. The following invention, reported in "Report of Invention", dated November 30, 1951 (HW-22850), was inadvertently omitted from the November, 1951, issue of this report.

Inventor	Invention
R. Willing	The Application of Ion-Exchange Principle to Pile Effluent Water Monitoring.

D. Plant Development and Expansion

1. Project Status

The most significant Reactor Section projects are reported below. Further details concerning projects will be found in the report, "Status of Reactor Section Projects, Informal Approval Requests and Budget Items", F. A. R. Stainken to E. P. Lee, dated March 18, 1952.

C-431 (100-C Plant)
Water plant and reactor facility construction are both approximately 45% complete at month end. Construction completion is currently scheduled for September, 1952. The installation of Reactor B blocks, tie-straps and bottom cast iron blocks has been completed. Building 190 siding and roof were also completed.

C-438 (Ball 3X Facilities for B, D, DR, F and H Piles)
The Minor Construction Management Unit is currently installing battery rooms in 105-B, D, F and DR Buildings. Fabrication of the moderator seam filler at the 100-D shop is approximately 80% complete. Plans are being made to prove the design in a mock-up test during April.

C-482 (Pile and Pile Water Plant Improvements)
Final design scoping of this work to be performed at DR and H Reactors has determined that modifications will be made only to the rear face piping. A revision to Part I of the project proposal requesting use of the originally approved $628,000 under

Plant Development and Expansion (Cont'd)

conditions of the revised scope has been approved by the Appropriations and Budget Committee and forwarded to the Atomic Energy Commission.

RDA-DC-3 (Improved Reactor Design)
Document No. HDC-2539, "Scope Bases for Hanford Expansion", has been submitted to the Design Committee. The document summarizes the bases used in the preparation of a preliminary project proposal to be submitted to the Atomic Energy Commission covering possible Hanford Works expansion.

RDA-DC-6 (Water Plant Design Development)
Document HDC-2541 was submitted to the Design Committee. This document contains a description of the proposed water plant and supporting facilities for Program X.

2. Plant Engineering

The scope of Reactor Section development studies which were active during March is indicated by the following tabulation. Further details concerning these studies are contained in documents HW-23980 and HW-23990.

1. Elimination of slug ruptures.
2. Decreased reactor charge-discharge time.
3. Elimination of reactor outage time for discharge of poison columns.
4. Increased reactor power levels.
5. Increased working time limits for personnel in the reactor discharge areas.
6. Faster removal of stuck tubes and slugs from the reactors.
7. Improved detection and location of reactor process tube leaks.
8. Reduced reactor outage time due to abnormal power conditions.
9. Decreased labor and material costs of process tube dummies.
10. Increased steam economy of power plant boilers and Building 190 pump turbines.
11. Increased efficiency of water plant filters.

Plant Development and Expansion (Cont'd)

Production tests of major plant development significance are reported below:

PT-105-313-2M (Irradiation of 8" Uranium Slugs)
An additional 235 process tubes in the DR and H Reactors were charged with eight-inch slugs during the month, bringing the total charged to date to 371 or about 12% of the slugs scheduled to be charged under this test.

PT-105-435-P (Graphite Temperature Increase of the F Pile)
The final phase of this test, in which graphite temperatures up to 450° C are allowed, was continued. The maximum graphite temperature attained during the month was 435° C.

PT-105-503-E (Use of Activated Silica as a Coagulation Aid for Aluminum Sulfate)
Water treatment in conformance with this test was continued at 100-F Area during the month using a coagulant feed of 6 ppm activated silica and 12 ppm alum. Coagulation was satisfactory but the rate of filter head loss was excessive (0.65 ft/hr). The water flow rate through the filters averaged 4.0 gpm/ft.^{2} for the month.

E. Non-Routine Reports Issued

Significant reports issued by the Reactor Section during March included:

February monthly reports for Operations Unit (HW-23707), Plant Engineering Services Unit (HW-23670), Process Unit (HW-23681), Radiation Monitoring Unit Technical Report (HW-23785).

"The Evaluation of Chlorine as an Activating Agent for Sodium Silicate", W. R. Conley to A. Frew, March 12, 1952.

"A Review of Slug Corrosion as Related to Process Water Composition and Film Formation in the Hanford Reactors" - HW-23608.

"Removal of Stuck Tubes and Charges, F Reactor" - HW-23915.

"Radiation Incident Investigation, Class I, Incident No. X-7" - HW-23999.

"Radiation Incident Investigation, Class II, Incident No. X-5" - HW-24001

"Radiation Incident Investigation, Class II, Incident No. X-6" - HW-24000.

A description of slug failures experienced during March is contained in document HW-23971.

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III. PERSONNEL

A. Organization

There were no appointments made in the Reactor Section during March.

Instrument and Mechanical maintenance shift coverage of the P-10 Project at Building 108-B was discontinued on March 21 since the process operation has been shut-down. Previously, six employees were assigned full time to this work.

B. Force Changes

	Beginning of Month	End of Month	Net Change
Section General	3	3	0
Operations	242	245	3
Plant Engineering Services	20	22	2
Power & Maintenance	803	809	6
Process	19	20	1
Radiation Monitoring	57	57	0
Section Total	1144	1156	12

Changes during March consisted of 8 terminations, 8 new hires, 1 deactivation, 18 transfers into and 5 transfers out of the Section.

C. Safety Experience

A sub-major injury, No. 216, was sustained on March 12 at 100-F Area when a Reactor Section pipefitter fractured a finger while working with jacking equipment in the Building 105 discharge area.

D. Radiation Exposure

Two Operations Unit employees received overexposures at Building 105-H during special pick-up work in connection with a ruptured slug removal. Contamination spread from oil slicks on the storage basin water to the tongs they were using and then onto the operators. As a result of this incident, a bus and its passengers were checked for contamination at the 1100 Area terminal. Two additional cases of low level personal clothing contamination were found. A Class II Radiation Hazards Incident investigation was held.

E. Training

The program for obtaining and training qualified engineering and supervisory personnel to meet existing and future requirements of of the Section was continued. At month end, 31 employees are receiving on-the-job training, including 9 Technical Graduates on assignment under the Rotational Pool Program. L. H. Wallace visited the University of Southern California and the University of Arizona during the period of March 3 - 12 to assist in the procurement of Technical personnel for Hanford Works.

MANUFACTURING DEPARTMENT
SEPARATIONS SECTION
MARCH, 1952

I. RESPONSIBILITY

There were no significant changes in the responsibilities of the Separations Section during the month of March. Some portions of the TBP project were accepted from construction forces for calibration and flushing work.

II. ACHIEVEMENT

A. Operating Experience

1. Statistics

a. Bismuth Phosphate Operations

	B Plant		T Plant		Combined	
	Normal	Acid Wash	Normal	Acid Wash	Normal	Acid Wash
Charges started in Canyon Bldgs.	46	1	76	1	122	2
Charges completed in Conc. Bldgs.	52	1	72	1	124	2
Special Charges-Conc. Bldgs.	9		1		10	
Charges completed-Isolation Bldg.	50	1	63	1	177*	2
Average Waste Losses	2.7		2.7		2.7	
Average MWD/Ton	599		580			
Special charges-Isolation Bldg.					7	
Average purity completed charges					99.0	
Material balance thru Isolation					102.6	
Yield through process					101.6	
Average cooling time (days)					49	
Minimum cooling time (days)					40	

*Includes 64 charges from Redox

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b. Redox Operations

Charges shipped to Isolation	66
Tons Uranium delivered to storage	43.11
Maximum 1A feed rate, Tons/day	3.13
Average 1A feed rate, Tons/day	1.96
Average yield, %	
Uranium	100.71
Plutonium	95.42
Total Waste Loss	3.55

c. UO_3 Operations

	March	To Date
Uranium drummed, Tons	42.37	68.07
Uranium shipped, Tons	19.57	34.83

d. Power

	February	March
Raw water pumped, gpm	5,955	6,618
Filtered water pumped, gpm	1,166	1,143
Steam generated, M lbs/hr	182	174
Maximum steam generated, M lbs/hr	246	263
Total steam generated, M lbs.	126,518	129,826
Coal consumed, tons (est.)	7,098	7,079

e. Waste Evaporation

	March	To Date
Gallons feed processed, 200-W	543,125	5,387,573
Percent volume reduction	74.2	73.3
Gallons feed processed, 200-E	459,322	1,453,621
Percent volume reduction	72.9	74.1

f. Waste Storage

	Batches
Metal Waste reserve storage capacity-T Plant	206
1st Cycle reserve storage capacity-T Plant	931
Metal Waste reserve storage capacity-B Plant	632
1st Cycle reserve storage capacity-B Plant	254
Redox Waste reserve storage capacity	2599

g. Analytical Control

Laboratory	Samples	Determinations
200-E	2272	3929
200-W	2600	4481
Isolation	843	2164
Standards	1264	1407
Total	6979	11981

[redacted]

The 200-E Laboratory was shut down on March 31 due to the reduction in production at B Plant. The few samples required for the processing at a minimum rate will be transported to the 200-W Laboratory for analysis.

2. Activities

a. Redox Processing

Reworking of waste solutions, as discussed in last month's report, continued until 3-5-52. 1A Feed was again started on this date and was maintained continuously until 3-27-52 when a 26 hour shut down was taken for column flushing purposes.

Plutonium waste losses varied widely from values below flow sheet specifications to losses ranging to over 7%. While there were definite indications in various stream samples that a part of the high losses originated primarily in process difficulties, some losses were also believed to be a combined function of process and piping difficulties causing overflow of the columns to the waste system.

On the theory that the ruthenium removal and/or scavenging steps were contributing solids or other foreign material detrimental to solvent extraction, major modification of head end treatment was undertaken starting with run HE-9 when both ruthenium removal and MnO_2 scavenging were temporarily discontinued. Only oxidation and centrifugation for minor solids removal were retained for an experimental run of 15 tons duration. Operation of the extraction batteries on the untreated feed did not deteriorate appreciably nor did it improve remarkably, and there were at month end only limited indications that the change was markedly reflected in the final products. Results of the test will be evaluated by the Plant Assistance group.

As plant operation continued, decontamination of plutonium streams became progressively worse, and PR can readings leveled off at consistently high values near the end of the month. The specific fission product content was not identified although suspected to be ruthenium. A number of cans were sufficiently high in gamma radiation to necessitate special handling in both the Redox and Isolation Buildings.

Operation of the extraction columns was unstable, with feed rates varying with process conditions. The emulsion phenomenon experienced at one time or another in all columns was the chief contributor to difficult operation. An intense investigation of the problem by all available technical personnel was started and is continuing using plant stream samples, interface samples, cold chemical samples, etc., in an effort to identify the impurities responsible for the difficulties. Meanwhile plant operation was continued with additional process changes being made during the month to further the investigation.

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b. UO_3 Processing

UO_3 Plant operations for the month of March were fairly uneventful. Investigations are underway to determine what might be the cause of low conversions experienced at the K-25 plant at Oak Ridge using Hanford feed material.

3. Special Operations

a. Acid Washes - $BiPO_4$ Plants

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

Plant	Extraction	Section 12 & First Cycle	2nd Cycle	Total Canyon	Total Thru Plant	F Cell Flush
T	7.7	4.3	16.5	28.5	24.5	20.0
B	9.7	17.9	7.0	34.6	43.5	None in March

b. 200 North Area

During the month the metal lag storage area operated on a curtailed basis during the transition to direct shipment of metal from the 100 Areas to the Separations Plant. Final arrangements have been made for the 200 North Area to be shut down by the middle of April.

4. Schedule Variance

Actual production of regular meterial processed through the Isolation Building was 127% of the forecasted amount which established a record. This was due to the Redox Plant performing as scheduled allowing the backlog built up during last month to be worked off in B and T Plants. Material actually started in the $BiPO_4$ and Redox plants was respectively 106% and 169% of the amount forecasted at the start of the month.

B. Equipment Experience

1. Operating Continuity

Except as noted elsewhere, there were no serious interruptions in operating continuity during the month.

2. Inspection, Maintenance and Replacement

a. 7-2 Centrifuge Replacement

In B Plant the Section 7 centrifuge was replaced with a new unit when an electrical failure occurred in the motor. An

unsuccessful attempt was made to use a renovated Section 16 machine as a replacement.

b. Repair of Storage Tank - Redox

Cleanout of ANN storage tank SS-113 which failed on 1-28-52 was completed during the month, and the tank was entered at month end for inspection. A complete inspection of the Tygon tank liner has not yet been completed but multiple blisters are noted in the lining ranging to 5" in diameter where the liner material has pulled away from the steel backing. No additional breaks in the liner material are evident to date.

c. Waste Metal Removal Facilities (TBP)

Sluicing activities during the month were virtually at a standstill because of a succession of mechanical and electrical troubles experienced with the Nagle sludge pumps, mechanical troubles with the periscope, and bearing troubles with the blend tank agitators. At month end most of the difficulties had been physically corrected. Fortunately these occurrences have not as yet affected the over-all metal recovery program since the TBP plant is still under construction.

d. UO_3 Equipment

Although considerable time was required during the month for maintenance of the unloading vacuum system and pot ventilation system bag filters, no production delays were experienced from equipment failures. Plugging of the X-3 bag system experienced previously has been eliminated by installation of a vibrator on the bottom of the X-3 hopper and by a 25% increase in the speed of the rotating discharge valve between the bag filter and the product hopper.

C. Improvements

1. Adoptions

a. Mechanical Seals

Dura-Seal mechanical seals were installed in the packing glands of the organic solvent pumps in the Redox solvent storage area. Several types and techniques of packing were unsuccessfully tried on these pumps before resorting to mechanical seals. Since their installation, the pumps have operated with a minimum of maintenance and gland leakage.

b. Run Size - $BiPO_4$ Plants

During March the size for make-up of batches in the Section 6 metal solution feed tank was increased from 98 percent to

99 percent of the maximum recommended starting "batch size" in an effort to increase production efficiency.

2. Inventions or Discoveries

An invention report "Vacuum Method for Holding Material While Machining or Finishing" was submitted March 17, 1952 by J. H. Rector, Power and Maintenance Unit.

D. Plant Development and Expansion

1. Project Status

a. TBP - Project C-362

Due to construction labor troubles, the scheduled "ready for use" date of April 1, 1952 for Phase IV of the project was revised to April 5. This date does not include final completion of clean-up items or such major items as ventilation balancing, canyon deck painting, and crane overhaul, but does include the installation of all equipment in the canyon cells and supporting areas. On March 18th and 19th, 22 of the 36 canyon cells which require construction work were satisfactorily completed and were turned over to the Manufacturing Department. Inspection, flushing and calibration work is proceeding in these cells.

b. UO_3 - Project C-361

Failure to meet the April 1st construction completion date was due to the recent labor disputes. Part C, which covers the UNH Lag Storage Facilities, is estimated to require about two weeks to complete.

c. M-606 - Underwater Repair Facilities

The installation of underwater repair facilities in "T" Plant Canyon Building was completed in March.

Electrical work for the underwater repair facilities in "B" Plant Canyon Building was completed. Installation of personnel platform and jetting facilities and final completion is expected in April.

E. Non-Routine Reports Issued

Document	Title	Author
HW-23382	Basic Information on Essential Material Standards	J. E. Fouts and B. M. Stark
HW-23350	Manufacturing Standards Manual Separations Section - Part I Materials and Utilities Consumption, Operations Unit	

Non-Routine Reports Issued (Cont'd)

HW-23724	Nuclear Safety RMA Line - 234-5 Bldg.	W. N. Mobley and R. W. Benoliel
HW-23804	Authorization for Process Change - 234-5 Building	W. N. Mobley and V. R. Cooper
HW-23847	Separations Process Committee Minutes	L. M. Knights

III. PERSONNEL

A. Organization

There were no major organizational changes in the Separations Section during March.

B. Force Changes

1. Number of employees on Roll

	Monthly Roll	Weekly Roll	Total
Beginning of Month	277	1269	1546
End of Month	280	1217	1497
Net Change	3	- 52	- 49

2. Personnel Changes

	Monthly Roll	Weekly Roll	Total
Transfers in	1	13	14
Reduction of Force	0	-12	-12
Transfers out	-2	-37	-39
Reactivates	0	0	0
New Hires	0	2	2
Terminations	-2	-11	-13
Weekly to Monthly	6	-6	0
Removed from Payroll	0	-1	-1
Monthly to Weekly	0	0	0
Net Change	3	-52	-49

C. Safety Experience

On March 19, 1952, an employee of the Electrical Maintenance group fell in the shower room in 234-5 Building and struck his head on the concrete floor sustaining injuries of such severity as to result in a major injury. After several days, the injured was removed from Kadlec Hospital to Seattle where an operation was performed. Latest word is that this was successful and the patient is recovering satisfactorily.

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D. Radiation Exposure

There were six Class I and five Informal radiation hazard investigations held by the Separations Section. The Class I incidents investigated included a blowback from a process tank resulting in widespread contamination in an operating gallery; the discharge of an unusually large amount of ruthenium from a 200 foot stack resulting in contaminated air in several buildings; two cases of entry into Radiation Danger Zones without benefit of radiation monitoring; gross plutonium contamination of a process room resulting from failure of a reactor containing a high pressure chemical reaction; and the gross contamination of a film badge resulting in skin and personal clothing contamination and significant potential to a spread of plutonium outside the perimeter barricade.

Total Iodine 131 emission rates from $BiPO_4$ and Redox facilities averaged 2.5 curies/day.

ENGINEERING DEPARTMENT

MARCH 1952

TECHNICAL SECTION

Examinations of the eight-inch canned slugs have shown that some of the slugs were warped, in some cases to such an extent that mechanical abrasion of the can wall by the slug caused local penetration and failure in the autoclave.

New maximum power levels were attained at B and D Piles. Leakage of water into F Pile caused a loss of inhours and a reduction of maximum power level. The rupture of a slug in H Pile caused a severe water leak with a consequent loss of reactivity.

Studies are being made to determine the condition of the graphite in the flooded portion of the F Pile. Certain regions of the pile have become so constricted that the diameter gauges could not be pushed through; this constriction is believed to be due to build-up of corrosion products.

Data from two experimental tubes have shown that the elimination of the dichromate from the pile cooling water will have no deleterious effect upon film formation or corrosion rate of slugs.

An accurate measurement of the half life of the Xe^{135} isotope has been obtained, using the xenon separation equipment. Two X-rays of different energies have been observed; the second X-ray having an energy of 0.15 mev. probably results from another mode of disintegration of the Xe^{135} nucleus.

The Redox plant operated under essentially continuous conditions starting March 6. While the production achievement could be considered noteworthy for operation during a shakedown period, process performance was nevertheless erratic due to an emulsification tendency of the phases in the solvent extraction towers. This emulsification tendency is being studied intensively in the laboratory. It appears that surface active agents exist in both the hexone and the aluminum nitrate solutions. During periods of serious emulsification at high rates a decrease in decontamination was evident.

Operation of the RMA Line was started March 18. The hydrofluorination of Pu (IV) oxalate was conducted with good conversion at about a 6½-hour time cycle. Reduction yields using sulfur as a booster instead of iodine were 90-95 percent, with remedial steps toward improvement now under study. The sulfur slag produced has been harder than normal with some difficulty in removing the button mechanically. Efforts at manual separation were successful. No serious equipment problems have been evident, although minor maintenance and revision were necessary. Casting, machining and coating operations were conducted successfully.

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During March, twenty senior chemists were given full-time special assignments in the Redox Control Laboratory, and an accelerated attack was made on numerous start-up difficulties. In addition, the number of supervisors per shift was permanently increased from two to three. As a result of this effort, by the end of the month output per man, accuracy and precision had all shown a marked improvement, and the proportion of priority samples reported late had dropped to a nominal level.

Exchanges of UO_3 samples between Hanford and Site K-25 analytical laboratories have led to correction of earlier errors in UO_3 specification analyses by both Sites. Hanford determination of water, U_3O_8 and iron have been substantially improved.

Spectrographic determination of two additional impurity elements in uranium billets has been initiated, employing the cupferron pre-treatment method. The elements and their detection limits in ppm are: W, 10; Cb, 1; Ga, 1; Hf, 20; Mo, 1; Pd, 1; Ta, 20; Ti, 1; and Zr, 1.

Construction of the Outside Facilities and Badge House for the Works Laboratory Area is ahead of the construction schedule. All other buildings in this area are behind schedule, but the rate of construction improved during March.

Preliminary plans and specifications of the design of the interior of the Mechanical Development Building were reviewed and comments prepared for transmittal to the Dix Steel Building Company.

Final drawings of the "Hanford Slave" manipulator were completed and released for off-site fabrication for the hot cells of the Radiometallurgy Building. Radiation lock panels were designed for use in the multicurie cells in Building 222-S. These panels will allow insertion or removal of a shielded cask without radiation exposure to operating personnel. Molding techniques for sealing polyethylene are being investigated by the Technical Shops. This method will be used for providing polyethylene envelopes for items such as stirring magnets that require total immersion in process solutions or strong acids.

DESIGN SECTION

Design Section effort for March was distributed approximately 35% to research and development, 40% to "X" Reactor and other major design projects, and 25% to minor design projects.

The preliminary design development report on an improved water plant to serve two 1300-MW reactors was submitted by Chas. T. Main and is being reviewed.

Reactor development during the month included work on the feasibility of aluminum-coated glass balls for a tested safety system, calculation of "ink"

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solution activities, and graphite drying tests. Discussions are in progress with the Aluminum Company of America concerning the problem of fabricating 50-foot process tubes. A development program for placing high density concrete was started during March; results to date have been favorable. Tests on a model of the proposed downcomer are underway at Washington State College.

Major separations plant design development accomplishments included revision and refinement of the Purex Process flow diagrams, establishment of separations plant capacity for processing Program "X" irradiated uranium at both the 420 and 600 MWD/T enrichment levels, study of improved waste treatment and disposal facilities, and continued study of various building arrangements for separations plant. Studies on the improvement of the pulse mechanism and on the fabrication of remote vessels were completed and submitted by the Vitro Corporation.

As part of the mechanical development activities, studies were continued on the use of television for remote maintenance. Permission to negotiate a special agreement for rental of television equipment has been requested of the A.E.C. Work on the plutonium fabrication equipment development program was started with an investigation of RM Line operational difficulties.

The draft of a preliminary project proposal entitled "Major Expansion of Hanford Works Production Facilities" (HDC-2526) was completed and is being reviewed. Cost estimates for this expansion are $276,000,000 with the reactor facilities located at the Coyote Rapids site (Case I) and $272,000,000 with reactor facilities located at the F & H Area sites (Case II).

Negotiations were carried on jointly with the A.E.C. for selection of an architect-engineer for design assistance on the 105-X Building. Since it is possible that an architect-engineer's services may not be required, it is proposed to place certain packages of mechanical design on a "design-and-fabricate" purchase order basis and to obtain consultant and special design services where required.

The major design engineering effort during the month was applied to design of the "X" Reactor, completion of "C" plant design, instrumentation for Waste Metal Removal and Recovery, and "DR" and "H" Reactor and Water Plant Improvements.

Design is continuing on "X" Reactor with the use of specially authorized funds. Based on completed drawings, design of the reactor process unit advanced 3% during March to 7% completion. The 105 Building design was approximately 10% complete at the month's end, a reduction from the completion reported for February due to an increase in the number of drawings required. Basic design specifications for the reactor were completed during the month and submitted to the Design Committee for approval. A drafting schedule covering 90% of the process drawings was issued. To date, approximately 10% of the detail design drawings have been issued for comment.

Design on C-431 ("C" Area facilities) is in the final stages, with detail

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design for the Metal Examination Facilities progressing on schedule.

PROJECT SECTION

Major projects advanced during the month and attained construction completion status as follows: C-349, Hot Semiworks, 81%; C-361, Metal Conversion Facilities, 97.1%; C-362, Waste Metal Recovery (TBP), 82.2%; C-413, Expansion of 234-5 Facilities, 97%; C-431-A, 100-C Waterworks Facility, 50.1%; C-431-B, New Production Facility, 51.5%.

Two jurisdictional disputes in construction occurred during the month. One dispute resulted in general work stoppages with the loss of about 765 man-months. As a result, an unfair labor practice was filed against the teamsters by the main CPFF contractor. Negotiations with boilermakers and ironworkers showed little progress. The Ninth Circuit Court of Appeals overruled the NLRB decision on the Hewes case.

Renewed attempts were made by the HAMTC to organize General Electric employees in the 3000 Area Steam Plant.

Twelve new jobs with an estimated total cost of $244,000 were assigned to Minor Construction Management during the month.

Seventy-six project items and ten informal requests, totaling $22,879,000, were active in Project Engineering. Four new project proposals, three revisions, and three informal requests were transmitted to the A.E.C.

With the exception of two small items of work which are tied in with the completion of TBP, Project C-418, Additional Waste Storage Facilities - 241-TY, was completed during the month. Construction on Project C-362, TBP, advanced 6.6% by month's end, a gain of 2% in the schedule lag. Project C-413, Expansion of the 234-5 Facilities, continued on schedule.

Approximately 85% of the concrete required on Project C-431-A, 100-C Water Works, was poured by month's end. As-built drawings are being completed and acceptance tests are being rewritten. On Project C-431-B, Production Facilities, both concrete and steel are 98% complete. The Gypsum Roof contractor completed his work March 14, 1952. "B" block assembly and tie straps are complete. Thermo-shield are complete. Packing of graphite is scheduled to begin April 9, 1952. A preliminary mock-up for the graphite was completed 3-10-52 and blocks were repacked.

GENERAL

Organization & Personnel

Total on Roll March 1, 1951	1,741
Accessions	57
Separations	145
Total on Roll March 31, 1951	1,653

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Twenty-six laboratory personnel were transferred from the Manufacturing Department to the Technical Section in connection with the cutback of operations at the B plant and laboratory. These personnel were assigned to the Redox Laboratory (222-S) to take care of the increased work load there.

As a result of the transfer of Project Section functions during the month, principally to the A.E.C., 121 personnel were removed from the Engineering Department roll. Of the five functions transferred to the A.E.C., the transfer of North Richland Realty, Work Order Control, and other North Richland Services (excepting the 3000 Area Steam Plant) accounted for the majority of people released.

A. B. GRENINGER, MANAGER
ENGINEERING DEPARTMENT

HW-23982

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SECURITY INFORMATION

PILE TECHNOLOGY UNIT

MONTHLY REPORT

MARCH, 1952

April 10, 1952

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VISITORS AND BUSINESS TRIPS

Visitor	Date	Address	Purpose
R. J. Smith	3-10/12-52	New York Operations Office.	Metal fabrication and production fabrication of uranium.
R. E. L. Stanford	3-10/12-52	Fernald Area Office	Metal fabrication and production fabrication of uranium.
E. J. Prosen	3-11/12-52	AEC: Wash.,D.C.	Consultation on thermal chemical reaction.
R. L. McCarthy L. C. Bancraft	3-11/14-52	duPont	Charging of DPW-101
P. M. Cook	3-13-52	Stanford Res. Institute	Discussion of Irradiation Program.
E. E. Baldwin R. R. Koenig L. M. Loeb	3-18/20-52	Knolls Atomic Power Laboratory	Consultation on engineering radiation of boron carbide.
L. M. Magner	3-18/24-52	duPont	Charging of DPW-101.
T. F. Fullner	3-26/28-52	General Engr. Laboratory	Consultation on canning and metallurgical problems.
A. L. London	3-28-52	Stanford University	Discussion on heat transfer.

Name	Date	Place Visited	Purpose
L. J. Lucas	3-3/10-52	York, Pa. New York, N.Y. Buffalo, N.Y. Chicago, Ill.	Consultation on specification for hydraulic presses.
D. F. Snoeberger J. C. L. Chatten W. K. Alexander	3-4/7-52	Washington State College, University of Idaho.	Recruiting
R. M. Fryar	3-4/7-52	Washington State College, University of Idaho	Recruiting
	3-21-52	duPont Savannah River	Discuss water problems.

Name	Date	Address	Purpose
J. M. Atwood	3-4/7-52	Washington State College, University of Idaho	Recruiting
	3-21/27-52	Lewiston, Idaho Eugene, Oregon Longview, Wn.	Inspect water treating plants.
G. E. McCullough	3-4/7-52	Washington State College, University of Idaho	Recruiting
	3-20/21-52	duPont Savannah River	Discuss water problems.
	3-24/26-52	Ames Laboratory	Ames Information Meeting.
M. W. Carbon	3-7/17-52	LaFayette South Bend	Recruiting
W. C. Riley	3-18/19-52	Argonne National Laboratory	Attend national meeting on graphite radiation damage.
	3-20/21-52	Battelle Mem. Institute	Discussion of graphite program.
J. R. Townsend	3-18/19-52	Argonne National Laboratory	Attend national meeting on graphite radiation damage.
	3-20/21-52	Battelle Mem. Institute	Discussion of graphite program.
J. F. Music	3-18/19-52	Argonne National Laboratory	Attend national meeting on graphite radiation damage.
	3-20/21-52	Battelle Mem. Institute	Discussion of graphite program.
L. P. Bupp	3-18/19-52	Argonne National Laboratory	Attend national meeting on graphite radiation damage.
P. H. Reinker	3-18/19-52	Argonne National Laboratory	Attend national meeting on graphite radiation damage.
	3-20/21-52	duPont Savannah River	Discuss water problems.
H. F. Zuhr	3-18/19-52	Argonne National Laboratory	Attend national meeting on graphite radiation damage.

Name	Date	Place Visited	Purpose
R. Ward	3-20/21-52 3-24/26-52	Argonne National Laboratory Ames Laboratory	Meeting on Dimensional Stability. Metallurgical Information Meeting.
J. W. Riches	3-20/23-52 3-24/26-52	Argonne National Lab. Ames Laboratory	Metallurgy Conf.
C. N. Spalaris	3-20/31-52	Buffalo, N. Y. Mellon Institute	A.C.S. Meeting A.C.S. Meeting and Graphite.
R. Neidner	3-21/26-52	Seattle	A.S.M.E. Meeting
J. B. Cole	3-21/26-52	Seattle	A.S.M.E. Meeting
D. P. O'Keefe	3-28-52	Knolls Atomic Power Laboratory	Metallurgical Consultation
D. E. Stephens	2-21/31-52	Rochester, N.Y.	Fabrication and testing consultation.
J. A. Ayres E. A. Eschbach W. L. Schalliol H. L. Mars	3-24/26-52	Ames Laboratory	Ames Information Meeting
W. J. Morris	3-28-52	R.C.A. Camden, N. J.	Consultation with Industrial Television and briefing on equipment being purchased.

CRITICAL MASS

A study of the radiation burst at the P-11 Area has been completed. In this study it was attempted to determine as accurately as possible, the course of events in a small reactor following a large gain in reactivity. One result of the study, namely, that a reasonably definite upper limit can be placed on the total energy production in such a reactor, is of some significance to Hanford in that it makes possible a good estimate of the effects of an accidental accumulation of plutonium in one of the separation processes. A report describing this work has been prepared.

IMPROVED PILE STRUCTURE

Exponential Experiments

An absolute flux calibration of the Sigma Pile, made necessary by the move to 189-D Building, has been completed.

The buckling of the 7.5 inch dry lattice has been measured with gold and indium foils. While a final value is not available yet, it appears that the result agrees to within five microbucks of the value of 99 microbucks obtained from BF_3 and fission counter measurements. Thus the discrepancies (i.e. the dependence of the buckling on the type of detector used) which were observed in the seven-inch lattice do not appear here. Further, it has been found that the neutron spectrum, as measured by the cadmium ratio, is constant at different heights in this pile. This was not the case with the seven-inch lattice.

The use of a scintillation counter for counting gold foils shows some promise of reducing the counting time from that of a Geiger tube. Preliminary investigations have shown too large a background. Further investigation with different scintillating crystals are planned.

General Lattice Design

The calculations on the build-up of U^{237} in exposed uranium have been revised to include the contribution of the U^{235} (n,γ) U^{236} (n,γ) U^{237} reaction and to take into account the power density variation along the process tubes. At present the calculated concentration differs by about 50 per cent from the observed values. A new set of observations will soon be made by the Analytical Research Sub-Unit. It is hoped to use this data to re-determine the formation cross sections involved.

A measurement of the blackness of the process tube assembly has been started. Four initial measurements have given values ranging from 0.35 to 0.52.

The technique for separating Xe^{135} with negligible amounts of Xe^{133} impurity has been perfected. Purity of the xenon was determined by an accurate measurement of the half life and by an investigation of the various radiations emitted from the sample.

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It was determined that the separation of xenon and krypton is most effectively carried out when the krypton is eluted from the charcoal column at a temperature of -70°C. and the helium flow rate is 250 ml/min. About 75 minutes are required for complete elution of the krypton under these conditions. The subsequent release of the xenon then takes place at a charcoal column temperature between 11°C. and 65°C.

It has further been determined that about 29 per cent of the xenon generated by fission in the uranium-thorium hydroxide slug can be separated out for experimental purposes. This results from a comparison of the absolute amount of xenon obtained in the apparatus with the amount produced in the slug as calculated from the known flux in the Test Pile. This efficiency is better than that required to enable a measurement of the cross section. A measurement of the efficiency at the temperature which the uranium-thorium hydroxide will have in the 105 Pile (ca. 100°C.) is planned.

The method of coincidence counting was used for the absolute determination of the amount of xenon present. This method is reliable provided there is no angular correlation between the beta and gamma radiation. Measurements of the degree of angular correlation were attempted but these are not consistent enough to be of value. Nevertheless, it appears that angular correlation effects are small if not entirely negligible.

A new uranium-thorium hydroxide slug is being prepared for use in these experiments. In addition, this will enable the establishment of a technique for using enriched uranium in the final slug to be used at the 105 Pile.

A beryllium crystal has been obtained for the neutron spectrometer. It is hoped that this crystal will extend the upper energy limit of the spectrometer to 20 e.v.

Transmission measurements were made on seven samples of C Pile control rod. Thirty-six measurements give an average of 0.152 grams/cm^2 ±10 per cent as the minimum amount of boron. This is well above the 0.080 grams/cm^2 specified minimum.

A regulated power supply for the main magnetic field of the magnetic β-ray spectrometer has been completed. Regulation of 0.1 per cent is achieved.

SHIELDING STUDIES

The Y test hole facility at H Pile has been improved by the installation of a new gas collecting system and other facilities. It is expected to be in operation shortly.

Thermal diffusivity equipment has been completed and tested.

Apparatus for the measurement of high energy gamma ray attenuation has been completed and samples of uranium, lead, copper, and aluminum have been procured.

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Measurements are underway to determine the maximum annulus that may be tolerated between the dummy slug and the nozzle at the front face. So far, it has been shown that an annulus of 20 mils leads to no significant increase in radiation level.

A test will be made to determine the possible existence of voids in a mock-up of a front face section utilizing Brookhaven concrete made by the "Prepakt" method.

OPERATIONAL PILE PHYSICS

Enrichment Experiment - Single Channel - P.T.-105-502-A

The enriched column in tube 0674-H has now reached an exposure of 300 MWD/AT exposure without incident. This tube contains enrichment in the same concentration and channel loading configuration as will be used at the C Pile.

Long Term Gains Study

The IBM analysis of the equations describing the build-up of samarium 149 gives a "half-build-up" time of 22 days whereas H Pile start-up data indicate a faster rate of build-up to saturation.

The analysis was made on a tube by tube basis, the front to back distribution being approximated by three slabs. A maxwellian energy distribution with an effective neutron energy of 0.0422 electron volts was assumed in calculating the effective samarium 149 cross section. A value of 1.478×10^{-2} hr^{-1} was used for the prometheum 149 decay constant; the maximum local flux was calculated to be 1×10^{13} neutrons/cm^2/sec at 275 MW.

It would appear unreasonable to assume a "half-build-up" time longer than 15 days from the start-up observations. The discrepancy is unexplained at present.

Pile Tube Abandonment Studies

Recent difficulties encountered in efforts to discharge a block of tubes at F Pile have led to a study to establish the conditions required to operate the pile with unremovable, uncooled metal charges in the pile fringe. The required low rate of heat generation is achieved by creating a poisoned, water-cooled reflector around the abandoned metal. Such a reflector is obtained by substituting lead-cadmium or P-10 slugs for regular metal and using cadmium splines where possible. In all cases temperatures in the abandoned channels should be monitored.

Ruptured Slug Detection

The emphasis during the month was placed on the development of the delayed neutron detector. The gamma ray spectrometer, which will also be utilized on this problem because of its ability to positively detect fission products through

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selecting the unique energies of the emitted fission product gamma rays, has reached an adequate stage of development. However, the delayed neutron detector has suffered from two faults, (1) instability and (2) high neutron counting backgrounds.

A highly stable laboratory instrument has been tested but its long-time stability on the pile has not yet been demonstrated.

The high backgrounds have previously been assumed to be due to photo-neutron production resulting from the H^2 (γ, n) H^1 reaction which has a 2.2 mev. threshold. Neutron decay curves demonstrate, however, that at least a portion of the neutron background is due to delayed neutrons.

Tube Temperature Recording Facilities

Design of the B Pile process-tube outlet-water temperature-rise recording equipment is complete. The fabrication of the relay cabinet is complete and the Brown coding switch is 75 per cent complete.

The Flexowriter has arrived on the plant although it was not scheduled for delivery until May 17, 1952. This early delivery is due to the close co-ordination existing between Hanford and the Commercial Control engineers. The installation of the equipment at B Pile has begun.

The tape-to-card data converter has been completed by the IBM corporation. This instrument will transfer the temperature data from the perforated tape, as recorded by the Flexowriter, to IBM cards for utilization in further calculations.

The DR Pile facility has functioned with a minimum of difficulty during the month following revisions to the installation made previously. Good data coverage was maintained during the month.

GRAPHITE STUDIES

Pile Graphite - Sampling

Special efforts were extended during the month to obtain information from process tube channels and process tubes at the F Pile. Horizontal and vertical inside diameters of seven process tubes were recorded. Measurements of the diameters and ellipticity of twelve graphite process tube channels were made. Graphite powder samples were mined from six process channels. Part of a core sample was obtained from a process tube channel in the leaking region of the pile. Preliminary information from this large amount of data shows that there is no unusual graphite crystallite expansion in regions associated with severe process tube corrosion. The diameter gauges were too large to pass through process tubes and graphite channels in regions where severe slug sticking had occurred. Cruder instruments, such as dimensional probes, would be more effective in these cases.

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The precise diameter measurements do indicate severe ellipticity in both the process tube and process channel adjacent to these regions of constriction. Graphite powder samples removed from the leaking region show appreciable contamination by corrosion products. Spectrographic analysis of these samples show very high quantities of aluminum with lesser amounts of other common metals. Anion analysis of the corrosion products in these graphite samples is being obtained. A report summarizing all these data will be issued as soon as possible.

Pile Graphite - Stored Energy

Graphite stringer samples representing filler layer conditions have been measured for stored energy release up to an annealing temperature of 600°C. This information complements total stored energy and stored energy released below 1000°C, both series previously completed by the National Bureau of Standards. Damage distribution, judged by these stored energy results, concurs with other measurements and indicates that the maximum damage and low activation energy damage occur in the fringe region within four lattice units of the edge of the pile.

Controlled Temperature Exposures of Graphite

The third set of graphite samples is being exposed at controlled temperatures in the region of between 100 and 140°C. Results from the samples discharged last month have been completed. The temperature history of these samples is being reviewed statistically and when effective temperatures are assigned these data will be published in the Technical Activities Report.

In-Pile Oxidation Studies

Graphite samples exposed in controlled atmospheres in the F Pile have been measured for weight losses during their exposure history. The temperature of the samples during this time was very erratic. Because of this, the temperature dependence of the weight losses observed is difficult to assign.

Aluminum samples exposed to water-saturated commercial grade nitrogen at the same time the graphite samples were exposed, showed evidence of corrosion. Samples in the central region of the pile were covered with a white coating and samples in the fringe regions of the pile were speckled white. Central region aluminum pieces weighing about nine grams gained about seven milligrams during exposure. Attempts are being made to determine the nature of the corrosion product on the aluminum pieces.

Graphite specimens exposed to the pile gas for about a three-months period ending March 12, 1952, lost weight at the rate of about two per cent/1000 days at an effective temperature of 430°C. The exposure history for this group of specimens was very good and it appears likely that these data will allow a relaxation of the maximum graphite temperature. Results are being compiled and a report will be issued shortly.

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Graphite - Gas Reaction Kinetics

Work continues in the laboratory to study the rate of reaction between reactor grade graphite and a mixture of carbon dioxide with about three per cent carbon monoxide. Preliminary results indicate that the activation energy for oxidation in the presence of small amounts of carbon monoxide is greatly increased. This study concurs with observations made in the piles which show that the rate of oxidation of graphite in the pile gas at 400°C is about ten per cent that in pure carbon dioxide at the same temperature.

Radiation-Induced Reactions Between Graphite and Various Gases

A Production Test has been completed and facilities are ready to initiate studies of the effect of in-pile irradiation on systems comprised of graphite and various gases at low temperature. It appears feasible that radiation-induced reactions may be occurring and contributing to weight losses observed in gas graphite systems at higher temperatures. This Production Test should elucidate such possibilities.

Graphite - Electrical Resistivity

The measurement of the electrical resistivity of irradiated graphite has been extended to include an exposure of almost 3000 MD/CT cold test hole exposure. When this information is correlated with previous resistivity measurements, it has become apparent that the electrical resistivity curve as a function of exposure does not saturate. Analysis of a large number of samples shows that electrical resistivity passes through a maximum after about 250 MD/CT, decreases slightly to a minimum at about 400 MD/CT and then increases linearly at a very low rate.

HEAT STUDIES

The boiling limits for the piles may be increased about three to four per cent if the downstream solid dummy slugs are replaced by perforated dummies. Calculations are being made to establish new water temperature rise limits for this case.

It has been proposed that the following changes be made in the outlet fittings of the DR Pile: (1) a larger pigtail, three-fourths-inch ID, be installed, (2) the Parker fitting at the junction of the pigtail and crossheader be drilled to a larger size, eleven-sixteenths-inch ID, and (3) the fitting between the pigtail and outlet nozzle be enlarged to about five-eights-inch ID. Initial calculations have indicated that the boiling limit for the pile could be raised about 19 per cent if those changes were made. However, since the inside diameter of the fittings is not uniform, experimental tests to confirm the 19 per cent figure are being planned. As soon as the necessary fittings can be obtained, the tests will be conducted on the full-scale mock-up in the 189-D Building.

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The preliminary values given in last month's report for the Panellit gauge pressure ranges for C Pile have been verified experimentally. In addition, the orifice sizes to give the desired flow rates have also been determined.

The study to investigate the capabilities of the pile cooling facilities for operation during emergency conditions is continuing. It is anticipated that a preliminary report will be issued in about three or four weeks.

Tests to obtain additional information on liquid flow-pressure drop characteristics on process tubes and fittings are being run in the 100-F Flow Laboratory. Flows for various downstream dummy patterns and various outlet fitting combinations are being measured.

The design of the apparatus for measuring slug bond coefficients has been completed. After the prints have been checked, the work will be turned over to the machine shop.

The first series of film formation - heat transfer tests was terminated during the month as a result of equipment failure. The tests were being conducted on the short-tube mock-up to determine the temperature drop across the film formed on slugs. The cumulative scale formation time was 51 days; a 20 gpm water flow rate and an 85°C average bulk water temperature were maintained during the film build-up period. The results of the experiment are being analyzed. After the test was terminated, the film on the surface of the tube was examined. The film appeared to be uniformly deposited, and its major components consisted of iron, aluminum, zinc, and magnesium.

The bases for allowable tube pressure drop increases due to film formation were reviewed. A new recommended limit was developed based on the condition that the present pile operation has been satisfactory as far as the observed corrosion rates of the aluminum cans are concerned.

The theoretical investigation of the use of unbonded "J" slugs is continuing. Calculations have indicated, among other things, that the axial temperature of such a slug having a uniform 0.0003 inch gas gap between the slug and jacket would be less than 500°C. A report covering the results of the investigation is being prepared.

An investigation is being made of the heat transfer aspects of slugs cooled not only at the surface but also at the axis. Such slugs would thus be annular in cross-section. Preliminary calculations indicate that the slug surface and axial temperatures could be reduced appreciably without a large reduction in the amount of uranium present. The investigation is continuing.

Fabrication of the resistance heating equipment for slug stress studies has been continued. Work was accomplished this month primarily on (1) the design of a test specimen (2) fabrication of a table for supporting the equipment, (3) fabrication of a hydraulic end-pressure system, (4) design of miscellaneous mechanical components, and (5) the procurement and expedition of fabrication of other parts.

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Design and fabrication of a steel thermocouple slug mock-up with thermocouples placed both at the axis and bonding layer has continued.

Experimental, in-pile temperature data are necessary in order to evaluate accurately the shield temperatures. "Thermal and Biological Shield Temperature with Reduced Water Flow," W.D. Gilbert, HW-23761, March 19, 1952, was issued to present justification of a production test to obtain the data at the D and H Piles.

WATER STUDIES

105-D Flow Laboratory

Additional information was obtained concerning the effects of filtered water pH on corrosion and film formation. The effect of decreasing pH in the range 7.7 to 6.2 was to increase film formation and decrease corrosion rates of the test slugs. Discharges of the tubes at 6.2 and 6.7 revealed numerous barnacle-like growths on the end caps and in the front tube section. In some cases pitting had occurred beneath these deposits.

A new test was started using cold raw water in view of the fact that very low film deposition rates are being obtained with raw water at higher temperatures.

Considerable time was spent improving the equipment in the flow laboratory to enable more efficient operation and to reduce safety hazards.

Film Formation Studies

The second operational run of the Film Formation Test Apparatus was started during the month. The variables being studied include type of aluminum, flow surface, water velocity, and water temperature. Data obtained from examination of the plates from the first operational run show a uniform average increase in film formation with time. Continued evidence of a cyclical variation of film deposition with a period of about 50 hours was obtained. The cyclical variation was superimposed on the linear film build-up rate.

The water quality test at 100-H Area to produce the best water possible with ferric sulfate coagulation showed significant results. Process water with residual iron concentrations of approximately 0.005 ppm, about one-third the normal amount, appreciably lowers film formation rates. Because of lower film formation rates H Pile was operated at a power level approximately two per cent higher than was previously possible. This gain amounted to nearly 10 MW. Since it is felt that further information will not justify the cost of the additional coagulant required, the test will be terminated at the next regular H Pile shutdown.

A program for the study of the mechanism of film formation has been formulated using the electron microscope. This instrument will be used to determine the number, size and shape of colloidal particles in both Ferrifloc-and alum-treated process water. Electron micrographs have been taken of the two types of process water and distilled water.

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Plant operating data are being collected and statistically analyzed to determine correlation between water quality, film formation rates, and effluent activity. Also, the effluent from a newly replaced tube in H Pile is being periodically radioanalyzed to study the build-up of effluent activity with time.

Sodium Dichromate Elimination Tests

Operation of the sodium dichromate elimination tests in 100-H Area was completed early in the month after 135 operating days. The test slugs were discharged and the four experimental tubes were replaced. Examination of slugs by air and water weighing showed that slugs exposed to dichromate-free water corroded at an appreciably lower rate, as determined by weight loss, than those exposed to normal process water. The maximum corrosion rate along the process tube for dichromate-free water was about half that obtained with dichromated water. Visual examination showed the dichromate-free slug surfaces to be in better condition than the normal slug surfaces. Results of tube examination are not yet available. All information obtained to date indicates that sodium dichromate can be eliminated as a process water addition. Final results of the tests will be published early in April.

P.T.-105-450-P - Effects of In-Pile Conditions on Dri-Film Coatings Applied to Slug Surfaces

The slugs used in this production test at DR Pile were discharged during the month. The slugs are being air weighed to determine corrosion effects. Panellit pressure data showed no significant differences between film formation rates in the special tubes and in normally charged tubes.

P.T.-105-503-E - The Use of Activated Silica as a Coagulation Aid for Aluminum Sulfate

Little information was obtained during the month concerning the effects of alum-activated silica process water on pile operation because of the extended outage of the F-Pile. Data collected since the start-up of the pile on March 15, indicate that some film had apparently been formed during the long shutdown period, but that the film is now being removed.

During the time the pile was down, the effects of sedimentation time, filter media, and changes in silica feed on filter operation were investigated. The rate of head loss increase or decrease with settling time was determined by increasing or decreasing the number of sedimentation basins in use while keeping the number of filters in service constant. In addition, further information on the effects of silica in reducing the length of filter runs was obtained.

Experiments were conducted using varying depths of Anthrafilt in small experimental filters. It was found that the filter consisting of 30 inches of Anthrafilt exhibits a lower head loss than the plant filter for a given filtering rate and settling time. Further tests are planned for this filter to determine more accurately its operating characteristics under widely varying conditions of river water quality and coagulant feed rates.

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Water Plant Flow Improvement Study

A study is being undertaken to evaluate possible changes in the process water pumping system to enable full utilization of water plant capacities. The use of the alum-activated silica coagulation process will appreciably increase the maximum quantity of process water available, although seasonal variations will still be encountered. If the maximum process water available could be furnished to the pile at all times, significant increases in overall production rates may be obtained. Methods of accomplishing variable flow of process water and the production gains to be realized by these changes will be investigated.

Induction Heater

The first test of the induction heater to determine slug corrosion rates as a function of surface temperature and temperature difference between surface and water was completed after one month of operation. The maximum surface temperature with a bulk water temperature of 6°C, was 33°C which gave a four-inch slug weight loss of six milligrams or a corrosion rate of 0.006 mil/month. A preheating steam supply is almost completed and will be used to obtain higher temperature runs.

High Temperature Corrosion

Slug corrosion rates over the temperature range 80°C to 135°C were obtained and reported as follows:

Bulk Water and Slug Surface Temperature °C	Corrosion Rate Grams/Month/Four-inch Slug
80	0.046
95	0.219
118	0.455
135	0.537

The rates obtained with water heated under pressure directly to the desired temperatures (118°C and 135°C) correlate well with other laboratory tests under different conditions. The tests in which cold and hot water were mixed to obtain the desired temperature (80°C and 95°C) do not correlate with other tests. The discrepancy is now the subject of special study. Simultaneously, a correlation of laboratory and in-pile corrosion test data is being made.

Weighed Tube Corrosion Test

A three-months run of the weighed tube apparatus was completed and the first visual inspection of the tubes was made. The amount of film on the tube walls was least in the empty sections, more in the aluminum-loaded, and most in the magnesium-loaded sections. Almost all the areas inspected for possible corrosion proved to be merely large film deposits. These deposits always appeared on the bottoms of the tubes. The apparatus has been re-assembled and started on another extended run.

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Front Tube Corrosion Mock-Up

The front tube corrosion mock-up was completed by Minor Construction and accepted by Pile Technology. Rotameters are being calibrated and other preparations are being made to start the first run. A borescope has been designed and is being constructed that can be used with a motion picture camera to give a permanent record of the tube walls.

Recirculation

The first flow laboratory recirculation test was completed after 615 hours of operation. Steam condensate that was circulated through the apparatus during this period showed negligible iron pickup. The flow rate averaged 14.5 gpm during the test with a 25°C tube inlet and 80°C tube outlet temperature. The pressure drop across the tube did not increase measurably during the test, indicating no perceptible restriction in the flow annulus due to film formation.

Corrosion rates varying from 0.010 to 0.55 grams/month/four-inch slug were observed along the length of the tube. These rates are appreciably lower than those that have been reported in comparable tests using process water on a single pass basis.

Test No. 2 is now underway using a mixture of steam condensate and filtered water to give a solids concentration of 12 ppm. Other conditions will be kept the same as Test No. 1.

MECHANICAL STUDIES

Charging and Discharging Programs

Further X-ray studies, to determine the reason for slug cocking, have been completed. One series of pictures was taken in the 189-D test laboratory of slugs charged by the pressurized method with a "C" process tube and full flow. In this test eight-inch uranium pieces were used which had been modified by having a convex spherical surface machined on each end to insure one-point contact between slugs. The X-ray pictures taken at various stages in the charging procedure showed these pieces to be cocked in a manner similar to the previously tested regular pieces, although there were not as many cocked pieces as previously. The pictures also revealed that the pieces cocked as soon as they entered the process tube.

Since cocked slugs could be one cause of slug ruptures, tests in the 108-D Building were made to determine if cocking results from normal charging procedures. Three standard charges were made under the same conditions of flow and lubrication as used in the pile areas. The columns were not seated and the caps were installed according to standard procedure. The X-ray pictures did not show any cocked pieces in these three charges. This cannot be considered conclusive, however, because of the limited number of runs. Further tests of this type will be made.

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Horizontal Control Rods

Construction of the full scale Horizontal Rod Mock-Up has been delayed by strike, craft manpower shortages, and unexpected additional construction of a steam supply line. The prototype rod is ready for installation as soon as the mock-up is complete.

Design of the Experimental Modified Horizontal Control Rod for the old piles is continuing. A practical step-plug with considerable freedom of movement has been developed. Essentially it is an extension of the doughnut idea used in the gun barrels with the major weight of the plug being supported by a set of springs. This results in a free floating plug which is quite flexible. In addition to the development of an external thimble considerable study is being made of the possibility of a seal at the pile face. This looks like an extremely difficult problem since for maximum flexibility and control the rod cannot be round and smooth.

Vertical Safety Rod and Third Safety Systems

Testing of the variable orifice for the C Pile shock struts is continuing. An orifice has been developed which reduces the initial deceleration from 200 to approximately 75. The time-displacement curve for this orifice approximates an arc of a circle but it is hoped that with further refinements it will more nearly approach the ideal case, which is a parabola.

Evaluation of "Molykote" dry lubricant is continuing at the Test Tower and at the experimental 3X installation on D Pile. Drop times of 2.72 and 2.38 seconds were recorded for a pressurized and unpressurized seal, respectively. These times are considered very good for a flexible rod and are somewhat less than reported previously for this rod.

Process Tube Assembly Distortion Tests

Document No. HW-23458 has been issued describing the tests to be run with the Nine-Tube Mock-Up to evaluate the effects of tube distortion. Fabrication of all required test equipment and alterations to the mock-up have been completed and testing will start immediately. Preliminary tests to determine the properties of process tubes when bowed into an arc are underway. Up to the present time a radius of curvature of 380 inches has been obtained. At this point there is only 0.001 inch flattening in the vertical axis of the tube. This is much less than anticipated by previous considerations. These tests will continue until the tube fails. Data to be collected will include dimension changes, maximum stresses, and probe sizes which can be passed.

METALLURGY OF URANIUM

Fabrication

The metallurgical evaluation of the uranium rods which were experimentally rolled to determine the optimum conditions to be used in rolling at the Fernald Feed Materials Production Center is still in progress. The X-ray data obtained on

samples of twenty-three of these rods indicate that the degree of preferred orientation decreases as the rolling temperature is increased. The rods which were finish-rolled at approximately 640°C exhibit a near random orientation. The microstructure of the rods which were finish-rolled at 540°C or above reveal a recrystallized grain structure with grain sizes ranging from 0.020 to 0.036 mm.

The fifty metal compacts produced from uranium metal powder by the Sylvania Electric Products Company have been tested in the Metals Comparator and representative samples have been microscopically examined. The results of these tests indicate that the material is uniform with an average grain diameter of 0.006 to 0.012 mm.

Uranium Quality

The results of laboratory studies of metallographic samples from the January production-rolling indicate that this uranium is relatively uniform with regard to grain size, mechanical properties and preferred orientation.

Uranium Alloys

Seven uranium-chromium alloys were successfully rolled from one and one-half inch diameter cast ingots to one-half inch diameter rods. The rolling was conducted with approximately a five per cent reduction in area in each pass and at temperatures between 400°C and 600°C. Analyses of samples from the rods indicate that some segregation existed within the original casting and that the chromium content of the alloys was less than expected. A metallurgical evaluation of these rods is in progress.

Mechanical and Physical Properties

True stress-strain relationships were obtained for both as-rolled and beta transformed uranium indicating that the as-rolled metal has greater ductility and toughness than the transformed metal. This study will be continued to determine the true stress-strain relationships for specimens from uranium rolled at selected temperatures.

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METALLURGY OF HANFORD STRUCTURAL MATERIALS

Aluminum

Corrosion tests on one 63S aluminum slug jacket from a canned slug which had been subjected to the standard salt-peroxide solution and one which was subjected to pile process water gave no evidence of intergranular attack on either the can wall or the base of these jackets. Some minor pitting was observed. The 63S aluminum cap contained a large number of minute shrinkage cracks, particularly in the weld preheat area. These cracks apparently produced concentration cells, and in several areas with cracks some intergranular attack was observed. The weld bead also was subject to pitting-type corrosion, probably due to inhomogeneous distribution of silicon in the weld.

Considerable difficulty was experienced in the fabrication of sound Al-Mg rod. Some bars, produced by both forging and rolling, appeared sound on the surface, but sections through samples revealed some minute internal cracks.

Control Materials

Aluminum coated borax-glass balls were tested with regard to thermocycling behavior and agglomeration. Samples which were cycled four times by heating to 450°C followed by water-quenching show no apparent defects produced either in the glass or in the aluminum. Four balls which were stacked in a pyramid, contained in a bronze sleeve, heated to 500°C, and subjected to approximately a sixteen-pound load for twenty hours showed no aluminum-to-aluminum fusion.

Corrosion of Canned Slugs

Because of an apparent increase in the number of corroded slug jackets, an attempt has been made to classify the types of surface blemishes noted after autoclaving, and to determine which of these types are likely to lead to slug ruptures.

Several aluminum-jacketed process slugs were examined for the presence of anodic or cathodic areas by immersion in an agar gel containing "aluminon", an indicator for aluminum ions, (cf. HW-23366). Local anodic spots were noted in pitted areas and along scratches and chatter marks on the side of the jacket. Certain local areas on the weld bead reacted anodically. Stained or discolored areas in the oxide film form during autoclaving were neither anodic nor cathodic.

Corrosion of Process Tubes at F Pile

Examination of a fourteen-foot section of tube 1092, discharged from the F Pile on March 13, disclosed the following facts: (1) The tube had been broken eight and one-third feet from the rear flange; (2) The section examined was severely corroded at the point of fracture and for a distance of two and one-half feet upstream from this point; (3) There was a large hole in the tube approximately one foot from the fracture.

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A thick, scaly deposit was found on the corroded sections of tubes recently discharged from 100-F Area. Its identity is under investigation. The moisture content of the corrosion product is high, and is only partially expelled upon heating to 100°C. The following results have been obtained:

Sample	Drying Temperature	Per Cent Weight Loss After Drying	Per Cent by Weight Moisture Pick Up of Dried Material From Saturated Air
I	Not dried	—	4.0
II	100°C	17.2	4.0
III	300°C	33.0	7.3

As a laboratory approach to the problem of process tube seizure in graphite, a tube section was mounted within two channel blocks. Water was fed into the annulus between the tube wall and the bore of the channel blocks at a rate sufficient to keep the tube wet at all times without flooding the assembly. The process tube was heated by passing steam through it.

During a three-day test, sufficient corrosion product formed on the tube to bind the tube to the channel blocks so tightly that several blows with a hammer were necessary to remove the tube from the graphite blocks. A dark gray film of corrosion product was found. Examination of the tube section after removal of the corrosion product by immersion in a solution of phosphoric and chromic acids revealed both pitting and etching. Several of the pits were estimated to be 22 mils deep. A similar experiment performed at room temperature resulted in corrosive attack nearly as severe as that obtained at the higher temperature.

Materials of Construction for Purex Equipment

Corrosion tests of 336 hours' duration on stainless steels, types 309 S Cb, 347, 316, and Carpenter 20, in boiling uranium product solution and simulated product streams containing 100 ppm of chloride ion concentration were completed; preliminary results indicate a corrosion rate of less than 0.0001 inch per month.

The same alloys have been tested in boiling simulated 1W and 2CU streams containing 1000 ppm of chloride ion. The corrosion rates in the liquid and vapor phases were less than 0.0001 inch per month.

Data will be obtained for longer time intervals, and for higher chloride ion concentrations.

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CANNING DEVELOPMENT

Effect of Slug Warp on Eight-Inch Slug Quality

Limited data obtained this month indicate that excessive warp of the eight-inch slug cores is directly reducing the canning yield and is reducing slug quality by increasing the chance of local Al-Si penetration. One of three eight-inch slug autoclave failures showed penetration associated with mechanical abrasion of the can wall by the slug. It is believed that the full value of the thick-walled can is not being realized in present canning practice.

Salt Bath Heat Treatment and Lead Dip Canning

No method has yet been found for pre-treating uranium slugs before salt bath heat treatment to assure slug wetting during lead dip canning. It is planned to try the Oak Ridge technique using flux covering on the lead dip bath to assure wetting, however, in view of the difficulty of wetting salt bath transformed slugs, it has been proposed that the rods for this test be transformed prior to machining.

Canning With 63S Cans

Destructive examination of six of the 198 four-inch uranium slugs canned in 63S cans showed good can-wall wetting and high can strength.

Continued investigation of the cracks in the welds on Hanford slugs has revealed no fissures extending as far as 19 mils into the weld. This value is the maximum depth found and reported previously.

Bond Strength Tests

Sandwich tests have shown that aluminum can be satisfactory bonded to Al-Si by using pressures of 7.5 to 13 tons per square inch for three to four seconds with die temperatures between 500 and 550°C. In order to achieve good bonding it was necessary to clean all components by successive degreasing, acid etching, and wire brushing.

Bond strength tests showed that uranium-aluminum bonds produced by hot pressing usually have a tensile strength of about 2800 psi. This value is approximately 1000 psi higher than the tensile strength of triple-dipped uranium-Al-Si bonds.

Sleeveless Canning

Four different methods for coating aluminum cans to prevent external wetting by Al-Si have been tried. Graphite, although satisfactory for preventing can wetting, is objectionable because of the possible accelerated corrosion of aluminum in contact with graphite in pile water. In an attempt to find a substitute for graphite, magnesium oxide, aluminum oxide, magnesium hydroxide and anodized coatings were tried. Magnesium hydroxide and anodized coatings appeared most promising.

Slug Welding

A General Electric Fillerweld machine using 2S aluminum filler wire was tried on Hanford slugs. The weld bead, although excessively wide (one-fourth inch), is clean and smooth. Methods of reducing the weld bead width are being investigated.

High Temperature Investigation of Salt Bath Heat-Treated, Lead-Dipped Slugs

Six salt bath heat-treated, lead-dip canned slugs were heated in air in a muffle furnace at 400°C for periods up to one week. These slugs were chosen because of the numerous unwet areas and the relative lack of metallurgical bonding in this material. After seventeen hours at 400°C the six slugs showed surface blistering which did not increase on continued heating. Examination of the blisters disclosed growths on the slug and internal pits in the aluminum can. It was evident that at seventeen hours most of the bond between the can and slug had disintegrated. After twenty-four hours the bond was completely gone, leaving a black powder residue.

Non-Destructive Testing

In the course of developing non-destructive tests for pile fuel elements, an electromagnetic or eddy current probe method has been found successful in defining the thickness of the can plus the Al-Si layer of canned slugs. Though limited in application because of inability to differentiate between the aluminum can and the Al-Si layer itself, use has been made of this method in the study of frost test rejects where the slug is eccentric, cocked, or warped in the can.

Materials for Use in Al-Si

The oxidized, low-carbon steel tongs, which were used in the canning line concurrently with a pair of tongs fabricated from type 347 stainless steel to evaluate their corrosion resistance to molten Al-Si, were found unsuitable for service after approximately 100 hours use. The carbon steel tongs were deeply pitted at areas where the slugs had abraded the oxide coating. The 347 stainless tongs appeared to be good for 150 hours use on the canning line.

RADIOMETALLURGY

Irradiated Slug Studies

Eight ruptured slugs, included in the twenty irradiated slugs sent to the Westinghouse Atomic Power Division hot laboratory in Pittsburgh, were examined with Mr. D. P. O'Keefe following the work as field representative for the Hanford Works. The examinations have included partial chemical stripping, completing the fractures present in the ruptured slug, and a study of the fractured surfaces.

The metallography and physical properties of unirradiated uranium containing defects near and along an inner core, are now being investigated to correlate these properties with observations made on irradiated ruptured slugs having similar appearances.

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One hundred and forty-one slugs from tubes 3465-H, 3665-H and 3666-H were examined. Tubes 3465-H and 3665-H had contained ruptures. Of these slugs, 43 per cent showed weld attack, 44 per cent showed donuts, and 24 per cent were rippled.

The cap and a portion of the canwere removed from a second selected irradiated slug. The removed pieces are being prepared for metallographic examination.

Process Tubing

The full lengths of process tubes 3361-DR and 1265-DR were examined. Corrosive attack similar in all respects to the attack that is occurring on the F Pile tubes was apparent on both of the DR tubes.

Samples of heavy scale from tube 1092-F as well as samples of the tube near the break have been taken for examination. This tube showed severe attack at the usual location (eight to twelve feet upstream from the rear flange) sufficient to cause weakening of the section sticking in the graphite, and possible penetration of the tube. Inspection of tubes 2358-F and 2058-F, by means of the underwater viewer, revealed that these tubes were also corroded near the end of the rear gun barrel.

Acceptance tests on the 108-B Metallurgy Laboratory are 98 per cent complete; the laboratory should be ready for occupancy early in April.

Facilities for underground storage of four sectioned process tubes have been added to the 111-B Laboratory.

Equipment

The equipment for removing water from the aluminum containers in which ruptured slugs are canned and for photographing the rupture in air has been operated successfully.

The results which have been obtained by the double crystal spectrometer using an aluminum single crystal in the second diffracting position have been very encouraging. The diffraction patterns obtained from various uranium samples compare favorably with those obtained by single diffraction techniques. The type of shielding to be used for the study of radioactive materials with this equipment is being studied.

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Engineering

Project C-412 is reported as 99 per cent completed. Acceptance tests for the Metallurgical Laboratory are in progress.

Scope for the P-10 Retirement, Part I-108-B Conversion and Part II-108-B Conversion, have been written and submitted for approval.

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General

The P-10 program is to be officially terminated by April 7, 1952; consequently, monthly reports will no longer be written for the P-10 program.

SPECIAL IRRADIATIONS

Gamma Irradiation of Non-Metallic Materials — Production Test 105-246-P

Non-metallic materials are being irradiated in special underwater baskets by the fission product gammas from pile-irradiated uranium pieces. Operational difficulties prevented charging new metal in the irradiation baskets this month. Because the 105-F Reactor has operated only a short period of time since the last basket reloading, a survey is being conducted to determine if a sufficient gain in activity resulted to justify the reloading procedure.

Nine samples completed the specified irradiation period and were shipped to Schenectady for testing.

Plant Assistance Gamma Irradiation Experiments

Assistance was given Separations Technology personnel in running an experiment in the 105-F storage area to determine the breakdown of CCl_4 in intense gamma irradiation. The breakdown was so great it caused excessive corrosion of the stainless steel equipment involved, which resulted in discontinuing the experiment temporarily.

Fission Chamber Life Test, DPW-M-101, Production Test 105-528-SR

Neutron flux monitoring chambers designed for the Savannah River Works are being life-tested under irradiation. Three chambers were charged into tube 1972-D on March 19, 1952. Two are neutron monitoring chambers containing uranium and are operating satisfactorily; the other is a dummy for observation of background. Extremely sensitive splices of the special triaxial cable used have not proved reliable at the 600 volt potential used, and the difficulty of repairing the dummy connections without damaging the others made it desirable to disconnect the dummy.

Creep Rate of Fuel Pins - KAPL-M-105, Production Test 105-400-P

The object of the KAPL creep test is to determine the effect of neutron flux on the creep rate of small diameter stainless steel tubes with high internal pressure. No significant amount of creep has occurred although all circuit elements

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check satisfactorily and temperature control has been excellent. Additional tests will be required to check the possibility of loss of the stressing helium pressure.

Thermal Conductivity of U-Zr Alloys, ANL-M-172 - Production Test 105-432-P

A continuous measurement of thermal conductivity of a uranium-zirconium alloy is to be made under pile irradiation. The slug assembly was charged into the DR Pile during the March outage, and preliminary data indicate satisfactory performance.

Electrical Resistivity Measurements of Cu-Au, WAPD-M-112 - Production Test 105-513-SR

The electrical resistivity of ordered and disordered copper-gold specimens is being investigated as a measure of the effect of pile radiation on lattice spacing. The resistivity of the ordered specimen has increased about nine per cent during the past month.

Controlled Gas Atmosphere Experiment Project C-410

The equipment to be used to determine the gas equilibrium and reaction rates between various gas mixtures and types of pile graphite during pile irradiation, is 90 per cent complete.

The defective gas circulating pump, oxygen and the water vapor analyzers, and gas flow rotameters are in various stages of repair. The gas analysis and circulating equipment has been moved to the zero-far level of the DR Pile to avoid radiation hazard and severe radioactive contamination encountered on the X-1 level.

Status of Special Irradiations

P-10-A pieces charged	234
P-10-A pieces discharged	367
P-10-A pieces being irradiated	354
Thorium pieces charged	0
Thorium pieces discharged	65
Thorium pieces being irradiated	830
Special Request samples charged	91
Special Request samples discharged	198
Samples being irradiated	350
Samples shipped during February	88
Samples awaiting charging	99
Samples awaiting shipment	197

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PROCESS CONTROL

Pile Operations

New high levels of operation were attained at B and D Piles. DR Pile has recovered from the leak of January 7, 1952, with no significant reactivity affects attributable to the water in the pile; the water take-out rate has returned to normal. An observed loss of 25 inhours resulted from the abandonment of 49 tubes in the wet lower-far corner of F Pile. The maximum power level has been reduced approximately five per cent due to the flux distortion. Of the total of ten ruptures during March, seven were removed during normal scram time or without additional down time, and three required additional down time. This number includes one rupture in tube 3686-B in which no definite ruptured piece could be located but which was considered a probable rupture because of high radiation levels on equipment used in discharging the tube.

During a shutdown for a slug rupture in tube 3873-F, a number of stuck metal charges were discovered in the bottom far region of the F Pile. The Reactor Section had planned to discharge and remove 39 tubes from production to eliminate the possibility of future leaks in this region, but sixteen of the thirty-nine tubes selected could not be discharged with the charging machine. Subsequent backseating and discharging work in other pile regions revealed seven additional stuck charges. A total of forty-nine tubes were discharged and removed from production although various methods and forces up to 52,000 pounds were required to discharge some of the metal.

The outage extended over a period of fifteen days during which an investigative program was conducted in thirteen process tubes and graphite channels. The program included visual observation of the outside of process tubes, borescopic examination of the interior of tubes and graphite channels, and measurement and sampling of both tubes and channels. Preliminary visual observation of the tubes and channels indicated that corrosion on the outside of the tubes is probably a major factor in causing the tubes to stick in the channels.

New maximum power levels at B and D Piles partially resulted from the correction of central graphite thermocouples. In addition, B Pile benefitted by increased flattening and D Pile from apparent increased graphite lattice conductances.

A statistical study of the rupture behavior of different types of regular metal slugs indicates that there has been a significant improvement in Group 8 metal over Group 7 metal. This improvement is revealed in comparisons made at both 400 and 600 MWD/T exposure level and shows that the frequency of both cap failures and uranium cleavages appears to have been equally reduced.

Water Leak Detection

Preliminary testing of water leak detection methods at H Pile under Production Test 105-509-A with normal gas flow rates has indicated that current moisture detection devices are adequate to detect the presence of water in the gas stream

but do not definitely locate the position of the leak horizontally. The study will be continued to determine the effects of varying gas flow rates on both vertical and horizontal distribution of water that leaks into the pile.

H Pile was shut down on March 27, 1952, with a rupture-water leak in tube 3565. The charge pushed easily, but the pile would not recover in the normal scram time, indicating at least 100 ih reactivity loss from water. Critical data at the time of start-up indicated a minimum of 200 ih loss due to water. By the end of the month the pile had gained back at least 100 ih during operation and was operating at 95 per cent of the previous equilibrium level.

Thorium Program

The in-pile inventory of thorium has remained at approximately 850 pieces. The increased inventory at DR Pile was approximately matched by the decrease at F Pile due to temporary tube abandonment.

Test Pile Calibration

An investigation of the high TDS values observed recently has revealed significant quantities of surface contamination on the uranium eggs. Seventeen egg lots were tested before and after a nitric acid bath treatment and in every case the TDS value decreased following the pickling. The average TDS value of the seventeen lots before pickling was eighteen and fourteen after pickling. All future egg lots will be tested before and after pickling and the pickling bath will be analyzed to identify the offending impurities.

The vertical flux traverse was completed and the data analyzed. The results will be used to determine the absolute power level of the pile. This work essentially completed the pile calibration work and a rough draft of the report on this work has been prepared. The complete calibration report will require several weeks for the preparation.

Reactivity Status

A representative summary of the reactivity status of each of the operating piles during the last equilibrium period of the month is given below:

Pile	B	D	DR	F*	H	Totals
Control Rod Excess (inhours)	155	125	190	150	140	
Xenon	699	684	699	684	716	
Plant Ass't.	20	5	6	13	5	49
"B"	120	105	100	89	101	515
Dummy Cols	8	36	40	128*	5	217
Hot Reactivity	1345	1309	1260	1329	1286	
Cc Allowance	-392	-441	-273	-422	-293	
Cold, Clean Reactivity	953	868	987	907	993	

*The ih loss to dummy columns in F Pile has increased by thirty-eight since last month primarily due to the temporary abandonment of forty-nine tubes in the lower far corner.

PLANT SERVICES

Six studs and a jumper bail were tested to determine the cause of their breaking in service. Variable hardness values and microstructures were found in these studs. A spectrochemical analysis showed a chromium content of 16 to 17 per cent although the studs were presumed to be fabricated from type 416 stainless steel, a 12 to 14 per cent chromium steel. It was definitely established that a heat treatment, inconsistent with the composition, was employed in the fabrication of these studs.

In discussing the problem of the failure of welds on casks used for transporting radioactive metal, the possibility was pointed out that the outer cask may not rest solidly on the flat car. This condition may give rise to highly stressed areas, particularly at the welds. Such a condition would be conducive to fatigue type failures in the highly stressed areas of the cask. Recommendations were made that a positive, solid support between the cask and flat car should be provided.

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. 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.

Signed: G E McCullough
G. E. McCullough
Manager, Pile Technology

GEMcC:lm

April 4, 1952

SEPARATIONS TECHNOLOGY UNIT

MONTHLY REPORT
MARCH, 1952

VISITORS AND BUSINESS TRIPS

W. O. Haas, Jr., Knolls Atomic Laboratory, visited Hanford March 10-14 to discuss Redox and Purex separations problems.

Dr. John Flagg, Knolls Atomic Power Laboratory, visited here March 27-28 to discuss Redox production problems.

O. F. Hill visited the Radiation Laboratory March 2-3 to discuss separations methods.

W. H. Reas attended a conference on Ion Exchange at Oak Ridge National Laboratory March 3-5.

G. L. Flint attended the American Society for Metals Meeting March 6-7 in Seattle, Washington.

R. B. Richards and F. W. Woodfield visited Carbide & Carbon Chemical Corp. to discuss production schedules and specifications and Oak Ridge National Laboratory to discuss separations processes March 17-20. They also visited Argonne National Laboratory March 20-21 for Purex process discussions.

P. B. McCarthy attended the ASME Meeting in Seattle, Washington March 23-26.

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R. J. Sloat attended the ACS Meeting in Buffalo, New York March 24-27 and recruited BS-MS personnel.

K. H. Wilmarth visited Radiation Laboratory March 26-28 for consultations on remote control laboratory equipment and techniques.

R. L. Dillon and A. S. Wilson visited Knolls Atomic Power Laboratory March 28 and Oak Ridge National Laboratory March 31 for consultations on solvent extraction. They also attended the ACS Meeting in Buffalo March 24-27.

Cornelius Groot visited Argonne National Laboratory March 1-7 for consultations on separations methods.

ORGANIZATION AND PERSONNEL

Personnel totals are as follows:

	February	March
Administration	2	2
Special Assignment	3	3
Research	41	43
Chemical Development	84	85
Process	43	42
	173	175

Research: Two Tech. Grads. were transferred from Manufacturing and Purchasing.

Development: One Chemical Engineer and one Engineering Assistant were added as new hires. Two Steno-Typists were transferred to Medical and Utilities and General Services. One Engineer Assistant was transferred from Process.

Process: One Engineer Assistant was transferred to Development.

$BiPO_4$ PLANT ASSISTANCE

Canyon Buildings

Extraction Centrifuge Failure - B Plant - The extraction centrifuge (7-2) at B Plant failed during the cake removal of Run B-12-03-DR-25. The first portion of cake removal acid had been slurried in the centrifuge and jetted to the solution tank (7-4) and the second portion of the acid was in the centrifuge when the motor failure occurred. Cake removal from the dead centrifuge was completed by using the weight

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factor dip tube as an air sparger using three seven hundred pound portions of acid added directly to the centrifuge. Approximately 91 per cent of the run was recovered in this manner. Since the acid in the precipitator tank (remaining from the standard cake removal) contained 11 per cent of the run, and the centrifuge radioactivity as indicated by Beckman readings, was reduced to background level, cake removal was assumed to be complete and the centrifuge was replaced.

Batch Size Revision - The batch size in tank 6-3 was increased from 98 to 99 per cent of maximum starting batch size coincident with runs B-12-03-DR-31 and T-12-03-H36.

Waste Evaporators - The waste evaporator at T Plant operated routinely for the month. Concurrently with the pumping of 113TX as feed for the evaporator, the instantaneous evaporation rate fell from the previous month's average of 750 gal/hr to 700 gal/hr and the sludge in the evaporator rose from approximately 875 gallons to approximately 1600 gallons. Considerable difficulty has been encountered in rodding the concentrate tank after dumping causing a great deal of variation in concentration ratios per run. The overall concentration ratio for the period of March 1 through March 23, 1952 was 74.6 per cent with a log beta decontamination factor of approximately 4.0.

The waste evaporator at B Plant operated with difficulty for the month. Two major difficulties impair the operating efficiency of this unit. One is the caking of the coils with sludge causing a large decrease in the overall heat transfer coefficient and the other is faulty trap operation in the steam system.

The B Plant evaporator was flushed twice. The first flush increased the rate from 345 gallons per hour to 752 gallons per hour. The second flush, made when the rate had dropped to 516 gallons per hour increased the rate to 817 gallons per hour. Approximately 540 gallons of sludge remained in the evaporator at this point.

At month's end some difficulty in pumping waste from the C Tank Farm was being experienced; apparently due to a plugged line. The location of the plug has not been determined.

Concentration Buildings - 224

Bismuth Phosphate By-product Precipitator Flush - B Plant - The second nitric acid-hydrogen peroxide flush of the bismuth phosphate by-product precipitator was made following Run B-12-02-D-56 at B Plant. The total waste loss for the flush was 1.38 per cent of an average run. The flush returned 12 per cent to the E-4 Tank. The Beckman background on the A-1 Tank was reduced by a factor of two, from 26×10^{-12} to 12×10^{-12} amps.

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Separations Technology Unit

The bismuth phosphate by-product cake is being removed from the centrifuge via the precipitator at both plants to prevent hold-up of bismuth phosphate in the precipitator.

Isolation Building - 231

Production Test 231-14 - Evaluation of Use of Filter Boats - Fourteen T Plant runs have been processed through two peroxide cycles and one plutonium (IV) oxalate cycle with the oxalate precipitate filtered into "Filter boats" and transferred to the Purification Building as the precipitate under Production Test 231-14. Data for the first seven processed, Runs T-12-02-DR-25, H-26, H-30, H-31, H-32, H-33, and MRC-2 are as follows: tetra fluoride bulk density: 1.13 to 180 grams/cc; apparent reduction yield 98.2 to 100.1 per cent; c/q summation 0.2817 to 0.8499, average 0.5711 (c/q summation for standard runs is 0.3726 to 0.9161, average 0.5711). Filtering times have ranged from 30 to 150 minutes for the approximately 13.5 liter slurry volume, excluding washes. Air leakage in the vacuum transfer system has lead to erratic performance. Some difficulty in removing sufficient water from the precipitate to prevent "slopping" in the RM Line mechanical furnace charger has been experienced. In an attempt to reduce the moisture content, air is being drawn through the precipitate for one hour before loading out.

Three Redox runs have been processed through one peroxide and one oxalate cycle. Preliminary data indicate that sodium decontamination is satisfactory. Additional runs are planned.

S Plant Runs - Redox material is being processed without difficulty although the acidity of solutions as received continues in a high range requiring 6 to 10 Kg of sodium hydroxide (100 per cent basis) for neutralization. This is an addition of sodium 17 to 39 times greater than the amount of product present. Sodium in the AT solutions have ranged from 2.5×10^3 to 4.0×10^4 ppm. Sodium in metal prepared in the Purification and Fabrication Building from this material was present to the extent of less than 5 ppm, a concentration comparable to that in metal prepared from bismuth phosphate plant material where AT solution sodium concentrations range from 150 to 1000 ppm.

Filtration of the first cycle product solution (through the N-2 filter) was discontinued with Run S-02-03-L-39. This eliminates all filtration of Redox solutions. An insufficient number of runs has been processed to evaluate this change. Bismuth phosphate runs continue to be filtered prior to both peroxide cycles.

In summary it appears from spectrochemical data that the AT solution (isolated product nitrate) derived from either Redox or B and T Plant streams was of adequate purity and were comparable except for high sodium content (40,000 ppm) in the Redox derived material and Ba (600 ppm), La (6400 ppm) and Hg (4000 ppm) in the bismuth phosphate plant solutions.

Separations Technology Unit

Pressure Testing of Filter Boat Plastic Storage Bags - In connection with Production Test 231-14, Demonstration of 231 Building Filter Boat Station with Plutonium (IV) Oxalate and Plutonium Peroxide Flowsheets, a pressure test of the plastic bags used for encasing the filter boat during storage was performed. This action was necessary due to the possible increase in pressure inside the bag due to alpha bombardment of water releasing hydrogen.

Three plastic bags as received from the vendor were inflated with air until the bag failed. The bursting pressures varied from 30 to 38 inches of water. All the breaks were due to a failure in the seam of the bag. Two breaks occurred along the vertical seam, while the third occurred on the seam joining the bag to the heavy ring.

PURIFICATION AND FABRICATION BUILDING PLANT ASSISTANCE

RG Line

Task I (Purification) - Recommendations were made for processing two non-standard batches, X-12-3-4 and X-12-3-5. Approximately 900 cc of $KMnO_4$ and 300 cc of HI had been added to X-12-3-4 instead of 1100 cc of HI. Approximately 300 cc of $KMnO_4$ and 800 cc of HI had been added to X-12-3-5 instead of 1100 cc of HI. In addition part of the oxalic acid precipitant had been added and approximately 500 cc of solids were present in the latter batch.

Procedures by which the plutonium from these batches could be salvaged for further processing with 234 Building equipment free from large quantities of manganese had not been previously developed. The developed procedures resulted in 98.5 per cent recovery for subsequent processing in the 224 Building.

Task III (Reduction) - A gasket failure during reduction of miscellaneous scow and boat sweepings for run Y-12-3-6 on March 2, 1952 resulted in a glove failure and consequent gross contamination of parts of room 231. Operations in this room were suspended until March 21, 1952, for decontamination work. Gasket failure frequency has been approximately one failure per 1000 runs since plant start-up. A new type bomb with two gasketed seals independent of each other was designed, fabricated, and tested with a uranium tetrafluoride reduction. The inner gasket was filed to a point where its failure was assured during the test run on uranium. Very little escape of reactants occurred through the defective inner gasket and the outer seal was unaffected. This principal was adopted for a design of bombs for routine RG Line use.

A second protective device was designed, fabricated, and evaluated by carrying out a uranium tetrafluoride reduction. This device included a baffled and packed section into which vapor and reactant discharge

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could be cooled, decelerated and contained. This equipment proved to be adequate protection during a reduction in which a gasket failure was made to occur, but would be heavy and more difficult to handle during routine operations than the existing bomb or the new bomb with two gasketed seals.

RM Line

Task II (Hydrofluorination) - Furnace temperature calibration data were used to design controller cams for the Task II furnaces. These cams provide the shortest possible time cycles (ca. 6.5 hours) to carry out the drying and hydrofluorination processes currently used.

The first batch of plutonium (IV) oxalate cake was processed in the RM Line on March 18, 1952. By March 27, eleven batches had been hydrofluorinated. The tetrafluorides produced have been exceptionally uniform in color within each boat and all fluorides which were properly dried in the 231 Building have had a normal color. No process difficulties have been observed. Minor equipment difficulties include:

a. Small HF leaks in HF lines, and through some solenoid valves,

b. Water back-up from a teflon aspirator, and

c. A separation of a boat lining from the body of one of the boats.

A more serious equipment problem is leakage around the filter disks of the boats. This allows precipitate to pass through the filter in the 231 Building and results in:

a. High recycles,

b. Non-representative supernatant sampling, and

c. Accumulation of product in an inaccessible compartment of the boats.

Separations Technology Unit

Task III (Reduction) - The first reduction of plutonium tetrafluoride was made on March 18, 1952. This and all subsequent reductions have been made using calcium and sulfur as "heat-booster" chemicals in accordance with production test 235-5. By March 27, seven reductions had been made. Reduction yields have ranged from 90.2 to 96.3 per cent. In all cases the button has remained with the slag during the unloading operation. This necessitates a hand separation. Production test procedures are being studied and varied to produce better yields and button-slag separations.

Miscellaneous

Production Tests - Production Test 234-5 (Plutonium (IV) Oxalate Precipitation in RG Line Equipment) has been completed and the final report is being prepared. Authorization to adopt the process to production has been obtained.

Production Test 235-5 (Reduction With Calcium and Sulfur) is being carried out in the RM Line.

Production tests have been written for:

1. Briquetting and recycling turnings through casting,

2. Hydrofluorination of turnings, and

3. Use of an Inconel boat for RM Task II.

Pressure Build-up in Sealed Sample Can- The pressure build-up in a sealed sample can containing 160 units of plutonium nitrate-sulfate solution had virtually ceased at 75 lbs/sq in gauge after 120 days of storage.

REDOX PLANT ASSISTANCE

Plant Performance

Redox production was resumed on March 6 after a period of reworking off-standard uranium product solution. Operation was essentially continuous for the balance of the month although several processing rate adjustments were required in order to cope with process difficulties while maintaining production. A resume' of the plant process performance is

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given later in this report. The overall summary of plant production performance is as follows:

	Approximate
Batches of Uranium processed	13
Plutonium produced (ATTC)	158.5×10^{13} (56 batches)
Per cent Uranium to waste	0.6
Per cent Plutonium to waste	3.1

Process Performance

Full radioactivity level operation was reestablished on March 6 at a uranium processing rate of 2.0 units/d operating three uranium and three plutonium extraction cycles. Operation was normal and continued until March 12 when it became necessary to reduce the production rate to 1.5 units/d in order to alleviate an apparent emulsion formation in the disengagement sections of all extraction columns; particularly 2A and 3A Columns. Through temporary instrumentation, it was determined that the liquid level in 2A had risen above the normal overflow level and was intermittently discharging plutonium-bearing organic solution to the vessel vent system which drains to the salt-waste receiver. The subsequent appearance of several successive high plutonium losses in the wastes disposed of to the underground storage confirmed this observation.

Plant operation from March 12 to 19 was characterized by fluctuations in production rates between 1.0 and 1.5 units/d in order to control 2A Column overflow and minimize waste losses. During this period instrumentation was installed on all extraction columns in order to detect abnormally high liquid levels in the disengagement sections. The product overflow piping on both 2A and 3A Columns was also examined from the standpoint of restrictions or possible gas entrainment and blockage. Based on these observations, a decision was made to redesign and fabricate two new enlarged jumpers for the locations in question. The plutonium extraction cycles were shut down on March 18 for the installation of the new jumpers while maintaining a low (1.0 unit/d) production rate on the uranium extraction cycles.

After 2A and 3A Column jumper installations, production rates were increased to an average of 3.0 units/d until March 24. A 36-hour interval of trouble-free 4 units/d operation in the plutonium cycles, in order to reduce inventories built up by first cycle operation during the shutdown, indicated that the new piping on 2A and 3A Columns had significantly increased the capacities of the organic overflow lines from these columns. During the above period of 3 units/d production rate in the uranium cycles, a cyclic rising and falling (on approximately a 15 to 20 minute interval) of the liquid level in the 2D Column disengagement section was observed. Coincident with this action of 2D Column, abnormally high uranium losses appeared in the salt wastes which indicated,

as observed previously on the plutonium extraction cycles, that 2D was overflowing uranium solution intermittently to the vessel vent system. A decrease in the decontamination factor across the second uranium cycle also became apparent, which indicated further, that entrainment of fission products from the 2D disengagement section was being experienced. Introduction of non-scavenged feed was started on March 21 in order to eliminate a possible source of solids, which are known generally to contribute to phase disengagement difficulties, from being introduced into the solvent-extraction columns.

Production rates were again adjusted to 2 units/d on March 25 in order to process an off-standard feed batch which had become diluted with coating removal waste. Processing of this feed was completed on March 27 with no unusual operating difficulties. At month-end all extraction columns are being given a thorough water flush in an attempt to remove impurities accumulated on the column interfaces and believed to be contributing to the disengagement difficulties. During the shutdown of 2D Column for water-flushing a redesigned jumper was installed on the disengagement section overflow in order to minimize any tendency toward blockage. Intense study is also being given to all process feed solutions in order to determine the source or sources of contaminants which are contributing to emulsification in the solvent-extraction units.

No mechanical difficulties were experienced with Redox agitators or pumps during the month.

Activity released to the atmosphere through the ventilation stack averaged 0.3 curie per day (I^{131}) with peaks of 1.0 to 1.9 curies per day during periods of dissolving. Heater difficulties are being experienced on both A and B silver reactors necessitating reduced dissolving rates in order to maintain proper off-gas temperatures of 375°F.

SUMMARY OF REDOX OPERATION

Period covering 3/6/52 to 3/12/52; average production rate of 2 units/d of uranium:

	Decontamination Factors (dF)				Per Cent Waste Losses	
	Uranium		Plutonium			
Cycle	Beta	Gamma	Beta	Gamma	Uranium	Plutonium
1st U	4.4	3.5	4.0	3.2	0.03	0.2 to 7
2nd U	1.9	1.6	--	--	<0.001	--
3rd U	0.7	0.8	--	--	<0.001	--
2nd Pu	--	--	2.0	2.2	--	0.1
3rd Pu	--	--	0.7	0.8	--	0.01
Overall	7.0	5.9	6.7	6.2		

Separations Technology Unit

Period covering 3/12/52 to 3/19/52; average production rate of 1.0 to 1.5 units/d uranium:

	Decontamination Factors (dF)				Per Cent Waste Losses	
	Uranium		Plutonium			
Cycle	Beta	Gamma	Beta	Gamma	Uranium	Plutonium
1st U	4.3	3.5	3.0	2.5	0.01	0.1 to 2.8
2nd U	1.9	1.7	--	--	<0.001	--
3rd U	0.6	0.9	--	--	<0.001	--
2nd Pu	--	--	2.7	2.6	--	0.1
3rd Pu	--	--	1.5	1.6	--	0.02
Overall	6.8	6.1	7.2	6.7		

Period covering 3/19/52 to 3/24/52; average production rate of 2 units/d uranium:

	Decontamination Factors (dF)				Per Cent Waste Losses	
	Uranium		Plutonium			
Cycle	Beta	Gamma	Beta	Gamma	Uranium	Plutonium
1st U	4.4	3.9	3.6	3.2	0.5	0.7 to 3.0
2nd U	1.1	1.0	--	--	0.001	--
3rd U	0.9	1.2	--	--	<0.006	--
2nd Pu	--	--	2.0	2.0	--	0.2
3rd Pu	--	--	1.2	1.0	--	0.001
Overall	6.4	6.1	6.8	6.2		

Approximately two-thirds of the recovered uranium batches produced during March contained less than the tentative specification value of 300 per cent of natural uranium gamma radiation from fission products, the remaining one-third being in the range of 300 to 560 per cent. The plutonium content of the recovered uranium was 14 ppb, or less (compared with a tentative specification value of 100 ppb).

Approximately three-quarters of the PR cans shipped from the Redox Plant during March read in the range 10 to 100 mr/hr on the side. The remaining one-quarter ranged from 100 to 250 mr/hr, read on the side. The uranium content of the plutonium averaged on-the-order-of 0.1 weight per cent.

Process Chemistry

The build-up of non-volatile "oily residue" in the Redox Plant hexone was followed during the month. Samples of the I00 Stream (hexone effluent from the I0 Column) ranged from 440 to 3100 mg oily residue/l. Samples taken from 0-2 Tank in 276-S Building (after distillation in the Plant) ranged from 5 to 190 mg/l. In general, the plant distillation removes approximately 90 per cent of this oily residue from the hexone.

Separations Technology Unit

An exhaustive series of tests is in progress in the laboratory to determine the causes of emulsification in the Redox Plant solvent-extraction columns. Based primarily on phase disengaging time tests, it has been established that both the plant hexone and the plant cold aqueous streams contain unknown emulsifying factors in moderate amounts. These as-yet-unknown agents apparently concentrate at the extraction-column interfaces during continued operation thereby compounding their original effects manyfold. Current efforts are concentrated on (a) developing a procedure to remove the unknown emulsifying agent from the plant hexone, (b) demonstrating a suitable antifoam agent, and (c) identifying and/or removing the unknown emulsifying agent or agents in the plant aqueous streams.

Two samples of hexone immersed in the 100-F cooling basin in a gamma radiation field on-the-order-of 2×10^6 R/hour were removed after 22 days and tested for non-volatile oily residue with the following results:

	Non-volatile Residue, g/l		
	6 days	15 days	22 days
Hexone + Redox IAFS	0.92	2.12	4.90
Hexone + Redox IBS	2.38	7.26	8.78

Some build-up of non-volatile matter occurs in the hexone-IBX system in the absence of radiation, the increase amounting to 0.92 g/l in 10 days.

Two runs were made in a 3/8-inch Mini (miniature mixer-settler) to study operation of the Redox 2D (or 3D) Column with water fed to the top of the column for the purpose of reducing the Al, Fe, and Na contents of the recovered uranium stream.

The streams fed to the Mini were:

H_2O (Stage 1)		flow = 0.5
2DS	2.2 M ANN	flow = 1.25
	0.05 M $Fe(NH_2SO_3)_2$	
	-0.2 M HNO_3	
2DF	2.0 M UNH	flow = 1
	0.2 M HNO_3	
2DX	0.008 M HNO_3 in hexone	flow = 4

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In one run, the scrub was introduced via stage 2, and in the other via stage 4. The feed was introduced in stage 5. Through analyses for Na, Fe, Al, and U (which have not yet been run) it is hoped that a pattern of behavior will become apparent that can be translated to expected plant performance. "Hot" runs will be made to evaluate decontamination performance.

URANIUM RECOVERY PLANT ASSISTANCE

241-U Tank Farm Operations

The acidification of Blend Batches #1 and #2 was completed during the period. Present analyses reveal that the various ions are present in approximately TBP process flowsheet ratios, but somewhat more dilute in concentration due to the addition of outside water (sumps, jet dilution, weak HNO_3).

Operation of the acid dissolution turbidimeters has not been reliable thus requiring visual inspection of the sample to determine its clarity. Both turbulence in the cup, caused by the air jet, and a film clinging to the glass sides of the cup give erroneous readings. It may be necessary to replace the turbidimeter with a light source-mirror arrangement. To date no reliable pH readings have been obtained from the electrodes in the Blend Tanks.

The construction status of the various tank farms is as follows:

241-U - 99.5%
241-C - 82 %
241-B - 44 %
241-T - 35 %

The cold side of 241-WR vault has been accepted from construction.

221-U Plant

Construction is virtually complete on "cold" piping and electrical systems of 221-U Building except for painting and labeling of lines. All process vessels have been installed and 26 of the 38 canyon cells have been accepted with the remaining cells to be completed by April 1.

Acceptance tests for the six pulse generators have been completed and all units were found to be satisfactory. Piston leakage varied from 1.18 gpm maximum at 25 cycles to 0.54 gpm maximum at 90 cycles. In all cases the leakage decreased with an increase in frequency. The final leakage correlates fairly well with the calculated flow through the air bleed hole in the piston.

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The four pulse generators installed in the cells will be run continuously at 75 cycles/min for as long as possible as soon as the cells are turned over to General Electric (expected to take place during April).

Preliminary measurements of pressure drop across the sand filter indicate that the drop will not exceed 7.0 inches of water during normal operation.

Standard operating procedures for 221-U Building production line "A" are ready for reproduction. Two shakedown run plans have been issued and run plans for concentrator shakedowns are being published.

224-U Plant - UO_3 Conversion - Eleven lots (88 drums) of UO_3 were processed during the month, 7 lots (56 drums) of which were shipped to K-25. Lowering the final calcining temperature from 300°C to 290°C shortened the overall cycle approximately 30 minutes with no change in product analysis. An additional 20 minute reduction was realized by lowering the temperature to 280°C with a slight but noticeable increase (0.2%) in HNO_3 content. A series of special pot samples taken at 1/2 hour, 1 hour, and 1-1/2 hour intervals indicated that the H_2O and HNO_3 content are less than specifications one hour after the charge passes through the plastic stage. (One and one-half hours after plastic the charge temperature was 260°C). This indicates that a still further reduction in the final charge temperature may be realized resulting in an 8-hour or less overall time cycle.

During the calcination of UNH from Redox containing a greater than flowsheet quantity of Ru, the pot radiation readings rose rapidly up to 1250 mrep/hour maximum. Additional radioactivity was also noted in the recovered nitric acid. High residual activity (up to 30 mr/hour) in the empty pots was reduced to almost normal when low activity (fission product gamma 0.8 of natural uranium gamma) UNH solution was calcined.

224-U Building construction is approximately 98 per cent complete with a target completion date set for April 1, 1952. Completion of the lag storage tanks for U-237 cooling is promised for April 1.

Process Chemistry

A laboratory-scale UNH-to-UO_3 calcination pot has been installed to permit simulation of the plant calcination step. Initial tests will be made first employing pure UNH, and then with the same material spiked with varying concentrations of Na, Al, and Fe.

REDOX AND METAL RECOVERY DEVELOPMENT

Process Studies

In conjunction with Chemical Research, investigations have been started to explore methods of achieving additional decontamination (if required)

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in the TBP process. The purpose of such investigations is to increase the certainty of adequate decontamination of the aged metal waste in one solvent-extraction cycle, and to decrease the ageing required to permit adequate one-cycle decontamination. These investigations are focused on the possibilities of a tail-end clean-up, and on chemical changes in the solvent-extraction process.

In conjunction with Analytical Research and Mechanical Development (process Engineering Unit of the Design Section) plans were laid to fabricate a continuous gamma monitoring test unit for low activity streams. It is planned that the unit will utilize a scintillation counter and will be tested initially on Redox condensate. When adequately demonstrated, this unit should find valuable application in the monitoring of TBP condensates from 221-U, and possibly on the Redox 3EU stream.

Chemical Engineering Development

Purex Solvent-Extraction Studies. During the month seventy-nine Purex-process solvent-extraction studies, with CCl_4 as the diluent and with "cold" (unirradiated) uranium were carried out in 321 Building. These studies were made in simple and dual-purpose 3-inch-diameter glass pulse columns. They included IA, IB, IC, and 2D Column HTU and flooding determinations, under the approximate conditions of the Purex flowsheet presented in Document HW-22888. The highlights of the new findings are as follows:

1. The performance characteristics of a IA Column with fluorothene perforated plates (0.125-in-diam. holes, 23% free area, spaced 2-inches apart) were considerably inferior to those reported last month with stainless-steel plates of the same geometry. The fluorothene plates decreased the column capacity to about half of that obtainable with stainless-steel plates and increased the HTU's by about 20 per cent.

2. The 1.5-inch-amplitude capacity and HTU's of a IA Column with a "standard-cartridge" (stainless-steel plates, with 0.125-inch diam. holes, 23% free area, spaced 2 inches apart) did not differ significantly from those (reported last month) for a 1-inch amplitude.

3. A dual-purpose IA Column, with no more than the normal (2-inch) plate spacing at the intermediate feed point performed satisfactorily. In a "standard-cartridge" dual-purpose IA Column run at 1200 gal/(hr)(sq ft), sum of both phases, 0.9-inch amplitude, and 60 cycle/min an HTU of 0.7 ft, equal to that previously obtained in a simple IA Column under comparable conditions, was determined. (The uranium loss from the 6.9-ft extraction section of the dual-purpose column was 0.006%).

4. The capacity of the IB Column scrub section with a "standard-cartridge" was found to be in excess of 1800 gal/(hr)(sq ft), sum of both phases, indicating the adequacy of a 6-inch diameter for the IB scrub section at an 8.3-ton/day uranium processing rate. HTU values of less

than 1.6 ft were determined, the uranium losses from a 13.2-ft IB scrub section being less than 0.001% of the IBF uranium content.

Mechanical Development

Purex Waste Concentrator Corrosion Studies. Additional runs have been made in a batch semiworks-scale Purex waste concentrator in which metallurgical samples of Type 309 SCb, 347, 304 ELC, 302, 304, Carpenter 20, and 430 stainless steel have been exposed to saturated vapors, condensing vapors, and boiling bottoms liquid. The conditions in the concentrator simulate the solution and conditions in the Purex No. 1 acid concentrator. Two runs have been made in which the samples were exposed for 50 hours to solutions nominally containing 1 g/l Cl^- (approximately 1000 ppm) and 2 g/l Cl^- (approximately 2000 ppm). In all cases the corrosion rates for 300 series stainless steels and Carpenter 20 stainless steel have been less than 0.0018 inch per month. The Type 430 stainless steel underwent a maximum corrosion rate of 0.0023 in/month. Additional tests are underway with solutions nominally containing 4 g/l Cl^- (approximately 4000 ppm Cl^-).

Purex Continuous Waste Concentrator and Acid Fractionator. A semiworks scale continuous Purex IAW concentrator and acid recovery fractionating tower is 75 per cent complete in 321 Building. Shakedown runs are expected to be underway by April 4. The equipment consists of a 14-ft long single tube evaporator (1 inch tube diameter) equipped so that the overhead vapors pass to a 12-ft long fractionating tower packed with 1/2-inch stainless steel Raschig rings. Instrumentation is provided to allow continuous operation of the equipment.

Purex Corrosion Testing Program. A corrosion test program is underway to evaluate the corrosion resistance of Type 309 SCb, 304 ELC, Carpenter 20, and 316 stainless steels exposed to simulated Purex solutions, IAW, IAP, 2AW, ICU, Uranium product, 2DF, Pu product, and an agitated two-phase system representing the IA Column feed point. Metallurgical samples of the four materials were exposed for 336 hours in both the liquid and vapor of boiling solutions representing the uranium and plutonium product streams containing 100 ppm Cl^-. Corrosion rates were less than 0.0001 inch/month. Similar metal specimens exposed to liquid and vapors of boiling IAW and ICU containing 1000 ppm Cl^- gave corrosion rates of less than 0.0001 inch/month after 150 hours exposure.

Other samples exposed statically for 100 hours to IAP, 2DF, and 2AW solutions at room temperature gave negligible corrosion rates for IAP and 2DF solutions containing 1000 and 2000 ppm Cl^- and 2AW solutions containing 1350 and 2700 ppm Cl^-.

Tests will continue to determine the threshold value of Cl^- concentration where corrosion becomes excessive.

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Pump Development

Hot Semiworks Centrifuge Feed Pumps. The first of the submerged regenerative turbine-type, centrifuge feed pumps for the Hot Semiworks has been accepted. The pump was operated for 43 hours in water. Operation was smooth and quiet. A calibration curve (speed vs. delivery) has been prepared. At a discharge head of 26 ft of water the pump delivers 0.148 gal/min at 1735 rev/min (115 volts) and 1.244 gal/min at 2180 rev/min (140 volts).

General Engineering Laboratories Submerged Motor-Pump, redesigned for use as an agitator driver was provided with a 10-inch diameter propeller type agitator blade in a 500 gal tank full of water. A small low-head centrifugal pump insures water circulation through the motor at a rate of 8 gal/min. In operation at 1750 rev/min, agitation was extremely violent and the motor was overloaded. The agitator has been replaced with an 8-inch diameter blade and operation has been resumed to observe the effect of agitator thrust on the bearing thrust faces.

Bearing Test Machines. One bearing test machine has been set up and put in operation with a graphitar bushing and a stainless steel shaft lubricated by CCl_4. A second machine is ready for operation. Difficulty is being encountered during initial operation in obtaining consistent and reproducible torque readings under various loading conditions. Based on initial operation, CCl_4 does not appear to be a worse lubricant than hexone.

Materials Testing

Amercoat 1574 Tie-Coat, a primer designed to be applied over other protective coatings before the application of Amercoat 1574 has been received for evaluation.

Hot Semiworks

Construction of the Hot Semiworks is 81 per cent complete. The Change House, Building 2707-C, was accepted with minor exceptions on March 19, 1952. Equipment installation and piping was completed and cleaning and testing was started in the Solvent Handling Building. All tanks except the dissolver and waste concentrator have been installed in the cells. The ventilation air filters were installed but have not been tested. The walls and ceilings of the cells have been painted with Amercoat 1574.

The Hot Semiworks Manual is 98 per cent complete in rough draft and 20 per cent complete in final copy.

Separations Technology Unit

SEPARATIONS PROCESS RES[redacted]

Solvent Extraction Applied to Bismuth Phosphate Process Streams

Recovery of Uranium from Current Metal Waste - Uranium has been extracted from current metal waste (unneutralized) in a two-cycle metal recovery process utilizing 12.5 per cent TBP in hydrocarbon (flowsheet IB, HW-23588). Overall decontamination was inadequate by a factor of approximately 15. Investigations aimed at improvement are in progress.

Purex Process Second Plutonium Cycle Reflux

A reflux flowsheet has been designed for the second plutonium cycle. The purpose of the new flowsheet is to furnish purified product at 60 g/l. The advantage of such a process is that concentration of dilute IIBP streams by boil down or by ion exchange could be eliminated.

The process as visualized involves five extraction, two scrub and five strip stages. The high plutonium concentration stages would be in the stripping column, a five inch critically safe tube.

Copper Sulfide Scavenging Studies

Tail-end treatment of a simulated full level Purex ICU by scavenging with copper sulfide gave decontamination factors of 28 for ruthenium, 3.3 for gross beta and 5.2 for gross gamma. When coupled with the decontamination achieved in the preceding extraction-scrub-strip operations the overall decontamination factors were 2.3×10^6 for ruthenium, 1.4×10^6 for gross beta and 3.1×10^5 for gross gamma. These data suggest the application of copper sulfide scavenging to Uranium Recovery RCU streams to achieve additional decontamination for off-standard streams which do not meet fission product ruthenium specifications.

Head-end scavenging of dissolver solution with copper sulfide followed by extraction and scrub operations yielded a Purex IAP with decontamination factors of 4.5×10^6 for gross beta and 9.1×10^4 for gross gamma (F.P. data incomplete). It has been found that any uranium which is reduced to U(IV) during the precipitation of copper sulfide by H_2S can be conveniently re-oxidized without introduction of impurities by passage of nitric oxide gas through the solution at room temperature.

Decontamination of Organic Uranium Solutions by Adsorption and Ion Exchange

A comparison of the batch-wise capacities of several adsorbents and ion exchange resins found earlier to give high gross beta and gamma decontamination of Purex IBU indicated zinc oxide and zeolite have higher capacities for ruthenium, niobium and zirconium than do alumina,

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Amberlite IRA-400 and litharge. Study of the flow rate of Purex IBU through various adsorbent beds as a function of particle size and hydrostatic head revealed satisfactory flow through alumina, zeolite and mixtures of zinc oxide and zeolite but unsatisfactory flow through zinc oxide alone due to formation of a heavy paste.

Similar investigations are being carried out on the adsorption decontamination of Redox IBU. In general, batch decontamination factors have proven less promising than those previously obtained with Purex IBU, the highest values obtained thus far being 18 for gross beta and 10 for gross gamma given by zinc oxide powder. Litharge shows some promise for decontamination of the Redox IBU stream.

Miniature Mixer Settler

The twelve stage, 3/8 inch KAPL model miniature mixer settler (MINI) was set up and put into operation during the month. Initial calibration runs are being made under Uranium Recovery RA conditions and indicate that operation of the unit is entirely satisfactory. It is planned to use the device to produce Uranium Recovery and Purex solutions for adsorption and scavenging studies as well as to demonstrate, under dynamic conditions, the effect of process modifications.

Resin Column Coupling

It has been found that Dowex-50 should not be oven-dried (110°C) before it is used in resin columns since presumably the resin spheres crack and/or splinter during the drying process, and the sharp edges, corners, etc., act as gas bubble formation centers. Some gas formation (probably nitrogen) takes place in the resin bed during the plutonium adsorption and elution operations, but when the resin column is filled with undried Dowex-50 the collection of gas in the resin bed during the adsorption process is completely eliminated and the minor amount of gases evolved during the elution steps is not troublesome.

The laboratory investigations have indicated that a resin column packed with Dowex-50 (50 to 100 mesh) can easily handle a throughput of 30 $ml/min/cm^2$. The feed used in these investigations was simulated Redox IIBP diluted to 0.3 M HNO_3 and ca. 0.5 g/l Pu, and the plutonium lost to the waste stream from the laboratory resin column was ca. 0.04%. This loss could be decreased even further by increasing the length of the column. The pressure required to attain a flow of 30 $ml/min/cm^2$ in the laboratory facility was ca. 5 to 7 psig (approximately one foot packed resin section).

Extrapolating to a seven inch diameter column having a packed section of five feet in height, approximately 10,000 liters of solution containing 5.6 kg of plutonium can be processed per 24 hours. This column may

require 25 to 35 psig on the plutonium feed to attain a throughput of 30 ml/min/cm^2. This pressure is probably an upper limit as this estimate is based on the laboratory experiments wherein the pressure drop through the piping and control equipment is unknown.

Pulse Column Glove Box

The construction of the alpha glove box pulse column is 100% complete and leak testing and shake-down runs are in progress. Initial "cold" uranium runs were being made at month end, and plutonium HTU studies are planned shortly after the first of April on the Recuplex Process. These runs will be made in a column cartridge consisting of one inch spaced, uncoated stainless steel plates with 0.04 inch diameter holes and 23% free area.

Treatment of Off-Standard Purex Streams

Consideration is being given to means of treating off-standard streams in the Purex process. Preliminary data indicate that a product uranium stream, such as IIEU, containing above tolerance amounts of plutonium may be adequately and economically decontaminated from plutonium by passage through a cation exchange resin. Consideration is also being given to the treatment of organic waste streams which contain excessive amounts of uranium, plutonium, or both due to high dibutyl phosphate in the organic stream. Prior to recycle of the products in the aqueous streams derived by washing these streams in the IO column, the dibutyl phosphate should be removed or destroyed. Attention is being given at present to analytical methods for dibutyl phosphate in preparation for studying ways to destroy or remove it from such streams.

Decontamination of Redox Concentrator Distillates by Ion Exchange

Studies with short columns of hydrogen-form Dowex-50 resins show that, at the flow rates used, about 2,600 bed volumes of simulated Redox concentrator distillates at pH 4.5 may be passed through the resin before activity in the effluent rises above a constant value representing a gross beta DF of about 20. Activity which comes through the beds initially is largely ruthenium. When the break does occur, ruthenium and cesium activities in the effluent rise sharply while strontium and rare earth activities remain constant at a low level. At the flow rates used, a resin bed three feet in diameter would handle the output of distillates from the Redox plant.

Regeneration of the resins with 6 M HNO_3 showed that most of the activity was readily removed while about 10 per cent adhered very tightly. Sixty-eight, 86, and 91 per cent of the activity was removed with 18, 53, and 180 bed volumes, respectively, of the regenerant. Complexing agents to remove the more tightly held activities may aid in the regeneration.

Ruthenium Chemistry

Equilibrium in the tracer ruthenium(IV)-TTA distribution experiments is attained very slowly. In experiments in which the TTA concentration was held constant at 0.1 M and the perchloric acid concentration was varied from 0.2 M to 0.005 M, equilibrium was not reached after shaking for eleven days. The maximum distribution coefficient (E^2) observed in these experiments was 0.05 at 0.005 M acid. In experiments where the acid concentration was held at 2 M and the TTA concentration varied from 0.1 M to 0.005 M, no distribution into the organic phase was observed after shaking for 18 days. Charcoal does not appear to catalyze the reaction. Because it is not known how long an equilibration time is necessary in these TTA studies the feasibility of using a cationic exchange resin to study the complex ion chemistry of ruthenium is being investigated.

Another method of studying complex ion formation, J. Bjerrum's method of "corresponding solutions" using the property of light adsorption, has been found to be unsuited to the study of the nitrate ion complexing of ruthenium(IV).

Experiments are still in progress to ascertain the nature of the ruthenium(IV)-nitrite ion reaction. Preliminary results indicate that this reaction may not involve the reduction of ruthenium(IV) to ruthenium(III).

234-5 PROCESS DEVELOPMENT

The group transferred its activities from the 231 Building laboratory to the new quarters in the 234-5 Building during the month.

Purification - The performance of the plutonium(IV) oxalate precipitation process applied to AT, 2BP, and 3BP solutions was evaluated in terms of the composition of the filter cake and metallic plutonium derived by reduction of the plutonium tetrafluoride obtained by direct hydrofluorination. The composition of the metal was satisfactory in all cases with the exception of the La content of the material derived from bismuth phosphate plant type of AT solutions which varied from 800 to 3000 parts lanthanum per 10^6 parts of plutonium. The sodium content of the metal derived from Redox type solutions was reduced to less than 25 ppm in all instances.

Recuplex - Operation of the 1/2" Mini unit in simulation of a Recuplex CA Column (Chemical Flowsheet #3, uranium stand-in; 1 scrub and 11 extraction stages) gave waste losses of 0.6-0.7 per cent at total throughputs slightly below the flooding point of 1200 cc/hour. Simulation of a Recuplex CC Column (Chemical Flowsheet #5, uranium stand-in; 12 stages) with the 3/8" Mini demonstrated losses of 1.4-1.6 per cent and a flooding point of 600 cc/hour.

Separations Technology Unit

Phase I of the Project Proposal for the Recuplex installation (requesting funds for detailed engineering design) has been approved by the A and B Committee and has been submitted to the Atomic Energy Commission for approval. Document HDC-2519, entitled "Certification of Funds Information for Recuplex Project", has been submitted to the Atomic Energy Commission for transmittal of the information to the Bureau of the Budget.

Crucible Shop - Fifty CD-110-1 crucibles were transferred to the Separations Section during March. Thirty-two experimental CD-110-1 and CD-110-2 crucibles of various grain compositions were pressed and 28 of these have been fired at 1800°C. Bulk densities and percentage voids of each dry mixture were determined by tamping to constant volume in a brass cylinder.

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. 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.

R. B. Richards

R. B. Richards, Manager
Separations Technology Unit

4/8/52

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ANALYTICAL UNIT

MARCH 1952

VISITORS AND BUSINESS TRIPS

E. W. Rebol and S. A. Reed, General Electric Company, ANP Project, Oak Ridge, Tennessee, visited Hanford Works March 13 for discussion of analytical and accountability methods.

G. J. Alkire spent March 3 at ANL and March 11-13 at KAPL, discussing mass spectrometric analyses.

A. H. Bushey spent March 10 at Site X-10 and March 11 at Site K-25 with the Carbide and Carbon Corporation, Oak Ridge, Tennessee, discussing analytical methods.

R. Ko spent March 23-27 at Buffalo, New York, attending the American Chemical Society Meeting, and March 28 at KAPL for discussion of analytical methods.

G. J. Alkire, A. H. Bushey and T. K. Bierlein spent March 5-7 in Pittsburgh, Pennsylvania, attending the Pittsburgh Analytical Conference.

T. K. Bierlein spent March 4 at the ALCOA Plant, New Keningston, Pennsylvania, discussing analytical methods.

W. N. Carson spent March 3 at the Beckman Instrument Corporation, South Pasadena, California, discussing analytical methods.

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Analytical Unit

G. J. Alkire spent March 10 at the National Bureau of Standards in Washington, D. C., discussing analytical methods.

ANALYTICAL RESEARCH

Assistance to Redox Control Laboratory

Two members of Analytical Research were assigned to each of the Redox control laboratory shifts during the month to aid in solving the many troublesome laboratory problems. Many, if not all, analytical methods received attention in one respect or another. Erroneous values for acid were tracked down to errors in the standard buffer solution and to imperfect response of the pH meter; accurate buffers were prepared, and one pH meter was modified by expanding the scale to allow easier reading. A new calibration curve for the photometric determination of dichromate was prepared when it was discovered that the dichromate content of process streams had been doubled. Difficulty with the americium-curium procedure was found to result from the addition of too great an excess of fluoride with the resultant precipitation of excess ceric fluoride. Erratic values for plutonium in salt waste streams were found to result from ineffective operation of the magnetic stirrers; corrective measures were improvised and an investigation has been undertaken to find a more efficient stirrer and stirring technique. High results for plutonium in UNH product were observed to result from the precipitation and subsequent slow dissolution of uranyl fluoride; excess washing was inaugurated to allow complete dissolution of the uranium salt. The sample size for the determination of plutonium in dissolver solution and Redox feed was reduced to half in order to eliminate possible beta-gamma interference during alpha counting. The x-ray photometric determination of uranium was observed to yield low results; this was found to follow from the fact that the standard reference solution had not been renewed for an appreciable period of time and had concentrated somewhat as a result of evaporation. A direct and rapid ruthenium procedure was placed in service. Although not suitable for absolute determinations, it is of value in obtaining relative figures that give a good index of process decontamination.

Special analyses performed included the determination of plutonium(IV) in salt waste samples; the analysis of slurry hold-up samples for plutonium, which revealed that 40% of the alpha count was retained with the solid matter; and the analysis of air samples from the Redox Process building, which revealed that high beta-gamma activity was due to ruthenium.

During the month increasingly large quantities of U-237 were observed in uranium product; one sample contained total gamma radiation that was 2200% of that of natural uranium. Since this represents the first supply of appreciable quantities of this isotope, its characteristics were studied in some detail. The first indication is that the previously indicated beta and gamma half thicknesses are somewhat low, since it is observed that a 25 mg/cm^2 gold absorber passes appreciable U-237 betas and a 5.2 g/cm^2 lead absorber passes appreciable gamma radiation from the isotope. As a result, these previously proposed absorbers may prove to be insufficient. Beta and gamma specification analyses for Redox product are presently being made with the use of increased absorber thicknesses to

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eliminate U-237 radiation; frequent absorption curves and analyses for specific fission products are made to ensure the validity of the counting technique. Continued investigation of the chromatographic procedure for separation of fission products indicates that a pretreatment with hydrochloric acid-hydrogen peroxide is effective in converting the ruthenium to a form that will be retained on the chromatographic column; this treatment, however, appears to precipitate zirconium and thorium (UX_1), so that they cannot be subsequently re-extracted with the fission products. A study with various complexing agents is being undertaken in continued work on this problem.

Difficulties with the coulometric determination of uranium were encountered during the month. These were found to result from two causes: the precipitation of bismuth in the lead reductor column during the analysis of waste storage solutions and the attack of bromine and hydrobromic acid on rubber stoppers and rubber base stopcock grease. The first difficulty was eliminated by removing the bismuth by internal electrolysis with a platinum-lead couple; the second was removed by eliminating the source of rubber.

A sample of reagent tank ANN was examined as part of an effort to find foreign compounds responsible for emulsion formation in Redox Process columns. The solution was suspect because of its brownish color and putrid odor. Extraction with hexone produced a colorless solution and a slimy, light-colored material that eventually collected on the container walls and at the interface. Upon removing the aqueous phase and adding water, the brown color was immediately restored to the hexone and the slime dissolved. Attempts to extract the ANN with carbon tetrachloride and ether likewise resulted in emulsion formation. In the latter case a portion of the ether extract was recovered and evaporated to yield a yellowish residue, having a strong odor, isobutyric acid. Overnight desiccation of this residual solution to remove remaining water produced an odorless, strongly hygroscopid powder. The first infrared absorption pattern of this material was poorly defined, so that no identification was possible.

An improved procedure for the determination of U_3O_8 in UO_3 was developed and placed in service in the 222-S Building Laboratory. It consists of dissolution of the UO_3 in hydrochloric acid in the presence of 10% hydroxylamine to destroy any nitrate complex; the insoluble U_3O_8 is then dissolved in a phosphoric-sulfuric acid mixture, and the tetravalent uranium is subsequently determined by photometric means. The procedure gives somewhat higher results than the previously employed one and eliminates the erratic results formerly obtained.

Isotopic analyses of UO_3 performed to date have given the following results.

Lot	% U-235	Lot	% U-235
6	0.709	12	0.664
7	0.680	13	0.659
8	0.677	14	0.657
9	0.674	15	0.638
10	0.668	16	0.660
11	0.654	17	0.647

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Analytical Unit

Comparison of Hanford and Oak Ridge results for the determination of water in UO_3 showed the latter to be twice the former. Hanford employs the Karl Fischer procedure for titrating water leached from the sample. Oak Ridge employs a procedure involving ignition of the sample and subsequent absorption and weighing of the water released. When the Oak Ridge procedure was tried at Hanford, it yieled the higher results, thus indicating that the Hanford leaching technique removes only the surface moisture from the sample. It is planned to adopt the Oak Ridge procedure.

In-line Monitoring

The investigation of the applicability of scintillation counters for the continuous monitoring of the gamma activity of process streams has continued. A scintillation counter considered suitable for monitoring condensate receiver solutions was designed and is under construction. If found suitable in laboratory tests, it will be installed for trial on the process line.

Various aspects have been examined in a study of the suitability of glass electrodes for continuously measuring the pH of highly radioactive process solutions. The pH of cold synthetic TBP neutralized waste solutions has been measured continuously with the aid of six different types of standard Beckman electrodes and a Beckman Industrial Model R Recording pH Meter. During a two weeks period the asymmetry potential in all cases changed in amount equivalent to 0.3 pH units, and the change in overall measured pH value varied between 0.1 and 0.5 units. One glass and one calomel electrode were immersed in a plutonium solution of about pH 5 for a five day period; the continuous exposure to a calculated bombardment rate of 10^6 alpha particles per minute had no effect on the measured pH value. At month's end a test was set up exposing two glass and two calomel electrodes immersed in a simulated TBP neutralized waste solution to a 4.5 curie cobalt-60 source; during the first several days, with a total exposure of 225,000 R, no variation in reading was observed. Arrangements are being made for further electrode tests in the 105 Building slug basin, or perhaps in the underground waste storage tanks.

The Baird infrared analyzer, purchased for making continuous determinations of moisture in pile atmosphere, does not operate satisfactorily. The manufacturer has requested a four week period to allow him to evaluate this application of the instrument before sending an engineer to Hanford. In the meantime a set of Aminco electric hygrometers has been set up and tested in the laboratory. The units, which collectively cover the range from 1.6 to 99% relative humidity, proved to be stable and to yield results precise to ± 1.5 relative humidity units. Laboratory tests have been made only with air-moisture mixtures, but the manufacturer claims that the units are applicable for determining moisture in carbon dioxide or carbon monoxide and that they may be employed under reduced pressure.

General

With the completion of the P-10 project at Hanford, consideration is being given to other applications of the two mass spectrometers previously employed for the analysis of process samples. Applications that will be investigated include the

analysis of carbon dioxide from the pile area, P-13 samples, inert gas blanketing material from the 321 Building, helium from the 200 Area, and helium employed for heli-arc closure of canned slugs.

Further investigation with a coulometric procedure for determination of acid included study of a preliminary extraction technique for separating acid from aluminum or uranium salts. Various amines dissolved in organic solvents were employed as extractants. Initial studies revealed 95-106% recoveries from pure acid solutions and somewhat less reliable recoveries from solutions containing aluminum.

A modified Karl Fischer procedure was investigated and found suitable for various plant analyses. The various components are not combined into one reagent but are prepared as two separate solutions that are not combined until they reach the titration vessel; since neither solution is hygroscopic, the titer value remains constant for many weeks.

ANALYTICAL SERVICE

Work Volume Statistics

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

	February		March	
	Samples	Determinations	Samples	Determinations
Process Control - 234-5	666	3,105	378	3,048
Process Control - Metal Preparation	511	1,060	601	1,424
Research & Development Programs	1,740	3,163	1,812	5,180
P-10 Control	943	9,430	848	8,480
Water Quality, P-13	625	1,755	555	2,082
Redox, TBP, UO_3	1,263	3,331	1,623	4,484
Process Reagents	334	693	338	515
Essential Materials	8	16	48	793
Special Samples	448	5,170	383	2,942
Totals	6,538	27,723	6,586	28,948

100-300 Area Services

On March 21 the last P-10 slugs were processed and except for a small amount of P-10 clean up work the mass spectrometers are now free to support other programs or processes. On March 24 five people were transferred to other laboratories leaving four on days to provide analytical service for customers requesting mass spectrometer analyses.

The P-13 equipment has not operated for the majority of the month due to failure of a recirculating pump. Start up will be on a revised program where changing

Analytical Unit

conditions will require immediate sample analysis. Pile Technology Unit and Analytical Unit supervision have mutually agreed that rather than place additional Analytical Unit personnel on shifts and utilize only a portion of their time it would be more economical and efficient for the P-13 operators who have free time to perform these analyses. Consequently, the majority of the month has been spent in training the operators in the methods and techniques of the gas analyzer in preparation for this shift work.

A special analytical service problem of interest was the determination of total chlorides in the vapor phase of a carbon tetrachloride system which had been subjected to heavy radiation by Separation Technology Unit personnel. None of the samples had a total chloride content expressed as chlorine greater than 0.1%.

The spectrographic analyses of UO_3 product for B, Cr, Mo, Ni, P, and W is now performed in the 3706 Spectrographic Laboratory and the remaining spectrographic analyses will be transferred to this laboratory as soon as it is equipped for the work. This will free the 234-5 Building Laboratory of the cross contamination problem and center all uranium work in one laboratory.

In routinely determining tungsten in uranium billet samples by the cupferron spectrographic method it is possible to simultaneously determine the concentrations of other elements. The detectable limits for these elements have now been established and in ppm. are as follows: tungsten, 10; cadmium, 1; gallium, 1; hafnium, 20; molybdenum, 1; palladium 1; tantalum, 20; titanium, 1; and zirconium, 1. The detectable limit for molybdenum by the carrier concentration method is 2 ppm.

234-5 Building Laboratory

The sharp decrease in the number of samples submitted during the month was due to process difficulties encountered in the R. G. Line reduction hood on March 1, 1952. Diversion of the laboratory air supply for several days forced evacuation of the laboratory. The remainder of the time prior to operations start-up was used to train personnel on new procedures, sharpen up older procedures, clean the laboratory and rearrange equipment and working areas for more efficient operations.

As a result of the R.M.A. Line start up on March 18 and subsequent initiation of a production test for evaluation of the reduction of plutonium tetrafluoride with calcium and sulfur, routine analysis of button samples for sulfur has been requested. The Methylene Blue Method for determining sulfur as the sulfide is being used and appears to be satisfactory. Experimental data indicates reproducibility of ± 35% (99% confidence level) and a limiting sensitivity of approximately 0.3 μg sulfide. It has been tentatively estimated that 130 man-hours/month will be required for this additional determination.

Spectrographic assistance was provided when a brown tetrafluoride powder was obtained in the R.M.A. Line on Run #RMDC-3-2-3-3. The primary contaminant was found to be sodium at a concentration of 40,000 ppm.

Spectrographic analysis of black crud from the 2A and 3A Redox columns indicated that the material was principally aluminum, silicon and iron although calcium,

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chromium and phosphorous were detected in moderate amounts.

The recovery of plutonium from laboratory waste solutions continued during the month with a total of 273.154 grams returned to the 231 Building process.

222-S Building Laboratory

During the month two chemists from Analytical Research and a Senior Analytical Service Supervisor were temporarily assigned to each shift to detect and correct problems associated with analytical and laboratory procedures. Changes resulting from this special assistance enabled the laboratory to increase its efficiency to a point where adequate service was provide for a 3-ton Redox rate and time was available for assistance to Research and Plant Assistance programs.

The primary sample sizes for total alpha analysis of Redox starting solution (H-7) and the column feed solution (H-1-F) were reduced from 0.25 to 0.125 microliters to prevent alpha absorption by excess uranium on the sample discs and eliminate the possibility of exceeding the beta tolerance of the Alpha Simpson Proportional counter. Sample sizes for waste samples were also adjusted so that the alpha counting rates would fall within the present waste checking limit chart used by 222-B and -T Laboratories. Use of this chart will prevent numerous reruns and recounts and laboratory supervision will be in a better position to determine the reliability of the alpha results on the waste samples.

The suspension of head-end ruthenium treatment on March 19 eliminated three samples (H-3, H-4, and H-1-F), two of which (H-3 and H-4) were extremely difficult to analyze because of high radioactive and undissolved solids. The elimination of these samples and associated resamples necessary to obtain a representative sample has decreased the laboratory work load significantly.

Preliminary precision studies of plutonium and uranium results on Redox samples for the period February 4 to March 6 are as follows:

Sample	Analysis	± % Precision of Average (99% Confidence Level)
H-7	AT	1.5
H-1-F	AT	1.2
E3	AT	0.75
PR Line	AT	0.94
E12	U	0.43

A standard sample typical of Redox uranium product (E12) was submitted for analysis and the specific gravity, beta-gamma and alpha total determinations agreed closely with the standard values. The x-ray photometric uranium values were 1.10% low. This situation has been corrected by recalibration of the x-ray photometer curve.

Analysis of a standard sample typical of Redox plutonium concentrate solution (E17) indicated that the precision of the specific gravity values were satisfactory but the results were somewhat low. The alpha total and nitric acid determinations

agreed with the standard value but were not highly precise.

Determination of Pu IV content in IAW samples confirmed the assumption that incomplete oxidation of Pu in the IAF was the cause of the high losses in the IAW. As a result, Plant Assistance personnel have requested that the amount of Pu IV in the IAF and IAW samples be routinely determined during this period of high waste losses.

In analyzing the 3 BP and PR Line samples for total alpha, brown colored discs having counting rates 5-6% below normal discs were frequently observed. Investigation revealed that the stainless steel discs used for mounting the samples were apparently of different types of steel and reaction between certain discs and the solution produced the brown color. Passivation of the discs in a nitric-acid sodium dichromate solution prior to use has eliminated the trouble and reduced the number of reruns.

On March 4 the chromatographic method of determining the fission products in Redox uranium product was replaced by a ratio method which is faster and more reliable. In this method direct gamma counting on a scintillation counter with a 7.2 g/sq. cm. (originally 3.5 g/sq. cm.) lead absorber to eliminate interference from U-237 is used and the reported value is the ratio of this count (corrected for reduced Ru 103-106 gamma) to that of natural uranium. The same procedure is used for the beta ratio except a 25 mg/sq. cm. gold absorber is used in place of the lead absorber.

Continued changes are being made in laboratory operating procedures to speed up the flow of samples. Analytical balances and equipment for fission product analyses have been removed from gloved boxes and placed in open hoods. Charts rather than graphs are being used to calculate nitric acid values from pH readings. Precision data on the various analyses are being collected to determine the reliability of laboratory results and to control the number of reruns. A duct-work leading from the flame photometer chimney directly into the hood exhaust was installed to prevent build up of activity in the gloved box containing the flame photometer. A principal Shift Supervisor who is in complete charge has been added to each shift releasing the two Shift Supervisors for closer observation and follow up on individual analyses being performed in the laboratory.

Methods Control

Activities of Methods Control personnel in direct support of a laboratory are reported under the applicable laboratory heading.

Safety and Special Hazards Control

Four high air samples occurred in the 234-5 Building Laboratory during the month. Two of these were obtained in Room #134 where work was being performed under SWP conditions. The third sample was obtained in Room #135 as a result of a sample spill which occurred when an employee attempted to remove a frozen stopper from a 1 ml. dilution flask. The fourth high air sample occurred in Room #157 and the cause is unknown since no off-standard or unusual incidents were reported.

Analytical Unit

A routine shift survey in 234-5 Building Laboratory on March 13 detected a spot of floor contamination near Room #136 in excess of 5×10^6 d/m. Upon cleaning the area, a small piece of metal, thought to be plutonium, was discovered. Although the exact source of the material is unknown (routine laboratory operation with metal was suspended during this period), it is suspected that the contamination was related to the transfer of the dissolving box contents from Room 134 to a gloved hood in Room 139. This transfer was conducted under SWP conditions and subsequent surveys indicated good contamination control.

The 222-S Building Laboratory was evacuated at 3:50 P.M. on March 8 due to high fission product concentration in the laboratory air. The source was traced to the 202-S stack which had discharged copious quantities of ruthenium. The building air was back to normal in 2 hours.

The concentrate of alpha emitting material in the air of certain rooms in the 222-S Building exceeded the assault mask level (3×10^{-11} μg/cc) during the period of March 15-17. High readings were observed in Rooms 2B, 4A, 4B, 4D, 4J and 4K with the highest in Room 2B (7.1×10^{-1} μg/cc). Masks were not worn until 4:00 A.M. on March 18 principally because of the time lag required for confirming preliminary results and delay in notifying laboratory supervision of the original high counts. The air was below mask level on March 18 but on March 23 mask level was again observed. The maximum observed this time was in Rooms 2B and 4E (6.4×10^{-11} μg/cc). The cause for these high alpha air samples had not been determined at month's end, but building personnel are endeavoring to find the answer. There is some speculation that part of it may be due to uranium rather than plutonium.

There were 20 cases of skin contamination during the month which can again be traced to inadequate survey of gloves and work stations. An intensive program is being undertaken by all shifts to reinstruct all personnel in special hazards procedures.

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 March, 1952 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
None	

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Signed: F.W. Albaugh
F. W. Albaugh
Manager, Analytical Unit

FWA:lc

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TECHNICAL SERVICES UNIT

MARCH 1952

4-10-52

VISITORS & BUSINESS TRIPS

There were no off-site visitors sponsored by this Unit during the month.

Business trips made by personnel of this Unit during the month were as follows:

Ezra Hollister spent March 24 - 26 in Seattle, Washington, attending the regional A.S.M.E. meeting and presenting a paper entitled "Handling of Radioactive Materials."

ORGANIZATION AND PERSONNEL

Personnel totals for the Technical Services Unit are summarized as follows:

	February	March
Laboratory Engineering	84	86
Technical Information	93	85
Administrative	3	3
Unit Totals	180	174

LABORATORY ENGINEERING SERVICES

Mechanical Shops (Bldgs. 1717-D, 3706 and 222-S)

Work volume statistics for the Mechanical Shops are as follows:

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	Customer Unit or Program	February No. of Jobs	February Man-Hours	March No. of Jobs	March Man-Hours
Work Done on Jobs Completed	P-10	6	319	2	46
	Pile Tech. (Incl. Exponential Pile)	37	718	40	633
	Separations Tech.	29	457	36	758
	Analytical	17	456	14	194
	Technical Services	9	205	16	238
	Others	13	73	12	245
	Sub-Totals	111	2228	120	2114
Work Done on Jobs Not Completed	P-10	2	0	0	0
	Pile Tech. (Incl. Exponential Pile)	6	58	10	258
	Separations Tech.	14	487	10	257
	Analytical	4	118	8	145
	Technical Services	11	592	11	545
	Others	2	191	2	192
	Sub-Totals	39	1446	41	1397
Total Work Done			3674		3511
Work Backlog:					Man-Hours To Complete
Jobs Started	P-10	2	19	0	0
	Pile Tech. (Incl. Exponential Pile)	6	112	10	180
	Separations Tech.	14	286	10	228
	Analytical	4	99	8	236
	Technical Services	11	644	11	621
	Others	2	45	2	8
	Sub-Totals	39	1205	41	1273
Jobs Not Yet Started	P-10	0	0	0	0
	Pile Tech. (Incl. Exponential Pile)	16	439	12	342
	Separations Tech.	7	185	8	139
	Analytical	8	149	8	331
	Technical Services	7	252	2	123
	Others	6	842	2	612
	Sub-Totals	44	1867	32	1547
Total Backlog			3072		2820

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The Mechanical Shops are operating on a 2820 man-hour backlog, which represents approximately 14 working days with present forces. The shop continued to provide routine machinist assistance to all Technical Units through the Building 3706 and Building 222-S one-man shops.

The following work was completed for the Technical Units as indicated:

Analytical Services

Considerable machinist assistance was furnished in connection with Building 222-S start-up. This assistance included the completion and installation of a revised Falling Drop Apparatus and a revised Oil Displacement Primary Sampler. Many small items incident to the completion of laboratory equipment requirements for this building were completed and delivered. A second high priority work order for 100 Teflon pipet tips was completed. These pipet tips were fabricated in the Technical Shops because outside vendors were unable to meet the required delivery date. Moreover, the plant supply of the Teflon used in the fabrication of these pipet tips is maintained in the Technical Shops special stores caption. Improvement in fabrication technique and the fixtures used resulted in more than a 100% savings in fabrication costs over the previous order. These pipets were fabricated for approximately $2 each.

Pile Technology

Fabrication of a Flexowriter Control Panel to be installed in the 105 Building, 100-B Area, was completed. Work entailed sheetmetal fabrication and heliarc welding of an instrument cabinet. The unit required dust-tight and all-welded construction. Design changes incorporated at the recommendation of shop personnel included the substitution of felt for the specified rubber seals, the substitution of Teflon drawer slides in place of the ball bearings, and the addition of angle iron stiffeners on door panels. Several 3"x6"x12" high density concrete blocks similar to those in use at Brookhaven National Laboratories were fabricated in the shop. These blocks have been covered with masking tape at the recommendation of shop personnel. This method of protecting the blocks against flaking and dusting proved more satisfactory and much cheaper than the taping and painting method proposed. Close fitting gas-tight tubing connections were machined on the ends of 12 special canned slugs. Other 2S aluminum fittings were also fabricated. Fabrication of 20 process control tubes for 100-C Area graphite diffusion studies was completed. Vacuum-tight heliarc welding of thin walled aluminum can to the 3/8" thick top and bottom plates was done on the inert gas welding lathe. A sounding tank to be used for locating cracks and imperfections in canned process slugs by a supersonic method was completed. The lucite tank is felt lined and is equipped with a variable-speed gear-reduction mechanism for the rotation of slugs being tested. Fabrication included the sounding heads which will be immersed in the tank. The construction of a thermal cycling unit for uranium studies was completed. The unit consisted of two brass plates separated by a glass tube. The completed work was completely leak-free, and capable of holding a five micron vacuum. A vacuum-tight seal was made by grooving brass plates so that a neoprene gasket could be placed under a uniform pressure.

Separations Technology

Fabrication of an air pulser for the Metal Recovery Research Program was completed. Mechanical details, tolerances and finishes were developed during fabrication. The unit has been successfully used to produce a square sine wave pulse. A second modified unit is being considered. Fabrication and erection of a solvent washing rack and the installation of two pumps and three stirring motors in the rack is proceeding under the direction of a Laboratory Equipment Design engineer. The customer has furnished the necessary stainless steel tanks. Fabrication involves leak-tight stainless steel pipefitting and the fabrication of the Teflon and neoprene gaskets required for the installation of large diameter sight glasses. A second 9' gloved box was completed and delivered. Additional bracing as recommended by the shops was installed to provide sufficient mechanical strength to protect the Homolite windows. Mechanical details to improve leak-tightness were incorporated.

Technical Services

Fabrication of a diffusion cell lift was completed and delivered. This mechanism was required to lower a drop of liquid into another liquid without the loss of any particles so that diffusion properties could be accurately determined. The mechanism was fabricated from gears and gear racks available from the special stores caption maintained in conjunction with the shop. The unit was mounted on a table also fabricated by the shops. Some development and experimental work was required to enclose a 3/8" x 1½" Alnico magnet in a polyethylene envelope. This magnet will be used for magnetically stirring the contents of PR cans used in the 222-S Building. This required a type of polyethylene welding not available elsewhere on the plant.

All vacuum apparatus necessary for the metal-to-ceramic brazing experiment was set up in the Metallurgy Laboratory in the 300 Area. Several sample runs were made but results to date are not completely satisfactory. Additional experiments are planned for the near future.

Glass Shops (Bldgs. 3706 and 222-S)

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

Jobs Completed	February	March
New	78	112
Revisions	21	12
Repairs	7	9
Totals	106	133

Eleven of the above jobs required quartz fabrication. At the present time the shop has a backlog of 17 jobs which will require about eight man-days to complete. Three of the jobs on the shop backlog require quartz fabrication.

One glassblower is being trained in the art of quartz working and is showing promising ability. This training program is in anticipation of the completion of the quartz working facilities in Building 3706. The glass lathe required to complete the quartz shop equipment is now scheduled for delivery on April 14.

Equipment Development

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

	February		March	
	Engineering	Drafting* & Misc.	Engineering	Drafting** & Misc.
Pile Technology				
Engineering	50	386	41	375
Metallurgy	136	184	111	217
P-10	-	45	-	55
Pile Applications	-	53	-	-
Separations Technology				
Development	134	176	83	338
Research	152	404	158	361
Analytical				
Service	418	1146	380	851
Research	17	10	78	26
Technical Services				
Laboratory Engineering	522	618	457	517
Laboratory Equipment Development (RDA #TC-5)	83	618	204	1004
Totals	1512	3640	1512	3744

* Includes 1488 hours of drafting time.
** Includes 1512 hours of drafting time.

Relatively high work loads continued in connection with design and outfitting of equipment for the analytical laboratories and multicurie cells of Building 222-S.

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

Pile Engineering

Engineering assistance was given on the drafting of the hydraulic load cell, slug weighing apparatus, rib position test, horizontal rod adapter for the test hold, gamma tube, Hanford Cask, hydrostatic pressure tester, process "P" shipping cask, control rod gland, clamping jaw, inlet nozzle test plug, and various charts and graphs.

Metallurgy

Engineering assistance was given on design, checking, and scoping of various items of equipment for the metallurgy "hot" cell; and on the drafting of film test apparatus, test sample No. 2, rear plug dry-test channel, rig position

test, crystal growing furnace, sample slide rack, sounding tank, scanning device, thermo shock unit, and various graphs and charts.

P-10

Assistance was given on drafting of toepler pump, a schematic drawing, and various graphs.

Chemical Development

Continued assistance was given on outfitting the multicurie cells of Building 222-S, and of several gloved boxes. One technical graduate continued to work full time with chemical development on the multicurie cell problems.

Chemical Research

Continued assistance was given on outfitting the multicurie cells of Building 222-S, and the alpha pulse column gloved box. Assistance was given on the design of a shaker, multiple unit extractor, and column water jacket.

Analytical Services

Work continued on outfitting and testing the analytical line for Building 222-S. A mock-up was built to test various suggested changes in the analytical line. Engineering assistance was given on drafting of standard micro-pipet, magnetic stirrer, gold absorber holder, cold spot dryer, acid mixture plastic pipet, and air displacement sampler pipet.

Analytical Research

Assistance was given on design of optical bench, lamp housing, and gas analysis chamber.

Laboratory Equipment Development (RDA #TC-5)

Development of basic equipment for the Building 222-S multicurie cells continued. Design of radiation-lock panels was completed. These panels will allow cell entry and removal of the "quart size storage cylinder" without radiation exposure.

Development of equipment decontamination facilities continued with the redesign of the sand blaster. Several gloved boxes and other equipment were decontaminated. Strippable coatings originally applied to some boxes proved very helpful during decontamination.

The first complete formal drawings of the "Hanford Slave" manipulator were completed.

Development of the powered floor cleaning machine employing a mastic type cleaner as the contact surface continued, and work on the vapor ionization detector was resumed.

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New Laboratory Planning

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

Field construction on Phase II included preparatory work above the hung ceiling and the placement of air supply baffles and related structures.

Mechanical Development Bldg., Proj. C-406

Preliminary plans and specifications for the design of the interior (PhaseII) of the Mechanical Development Building were submitted for approval by the Dix Steel Building Co., the architect-engineers. The comments of the interested General Electric departments and of the A.E.C. have been received and will be transmitted to the Dix representatives on April 1. The A-E contract (G-416) is scheduled for completion May 7, 1952.

Radiochemistry Bldg., Proj. C-381

Structural steel erection is almost completed and the welding is about 50% complete. Some roof and floor decking is on the site and erection is expected to start in the near future.

The uninstalled equipment descriptions have been developed and requisitions are being written in preparation for the approval of the revision of the project proposal which covers such equipment.

The revised shop drawings of the fume hoods as submitted by the S. Blickman Co. of Weehawken, N.J., have been reviewed and arrangements were made to inspect the prototype hood which has been recently completed according to these drawings.

Outside Facilities and Utilities, Proj. C-394

The construction work on this project continues well ahead of schedule.

Badge House - The painting, carpentry and ventilation duct work have advanced considerably. The exterior painting is about 80% complete. The interior painting is about 60% complete. The second floor plywood floor has been laid. The lunchroom cabinet work is essentially complete and the badge counters are being installed.

340 Building - The concrete forming work is progressing with the forms and reinforcing steel for the walls in place.

Retention and Neutralization Basin - The forms and reinforcing steel have been placed for one basin, and the reinforcing steel for the second basin is in place.

Piping - The 12" water line from North Richland has been completed.

The parking lot has been graded and is ready for the base course.

The Manufacturing Department has appointed a co-contact engineer to follow all Outside Utilities construction.

Radiometallurgy Bldg., Proj. C-385

Structural steel work for the first floor was completed and the balance of the exterior structural framework for the building will be erected as soon as the reinforced concrete floor has cured to the proper allowable structural strength. Approximately 75% of the main floor slab is complete and the necessary electrical, service piping and ventilation "block outs" have been installed.

The two variable purpose manipulator positioners for high and intermediate cell operations previously on order from Farrel Birmingham were cancelled to permit the substitution of the more suitable "Hanford Slave" type manipulator. Shop drawings of the "Slave" have been completed by Technical Services - Laboratory Equipment Design. Arrangements are being made to have these manipulators fabricated on a competitive bid basis.

Pile Technology Bldg., Proj. C-414

The reinforced concrete work required prior to erection of structural steel is essentially complete. Structural steel is scheduled to be delivered from Seattle to the building site by April 15, 1952.

Detailed shop drawings of the laboratory furniture for this building have been submitted by the Browne-Morse Company for approval. Pertinent comments and suggested revisions to conform with the building prints and specifications have been submitted to the Project Engineer for transmittal to the vendor. Drawings covering the furniture for the Radiometallurgy Building were also included.

Library and Files Bldg., Proj. C-421

Steel erection is almost complete. Some difficulty was experienced in bolting the members together because of improper bolt hole and bracket locations in the prefabricated members. The necessary modifications were made in the field. The steel decking which will form the roof is being installed.

The telephone conduit grid has been placed and the backfill work is being completed prior to pouring of the first floor slab. The interior color scheme was determined with the cooperation of architects assigned to the Design Section.

Building Services

Building 3706

Material control, stockroom and miscellaneous services activity is summarized as follows:

	February	March
Purchase Requisitions		
Total number processed	90	91
Number requiring special expediting	90	91
Number requiring emergency handling	8	12

	February	March
Stores Stock Requests	1	0
Store Orders		
Total number processed	798	1013
Number requiring emergency pick-up & delivery	6	4
Work Orders Processed	63	54
Miscellaneous Services		
Office furniture requests	9	6
Precious metal transactions	14	19
Office machines sent for repair	14	21
Trips to 200-W for contaminated waste disposal	11	12

Photographic services are again available in the Technical Services Unit.

Rooms #1 and #50, Building 3706, were assigned to the Applied Research Unit, and Room 52 was tentatively assigned to the Technical Services Unit. These rooms were previously assigned to Calibrations and Standards, Separations Section, Manufacturing Department, who moved from Bldg. 3706 to Bldg. 231, 200-W Area. As a result of the relocation of the Standards and Calibration Services, it is now necessary to provide a special messenger service to maintain the supply of calibrated glassware and standardized chemicals required for Bldg. 3706 personnel. Means of avoiding this expense and the associated delays are being studied.

Storage cribs for the Technical Section in the 3722-A warehouse were centralized and cleaned up. The original wire fence to the ceiling was replaced with a two foot fence.

Routine replacement of the CWS filter pads in the ducts leading from the "hot" hoods continued.

Building 222-S

Laboratory Services-222-S activity may be summarized as follows:

	February	March
Material dispensed, 222-S stockroom	$2,625	$4,198
Emergency trips (pick up and delivery)	10	14
Work orders processed	49	45
Gallons "hot" waste transfer (219-S to 202-S)	4,283	4,717

Decontamination of gloved box units removed from service in Building 222-S was initiated, using experimental methods and equipment developed by Laboratory Equipment Design. Three units and associated equipment were cleaned and returned for re-use. Other contaminated units from laboratories in Buildings 3706 and 234-5 will be cleaned as soon as remaining equipment is ready for use. The contamination levels of the remaining units will require use of all the protective measures and equipment presently developed for the special Gloved Box Decontamination Unit.

Additional sampling equipment has been placed in service by the Separations Section and this has permitted more efficient scheduling of decontamination

work. The volume of pieces received, however, continues to create cleaning problems necessitating special handling. Contamination levels of the Kellex type doorstops used in sampling concentrated product streams requires extensive cleaning time on these units. This difficulty will be eliminated by a proposed plan to convert to bayonet type samplers.

During the weeks ending March 16 and 23, air samples taken in several laboratories and the decontamination rooms of the millicurie wing were above tolerance limits for micrograms of Pu per cc. High samples were obtained throughout the building indicating a general contaminated condition. No specific reasons for this contamination could be determined. Locations where spills were experienced did not coincide with locations of the high samples. High counts in the Decontamination Rooms may have resulted from a floor drain, the cover of which read approximately 3000 c/m on the bottom side. This drain has been sealed to prevent possible further contamination. An active investigation is being made of this condition to discover the cause and to enable corrective measures to be taken.

TECHNICAL INFORMATION SERVICES

Plant Library

Library work volume and book statistics were as follows:

	February	March
Number of books on order	228	277
Number of books fully cataloged	223	191
Number of bound periodicals processed but not fully cataloged	27	176
Pamphlets added to the pamphlet file	6	42
Miscellaneous material received, processed and routed (including reprints)	84	17
Books and periodicals circulated	4,428	4,516
Unclassified reports processed	203	394
Unclassified reports circulated	201	302
Reference services rendered	1,738	1,435
Inter-library loans	40	46
Photostats from off-site	19	20
New periodical titles added to Kardex	10	19

	Main Library	W-10 Library	108-F Library	Total
Number of books	8,533	3,882	471	12,886
Number of bound periodicals	5,288	0	662	5,950
Totals	13,821	3,882	1,133	18,836

Operation of the Plant Library continued routinely during the month with the curve of book and periodical circulation continuing steadily upward. Reference work continued steady, with representative questions handled as follows:

General properties of transistors
Information on Radioisotopes training courses
Methods of welding reinforcing steel
Backscatter type beta gages
Strength of aluminum welds made by using inert gas shielding
Removal of mildew from linen paper
Adsorption of water by activated alumina
Use of $TiCl_4$ for smoke screens
Design of latches for use on gloved boxes
Principles of underwater television
Definition of Chelate
Suitable solvent for Calol
Solubility product of zirconium phosphate
Corrosion of 2S aluminum by steam
Address of St. Andrew's University, Scotland
Text of the Wherry Act, on military housing
Diffusion of argon through glass
Table of integral values of e^{-x^2}
Design and working principles of turbidimeters
Range and distribution of sizes of human fingers

A revised check list of current periodicals available from the Plant Technical Library was prepared and distributed. The Library presently handles approximately 425 periodical titles in the fields of Hanford interests. Increased plant-wide circulation of the current periodicals has been noteworthy.

The status of all outstanding book orders on the present contract with Stechert-Hafner was checked during the month. The basic contract under which the Library purchases are made (which assures optimum discounts) is being re-submitted for bids. When concluded, it will be necessary to close out the previous contract by cancellation or reorder of all outstanding items.

The McGraw-Hill Book Company has made available to A.E.C. installations, through the members of the Technical Information Panel, surplus copies of the unclassified titles in the National Nuclear Energy Series. These items can be purchased by Project scientists at considerably below list price, provided that a consolidated order is received from each site. The Information Sub-Unit undertook to develop the order from Hanford, and at month end requests from the various Hanford departments totaled approximately $500.

The Library's inter-library loan service was highlighted during the month when it located at the University of Wisconsin an out-of-print book on "Reactions of Hydrogen with Organic Compounds over Copper-Chromium Oxide and Nickel Catalysts." This was borrowed and the entire book photostated for use at Hanford. This is the second time such a procedure has been used on valuable items otherwise unobtainable.

Classified Files

Work volume statistics for the Classified Files were as follows:

	February	March
Documents routed and discharged	18,618	22,882
Documents issued	7,274	7,834
Registered packages prepared for off-site	448	327

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	February	March
Inter-area mail sent via transmittal	29,064	29,967
Holders of classified documents whose files were inventoried:		
(a) Because of normal perpetual inventory procedure	20	1
(b) Because of transfer of work assignment	8	6
(c) Because of termination	4	6
Inventory reductions:		
Copies of documents destroyed	3,371	2,675
Copies of documents downgraded to:		
RESTRICTED	77	165
CONFIDENTIAL	0	2
Copies of documents declassified	232	552
Classified documents located which were unaccounted for in previous inventory	23	27
Standard storage cartons of material retired to the Records Center:		
Unclassified and Official Use Only	0	0
Classified	0	20
Off-site originated reports requested by Hanford personnel	201	126
Hanford originated reports requested by off-site personnel	120	145

As indicated, work volume was normal for the period. The 100% increase in the number of documents declassified represents increased activity by the Non-Technical Document Review Board, which continued steadily to remove from local accountability many early documents over-classified by present standards.

A representative sampling of reference questions worked on by Classified Files personnel follows:

X-ray diffraction data on Pu compounds
Results of possible breach of Grand Coulee
Borst-Wheeler curves of fission product decay
Material on Frost tests
Special tests performed in 305 Test Pile
Electroplating of ruthenium
Iodine removal in the bismuth phosphate process
Material on fluorimeters
Alpha counters for aqueous solutions
Effects of stoppage of cooling water in piles
Pre-canning treatment of aluminum cans
Graphite specifications
Cross section of fission products of U-235
Ruthenium determination
Basis for established limits on corrosion film allowable in process tubes
Power levels of Los Alamos water boilers, amount of fuel needed, how operated, etc.
Information on beryllium crystals
Information relating to the location of reactors along the Columbia River on the Hanford Area
Information on Ball 3X safety device

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DECLASSIFIED

DECLASSIFIED

The development of information on this type of questions requires building up adequate reference "tools" for the classified reports literature, an important activity of the Technical Information Sub-Unit. An illustration of the use of the "series file" of Hanford reports (an index to the title changes, author changes, and changes in department of origin for the principal Hanford reports) involved a letter recently received from the A.E.C. Division of Engineering in Washington requesting information on the H.I. Environ Reports which they believed to have been discontinued in January, 1951. They were unaware that the current title of this report is "Radioactive Contamination in the Environs of Hanford Works," and that it is a continuation of the earlier series of reports. Many of the changes reflected in the "series file" are considerably more complex as indicated by HW-23667 (issued during the month) which traced the variations in the Technical Activities Reports. The use of the reports index, another basic "tool" developed by the professional staff, is increasing steadily. Personnel of the Separations Technology Unit, for example, have been using the index for almost two months developing a bibliography to be used in the 234-5 operating manual.

Reference work also involved inquiring throughout the country to locate reports requested by local personnel. A sampling of these, together with the source of origin, follows:

U.S. Navy
Office of Naval Research
"Measurements of Thermal Conductivity of Sodium and Potassium"

Army Chemical Center
Camp Dietrich, Maryland
"Final Report on Molecular Filter Systems"

Bureau of Mines
Metals Corrosion Laboratory
College Park, Maryland
"Progress Reports on the Corrosion Studies of Titanium and Zirconium"

Air Force Special Weapons Project
"Military Effects Program Summary"

U.S. Army
Corps of Engineers
"Behavior of Truss Bridges under Blast from Atomic Bomb"
"Report of Bomb Tests on Shelters"
"Report of Bomb Tests on Protective Structures"
"Report of Bomb Tests on Glass"

Air Targets Division
Directorate of Intelligence
U.S. Air Force
"Vulnerability of Grand Coulee Dam to Attack with an Implosion Type Atomic Weapon"

Joint Chiefs of Staff
"Protective Construction Design Manual"

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U.S. Army
Equipment Systems Evaluation Group
"Staff Study #5"
"Staff Study #6"

Westinghouse Research Laboratory
"Resistance Behavior of Various Ceramic Glazes at High Temperature and High Voltage"

Bureau of Mines, Albany, Oregon
"X-Ray Fluorescent Determination of Hafnium in Zirconium"

Office, Chief of Ordnance
Washington, D.C.
"Information on Ceramic Coating for Magnesium, Applied by an Anodizing Process"

U.S. Air Force
Cambridge Research Laboratory
"The Accuracy of Predicted Trajectories of Constant Pressure Balloons at High Altitudes"
"The Effect of Local Surface Wind on Airborne Contamination Associated with Underwater Atomic Explosions Along the Los Angeles Coast"

A further interesting search involved the location of x-ray diffraction photographs for a number of uranium compounds referred to in report A-1277. This report originated in the SAM Laboratories at Columbia University in early 1944. Inquiry indicated that the files of the SAM laboratory had been transferred to K-25, where the originals of the x-ray diffraction photographs were located. On receipt of the photographs additional information on the type of camera used, its diameter, and the key to the codes used to identify the compounds had to be developed.

The program of the Audit and Inventory Unit proceeded routinely. The annual inventory of Research and Development reports was prepared and submitted to the A.E.C. on March 12, 1952, in accordance with the requirements of GM-176. The figures indicated a total of 33,263 Research and Development reports on the site, of which 37 were unaccounted for. Of this number, 31 were carried over from the previous inventory leaving only six additional documents unaccounted for during 1951. Since last year's inventory reported 75 documents missing, a carry-over of 31 meant that 44 documents reported missing in the previous inventory had been located during the year. Nine were found off-site through the circulation to other installations of our missing list (which was done again this year), six were declassified by the A.E.C. Declassification Branch at Oak Ridge, and the balance were located on site in the routine operation of the perpetual inventory program.

A notification was received from the Declassification Branch of the A.E.C. at Oak Ridge declassifying a number of missing documents which had presented a special problem. These were classified abstracts circulated to members of the former Manhattan Project Editorial Advisory Board, which had not been handled in accordance with standard procedures. However, enough information was assembled and submitted to permit their declassification and removal from accountability.

In connection with the inventory, work is going forward on the final disposition of document accountability between Hanford and the newly established document accountability and transfer station at the General Engineering Laboratory. A listing of all classified documents transmitted from Hanford to personnel at the General Engineering Laboratory was completed and forwarded. These documents were transmitted through KAPL since this was the only document accountability and transfer station in the Schenectady area at that time. Inasmuch as accountability for these documents is presently held at KAPL, it was suggested that when the inventory was complete, a transfer of document accountability be made between KAPL and General Engineering Laboratory. A similar listing of documents, previously submitted by the former Design and Construction Classified Files, was resubmitted to indicate documents transmitted from Hanford directly to General Engineering personnel and those transmitted through KAPL. The latter group will be handled as indicated above, and a transfer of accountability will be arranged between Hanford and General Engineering Laboratory on the remainder.

Review of Classified Files procedures, looking towards simplification and economies, continued. The writing of an operating manual for the Classified Files, which has been underway for some months, has focused attention on procedures. Furthermore, the consolidation with 760 Classified Files, necessitating coordination of procedures, has resulted in critical review and evaluation of differences.

Considerable effort was expended during the month in adjusting Classified Files registered delivery mail procedures to the new centralized Plant mail service being planned by the Office Services Unit. A number of meetings were held with Security and other interested personnel. The necessary procedures and forms were developed in preparation for the change effective April 1.

In order to reduce the typing time expended in preparing Inter-Area Document Transmittal forms for classified documents mailed to the outer areas, the use of the form was discontinued on a trial basis and the white and yellow copies of the standard route card, which accompany the document in any event, made to serve this purpose. The saving in typing time has been somewhat offset by the necessity of a telephone follow-up on delayed returns, but it appears that the volume of the latter will be reduced when the new mail service is organized.

Work on the development of a definite plant-wide procedure for the control of classified photographs is going forward. A number of area photographic facilities were visited with Security personnel and local problems reviewed. A draft of a proposed Organization and Policy Guide on the subject was written.

A further effort was made during the month to firm up permanently a procedure on approvals for off-site transmittal of "internal" reports, memoranda, correspondence, etc., which is a Classified Files problem of long duration. The proposed solution would involve the use of an approval form to be signed and delivered with the documents at the time of their issuance by Classified Files. This will allow individual Departments to establish internal procedures as required. A draft of an Organization and Policy Guide and a suggested form for this purpose were completed and forwarded for review by Department Heads.

In accordance with arrangements worked out by the Legal Department and Design and Construction Management, the contract files in the 760 Classified Files were transferred to the Supervisor of Contracts, Engineering Department, North Richland, for incorporation into a master contracts file being developed there.

Reports and Abstracting

The work statistics for the group were as follows:

	February	March (Through 3/14/52)
Ditto masters run	453	210
Mimeograph stencils run	1,051	696
Ditto masters prepared	18,280	9,729
Mimeograph copies prepared	55,518	62,846
Multilith masters typed	643	394
Multilith copies handled	53,960	37,627
Formal Research and Development Reports issued	11	8
Formal Reports in process	9	3
Reports abstracted	822	613
Volume of unclassified mail handled by the 300 Area Mail Room	34,235	15,122

On March 17, 1952, the 300 Area Mail and Duplicating Services, formerly under Reports and Abstracting, were transferred to the Office Services Unit, Utilities and General Services Department. This is in accord with the Plant policy of centralizing the administration of these services. The work volume statistics given, therefore, are inclusive only to this date. Otherwise, work proceeded routinely in the unit. Eight formal reports were published, and satisfactory progress made on the bibliographies in process.

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 covered by this report, notebook records, if any, kept in the course of their work have been examined for possible inventions or discoveries.

Inventors	Title
H.L. Rutan and A.C. Rediske	An Accelerator for Mercury or Oil Diffusion Pumps.

Signed J.W. Underwood
J.W. Underwood, Unit Manager

JWU:cf

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DESIGN SECTION

MARCH, 1952

VISITORS AND BUSINESS TRIPS

A. L. London, Stanford University, visited Hanford to discuss heat transfer problems.

N. A. Spector, Vitro Corp., visited here the week of March 10 to discuss Vitro progress on separations plant studies.

M. Magner, L. Bancroft, and R. P. Coon, du Pont, visited here March 24-25 to acquaint themselves with instrumentation problems at Hanford.

J. E. Brown and F. J. Champlin, G.E.L., visited Richland March 25 for consultation work on Project C-413.

V. D. Nixon and J. R. Wolcott visited Chas. T. Main March 11-14 to discuss progress on the water plant development study.

E. S. Day, with a representative of Manufacturing Department, visited
(1) Panellit Inc., Chicago, to inspect temperature and pressure monitoring systems (C-431-B).
(2) Bailey Meter Co., Cleveland, to inspect classified files in connection with 100 B, D and F power calculator systems.
(3) Foxboro Co., Foxboro, Massachusetts, to review power calculator system for 105-C reactor.
(4) Vitro Corp. to review instrument drawings schedule (C-431-B).
(5) Mine Safety Appliance Co. for Lira investigation (234-5).

Chas. L. Cobler visited Instrument Laboratory Inc., Seattle, to perform physical and electronic tests on water monitoring chambers (C-431-B).

E. P. Peabody visited Chas. T. Main March 6-8 to discuss electrical development for RDA-DC-6.

C. T. Drury visited Northwest Electronics Co., Spokane, March 5-6 in conjunction with communications equipment (C-431-B).

R. T. Jaske visited Witney & Associates, L. Bouillon and Associates, March 20 with representative of the Engineering Department Contract Group to consult with prospective architect-engineers.

J. M. Frame attended meetings of (1) A. I. Ch. E. in Atlanta, Georgia, and A. C. S., Buffalo, to recruit technical personnel.
(2) E. I. du Pont, Augusta, Georgia, for separations design consultation.

ORGANIZATION AND PERSONNEL

Personnel Statistics:

	March 1			March 31		
	Exempt	Non-Exempt	Total	Exempt	Non-Exempt	Total
Design Management	4	2	6	4	2	6
Process Engineering Unit	44	11	55	45	10	55
Design Planning Unit	9	7	16	9	9	18
Design Engineering Unit	60	13	73	60	18	78
Total Section Personnel	117	33	150	118	39	157
Technical Graduates (Rotational)	—	22	22	—	19	19
TOTAL	117	55	172	118	58	176

DESIGN DEVELOPMENT

Statistics:

The total number of engineering man months expended on research and development during the month of March is as follows:

		Man Months Expended	% of Total
RDA-DC-3	Reactor Development	18.8	39.0
RDA-DC-4	Separations - Design	11.1	23.0
RDA-DC-6	Water Plant	7.5	15.6
RDA-DC-7	Separations - Process	5.4	11.2
RDA-DC-9	234-5	1.8	3.7
Standards		3.6	7.5
TOTAL		48.2	100.0

Accomplishments:

RDA-DC-3 - Engineering Development Studies to Improve Design Bases for Future 100 Area Production Facilities

The development program with the Prepakt Concrete Company started at Hanford on March 11. Grout and high density concrete mixes proposed in Document HDC-2463 were found satisfactory. Densities over the specified values have been obtained. Compression, flexure, bond, shrinkage, and water content experiments have been made for several combinations of different grouts. Test Block I was prepared with coarse limonite and steel aggregate and pumped successfully.

Fabrication of a steel test [redacted] has been initiated at the Puget Sound [illegible]val Ship Yard and should be completed in approximately six weeks.

The program for proving the feasibility of the aluminum coated glass ball is continuing. A purchase order was placed with the Corning Glass Works for 400 lbs. of aluminum coated glass balls and 400 lbs. of uncoated glass balls. The coated balls are scheduled for shipment April 18, 1952.

Contract negotiations for test of a model downcomer for the effluent system were completed. Washington State College received the order to proceed on March 21, 1952.

Calculations of the activities of the "ink" solution were made for the operating cycle plan for 1952. The $K_2CR_2O_7$ corrosion inhibitor in the "ink" system results in fairly high activities. Tests will be run to determine the feasibility of using no inhibitor.

Discussions are in progress with the Aluminum Co. of America concerning the problem of fabricating the longer (47' 8") 2S H 14 clad process tube required for "X" type reactor.

RDA-DC-4 - Engineering Development Studies to Improve Design for Future Separations Facilities

The general building arrangement studies are being continued both as a part of extraction contactor evaluation and as a part of the evaluation of plant arrangements of various capacities. Cost estimates and drawings for three alternate longitudinal type canyon arrangements have been made: (1) a single equipment line of 137 ton uranium capacity (2) a single equipment line of 275 ton capacity (3) a dual equipment line with a capacity of 137 tons per line or 275 tons per plant. Drawings and cost estimates for six alternate plant capacities and arrangements are now in progress to aid in determining the most economical plant size from an overall viewpoint.

The evaluation and comparison of (1) the mixer settler and pulse column type contactors, (2) the jet orifice flow and pump rotameter control systems have been temporarily halted pending decisions on required plant capacity and the probability of critical mass occurring in both types of plutonium second cycle contactors.

Preliminary negotiations have been initiated for the rental of studio type television equipment for test work at Hanford. A formal request has been made to the AEC for permission to negotiate a rental contract with the du Mont Laboratories.

Fabrication of the improved 2" and 3" single and triple type crane connectors is progressing with delivery to Hanford scheduled for April 30, 1952. Preliminary study indicates that the expense of developing an 8" connector is not justified on the basis of presently anticipated plant equipment capacities.

The Vitro Corp. has completed a study of pulse mechanism simplification and the fabrication of "stripped down" remote vessels. Final reports on these two studies have been submitted to General Electric and are presently being reviewed and evaluated for use in the proposed expansion program. Preliminary reports have been submitted by Vitro on the engineering study of open canyon arrangement and remotely maintained rotating equipment.

RDA-DC-5 - Design Development Mechanization of the 300 Area Slug and Component Preparation Facilities

(Included in Project Section Report for March)

RDA-DC-6 - Process Water Cooling System Including Retention Basin, Design Development

The preliminary design development report on an improved water plant to serve two 1300-MW reactors was submitted by Chas. T. Main, Inc. and is now being reviewed. This report involves the process study of water plants which will supply a flow of 125,000 gpm to the reactor front face riser at 385 psig with provision for expansion to 140,000 gpm at 585 psig in the future.

Exploration drilling at the Coyote Rapids site continued during March. Nine test holes varying in depth from 40 to 125 feet have been completed.

Models were prepared for the F Area and H Area versus Coyote Rapids site comparison study.

Conferences were held with the Radiological Sciences Department during March to develop approved design for waste cribs to control contaminated process effluent.

The study of steel retention basin inlets and outlets is approximately 75% complete.

Work was continued on the bomb blast study. On March 5 a meeting was held to outline the magnitude of the problem and what is being done at Hanford Works together with a brief summary of what the Japanese atomic bombing experience shows we can do to improve new structures.

Document HDC-2518 was issued March 3. This document is a bibliography of material on protective construction which is currently available at the Hanford Works. The bibliography will be kept up to date. Considerable new material was received during the month of March.

RDA-DC-7 - Separations Process Engineering, Expansion and Improvement

The Purex Process flow diagrams have been revised and reissued in accordance with comments made by the Technical Section on the first issue. Approximately 50% of the engineering flow diagrams were revised in accordance with the above process flow diagram changes. About 75% of the engineering flow diagrams have been reviewed for coordination with the instrument engineering flow diagrams to confirm routings and instrument control functions.

Assistance to the Technical Section on the Recuplex process was continued with the preparation of the material balance flow sheet and engineering flow sketches required for the project proposal. Alterations were required to include the processing of the 224 Building product in the Recuplex facilities.

Work on improved waste treatment and disposal facilities continued during the month. Several storage tank designs have been reviewed for the most favorable economic comparison with the existing design. A vault type construction with individual tanks mounted independent of wall or roof structure appears to offer the most promise. This alternate is being studied further to obtain data for cost comparison purposes.

The capacity of the separations plant, required for processing Program "Y" irradiated uranium, was established for operation at both the 420 and 600 MWD/T enrichment levels. The increase in capacity required for the Redox Plant at the 420 enrichment level was also determined. This increase would be required to handle Program "X" production prior to completion of the proposed separations plant, and to avoid stock piling irradiated metal and reactivation of the 221-B plant (assuming 221-B plant is shut down prior to receipt of Program "X" production.)

RDA-DC-9 - Product Purification and Metal Fabrication Equipment

Work on the plutonium fabrication equipment development program was started with an investigation of RM Line operational difficulties. Representatives of the Manufacturing Department and Technical Section have been contacted for comments on the design and operation of the RM Line which started production during the month. A document containing proposed development items is being prepared for review by the Working Committee.

At a meeting held March 25 with representatives of Technical Section to discuss the possibilities of installing a continuous Gamma monitoring instrumentation test facility in 202-S,

Instrument Development

Drawings have been completed on a vacuum furnace for Technical Section for use with an X-Ray Spectrometer. Another similar furnace design for use in studies of expansion of materials by the Technical Section is nearly complete.

A metal vaporizer for the preparation of vacuum samples is being completed in the 300 Area instrument shop and is nearly ready for final tests. A dimpling press for preparing tungsten ribbon heaters for use in the vaporizer is being designed.

Program "X"

Basic process data were developed for use in the draft of a Preliminary Project Proposal entitled "Major Expansion of Hanford Works Production Facilities," (HDC-2526). The draft was completed and is now being reviewed. This proposal contains total cost estimates of $276,000,000 on the basis of the Coyote Rapids site for the reactor facilities (Case I) and $272,000,000 for the F & H Area sites (Case II).

Standards

The following Standards have been completed and will be presented for approval at the next HW Standards Committee meeting:

A. A-3-7 Fire Hydrants

B. E-5-12 Encasement Specifications for Underground Conduits, Crossing Railroads and Highways

C. E-5-13 Encasement Specifications for Underground Conduits, Crossing Railroads and Highways Type A Encasement

D. E-5-14 Encasement Specifications for Underground Conduits, Crossing Railroads and Highways Type B Encasement

E. C-4-4 Chain Gate

Work is continuing on the preparation of the Design Guides for (1) Valve Code (2) Valve Equivalent Code and (3) Piping Code, as well as revisions to miscellaneous existing Standards.

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DESIGN ENGINEERING

Statistics:

Design Engineering services were performed on projects, engineering orders, design orders, and specifications during the month. The total number of engineering man months expended in the several categories follows:

	Man Months Expended	% of Total
Reactor Projects	36.3	50.2
Major Projects - Other than Reactor	12.4	17.5
Minor Projects and Engineering Orders	23.0	32.3
TOTAL	71.7	100.0

The effect of the month's accomplishments on the design work load of the Design Engineering Unit in the several categories is given below.

	DESIGN ENGINEERING UNIT ENGINEERING MAN MONTHS			
	Backlog Start of Month	Orders Received During Month	Time Spent During Month	Backlog End of Month
Projects - Reactors	134.7		36.3	98.4
Major Projects - Others	44.0		12.4	31.6
Minor Projects and Engineering Orders	71.7	24.4	23.0	73.1
Research and Development	76.2		44.6	31.6
Standards and Specifications	6.5		3.6	2.9
TOTALS	333.1	24.4	119.9	237.6

Accomplishments:

Program "X" - Negotiations were carried on jointly with the AEC for selection of an architect-engineer for design assistance on the 105-X Building. Since it is recently becoming apparent that an architect-engineer's services may not be required, it is being proposed to place certain packages of mechanical design on a "design-and-fabricate" purchase order basis and to obtain consultant and special design services where additionally required.

Design is continuing on the "X" Reactor with the use of specially authorized funds. In terms of completed drawings, design of the reactor process unit progressed 3% during March to 7% of total completion. The 105 Building design was approximately 10% complete at the month's end, a reduction from February's report due to an increase in the number of drawings required. Basic design specifications for the reactor were completed during the month and submitted for approval of the Design Committee. A drafting schedule covering 90% of the process drawings has been issued. To date, approximately 10% of the detail design drawings have been issued for comment.

C-385 - Radio Metallurgy Building

Instrument design is approximately 95% complete. Remaining work will include inspection of panel fabrication and follow-up on orders placed for monitoring equipment. Vendors drawings of the aluminum exhaust stack for the building were checked and proved adequate.

C-406 - Phase II Mechanical Development Building

Preliminary design drawings and specifications submitted by Dix Steel Co. were reviewed and comments were forwarded to the Project Section.

C-431-B - 100-C Area Production Facilities

Design on C-431-B (C Area facilities) is in the final stages. Process Unit design for the reactor is essentially complete. All drawings and requisitions are complete with minor exceptions.

Design work on the fuel element examination facilities is moving ahead on schedule and all material for this facility is on hand or on requisition.

Scope work on the 105 crib is nearly complete, and scope drawings will be presented to the Working Committee the early part of April.

Recommendation has been made to the Working Committee that the top shield be placed by the Prepakt method.

A number of design deviations were made in connection with side thermal shield erection.

New liner cans were ordered for the horizontal rods to reduce the water annulus between liner and shell as a result of re-evaluation of the control reduction caused by the water annulus.

Instrument design is approximately 95% complete. Minor additions have arisen which will entail field engineering and drafting time.

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C-434 - New Bio-Assay Laboratory [redacted]

The Radiological Sciences Department has requested that work proceed on preparation of a revised project proposal. This proposal will include previously outlined design modifications and a new location for the building west of the Power House, Building 784. Rescoping is approximately 25% complete and is scheduled for completion April 18, 1952.

C-475 - Cross Header Pressure Monitoring

Design work is approximately 90% complete.

C-482 - Pile and Pile Water Plant Improvements

The original scope of work, as outlined by the Project Section, was revised during the month and the scope of the design work reduced.

C-492 - "Ink" Facilities at DR

Design is approximately 70% complete.

C-495 - Outlet Tube Temperature Monitoring Spare Thermocouple 105 B, D & F

Drafting instructions have been prepared and preliminary work started. Complete design information will be obtained after inspection is made during next shut-down in 105-F.

MWI-43 - Radiation Monitoring Offices - Addition 105-D Building

Final design of this building started March 17, 1952. Design is approximately 10% complete.

E.O 002714 - Recuplex Installation Building 234-5

Preliminary designs are being made of several possible types of 200,000-gallon waste storage tanks for cost comparison purposes. The nature of the material to be stored is such as to make unnecessary the deep burial and double wall construction of the present 200 Area tanks. The designs being considered are a partially buried tank with gravity flow, a partially buried tank with a sump pump and a tank similar to the present 200 Area waste storage tanks. A study has been made of the dissolver heating system to determine the most suitable type. On the basis of this study, a convection circulation, jacketed vessel with water indirectly heated by means of a steam coil will be recommended. A study of the exhaust ventilation requirements has been made indicating that the required volume may be obtained by means of a tie-in with an existing duct which is at present carrying only a fraction of its design capacity. An enlargement of the original scope has necessitated changes in process equipment which have retarded the flow of design criteria information on vessels and other equipment.

E.O. 002715 - Corrosion Test Laboratory Building - 108-B

Eight preliminary drawings for estimating and project proposal purposes were completed March 14, 1952. The drawings included layouts of the corrosion cup facilities and of the electro-chemical laboratory. A list of the required instruments was transferred to the Project Section on March 17.

E.O. 006015 - Graphite Production Facilities - 101 Building

Information is being assembled to make comparative cost estimates for rehabilitation of the existing 101 Building or construction of a new 101 facility.

E.O. 010706 - Area First Aid Building

Preliminary drawings have been transmitted to the Project Section for review by the Medical Department.

E.O. 010707 - Fire Protection Building 272-W and 277-S Annex

Preliminary design of a fire protection system was commenced.

E.O. 011180 - Additional Facilities 189-D Building

Preliminary drawings have been completed and prints issued for comment.

PROJECTS IN CLOSING STAGES

Design work on the following projects and engineering orders has been completed with the exception of as-builts, field liaison, minor design revisions, etc.

C-295 - Enlarging 251 Substation
C-361 - Part "C" UNH Lag Storage
C-412 - Extraction Facilities P-10-X
C-413 - Expansion of 234-5 Capacity
C-431-A - 100-C Water Works
C-438 - Ball Third Safety System
C-447 - Portable Meteorological Mast
C-479 - Replacement of Ducts, Outside Stairs - 700 Area Buildings
C-480 - Remodeling 722-C Building for Use as Office Machine Repair Shop
C-483 - Downcomer Revisions
E.O. 0011183 - Effluent Line Repair - 107-DR

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INACTIVE PROJECTS

No work was performed during the month on the following projects and engineering orders.

C-192 - Biology Building 108-F
C-441 - Solvent Building
C-452 - Meteorological Tower Elevator
E.O. 0010682 - Underground Steam Line

MONTHLY REPORT OF INVENTIONS AND DISCOVERIES

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

P H Beston

Manager, DESIGN

[redacted]

MONTHLY NARRATIVE REPORT - MARCH 1952

PROJECT SECTION

I. SUMMARY

A. ORGANIZATION

Extensive interviews were arranged and conducted with employees who were affected by the change of functions April 1, 1952.

Following is a summary of personnel data for the Project Section, March, 1952:

	Beginning of Month	End of Month	Net Change
Employees on Payroll	631	515	-116
Technical Grads-Rotational	4	7	+ 3
Employees on Loan to Section	5	5	0

The end-of-month status involved these changes:

	Project Section Personnel	Tech. Grad-Rotational
Payroll Additions	2	
Payroll Removals	69	
Transfers to Section	3	3
Transfers from Section	52	
Transfers within Section	10	

Of the 121 employees removed from the Project Section Payroll by termination and transfer, 100 were from the Project Services Unit, and 21 were from the four line units. Distribution of the employees removed was as follows:

	Transferred	Removed from Payroll	Total
Project Services Unit	40	60	100
All other Units	12	9	21
Total	52	69	121

Of the 69 employees removed from the Hanford Works Payroll, one accepted a transfer to the Lockland, Ohio plant; five accepted employment with the Atomic Energy Commission, and approximately 40 accepted employment with the operating contractor of the North Richland construction camp. These 46 placements were arranged prior to the effective date of payroll removals. Approximately half of the remaining employees had secured employment by the actual removal date. Ones not placed were:

One exempt (Concrete Inspector) and
Ten non-exempt (6 janitors and 4 drivers & helpers)

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B. SCOPE OF ACTIVITIES

Major projects attained construction completion status as follows: C-349, Hot Semiworks, 81%; C-361, Metal Conversion Facilities, 97.1%; C-362, Waste Metal Recovery (TBP), 82.2%; C-413, Expansion of 234-5 Facilities, 97%; C-431-A, 100-C Waterworks Facility, 50.1%; C-431-B, New Production Facility, 51.5%.

C. MATERIAL PROCUREMENT

During the month plans were completed to discontinue Project Section central control of critical materials. Announcement of changes was made in Supplementary Organization and Procedure Announcement No. 26, March, 1952.

D. CRAFT LABOR

Two jurisdictional disputes arose during the month. One resulted in a general work stoppage, the loss of 130,000 construction man-hours, and the filing of an unfair labor practice by the main CPFF contractor against the teamsters. Negotiations with boilermakers, and ironworkers showed little progress. The HAMTC renewed attempts to organize employees of the 3000 Area Steam Plant. The Ninth Circuit Court of Appeals overruled the NLRB decision on the Hewes case.

E. SAFETY

There was a decrease of all classes of injuries. Routine safety investigations were conducted.

F. HIGHLIGHTS OF UNIT ACTIVITIES

Minor Construction Management Unit completed six work orders and its assigned portions of C-404 (Power Lines to H.W. Lab. Area), C-416 (Minor Construction Combined Shops), C-469 (Front Tube Corrosion Mock-up). The Unit was assigned 12 new jobs estimated at $244,000. The dispute between the teamsters and pipefitters caused a loss of 25,000 man hours on Minor Construction work, or almost one-fifth of the total available time was lost.

Project Engineering Unit worked on 76 project items and 10 informal requests, totaling $22,879,000. Four new Project Proposals were transmitted to sponsoring organization. Four new Project Proposals, three revised Project Proposals, and three Informal Requests were approved by the A & B Committee and sent to the A.E.C. Two authorizations were granted by the A.E.C. Three projects and one engineering request were completed.

Project Services Unit completed preparation for turning over functions and responsibilities of the construction camp to the A.E.C. and the operating contractor. The Project History group was moved from the 700 Area to the 3000 Area. Four histories were issued. The Unit Cost function was transferred to the Minor Construction Management Unit. Inventories at the 3000 Area Steam Plant have been completed. Certain key people were retained to operate the 3000 Area Steam Plant.

Reactor Projects Unit has completed approximately 85% of the concrete required on C-431-A (100-C Waterworks). As-built drawings are being completed and acceptance tests are being re-written. On C-431-B (Production Facilities) both concrete and steel are 98% complete. The Gypsum Roof contractor completed his work March 14, 1952. "B" block assembly and tie straps are complete. Thermo-shields are complete. Other assemblies have reached the stage that packing of graphite is scheduled to begin April 9, 1952. A preliminary mock-up for the graphite was completed 3-10-52 and blocks were re-packed.

Separations Projects Unit completed Project C-418, Additional Waste Storage Facilities, 241-TY, except for two small items which depend upon completion of C-362. On C-362 (TBP) construction was advanced 6.6%, a gain of 2% on the schedule lag. The Project Proposal Revision V, on C-361, Metal Conversion Facilities, was approved by the A & B Committee and forwarded to the A.E.C. Despite the work stoppage, C-413, Expansion of 234-5 Facilities, was on schedule.

G.. MONTHLY REPORT OF INVENTIONS AND DISCOVERIES

All persons in the Project Section engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the best of their knowledge, no inventions or discoveries were made in the course of their work during the period covered by this report. Such persons further advise that note-books and records, if any, kept in the course of their work, have been examined for possible inventions and discoveries.

J. S. McMahon, Manager
PROJECTS

Date: March 31, 1952

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II. STATISTICAL AND GENERAL

A. SIGNIFICANT ASSIGNMENTS

1. Initial Reporting

C-496 - Recuplex Installation, 234-5 Building

Design was begun and advanced to 9%; construction has not begun. A Project Proposal has been submitted. During the month a major change in job scope occurred wherein the processing facilities were increased to handle product from the Bismuth Phosphate process.

2. Final Reporting

C-340 - P11 Project

The layaway work has been completed, and the P11 is in a safe layaway condition.

C-380-R - Electricity Metering - Village of Richland

Contract work has been accepted. Drawings are being revised to show work as installed. Closing notice is being prepared.

C-430-R - Rev. 2, Improved Lighting - 703 Building

All design and construction work has been completed.

C-469 - Front Tube Corrosion Mock-Up

The installation work has been completed and turned over to the Technical Section.

ER-A-1181 - Jacket Removal Facilities

All design and construction work has been completed. As-built drawings will not be provided.

3. Current Projects

C-349 - Hot Semiworks

Design had been completed previously; construction was advanced 7% to a total of 81%. The revised Project Proposal requesting $200,000 additional has been prepared for submission to the A & B Committee in April. All tanks for the Hot Process Building Cells have been placed, and process piping is being installed. Cartridges for the ventilation filters are installed. All off-site fabricated equipment has been delivered except the agitators, jets, and submersed pumps.

C-361 - Metal Conversion Facilities

Construction completion status for the entire project was advanced 3.1% to a total of 97.1%. The schedule for completion on April 1, 1952, was not met because work stoppages and the late delivery of three purchased items. Between March 15 and the end of the month, only 1% construction progress was made. Essentially no progress was made after March 22. The work remaining consists of interior painting, equipment installation and testing, and insulation of pipes.

Revision V to the Project Proposal was approved by the A & B Committee and forwarded to the A.E.C.

C-362 - Waste Removal and Recovery Facilities (TBP)

Design had been completed previously; construction was advanced 6.6% to a total of 82.2%. This advance represents a 2% gain on the schedule lag.

Atkinson-Jones has completed 89.1% of their work. Minor Construction forces have completed 57% of the assigned work. Work to be performed by General Electric on Phase I is 99.4% complete compared with 100% scheduled completion. Phase II is 45.4% compared with 80% scheduled completion.

General Electric was requested by the A.E.C. to assume responsibility for Phases III and VI.

Revision IV of the Project Proposal was submitted to the A & B Committee on March 19. After a special meeting of the A & B Committee to consider the request for authorization of $49,300,000, Revision IV was forwarded to the A.E.C. on March 31.

As-built drawings are being received from both the Vitro Corporation and General Electric designers.

C-406 - Mechanical Development Building (Phase II)

Design was advanced 10% to a total of 40%; construction has not begun. Preliminary plans and specifications were received from the architect-engineer on March 10. The requested comments will be forwarded in early April.

C-413 - Expansion of 234-5 Facilities

Of the portion of this work being done at Hanford, overall design was advanced 1% to a total of 95%; construction was advanced 12.9% to a total of 97%. Present completion status of General Engineering Laboratory's work is: overall design - 95%, construction 98.5%. July 1, 1952 has been scheduled as the completion date for all GEL work.

Although the five-day work stoppage impeded progress, the main C.P.F.F. construction contractor met his completion schedule of April 1, 1952.

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C-431-A - 100-C Waterworks Facility

Design had been completed previously; construction was advanced 8.3% to a total of 50.1%. Work on as-built drawings is progressing. Acceptance Test Procedures are being re-written. At the request of Manufacturing Department, the method of water treatment will be changed to employ alum and activated silica. Basic requirements and engineering calculations have been developed to conform to the changes.

To date 64,000 cubic yards of structural concrete and 16,000 yards of lean concrete have been poured. This is 85% of the estimated concrete requirements. At the 181-B Pump House, concrete work was completed except for pre-cast roof slabs and the access openings to the pipe tunnels. Base plates for the pumps are set and grouted. The 48" discharge header was in place, also the 30" tie header to the present 181-B system. Dredging and rip-rapping are complete. The 183-C Filter Plant has most concrete work completed, also structural steel erection. Filter equipment was essentially complete. The floor and first ring of clearwell No. 5 was substantially complete.

The 190-C Pump House building structure was complete except for a small part of the Transite siding. The transformer bank at the north side of the building was complete. Pump units Nos. 8 and 9 are being aligned preparatory to an extended test about April 20. Components for the ten pump assemblies have been received.

Subcontractors forces on 107-C Retention Basins and 187-C High Tanks resumed work March 3. They are making excellent progress. Floors of both basins were completed, and the lower rings of both were placed and partially welded. The north 187-C high tank supporting structure is being erected.

C-431-B - 100-C Production Facility

Design completion status remains at 99%; construction was advanced 10% to a total of 51.5%. Concrete placement and steel erection were about 98% complete. The Gypsum roofing contractor completed work March 14.

All "B" blocks, sub-assemblies, and tie straps were completed. Base cast iron and thermal shields on both sides were complete, and installation of biological shielding is proceeding. Gun barrel assembly was approximately 40% complete.

A preliminary mock-up of graphite for 105-C was completed on March 10, and all material is packaged and ready for final installation. Packing of the process unit is scheduled to begin April 9.

In the 115-B facilities concrete work was 98% complete. Equipment installation was begun March 31.

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C-433 - 384 Steam Plant Addition

Design was advanced 9% to a total of 92%; construction was begun and advanced to 2%. Preparatory work was begun March 3. A crew of 15 construction personnel was at work by the end of the month.

C-438 - Ball Third Safety System

Design had been completed previously; construction was advanced 1.5% to a total of 2%. The architectural phase of the 105-B battery room was completed. Construction was begun on the battery rooms of 105-D, 105-DR, and 105-F.

Minor Construction is fabricating special tools and equipment. A vendor has agreed to furnish the steel wire in a pickled and annealed condition satisfactory for working. The vendor expects to deliver 90,000 lbs. of steel balls by July 1.

Fabrication of balls for DR and H reactors will be held pending test work on glass balls. Approximately 400 lbs. of glass balls are expected by late April. A decision on their use should be reached in early May.

The Project Engineer and a purchasing agent visited the vendor of hopper and step plug units to interpret design specifications and to correlate work of the shielding vendor.

C-482 - Pile and Pile Water Plant Improvements

Design completion status was revised downward to 5%; construction has not begun. A review of the scope of the project was completed by the Working Committee. It was determined that greater benefits would be derived from modifying outlet fittings at 105-DR to a 5/8" minimum inside diameter and at 105-H to a 1" minimum inside diameter than by the previously proposed front face modification. The dual drive on the primary pumps of the 190-DR and 190-H Buildings is to be deleted. Revisions of the rear face are to be included, and design work on these revisions is being continued. A revised project proposal has been approved by the A & B Committee and forwarded to the A.E.C. The estimated total project cost is now $2,250,000 as compared to the original $3,250,000. The revised project proposal requested that the original allocation of funds $628,000) be applied to the revised scope. Funds for installation are to be requested in a future revision.

4. Research and Development Studies

RDA-DC-5 - Design Development, Mechanization of the 300 Area Slug and Component Preparation Facilities

Design was advanced 2% to a total of 32%; construction has not begun. It has been recommended to the Metal Preparation Section that a Project Proposal be submitted requesting funds to perform detailed design, fabrication, and installation of a mechanized slug canning and component preparation facility.

B. OTHER ASSIGNMENTS

C-187-E - Conversion of Unassigned Space for Radiochemistry Laboratory

Design had been completed previously; construction was advanced 3% to a total of 10%. Sheet metal partitions in the plenum area above the ceiling were installed. Almost all of the Hauserman partitions have been removed preparatory to installing the new ones. Material for piping is being accumulated on the job.

C-192 - Biology Laboratory 108-F

Completion status remains at design 98%, construction 88%. The revised project proposal is still awaiting A.E.C. authorization.

C-204 - Extension to Existing Kadlec Hospital and Medical Arts Building

Design had been completed previously; construction was advanced 2% to a total of 93% for the entire project. Construction of the six-room addition was about 30% complete.

C-404 - Primary Power Lines for Hanford Works Laboratory

Completion status remains at design 100%; construction 79%. The revised project proposal has been submitted to the A.E.C. Remaining work will be contracted with C-451 (300 Area Underground System).

C-410 - In-Pile Controlled Atmosphere Experiment

Design completion status remains at 95%; construction was advanced 2% to a total of 87%. A high radiation background at the X-1 level of 105-DR pile has necessitated relocation of the gas circulating equipment in the X-0 level. A new design is being prepared for the heater element.

C-412 - P-10-X Extraction Facilities

Design had been completed previously; construction was advanced 1% to a total of 99%. Remaining construction is installation of two lead glass windows. Facilities are being "run in" in preparation for final acceptance. Instructions on disposal of the second metal extraction line are expected soon.

C-418 - Additional Waste Storage Facilities

Except for completion of the steam line and completion of the road to barrier fence, construction of this project is complete. These items can be completed only after the large encasement belonging to Project C-362 is backfilled. It is planned to inspect the work April 1, and transfer it to the Manufacturing Department, with exceptions noted on the CDC form.

C-419 - Induction Heating Unit - Building 3732

Completion status remains at Design 100%; construction 0%. Installation of the unit is being considered for the new Metallurgical Laboratory, Project C-491.

C-423 - Additional Waste Evaporation Facilities - 200-E

Design had been completed previously; construction was advanced 1% to a total of 99%. Construction of BX and BY transfer facilities is complete except for minor phases.

C-424 - Water Quality Experimental Facilities

Completion status remains at design 95%; construction 87%. The ionization chambers have been fabricated and delivered to the job site.

C-430-Revision 2 - Improved Lighting - 703 Building

Design work on Part II was advanced 15% to a total of 80%; construction has not begun. The project for 85 additional rooms has been approved by the A.E.C.

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

Design had been completed previously; construction was advanced 15% to a total of 98%. The equipment was tested initially March 19. A report of the test is in preparation.

C-434-R - New Bio-Assay Laboratory

Design was advanced 1% to a total of 92%; construction has not begun. Design rescoping is in progress, and a project proposal is scheduled for completion in May.

C-441 - Solvent Building

Completion status remains at design 95%; construction 0%. The revised project proposal is still awaiting authorization from the A.E.C.

C-442 - X-Ray Machine - 3745-A

Design completion status remains at 95%; construction was advanced 4% to a total of 89%. Continued difficulties with operation of the machine have necessitated more contacts with the High Voltage Engineering Corporation. Present project completion date is July 1, 1952.

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

Completion status remains at design 100%; construction 60%. A revised project proposal has been submitted to the A & B Committee. The battery and chargers are being installed by plant forces.

C-447 - Portable Meteorological Mast

Design was advanced 3% to a total of 68%; construction was advanced 10% to a total of 20%. The triangular aluminum mast and the operational truck with the van body have been received. Instrumentation design and material procurement is progressing.

C-451 - Extension of 300 Area Underground Electrical Power Distribution System

Completion status remains at design 98%; construction 0%. Final plans and specifications have been completed and sent to the A.E.C. for incorporation in the bid assembly.

C-452 - Meteorology Tower Elevator

Completion status remains at design 100%; construction 0%. Lump-sum bids were opened, and the low bid exceeded authorized funds. Bids will again be requested on the basis of revised specifications.

C-454 - Spectrometer Shielding

Completion status remains at design 95%; construction 65%. A revised project proposal is being prepared.

C-455 - Replace Two Elevated Water Tanks in 200-E Area

Completion status remains at design 50%; construction 0%.

C-456 - Additional 13-Quad Telephone Cable - BY to Point "I"

Design had been completed previously; construction was advanced 7% to a total of 91%. Revision 2 for extension of completion date to June 1, 1952 has been approved.

C-457 - Pile Technology Office Building

Design had been completed previously; construction was advanced 2% to a total of 97%. A preliminary inspection has been held, although some items of ventilation equipment and partitions remain. The building is scheduled for use by April 15.

C-460 - Installation of Asbestos Siding and Painting Wood Trim - 272-E and W

Completion status remains at design 100%; construction 0%. Contractual difficulties delayed the beginning of work. Notice to Proceed was issued March 20, for construction to begin April 1.

C-461 - Maintenance Hot Machine Shop

Design had been completed previously; construction was advanced 60% to a total of 75%. A completion dateof July 1, 1952, has been established.

C-468 - Horizontal Rod Mock-Up Test Facilities - 189-D

Design had been completed previously; construction was advanced 10% to a total of 70%. The project proposal for extension of time has been submitted to the A & B Subcommittee. Lack of craft labor has delayed work on installation of prototype equipment.

C-470-R - 200-W Badge House Remodeling

Completion status remains at design 100%; construction 0%. Negotiations are progressing with the contractor to modify the original contract.

C-473-R - 100-B Automatic Dial Telephone Exchange

Completion status remains at design 75%; construction 0%. The project is still awaiting A.E.C. approval.

C-474 - Relocation of Exponential Facilities

Completion status remains at design 100%, construction 98%. The small exhaust fan has been received and is being installed.

C-477 - Building 284-W - Fifth Boiler Addition

Design was advanced 10% to a total of 25%; construction has not begun. Preliminary contractual and bonding arrangements were completed. The Notice to Proceed was issued March 14. The contractor has submitted a manpower schedule and a design and construction schedule. Flow diagrams and architectural plans are nearly completed.

C-478 - Area Fence and Minor Repairs Excess Material Warehouse - North Richland

Completion status remains at design 100%; construction 0%. Lump-sum bid opening is scheduled for April 11.

C-479 - Replacement of Docks and Outside Stairs - 700 Area Permanent Buildings

Completion status remains at design 95%; construction 0%. The completion of specifications is being delayed.

C-480 - Remodeling 722-C Building for Office Equipment Repair

Completion status remains at design 95%; construction 0%. Completion of specifications is being delayed.

C-483 - Downcomer Repairs in 100-B, D, DR and H and Replacement in 100-F

Design was advanced 35% to a total of 60%; construction has not begun. Final design drawings have been completed and are being routed for approval. Priority directives are being requested to secure shipping dates of AISI Type 502.

C-484 - 300 Area Administration Building

Completion status remains at design 10%; construction 0%.

C-489 - Positive Ion Accelerator

Completion status remains at design 10%; construction 0%. A revised project proposal has been forwarded to the A.E.C. The estimated cost of installing this facility in 300 Area is $242,000. An alternate location is Bldg. 189-F at an estimated cost of $212,000.

C-490 - Soil Science Laboratory

Completion status remains at design 10%; construction 0%. Further work depends upon scope change by the User Department.

C-491 - Metallurgy Laboratory, 300 Area

Design was advanced 70% to a total of 95%; construction has not begun. The project proposal was authorized by the A.E.C. March 14. Final design is being done on a work order basis. Equipment specifications have been completed, and lump-sum bid assemblies are being prepared.

C-492 - Experimental One-Tube Ink Facility

Design was advanced 45% to a total of 95%; construction has not begun. Final design drawings are being prepared for the electrical system, drains, and bayonet tube nozzle. Materials have been ordered, and work orders have been prepared for the field.

C-493 - Duct Level Safety Showers, Building 234-5

Completion status remains at design 100%; construction 0%. This work still awaits A.E.C. authorization.

* * * * * * *

The following studies and engineering requests, involving preparatory work and scoping of future projects, were active during the month:

ER-E-466 - Improved Lighting and Increased Electrical Capacity Miscellaneous 700 Area Buildings

Design completion status is 20%; construction has not begun. Project Proposal is being prepared.

ER-E-474 - New Permanent Civil Defense Center

No work has been done. Informal request for design funds has been submitted to the A.E.C.

ER-E-476 - Design and Specification for Improved Lighting, White Bluffs and 200-E and W Telephone Exchanges

No work has been done.

ER-A-557 - New Substation Fences and Grounding of Existing Fences

Design completion status is 40%; construction has not begun. Project Proposal has been forwarded to the A & B Committee.

ER-A-661 - Central Distribution Headquarters

Project Proposal is in preparation.

ER-A-663 - Pile Technology Test and Storage Building

Further work is awaiting information from Technical Section.

ER-A-666 - Insulation Floors and Ceilings - 700 Area Permanent Buildings

Investigation of this request has been stopped at the request of the sponsor.

ER-A-667 - Water Drainage Around 700 Area Buildings

No progress reported.

ER-A-671 - Crushed Rock and Oil Covering, 700 Area

No progress reported.

ER-A-673 - Floor Coverings - 700 Area Permanent Buildings

An estimate and a rough draft project proposal have been prepared.

ER-A-681 - Roads and Walks - 700 Area

No progress reported.

ER-A-682 - Underground Steam Line, 722-C and 707 Buildings

Further work is awaiting issuance of the 700 Area Steam Study.

ER-A-686 - Painting High Tanks - 105-B and 105-F

Work has been temporarily discontinued pending possible changes of scope by the Using Department.

ER-A-698 - Lubrication Pits, 100-D and 100-F Buildings

An estimate and a project proposal have been completed for presentation to the A & B Committee meeting in April.

ER-A-701 - White Bluffs Steam Plant, Automatic Firing

Since AEC assumed management of the White Bluffs Area on April 1, 1952, work on this project has been discontinued. All work done thus far is available to the Commission.

ER-A-702 - Exhaust System Alteration, 716 - 1131 Buildings

An informal request has been forwarded to the A & B Committee for the April meeting.

ER-A-703 - Sanitary Facilities - Surplus Sales Yard

A Project Proposal is being prepared.

ER-A-704 - Addition to Kadlec Hospital

Preliminary plans and a rough draft of the Project Proposal have been completed. This project is to be related to Program "X".

ER-A-705 - Rest Room Alterations, 700 Area Buildings

A survey has been completed and an estimate is now being prepared.

ER-A-706 - Area First Aid Buildings

Preliminary Architectural Design has been completed.

ER-A-707 - Fire Protection Buildings, 272-E and W

Scope of this project has been increased to include fire protection for 277-S annex.

ER-A-708 - Temperature Recording Stations

Preliminary estimates have been completed.

ER-A-709 - Replacement of Fire and Sanitary Water Tank, 100-D

Scoping is in progress.

ER-A-710 - Spare Parts Warehouse, 100-200 Areas

Scoping is in progress.

ER-A-711 - 711 Waste Storage Hut 234-5

Preliminary designs are being completed for the erection of a quonset hut. Work is to be performed by Minor Construction.

ER-A-712 - Richland Air Raid Shelter Study

Informal request is awaiting authorization of the AEC.

ER-A-1171 - Earthquake Detector

Project Proposal was submitted to the A & B Committee.

ER-A-1176 - Temperature Monitor Thermocouple Replacements, 100-B, D and F Areas

Transferred by top management to the Manufacturing Department.

ER-A-1177 - Additional Indication of Moderator Temperatures, 105-B, D, F, and DR

Approval of the Manufacturing Department has been received for a final project proposal.

ER-A-1179 - High Pressure Water Supply to Front Face, 100-B, D, F, DR and H Areas

A rough draft of the Project Proposal is being routed to the Reactor Section for comments.

ER-A-1180 - Additional Facilities in 189-D Building

Design work is 5% complete; construction has not begun. An informal request letter is being prepared.

ER-A-1182 - P-13 Pressure Assembly Removal

A final draft of the project proposal is being prepared.

ER-A-1183 - Repair of 105 Effluent Line Junctions with 107-DR

Design work is 25% complete; construction has not begun. The Project Proposal is being routed for signature.

ER-A-1184 - Replacement of 100-D Reactor Effluent Line

Design work is 5% complete; construction has not begun.

ER-A-1185 - Car Puller and Car Shake-Out

No design or construction work has been done. The Project Proposal will include pullers and shake-outs for all 100 and 200 Area power houses.

ER-2596 - Remodel Former Laundry Building for Engineering Offices

Design is 15% complete; construction has not begun.

ER-2710 - Start-Up Studies - RMA Line - 234-5 Building

Design is 85% complete; construction has not begun.

ER-2712 (IR-113) - Pile Technology Metallurgical Laboratory Alterations 234-5 Building

Completion status is design 100%; construction 0%. The Work Release was issued and received on March 20. Design drawings were approved and issued to the field.

ER-2713 - Ground Level to Roof Stairway - 224-U Building

Design is 40% complete; construction has not begun.

ER-2715 - Corrosion Test Laboratories, 108-B

Design is 30% complete; construction has not begun. Work is being done on cost estimates and a project proposal.

ER-2716 - Retirement of P-10 Facilities, 108-B

Design is 12% complete; construction has not begun. A project estimate is being prepared.

ER-2717 - Conversion of 108-B to Corrosion and Material Studies

No design or construction work has been done. Scope instructions are being prepared by the sponsor.

ER-2718 - Fire Protection 200-E and W Spare Parts Warehouse

Design is 20% complete; construction has not begun. Further action has been postponed at the request of the sponsor.

ER-6010 - Plant Manpower Forecast Including Program "X"

No work was done during March, and no further work will be needed.

ER-6011 (M-135) - 700 Area Steam Study

The study is 85% complete; it has been delayed for higher priority work.

ER-6012 - Hanford Works Standards Evaluation

This study is 60% complete, as a result of an informal survey.

ER-6013 - Piping Design Guides

Completion of the design guides has been delayed until additional information on valves has been received.

ER-6014 - Evaluation of Utilities and General Services Department Landlord Properties

A study was made in the Administration Area, but no conclusions have been reached.

ER-6015 - Graphite Production Facilities

This study is to determine method of machining graphite for Program "X" piles. Alternates being considered are:

1. New production facilities in one of the present 100 Areas.

2. Alterations to the present 101 Area facility. (Fire protection)

3. Erection of a new fire-proof warehouse at the present 101 Area site.

M-612 (IR-112) - Building 224 - Waste Diversion, 224 E & W

Design has been completed, construction has not begun. The sponsor has advised that the work in West Area should be completed by June 1, 1952.

M-713 (ER-A-1068) - Vertical Safety Rod Corrective Designs, 105-B, D, and F

Design is 65% complete; construction has not begun. The one-joint test model has been completed and will be tested soon. A drawing is being made of a complete test rod using the ball joint as a basis. Tentative plans are to test the complete rod assembly. Also a pile test of the poisoning effect will be made.

DECLASSIFIED

1211508

M-852 (IR-96) - Replacement of Air Lock Doors, 234-5 Building

Design has been completed; construction has not begun. All material has been requisitioned or purchased.

IR-115 (E-29) - Radiation Monitoring Addition to 105-D

This work has been authorized by the A.E.C. on the basis of friable construction.

AEC-117 (010) - Survey of Richland, Washington

Approximately 40 permanent monuments have been established on the city limits and the total project is approximately 55% complete.

C. RELATED SERVICES

1. Design Services

RDA-DC-3 and Program "X" continued to be the largest jobs in a steady workload of drafting. Total production was 240 new drawings, 38 charts and graphs, and 224 revisions. Average production was 6.7 man days per drawing.

Working conditions in the 760 Drafting Room have been reviewed, considering also the report from Plant Engineering, Manufacturing. No decisions have been made.

Reproduction output decreased slightly during March. Although there were more orders processed, total square feet of prints produced was 316,642. Square footage on Portagraph and blueprints increased slightly. The largest single orders were 6055 prints for C-431-B, and 6,530 prints for C-413.

Critical Materials Control functions were discontinued March 31, 1952. Plans were completed for direct submission of critical materials requirements to the Purchasing and Stores Section. An announcement of changes was made in Project Section SOPA #26, dated March 19, 1952.

The Project Control group continued preparation of the Construction Budgets for Fiscal Years 1953 and 1954.

Estimating services group completed 39 estimates. On March 3, the Unit Cost function was transferred to the Minor Construction Management Unit. Because of a critical space shortage in 700 Area, the Project History group was moved from the 700 Area to the 3000 Area on March 22. Four histories were completed and issued during the month.

2. Construction Services

Main activity for the month was centered on preparation for transfer of remaining functions. The A.E.C. assumed responsibility for issuance of work orders on March 28. The operation of North Richland Camp were turned over to the A.E.C. March 31. Duplicate occupancy cards were prepared for turnover to the operating contractor of the camp.

2. Construction Services (continued)

Exterior painting of the administration buildings in North Richland was completed.

Inventories on maintenance and operating material in the 3000 Area Steam Plant have been completed. Project Section personnel will continue to operate the Steam Plant.

Utility costs were gathered and distributed for billing to the Army and School District 400.

The population of North Richland decreased by 267 during the month, leaving a total of 5,887, exclusive of Army personnel. There were 15 commercial facility operators in North Richland with an estimated rent revenue of $5500. Routine safety investigations were conducted. There was a general decrease in all classes of industrial injuries, as well as automotive accidents. There were 21 fires reported, causing an estimated loss of $885. This was an increase of nine fires over February.

D. CRAFT LABOR

The teamsters walked off the job March 13, as a result of a jurisdictional dispute with the pipefitters. By reason of the teamsters' refusal to man the job, there was a shut-down of all construction activities. On March 25, during a second walkout of the teamsters, the prime CPFF contractor filed a charge of unfair labor practice against the teamsters. Approximately 130,000 construction manhours were lost by all crafts as a result of the strikes.

Another jurisdictional dispute occurred between ironworkers and pipefitters. Loss of time was negligible, but an ironworker foreman and steward were discharged. Two journeyman ironworkers resigned.

Voluntary terminations of CPFF construction contractors' personnel continued to increase sharply. Percentage of terminations in March was 5.8, an increase of 2% over February.

A net gain of 39 plumbers and welders (both still in critical supply) was made during the month. There remained 196 on requisition, including 53 welders.

The Davis Panel hearing on the boilermakers' dispute relative to travel and subsistence allowances was held in New York on March 3. The Davis Panel has not made recommendations.

On March 3, 1952, information was received that the Ninth Circuit Court of Appeals had overruled the NLRB decision on the Hewes case and found the main CPFF construction contractor not guilty of alleged unfair labor practices. (Hewes, an operating engineer, was discharged in 1948, upon demand of the Union, by the main CPFF construction contractor for failure to pay dues).

Negotiations with the ironworkers produced Union demands for a 15-cents-per-hour wage increase and double time for Saturday while the Project is on a six-day week. No agreement was reached during March.

The HAMTC has renewed attempts to organize personnel in the 3000 Area Steam Plant. Employees have received notice of a meeting for discussing union representation.

On the recommendation of the Construction Industry Stabilization Commission, the Wage Stabilization Board has approved a policy of wage increases for the building and construction industry for 1952. The basis of increase is to be a maximum of 15 cents per hour above the wages which resulted from application of the old 10% formula.

There was considerable improvement in the number of plumbers and pipefitters assigned to the C-431 projects in "C" Area. About 115 journeymen were gained, chiefly transfers from 200-West.

After their return to work March 3, the boilermakers showed excellent results compared with hours worked.

III. ORGANIZATION AND PERSONNEL

Following is a summary of the disposition of Construction Services functions during March, 1952:

As of March 1, Automotive and Construction Equipment Control functions, including Machine Tools, were assumed by the A.E.C.

At the end of March, Construction Safety and Fire Prevention responsibilities were transferred to the Plant Safety and Fire Protection Unit, Utilities and General Services Department. North Richland Commercial Facilities responsibility was transferred to the Community Real Estate and Services Department.

North Richland Realty, Work Order Control, and all other Construction Services functions (except the 3000 Area Steam Plant) were assumed by the A.E.C.

MEDICAL DEPARTMENT

MARCH 1952

General

Personnel Changes

The roll decreased from 276 to 273

Visits

Dr. Sachs attended the annual Washington State Health Officers' Meeting in Seattle.

Miss Elizabeth Peterson, State Department of Health regional consultant nurse visited to discuss problems of public health nursing.

Mr. Emil Jensen and Mr. Roger James, engineers with the State Department of Health, visited the department to discuss informally our domestic water supply

Dr. Albert Allen of the Central Washington Tuberculosis Hospital, held the quarterly clinic for Tbc in our public health office.

Industrial Medicine

Employee physical examinations changed little from 2085 to 2024. The small change in dispensary treatments was from 11371 to 10729.

"Cancer," the health topic for the month gives emphasis to subject which is being given local, state and national publicity this month.

One General Electric employee was treated for major injury and seven for sub-major injuries. Contractor employees sustained 22 major injuries and 14 sub-major injuries. Several contractor employees were treated for minor illness due to degreasing operations at 100 C with exposure to trichlorethylene vapor concentrations exceeding allowable tolerances. It was found necessary to hospitalize one of these men for treatment though no permanent damage is expected. Corrective measures are in progress following recommendations of the industrial hygienist.

The rate of sickness absenteeism for March was 2.20% as compared to 1.94% for February and 1.91% for January. The trend has been upward since June 1951.

Kadlec Hospital

The average daily census decreased from 110.1 (94.7 adults, 15.4 newborn) to 103.1 (90.5 adults, 12.6 newborn.) The census was high at 112 a year ago due to an epidemic of "Flu" at that time.

The occupancy rate for mixed services (all services except obstetrics) was 84.6.

Nursing hours per patient day were 3.57 for the mixed services and 4.19 for obstetrics.

Public Health

A mild epidemic of german measles has subsided to be followed by a rise in the incidence of mumps.

The radio series, "The Story of Empire County," has begun and will continue to be broadcast for a 13-week period. The Public Health Section and physicians in the community are participating in this health educational program.

Mosquito control activities were initiated during the latter part of the month.

The social service counselors spent much time discussing with the school teachers methods of handling abnormal behavior problems in pupils.

A four week movie panel discussion program has been worked out with the pre-school PTA in an effort to establish better understanding of the emotional growth and development of children.

1216512

MEDICAL DEPARTMENT

MARCH 1952

General (Continued)

Costs (February)

Medical Department costs before assessments to other departments were as follows:

	January	February	February Budget
Industrial Medicine (Oper.)	$36,029	$34,354	$37,705
Public Health (Oper.)	10,556	9,910	11,853
Kadlec Hospital (Net)	24,776	20,340	25,742
Hospital Expense Credits	3,081	3,958	2,180
Subtotal-Medical Dept. (Oper.)	74,442	68,562	77,480
Construction Medical (Industrial and Public Health)	18,152	16,851	18,517
Total Operations and Construction	92,594	85,413	95,997

The net cost of operating the Medical Department before assessments to other departments was $85,413, a decrease of $7,181 and $10,584 below the budget.

Gross costs were decreased in all sections because of the shorter work month. The decrease in hospital revenue was less than the decrease in costs, resulting in a decrease in net cost of $4,436.

1216513

MEDICAL DEPARTMENT

MARCH 1952

Industrial Medical Section

General

Medical examinations remained about the same as for the previous month, 2024 as compared to 2085. Dispensary visits decreased from 11,371 to 10,729. The decrease of 642 visits was about equally divided between construction and operations visits. The 200 W station had 1603 visits during the month, an increase of 130 visits over February. Should this volume continue additional personnel will be required for medical service at this location. General Electric employees sustained 1 major injury and 7 sub-major injuries. Contractor employees sustained 22 major injuries and 14 sub-major injuries.

Dr. Russell, industrial physician, discontinued full time employment March 31st and will continue to work on a half time basis.

Dr. Brockman reported on the AEC Biology and Medicine Divisions' general information meeting held at Brookhaven, at the Industrial Physicians' Scientific Meeting on March 26. A general discussion of the papers reported on followed.

The Chemical Hazards Committee met on March 28. Exposure to trichlorethylene has occurred to some construction workers at the 100 C degreasing location. Working atmospheric levels were found to be above tolerance and corrective action was taken. The cases seen have as yet revealed no findings which are believed to be irreversible.

The Health Activities Committee met on March 20 and the health topic on "Cancer" was presented. Material on this subject was prepared for distribution throughout the plant.

The combined sickness absenteeism for both weekly and monthly roll employees was 1.94% for the month of February.

The net cost of operations for February as compared with January showed a decrease of $1,783, due chiefly to the shorter work month. Gross costs totaled $35,172 as compared to $36,953 in the month of January, a decrease of $1,781. These costs consist of the following items:

	February	January	Increase (Decrease)
Salaries	$ 25,587	$ 26,587	(1000)
Continuity of Service	2,470	2,567	(97)
Laundry	351	338	13
Utilities, Transportation, Maintenance	3,030	3,578	(548)
Supply and Other Costs	3,734	3,883	(149)
Gross Operating Costs	35,172	36,953	(1781)
Less: Revenue	818	924	(106)
Expense Credits	5,287	5,199	88
Net Cost of Operations	29,067	30,830	(1783)

1216514

MEDICAL DEPARTMENT

MARCH 1952

Industrial Medical Section (Continued)	February	March	Year to Date
Physical Examinations			
Operations			
Pre-employment	84	87	286
Rehire	12	11	31
Annual	244	268	779
Interim	94	108	276
A. E. C.	35	37	110
Re-examination and rechecks	86	80	242
Termination	178	200	518
Sub-total	733	791	2242
Contractors			
Pre-employment	227	235	669
Rehire	231	211	690
Recheck	79	67	226
Termination & Transfer	748	781	2131
Interim	6	0	17
Sub-total	1291	1294	3733
Total Physical Examinations	2024	2085	5975
Laboratory Examinations			
Clinical Laboratory			
Government	134	139	405
Pre-employment, Termination, Transfer	3611	3767	10943
Annual	1492	1526	4717
Recheck (Area)	555	585	1684
First Aid	14	51	116
Clinic	560	718	1904
Hospital	4648	5057	14784
Public Health	26	32	67
Total	11040	11875	34620
X-Ray			
Government	29	26	105
Pre-employment, Termination, Transfer	548	553	1687
Annual	260	275	811
First Aid	260	197	762
Clinic	303	298	1012
Hospital	336	383	1114
Public Health	4	15	19
Total	1740	1747	5510
Electrocardiographs			
Industrial	35	25	85
Clinic	9	9	27
Hospital	54	46	155
Total	98	80	267

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MEDICAL DEPARTMENT

MARCH 1952

Industrial Medical Section (Continued)	February	March	Year to Date
First Aid Treatments			
Operations			
New Occupational Cases	384	449	1266
Occupational Case Retreatments	1336	1503	4409
Non-occupational Treatments	3309	3364	9659
Sub-total	5029	5316	15334
Construction			
New Occupational Cases	940	912	2745
Occupational Case Retreatments	4008	3404	11114
Non-occupational Treatments	1363	1061	3596
Sub-total	6311	5377	17455
Facility Operators	31	36	103
Total First Aid Treatments	11371	10729	32892
Major Injuries			
General Electric	0	1	3
Contractors	30	22	72
Total	30	23	75
Sub-major Injuries			
General Electric	0	7	9
Contractors	13	14	42
Total	13	21	51
Absenteeism Investigation			
Total No. calls requested	13	11	55
Total No. calls made	13	11	55
No. absent due to illness in family	0	0	1
No. not at home when call was made	0	1	7

1216516

MEDICAL DEPARTMENT

MARCH 1952

Hospital Section

General

The average daily adult census decreased from 94.7 to 90.5, as compared to 97.7 a year ago. This represents an occupancy percentage of 80.8 broken down as follows: Mixed Service (Medical, Surgical, Pediatrics) 84.6%; Obstetrical Service 64.3%. The minimum and maximum daily census during the month ranged as follows:

	Minimum	Maximum
Mixed Service	52	95
Obstetrical Service	7	23
Total Adult	63	107

The average daily newborn census decreased from 15.4 to 12.6, as compared to 14.3 a year ago.

Nursing hours per patient per day:

Medical, Surgical, Pediatrics	3.57
Obstetrical	4.19
Newborn	2.85

The ratio of in-patient hospital employees to patients (excluding newborn) for the month of February was 1.80. When newborn infants are included the ratio is 1.55.

The net expense for the operation of Kadlec Hospital for February was $20,340., as compared to $24,776 for January. Summary is as follows:

Kadlec Hospital net expense $20,340.
This is a decrease of $4436 due primarily to a shorter work month. Salaries and supplies decreased more than the reduction in revenue. The higher patient census compensated in part for the shorter month. Expenses dropped $5,313., revenue decreased $1,754. and expense credits increased $877.

Continued progress is being made on the 6-room addition to the Medical Wing. The framework is up and the roof and sides are on. It is expected that interior work, such as plastering, will begin very soon.

1216517

MEDICAL DEPARTMENT

MARCH 1952

Hospital Section (Continued)	February	March	Year to Date
Kadlec Hospital			
Average Daily Adult Census	94.7	90.5	92.2
Medical	31.0	30.1	30.5
Surgical	33.9	33.2	34.5
Pediatrics	14.2	13.7	13.9
Mixed	79.1	77.0	79.1
Obstetrical	15.6	13.5	13.3
Average Daily Newborn Census	15.4	12.6	12.3
Maximum Daily Census:			
Mixed Services	94	95	95
Obstetrical Service	20	23	23
Total Adult Census	110	107	110
Minimum Daily Census:			
Mixed Services	66	52	52
Obstetrical Service	9	7	7
Total Adult Census	83	63	63
Admissions: Adults	563	635	1804
Discharges: Adults	566	627	1773
Newborn	99	82	244
Patient Days: Adult	2746	2806	8399
Newborn	447	391	1116
Total	3193	3197	9515
Average Length of Stay: Adults	4.9	4.5	4.7
Medical	5.6	5.2	5.4
Surgical	4.5	4.1	4.4
Pediatrics	5.3	4.4	4.8
Mixed	5.0	4.5	4.8
Obstetrical	4.2	4.3	4.3
Newborn	4.5	4.8	4.6
Occupancy Percentage: Adults	84.6	80.8	82.3
Medical	106.9	91.2	92.4
Surgical	116.9	114.1	119.0
Pediatrics	49.0	43.8	47.9
Mixed	90.9	84.6	86.9
Obstetrical	62.4	64.3	63.3
Newborn	59.2	48.5	47.3
(Occupancy Percentage based on 112 adult beds and 26 bassinets.)			
Avg. Nursing Hours per Patient Day:			
Medical, Surgical, Pediatrics	3.57		
Obstetrics	4.19		
Newborn	2.85		
Avg. No. Employees per Patient (excluding newborn)	1.80		
Operations: Major	84	84	259
Minor	95	92	294
E.E.N.T.	75	86	245
Dental	1	1	4
Births: Live	97	90	252
Still	1	1	4

1211518

MEDICAL DEPARTMENT

MARCH 1952

	February	March	Year to Date
Kadlec Hospital (Continued)			
Deaths	7	4	16
Hospital Net Death Rate	.15	.28	.35
Net Autopsy Rate	42.9	75.0	62.5
Discharged against advise	0	4	4
One Day Cases	132	155	408
Admission Sources:			
Richland	76.7	76.4	75.9
North Richland	10.7	12.1	12.3
Other	12.6	11.5	11.8
Admissions by Employment:			
General Electric	71.8	71.8	70.7
Government	2.5	2.7	2.4
Facility	6.6	6.0	6.5
Contractors	14.0	14.8	14.6
Schools	.9	1.8	1.8
Military	.9	.5	.9
Others	3.3	2.4	3.1
Hospital Outpatients Treated	494	459	1352
Physical Therapy Treatments			
Clinic	222	262	690
Hospital	184	80	320
Industrial: Plant	221	254	743
Personal	8	7	24
Total	635	603	1777
Pharmacy			
No. of Prescriptions Filled	3233	3338	10018
No. of Store Orders Filled	692	771	2306
Patient Meals			
Regulars	4660	4353	13349
Children under 8	472	627	1791
Specials	1396	1525	4438
Lights	0	1	1
Softs	927	952	2860
Tonsils	145	155	464
Liquids	124	187	589
Surgical Liquids	84	91	265
Total	7808	7891	23757
Cafeteria Meals			
Noon	1761	1926	5534
Night	255	263	804
Total	2016	2189	6338

1216519

MEDICAL DEPARTMENT

MARCH 1952

Public Health Section

General

Although the incidence of communicable diseases dropped slightly, a rise has been experienced in the incidence of mumps. It appears that the mild epidemic of German Measles has run its course and we are now facing the spread of mumps in the community. Random blood samples taken from Richland residents as samples for influenza virus still show positive reports for A in addition to A prime.

With the decrease in the number of communicable diseases reported, the home nursing visits have also dropped by approximately 10%.

The radio series, "The Story of Empire County," has begun and will continue to be broadcast for a 13-week period over station K.W.I.E. This section and physicians in the community are participating in this program.

A four-week movie panel discussion program has been worked out with the pre-school PTA in an effort to establish better understanding of the emotional growth and development of children. A series of four movies will be shown with discussion by panel of local resource persons from both our section and Kadlec hospital's staff.

The Health Officer attended a Washington State Health Officers' meeting in Seattle where problems of communicable disease control, medical care, health legislation, civil defense and economic security were discussed on a state level.

Miss Elizabeth Peterson, State Department of Health Regional Consultant Nurse, visited this section for several days to discuss problems of public health nursing as related to our public health program.

Mr. Emil Jensen and Mr. Roger James, engineers with the State Department of Health, visited the department to discuss informally our domestic water supply.

Dr. Albert Allen of the Central Washington Tuberculosis Hospital, held the quarterly clinic for Tbc in our office.

Restaurants in this area were inspected. It was necessary to degrade one establishment because of insanitary conditions.

Fourty-six dairy farms were inspected, with two being degraded because of high resazurin grade. One shipper has installed a pipe line milker which is new to this area and which is an advance in dairy engineering. Results of bacteriological analysis of pasteurized samples were satisfactory.

Considerable time was spent relative to dog bites, vermin and rodent control. Information and advice regarding control measures was given to the residents.

1216520

Public Health Section (Continued)

Mosquito control activities were initiated during the latter part of the month. Activities thus far have consisted chiefly of clearing and burning accumulations from various drainage ditches in the periphery of the village which are conducive to mosquito breeding. A large drainage problem in clear lake area is being completed. Plans are being made to do some pre-hatch treatment in the near future with 5% DDT.

Results of the bacteriological analysis of water and sewage samples were satisfactory.

During March, the Social Service Counselors were active in direct work with the schools. At the School Health Council, general principals of understanding children's behavior were discussed. This was followed by individual conferences throughout the month with teachers who were concerned about the particular behavior of children in their classrooms.

The Counselors also met with two PTA groups discussing situations concerning children.

1211521

MEDICAL DEPARTMENT

MARCH 1952

Public Health Section (Continued)	February	March	Year to Date
Education			
Pamphlets distributed	10,000	10,000	29215
News Releases	3	1	4
Staff Meetings	1	1	3
Classes	17	10	28
Attendance	529	406	953
Lectures & Talks	11	16	37
Attendance	473	741	1490
Films Shown	37	5	75
Attendance	1987	112	5217
Community Conferences	24	17	55
Radio Broadcasts	3	0	3
Immunizations			
Diphtheria	16	2	51
Diphtheria Booster	243	30	407
Tetanus	59	27	161
Tetanus Booster	278	17	378
Pertussis	2	6	13
Pertussis Booster	1	3	8
Smallpox	41	9	65
Smallpox Revaccination	351	230	900
Tuberculin Test	0	0	5
Immune Globulin	8	15	23
Other	0	2	2
Social Service			
Cases carried over	67	72	209
Cases admitted	18	18	57
Cases closed	13	17	54
Remaining case load	72	73	212
Activities:			
Home Visits	1	4	16
Office Interviews	227	239	626
Conferences	74	50	202
Meetings	9	4	20
Sanitation			
Inspections made	146	126	337
Conferences held	28	49	97
Bacteriological Laboratory			
Treated Water Samples	173	178	512
Milk Samples (inc. cream & ice cream)	12	11	35
Other bacteriological tests	266	293	826
Total	451	482	1373

1211522

MEDICAL DEPARTMENT

MARCH 1952

Public Health Section (Continued)	February	March	Year to Date
Communicable diseases			
Amoebic Dysentary	4	0	4
Chickenpox	16	9	45
Erysipelas	1	0	1
German Measles	168	129	377
Gonorrhea	2	3	6
Influenza (U.R.I.)	0	1	1
Infectious Mononucleosis	0	3	3
Measles	0	0	2
Mumps	34	56	93
Pediculosis	1	0	1
Pinkeye	12	5	18
Rheumatic Fever	1	0	1
Ringworm	2	0	6
Scabies	1	0	1
Scarlet Fever	10	4	23
Thrush	1	0	1
Tuberculosis	1	1	2
Total	254	211	585
Total No. Nursing Field Visits	1166	1090	3049
Total No. Nursing Office Visits	276	251	712

1216523

MEDICAL DEPARTMENT PERSONNEL SUMMARY

March 31, 1952

		Physicians	Nurses	Anesthetists	Nurse Aides	Orderly & Am.Dr.	Technicians - Clin.Laboratory	Tech. - X-Ray	Tech.-Bac. Lab.	Tech.-Phy. Ther.	Secretary	Steno-Typist	Office Mach.Opr.	Telephone Opr.	General Clerk	Pharmacist	Dietitian	Cook	Kitchen Worker	Social Serv.Couns	Sanitarian	Health Educator	Janitors	Records Supv.	Adm. & Assistant	Others	TOTAL
1100 Area	Department Admin.	2	2								2	1		3	5									1	2	1	19.0
	Industrial	3	8		1							2	1		6.975								5.4				27.4
	Hospital	2	*61	3	26	6	5.4	4	1	2		3			9.5	4	2	5	11				7			6	157.9
	Public Health	1	8		1							2			1.125					2	2	1	.6				18.7
Outlying Areas	Industrial	2.7	1				1	1							7.4								.7				13.3
	Public Health		2																				.3				2.3
	300	.2	2				.2								.333												2.8
	100-B	.1	1												.25												1.4
	100-D	.1	4				.2								.25												4.5
	100-H	.1	1				.2								.25												1.5
	100-F	.1	4				.2								.25												4.5
	200-E	.2	4				.2																				4.4
	200-W	.3	5				.6								.333												6.2
	White Bluffs		1																								1.0
	101		1																								1.0
	100-C	.2	3												1												4.2
	M. J.-4		2												.333												2.3
	TOTAL	12	110	3	28	6	8	5	1	2	2	8	1	3	33	4	2	5	11	2	2	1	14	1	2	7	273

* Three part-time nurses included

Number of employees on roll:

Beginning of month	276
End of month	273
Net decrease	3

1216524

Radiological Sciences Department [redacted]

RADIOLOGICAL SCIENCES DEPARTMENT

MARCH 1952

Summary

The number of radiation incidents (two in Class II and seven in Class I) continued to exceed the experience of previous years. In particular, the number of cases in which improper attention to the wearing or handling of personnel meters was noted remained high. None of the exposure incidents was such as to cause serious concern.

The escape of radioactive particles, whose activity was primarily due to ruthenium isotopes, was an essentially new hazard introduced by the Redox process.

In other respects, personnel monitoring and environmental hazard monitoring results showed no noteworthy deviation from established patterns.

The applied research in biophysics and biology proceeded satisfactorily without unusual findings. A promising device for the radiological monitoring of fission products in reactor effluent by determination of radioactive noble gase content was also applied to the prompt detection of ruptured slugs. Such a unit was installed in a reactor that had been a fruitful source of ruptures, whereupon the reactor disobligingly operated without a rupture for one month. This prevented direct proof of the sensitivity for this application.

1210525

RADIOLOGICAL SCIENCES DEPARTMENT

MARCH 1952

Organization

The composition and distribution of the force as of 3/31/52 was as follows:

	100-B	100-D	100-F	100-H	200-E	200-W	300	700	P.G.	Total
Supervisors	0	0	3	0	1	6	11	5	0	26
Engineers*	1	0	35	0	5	22	17	5	0	85
Clerical	0	0	5	0	1	2	4	4	0	16
Others	14	4	46	3	35	63	54	10	7	236
Total	15	4	89	3	42	93	86	24	7	363

* includes chemists, biologists, etc.

Number of employees on Payroll	March 1952
Beginning of month	365
End of month	363
Net decrease	2

The reduction in personnel is contrary to the budget forecast, results from slowness in effecting new hires, and leaves the department critically understaffed.

General

An unexpected deposition of radioactive particles was quickly proved to be of local origin by new techniques that differentiate between "Hanford" particles and "Nevada" particles. The contaminant proved to be ruthenium isotopes, which appear to be taking over the position of prominence in waste disposal formerly enjoyed by I^{131}.

A device conceived for the measurement of fission products in reactor effluent water, by flushing out the radioactive noble gases, appeared to have considerable promise for the early detection of ruptured slugs. By chance, the installation of such a device in one of the reactors was followed by a long and

General - continued

still continuing period of freedom from rupture. If the early tests prove to be encouraging, further development for slug rupture would be referred to the appropriate subdivision of the Engineering Department.

In a general program to reduce the length of this report, such details as the job positions of personnel additions, and the list of visits to other installations, will henceforth be omitted. That portion of the information that appears to be significant for record purposes has been found to appear elsewhere in the composite monthly report.

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
H.J. Carter	-	Sonic Fluid Level Instruments
H.J. Carter	-	Fluorescent Material Discriminators

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Radiological Sciences Department

RADIOLOGICAL RECORDS AND STANDARDS SECTION

1. Radiation Monitoring Services

General Statistics

	February	March	Year To Date
Special Work Permits	781	910	2152
Routine & Special Surveys	1547	1438	4345
Air Samples	1368	1701	4149
Skin Contamination Cases	76	93	223

High level air contamination made it necessary to require assault masks throughout the 222-S building on two occasions. In one case, radioruthenium (10^{-8} µc/cc maximum) from the 202-S exhaust stack was drawn into the building by the air supply fans. In the other case, airborne plutonium (8×10^{-10} µg/cc maximum) was detected throughout the building from a source as yet undetermined.

An employee of the Separations Section in the 231 building was found contaminated with plutonium after reporting to work on March 28, 1952. Evidence indicated that the contamination had been received the previous day, and surveys of two homes in Richland, one home in Kennewick, two privately-owned vehicles, and several plant busses, were required. Only very low contamination spread outside the barricade was detected. Following another incident at 100-H, it was necessary to survey the passengers of a bus after arrival at the 1100 Area bus lot. One passenger had low level shirt contamination. It was also necessary to survey photographic equipment and one vehicle at building 69-X in Richland when a photographer failed to have his equipment checked when leaving a contaminated zone in one of the pile buildings.

2. Standards

Two Class II incidents, and seven Class I incidents were reported during March. The Class II incident (#31) involved skin exposures to two Reactor Section personnel at 105-H of approximately 625 mrep and 1 rep, resulting from significant contamination of personal clothing.

Incident #32 concerned a possible exposure of 590 mrep to a Separations Section employee, who performed work in the 241-TX tank farm without

2. Standards - continued

proper monitoring. The exposure record was obscured by improper handling of personnel meters.

Among the Class I incidents; Incident #197 involved significant personnel and work area contamination with plutonium, resulting from a process vessel explosion in 235 building. Incident #198 covered improper handling of a contaminated personnel meters badge in 222-S, resulting in loss of exposure record for a 9-day period. Incident #199 involved operational failure of the ruthenium scrubber in the Redox process, causing release from the stack and subsequent recirculation into 202-S and 222-S buildings of significantly contaminated air. Incident #200 resulted from a blowback from an operating cell to the Redox operating gallery, causing high exposure rates, significant air contamination, and several cases of skin and personal clothing contamination. A Separations Section informal investigation in February was reclassified as Radiological Sciences Incident #201, Class I, and involved Redox canyon entry with the dissolver cell uncovered by a supervisor without radiation monitoring. Incident #202 involved the plutonium contamination spread from 231 building to Richland, explained above. Incident #203 concerned work in a Redox sample gallery without adequate monitoring or timekeeping, and failure to wear personnel meters badge during this work.

Radiological Sciences Department

3. Exposure Records

(a) Personnel Meters, and Records and Photometry

Pencils

Area	Single Readings 100-280 mr	Paired Readings 100-280 mr	Single Readings Over 280 mr	Paired Readings Over 280 mr	Lost Readings	Pencils Read
100-B	80	1	52	3	1	17,936
100-D	120	0	69	0	1	17,940
100-F	112	0	46	0	0	16,100
100-H	29	0	21	0	1	11,948
200-E&N	125	0	77	0	1	30,234
200-W Const.	74	0	51	0	1	15,930
200-W	180	3	140	0	1	41,036
Redox	126	0	102	1	1	23,838
300	161	1	87	3	1	43,278
Total	1007	5	645	7	8	218,240
Year to date	2,642	17	1,737	16	43	575,690

Of the 12 significant pencil readings, one was confirmed by badge result, and indicated the overexposure investigated in Class II Incident #32. In the other 11 cases, the badge result indicated insignificant exposure. Of the 8 lost pencil readings, the badge result showed exposure to be within permissible limits in 4 cases. In the remaining 4 instances, the badge reading was also lost, but investigations completed on 3 cases showed low probability of significant exposure; investigation is still in progress in one case. The two investigations still in progress at the end of the preceding reporting period were completed, and showed low probability of significant exposure.

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3. Exposure Records - continued

Badges

Area	Number Readings 100-300-mrep	300-500-mrep	500-1000 mrep	Over 1000 mrep	Lost Readings	Badges Processed
100-B	15	0	0	0	1	2,981
100-D	8	0	0	0	4	3,031
100-F & P11	109	3	1	0	0	2,575
100-H	6	0	0	0	3	2,340
200-E	13	1	0	0	0	2,627
200-N&RRT	0	0	0	0	0	581
200-W	19	3	1	0	2	5,331
Redox	47	2	0	1	2	2,829
300	160	4	1	0	3	7,306
224-U	1	0	0	0	0	2,202
Total	378	13	3	1	15	31,846
Year to date	1,450	33	4	1	45	102,490

Of the 17 readings of 300 mrep or over, two were overexposures occurring in the Class II Incidents #30 and #32. Investigations of the other 15 readings were complete in 8 cases, which indicated that exposure was within permissible limits, and were still in progress in the remaining 7 cases. Review of the 15 instances of lost badge results shows:

2 cases, pencils also lost, investigation indicates low probability of significant exposure.
7 cases, pencil results and investigation indicates low probability of significant exposure.
4 cases, pencils show no gamma exposure exceeding permissible limits; investigation in progress.
1 case, pencils not required; investigation in progress.
1 case, pencils also lost; investigation in progress.

Radiological Sciences Department

3. Exposure Records - continued

Badge Resume - Construction Areas

Area	Number Readings 100-300 mrep	300-500 mrep	500-1000 mrep	Over 1000 mrep	Lost Readings	Badges Processed
100-C	0	0	0	0	1	2,286
200-E	6	0	0	0	0	3,079
200-W	5	0	0	0	2	6,214
Total	11	0	0	0	3	11,579
Year to date	59	3	0	0	17	33,643

There was no badge result in excess of 300 mrep. The 3 cases of lost badge results showed: 1 case, pencil results and investigation showed low probability of significant exposure; 1 case, pencil results showed insignificant gamma exposure, investigation in progress; 1 case, pencils not required, investigation in progress.

Lost Readings

Operations

Badge lost in area	-	7
Stuck film	-	4
Exposed to X-ray	-	1
Not packaged	-	1
Contaminated badge	-	1
Light struck	-	1
Total	-	15

Construction

Badge lost in area	-	1
Lost in processing	-	1
Exposed to X-ray	-	1
Total	-	3

Total badges processed 1952:

Operation	-	102,490
Construction	-	33,643
Total	-	136,133

In addition to the badge program, a total of 1,769 items of a non-routine nature was processed during the month.

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Radiological Sciences Department

3. Exposure Records - continued

Slow Neutron Pencil Summary

	100-B	100-D	100-DR	100-F	100-H	Total	Year to date
Pairs issued	41	52	111	15	130	349	1,184
Significant readings	1	0	26	0	4	31	120
Significant readings-above 50 mrem	0	0	0	0	0	0	0

Neutron Film

Badges Processed	100-B	100-D	100-F	100-H	200-W	300	Total	Year to date
Personnel	34	108	14	140	84	2	382	1,184
Significant readings	0	0	0	0	0	0	0	0
Special	0	0	0	0	6	1	7	29

(b) Bioassay

1) Plutonium analyses:	February	March	Year to date
Samples assayed	708	604	1,775*
Control samples	74	78	220
Results over detection limit	5	3	9
Maximum d/m/sample	1.10	0.62	
Resamples of previous months	1	5	6
Maximum d/m/sample	BDL**	BDL**	

*corrected total-error in January report.
**below detection limit

2) Fission Product analyses:

Samples analyzed	713*	586	1,758
Control samples	103	81	250
Results over 10 c/m/sample	0	0	0

*incorrectly reported last month.

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3. Exposure Records - continued

3) Uranium analyses:

Results of 552 samples were as follows:

METAL PREPARATION - 300 AREA

Job description	End of 4th Day Exposure µg/liter Maximum	Average	Number Samples	End of 1 Day-No exposure µg/liter Maximum	Average	Number Samples
Canning	33	7	33	7	2	17
Machining	66	11	51	16	6	40
Melt Plant	97	17	38	40	9	36
Material Handling	67	16	31	21	9	29
Inspection	14	7	15	20	5	13
305 building			0			0
Clerical	21	11	2	9	6	2
Coverage	5	8	5	5	12	6
R.M.U.	6	5	4	5	4	4

Results on two employees have been omitted in the Material Handling averages. One employee's samples indicated 107 µg/liter and 169 µg/liter on March 6 and 10, respectively. Investigation showed that he sampled in his work clothes after having operated a rod straightener. A sample measuring 202 µg/liter received from another employee March 20 was not substantiated by his Monday sample.

	Before Job Maximum	Average	Number Samples	After Job Maximum	Average	Number Samples
Car unloading	62	14	29	5	1	27

	Miscellaneous Samples (µg/liter) Maximum	Average	No. Samples
224-U building	11	1	152
271-UR building	13	1	15

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3. Exposure Records - continued

4) Tritium analyses:

	Activity Density (μc/cc x 10^3)							
	<2	2-5	5-10	10-20	20-35	35-65	>65	Total
No.samples-Operating personnel-108-B	485*	144	102	94	26	9	0	860
No. personnel involved	76	23	17	13	6	5	0	140
No.samples-Construction personnel-108B	28	0	0	0	0	0	0	28
No. personnel involved	12	0	0	0	0	0	0	12
No.samples-Biology Lab.-108F	70	0	0	0	0	0	0	70
No. personnel involved	18	0	0	0	0	0	0	18

*includes 18 samples from off-site visitors

Thyroid Checks

All thyroid checks were below the warning level.

Hand Score Summary

There were 56,871 alpha and 82,404 beta hand scores reported. About 0.12% of the alpha scores, and 0.08% of the beta scores were over the warning levels. There was no attempt made to reduce 12 of the high alpha scores and 2 of the high beta scores. Where decontamination was attempted, it was successful.

4. Calibrations

	Number of Routine Calibrations		
	February	March	Year to date
Fixed Instruments (Gamma)	256	352	760
Portable Instruments			
Alpha	305	300	800
Beta	545	468	1,422
Gamma (Radium)	1,235	1,154	3,386
X-ray	16	35	51
Neutron	15	8	29
Total	2,116	1,965	5,688
Personnel Meter			
Beta	933	737	2,538
Gamma (Radium)	6,720	4,914	18,386
X-ray	6,801	5,578	19,348
Neutron	95	28	302
Special Film (X-ray)	10	31	41
Total	14,559	11,288	40,615
Grand Total	16,931	13,605	47,063

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Radiological Sciences Department

BIOPHYSICS SECTION

CONTROL UNIT

Regional Survey

The general findings are summarized in the following table:

SAMPLE TYPE AND LOCATIONS	Activity Type	Average Activity Density µc/cc
Drinking Water		
Benton City Water Co. Well	alpha	1.8×10^{-8}
Richland, N.Richland, Benton City Wells	alpha	$0.6\text{-}2.5 \times 10^{-8}$
100 Areas	beta	2.5×10^{-7}
Pasco, Kennewick, McNary Dam	beta	$< 0.5\text{-}2.5 \times 10^{-7}$
Backwash Solids-Pasco Filter Plant	beta	9×10^{-3} (µc/gm)
Backwash Liquids-Pasco Filter Plant	beta	7.2×10^{-7}
Sand Filter-Pasco Filter Plant	beta	1.4×10^{-5} (µc/gm)
Anthracite Filter-Pasco Filter Plant	beta	1.0×10^{-4} (µc/gm)
Other Waters		
300 Area Wells #1, 2, 3	alpha	$0.5\text{-}3.0 \times 10^{-8}$
300 Area Well #4	alpha	1.9×10^{-7}
Well #4 measured as uranium	U	1.5×10^{-7}
50 wells on the reservation	beta	$< 5 \times 10^{-8}$
Columbia River-Hanford Ferry	beta	5.9×10^{-6}
Columbia River-Patterson to McNary	beta	5.0×10^{-7}
Columbia River-Shore-mud	beta	$2.0\text{-}6.4 \times 10^{-5}$ (µc/gm)
Raw water-Operating Areas	beta	$< 0.5\text{-}7.8 \times 10^{-7}$
Pile Effluent retention basins	beta	$1.5\text{-}2.3 \times 10^{-3}$
Pile Effluent retention basins	alpha	$< 5 \times 10^{-9}$
I^{131} in farm wastes	I^{131}	8.1×10^{-6}
I^{131} in Columbia River-Hanford	I^{131}	5.4×10^{-8}
Atmospheric Pollution		
Gross alpha emitters	alpha	$< 0.4\text{-}2.9 \times 10^{-14}$
Gross dose rate -Separations areas	beta-gamma	0.5-1.8 mrep/24 hrs.
Gross dose rate -Residential Areas	beta-gamma	0.5 mrep/24 hrs.
Filterable beta -Separations areas	beta	$1.0\text{-}4.0 \times 10^{-12}$
I^{131}-Separations Areas	I^{131}	$0.1\text{-}6.0 \times 10^{-12}$
I^{131}-Separations stacks	I^{131}	2.8 C/24 hrs.
Active particles -Wash.,Idaho, Ore., Mont.	--	$< 0.002\text{-}0.07$ ptls/meter^3
Active particles -Hanford Works	--	0.03-0.7 ptls/meter^3
Tritium (as oxides)-Riverland to Hanford	T	$< 4 \times 10^{-9}$
Tritium (as oxides)-Reactor stacks	T	$0.5\text{-}2.7 \times 10^{-8}$

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Radiological Sciences Department

Regional Survey - continued

SAMPLE TYPE AND LOCATIONS	Activity Type	Average Activity Density μc/gm
Vegetation		
Environs of Separations areas	I^{131}	$1 - 4 \times 10^{-4}$
Residential areas	I^{131}	5×10^{-6}
Eastern Wash. and Oregon	I^{131}	$<3 \times 10^{-6}$
Non-volatile beta emitters -Wash. & Ore.	beta	1.5×10^{-5}
Alpha emitters -Separations areas	alpha	$3 - 6 \times 10^{-7}$
Alpha emitters -300 Area	alpha	4.6×10^{-7}

ANALYTICAL CONTROL LABORATORY

Routine analyses were carried out as follows:

Laboratory

Type Sample	Analyses Completed March	Analyses Completed Year to date
Vegetation	1508	4580
Water	1910	6320
Solids	281	987
Air samples	451	1579
Fluorophotometer	789	1724
Dow background study (water total alpha)	0	107
Special survey samples (RMU)	62	129
Special survey samples (RS)	24	24
Total	5025	15450

Counting Room

Beta measurements (recounts included)	6033	17668
Alpha measurements (recounts included)	3306	10279
Control points (beta and alpha)	2684	8460
Decay curve points	3539	9911
Absorption curve points	195	634
Total	15757	46952

A revised ether extraction procedure for the detection of uranium and plutonium was adopted on March 4. This procedure has given results similar to the earlier procedure with reduced delay in the laboratory.

A study of the relationship between activity density of pile waste effluent and tube life within the pile was made in conjunction with the Pile Technology-Water Studies Section. Comparison of activity density measurements of waste effluent from a new tube showed that the activity density of this effluent was

within 10% of that of older tubes after twenty days operation, and that the activity density at twenty days was three times that at two days after initial operation. A distorted isotope spectrum was also noted during the first few days of operation, but results of isotope analyses are not yet complete.

Control Services

The adsorption patterns of fission products on a soil column were examined and defined functionally. A statistical analysis showed no correlation present between P-10 scrubber efficiences and: (1) relative humidity; (2) amount of moisture to be removed; and (3) temperature. The statistical treatment of the background measurements for the Dow survey was begun, and additional calculations of the amount of radon present in the air here at Hanford Works were started, together with another attempt to correlate these measurements with meteorological conditions.

Synoptic Meteorology

Forecasts	Number made	March Percent Reliability
Production	93	84.9
24-hour	62	84.1
Special	45	91.1

Except for a brief period from the 23rd to the 26th, temperatures were near to the seasonal normals. The over-all monthly average, 44.1°, was 1.7° below normal. The highest temperature was 70°F on the 26th; the lowest was 24° F on the 22nd.

Precipitation was very light, amounting to only 0.06 inch, or 0.27 inch below normal. Measurable amounts occurred on a total of only 3 days.

There were several days in which considerable wind occurred. On the windiest day, the 25th, the peak gust at 400 feet reached 58 mph. Over-all monthly average speeds of 8.3 mph at 50 feet, and 12.9 mph at 400 feet, were only slightly above normal.

ENVIRONMENTAL HAZARDS AND GENERAL STUDIES UNIT

1. Experimental Meteorology

The computations of trajectories of hypothetical emission clouds were continued as was the analysis of the data from the outlying meteorological stations.

Two field tests with smoke generators were conducted during the month. A new grade of oil was found to be more easily detected than the old, so that some improvement in experimental results is expected.

2. Geology-Hydrology

There was no significant change observed in the contaminated zones in the water table beneath the 200 Areas.

A sediment sample obtained from the 46-foot level from Well #1 in the 241-T second cycle crib area had the highest activity density yet recorded. The value was about 0.01 μc/gm.

Samples from the wells 108-B-1, 2, and 3, showed a build-up in activity levels which indicated that the 105 effluent line may be leaking; contaminated water from leaks in the retention basin itself should be moving toward the river during this period of low river flow.

There was little change in the uranium content of the wells in and near the 300 Area.

Data is being obtained from wells being drilled on the Wahluke Slope by the U.S. Army. One well currently at a depth of 800 feet is 500 feet into basalt. This, with data from the other wells, indicates that a layer of basalt may underlie the 100-H Area at a depth of about 100 feet.

3. Soil Science

Equilibrium experiments were conducted to compare the adsorption of trace amounts of fission products on soil from water solutions and salt solutions. The results indicated that Y, Ce and Zr, all polyvalent cations, are adsorbed on soil to approximately the same extent from both solutions, while Cs, Sr and Ru are adsorbed less effectively from the salt solution.

A similar measurement with Pu indicated no significant difference between salt solutions, actual 112-T tank waste solution, and distilled water solutions.

4. Industrial Hygiene

The piping was completed for stack sampling at the T Plant, and samples were obtained with the cascade impactor for tests on methods to remove the I^{131} activity. The application of heat reduced the total amount of activity on the sample slides appreciably; colored micro-photographs taken before and after heat treatment showed that certain brown particles in the larger size fractions disappeared during the treatment, while the other particles were unaltered.

Some work has been done in testing the MSA pleated filters in the velocity range of 10 to 180 feet per minute. Efficiencies appeared to vary from about 85-95%.

Limited sampling has been in progress to measure the concentration of nitrogen oxides in the 200 Area process stacks.

A study was made of the hazards associated with the use of trichlorethylene degreasers in the 105-C building.

5. Methods

The installation for sampling of the T Plant stack effluent, and for constant monitoring of these effluents for I^{131} and noble gases, was completed, and is now under test. Although some difficulty has been encountered in adjustment of the air flow through the sampler, good evolution curves for both I^{131} and noble gases have been obtained with the background returning to normal at the end of each dissolving.

Final testing of the procedure for electrodeposition of ruthenium was carried out on distilled water solutions, with an average yield of 95.4%, and a standard deviation of 1.6%. It was noted that the addition of potassium fluoride to the electrolyte reduced the interference from the zirconium-niobium equilibrium mixture, with little effect on the ruthenium yield. Experiments on the electrodeposition of ruthenium from a basic medium indicated that quantitative yields could be obtained, although no information was yet obtained on the carrying of other radioisotopes.

An apparently satisfactory procedure for the determination of ruthenium in vegetation is being tested. This procedure consists of an H_2S precipitation from first a basic and then an acidic solution of the sodium hydroxide-sodium hypochlorite extract of the vegetation. Although considerable organic residue resulted, tests on 9 samples to date indicated an average yield of 81%, with a maximum deviation of 5%.

The constant monitoring equipment for noble gases in the pile effluent water was put into service at 100-DR on March 3, 1952. The only difficulty with this pilot model has been in adjustment of flow rates of both water and gas. Operation was otherwise satisfactory with no indication of long period variations in the amounts of active materials flushed from the water. This unit will be left in operation until a ruptured slug occurs in the portion of the pile to which it is connected.

Experiments were continued on the use of proportional counters for the measurement of radon and thus radium in samples of soils, water, etc.

6. Radiochemical Standards

Tritium calibration study using internal GM counters was directed toward counting dilutions of known purity tritium. One sample was diluted about 10^6 fold, and counted directly. Preliminary evaluation indicates a counting rate greater by a factor of 1.8 than that calculated from the quoted purity and dilution made. A careful scrutiny of effects which may give rise to this discrepancy is being made.

Using the brass tube with an external quench circuit and filling with hydrogen generated from water of known tritium content, a counting efficiency of 53-58% was obtained; checking reasonably well the value obtained with the tube used as a self-quenched GM counter.

Examination of beta proportional counters continued with a study of backscatter, geometry, plateau characteristics, and reliability being made. The data obtained thus far demonstrated a definite advantage of proportional counters, particularly for very soft emitters. Reproducibility as determined by day-to-day control charts was good.

An I^{131} solution from ORNL was carefully calibrated using ideal conditions. Radiochemical Standard's determination was 2% lower than the value reported by ORNL.

Thin mica window counter corrections were extended to include backscatter and absorption coefficient data for Cu^{64}.

An investigation was completed to improve the acid resistance of the very thin films used for source mountings. A formvar film laminated with polystyrene can be prepared which shows much better acid resistance than does formvar.

RADIATION MEASUREMENTS

1. Physics

A calibration of 25 r and 0.25 r Victoreen chambers using a radium source in an arrangement with very little scattering correction has been carried out at the 189-F building.

Several measurements have been made with the Po-B source #182 after removal of an extra can. There is a slight reduction in the asymmetry, but hardly enough to justify doing away with the protection against contamination afforded by the extra can. Measurements with indium foils in the sigma pile could not detect any differences between runs made with various orientations of the source.

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Apparently the diffusion in the pile smears out the asymmetry.

Studies of a long counter in a Hanson moderator indicated that the system is fairly critical to the position of the counter within the moderator, but the relative responses to sources of various energies is not affected. By proper allowance for the asymmetry of the source, the calibration of the source by use of the long counter agrees to within about 1.5% of the sigma pile calibration.

2. Instrument Development

Several improved gas mixtures were tested for possible use for the monitoring of tritium contamination in air. The safest one was a mixture of 95% argon with 5% carbondioxide, which had a counting plateau from 3550 to 3750 volts. Other successful gas mixtures of methane with helium and methane with argon were also usable, but were still possibly explosive when mixed with air. The main drawback for the use of any of these mixtures is the fact that the operating voltages are higher than is available in ordinary scaler power supplies.

Further work on the alpha pulse height analyzer resulted in improvement of the energy resolution.

The needle counter operation was very considerably improved by cooling the scintillation photomultiplier tube with dry ice.

A gamma scintillation counter using a sodium-iodide crystal was set up for use by the Biology Section. The system was found to be about 18% efficient for Co^{60} radiation.

A mock-up air monitor was nearly completed after initial test runs indicated some weaknesses in the original switching scheme which involved switching of circuits with millivolt differences in potential. Improved operation was obtained by changing the circuit so that switching was done with potentials on the order of one volt.

Radiological Sciences Department

BIOLOGY SECTION

AQUATIC BIOLOGY UNIT

Biological Chains

1. Algae-Trout Relationships

The trout are approaching sexual maturity.

2. Retention Basin Algae Control

Test patches of anti-fouling paint applied to a wall of the 107-F Basin last November still appear to be withstanding basin conditions satisfactorily.

3. Plankton Microcosm Studies

A plankton microcosm was established in river water in a 50-gallon aquarium, and maintained through the month as a pilot test for future experimental work. A self-maintaining community dominated by green algae and a high population of water fleas (Daphnia pulex) developed.

Ecology

1. Survey of the Columbia River

Conditions for shallow-water bottom collecting were better throughout the month than those encountered during the same period of previous years. Activity densities of bottom algae were slightly higher and of aquatic invertebrates, fish, and plankton slightly lower than during the previous month. Average values at Hanford were: plankton, 22×10^{-3} μc/g; bottom algae, 2.8×10^{-3} μc/g; caddis fly larvae, 0.95×10^{-3} μc/g; and small fish, 0.10 μc/g. One adult squawfish was caught which had an activity density of 1.6×10^{-5} μc/g in the liver, and 3×10^{-6} μc/g in the flesh.

Effluent Monitoring

1. Effect of Pile Effluent on Silver Salmon

In the routine monitoring of the area effluent water, all of the fish completed the absorption of the yolk sac and were being fed by the latter part of the month. Cumulative mortalities to date of 48% and 18%, respectively, occurred in the 10% and 5% concentrations of the effluent compared to 14.5% in the controls. Mortalities resulting in the lower concentrations were intermediate to those above. Except for the 10% and possibly the 5%, no significance is presently attached to mortalities resulting from the lower concentrations.

Radiological Sciences Department

BIOLOGICAL SERVICES UNIT

Biological Monitoring

1. Waterfowl

No report.

2. Upland Wildlife

Thyroid activity densities of rabbits taken at collection sites near Separations areas were lower than last month despite a slight increase in average daily emission of I^{131}. An attempt to relocate collection sites to those of vegetative sampling locations of the Regional Survey unit proved unsatisfactory. Kidney samples of rodents collected during the month were assayed to determine ruthenium 103 and 106. No positive count was obtained in 11 specimens taken at various locations on the project.

Thyroid activity densities of rodents taken during the month are tabulated as follows:

Locality	Specimen		$\mu c\ I^{131}/g$ Maximum	$\mu c\ I^{131}/g$ Average
Meteorology Tower	Jack rabbit	(6)	0.030	0.022
Near 200-E Area	Jack rabbit	(5)	0.006	0.005
Prosser Barricade	Jack rabbit	(5)	0.007	0.004
2 Mi. NE 200 East	Jack rabbit	(1)	0.007	--
2 Mi. S 4S 2S Intersection	Jack rabbit	(1)	0.004	--
5 Mi. E 4S 2S Intersection	Jack rabbit	(2)	0.001	< 0.001

Clinical Laboratory

Nine hundred and sixty-three determinations.

Microscopy

1. Histology

Routine histological preparations and photomicroscopy.

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[redacted]

Radiological Sciences Department

2. Electron Microscopy

Setting up and testing apparatus continued along with some work for Pile Technology of the Engineering Department on colloidal materials in water causing film formation.

Radiochemistry Laboratory

1. Radioactivity in Carcasses

Work was initiated again on this problem to bring the number of samples to be analyzed up to 50.

2. Analytical Services

Services to other units included 36 TTA determinations of Pu in biological samples, the preparation of 40 isotope solutions, and approximately 4800 alpha and beta counts.

3. Analytical Techniques

Our tritium spike value has been redetermined using 12.5 years as the better choice of half-life, both for calculating the amount of tritium present in the spike, and for decay correction from the time of first calibration. This will give a better estimate of true values pending the completion of experiments now in progress by the Biophysics Section on absolute tritium counting. As of March 25, 1952, the spike value was changed from 0.089 μc/cc to 0.072 μc/cc.

The windowless GM flow counter failed in giving reproducible counts over a several day test period.

A scintillation counter, employing a thallium activated sodium iodide phosphor and a 5819 photomultiplier tube, was calibrated for several isotopes and is ready for application to routine gamma counting service in the counting room.

METABOLISM UNIT

Animal Metabolism

1. Low-level Chronic Plutonium Absorption and Deposition in the Rat

Analyses incomplete.

[redacted]

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2. Percutaneous Absorption of Plutonium

Analyses incomplete.

3. Metabolism of Plutonium

No result.

4. Comparison of the Metabolism of Deuterium and Tritium in the Rat

No result.

5. Percutaneous Absorption of Tritium Gas

No result.

Microbiology

1. Determination of RBE's by Microbiological Methods

The effect of tritium radiation on the growth of L. casei at 30° and at 37° C was compared. Growth is slower at 30° than at 37°, but the maximum growth attained at 30° is greater than that attained at 37°. The inhibitory effect of tritium is more pronounced at 30°.

2. Destruction of Metabolites by Radiation

No result.

3. Tritium Fixation by Mammalian Tissues

No result.

Plant Nutrition

1. Absorption and Translocation of Fission Product and Pile Effluent Radioactivities

Neubauer seedling experiments, using an Ephrata fine sandy loam, indicated a maximum absorption in the aerial portions of barley plants of 0.10 - 0.15% of a tracer dose of cesium.* This compares with a previously reported value

* The Neubauer technique involves the use of reproducible conditions for measuring absorption and translocation of substances from soil into plants. The percent values reported refer to the total amount of substance in the plant part compared to the total amount of the same substance present in the soil.

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of 1%-2% absorption of strontium under similar conditions. These relative values for the two elements are in agreement with what one would predict from the leaf/root ratios obtained in nutrient culture experiments.

Additional soil experiments with strontium indicated a slight increase in percentage uptake with increase in strontium content of the soil. This also confirms predictions based on nutrient culture work. Variations of strontium uptake with pH did not agree exactly with predicted behavior, and the discrepancies are presently under investigation.

2. I^{131} Vapor Absorption and Translocation

Three series of I^{131} gas exposures were made; each involving the exposure of 3 plants on subsequent days. Bean plants were exposed at pH 4.0 and pH 6.0; tomato plants were exposed at pH 6.0. Exposures were for 22 hours in continuous light (900 foot candles). In all cases, more than 99% of the total activity recovered was found on the exposed leaf. The small amount of translocation which did occur (predominantly upward in the plant) was perhaps slightly greater in the tomato than in the bean, and definitely greater at pH 6.0 than at pH 4.0.

3. Absorption and Metabolism of Tritium Oxide by Vascular Plants

Leaves of bean plants were exposed to tritium atmospheres and a study made of the resulting distribution of tritium in the plant. Activity was found consistently only in the exposed leaf.

Plant Metabolism

1. Radiation Damage to Plants. I. Algae

The concentration of phosphorus, sulfur, calcium, strontium, and copper in the algal cells was studied. The phosphorus and sulfur content is relatively constant regardless of the level of phosphorus or sulfur in the medium. Concentration of the other elements in the algal cells is proportional to their concentration in the medium. It is significant that of this group of elements, phosphorus and sulfur are the only ones whose effect on the growth of algae is a function of the elemental specific activity of the isotope preparation.

2. Metabolism of Tritium Oxide by Algae

Previous observations indicating possible isotopic fractionation of protium

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and tritium were confirmed and extended. The possibility remains that the observed difference between tritium and protium incorporation may be appreciably influenced by techniques employed in washing the algal cells prior to analyses. This is being investigated.

TOXICOLOGY UNIT

Experimental Animal Farm (Toxicology of I^{131})

1. Low-level Chronic Effects

Lambing was almost completed. One hundred and five lambs were born to 70 ewes. Significant birth weight depression was noted only in the lambs born to the ewes that received 240 μc of I^{131} daily for 450 days. In this group, none of the 6 ewes produced enough milk to raise normal lambs. All animals required supplemental feeding.

All lambs exhibited normal development at birth except lambs born to the 135 μc/day group. Only one of 6 lambs born to 4 ewes in this group was able, initially, to stand and nurse unassisted. External monitoring of the thyroids of all lambs in this group indicated intra-uterine glandular damage. The same was true for the thyroid status of the lambs born to the 45 μc ewes, although all these lambs appeared normal at birth and appeared to be developing satisfactorily.

2. Thyroid Regeneration

Only 2 rams remained in the group of 8 that were placed on a regimen of 480 μc of I^{131} on February 1, 1952.

3. Effects of Inert Iodine and Deiccated Thyroid

No progress.

4. Effect of Route of Administration on Thyroid Metabolism

No progress.

5. Effect on Gonadal Function in the Ram

One ram lamb that received 135 μc of I^{131} daily since August, 1951, exhibited symptoms of athyroidism.

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Radiological Sciences Department

Physiology

1. Toxicology of Active Particles

No progress.

2. Plutonium Toxicology

No progress.

3. Therapeutics in Plutonium Poisoning

Studies continued to define the toxicity of zirconium citrate. A total of 20 experiments on 8 animals was performed. The 2.5% zirconium I.V. solution used contains 10% citrate. The mean amount of citrate/kg body weight administered before the first signs of calcium ion deficiency (tetany or death) is 1.14 g. Preliminary results indicated the administration of 1 g calcium gluconate for each 0.75 g/kg of citrate would adequately compensate for the calcium ion deficiency noted. The largest single dose of zirconium administered to date was 900 mg/kg, and the most given over a series of 9 experiments to one animal was 4000 mg/kg, which represented a total of 40 g and 76 g of citrate, respectively, to each animal.

4. Pulmonary Absorption of Tritium

No result.

1211549

FINANCIAL DEPARTMENT MONTHLY REPORT
MARCH, 1952

General

Work continued on the preparation of FY 1953 and FY 1954 budget data for review by the Appropriations and Budget Committee and submission to the Atomic Energy Commission. This data will be submitted to the Appropriations and Budget Committee on April 10 and to the Hanford Operations Office on April 25.

Request was received from the Hanford Operations Office for submission by April 22 of "high-spot" estimates of the effect of a proposed expansion program on operating costs, personnel requirements, operations inventory levels and acquisitions of operations equipment for fiscal years 1953 and 1954. Department managers were requested to prepare estimates with respect to their departments; these estimates will be consolidated for review by the Appropriations and Budget Committee and submission to Hanford Operations Office.

Approval of the Wage Stabilization Board and Atomic Energy Commission was received in March for the 3.58% general salary increase. The general increase was paid on a current basis in salary checks distributed to weekly paid employees on March 28, and to monthly paid employees on March 31, 1952. Payment of the retroactive portion of the general increase will be made in April.

A summary of cash disbursements and receipts (excluding advances from AEC) for the months of March and February, 1952 is shown below:

Disbursements	March	February
Materials and Freight	$ 3 415 366	$ 2 900 917
Payrolls	2 384 090	2 822 661
Payroll Tax	553 783	703 548
Payments to Subcontractors	301 003	117 697
U. S. Savings Bonds	168 098	170 180
Payment to General Electric Pension Trust of the Nucleonics Division portion of the Company's pension cost for calendar year 1951	-0-	1 381 532
Other	329 099	546 071
Total	7 151 439	8 644 606
Receipts		
Sales to AEC Cost-Type Contractors	414 138	172 337
Rents	140 254	142 908
Hospital	85 214	47 516
Telephone	19 508	19 373
Scrap Sales	13 604	19 768
Bus Fares	10 914	10 904
Refunds from Vendors	7 289	4 388
Refund of Advance from Subcontractor	-0-	50 000
Other	59 303	10 057
Total	750 224	477 251
Net Disbursements	$ 6 401 215	$ 8 167 355

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Advances from AEC decreased from $3,000,000 as of February 29 to $2,500,000 as of March 31, 1952 and may be summarized as follows:

	March 31	February 29
Cash in Bank - Contract Accounts	$ 1 673 785	$ 2 357 645
Cash in Bank - Salary Accounts	50 000	50 000
Cash in Transit	401 215	217 355
Advances to Subcontractors	250 000	250 000
Travel Advance Funds	125 000	125 000
Total	$ 2 500 000	$ 3 000 000

Personnel and Organization

Personnel Changes During Month	Current Month	Prior Month
Employees at beginning	391	406
Additions and transfers in	9	9
Removals and transfers out*	(16)	(24)
Employees at close	384	391
*Includes transfers of Engineering Accounting personnel to AEC-HDO in connection with transfer of accounting functions	1	9

Personnel by Sections at Month-End		
General	9	9
General Accounting Section		
General Accounts	21	20
Plant Accounts	26	26
Accounts Payable	26	26
Accounts Receivable	17	19
General	3	3
	93	94
Payroll Section		
Weekly Payroll	73	74
Monthly Payroll	20	21
General	8	8
	101	103
General Cost Section		
Consolidated Costs and Budgets	2	2
Utilities and General Services	16	17
Community Real Estate and Services	15	15
Radiological Sciences and Other	7	7
Medical	3	3
General	2	2
	45	46
Manufacturing Cost Section		
Costs and Budgets	35	32
General	6	5
	41	37
Engineering Accounting Section		
Audits	4	4
Accounts Payable	25	24
Costs and Budgets	33	35
General Accounts	7	7
General	7	11
	76	81

Personnel and Organization (continued)

Personnel by Sections at Month-End (continued)	Current Month	Prior Month
Rotational Trainees	7	7
Internal Audit Section	12	14
Total	384	391*

*Represents segregation by sections as of March 1, 1952

Personnel by Job Classification at Month-End		
Exempt	65	67
Non-Exempt		
Accounting Clerks A	4	4
B	7	7
C	9	10
D	16	16
Business Graduates	28	28
Clerical Working Leaders	11	12
Cost Clerks A	6	5
B	6	6
C	9	9
D	13	15
Field Clerks A	4	4
C	4	4
General Clerks A	50	49
B	62	63
C	27	27
D	7	7
E	2	2
Office Machine Operators A	13	13
B	6	7
Secretary A	1	1
B	6	6
Steno-Typist A	5	5
B	14	14
C	9	10
Total	384	391

Effective March 1, 1952 the organization of the Financial Department was changed to that shown above under "Personnel by Sections at Month-End."

Sections' Reports

The monthly reports of the six sections of the Financial Department, as listed below, are shown on the following pages.

	Pages
General Accounting Section	Ia- 1 thru Ia - 7
Payroll Section	Ib- 1 thru Ib - 9
General Cost Section	Ic- 1
Manufacturing Cost Section	Id- 1 thru Id - 3
Engineering Accounting Section	Ie- 1 thru Ie - 3
Internal Audit Section	If- 1

1215552

GENERAL ACCOUNTING SECTION
MONTHLY REPORT - MARCH, 1952

ACCOUNTS PAYABLE

Volume of work in Accounts Payable this month was comparable with prior month's averages. Accounts payable vouchers entered numbered 2,766 and totaled $1,846,730, as compared with 2,757 totaling $3,676,759 in the previous month. The payment of $1,381,532 in February, representing the Company's portion of pension plan costs, accounts for the wide variance in dollars between the two months.

In March, 1,455 freight bills amounting to $341,338 were paid. This compares with the 1,430 bills totaling $334,428 which were paid in February. As of March 31, the balance in the Freight Account, representing transportation charges not distributed to appropriate cost accounts, was $5,575.

The 1,592 new purchase orders, totaling $673,012, received this month represented an increase of twenty per cent over the 1,312 orders totaling $557,024 received in February.

ACCOUNTS RECEIVABLE

The accounts receivable balance at March 31, 1952, of $609,838 was approximately $400,000 lower than at the beginning of the month. The major item accounting for this decrease was the receipt of $406,000 in payment of sales to cost-type Atomic Energy Commission contractors.

All other classes of receivables reflected decreased balances, except Telephones, which increased by approximately three per cent.

Uncollectible accounts in the hands of collection agencies on February 29, 1952, numbered 167 and totaled $19,891. Thirteen accounts, totaling $207, were referred to collection agents in March. Six accounts were returned to us with collections of $25. At March 31, 1952, credit agencies had 174 accounts in the total amount of $19,503.

Kadlec Hospital out-patient invoices numbered 2,292, amounting to $10,930, as compared to 2,136 invoices amounting to $9,324 in February. In-patient revenue increased $5,156 in March as compared to February. Sales of $77,573 were booked in March, and cash receipts totaled $89,608, resulting in the receivable balance being reduced approximately $12,000, from $158,862 at February 29 to $147,017 at March 31, 1952.

Copy of Lease No. 52-100 between General Electric Company and Bauer-Day Incorporated, which covered the leasing of two parcels of land in Richland for the construction and operation of a private housing development, was received this month. The terms of the lease were reviewed, and steps were taken to set up the necessary accounting controls for the collection of rent and billing the lessee for services to be rendered under the lease.

1215553

General Accounting Section

GENERAL ACCOUNTS

Advances from the Atomic Energy Commission at March 31, 1952, amounted to $2,500,000, a decrease of $500,000 from the amount at the end of last month. These advances have been applied as follows:

	March	February
Cash in Bank - Contract Accounts	$1 673 785	$2 357 645
Cash in Bank - Salary Accounts	50 000	50 000
Cash in Transit	401 215	217 355
Advances to Subcontractors	250 000	250 000
Travel Advance Funds	125 000	125 000
Total	$2 500 000	$3 000 000

Considerable time was spent this month revising the Inventories and Project Costs reports. The Inventories Report was revised to show actual turnover rates as compared with bogeys established by responsible department managers. The Project Costs Report was revised to segregate those projects where management responsibility has been transferred to the Atomic Energy Commission. More work is yet to be done after April 1, 1952, with respect to reporting of total project costs.

Work progressed in the transfer of responsibility of reconciling sub-captions of the General Maintenance and Spare Parts inventories, which has been handled in the past by Stores. Considerable time was spent with the Internal Audit Section on reconciling old items and training clerical personnel in order that full responsibility can be assumed in the near future of reconciling these sub-captions.

Current month charges to the Travel and Living Expense Variation Account, including Engineering Department, totaled $2,064, a decrease of $1,151 from February. These charges represented entertainment expense of $867 and the excess of amount reimbursed employees over amount billed to the Atomic Energy Commission of $1,197.

PLANT ACCOUNTS

Inventories of furniture and fixtures used in the North Richland Barracks, Bremerton Houses and Trailer Camp were nearing completion at the end of the month. Inventory of equipment in facilities leased to commercial operators was completed in prior months. All equipment included in the account "Construction Camp Furnishings" will be transferred to the Atomic Energy Commission to be accounted for by Atkinson-Jones or other contractors designated by the Atomic Energy Commission. This transfer will be completed during the month of April.

During the month, reason sheets submitted by Manufacturing Department personnel in connection with budgets for fiscal years 1953 and 1954 were reviewed, and items included were classified as to investment or expense.

1211554

General Accounting Section

	March	February
Accounts Payable		
Balance at Beginning of Month	$ 296 781	$ 285 831
Vouchers Entered	1 846 730	3 676 759
Cash Disbursements	1 903 495 DR	3 666 222 DR
Cash Receipts	6 411	413
Balance at End of Month	$ 246 427	$ 296 781
Number of Vouchers Entered	2 766	2 757
Number of Checks Issued	1 760	1 652
Number of Freight Bills Paid	1 455	1 430
Amount of Freight Bills Paid	$ 341 338	$ 344 428
Number of Purchase Orders Received	1 592	1 312
Value of Purchase Orders Received	$ 673 012	$ 557 024
Cash Disbursements		
Engineering	$2 695 756	$1 985 543
General	4 455 683	6 659 063
Total	$7 151 439	$8 644 606
Material and Freight	$3 415 366	$2 900 917
Lump Sum and Unit Price Subcontracts	-0-	34 154
CPFF Subcontracts		
Labor	267 745	54 623
Others	33 258	28 920
Payrolls (Net)	2 384 090	2 822 661
Payroll Taxes	553 783	703 548
U. S. Savings Bonds	168 098	170 180
Pension Plan - Employer's Portion	-0-	1 381 532
All Other	329 099	548 071
Total	$7 151 439	$8 644 606
Number of Checks Written		
Engineering	1 065	1 067
General	1 760	1 652
Total	2 825	2 719

1216555

General Accounting Section

PLANT ACCOUNTS (CONTINUED)

Reconciliation of the account "Community Facilities" was completed during the month. Adjustments were made to this account eliminating facilities and equipment for which the community is not responsible. Other facilities and equipment included in the General Facilities account which are the responsibility of the community were transferred to the Community Facilities account.

The composite annual depreciation rate for Shop Equipment was revised from four per cent to seven and one-half per cent. The revised rate was based on latest estimates as detailed in the depreciation schedule issued by the United States Bureau of Internal Revenue and was formally approved by the Atomic Energy Commission.

Statement covering changes in plant accounts for the first six months of fiscal year 1952 was completed and distributed during the month.

During the month of March, 368 work orders were referred to Plant Accounts for review. The coding of 46 of these was found to be incorrect, and adjustment was made changing the distribution of 27 from expense to capital and changing the distribution of 19 from capital to expense.

1210556

General Accounting Section

	March	February
Cash Receipts		
Engineering	$ 67 926	$ 112 533
General	6 399 653	8 923 401
Total	$6 467 579	$9 035 934
Detail of Cash Receipts		
Advances From AEC	$5 717 355	$8 558 684
Rents	140 254	142 908
Hospital	85 214	47 516
Telephone	19 508	19 373
Scrap Sales	13 604	19 768
Bus Fares	10 914	10 904
Miscellaneous Accounts Receivable	19 165	5 327
Sales to AEC Cost-type Contractors	414 138	172 337
Refunds from Vendors	7 289	4 388
Employee Sales	399	458
Educational Program	1 262	1 204
Utilities	3 379	-0-
Refund of Advances to Sub-contractors	-0-	50 000
Income from Special Funds	29 941	-0-
All Other	5 157	3 067
Total	$6 467 579	$9 035 934
Bank Balances at End of Month		
Chemical Bank & Trust Company - New York		
Contract Account	$ 158 656	$ 364 184
Seattle First National Bank - Richland		
Contract Account	866 278	1 360 409
U. S. Savings Bond Account	209 646	239 690
Salary Account No. 1	20 000	20 000
Salary Account No. 2	30 000	30 000
Travel Advance Account	49 284	52 344
Seattle First National Bank - Seattle		
Escrow Account	5 875	5 875
National Bank of Commerce - Richland		
Contract Account	648 850	633 053
Total	$1 988 589	$2 705 555
Travel Advances and Expense Accounts		
Cash Advance Balance at End of Month (1)	$ 25 264	$ 27 653
Cash Advance Balance Outstanding Over One Month (1)	4 418	3 518
Traveling and Living Expenses - All Departments		
Paid Employees	30 601	33 178
Billed to Government	28 537	29 963
Balance in Variation Account at End of Month	23 943 DR	21 879 DR

(1) Excludes Engineering Department

1215557

General Accounting Section

	March	February
Accounts Receivable		
AEC Cost-type Contractors	$ 318 670	$ 685 805
Hospital	147 017	158 862
Rents	60 919	75 774
Equipment Sales to Facilities	44 633	45 185
Miscellaneous Services	18 929	21 349
Telephone	12 722	12 320
Utilities	6 228	6 564
Safety Shoes	720	885
Subtotal	609 838	1 006 744
Reserve for Bad Debts	43 819 CR	43 027 CR
General Ledger Balance	$ 566 019	$ 963 717
Hospital		
Out-patient Invoices Issued	2 292	2 136
Operating Revenue	$ 77 573	$ 70 811
Houses		
New Leases	52	52
Lease Modifications	17	19
Lease Cancellations	58	46
Total Active Leases	6 051	6 057
Operating Revenue		
Basic Rent	$ 215 158	$ 216 067
Electricity	51 137	51 197
Water	8 549	8 571
Total	$ 274 844	$ 275 835
Dormitories		
New Assignments	76	84
Removals	84	86
Total Occupancy	1 080	1 088
Operating Revenue	$ 14 908	$ 15 195
Facilities		
Number of Facility Leases	119	119
Operating Revenue		
Basic Rent	$ 40 747	$ 46 653
Electricity	3 434	3 434
Water	490	490
Total	$ 44 671	$ 50 577
Telephones		
Working Telephones	5 437	5 425
Telephone Work Orders Processed	227	291
Operating Revenue	$ 20 487	$ 20 660

1210550

General Accounting Section

	March	February
Miscellaneous Services		
Invoices Issued	421	205
Operating Revenue	$ 7 051	$ 7 002
AEC Cost-type Contractors		
Invoices Issued	17	22
Operating Revenue	$ 20 642	$ 476 885

Note: Operating Revenue represents amount charged to Accounts Receivable and credited to Operating Costs.

	Number	Amount
Uncollectible Accounts (Total to Date)		
Accounts Forwarded to Collection Agencies	357	$ 37 196
Accounts Returned as Uncollectible	75	11 450
Collections	130 -1)	6 243
Balance at Collection Agencies - March 31, 1952	174	$ 19 503

(1- Includes 108 accounts collected in full and 22 accounts partially collected.

	March	Total to Date
Scrap Sales		
Number of Sales	12	464
Revenue (excluding Sales Tax)		
Scrap Sales	$ 10 737	$ 435 929
Tract House Sales		
Revenue to AEC	-0-	33 449
Revenue to GE	-0-	14 498
Total	$ 10 737	$ 483 876

1210559

PAYROLL SECTION MONTHLY REPORT
MARCH 1952

During the month of March, 89 employees were added to the payroll which includes 19 employees reengaged with continuous service. There were 198 employees removed from the payroll during the month including 4 leaves of absence, 30 removals due to illness, 60 for lack of work and 1 transfer to another division of the Company. These additions and removals resulted in a net decrease of 109 employees for the month. At March 31, 1952 there were 8,904 employees on the payroll.

Authorizations for payroll deductions for the cost of safety shoes were received from 122 employees during March. There were 99 open payroll deduction accounts at March 31, 1952.

Preferential rates were eliminated in 5 cases of weekly paid employees during March due to transfer or reclassification. As of March 31, 1952, there were approximately 900 weekly paid employees having preferential rates.

A total of 232 weekly paid employees were scheduled to begin their 1952 vacations in March.

During March, 745 claims were processed and forwarded to Metropolitan Life Insurance Company. A total of 1,202 checks in the amount of $74,728.52 covering 947 claims were received from the insurance company and forwarded to employees, hospitals, and surgeons during March. Since December 1, 1950, the effective date of the new insurance plan, employees of the Nucleonics Division have received $848,056.10 in benefits under the terms of the health insurance portion of the plan.

In March, 153 newly eligible employees were canvassed for participation in the General Electric Pension Plan. Of these, 101 employees elected to participate, 50 employees elected not to participate, and replies have not been received from 2 employees. Applications for normal retirement pension were prepared and forwarded to the Pension Department during the month for three employees.

Approximately 671 checks were delivered directly to employees by Payroll. Of these, 400 salary checks were for area employees whose days of rest were Thursday and Friday; these checks were held in Payroll at the request of the employee's supervision. Termination checks, suggestion awards, etc. accounted for 226 checks and the remaining 45 checks were mailed to employees who have been removed from the roll for various reasons. In addition, approximately 100 salary checks were picked up by a representative of Employee and Public Relations for delivery to employees absent due to illness.

A total of 4 garnishments were received in March, and all were released without payment to the court. As of March 31, 1952, 3 garnishments are pending.

Two checks were reported lost during March; of these, one was replaced. At March 31, 1952, 2 lost check cases were pending; one from February, 1952, and one from March, 1952.

Twelve suggestion awards in the aggregate amount of $520 were paid during March.

During March, military allowances were paid to four employees. As of March 31, 1952, 218 employees of the Nucleonics Division had entered Military Service.

Payroll Section (Continued)

During March, two Payroll employees were trained as IBM key punch operators and esent plans call for training of other Payroll employees as soon as opportunities uevelop. To date a total of six employees have been given training as IBM key punch operators.

Considerable progress was made in March on preparation of revised draft of Appendix C to the prime contract. Four meetings were held with representatives of interested departments and the Law Department to complete revision of certain sections of the appendix.

Payments, in the aggregate amount of $1,580, covering classes for the month of February, were made in March to instructors who teach in the Graduate School of Nuclear Engineering.

Monthly Attendance Report Form, P-273-D, was revised in March to provide space for recording days worked in a remote area by employees whose normal work assignment is in the outer areas. Forms, for employees working in the outer areas, were forwarded to Section Heads with instructions for completion.

In addition to regular payroll addressograph work, 100,000 items were addressographed for other departments and envelopes for use in distributing General Electric Annual Report were addressographed for all employees showing home addresses.

During March, 160 employees withdrew 1,134 U. S. Savings Bonds having a maturity value of $54,500 from the Stock Bonus Plan.

Custody receipts were reported lost by six employees during March.

Forty-eight participants withdrew their U. S. Savings Bonds purchased in 1948, 1949 and/or 1950 under the Stock Bonus Plan. Checks covering the income earned by these bonds for the years 1948, 1949 and 1950 were delivered to the employees.

During the month of March, 6,069 salary checks were deposited to accounts of employees in local banks as follows:

Seattle-First National - Richland Branch	3,910
Seattle-First National - North Richland Branch	52
National Bank of Commerce - Richland Branch	2,107
Total	6,069

During March a control register was established to record undistributed salary checks that are returned to the Payroll Section. The register will show the following information: Pay number, employee's name, date of salary check, date returned to Payroll Section, date received by employee and name of payroll clerk disbursing check.

Payroll Section is attempting to keep outstanding checks to a minimum and, consequently, a procedure for following up salary checks outstanding over 60 days has been established.

Statements of accounts of participants in the Savings and Stock Bonus Plan at December 31, 1951 were received during March. The statements show bonds purchased l shares of stock given as bonuses for the years 1948, 1949, 1950 and 1951, total maturity value of all bonds purchased, total shares of stock awarded and accumulated income for each participant. The statements were segregated by departments and sections and forwarded to section heads. On March 1, 1952, a check in the amount of $115,829.12 covering the Nucleonics Division's portion of the cost of the Stock Bonus Plan for the year 1951 was forwarded to Schenectady.

Payroll Section (Continued)

Total gross payment as of March 25 to General Electric employees performing construction work for the period September 1, 1946, through September 30, 1951, is $130,741.16 for 1,105 employees excluding 55 checks in the total gross amount of $2,294.06 which are being held by Payroll because addresses of these former employees are not available and 2 checks totaling $1,099.69 for deceased employees which have not been prepared due to legal requirements. Total retroactive payments after the remaining 57 checks are disbursed will be $134,135 for 1,162 employees. As of March 25, 104 checks in the net amount of $4,456 are outstanding.

Wage Stabilization Board approval of the 2.5% general increase was received in March. Approval of 1.08% general increase was received in February. The 3.58% general salary increase was made effective on a current basis on March 17 in the case of weekly paid employees and March 1 in the case of monthly paid employees. Payment of the retroactive portion of the general increase will be made on April 11 for weekly paid employees and April 30 for monthly paid employees. The base payroll will be increased approximately $120,000 per month due to the 3.58% general increase.

Payroll base rates have been changed to reflect the new rates due to the 3.58% general salary increase. Life Insurance coverage for employees who became eligible for higher coverage by reason of the 3.58% general salary adjustment and who died on or after September 15, 1951 are being reviewed to ascertain if additional death benefits are payable to their beneficiaries.

Disability benefits are being adjusted in those cases where the 3.58% general salary increase qualifies the employee for a higher benefit rate subsequent to September 15, 1951.

Pension applications processed after September 1, 1951 are being reviewed to give effect to any increase in monthly pension payments.

During the month of March, 1,393 overtime hours were expended by the Payroll Section. The greater portion of the overtime was used to change payroll records to reflect current rates due to the 3.58% general salary adjustment and calculation of the retroactive payments. The remainder of the time was spent on special payroll analysis.

Payroll Section has been working with Central Tabulating personnel in the preparation of the IBM system of payroll. Detail procedures are being prepared and tested. It is planned to have a test run of the IBM system equipment during the month of May. A payroll representative has met with the committee appointed to develop a uniform cost code. Two meetings have been held and a recommendation has been submitted to the committee by the Payroll Section of a numerical code for the replacement of the present alphabetical suffix code and for use as a servicing unit code by all cost groups.

Organization and Policy Guide on Monthly Attendance Report was completed and distributed during March. Considerable progress was made in completion of Organization and Policy Guides for Overtime, Absences and Tardiness.

Bank reconciliations completed in March were:

Weekly Salary through #288, week ended March 2, 1952.
Weekly Salary Vacation through #288, week ended March 2, 1952.
Bond Account - February, 1952.
Monthly Payroll #66, February, 1952.

Payrolls reimbursed were as follows:

Weekly Salary through March 30, 1952.
Monthly Salary through March, 1952.

Payroll Section

STATISTICS

Employees and Payroll	Total	Monthly Payroll	Weekly Payroll
Employees on payroll at beginning of month	9 013	2 082	6 931
Additions and transfers in	89	5	84
Removals and transfers out	(198)	(22)	(176)
Transfers from weekly to monthly payroll	-0-	20	(20)
Transfers from monthly to weekly payroll	-0-	-0-	-0-
Employees on payroll at end of month	8 904	2 085	6 819

Number of Employees	March	February
Bargaining group - HAMTC	3 493	3 500
Bargaining group - Building Services	71	70
- Two Platoon Firemen	56	56
- Hanford Guards	607	612
Other weekly - non-bargaining	2 648	2 749
Executive, administrative and operating	1 515	1 498
Professional	492	506
Other monthly	22	22
Total	8 904	9 013

Number of Employees		
Engineering	1 706	1 733
Manufacturing	3 145	3 192
Utilities & General Services	2 323	2 340
Community	203	204
Real Estate & Services	330	331
Financial	384	391
Employee & Public Relations	109	113
Radiological Sciences	363	365
Medical	274	276
General	24	25
Law	7	7
Accountability	22	22
Technical Personnel	14	14
Total	8 904	9 013

Overtime Payments		
Weekly paid employees	$107 438	$129 885
Monthly paid employees	33 415 (1)	32 190 (2)
Total	$140 853	$162 075

Number of Changes in Salary Rates and Job Classifications	2 345	1 117

(1) Payments cover period March 1 through March 31, 1952, except in the case of patrolmen in the Plant Security & Services Section of the Utilities & General Services Department who were paid for period February 1 through February 29, 1952.

(2) Payments cover period February 1 through February 29, 1952, except in the case of patrolmen in the Plant Security & Services Section of the Utilities & General Services Department who were paid for period January 1 through January 31, 1952.

Payroll Section (Continued)

Gross Amount of Payroll	March	February
Engineering	$ 730 401	$ 816 838
Manufacturing	1 282 644	1 503 519
Utilities and General Services	807 611	973 592
Community Real Estate and Services	197 050	223 545
Other	437 321	498 872
Total	$3 455 027 (1)	$4 016 366 (2)

Annual Going Rate of Payroll (3)		
Base	$40 362 577	$39 615 484
Overtime	1 769 393	1 730 259
Isolation Pay and Area Differential	1 534 253	1 285 195
Shift Differential	500 145	505 646
Other	36 617	40 073
Total	$44 202 985	$43 176 657

Average Hourly Base Rates (3)		
Bargaining group - HAMTC	$2.089	$2.019
- Building Services	1.629	1.565
- Two Platoon Firemen	2.056	1.985
- Hanford Guards	1.808	1.756
Other weekly - non-bargaining	1.784	1.715
Executive, administrative and operating	2.943 (4)	2.916
Professional	3.014	2.941
Other monthly	3.408	2.333
Total	$2.172	$2.106

Average Earnings Rate Per Hour (5)	March			February		
	Weekly	Monthly	Total	Weekly	Monthly	Total
Engineering	$1.935	$3.056	$2.395	$1.847	$2.946	$2.290
Manufacturing	2.277	3.080	2.418	2.207	2.983	2.340
Utilities and General Services	1.972	2.789	2.082	1.911	2.696	2.015
Community Real Estate and Services	2.041	2.549	2.214	1.981	2.478	2.152
Other	1.801	3.167	2.107	1.742	3.055	2.038
Total	$2.061	$2.991	$2.271	$1.994	$2.890	$2.194

(1) Includes payments for four-week period ended March 23, 1952 in the case of weekly paid employees. Excludes $1,332 retroactive payments to contruction workers for periods of employment between September 1, 1946 and September 30, 1951. Includes General Salary Increase of 3.58% paid on a current basis effective March 1, 1952 in the case of monthly paid employees and effective March 17, 1952 in the case of weekly paid employees.

(2) Includes payments for five-week period ended February 24, 1952 in the case of weekly paid employees. Excludes $845 retroactive payments to construction workers for period of employment between September 1, 1946 and September 30, 1951.

(3) Statistics for March include new rates after giving effect to General Salary Increase of 3.58%.

(4) Excludes area differential which, prior to March 1, was included as part of base salary.

(5) Includes shift differential and isolation pay in the case of weekly paid employees and area differential in the case of monthly paid employees. Excludes overtime premiums, commissions, suggestion awards, etc.

1215554

Payroll Section (Continued)

Employee Benefit Plans

Pension Plan	March	February
Number participating at beginning of month	6 603	6 542
New participants and transfers in	123	100
Removals and transfers out	(52)	(39)
Number participating at end of month	6 674	6 603
% of eligible employees participating	94.2%	94.5%

Employees Retired	March	Total to Date
Number	3	197-a)
Aggregate Annual Pensions Including Supplemental Payments	$ 458	$47 769-b)
Amount contributed by employees retired	1 145	42 096

(a - Includes 8 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.

	March	February
Number who became eligible for participation	153	147
Number who applied for participation	101	96
Number who elected not to participate	52	51

Insurance Plan (1)

Personal Coverage		
Number participating at beginning of month	9 049	9 082
New participants and transfers in	70	67
Cancellations	(27)	(15)
Removals and transfers out	(100)	(85)
Number participating at end of month	8 992	9 049
% of eligible employees participating	98.2%	98.2%

Dependent Coverage		
Number participating at beginning of month	5 576	5 573
Additions and transfers in	88	51
Cancellations	(8)	(7)
Removals and transfers out	(53)	(41)
Number participating at end of month	5 603	5 576

Claims - Disability Benefits (2)

Number of claims paid by insurance company: Employee Benefits		
Weekly Sickness and Accident	153	134
Daily Hospital Expense Benefits	197	141
Special Hospital Services	221	165
Surgical Operations Benefits	155	106

(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.

Payroll Section (Continued)

Employee Benefit Plans (continued)

Claims - Disability Benefits (continued)

	March	February
Dependent Benefits		
Daily Hospital Expense Benefits	253	191
Special Hospital Services	297	229
Surgical Operations Benefits	288	187
Amount of claims paid by insurance company:		
Employee Benefits	$34 204	$29 870
Dependent Benefits	40 524	24 963
Total	$74 728	$54 833

Number of Disability Claims Forwarded to Insurance Company		
Hospital Benefits		
Kadlec Hospital	453	439
Other Hospitals	122	116
	575	555
Weekly Sickness and Accident Benefits	170	150
Total	745	705

Claims - Death Benefits (1)	March	Total to Date
Number	2	81
Amount	$13 000	$453 000

Group Life Insurance

The Group Life Insurance Plan was discontinued November 30, 1950. As of March 31, 1952, 4 employees who are absent due to total disability are still participating in the Group Life Insurance Plan. They were not actively at work 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.

Vacation Plan

Number of employees granted permission to defer one week of their 1952 vacation to 1953

	March			Total to Date		
	Weekly	Monthly	Total	Weekly	Monthly	Total
Engineering	9	4	13	16	7	23
Manufacturing	86	26	112	109	33	142-a)
Utilities and General Services	6	6	12	126	14	140-b)
Community Real Estate and Services	2	9	11	12	13	25
Financial	1	1	2	9	1	10-a)
Employee and Public Relations	0	0	0	0	0	0
Radiological Sciences	3	3	6	4	4	8
Medical	0	1	1	2	1	3
General	0	0	0	0	0	0
Total	107	50	157	278	73	351

(a - Total to date decreased by one cancellation.
(b - Total to date decreased by two cancellations.

(1) Total to date includes all claims under the old and new Insurance Plans and four deaths on which accidental death benefits were paid.

Payroll Section (Continued)

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	919	1 523	1 039	277	603	4 361
New authorizations	12	31	19	1	7	70
Voluntary cancellations	(10)	(24)	(21)	(6)	(7)	(68)
Removals and transfers out	(50)	(22)	(14)	(1)	(9)	(96)
Transfers in	19	5	7	2	4	37
Number participating at end of month	890	1 513	1 030	273	598	4 304
Percentage of Participation						
G.E. Employees Savings and Stock Bonus Plan	48.1%	42.5%	38.2%	45.2%	44.8%	42.9%
G.E. Savings Plan	7.6%	11.6%	10.3%	11.8%	9.9%	10.3%
Both Plans	52.2%	48.1%	44.3%	51.2%	50.0%	48.3%
Bonds issued						
Maturity value	$36 625	$71 150	$46 200	$10 700	$24 775	$189 450
Number	779	1 516	1 012	226	541	4 074
Refunds issued	38	31	36	6	14	125
Revisions in authorizations	9	10	12	5	15	51
Annual going rate of deductions						
G.E. Employees Savings and Stock Bonus Plan	$350 397	$612 241	$384 650	$ 90 217	$227 346	$1 664 851
G.E. Savings Plan	65 763	190 046	121 196	28 140	52 396	457 541
Total	$416 160	$802 287	$505 846	$118 357	$279 742	$2 122 392

Withdrawal of U. S. Savings Bonds from G. E. Employees Savings and Stock Bonus Plan

	March	Year to Date
Number of participants withdrawing Bonds	160	419
Maturity value of U. S. Savings Bonds withdrawn	$54 500	$139 675

Check-off of Union Dues

Number of Payroll Deduction Authorizations in Effect

	2-29-52	Additions	Cancellations And Terminations	3-31-52
Hanford Atomic Metal Trades Council	1 142	44	18	1 168
Building Service Employees International Union, Local 201 (Medical Department Employees)	25	2	-0-	27
Hanford Guards Union, Local 21, of the International Guards Union of America	202	21	2	221
Total	1 369	67	20	1 416

Employees Who Have Entered Military Service

	Total to Date		
	Called to Duty	Volunteered for Duty	Total
Reserve Officers	20	3	23
Enlisted Reserve	51	6	57
National Guard	6	-0-	6
Selective Service	46	-0-	46
Voluntary Enlistments	-0-	86	86
Total	123	95	218

1 2 1 1 5 1

Payroll Section (Continued)

Number of Rent, Telephone and Hospital Deductions from Salaries	March	February
House Rent	5 022	5 167
Dormitory Rent	875	871
Barracks Rent	189	194
Trailer Space Rent	143	148
Telephone	3 705	3 882
Hospital	511	577
Total	10 445	10 839

Annuity Certificates (For duPont Service)	March	Total to Date
Number issued	1	84

Suggestion Awards		
Number of awards	12	1 348
Total amount of awards	$520	$26 045

Employee Sales Plan	March		
	Major Appliances	Traffic Appliances	Total
Certificates issued	23	136	159
Certificates voided	1	5	6

Salary Checks Deposited	March		February	
	Weekly	Monthly	Weekly	Monthly
Richland Branch - Seattle-First National Bank	758	854	772	864
North Richland Area Office - Seattle-First National Bank	12	6	10	6
Richland Branch - National Bank of Commerce	455	291	445	280
Out of state banks (Schenectady Staff)	-0-	1	-0-	1
Total	1 225*	1 152	1 227**	1 151

*Week ended 3-16-52
**Week ended 2-17-52

Special Absence Allowance Requests	March	February
Number submitted to Pension Board	9	5

% Absenteeism		
Weekly - Men	2.79	2.71
Weekly - Women	4.22	3.64
Total Weekly	3.17	2.94
Monthly	1.66	1.66
Grand Total	2.86	2.65

1216568

GENERAL COST SECTION

Work in connection with preparation of the Budget for FY 1954 and revision of Budget for FY 1953 was intensified during the month in order to insure completion of data by April 9 for review by the Appropriations and Budget Committee and for submission to the Atomic Energy Commission. Every effort was made to forestall last minute adjustments and changes by scheduling budget discussions both with departmental managers and with interested A.E.C. personnel.

Summaries of Operating Costs for the Nucleonics Division were issued to plant management on March 15. Departmental cost reports were prepared and issued about March 17 detailing all costs incurred by the various Departments for which General Cost is responsible. Supplementing these cost reports, letters were issued to department and section managers analyzing costs incurred during February and explaining major variations in costs when compared with the previous month.

A letter was prepared for the Manager-Finance addressed to the General Manager which detailed Production Costs for the months of February and January, and which afforded a comparison of year-to-date costs with budgeted amounts for the same period. Major variances in elements of Production Costs were explained.

Actual cost summaries for the first eight months of the fiscal year together with cost bogeys thru June, 1952 were issued to Plant Management on March 28, 1952.

Based on current studies, new procedures were established in order to charge cost of IBM machine time to customers on a more accurate basis. This will include applicable rates for each type of machine rather than arbitrary distribution of lump billings.

A study of amounts allocated as General and Administrative expense in February by Statistical and Computing Services indicate that more of the expense of this unit should be borne by customer departments. Although little change is expected in March in amounts so-allocated, a definite improvement should be evident in succeeding months.

A special study on expenditures for Office Furniture and Equipment for FY 1951 was made and presented to the Secretary of the Appropriations and Budget Committee.

In line with the responsibility as financial advisor to the Director, Radiological Sciences, considerable work was done in connection with preparing unit costs on Radiological Sciences Department activities, previously prepared by their personnel. Unit costs for prior months were reviewed and inconsistencies were adjusted where necessary. It is expected that reports will be issued to Radiological Sciences Management on a monthly basis beginning in April.

Salary costs of the Financial Department were recast in line with the recent reorganization and will be included on a recast basis in March cost reports.

1215559

MANUFACTURING COST
MARCH, 1952

BUDGETS

Budget preparation for Manufacturing Department is nearing completion with only minor revisions expected before final submission.

Narrative justifications, as submitted by Section Managers, were reviewed and correlated with the budgeted personnel and expenditure amounts. Recommendations and minor changes were made to improve presentation.

SPECIAL REQUESTS

A new report form indicating status of Special Request work that will be utilized for comparison of cost to date with current estimates was completed.

The requests for billing on this program increased over previous months. The number of estimates also increased, indicating a continuing expansion of work on the Special Request Program.

MAINTENANCE AND PLANT IMPROVEMENT

A method of recording costs incurred on each building, for which the Manufacturing Department has Landlord Responsibility, was established. The method of properly allocating costs was reviewed with the Financial representatives of the operating sections and general agreement reached.

The problem of reporting overruns to section management was discussed with the Central Tabulating Unit personnel and a reporting method was agreed upon. Some delay in scheduling the first reports of this type was encountered. It is now anticipated that the first reports will be received early in May. The new weekly report will replace one weekly and one monthly report now prepared by Central Tabulating Unit.

REPORTS AND RECORDS

Much time and effort has been expended towards preparation of the new inventory report on Process Materials. The report for March is expected to be issued early in the month of April. Additional improvements and minor revisions will be made in future months. It is expected that regular issuance date of the report will be not later than the 10th of the month following the end of the month reported.

Personnel figures will be shown on Operating Reports starting with March. The personnel will be shown on unit and section reports and will be obtained from Manufacturing Department personnel report. Budgeted personnel will also be shown.

A new unit code was set up for all Special Production Work with sub-account classification codes established to gather costs of specific programs as follows, such as Phoenix, P-10 and Postum, Chemical 10-66.

PRODUCTION COST ACCOUNTING

The statement for February was completed April 3rd. Completion dates will be further improved in future months.

1216570

Review of anticipated accounting problems in connection with Redox was made.

It was agreed with A.E.C. personnel that we would develop a complete pattern of information required from accountability and other units and make necessary arrangements to obtain same.

ANALYSIS AND STUDIES

Manufacturing cost forecasts and unit cost "Bogeys" for department management were prepared.

A preliminary study is being made regarding usage of unit costs for power liquidations to operations units.

The Manufacturing Department was provided with Budgeted Unit Costs for FY 1953 and FY 1954 on $BiPO_4$, Redox, 234-5, TBP and UO_3 budgeted production.

REACTOR SECTION ACCOUNTING

An analysis of February costs as compared to January costs and February forecasted costs was submitted with the operating reports. This analysis was utilized by the Reactor Section in preparing the monthly analysis of irradiation costs. An additional detailed analysis was prepared for the use of the Operations Unit in connection with the area cost control program.

The monthly cost report has been revised to present the Reactor Section manufacturing costs on a unit responsibility basis. It is anticipated that the segregation of costs in this manner will furnish an instrument for better cost control. It is planned to issue the March cost report on the new basis.

methods of charging to the Special Request program and the source of codes to be used was outlined to those not familiar with the procedure. Charges to this program by the Reactor Section will be reviewed monthly to insure that charges applicable to each job are made.

A recommendation was made to charge job training of personnel in the service groups which are training for 100-C as a line item on the operating reports for Operations and Power. The job training costs of the service groups to consist mainly of Instrument and Radiation Monitoring personnel.

SEPARATIONS SECTION ACCOUNTING

Considerable work has been accomplished in connection with Landlord Responsibility program in the areas controlled by Separations Section.

The revised cost report prepared for Separations Section is being reviewed for possible further changes at the request of operating personnel.

Consideration is being given to a recommendation of Accountability Section that production monthly closing dates prior to the end of the calendar month be established. If the dates are so established that a full months production is consistently reported there is no reason why reporting costs by calendar months would distort comparisons or unit costs.

METAL PREPARATION SECTION ACCOUNTING

A procedure for administering Landlord Responsibilities is being prepared in cooperation with the other sections. Rental rates will be ready to apply to April 1952 business.

The review of the Section Budget for FY 1954 and Revision for FY 1953 was completed. Assistance was given in the preparation of the narrative justification.

Graphic charts have been prepared for the Senior Supervisors showing actual cost versus standard cost where standards are available.

The Reactor Section has agreed to assume the expense of transporting metal from the 300 Area to the Reactor Section.

CER 4/10/52

1215572

ENGINEERING ACCOUNTING SECTION
MONTHLY REPORT FOR MARCH, 1952

Accounts Payable

In March a request was received from the Atomic Energy Commission that Subcontracts G-148, Vitro Corporation of America, and G-363, Chas. T. Main, Inc., be assigned to the Atomic Energy Commission effective April 1, 1952. Total payments made by General Electric to Vitro Corporation of America were $13,130,897 and to Chas. T. Main, Inc. $670,058.

The present balance of $250,000 representing the advance account to the Vitro Corporation of America will be liquidated by their remittance which is expected in April.

There were 1,762 accounts payable vouchers processed during the month in the total amount of $2,562,706, compared with a February activity of 1,560 vouchers totalling $2,011,972.

Disbursements were $2,695,756 contrasted to February figure of $1,985,543, thus an approximate increase of 27%. Disbursements for March may be detailed briefly as follows:

Material and Freight	$ 2 379 148
CPFF Subcontracts - Labor	263 138
CPFF Subcontracts - Other	33 257
Miscellaneous	20 213
	$ 2 695 756

General Accounts

The following is a detail of Cash Advances for the month of March as compared with February, 1952:

	March		February	
	No. of Accts.	Amount	No. of Accts.	Amount
Beginning Balance	80	$ 23 124	85	$ 27 244
Cash Advances made		20 038		13 428
Cash Receipts and Expense Reports processed		16 654 Cr.		17 548 Cr.
Balance at end of Month	95	$ 26 508	80	$ 23 124

1216573

ENGINEERING ACCOUNTING SECTION

General Accounts (continued)

Travel Expenses billed to AEC during March amount to:	$ 10 782
Actual amount paid employees:	11 286
Charges to Travel and Living Variation Account:	504

Of the above balance of $26,508 accounts over 30 days old amounted to $5,572.

Project Section Cost

During the month the following two projects were unitized for Plant Accounting:

C-326 Underground Geological and Hydrological Investigation Program
C-330 Improvement of 313 and 314 Buildings Ventilation for Control of Air-Borne Contamination

The following projects comprising Account 23, Major Construction Program Facilities, were unitized in preparation of transfer to the Atomic Energy Commission:

C-244 Steam Generating Facilities, 3000 Area, Building 3084
C-281 Construction of Central Shops Area (White Bluffs)
C-303 White Bluffs Water System
C-320 Moving Three (3) Warehouses from 3000 Area to White Bluffs
MWI-2 Automotive and Heavy Equipment Spare Parts Warehouse, White Bluffs
MWI-7 Alterations to Pipe Shop, White Bluffs
MWI-9 Installation of Crane and Crane-Way, Heavy Equipment Repair Shop, White Bluffs
MWI-10 Fire Protection Records Storage Building, 3000 Area
MWI-16 Minor Changes to White Bluffs Riggers Loft and Pipe Shop
MWI-27 Installation of Evaporative Coolers Minor Construction Offices
MC-315 Install Light and Poles at White Bluffs Intersection
MC-381 Installation of Fluorescent Lights, 101 Building, 3000 Area
MC-391 Fabricate and Install Hoods and Ducts for Exhaust in Wash and Grease Building, Central Shops, White Bluffs
MC-429 Steel Fabrication Shelter, Central Shops, White Bluffs
MC-451 Installation of Electrical Service Welding Shop, White Bluffs
MC-484 Installation of Hydro-Planer in Machine Shop, White Bluffs
MC-1045 Install Evaporative Type Air Conditioner, Concrete Testing Laboratory, White Bluffs

A new Cost Accounting system was established during the month to be effective April 1, 1952, which places the Project Section on a standard cost basis. Meetings were held with all managers and the new system was thoroughly explained. It is believed through the use of standard rates project cost control will be improved. Month-end closings and issuance of reports will also be facilitated by this change.

1211574

ENGINEERING ACCOUNTING SECTION

Budgetary Control

During the month of March, FY 1952, compilation of the "Budget For Fiscal Year 1954 and Revision of Budget For Fiscal Year 1953" required the major portion of the working-month, being completed during the last week.

Cost codes were established and standard costs were computed and approved for the Design Section effective March 1, 1952, and for the Project Section effective April 1, 1952.

Work was performed on the transfer of budgeted funds which occurred within the Engineering Department. On February 18, 1952 Design and Project Sections transferred the Design and Construction Classified Files to Technical Section. This transfer followed the plant-wide policy of consolidating crafts and services of a similar nature.

Technical Cost

The Trial Balance for Technical Section was issued to the Manager - Technical on March 13, followed on March 15 by the detail of operating costs for the month. Letters analyzing variations in February costs as compared with January were prepared and issued to the Manager - Technical and the Manager - Finance.

On March 1 a new cost code book was issued. The most significant changes in the codes were a reduction in the length of a complete code from eleven (11) to six (6) digits with an expansion in the number of Sub-Unit codes. The change is intended to reduce confusion and the effort required to properly code costs.

Discussions were held concerning a survey being made to determine the possibility of installing a uniform code system for the entire plant to facilitate putting non-exempt payrolls on IBM. It was determined that the existing Technical codes could meet IBM requirements with very few changes.

In March the previous IME liquidation rates for each Sub-Unit were replaced by one rate for each Unit. This reduced the number of different percentages in use from eleven (11) to four (4). At the same time segregation of indirect costs by Sub-Unit was discontinued in all Units except Technical Services.

1216575

INTERNAL AUDIT SECTION
MONTHLY REPORT

March, 1952

During the month several auditors performed work in connection with the transfer of responsibility for maintaining controls for spare parts and general maintenance inventories from Stores Unit, Purchasing and Stores Section, to General Accounts, General Accounting Section. The control ledger, formerly kept by Stores Unit, was discontinued and control will be maintained in General Accounts by general ledger subaccount balances together with files of open items. The transfer will place monetary control in the Financial Department and will accomplish an overall saving of the time of three people.

An account, Fabrication Work in Process, was established for the accumulation of in-process costs of parts and equipment being fabricated by plant personnel or vendors to whom materials are furnished from stores stock. These costs had previously been accumulated by Stores Unit in inventory subaccounts. Accumulated costs, approximating $21,000, were either distributed to inventory accounts for completed items or transferred to the newly established account for items still in process of fabrication. Written instructions have been prepared to cover a revised procedure under which fabrication costs on the plant site will be accumulated by Manufacturing Cost Section and fabrication costs at vendors' plants by General Accounts, General Accounting Section.

Investigation was made of the stock record cards maintained by Stores Unit for Spare Equipment Held in Storage Account, preparatory to transferring control from the Stores Unit to General Accounts. Numerous errors were revealed and in addition it was found that large numbers of receiving reports, store orders and other posting media had not been processed. Errors found were corrected and Stores Unit stock record cards were balanced with the records maintained by Plant Accounts. Stores Unit is now working to eliminate the backlog of unprocessed documents.

A breakdown of telephone and telegraph charges by type for Employee and Public Relations Department and Construction Procurement, Operational Procurement, and Inspection and Expediting Units of the Purchasing and Stores Section covering a six month period, August 1951 to January 1952, was prepared for the Atomic Energy Commission.

An investigation made to determine the reasons for hauling lump coal from the 101 Building, Hanford, to various locations on the project, including several in the 700 Area, found justification for this practice because of the economies of unloading and storing this type of coal at one location.

A report was issued of a survey made of the activities of the 100 F Area store which was recently opened. The survey included (1) determination of the reasonableness of stock levels, (2) study of the extent of use of the store facilities by 100 F Area departments, and (3) personal contacts and observations in the field to evaluate inventory control practices of using departments.

A preliminary report was issued of an audit made to verify the loss sustained from a burglary of Kadlec Hospital. Reports were also issued for the following audits, (1) Weekly Payroll Bank Reconciliation, (2) General Electric Pension Plan (Weekly Employees), and (3) Weekly Payroll Preparation.

1216576

PLANT SECURITY AND SERVICES SECTION

MONTHLY REPORT - MARCH 1952

SUMMARY

There was one major injury in March, making a total of three for the year to date, with a frequency rate of 0.66.

There were five fire alarms in the industrial areas. There were no losses.

Effective March 17, Mail and Duplicating functions formerly performed by the Engineering Department in the 300 Area were transferred to the Utilities and General Services Department.

Total savings resulting from forms control and procedures analysis activities resulted in savings of $26,968 of which $25,865 will be on an annually recurring basis. Total savings since January 1, 1952 are $74,948.

1216577

PLANT SECURITY AND SERVICES SECTION

MONTHLY REPORT - MARCH 1952

ORGANIZATION AND PERSONNEL:

Number of employees on payroll:

	Beginning of Month	End of Month	Increase	Decrease
Staff	6	6		
Patrol and Security	660	656		4 (a)
Safety and Fire Protection	149	150	1 (b)	
Office Services (Laundry and Building Service, Clerical Services, Records Control and Procedures Analysis)	327	333	6 (c)	
TOTALS	1,142	1,145	7	4

NET INCREASE: 3

(a) - Patrol and Security

2 - New Hires
3 - Reactivated
1 - Deactivated
3 - Transferred to other Departments
5 - Terminations

(b) - Safety and Fire Protection

1 - Reactivated
1 - New Hire
2 - Transferred from other Departments
3 - Terminations

(c) - Laundry and Building Service

2 - New Hires
3 - Reactivated
2 - Transferred to other Departments
1 - Deactivated
3 - Terminations

Clerical Services

10 - New Hires
10 - Transferred from other Departments
1 - Deactivated
7 - Transferred to other Departments
5 - Terminations

1215576

SAFETY AND FIRE PROTECTION

Injury Statistics

	FEBRUARY	MARCH	YEAR TO DATE	COMPARATIVE PERIOD 1951
Major Injuries	0	1	3	1
Sub-Major Injuries	0	7	9	5
Minor Injuries	357	421	1,170	824
Exposure Hours	1,408,843	1,574,495	4,561,517	3,927,037
Major Injury F/R	0.00	0.64	0.66	0.25
Major Injury S/R	0.003	0.008	0.006	0.08
Penalty Days	0	0	0	300
Actual Days Lost	4	12	29	473
Minor Injury F/R	2.53	2.67	2.56	2.10
Estimated Medical Treatment Time Required	1,428 hours	1,740 hours	4,752 hours	3,336 hours

Industrial Fires

Department	Area	No. of Fires	Cause	Loss
Utilities & Gen. Services (Transportation Section)	100-F	1	Flammable Liquid	None
Manufacturing Department (Reactor Section)	100-H	1	Leaking Flammable Gas	None
Manufacturing Department (Reactor Section)	100-H	1	Spark from Welding	None
Minor Construction	200-W	1	Flammable Liquid - Smoking Material	None
Minor Construction	200-E	1	Undetermined	None
TOTAL NUMBER OF FIRES		5	TOTAL LOSS	NONE

Safety & Fire Protection Activities

Fire protection surveys were completed on Buildings 181-D, 182-D, North Richland Warehouses Nos. 63, 64, 65, 66, 70, 72, 73, 74, 75, 76, 77, 78, 85 and 91.

The Hanford 101 Building fire protection is again under study. It is our feeling that this building cannot be made satisfactory from a fire protection standpoint.

Work is being done with the Engineers in reviewing plans for the interior design of the Mechanical Development Building in the new Technical Center.

A study of fire resistant paper for contamination control is continuing.

A total of 216 training drills were conducted by the Fire Department.

1216579

Safe handling of equipment in laboratories is receiving psecial attention throughout the Areas, especially the 200 Areas.

A review of the Hot-Semi Works safety rules has been made at the request of Supervision.

Special efforts are being put forth by Supervision in the 300 Area to curb the increase in minor injuries. Safety has followed and assisted in this effort. Improvement has been noted during the past three weeks.

During the month, 83 pair of prescription safety glasses were ordered and 89 pair were delivered from previous orders. 249 pairs of safety shoes were sold.

A general review and adjustment of activities in the 105 Buildings throughout the 100 Areas has resulted in correcting unsafe conditions and improving the safe working practices.

Old bridges over irrigation canals in various locations throughout the industrial areas are now being removed.

Distribution of the safety award gifts was not made as scheduled because the gifts from the Utica Cutlery Company were not shipped as per instruction (motor freight) but sent LCL. It is felt that approximately 80% of the gifts will be distributed on 4-7-52.

Three Safety Engineers from the Design and Construction Section of Engineering will be transferred to Operational Safety on 4-1-52. Their previous duties and assignments are being studied before permanent assignments are issued.

OFFICE SERVICES

Plant Laundry	February	March
Pounds Delivered	233,254	230,931
Pounds Rewash	29,541	26,142
Total Dry Weight	262,795	257,073
Richland Laundry		
Flatwork - Pounds	60,754	67,504
Rough Dry - Pounds	37,360	30,142
Finished - Pounds	2,872	2,673
Estimated Pieces	132,292	131,418
Total Dry Weight - Lbs.	100,986	100,319
Monitoring Section (Plant Laundry)		
Poppy Check - Pieces	189,610	179,083
Scaler Check - Pieces	200,710	224,466
Total Pieces	390,320	403,549

1211560

Clerical Services

Negotiations were completed for transferring the Mail and Duplicating functions in the 300 Area from Technical Services of the Engineering Department to Office Services of the Utilities and General Services Department effective March 17, 1952. This involved nine non-exempt employees.

Transportation Section agreed to turn over all responsibility for carrying of area mail to Office Services Unit effective March 31, 1952.

The teletype machine used by the Engineering Department in the 760 Building was removed on March 21, 1952. Arrangements were made by mutual agreement to have this service performed by the AEC at an annual savings to General Electric Company of approximately $4,000.00.

Central Mail

Timing and scheduling of plantwide mail runs which provide for a minimum of twice daily mail service to all locations at Hanford Works was completed. This extensive change and improvement in mail service was accomplished with the addition of one new employee, the balance of the employees being obtained from reductions of previous duplicated mail service in the 700, 300 and 3000 Areas.

Types and Pieces of Mail Handled:	March	February
Internal	932,119	715,116
Postal	75,378	62,610
Registered	1,244	1,380
Insured	347	347
Special Delivery	201	236
Total Mail Handled	1,009,289	779,689
Total Postage Used	$2,224.52	$2,303.54
Total Teletypes handled	7,345	4,969
Total Store Orders Handled	488	331

Office Equipment

The Office Equipment budget for Fy 1953 and 1954 was compiled and submitted to the Financial Department during this month. Estimates received from Department Managers show a substantial net reduction in additional requirements for these periods.

Victor adding machine representatives conducted a week's schooling for our mechanics to enable them to give improved service on the new type machines procured in FY 1952.

Meetings were held with the AEC to determine responsibility for furnishing office equipment and machines to the AEC and prime contractors other than GE during FY 1953. No conclusions have been reached as of March 31.

1216501

All office equipment for projects as approved by the A & B Committee during the Midyear Review for FY 1952 was requisitioned during the month.

Machine Repair	March	February
Office Machines repaired in shop	173	193
Office Machine service calls	506	444
Total Machines Serviced	679	637

Furniture and Moves		
Office Moves	23	31
Pickups for Records Center	72	63
Store Orders filled	287	368
Pieces of furniture delivered	680	658
Property transfers completed	17	43

Central Printing

The new Hanford Works Organization Directory was printed and distributed during March, along with several major Organization and Policy Guides.

Short run duplicating type work has fallen off sharply in Printing making it possible to devote time and attention to turning out quality printing. Some reductions in personnel will continue to be made to keep expenses in line with lower income, due to reduced volume.

The dark room camera recently installed was given a complete 30-day checkup by the manufacturer. It is doing very sharp work and has improved quality of plates considerably.

The time required to complete large, quality type printing orders is steadily being reduced due to new procedures being adopted and closer attention given to follow-up.

Work Completed	March	February
Orders Received	304	283
Zinc plates made	362	277
Offset orders completed	268	281
Offset copies	1,197,992	1,284,685
Letter press completed	32	43
Letter press copies	25,824	12,870
Xercx plates made	2	75
Photo copy prepared	179	10
Negatives processed	430	251
Cancelled orders	2	2
Orders on hand at end of month	45	43

1211502

Stenographic Services

Stenographic services moved from the third wing of the 703 Building to the second wing on March 8. The new quarters are very satisfactory and represent a much improved arrangement with more adequate lighting and additional room.

Requests for stenographic services continue to run quite heavy. New personnel entering the steno pool include several business graduates with college diplomas, thus making available to other departments some exceptional employees.

Breakdown of Hours	March	February
Dictation and Transcription	.0	.0
Machine Transcription	.0	66.0
Letters	247.5	82.0
Rough Drafts	29.5	79.0
Stencils, dittos, duplimats	334.0	485.0
Miscellaneous	583.0	537.5
Meeting Time	.0	25.0
Training Time	287.0	401.0
Absentee Time	2.5	16.0
Holiday and Vacation	.0	136.0
Unassigned Time	40.0	80.0
Total	1523.5	1907.5
Employees loaned to other departments	1100.5	796.5
Total Hours Available	2624.0	2704.0

Area Mail and Duplicating Services

Much activity has taken place during the month to establish internal mail schedules and to arrange for space, furniture, training of employees, arranging for clearances, package passes, etc.

The volume of duplicating being performed in the areas is steadily increasing, with offset duplicating showing good gains over the other less desirable methods.

Major changes and revisions in area mail schedules are resulting in savings of equipment and personnel which have been utilized in providing services not previously furnished to outlying areas.

Intensive training and educational programs are being sponsored in the outer areas to acquaint employees with the offset duplicating processes and thus permit full utilization of services offered.

Duplicating Statistics	March	February
Orders Received	2,783	2,304
Orders Completed	2,759	2,248

1 2 1 0 0 3 3

Duplicating Statistics (Contin)	March	February
Offset Plates	6,954	3,470
Offset Copies	437,180	282,556
Xerox Plates	5,443	1,142
Number of Stencils	1,300	1,608
Number of Copies	142,486	181,360
Number of Dittos	5,018	3,937
Number of Copies	134,418	120,296
Area Mail Statistics		
Pieces of Mail handled	173,134	120,717

Records Control

Records Service Center statistics:

Quantity of records received, processed and stored:

Community Real Estate and Services Department	10	Standard	Storage	Cartons
Employee & Public Relations Department	44	"	"	"
Engineering Department	166	"	"	"
Financial Department	183	"	"	"
Manufacturing Department	40	"	"	"
Radiological Sciences Department	8	"	"	"
Utilities & General Services Department	130	"	"	"
TOTAL	581	Standard	Storage	Cartons

Persons provided records service: 875 In addition to the individual services, 17 man hours were expended providing service for the Purchasing Section.

Records destroyed: 8 standard cartons.

Records cartons issued: 569

Percentage of the Records Service Center Vault occupied by records is 92.3% excluding Civilian Defense portion.

Ten requests for file cabinets were received. Six requests were filled and four requests were cancelled.

Ten employees were trained to use the uniform filing system. Six additional contacts were made with personnel installing the uniform filing system to check their files. In addition to those people, twelve other employees have begun uniform filing which makes a total of eighteen during the month. Six other offices were visited for the purpose of checking files which were begun in the month of February.

1211504

Records Control (Contin.)

Records disposal schedules were prepared and subsequent internal approvals were obtained for sixteen records during the month. The schedules for disposal of sixty-three records are now ready for transmission to A.E.C. for consideration for approval.

Procedures Analysis

General Activities	February	March
Printing Orders received	377	347
Printing Orders rejected	14	14
New numbers assigned	98	55
Forms Designed	72	50
Suggestions Processed	4	3

There were 45 new permanent form numbers assigned and 10 temporary or "X" numbers assigned during March.

A short survey has been completed on the preparation of the Meteorology Statistical Summary. This summary was converted to offset duplication and printed both sides of the sheet. Annual recurring savings $31.00.

A portion of the Housing Survey has been involved in the redesign of the Service Order Forms. The typing of back charges has been eliminated for all fixed fee services. One copy of the recently redesigned "Service Order" will be used instead. The total annual recurring savings resulting is $160.

Procedures now employed at the Area Badge Houses regarding area clearance records and utilizing a Kardex filing system have been under review. This system is now being replaced by a Lindex system. Equipment required for the new installation is as listed below:

a. 8 Lindex desk stands
b. 240 Lindex frames
c. 1000 Lindex insert sheets

Savings on equipment has been calculated, however clerical savings will be calculated after the system has been in effect for a longer period. The new equipment cost is $750. Equipment now in use that has been made available is valued at $6930. Net saving is $6180.

A procedures analysis has just been completed concerning Classified Files and Mail Services. New procedures have been established for the transfer of functions pertaining to registered delivery of mail. The use of seven forms was eliminated, resulting in an annual savings in material of $250. Other clerical savings will be realized but they are indeterminate quantities as there is no basis for comparison.

The second indoctrination and training meeting was held April 2. Four films "Typing Techniques", "Using A Carbon Pack", "Addressing Envelopes", "Motion Study Applications" were shown to the Procedures Analysis group. The first three films were deemed beneficial to other personnel so they were reshown to the steno pool personnel, approximately 40 persons attended.

1215565

The new material and equipment has been ordered for the Purchasing group to prepare purchase orders via the offset method. The new procedure will amount to $19,800 savings in clerical effort, personnel and equipment. Installation cost is approximately $2000 resulting in an annual savings of $17,800 the first year and $19,800 each year following. Additional savings will be calculated and included in the complete report.

Savings Realized for March:	One Time	Annual Recurring
Forms Control:	$ 1103	$ 1,444
Analysis:		24,421

Total Savings for Previous Month:	$ 7,578
Total Savings for March:	26,968
Accumulated Savings from 1-1-52:	74,948

SECURITY AND PATROL

Document Report

Number of technical and scientific documents reported unaccounted for March 1, 1952:	409
Documents (technical and scientific) reported unaccounted for during March:	6
Documents (technical and scientific) reported found during March:	12
Number of technical and scientific documents unaccounted for March 31, 1952:	403
Number of non-technical documents unaccounted for March 1, 1952:	54
Documents (non technical) unaccounted for during March 1952:	13
Documents (non technical) reported found during March 1952:	15
Documents (non technical) declassified during March, 1952:	6
Number of non-technical documents unaccounted for March 31, 1952:	46
Total number of technical and scientific and non technical documents unaccounted for March 31, 1952:	449

Following is a summary of the month's activities of the Non-Technical Document Review Board completed in two meetings:

248 documents were reviewed of which
146 were declassified
69 were downgraded to "Restricted"
3 were downgraded to "Official Use Only"
9 were not within the scope of the board
8 were referred to the Coordinating Organization Director and
21 had classifications retained.

There were 21 security violations committed by General Electric Company personnel involving unattended classified material.

Security Education

There were 209 security meetings held and attended by 2,625 General Electric employees.

Four security items appeared in the Works NEWS during the month.

A representative of the Security group showed the following films at security meetings during the month:

"Fitting 'U' Into Security" at one meeting with fifteen employees.

"Sabotage" at two meetings with an average attendance of twenty employees.

"The Man on the Left" at ten meetings with an average attendance of twenty people.

"The Case of the Smokeless Chimney" at three meetings with an average attendance of eighteen employees.

"Let's Demand Positive Identification" is the slogan which appeared on 4,000 copies of the ABC security pamphlet distributed to the plant areas during the month.

Five-hundred posters were distributed plantwide and to the Richland commercial facilities with the slogan "Loose Talk Tells the Saboteur what to Smash". Bus posters bearing the same slogan were also distributed to all the area and city busses (200 posters in all) on March 24.

One hundred and forty-one employees of the General Electric Company received a "Q" orientation security talk from either a representative of the Security Unit or an Area Patrol Captain during the month.

Two names were submitted to the Atomic Energy Commission for an emergency clearance during March.

General

On March 4, arrangements were made for the "Prepakt Test Program" in the 100-C Area to be conducted in Building 41 on an exclusion area basis with 66 clearances in the Kardex File. Tests are to run spasmodically on the day shift only. One Patrolman will be assigned on the days of testing the material and the building securely locked and frequently checked at all other times. The first test was run March 5, 1952.

Temporary Gate "F", 108 Construction Area Gate in 108-B, was discontinued on March 7. A new temporary post was established at Gate "B", 105-B, to expedite construction work on 115-B Building.

1211587

Effective 11:40 AM, March 7, the 241 -UR Tank Farm badge house was closed for a temporary period. All gates and the badge house were secured.

Plans were drawn up on March 10 to restrict the White Bluffs Tube Shop on March 12. One Patrolman on the No. 2 shift, six days per week will be required. The Kardex system with all clearances will be handled through the Security Office. A Patrolman will be on duty from 7:45 A.M. to 4:30 P.M. Monday through Saturday. The buildings will be secured at all other times, and checked by the cruiser cars and White Bluffs motor patrol.

Effective at 3:00 P.M., March 13, the Mechanical Laboratory Section of the 234-5 Building was consolidated with the Top Secret zone of the Building. Rooms 179 through 191 and corridors 7, 9 and 11 will be included in this section. No change in Patrol personnel will be involved.

Operations Order No. I-262 was issued March 13 on the distribution of Security Daily Badge Logs. This order provides for the new procedure of distributing daily badge logs to the area badge houses by Security Patrol. The badge logs are assembled in the Emergency Office and distributed by cruiser cars to area badge houses. The new log is a combined badge log of all areas and eliminated the use of separate badge logs for each particular area.

Alteration of the 300 Area Main Badge House by the Financial Accounting Section on March 17 was made to permit the installation of time clocks. This work was completed March 25. This new arrangement will benefit security, in that it will have a tendency to slow down personnel as they exit the area, allowing more time to perform shift change duties. Actual time clock punching has not been initiated as yet.

"Burma Shave" type signs bearing the following slogans were installed throughout plant roads during the month:

"Security Rules are Merely Tools, to Help You Protect Your Country".

"Loose Talk Requires Energy, Why Work Yourself to Death, Security".

On March 31, at 2:45 P.M., the 234-5 Construction Badge House, manned by one Patrolman twenty-four hours, was discontinued. The badge house was moved out and the fence completed around the 234-5 Area.

During the month of March, the emergency pat search procedure was initiated on one occasion in the 100-B Area, and on eleven different occasions in the 300 Area. These searches resulted from discrepancies in slug or process material accounting, but all discrepancies were eventually resolved.

The "B" Block purchase order from Puget Sound Navy Shipyard, Bremerton, Washington, was completed early in the month of March. All documents and prints charged to the vendor relative to this order have been returned to Hanford Works. Action is being taken at the close of this month to deactivate the security clearances of the Navy Shipyard personnel working on this order.

Training courses received at the Training School during the month by 298 Security Patrolmen were as follows:

1 2 1 5 5 0 0

Pistol	1 1/4 hours
Sub-Machine Gun	3 "
Operations Class No. 1	1 hour
First Aid	1 "
Safety	1/2 "
Security	1 "
Security Film	1/4 "

Security Field Inspection Activities:

Contacts made for unaccounted for documents:	31
Searches conducted for unaccounted for documents:	14
Documents located:	27
Documents declassified:	6
Notices made on changing file combinations which were overdue:	27
Combinations changed:	25
Registered mail violations investigated:	12

Statistical Report of Security Patrol activities:

	100-B	100-D	100-F	100-H	200-E	200-W	300
Pat Searches	93	93	93	36	123	145	9
Escorts	26	9	18	67	178	227	72
Ambulance Runs	2	1	4	1	3	9	1
Passes issued:							
One day temporary	9	15	9	15	8	96	27
Travel	0	0	0	0	0	0	88
Red Tag	199	171	300	73	104	1,009	296
Telephonic	0	8	0	0	0	0	16
Supervisors' post contacts	676	424	354	347	470	1,941	1,015

Other Security Patrol Activities:

Buildings and doors opened:	198
Railroad gates opened:	184
Master System Keys issued:	174
Operation Gas Pumps:	83

Violation	Number of Violations	Cont. Cases from Feb. '52	Cases Cleared	Pending	Fined
Speeding	5	1	5	1	5
Negligent Driving	1	0	1	0	
No Operator's License	1	0	1		
Failure to yield Right-of-Way to Authorized Vehicle	1	0	1		
Refusing to Dim Lights	1	0	1		
Total	9	1	9		

Citation tickets issued:	6
Warning tickets issued:	10
Verbal Warnings:	6

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HANFORD WORKS
General Electric Company
Richland, Washington

REPORT OF VISITORS FOR PERIOD ENDING MARCH 31, 1952

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
MEDICAL DEPARTMENT							
I. Visitors to this Works							
H. I. Foreman Los Alamos Scientific Laboratory Los Alamos, New Mexico	Consultation on medical research problems	W. D. Norwood, M.D. K. Brockman, M.D.	3-4-52	3-5-52	X		100-F 105
DESIGN SECTION-ENGINEERING DEPARTMENT							
I. Visitors to this Works							
A. A. Batza General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	D. A. Hoover	4-2-51	7-1-52	X		200-W 234, 235 234-5 Const.
W. C. Bellows General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	D. A. Hoover	9-7-51	7-1-52	X		200-W 234, 235 234-5 Const.
J. E. Brown, Jr. General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	D. A. Hoover	1-14-52	7-1-52	X		200-W 234, 235 234-5 Const.
F. J. Champlin, Jr. General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	D. A. Hoover	1-14-52	7-1-52	X		200-W 234, 235 234-5 Const.
J. C. Coons General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	D. A. Hoover	2-19-52	7-1-52	X		200-W 234, 235 234-5 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	D. A. Hoover	11-5-51	7-1-52	X		200-W 234, 235 234-5 Const.
C. W. George General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	D. A. Hoover	2-12-52	7-1-52	X		200-W 234,235 234-5 Const.
K. E. Gilbert General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	D. A. Hoover	2-12-52	7-1-52	X		200-W 234, 235 234-5 Const.
H. A. Hadley H. A. Hadley Associates Burlington, Vermont	Consultation and installation of equipment on 432 Project	D. A. Hoover	2-19-52	3-1-52	X		200-W 234, 235 234-5 Const.
E. J. Hatfield, Jr. General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	D. A. Hoover	2-21-52	4-1-52	X		200-W 234,235 234-5 Const.
E. Long General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	D. A. Hoover	6-26-51	7-1-52	X		200-W 234, 235 234-5 Const.
J. L. Matrone General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	D. A. Hoover	2-12-52	7-1-52	X		200-W 234, 235 234-5 Const.
R. N. Poole General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	D. A. Hoover	10-1-51	7-1-52	X		200-W 234, 235 234-5 Const.
C. P. Sherman General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	D. A. Hoover	10-17-51	7-1-52	X		200-W 234, 235 234-5 Const.
R. Siftar General Engineering Lab. Schenectady, New York	Consultation and installation of equipment on 432 Project	D. A. Hoover	10-1-51	7-1-52	X		200-W 234, 235 234-5 Const.

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
L. D. Singleton H. A. Hadley Associates Burlington, Vermont	Consultation and installation of equipment on 432 Project	D. A. Hoover	2-12-52	2-23-52	X		200-W 234, 235 234-5 Const.
R. W. Stanhouse General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	D. A. Hoover	1-14-52	7-1-52	X		200-W 234, 235 234-5 Const.
W. M. Wheeler General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	D. A. Hoover	2-26-52	7-1-52	X		200-W 234, 235 234-5 Const.
B. A. Lamberton Prepakt Company Seattle, Washington	Consultation on concrete installation	L. Pihlfeldt	3-19-52	3-26-52	X		105-C
T. S. Fuller General Engineering Laboratory Schenectady, New York	Consultation on current research metallurgical problems	J. M. Fox	3-26-52	3-28-52	X		300 303 Redox, 221-U 100-B 105 100-H 105
A. L. London Stanford University Palo Alto, California	Discuss heat transfer problems Examine evaporator in 200-E XXX	M. W. Carbon G. M. Roy G. L. Locke	3-27-52	3-28-52	X		101, 700 100-D 189, 105-D 100-H 105 105-C 221-U, 224-U 200-E XXX
II. Visits to other Installations							
E. S. Day, Jr. to: Foxboro Company Foxboro, Massachusetts	Engineering inspection of 105-C Power Calculator System	M. Parr	3-17-52	3-19-52	X		
E. S. Day, Jr. to: Bailey Meter Company Cleveland, Ohio	Determine at AEC direction classified files to be deleted	P. S. Dickey	3-10-52	3-14-52	X		
E. S. Day, Jr. to: Vitro Corporation New York, New York	Instrument design on Project C-431-B	G. Vincent	3-14-52	3-16-52	X		

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Name - Organization	Purpose of Visit	Person Conctaced	Arrival	Departure	Class.	Unclass	Areas
J. M. Frame to: Savannah River Ordinance Augusta, Georgia	Discuss separations process and equipment development	J. D. Ellet	3-25-52	3-27-52	X		
J. M. Frame to: E.I. du Pont de Nemours & Co. Wilmington, Delaware	Discuss plant design	S. D. Smiley	3-27-52	3-27-52	X		
J. M. Frame to: Argonne National Lab. Chicago, Illinois	Discuss separations process and equipment development	S. Lawroski	3-26-52	3-28-52	X		
J. D. McCullough to: Vitro Corporation New York, New York	Instrument design liaison with Project C-431-B architect engineers	G. Vincent	3-14-52	3-16-52	X		
J. D. McCullough to: Foxboro Company Foxboro, Massachusetts	Engineering inspection of 105-C Power Calculator system	M. Parr	3-17-52	3-19-52	X		
V. D. Nixon to: Charles T. Main, Inc. Boston, Massachusetts	Discuss progress of development study of RDA-DC-6	R. K. Patterson	3-11-52	3-15-52	X		
E. P. Peabody to: Charles T. Main, Inc. Boston, Massachusetts	Discuss electrical design with architect engineers on RDA DC 6	R. K. Patterson	3-6-52	3-13-52	X		
J. R. Wolcott to: Charles T. Main, Inc. Boston, Massachusetts	Discuss progress of development study of RDA-DC-6	R. K. Patterson	3-11-52	3-15-52	X		

PROJECT SECTION-ENGINEERING DEPARTMENT

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
B. A. Lamberton Prepakt Concrete Company Seattle, Washington	Inspection and supervision of use of equipment required for development program with high density concrete	V. D. Nixon H. S. Davis	3-10-52	4-19-52	X		
R. E. Chase, II R. E. Chase Company Tacoma, Washington	Inspection of equipment	J. W. Brands	3-13-52	3-13-52		X	100-D XXX
J. H. Wills General Machinery Company Spokane, Washington	Inspection equipment at 244 UR Tank Farm	R.C. Hollingshead A. Edison	3-19-52	3-20-52		X	200-W Const.
II. Visits to other Installations							
F. Ranahan to: General Electric Realty Schenectady, New York	Scheduled conferences with Nucleonics & Realty Divisions	B. R. Prentice D. S. Dobb	3-17-52	3-21-52		X	
R. A. Moncrieff Charles T. Main, Inc. Boston, Massachusetts	Liaison on sub contract G-363	J. R. Kelly J. W. Conley W. H. Clymer	3-14-52	3-20-52		X	100-C XXX
J. W. Conley to: Potlatch Forrest Ind. Lewiston, Idaho	Inspect water plant	E. Archibald	3-24-52	3-25-52		X	
C. D. Berkeley to: Bumstead-Wolford Seattle, Washington	Liaison on sub contract G-382	O. H. Woolford	3-10-52	3-11-52		X	
R. C. Hollingshead to: Standard Steel Corp. Los Angeles, California	Design consultation	K. W. Barnhart	3-7-52	3-12-52		X	
R. C. Hollingshead to: Stearns-Rogers Mfg. Co. Denver, Colorado	Design consultation	M. S. Rosengren	3-19-52	3-24-52		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
G. H. Hill to: General Electric Company Erie, Pennsylvania	Drafting sub development committee meeting		3-4-52	3-7-52		X	
H. P. Shaw to: Food Machinery & Chemical Corp. San Francisco, California	Interpretation of drawings	R. B. Leslie	3-10-52	3-11-52		X	

RADIOLOGICAL SCIENCES DEPARTMENT

I. Visitors to this Works

F. A. Devlin U. S. Naval Radiological Lab. San Francisco, California	Information on radiological protective equipment and removal methods of radioactive material	H. M. Parker A. R. Keene P. C. Jerman W. A. McAdams R. N. Donelson	4-1-52	4-4-52	X		100-B 105 200-W 221-T Redox 300 303 100-F 105
H. I. Foreman Los Alamos Scientific Lab. Los Alamos, New Mexico	Medical research problems	H. A. Kornberg	3-5-52	3-5-52	X		100-F 105, 108
L. R. Gibbs R. C. A. Services San Francisco, California	Inspect equipment mass spectrometer	W. C. Berlin	3-27-52	3-29-52		X	100-F 108
J. E. Law U. S. Naval Radiological Lab San Francisco, California	Information on radiological protective equipment and removal methods of radioactive material	H. M. Parker A. R. Keene P. C. Jerman W. A. McAdams R. N. Donelson	4-1-52	4-4-52	X		100-B 105 200-W 221-T Redox 300 303 100-F 105
C. G. Sutch Kadlec Hospital Richland, Washington	Give lecture on "Mental Hygiene"	H. A. Meloeny	3-28-52	3-28-52		X	300 XXX

II. Visits to other Installations

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
C. C. Gamertsfelder to: U. S. Atomic Energy Comm. Washington, D. C.	Attend AEC meeting on neutrom problems	S. Warren	3-16-52	3-19-52	X		
J. W. Healy to: Consolidated Mining & Smeling Co. Trail, British Columbia, Canada	Discuss contamination problems	C. H. Wright	3-5-52	3-6-52	X		
W. C. Roesch to: U. S. Atomic Energy Comm. Washington, D. C.	Attend AEC meeting on neutron problems	S. Warren	3-16-52	3-19-52	X		
MANUFACTURING DEPARTMENT							
I. Visitors to this Works							
E. L. Heller Joint Committee on Atomic Energy Washington, D. C.	Inspection of facilities	C. N. Gross J. E. Maider J. S. McMahon	3-19-52	3-21-52	X		100-C Const. 105-C 221-U, 224-U 200-W, 221-T 234, 235
D. Crumb International Business Machines Richland, Washington	Repair IBM equipment	L. T. Hagie	3-6-52	3-6-52		X	100-H 105
M. R. Myers International Business Machines Richland, Washington	Repair IBM equipment	L. T. Hagie	3-10-52	3-11-52		X	100-H 105
G. M. Clifton General Electric Company Pasco, Washington	Inspect equipment	H. A. Carlberg	3-20-52	3-20-52		X	Barricade only
J. P. Langan to: Potlatch Forests Lewiston, Idaho	Observe water treat	D. LaFrenz	3-24-52	3-24-52		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
J. P. Langan to: Eugene Water & Electric Eugene, Oregon	Observe water treatment plant	E. A. Armstrong	3-25-52	3-25-52		X	
J. P. Langan to: Springfield Plant	Observe water treatment plant	O. P. Morgan	3-25-52	3-25-52		X	
J. P. Langan to: Longview Plant Longview, Washington	Observe water treatment plant	P. E. Hazelquist	3-26-52	3-26-52		X	
A. R. Maguire to: Oak Ridge National Lab. Oak Ridge, Tennessee	Discuss separations process	F. Steahly	3-17-52	3-20-52	X		
A. R. Maguire to: Carbide & Carbon Oak Ridge, Tennessee	Discuss separations process	F. W. Hurd	3-17-52	3-20-52	X		
A. R. Maguire to: Argonne National Lab. Chicago, Illinois	Discuss Purex processes	S. Lawroski	3-20-52	3-21-52	X		
R. O. Mehann to: Argonne National Lab. Chicago, Illinois	Attend Reactor Safeguard Committee meeting	Committee	3-17-52	3-19-52	X		
R. O. Mehann to: Knolls Atomic Power Lab. Schenectady, New York	Discussion of Hanford problems	B. R. Prentice	3-20-52	3-20-52	X		
W. N. Mobley to: Carbide & Carbon Oak Ridge, Tennessee	Discuss production schedules and specifications	F. W. Hurd	3-17-52	3-20-52	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass.	Areas
W. N. Mobley to: Oak Ridge National Lab. Oak Ridge, Tennessee	Discuss separations processes	F. Steahly	3-17-52	3-20-52	X		
W. N. Mobley to: Argonne National Lab. Chicago, Illinois	Purex process discussions	S. Lawroski	3-20-52	3-21-52	X		
MANAGEMENT							
I. Visitors to this Works							
D. R. Shoults General Electric Company Lockland, Ohio	Discussions on ANP reactor program problems	G. R. Prout W. E. Johnson J. S. Parker	3-25-52	3-27-52	X		200-W Const. 200-W 234, 235 Redox 234-5 Const. 100-C Const. 105-C 100-H 105
PURCHASING AND STORES SECTION-UTILITIES AND GENERAL SERVICES DEPARTMENT							
I. Visitors to this Works							
G. Hixon Inland Motor Freight Kennewick, Washington	Deliver material on order HW 87743-M	H. L. Morgan	3-4-52	3-4-52		X	300 303-J
	Deliver material on order 90853-M	H. L. Morgan	3-6-52	3-6-52		X	100-D 105-D
	Deliver material on order 83029-M	H. L. Morgan	3-12-52	3-12-52		X	100-D 105-D
	Deliver material on order 90853-M	H. L. Morgan	3-19-52	3-19-52		X	100-D 105-D
	Deliver material on order 90853-M	H. L. Morgan	3-19-52	3-19-52		X	100-F 105-F
	Deliver material on order 90853-M	H. L. Morgan	3-21-52	3-21-52		X	100-D 105-D
	Deliver material on order HW 87743-M	H. L. Morgan	3-24-52	3-24-52		X	300 303-J
	Deliver material on order 90853-M	H. L. Morgan	3-26-52	3-26-52		X	100-B 105

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
G. Hixon Inland Motor Freight Kennewick, Washington	Deliver material on order 90853-M	H. L. Morgan	3-26-52	3-26-52		X	100-F 105
R. Bagby West Coast Fast Freight Kennewick, Washington	Deliver material on order HW 87756	H. L. Morgan	3-12-52	3-12-52		X	221-U
	Deliver material on order HWC 19492	H. L. Morgan	3-14-52	3-14-52		X	300 3706
F. F. Smith Inland Motor Freight Kennewick, Washington	Deliver material on order 90853-M	H. L. Morgan	3-19-52	3-19-52		X	100-B 105
W. Freuhling United Truck Lines Kennewick, Washington	Deliver material on order AEC 58911	H. L. Morgan	3-24-52	3-24-52		X	300 303-J
M. Brill Lee and Estes Kennewick, Washington	Deliver material on order 90853-M	H. L. Morgan	3-28-52	3-28-52		X	100-D 105
G. Zank Lee and Estes Kennewick, Washington	Deliver material on order 90853-M	H. L. Morgan	3-31-52	3-31-52		X	100-F 105
F. Kropf Grinnel Company Seattle, Washington	Inspection of sprinkler system installed	H. A. Hauser	3-19-52	4-2-52		X	277-S, 277-U
W. E. Olson Eastern Industries Norwalk, Connecticut	Supervise repair and testing of agitators	R. C. Hollingshead	3-17-52	3-18-52		X	244-UR
B. Tassmer Penefield Manufacturing Co. Meriden, Connecticut	Supervise installation of water demineralizer system	A. Anderson	3-10-52	4-7-52		X	271-U
H. Knapp Western Gear Works Lynwood, California	Supervise installation gear increasers	P. R. Clark	3 4 52	4-1-52		X	100-C 190-C

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
J. O. Borst Western Gear Works Lynwood, California	Supervise installation of gear increasers	P. R. Clark	3-4-52	4-1-52		X	100-C 190-C
H. Long General Electric Company Seattle, Washington	Test welding equipment	G. J. Hayward	3-20-52	3-21-52		X	300 3732
II. Visits to other Installations							
J. C. Hamilton to: Puget Sound Naval Shipyard Bremerton, Washington	Inspection of equipment on order	S. L. Allison	3-5-52	3-7-52		X	
J. C. Hamilton to: Sound Sheet Metal Seattle, Washington	Inspection of equipment on order	G. T. Dexter	3-5-52	3-7-52		X	
H. A. Hauser to: American Machine & Foundry Buffalo, New York	Correlation of orders	E. Forth	3-10-52	3-11-52		X	
H. A. Hauser to: E. W. Bliss Company Canton, Ohio	Correlation of orders	Mr. Moss	3-10-52	3-11-52		X	
H. A. Hauser to: Crane Company Chicago, Illinois	Correlation of orders	P. M. Weiss	3-12-52	3-12-52		X	
C. P. Lawson to: William Powell Company Cincinnati, Ohio	Expedite material on order	Mr. Coombe	3-6-52	3-7-52		X	
R. V. Lawson to: Stewart Machine Works Seattle, Washington	Placement of order	Mr. Stewart	3-21-52	3-21-52		X	
R. V. Lawson to: Western Gear Works Seattle, Washington	Placement of order	Mr. Forsyth	3-21-52	3-21-52		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
R. V. Lawson to: Sulak Machine Works Seattle, Washington	Placement of order	Mr. Sulak	3-21-52	3-21-52		X	
R. V. Lawson to: Nieder Mfg. Company Seattle, Washington	Placement of order	Mr. Neider	3-21-52	3-21-52		X	
C. W. Rushmore to: Peerless Pump San Francisco, California	Correlation of orders	R. B. Leslie	3-10-52	3-11-52		X	
C. W. Rushmore to: K Plastics San Francisco, California	Correlation of orders	F. Kebely	3-10-52	3-11-52		X	
G. H. Wright to: Stearns Rogers, Inc. Denver, Colorado	Procurement of critical material	D. Clow	3-20-52	3-24-52		X	
J. W. O'Rourke to: Knolls Atomic Power Lab. Schenectady, New York	Discuss priorities, allocations and special assistance requests	F. H. Croninger	3-10-52	3-12-52	X		
J. W. O'Rourke to: U.S. Atomic Energy Comm. Washington, D.C.	Discuss priorities, allocations and special assistance requests	C. R. Lee	3-13-52	3-14-52	X		
H. J. Wolte to: Knolls Atomic Power Lab. Schenectady, New York	Discuss priorities, allocations and special assistance requests	F. H. Croninger	3-10-52	3-12-52	X		
H. J. Wolte to: U.S. Atomic Energy Comm. Washington, D.C.	Discuss priorities, allocations and special assistance requests	C. R. Lee	3-13-52	3-14-52	X		

ENGINEERING DEPARTMENT-ADMINISTRATIVE

I. Visits to other Installations

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
A. B. Greninger to: Knolls Atomic Power Lab. Schenectady, New York	Program discussions	K. H. Kingdon	3-27-52	3-28-52	X		
A. B. Greninger to: National Carbon Company New York, New York	Program discussions	C. O. Kleinsmith	3-26-52	3-26-52		X	
M. K. Cain to: John Maloney Company Seattle, Washington	Interview personnel for 105-C Project	J. Maloney	3-21-52	3-21-52		X	
M. K. Cain to: Bouillon & Griffiths Seattle, Washington	Interview personnel for 105-C Project	L. Bouillon	3-21-52	3-21-52		X	
W. H. Clymer to: National Carbon Company New York, New York	Program discussions	C. O. Kleinsmith	3-26-52	3-26-52		X	

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TECHNICAL SECTION-ENGINEERING DEPARTMENT

1. Visitors to this Works

E. E. Baldwin Knolls Atomic Power Laboratory Schenectady, New York	Consultation on engineering radiation of boron carbide	H. L. Henry J. B. Lambert	3-19-52	3-20-52	X		100-B 105 100-D 105 100-F 105 100-H 105 300 XXX;700
D. Darrow U. S. Atomic Energy Commission Savannah River Plant Augusta, Georgia	Confer on Classified File procedures	C. G. Stevenson	3-12-52	3-14-52			X
J. F. Flagg Knolls Atomic Power Laboratory Schenectady, New York	Discuss Redox production problems and chemical processing	R. B. Richards	3-27-52	3-28-52	X		Redox 300 XXX

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Restricted Data Areas
B. M. Fry U.S. Atomic Energy Commission Washington, D. C.	Confer on Classified File and Technical Library procedures	C. G. Stevenson M. G. Freidank B. B. Lane B. J. Borgmier	3-24-52	3-25-52		X	700 300 3703
T. S. Fuller General Engineering Laboratory Schenectady, New York	Consultation on canning and metallurgical problems	F. E. Kruesi R. Ward F. B. Quinlan W. I. Patnode J. M. Fox	3-26-52	3-28-52	X		300 303 Redox, 221-U 100-B 105
W. O. Haas, Jr. Knolls Atomic Power Laboratory Schenectady, New York	Discuss Redox and Purex separations problems	R. B. Richards F. W. Woodfield	3-10-52	3-14-52	X		300 XXX Redox
R. F. Koenig Knolls Atomic Power Laboratory Schenectady, New York	Consultation on engineering radiation of boron carbide	H. L. Henry J. B. Lambert	3-19-52	3-20-52	X		100-B 105 100-D 105 100-F 105 100-H 105 300-XXX; 700
R. F. Koenig Knolls Atomic Power Laboratory Schenectady, New York	Consultation on engineering radiation of boron carbide	H. L. Henry	3-18-52	3-20-52	X		100-B 105 100-D 105 100-F 105 100-H 105 300 XXX; 700
A. L. London Stanford University Palo Alto, California	Discussion on heat transfer	M. W. Carbon	3-28-52	3-28-52	X		101 Hanford
E. J. Prosen National Bureau of Standards Washington, D. C.	Consultation on thermal chemical reaction	P. H. Reinker	3-11-52	3-12-52	X		300 XXX 100-H 105
E. W. Rebol General Electric Company Lockland, Ohio	Discuss analytical and accountability methods	F. W. Albaugh	3-13-52	3-13-52	X		300 3706

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass.	Areas
S. A. Reed General Electric Company Lockland, Ohio	Discuss analytical and accountability methods	F. W. Albaugh	3-13-52	3-13-52	X	300 XXX	3706
K. P. Siegmund E. I. duPont de Nemours & Co. Wilmington, Delaware	Confer on Classified File procedures	C. G. Stevenson M. G. Freidank	3-12-52	3-14-52		X 700 300	3702
R. J. Smith U. S. Atomic Energy Commission New York, New York	Metal fabrication and production fabrication of uranium	W. T. Kattner	3-10-52	3-12-52	X	100-B 105 100-D 105 300 303	
R. E. L. Stanford Fernald Area Office U. S. Atomic Energy Commission	Metal fabrication and production fabrication of uranium	W.T. Kattner	3-10-52	3-12-52	X	100 B 105 100 D 105 300 303	
II. Visits to other Installations							
G. J. Alkire to: Argonne National Lab. Chicago, Illinois	Discuss mass spectrometer	M. C. Inghram	3-3-52	3-3-52	X		
G. J. Alkire to: Knolls Atomic Power Lab. Chicago, Illinois	Discuss mass spectrometer	H. C. Mattraw	3-11-52	3-13-52	X		
J. A. Ayres to: Ames Laboratory Ames, Iowa	Ames information meeting		3-24-52	3-26-52	X		
L. P. Bupp to: Argonne National Lab. Chicago, Illinois	Attend national meeting on graphite radiation damage	G. R. Hennig	3-18-52	3-19-52	X		
L. P. Bupp to: Battelle Memorial Inst. Columbus, Ohio	Discuss graphite program	H.Z. Scofield	3-20-52	3-21-52	X		
A. H. Bushey to: Carbide & Carbon Oak Ridge, Tennessee	Discuss analytical methods	F.W. Hurd	3-10-52	3-11-52	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
A. H. Bushey to: Carbide & Carbon Oak Ridge, Tennessee	Discuss analytical methods	M. T. Kelley	3-10-52	3-11-52	X		
R. L. Dillon to: Knolls Atomic Power Lab Schenectady, New York	Conferences on solvent extraction	J. Marsden	3-28-52	3-28-52	X		
R. L. Dillon to: Oak Ridge National Lab. Oak Ridge, Tennessee	Conferences on solvent extraction and inspection of laboratory installations	F. L. Steahly	3-31-52	4-1-52	X		
E. A. Eschbach to: Ames Laboratory Ames, Iowa	Ames information meeting		3-24-52	3-26-52	X		
R. M. Fryar to: E.I. du Pont de Nemours & Co. Wilmington, Delaware	Discuss water problems	D. F. Babcock	3-20-52	3-21-52	X		
O. H. Greager to: Knolls Atomic Power Lab. Schenectady, New York	Program discussions on assistance to Hanford work	K. H. Kingdon	3-26-52	3-28-52	X		
O. F. Hill to: Radiation Laboratory Berkeley, California	Separations methods	W. H. McVey	3-2-52	3-3-52	X		
R. Ko to: Knolls Atomic Power Lab. Schenectady, New York	Discuss analytical methods	J. F. Flagg	3-28-52	3-28-52	X		
G. E. McCullough to: Ames Laboratory Ames, Iowa	Ames information meeting		3-24-52	3-26-52	X		
G. E. McCullough to: E.I. du Pont de Nemours & Co. Wilmington, Delaware	Discuss water problems	D. F. Babcock	3-20-52	3-21-52	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass.	Areas
A. R. Maguire to: Oak Ridge National Lab. Oak Ridge, Tennessee	Discuss separations processes	F. Steahly	3-17-52	3-20-52	X		
A. R. Maguire to: Carbide and Carbon Oak Ridge, Tennessee	Production schedules and specifications	F. W. Hurd	3-17-52	3-20-52	X		
A. R. Maguire to: Argonne National Lab. Chicago, Illinois	Purex process discussions	S. Lawroski	3-20-52	3-21-52	X		
H. L. Mars to: Ames Laboratory Ames, Iowa	Ames information meeting		3-24-52	3-26-52	X		
W.N. Mobley to: Oak Ridge National Lab. Oak Ridge, Tennessee	Discuss separations processes	F. Steahly	3-17-52	3-20-52	X		
W. N. Mobley to: Carbide and Carbon Oak Ridge, Tennessee	Production schedules and specifications	F. W. Hurd	3-17-52	3-20-52	X		
W. N. Mobley to: Argonne National Lab. Chicago, Illinois	Purex process discussions	S. Lawroski	3-20-52	3-21-52	X		
J. F. Music to: Argonne National Lab. Chicago, Illinois	Attend national meeting on graphite radiation damage	G. R. Hennig	3-18-52	3-19-52	X		
J. F. Music to: Battelle Memorial Inst. Columbus, Ohio	Discussion on graphite program	H. Z. Scofield	3-20-52	3-21-52	X		
D. P. O'Keefe to: Knolls Atomic Power Lab. Schenectady, New York	Metallurgical consultation	T. J. E. Glasson	3-28-52	3-28-52	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
W. H. Reas to: Oak Ridge National Lab. Oak Ridge, Tennessee	Conference on ion exchange	D. C. Overholt	3-3-52	3-5-52	X		
P. H. Reinker to: E.I. du Pont de Nemours & Co. Wilmington, Delaware	Discuss water problems	D. F. Babcock	3-20-52	3-21-52	X		
P. H. Reinker to: Argonne National Lab. Chicago, Illinois	Attend national meeting on graphite radiation damage	G. R. Hennig	3-18-52	3-19-52	X		
R. B. Richards to: Oak Ridge National Lab. Oak Ridge, Tennessee	Discuss separations processes	F. Steahly	3-17-52	3-20-52	X		
R. B. Richards to: Carbide & Carbon Oak Ridge, Tennessee	Production schedules and specifications	F. W. Hurd	3-18-52	3-20-52	X		
R. B. Richards to: Ames Laboratory Ames, Iowa	Reactivity meeting	C. Karl	3-20-52	3-20-52	X		
R. B. Richards to: Argonne National Lab. Chicago, Illinois	Purex process discussions	S. Lawroski	3-20-52	3-21-52	X		
J. W. Riches to: Argonne National Lab Chicago, Illinois	Metallurgy conference	F. G. Foote	3-20-52	3-23-52	X		
J. W. Riches to: Ames Laboratory Ames, Iowa	Metallurgy conference		3-24-52	3-26-52	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
W. C. Riley to: Argonne National Lab. Chicago, Illinois	Attend national meeting on graphite radiation damage	G. R. Hennig	3-18-52	3-19-52	X		
W. C. Riley to: Battelle Memorial Inst. Columbus, Ohio	Discussion of graphite program	H. Z. Scofield	3-20-52	3-21-52	X		
W. L. Schalliol to: Ames Laboratory Ames, Iowa	Ames information meeting		3-24-52	3-26-52	X		
J. R. Townsend to: Argonne National Lab. Chicago, Illinois	Attend national meeting on graphite radiation damage	G. R. Hennig	3-18-52	3-19-52	X		
J. R. Townsend to: Battelle Memorial Inst. Columbus, Ohio	Discussion of graphite program	H. Z. Scofield	3-20-52	3-21-52	X		
R. Ward to: Argonne National Lab. Chicago, Illinois	Meeting on dimensional - stability		3-20-52	3-21-52	X		
R. Ward to: Ames Laboratory Ames Iowa	Metallurgical information - meeting		3-24-52	3-26-52	X		
K. H. Wilmarth to: Radiation Laboratory Berkeley, California	Consultation on remote control laboratory equipment and techniques	N. B. Garden	3-26-52	3-28-52	X		
A. S. Wilson to: Knolls Atomic Power Lab. Schenectady, New York	Conferences on solvent extraction	J. Marsden	3-28-52	3-28-52	X		
A. S. Wilson to: Oak Ridge National Lab. Oak Ridge, Tennessee	Conferences on solvent extraction and inspection of laboratory facilities	F. L. Steahly	3-31-52	4-1-52	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
F. W. Woodfield to: Oak Ridge National Lab. Oak Ridge, Tennessee	Discuss separations processes	F. Steahly	3-17-52	3-20-52	X		
F. W. Woodfield to: Carbide & Carbon Oak Ridge, Tennessee	Production schedules and specifications	F. W. Hurd	3-17-52	3-20-52	X		
F. W. Woodfield to: Argonne National Lab. Chicago, Illinois	Purex process discussions	S. Lawroski	3-20-52	3-21-52	X		
H. F Zuhr to: General Engineering Lab. Schenectady, New York	P-10 consultations	D. H. Marquis C. W. George	3-10-52 3-20-52	3-14-52 3-21-52	X X		
H. F. Zuhr to: Knolls Atomic Power Lab. Schenectady, New York	P-10 consultations	J. Marsden	3-10-52 3-20-52	3-14-52 3-21-52	X X		
H. F. Zuhr to: Argonne National Lab. Chicago, Illinois	Attend meeting on graphite radiation damage	G. R. Hennig	3-18-52	3-19-52	X		
W. N. Carson to: Beckman Inst. Corp. Pasadena, California	Discuss analytical methods	T. F. Henning	3-3-52	3-3-52		X	
T. K. Bierlein to: Aluminum Co. of America New Kensington, Pennsylvania	Discuss analytical methods	H. L. Moss	3-4-52	3-4-52	X		
C. Groot to: Argonne National Lab. Chicago, Illinois	Consultation on separations methods	J. J. Katz	2-18-52	3-7-52	X		

SPECIAL CONSULTANT TO HANFORD

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
G. A. Freund Argonne National Laboratory Chicago, Illinois	Install test equipment	M. Fitzsimmons	3-31-52	4-5-52	X		300 XXX, 700 100-H 105
DESIGN SECTION-ENGINEERING DEPARTMENT (cont'd)							
I. Visitors to this Works							
N. A. Spector Vitro Corporation of America New York, New York	Discuss progress on RDA-DC-4	V. D. Nixon J. M. Frame J. S. Parker W. B. Webster	3-10-52	3-13-52	X		200-W
J. E. Brown, Jr. General Engineering Laboratory Schenectady, New York	Consultation on C 413	G. S. Cochrane W. P. Ingalls	3-25-52	3-25-52	X		200-W, 700
F. J. Champlin, Jr. General Engineering Laboratory Schenectady, New York	Consultation on C 413	G. S. Cochrane W. P. Ingalls	3-25-52	3-25-52	X		200-W, 700
M. Magner E. I. du Pont de Nemours & Co. Savannah River Plant Augusta, Georgia	Discuss instrumentation problems at Hanford	V. W. Wood M. T. Slind	3-24-52	3-25-52	X		300
L. Bancroft E. I. du Pont de Nemours & Co. Savannah River Plant Augusta, Georgia	Discuss instrumentation problems at Hanford	V. W. Wood M. T. Slind	3-24-52	3-25-52	X		300
R. P. Coon E. I. du Pont de Nemours & Co. Savannah River Plant Augusta, Georgia	Discuss instrumentation problems at Hanford	V. W. Wood M. T. Slind	3-24-52	3-25-52	X		300
II. Visits to other Installations							
E. P. Peabody to: General Electric Company Schenectady, New York	Discuss electrical develop-ment on RDA-DC-6	D.G. Brereton	3-7-52	3-7-52		X	

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Name - Organization	Purpose of Vist	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
C. T. Drury to: Northwest Electronics Spokane, Washington	Discuss communications equipment	E. R. White	3-5-52	3-6-52		X	
C. L. Cobler to: Instrument Laboratory Seattle, Washington	Check water monitor chamber (C-431 B	E. L. Frost	3-27-52	3-29-52		X	
R. T. Jaske to: Whitney & Associates Seattle, Washington	Consultation with prospective architectural engineers	A. Bouillon	3-20-52	3-20-52		X	

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PURCHASING AND STORES SECTION
UTILITIES AND GENERAL SERVICES DEPARTMENT
SUMMARY - MARCH 1952

Personnel of the Purchasing and Stores Section showed a net decrease of 14 as noted below:

TOTAL PERSONNEL

	2-29-52	3-31-52	Net Change
Exempt	94	92	-2
Non-Exempt	328	316	-12
	422	408	-14

Requests for quotations on oxygen and acetylene were withdrawn from the market, as it was decided that the best interests of the project would be served by the award of one project-wide contract to serve both the operating prime contractor and the construction prime contractor. A.E.C. has placed these items on the mandatory purchase list and contracts will be awarded by A.E.C. Procurement.

The stock position of 8" and 4" aluminum cans represents about a 4 months' supply. This inventory level has been accumulated in anticipation of a strike in the aluminum industry. If the strike does not materialize the inventory will be reduced to approximately a 3 months' level.

Inspection activities are concentrated largely on components for Project C-431-B. Downcomer piping assemblies, safety rods, 54" valves, vertical rod winches, and transmitters are potential limiting items.

The Bay Company order with Alaskan Copper Works for the Hot Semi-Works Project is essentially completed.

All experimental orders for boron steel balls for the 3-X Safety Systems have been tested, accepted, and released for shipment. The only balls presently in production are those required for the C-431-B Project. Pending tests on glass balls production of boron steel balls will be stopped upon completion of 90,000 pounds.

The work load of the Construction Procurement Unit remained near the same level attained in February. 653 orders and alterations were processed in March compared to 734 in February.

A joint AEC-GE audit was completed at Crane Company on 17 purchase orders for pipe and electrical connectors. The audit indicated the cost records were in order and that costs plus a profit should be allowed for the work performed.

Four scrap sales of material located in vendors' plants were made in March. 79,468 pounds of stainless steel scrap were disposed of for $4,260.33.

The Interstate Commerce Commission granted authority for publication of a six per-cent increase on truck rates applying on interstate movements in the Pacific Coast Area. These increased rates became effective March 28, 1952.

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PURCHASING AND STORES SECTION
SUMMARY

As a result of rate reductions obtained from the carriers, there was a total savings in freight charges for the month of March amounting to $2,366.97. This makes a total savings from September 1, 1946 to date of $1,703,513.45.

A plan for obtaining information for submission of special assistance requests was developed in February 1952 with representatives of the General Electric Company, Seattle and Pasco, Sales Offices. This method, having been in effect for approximately six weeks, is not proving as satisfactory as is desired. The plan calls for information from the General Electric Company's Washington Office of Government Business Services Division, being given directly to AEC and NPA, Washington. We are finding that information from that source is not readily available, and in some cases inaccuracies are appearing.

2849 purchase requisitions were processed through screening and 1017 items were furnished from Stores Unit inventories. Twenty-five items of stainless steel not immediately available on the open market were also furnished to fabricators from Stores Unit inventories.

Receiving reports issued during the month totaled 5460.

342 representatives of government and private businesses were escorted through our warehouses and yards for the purpose of negotiating the sale of scrap and transfer of excess property.

In line with the program to consolidate all Excess and Surplus Activities at North Richland the Inventory Control Group at White Bluffs has been transferred to North Richland and all inventory control activities placed under the direction of one supervisor. This action has resulted in the elimination of one supervisory position.

The General Electric receiving function at White Bluffs has been expanded to encompass the physical checking of all incoming materials and equipment for which General Electric is responsible. This work was formerly performed by A & J.

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PURCHASING AND STORES SECTION
GENERAL

A plan for obtaining information for submission of special assistance requests was developed in February 1952 with representatives of the General Electric Company, Seattle and Pasco, Sales Offices. This method, having been in effect for approximately six weeks, is not proving as satisfactory as is desired. The plan calls for information from the General Electric Company's Washington Office of Government Business Services Division, being given directly to AEC and NPA, Washington. We are finding that information from that source is not readily available, and in some cases inaccuracies are appearing.

National Production Authority Directive to Schutte & Koerting Company has provided assistance for the final limiting item on the Hot Semi-Works Project.

Allied Chemical and Dye Corporation has filed request for Certificate of Necessity for the construction of production facilities at Hedges Works for manufacture of anhydrous ammonia. We have received a request from the Commission for an expression of interest in the proposed program.

In line with the transfer of allotment responsibility for CPFF contractors from Priorities to the Atomic Energy Commission, a record of allotments made to them and their construction subcontractors was prepared and transmitted. Unused allotments intended for use by CPFF contractors were returned to the Commission.

Seven requests for NPA Directive or DX action were received.

Six cases were submitted to the Atomic Energy Commission for directive or DX action.

Analysis was made and report prepared and forwarded to the Commission on one Certificate of Necessity application.

Special reports on sulfuric acid, magnesium, aluminum nitrate, nitric acid, and certain Class "B" items were compiled and transmitted to the Commission. Periodic reports on copper, lead, tin, and sulfuric acid were prepared and transmitted.

Field erection engineers from six companies were requested during the month to supervise installation of equipment in the 100-C Area.

The reconciliation and audit of the returnable container account has been completed.

The Area Stores Procedure has been completed. A draft of the procedure has been published and issued to Stores Unit warehousing and Inventory Control Supervision.

PERSONNEL

	As of 2-29-52			As of 3-31-52			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
Staff	2	1	3	2	1	3	0	0	0
General	2	3	5	2	3	5	0	0	0
Priorities	7	7	14	7	7	14	0	0	0
Inventory	2	11	13	2	12	14	0	+1	+1
Clerical	2	34	36	2	33	35	0	-1	-1
	15	56	71	15	56	71	0	0	0

PURCHASING AND STORES SECTION
GENERAL

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	1
Number of Employees Attending	26

STATISTICS

The following schedule reflects total allotments received from the Atomic Energy Commission and allotments used and extended to suppliers and contractors through March. Top figures under each item number indicate allotment received from AEC. Lower figures under each item number reflect material allotment used or allotted for the quarter indicated.

CONSTRUCTION

Controlled Material	Unit Measure	1 Q 52	2 Q 52	3 Q 52	4 Q 52
	Short	217.50	261.00	11.00	12.00
Carbon Steel Plate	Tons	150.31	49.99	.25	0
Carbon Steel	Short	42.00	156.00	24.00	12.00
Structural Shapes	Tons	10.92	46.63	6.35	0
Carbon Steel	Short	460.55	548.25	300.00	75.00
Other Forms	Tons	434.80	184.21	9.05	0
Alloy Steel (excluding	Short	8.00	3.00	35.00	3.00
Stainless Steel)	Tons	4.58	.05	31.05	0
		90,000	113,640	37,000	3,000
Stainless Steel	Lbs.	87,246	36,528	2,200	0
Copper & Copper Base Alloy		10,214	6,475	2,650	1,000
Brass Mill Products	Lbs.	9,888	1,300	200	0
		4,219	26,235	13,630	4,000
Copper Wire Mill Products	Lbs.	4,035	7,941	1,200	0
Copper & Copper Base Alloy		3,395	100	50	0
Foundry Products & Powder	Lbs.	2,848	100	0	0
		23,500	9,985	206,900	100
Aluminum	Lbs.	23,288	2,286	200	0

OPERATIONS

Controlled Material	Unit Measure	1 Q 52	2 Q 52	3 Q 52	4 Q 52
Carbon Steel (including	Short	67.00	109.00	120.00	150.00
Wrought Iron)	Tons	63.64	60.23	5.00	0
Alloy Steel (excluding	Short	3.00	3.00	4.00	3.00
Stainless Steel	Tons	2.20	.01	0	0
		11,000	50,000	46,000	42,000
Stainless Steel	Lbs.	9,278	18,097	738	3,920
Copper & Copper Base Alloy		11,400	8,050	7,760	2,820
Brass Mill Products	Lbs.	11,317	2,122	0	0
		7,546	13,000	20,000	12,000
Copper Wire Mill Products	Lbs.	6,729	1,382	378	0
Copper & Copper Base Alloy		0	0	0	400
Foundry Products & Powder	Lbs.	0	0	0	0
		312,700	239,980	180,000	132,200
Aluminum	Lbs.	307,027	199,301	92,769	90,000

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PURCHASING AND STORES SECTION
GENERAL

STATISTICS

	G	D	TOTAL
Requisitions On Hand 3-1-52 (Includes 128 Assigned To Gov't.)	814	268	1082
Requisitions Assigned During March	2301	768	3069
Requisitions Placed During March	2196	745	2941
Requisitions On Hand 3-31-52 (Includes 188 Assigned To Gov't.)	919	291	1210

		NUMBER	VALUE
HW Orders Placed		1410	$658,677.83
HW Alterations Placed		111	9,213.81
	TOTAL	1521	$667,891.64
HWC Orders Placed		572	$303,121.22
HWC Alts. Placed		81	58,539.08 Cr.
	TOTAL	653	$244,582.14
AEC Orders Placed		115	$121,508.09
DC Orders Placed		42	22,916.99

	OR	ORC
Government Transfers	0	0

	NUMBER
Return Orders Issued	123

PURCHASING AND STORES SECTION
CONSTRUCTION PROCUREMENT UNIT
MARCH 1952

The work load during March remained at approximately the same level attained during the preceding month. 653 orders and alterations were processed during March as compared with 734 processed in February. Of the 113 open requisitions on hand at month end, 56 are for material for major construction projects, 26 for minor construction and the balance for research and development and miscellaneous supplies chargeable to construction activities.

A joint AEC-GE audit was completed at Crane Company, Chicago, Illinois in conjunction with 17 purchase orders for pipe and electrical connectors. The audit report indicated Crane Company's cost records were in order and that the costs plus a profit should be allowed for the work performed by Crane Company. Also in conjunction with the connector orders the General Electric Company resident inspector reported on the phases of work which resulted in costs beyond the purchase order prices.

Southwest Welding & Manufacturing Company resubmitted their claim for $152,439.45 additional compensation on the vessels they fabricated for the Redox and TBP projects. The portion of the claim covering escalation of wages and material was turned down. The part of the claim covering production costs is being reviewed by Inspection, Expediting and Engineering. Results of this review will be reported in next months report.

An order for 400 pounds of boron glass balls was placed with Corning Glass Works with hipment promised on April 18, 1952. Pending tests on the glass balls the vendor of boron steel balls was instructed to stop production upon completion of 90,000 pounds.

Due to urgent delivery requirements for replacement bellows keys, it was necessary to send a representative to Seattle to place an order. An order was placed with the Stewart Machine Company on the basis of lowest price and best delivery. Delivery requirements will be met.

Four scrap sales of material located in vendors plants were completed in March. These sales disposed of 79,468 pounds of stainless steel scrap for $4,260.33.

One buyer and one steno-typist were transferred to Operations Procurement Unit, and one steno-typist resigned because of illness. One buyer was given a Reduction Of Force notice effective April 1, 1952.

PERSONNEL

As of 2-29-52			As of 3-31-52			Net Change		
Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
9	9	18	7	7	14	-2	-2	-4

SAFETY AND SECURITY

Safety and Security Meetings	-	1
Number of Employees Attending	-	10

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PURCHASING AND STORES SECTION
OPERATIONS PROCUREMENT UNIT

MARCH -- 1952

The successful bidder on our requirements for Sulphuric Acid for the coming contract year is Stauffer Chemical Company. A contract is being negotiated with this firm and should be concluded during April.

Requests for quotation on Oxygen and Acetylene were withdrawn from the market, as it was decided that the best interests of the project would be served by the award of one project-wide contract to serve both the operating prime contractor and the construction prime contractor. As a result of this decision, the Atomic Energy Commission placed these two items on the mandatory purchase list and contracts will be awarded by the Atomic Energy Commission Procurement Unit.

Present plant stock of aluminum cans, of both the 8" and 4" sizes, continues to be adequate. The combined stock position represents approximately a four-months' supply. This slightly high inventory level has been accumulated in anticipation of a possible strike in the aluminum industry. If the strike does not materialize, the inventory will be reduced to approximately a three-months' level.

The Tygon lined storage tanks in the Redox plant, built for the storage of Aluminum Nitrate, have proved faulty, making it impossible to maintain the delivery schedule of this product. The difficulty seems to lie in the fact that Tygon, as such, is an unsuitable material for a tank liner for the storage of Aluminum Nitrate. Various technical reasons for this have been advanced, chief of which seems to be that the Aluminum Nitrate extracts the plasticizer from the Tygon, causing an eventual rupture of the lining and subsequent corrosion of the tank shell. This matter is being closely followed with the Manufacturing Department, and all efforts necessary will be made to assure a continued supply of Aluminum Nitrate for Redox production.

The use of Sodium Dichromate in the water treatment process in the 100 Areas has been discontinued. We have stopped shipments of this material from Mutual Chemical Company, the vendor holding the current year's contract for this product. No further orders will be placed under this contract.

Liasion is being maintained with the Manufacturing Department on possible further major changes in the water treatment process, which would require the procurement of new chemicals in quantity. The information available to date is very meager, and every effort is being made to obtain information sufficiently in advance of requirements to allow for proper procurement of the required items.

Personnel

As of 2-29-52			As of 3-31-52			Net Change		
Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
11	13	24	11	14	25	0	+1	+1

Safety and Security

Safety and Security Meetings scheduled - 0
Number of employees attending - 0

PURCHASING AND STORES SECTION
INSPECTION AND EXPEDITING UNIT
MARCH 1952

The overall work load of the Unit decreased during the month approximately 10% for the Expediting Unit and 15% for the Inspection Unit. This work load will continue to decrease unless there is a major increase in the placement of purchase orders.

The Inspection activities are now concentrated largely on components for Project C-431-B. Equipment is being delivered in most part to the Project in time to prevent delay in the construction schedule. There are still a few items which may become limiting items for this Project; namely, 54" valves, downcomer piping assemblies, safety rods, vertical rod winches, and transmitters.

Some of the items which appeared to be of a limiting nature one month ago for Project C-431-B have been brought into line, and satisfactory delivery obtained or promised. These items are flexible connectors, cast iron sleeves, aluminum outlet nozzles, and centering flange keys.

The Bay Company order with Alaskan Copper Works for the Hot Semi-Works Project is essentially completed at this time. One man spent practically two months' time in the inspection and expediting of this order at the request of the Project Engineering Unit.

Due to the delay in obtaining gear racks for the H-Rods, the vendor was prevailed upon to start assembly of VS Rods. Since the same assembly fixture is used for both rods, any delay in completing H-Rods would result in an equal delay in VS Rods unless the changeover was made. The assembly of VS Rods disclosed several assembly problems. While no VS Rods have been completed the changeover did bring these problems to a head in sufficient time to work them out. In view of delay of delivery of components for both rods (i.e. gear racks for H-Rods, and boron tubes for VS Rods) the vendor may be required to change the assembly fixture from one type rod to the other in order to meet field delivery requirements.

All experimental orders for boron steel balls for 3-X Safety Systems have been tested, accepted, and released for shipment. The only balls presently in production are those required for the C-431-B Project.

Centering flange keys received for Project C-431-B, while in accordance with purchase requirements, were found to be not usable. This resulted in an emergency purchase of new keys to be produced and delivered in two weeks. Through cooperation with other units of Purchasing and Stores Section, the order was placed and production begun so that it now appears that field requirements will be met.

Ten technical graduates have been returned to Technical Personnel the past month.

PERSONNEL

	As of 2-29-52			As of 3-31-52			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
Inspection	30	16	46	30	6	36	0	-10	-10
Expediting	13	9	22	13	9	22	0	0	0
	43	25	68	43	15	58	0	-10	-10

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PURCHASING AND STORES SECTION
INSPECTION AND EXPEDITING UNIT
MARCH 1952

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	0

STATISTICS

Inspection

Number of open orders requiring inspection	188
Number of open orders being inspected	178
Number of new orders requiring inspection	26
Number of open requisitions requiring inspection	46
Number of completed orders (cancelled, waived, etc.)	55
Number of open orders requiring inspection - sub-vendor	16
Number of open orders being inspected - sub-vendor	14
Number of completed orders - sub-vendor	15

Expediting

HW Orders expedited in March (active)	435
HW Orders expedited in March (routine)	1166
HWC Orders expedited in March	1005
Sub-vendor Orders expedited in March	1500*
HW Orders completed in March	1730
HWC Orders completed in March	780

* Estimated

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PURCHASING AND STORES SECTION
STORES UNIT
MARCH, 1952

GENERAL

2849 purchase requisitions were processed through screening and 1017 items were furnished from Stores Unit inventories. 25 items of stainless steel not immediately available on the open market were also furnished to fabricators from Stores Unit inventories.

Maintenance materials, supplies and spare parts disbursed from Operations inventories were valued at $375,218.18. Receiving reports issued during the month totaled 5460.

Material and equipment valued at $79,204.42 from 12 captions in the 10.20 Account (Construction Materials Held for Future Use) were disbursed to construction forces during the month. In addition to the foregoing, materials valued at $2,728.79 were shipped as directed by the Commission. Materials declared excess from the above account totaled $565,979.23. The total value of materials disposed of during the month was $662,369.78.

Materials and equipment valued at $24,820.98 were withdrawn from the 10.10 Account (Excess) for use on the project. Excess materials and equipment valued at $231,515.61 were shipped from the project as directed by the Commission. Total value of Excess materials disposed of this month was $259,089.77.

During the month 15 formal excess lists totaling $168,595.64 were submitted to the Commission for disposition.

342 representatives of government and private businesses were escorted through our warehouses and yards for the purpose of negotiating the sale of scrap and transfer of excess property. 14 scrap sales were completed this month for a revenue of $12,266.31.

2 A.E.C. Surplus and Salvage Sales conducted by our personnel during March resulted in a total revenue of $46,035.99. 212 truckloads of material were received by our Surplus Sales yard this month for eventual sale to the public.

In line with the program to consolidate all excess and surplus activities at North Richland, the Inventory Control group at White Bluffs has been transferred to North Richland and all inventory control activities placed under the direction of one supervisor. This action has resulted in the elimination of one supervisory position.

The G.E. receiving function at White Bluffs has been expanded to encompass the physical checking of all incoming materials and equipment for which G.E. is responsible. This work was formerly performed by Atkinson & Jones.

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	12
Number of Employees Attending	206
Minor Injuries	6

1216621

PURCHASING AND STORES SECTION
STORES UNIT

PERSONNEL

	As of 2-29-52			As of 3-31-52			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
Administrative	5		5	5		5			
Construction Materials	1	28	29	1	21	22		-7	-7
Operations Materials	4	121	125	4	123	127		+2	+2
Surplus, Salvage & Scrap Mtl.	4	66	70	4	70	74		+4	+4
TOTALS	14	215	229	14	214	228		-1	-1

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PURCHASING & STORES SECTION
TRAFFIC UNIT
MARCH 1952

GENERAL

On March 6 the Traffic Manager, together with a representative of the Law Department and the Transportation Officer of the Hanford Operations Office, met in Olympia with members of the Washington Public Service Commission to present objections to certain provisions of the Bulletin issued by that Body on January 2, 1952. The Commission agreed to withdraw this Bulletin and re-issue it with Condition (2) modified to read as follows:

> "(2) The Government Agency (Federal, State or Local) must actually pay transportation charges or reimburse in full its contractor or sub-contractor for said specific transportation charges."

The above action removes any doubt as to the legality of past payments by General Electric Company of reduced freight rates under numerous Section 22 Quotations, and requires no change in present procedure for payment of such charges in the future.

The Interstate Commerce Commission granted authority for publication of a six per cent increase on truck rates applying on interstate movements in the Pacific Coast area. These increased rates became effective March 28, 1952.

The North Coast Rail Lines revised their Section 22 Quotation #124A reflecting a reduction of 8¢ per cwt., minimum 30,000 pounds, thus effecting a savings of approximately $ 24.00 per carload on shipments of freight, all kinds, from North Pacific Coast points to Richland and Hanford, Washington.

As a result of rate reductions obtained from the carriers, there was a total savings in freight charges for the month of March amounting to $ 2,366.97. This makes a total savings from September 1, 1946 to date of $ 1,703,513.45.

PERSONNEL

As of 2-29-52			As of 3-31-52			Net Change		
Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
2	10	12	2	10	12	0	0	0

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	0
Meetings Held	0
Minor Injuries	0

1216623

PURCHASING & STORES SECTION
TRAFFIC UNIT
MARCH 1952

STATISTICS

Savings Report

1. Rate reductions obtained from the Carriers:

Commodity	Origin	Savings for March	Savings 9-1-46 thru Feb. 1952	Total Savings 9-1-46 to Date
Castings, Rough	Los Angeles, Cal.	$ 1,250.00		
Salt, Crude, Undried	Newark, Cal.	259.90		
Gravel	Pioneer Spur, Wn.	474.04		
Methane Gas	Various	81.62		
Truck	Various	263.66		
Carloading	Various	9.46		
Rail	Various	28.29		
		$ 2,366.97	$ 1,701,146.48	$ 1,703,513.45
2. Freight Bill Audit		4,449.33	80,657.95	85,107.28
3. Loss & Damage & Overcharge Claims		938.14	111,310.40	112,248.54
4. Ticket Refund Claims		447.97	22,945.83	23,393.80
5. Household Goods Claims		132.12	16,194.96	16,327.08
		$ 8,334.53	$ 1,932,255.62	$ 1,940,590.15

Work Volume Report

Reservations Made	Rail	124
	Air	109
	Hotel	157
Expense Accounts Checked		179
Household Goods & Automobiles	Movements Arranged Inbound	2
	Movements Arranged Outbound	1
	Insurance Riders Issued	3
	Claims Filed	3
	Claims Collected - Number	6
	Claims Collected - Amount	$ 132.12
Ticket Refund Claims	Filed	29
	Collected - Number	24
	Collected - Amount	$ 447.97
Freight Claims	Filed	6
	Collected - Number	9
	Collected - Amount	$ 938.14
	Over & Shorts Processed	12
	Damage Reports Processed	10
Freight Bill Audit Savings		$4,449.33

1216624

STATISTICS (CONT.)

Work Volume Report (Cont.)

Freight Shipments Traced		96
Quotations	Freight Rates	209
	Routes	277
Bills Approved	Air Express	29
	Boat	1
	Carloading	148
	Express	102
	Rail	1195
	Truck	439
Return Orders Processed		45
Carload Shipments	Inbound - GE - AEC	1238
	All Others	115
	Outbound - GE - AEC	25
	All Others	32

Report of Carloads Received

	CMSTP&P	NP	UP	TOTAL
General Electric Company				
Acids, Miscellaneous		1		1
Agitator Units			1	1
Aluminum Ingots		1		1
Aluminum Sulphate		2		2
Anthrafilt			5	5
Asphalt		1		1
Blowers	1			1
Carbon Tetrachloride	1			1
Castings	1	4		5
Caustic Soda	6	6	4	16
Cellulose Wadding		1		1
Chlorine	1	1		2
Coal	213	13	838	1064
Ferric Sulphate	1	1	1	3
Filter Plant Parts	1			1
Furniture, Office			1	1
Gravel		22		22
Hopper Chutes	1			1
Lime		2		2
Machinery	2	2	2	6
Nitric Acid		7	6	13
Petroleum			1	1
Phosphoric Acid	1	2	1	4
Pipe			5	5

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STATISTICS (CONT.)

Report of Carloads Received (Cont.)

	CMSTP&P	NP	UP	TOTAL
General Electric Company (Cont.)				
Pipe Assemblies	1			1
Pipe & Fittings			4	4
Pipe Fittings		2	3	5
Pump Parts		2		2
Salt		1	1	2
Sand	15			15
Soda Ash		1		1
Solvent	1			1
Steel Beams			1	1
Steel Partitions			1	1
Steel Tubes	1			1
Sulphuric Acid	1			1
Tanks	1			1
Transformers		1		1
Valves & Parts	2	2	1	5
Merchandise	2	3	1	6
TOTAL	253	78	877	1208
A.E.C.				
Automobiles		7		7
Chemicals	6		1	7
Electric Breakers			4	4
Electric Motors & Parts		2		2
Helium Gas			1	1
Lumber		4		4
Machinery			3	3
Transformers			1	1
Express	1			1
TOTAL	7	13	10	30
TOTAL GE & A.E.C.	260	91	887	1238
Atkinson & Jones Const. Co.				
Asbestos		2		2
Asbestos Wallboard			1	1
Cement	11	1	9	21
Pipe	5	3	2	10
Steel Channel	1			1
Steel Flooring	1			1
Steel Plates	1			1
Steel Sheet			1	1
Steel Structural	2		4	6
Merchandise	4	2		6
TOTAL	25	8	17	50

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PURCHASING & STORES SECTION
TRAFFIC UNIT
MARCH 1952

STATISTICS (CONT.)

Report of Carloads Received (Cont.)

	CMSTP&P	NP	UP	TOTAL
Associated Engineers				
Pipe			1	1
Electric Smith, Inc.				
Transformers			1	1
Haughton Elevator Co.				
Elevator Machinery	1			1
Head Mechanical Contractors				
Pipe			1	1
L. H. Hoffman, Inc.				
Steel Roofing		2		2
Steel Structural	4			4
TOTAL	4	2	—	6
Northwest Painting & Roofing, Inc.				
Asbestos Siding	1			1
Pittsburgh DesMoines Steel Co.				
Steel Plates		16	17	33
Richland Fuel Co.				
Coal			3	3
J. C. Shotwell				
Tractor		1		1
Sound Const. & Engr. Co.				
Machinery		1		1
Steel Roofing		4		4
Merchandise		1	1	2
TOTAL	—	6	1	7
U. S. Army				
Automobiles		1		1
Cable		1		1
Crane, Mobile			1	1
Miscellaneous Supplies		4		4
Switchboards		1		1
Tractor Parts			1	1
Merchandise		1		1
TOTAL	—	8	2	10
TOTAL - SUB-CONTRACTORS	31	41	43	115
TOTAL - ENTIRE PROJECT	291	132	930	1353

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TRANSPORTATION SECTION
MONTHLY REPORT
MARCH 1952

GENERAL

Transportation Section personnel forces decreased from 522 to 511 employees during the month by 5 new hires, 4 transfers in, 7 transfers out, 12 terminations and 1 deactivation - personal illness.

RAILROAD ACTIVITIES

Commercial cars handled during March increased 7.9% over February.

Process movements were near normal and increased 15.4% over February. Movements were evenly divided from the 100 Areas via 200 North Area and from the 100 Areas direct to the 200-East and 200-West Areas.

Car movements including process service totaled 3,282 in March compared to 2,803 in February and 2,909 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	1237	27	27	1245
Associated Engineers	1	-	-	1
Atkinson & Jones Co.	42	-	-	46
Chicago Bridge and Iron Co.	4	-	-	4
Electric Smith Co.	1	-	-	0
Haughton Elevator Co.	2	-	-	2
Head Mechanical Contractors	1	-	-	1
L. H. Hoffman Co.	4	-	-	4
Northwest Painting & Roofing Co.	1	-	-	0
Pittsburgh-Des Moines Steel Co.	36	-	-	31
Richland Fuel Co.	3	-	-	5
H. H. Robertson Co.	2	-	-	0
Sound Construction Co.	7	-	-	6
U. S. Army	11	30	32	10
	1352	57	59	1355

Eighty ton diesel electric locomotive 39-3725 was removed from service on March 24 for a major overhaul and will be out of operation for approximately one month. Main generators, auxiliary generators and traction motors have been sent to the 200-East Electrical Shop.

Railroad track maintenance and rehabilitation work continued on a routine basis. Lining, surfacing and dressing of track required 4,714 man-hours. Relay of rail and ties required 852 man-hours. Installation of other track materials required 200 man-hours. Distribution and handling of track materials required 333 man-hours. Retirement of 516 feet of 100-B coal track required 136 man-hours. Rehabilitation of 234-5 track required 493 man-hours.

AUTOMOTIVE ACTIVITIES

The Plant Bus System transported 5.05% more passengers in March than in February. The following statistics indicates the magnitude of service rendered:

[redacted]

Transportation Section

Passenger volume	159,675
Revenue - bus fares	$ 7,983.75
Bus trips	7,394
Bus miles	183,105
Passenger miles	4,880,893

The following is a comparative breakdown of average daily round trips to the Plant Areas:

Passenger buses - 100-B	11
Passenger buses - 100-D	12
Passenger buses - 100-F	11
Passenger buses - 100-H	9
Passenger buses - Hanford	4
Passenger buses - 200-West	34
Passenger buses - 200-East	9
Passenger buses - 300 Area	6
Passenger buses - Riverland	2
Passenger buses - Pistol Range	1
Passenger buses - White Bluffs	4
Passenger buses - North Richland	3
700-300 Area Shuttle Service	21
Inter-Area Passenger Service	3
Inter-Area Express Service	1
Inter-Area Mail Service	1

'fective March 17, all departing Redox "To Home" buses with less than a maximum .oad were routed via the TBP Plant. This change in routing was effected to insure ample service for increasing personnel with frequent resultant bus passenger fluctuations at the Redox and TBP facilities in the 200-West Area.

Effective March 28, the Richland-North Richland shuttle bus service was established on a trial basis. Extensive studies had proved that the intermediate bus stops on Stevens Drive at North Richland were impractical from an operating and safety standpoint. This plan also provides a service for G.E. employees living in North Richland comparable to that rendered for employees residing in the city of Richland.

The Richland Bus System transported 1.5% more passengers in March than in February. The following statistics indicate the volume of service rendered.

Total passengers including transfers	40,535
Revenue - bus fares	$ 2,884.21
Bus trips	3,652
Bus miles	20,086
Passenger miles	109,560

Effective March 28, the Transportation Section was relieved of transporting the Hanford Works News from Pasco to Richland., This followed the awarding of a new contract to the Columbia Basin News Company for printing and delivering the Hanford Works News.

Special Agreement No. 2, Principal Contract W-31-109 Eng. 52 for transit advertis- g in Hanford Works' buses was executed on January 29 to become effective .ebruary 1, 1952.

Transportation Section

The subcontractor, Washington Transit Advertising, began selling space on February 7 with the first cards being installed on February 9. All buses were equipped with inside car card racks as of March 1. Outside racks for traveling display cards had to be manufactured and installation should be complete by April 15.

The subcontractor is quite optimistic over the manner in which card space is selling locally and feels certain that a major portion of the available space will be utilized by the middle of this year.

Total revenue from this source is expected to approximate $25,000 a year after it is fully under way with 40% or $10,000 to the General Electric Company - Transportation Section.

Off Plant chauffeured automobile trips (Company business and/or official visitors) totaled 177.

The following tabulation indicates the volume of Drivers Test Service rendered including the new permits issued in compliance with AEC Bulletin GM 181 and HW Instructions Letter No. 15.

Applicants:	Male	61	Number tests given	68
	Female	7	Number rejected	0

Permits Issued:	Limited to driving with glasses	25
	Unlimited	43

Permits Reissued:	Routine	22
	New AEC	200
	New AEC to date	5300

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	25,266	14,179	9,765	1,987	176
Received during month	115,887	23,728	30,500	5,650	53
Total	141,153	37,907	40,265	7,637	229
Disbursed during month	111,510	22,509	28,258	4,669	148
Stock at end of month	29,643	15,398	12,007	2,968	81

The following tabulation indicates the volume of inspection and maintenance service rendered to Hanford Works automotive and heavy equipment by Equipment Maintenance personnel:

Motor overhauls	14
Class A Inspections and Repairs	81
Class B Inspections and Lubrications	1164
Other routine maintenance repairs and service calls	1888
Tire repairs	464
Wash jobs	504

Transportation Section

The following tabulation indicates the Plantwide usage of automotive equipment:

Code	Type	No. of Units	Total Mileage
1A	Sedans	319	530,525
1B	Buses	157	239,800
1C	Pickup Trucks	453	256,111
1D	Panel,Carryall,Sta.Wagon	126	137,792
1E	Armored Cars	12	137
1G	~~Jeeps~~	2	581
68 Series	Trucks	277	89,254
		1,346	1,254,200

Effective March 17, operation of the 300 Area service station on an eight hour day basis was discontinued. New operating hours are from 10:30 a.m. to 12:00 noon and from 12:45 p.m. to 2:00 p.m. The 700 Area service station will operate from 8:00 a.m. to 9:45 a.m. and from 2:15 p.m. to 4:45 p.m. This arrangement permits the manning of both facilities with one attendant while providing ample service thus allowing the reassignment of one employee.

Completed overhaul of regulated motor crane 17T 3023 in the 200-West Area.

Completed overhaul of D-7 caterpillar tractor 63 11798.

GMC coach 1B 5108 has been returned to service following major accident damage repairs by a contractor in Portland, Oregon.

Received 27 new sedans which completed the original order of 50 replacement sedans.

ROAD ACTIVITIES

The following tabulation indicates in gallons the volume of road asphalt material handled by Transportation Services personnel:

	MC 1	MC 3	MC 4	MC 5
Stock at start of month	0	395	0	2,803
Received during month	0	9,518	0	0
Dispensed during month	0	3,675	0	0
Stock at end of month	0	6,238	0	2,803

Maintenance of primary roads required 1,072 man-hours. Crushing and stockpiling of 1,977 cubic yards of 3/4" crushed rock required 275 man-hours.

Handling of materials and equipment for the Stores Unit at White Bluffs, 700, 1100 and 3000 Areas included 43 carloads and 336 truckloads and required 7,174 man-hours.

Handling Area deliveries required 1,497 man-hours and office furniture 1,762 man-hours.

1216631

ELECTRICAL DISTRIBUTION AND TELEPHONE SECTION

MARCH 1952

April 7, 1952

GENERAL

The Section total scheduled work backlog of 4,201 man days, as of March 31, 1952, is distributed as follows:

	Days Per Craftsman	Total Man Days	Net Change Man Days
Line Maintenance	47.4	1,517	161 Decrease
Substation Maintenance	27.2	462	3 Decrease
Telephone Unit	56.7	2,212	62 Decrease

Electric power peak demands for March were:

	Date	March KW Demand	Comparative February Demand
Process Load	3-17-52 (11 am - 12 am)	77,300	78,500
Richland Load	3-4-52 (5 pm - 6 pm)	27,850	29,100

Budget information with an estimate of electric power and telephone service requirements for Program "X," including construction requirements, was prepared for the Engineering Department.

Section participation functioned satisfactorily in a March 31, 1952 civil defense "alert." Civil defense telephone communication facilities are now on a two week routine test schedule.

ELECTRICAL DISTRIBUTION UNIT

Maintenance and Operation

An operational error at Substation 151-F de-energized one 13.8 KV bus for three to four minutes March 10, 1952. The area was not operating at the time and no loss of production was involved.

B.P.A. system low frequency necessitated establishment of Critical Power Condition Grade "Y" for thirty-five minutes for all plant areas March 14, 1952. This was the first opportunity to determine the effectiveness of the voltage-frequency table established January 1952 for Hanford System Dispatcher guidance. The result was no sustained loss of production.

A special extended Critical Power Condition Grade "W" was established to perform

inspection and routine maintenance of a 230 KV by-pass disconnect switch in Area 100-F. This procedure will be followed to service an additional switch in Area 100-D. If results prove satisfactory a recommendation will be made to cancel Project Proposal C-466--"230 KV Disconnect Servicing Devices."

An existing leased telephone line to B.P.A.'s Ross Substation is of questionable value to Hanford Work's electric system dispatcher. Its use will be discontinued if daily tests now being performed indicate that normal leased line facilities will be adequate for the desired communication.

System Expansion and Planning

Replacement of Hanford 230 KV system wood structures with steel has been thoroughly studied by the Electrical Distribution Unit. Addition of substantial critical process load to main substations in the 100 Areas has increased the desirability of eliminating any possible hazard to that equipment. Exposure of tangent structures to fire will be essentially eliminated, by completion of hardware bonding in April 1952. Therefore, a recommendation has been made to defer the program for tangent structure replacement for approximately five years. A $1,340,000 item (B-1715) has been included in the Construction Budget to start replacement of structures in the old 100-B, D and F main substations in Fiscal Year 1953.

An Appropriation Request was prepared for purchase and installation of the second 3750 KVA transformer in the 300 Area 115 KV Substation, required by planned expansion in this area.

TELEPHONE UNIT

Maintenance and Operation

A telephone trunk cable (T-5) was damaged by a U.S. Army "A" frame truck March 16, 1952. Cost of repairs is being billed to the Army for $200.

A summary of telephone subscriber service is as follows:

	Subscriber Stations in Service	Lines Available for Service	Sides Available for Service	Exchange Lines in Service
Richland	4,910 Residence 999 Official 437 Miscellaneous	83	320	3,866
N. Richland	533	143	24	457
Process Areas	1,317	520	0	1,230
Total	8,196	746	344	5,553

System Expansion and Planning

Plant expansion requirements have been of considerable concern owing to a shortage

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of telephone engineering talent. This condition will be improved by the employment of a former Stromberg Carlson Company telephone engineer, scheduled to report April 15, 1952.

An Appropriation Request was prepared for purchase and installation of 100 additional lines in the White Bluffs Exchange, as a requirement of the growth of the 100 Areas.

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1216634

POWER STATISTICS
ELECTRICAL DISTRIBUTION AND TELEPHONE SECTION
FOR MONTH ENDING MARCH 31, 1952

ITEM	ENERGY - MW HRS. Feb.	ENERGY - MW HRS. Mar.	MAX. DEMAND - KW Feb.	MAX. DEMAND - KW Mar.	LOAD FACTOR - % Feb.	LOAD FACTOR - % Mar.
230 KV SYSTEM						
A-2 Out (100-B	7,650	8,280	12,000	12,800	91.4	86.9
A-4 Out (100-D)	13,450	15,630	22,200	23,200	87.0	90.6
A-5 Out (100-H)	9,504	9,144	15,000	15,000	91.0	81.9
A-6 Out (100-F)	7,060	5,900	12,800	11,800	79.2	67.2
A-8 Out (200 Area)	5,364	5,472	9,000	9,720	85.6	75.7
TOTAL OUT	43,008	44,426	71,000**	72,520**	87.0	82.3
MIDWAY IN	43,487	45,060	68,400*	67,200*	91.3	90.1
Transm. Loss	479	634				
Per cent Loss	1.1	1.4				
115 KV SYSTEM						
B1-S4 Out (N. Rich.)	2,386	2,568	4,608	4,550	74.4	75.9
Richland	13,952	13,962	28,480*	27,840*	69.1	67.4
EB1-S3 Out(300 Area)	888	1,000	2,160	2,160	59.1	62.2
TOTAL OUT	17,226	17,530	35,748**	34,550**	69.2	68.2
Benton In	3,460	5,400	41,600*	50,400*	11.9	14.4
So. Richland In	13,800	12,160	34,000*	32,000*	58.3	51.1
TOTAL IN	17,260	17,560	75,600**	82,400**	32.8	28.6
Transm. Loss	34	30				
Per cent Loss	.2	.2				
66 KV SYSTEM						
B9-S11 Out (100-C)	541	666	1,200	1,350	64.8	66.3
B7-S10 Out (W.Bluffs)	501	489	1,440	1,328	50.0	49.5
Hanford Out	325	332	600**	600**	77.8	74.3
TOTAL OUT	1,367	1,487	3,240**	3,278**	60.6	61.0
HANFORD IN	1,318	1,433	2,800*	2,850*	67.6	67.6
Transm. Loss	+ 49	+ 54				
Per cent Loss	+ 3.7	+ 3.8				
PROJECT TOTAL						
230 KV Out	43,008	44,426	71,000**	72,520**	87.0	82.3
115 KV Out	17,226	17,530	35,748**	34,550**	69.2	68.2
66 KV Out	1,367	1,487	3,240**	3,278**	60.6	61.0
TOTAL OUT	61,601	63,443	109,988**	110,348**	80.4	77.3
230 KV In	43,487	45,060	68,400*	67,200*	91.3	90.1
115 KV In	17,260	17,560	73,600**	82,400**	32.8	28.6
66 KV In	1,318	1,433	2,800**	2,850**	67.6	67.6
TOTAL IN	62,065	64,053				
Transm. Loss	464	610				
Per cent Loss	.7	1.0				

*Coincidental Demand
**Non-Coincidental Demand

Average Power Factor - 230 KV System--92.6
Average Power Factor - 115 KV System--96.4
Average Power Factor - 66 KV System--87.6

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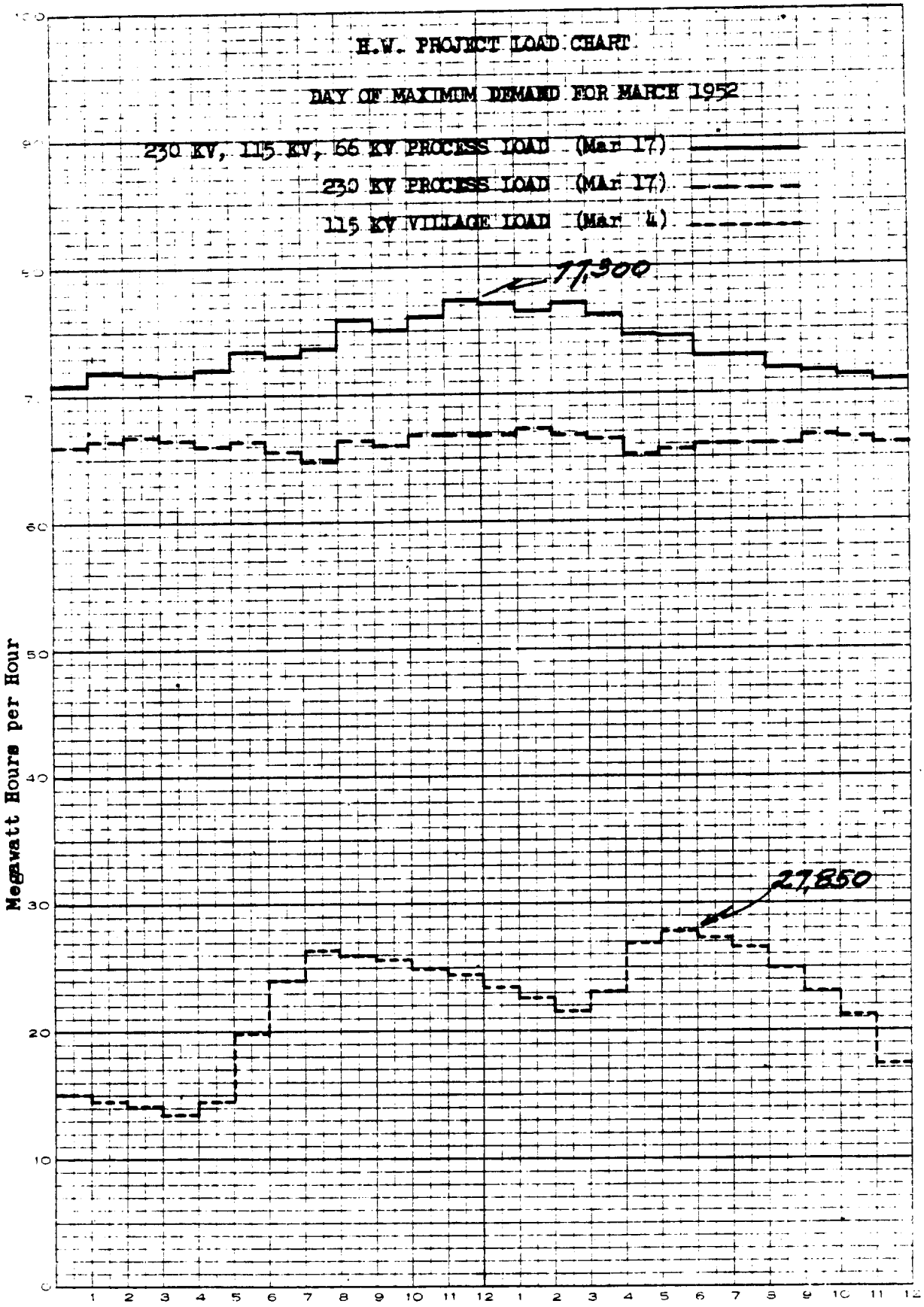

1210636

UTILITIES AND GENERAL SERVICES DEPARTMENT
STATISTICS UNIT

MONTHLY REPORT - MARCH, 1952

GENERAL - C. A. Bennett

Organization and personnel of the Statistics Unit are summarized as follows:

	As of 2-29-52			As of 3-31-52			Net Change		
	Ex	Non-Ex	Total	Ex	Non-Ex	Total	Ex	Non-Ex	Total
100 Area Services	1	2	3	1	2	3	0	0	0
200 Area Services	2	3	5	2	2	4	0	-1	-1
300 Area Services	1	2	3	1	2	3	0	0	0
General Services	1	0	1	1	0	1	0	0	0
Methods	2	0	2	2	0	2	0	0	0
Staff	1	1	2	1	1	2	0	0	0
TOTAL	8	8	16	8	7	15	0	-1	-1

One clerical employee was transferred to the Computing Unit because of the discontinuance of routine statistical quality reports to the 200 Area control laboratories.

100 AREA SERVICES - R. F. Cell

A rough draft of the statistical analysis of slug rupture data through February 29, 1952 was supplied to the Pile Technology Unit for inclusion in a proposed report on this problem. A reanalysis with particular emphasis on the inclusion of more recent data is in progress. In addition to the comparison of Group VII and Group VIII metal, the relationship of cap failures, uranium splits, and total failures to power and exposure levels is being studied on the basis of the more extensive data now available. These data continue to reflect the relationships to manufacturing variables previously noted.

A statistical study of the corrosion of Van Stone flanges in operating piles was undertaken for the Process Unit, Reactor Section. The relationship between the observed corrosion for front and rear faces, different orifice zones, and different piles will be studied.

Extensive analyses of film buildup data from the 105-D flow laboratory are continuing. In particular, it was determined that the periodicity and downward trend in a portion of these data of particular interest were both statistically significant. The period of the non-random fluctuations after the removal of the linear trend in the data was determined.

Temperature charts of irradiated graphite samples are being used to study the temperature of irradiation for the Graphite Studies group. An average and maximum deviation will be obtained from the charts for each twenty-four hour period since last June to provide the basic data necessary to the study.

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200 AREA SERVICES - W. C. Healy, Jr.

Problems of measurement reliability at Redox process accountability points dominated 200 Area Services during the month. Data from extensive multiple sampling of the dissolver metal solution tank (H-7) during March indicated a need for information on sources of error in the plutonium measurements at that point. As a consequence, a special schedule for the analysis of H-7 duplicate samples was devised which should, upon the accumulation of sufficient data, establish the source of excessive errors in this measurement. A fairly firm figure for the present reliability of measured uranium content of the uranium product concentrate (E-12) was obtained from duplicate sampling data to date. This program will continue.

Final results from the extensive sampling and analysis test of plutonium measurements (P-1) on both the Redox and $BiPO_4$ plutonium product at receipt by 231 Building had been obtained at month end. A final report is being held pending the completion and analysis of the volume measurement phase of this test. Comparison of plutonium measurements on the Redox plutonium product before concentration (E-3), after concentration (PR-line) and at receipt in 231 Building was continued, and showed substantially the agreement between PR and P-1 measurements that would be expected on the basis of the P-1 testing reported above.

The study of Redox laboratory precisions of key Redox samples was continued and expanded to include most of the routine samples processed. Results of this work are summarized in a weekly report. Also, an analysis of the number of reruns required for alpha, beta, and gamma counting determinations was begun, to guide the laboratory supervision in determining whether or not changes in laboratory rerun limits may be desirable for increased laboratory efficiency.

In connection with 231 Building accountability, the precision of the plutonium measurements on the supernate solution (CT1R) from the peroxide precipitations was estimated from routine laboratory data. Also, a study of plutonium shipper-receiver differences between 231 Building (AT assay) and 234-5 Building (F-2 weight) was initiated.

The running comparison of actual plutonium yields based on metal solution assays with theoretical yield figures based on pile exposure was maintained up to date, and the regular semi-monthly reports of certain Kr 85 computations were completed and forwarded to the Atomic Energy Commission.

An analysis was made of experimental data on the percutaneous absorption of tritium for the Radiological Sciences Department.

Miscellaneous services rendered included the following topics: control limits for use with low counting rates, reliability of blood factor averages associated with the experimental feeding of radioactive iodine to sheep, coincidence losses with a scintillation counter, and calculation of optimum counting times in certain radio-assay problems.

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1210130

300 AREA SERVICES - L. G. Waters

The study to determine the feasibility of adopting a sampling plan for incoming aluminum can shipments was completed. It was concluded that the present inspection procedure cannot be modified to effect a substantial savings of inspection time and still permit 100 percent inspection of wall thickness and surface defects.

Assistance was afforded the Metal Preparation Section in designing an experiment to determine the amount of turnings that must be removed from present processed uranium rods in order that a given percentage of the resulting slugs will be free of surface defects.

The analytical results for copper, tin, and uranium on samples from ingots salvaged from the canning process tin bath were submitted by the Metal Preparation Section to gain information about the distribution of the constituents in the material and to formulate an experience factor for uranium content. The results showed that no reliable experience factor could be established to date. This is probably due to the non-uniformity of the material being sampled.

In connection with the problem of slug ruptures, it has been noted that ruptures occur more frequently in slugs that were canned at the end of the week. A study was made for the Metal Preparation Section to determine how the percent of canning rejects for the first part of the week compared with the percent at the end of the week. The results showed no statistically significant difference.

As a result of the study of the estimation of uranium content of CRD-2 and CRD-6 oxides from their unburned weights, the Metal Preparation Section has decided to combine the two types of oxides and to process floor sweepings separately. Previously floor sweepings were added to the CRD-2 oxide. This added material may be responsible for the wide variation experienced in the uranium content of that oxide. When sufficient data are available, estimates of the uranium content of the combined oxides and the separately processed floor sweepings will be made.

A statistical study of the 140 slugs canned under MFR 184 has been completed. This MFR authorized canning slugs in graphite coated cans without sleeves. The effect of bath temperature, can submerged time, and internal can wiping with a graphite plunger on can-wall thickness (penetration) and base thickness (seating) was determined.

Assistance was afforded the Pile Technology Unit in designing an experiment to determine the amount of turnings that must be removed from the β-heat treated uranium rods now being processed in order that a given percentage of the resulting slugs will be free from surface defects. Assistance was also afforded in designing an experiment to compare four other types of material to be processed through the 300 Area for various metallurgical properties and processing yields. The materials are: (1) present production material used for control purposes, (2) material rolled in the high α-phase and triple-dipped canned, (3) material rolled in the high α-phase and lead-dipped canned, and (4) material β-transformed, then rolled in the α-phase, and lead-dipped canned. The material prepared will also be pile tested.

DECLASSIFIED

Numerous equations concerning coefficients of thermal expansion of regular production and experimentally rolled uranium were computed for the Pile Technology Unit under program RDA-571.

Distributions were made of the reactivity results of canned 4 inch FM and 4 inch FZ type slugs tested from January, 1951 to the present. These distributions were supplied to the Pile Technology Unit as requested to help evaluate the feasibility of sorting material on the basis of reactivity for loading in the 105 Piles.

The reactivity results obtained from testing the stringer of bare slugs made up for use as a test standard by Savannah River are being analyzed for the Pile Technology Unit to determine the confidence limits on the average.

Assistance was given the Separations Technology Unit in tracing down irregularities in metal quality which may contribute to emulsion formation in the Redox Plant.

The best estimate of the average weight (1,781.1 grams) and the 99 percent confidence limits of an individual slug (± 14.2 grams) of 4 inch FM type slugs weighed immediately following deoxidizing was determined for the Analytical Unit. This study was made in conjunction with the program to determine the quantity of uranium that goes to underground storage in the 200 Areas based upon factor weights of bare slugs. It was pointed out to the Unit that since approximately one-third of the slugs processed are the lighter 4 inch FZ type, the average and variation of these slugs must be taken into consideration separately. A means of determining the average and variation of the FZ type slugs was suggested to the Unit.

Document Number HW-23844, "Trip Report, Meeting to Discuss Assignment of Lot Numbers to Uranium to Provide Technical Information and Manufacturing Control, Mallinckrodt Chemical Works, St. Louis, Missouri, February 15, 1952", summarizes the meeting at which the identification of lots throughout refining, rolling, and Hanford Works processing was discussed and adopted. In conjunction with the Computing Unit, Engineering Department, and Manufacturing Department, techniques for handling 300 Area manufacturing data pertaining to the new lot system were set up during March. April 1, 1952, is the tentative date for processing the data on I.B.M. cards.

On March 12, 1952, a meeting was held with Messrs. Rebol, Neeley, and Reed of the Aircraft Nuclear Propulsion Division of the General Electric Company to discuss statistical problems pertaining to their manufacturing processes.

Assistance was given the Plant Engineering Services in designing an experiment to determine the thermal efficiency of 100 Area combustion engineering boilers at various steaming rates using Kremmerer coal.

METHODS AND GENERAL SERVICES - F. H. Tingey

An analysis was made of the tabulated results of the preliminary stores study carried out by the Computing Unit. It was decided that this tabulation did not lend itself well to statistical treatment and that the information available did not warrant the continuation of the study at this time.

[redacted]

The necessary information and data is being assembled relative to the labor turnover problem as mentioned in last month's report. The method of statistical analysis of this data has been derived and will be applied when a sufficient amount of data becomes available.

Assistance was given the Pile Technology Unit pertinent to the determination of the half life of a radioactive substance by means of an exponential regression equation.

The abstracting of current statistical literature for subsequent dissemination of techniques to the Senior Statisticians was continued.

Assistance was rendered the Senior Statisticians on statistical problems such as the feasibility of adopting a sampling plan for incoming aluminum can shipments; slug rupture problem; an experiment to determine the thermal efficiency of 100 Area combustion engineering boilers at various steaming rates; tube corrosion; metal recovery from the canning process tin bath and various other problems that did not lend themselves to immediate analysis.

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UTILITIES AND GENERAL SERVICES DEPARTMENT
COMPUTING UNIT

MONTHLY REPORT - MARCH, 1952

Following is the month end summary of personnel:

	As of 2-29-52			As of 3-31-52			Net Change		
	Ex	Non-Ex	Total	Ex	Non-Ex	Total	Ex	Non-Ex	Total
Staff	1	2	3	1	2	3	0	0	0
Planning	5	7	12	5	7	12	0	0	0
Operations	2	27	29	2	27	29	0	0	0
TOTAL	8	36	44	8	36	44	0	0	0

One key punch operator terminated to spend full time as a housewife, and another is on leave due to serious illness. A key punch operator and a machine operator trainee were hired during the month.

The planning components of the Computing Unit organization are beginning to take shape. A business graduate who has been in training in the machine room has been assigned to the accounting planning and procedures office. He is working in close cooperation with the scheduler, revising machine procedures to include all detailed instructions necessary for maintaining accuracy and process control of machine work. These expanded procedures will make possible operation of the machines by personnel not familiar through experience with the background and details of the various jobs.

Good progress is being made on the plans for scheduling. It is proposed to begin scheduling on approximately 60% of the routine work during April.

Planning activity on the weekly payroll preparation job is receiving great emphasis. The specifications, definitions, general procedure, and many of the procedure details have been formulated by the Payroll Section. During this month most of the remaining details have been outlined and design of the control panels has begun. Calculator panels have been completed for calculating and punching gross pay and various pay items included in the gross amount. The tax panel has also been completed. It calculates all applicable taxes and pension assessments.

The procedure for billing commercial electricity accounts has been completed and a control panel for calculating the direct charge from the block rates has been designed. Panels for calculating demand and minimum charges have not het been designed pending final review of all contract provisions.

Motorized equipment reports are used by the Financial Department for accounting purposes, by the Transportation Section for control information and by the A.E.C. for their reports to Washington. All three of these customers have requested changes in the present reports. A complete review of this procedure will be made. All customers will review their primary objectives and requirements so

the revised procedure will present summarized cost and control information in the most effective form for all concerned at the least cost.

Filing responsibility for IBM accounting reports has been assumed by the Financial Department. Thirty-four cartons of historical reports have been transferred to them.

A procedure has been worked out to provide statistical accuracy control on radioactivity counters used in the Redox laboratory. These counters are used in making chemical analyses through counting intensitities and decay rates of radioactive isotopes, hence their accuracy must be well known at all times. Approximately 1000 readings per month are recorded in IBM cards by mark sensing. These cards are delivered to the machine room where the calculations are made and the results printed.

Assistance is being given on the problem of process tube rupture. Cooling water reaches the pile graphite through these ruptures and must subsequently be evaporated. A series of special temperature maps were printed showing average outlet temperatures and the departure from normal of each outlet temperature. These maps are being used in the determination of the optimum techniques for drying the pile graphite.

Assistance is continuing on the slug rupture problem. A forecast of fringe tube exposures for all piles for the period of January to May, 1952 has been completed. Calculation is continuing on the regular tube exposure frequency distributions for all piles for the year 1951. Power and exposure frequency distributions of the fringe tubes are being compiled starting with July, 1951 for group 8 metal (4") tubes, and with January, 1952 for group 9 metal (8") tubes.

The evaluation of slug stress and displacements is about half completed. To date 410 values of stress and displacement have been computed on the card programmed calculator. Each evaluation requiring a 320 card instruction deck for a nominal total instruction card volume of 130,000 cards.

The effect of samarium buildup on pile reactivity was assessed on a calculation completed this month. The calculation involved temperature differences taken from temperature maps and the evaluation of complicated expressions on the card programmed calculator.

Programming has been completed on three new calculations pertaining to diffusion length in graphite. One is a complicated calculation using fast neutron source theory. A number of series with terms involving the probability integral and positive and negative exponentials are calculated. Fitting of experimental data with a least squares method was also involved. The main difficulties centered about the judicious use of the limited storage capacity of the calculator and the wide range of the magnitudes of the numbers involved. The second calculation is based on the fitting of an exponential series by a least squares method to experimental data. The third is a calculation of harmonic correction factors to be applied to flux measurements in finite-sized graphite blocks. These measurements were made in the Savannah River mock-up in order to determine the diffusion length of neutrons in this graphite.

Work has begun on the solution of a diffusion equation in one dimension in an attempt to determine the transfer coefficient for particle diffusion between the equeous and organic solvents used in the separations process. The diffusion equation, which is a second order partial differential equation, is replaced by a system of finite difference equations applying to a set of equally spaced points representing the geometric configuration involved. With these equations the value of the variable in question at any point can be determined in terms of the values at neighboring points. At the outset, a guess as to the value of each point is made, then the value at each point is calculated from the values of the neighboring points and the calculated values compared to the guesses. These calculated values are then used for the second guess and another calculation is made. This procedure is used over and over until a set of numbers is developed that is consistent through the calculation. These values represent the solution to the original equation at the points specified.

Pile cooling water contains a rather large number of radioactive isotopes. Some of these may go through a chain of three disintegrations before becoming stable nuclei. These decay equations have been programmed for the card programmed calculator. In the present investigation radioactivity of the decay chains is being determined for various times of exposure and for various periods of decay. Since the range of magnitude of the numbers involved is very great, the floating decimal control system was finally used to preserve accuracy over the entire range. The floating system is ordinarily not used on large calculating projects as it is more time consuming. However, in this case, the floating system eliminated the establishment of several fixed decimal routines for various ranges and a large scale hand selection of values to fit these ranges. 2366 chain calculations are being made in this study.

In the day to day analysis of scientific problems certain mathematical formulations (functions) appear quite frequently. Many of these functions have been evaluated and published. Occasionally technical personnel at Hanford find functions recurring in their work that have not yet been tabulated. The Computing Unit is requested from time to time to calculate and tabulate such functions. This month three tables were made of functions over ranges not available in published references; (1) tables of the exponential function, (2) tables of the Bessel function of the second kind, orders two through ten, and (3) tables of the Bessel function of the first and second kind of imaginary arguments and half integral order up to 9/2.

Routine reports and calculations were made during March as follows: Exempt salary distribution; weekly payroll distribution for Manufacturing Department, Utilities and General Services Department, and Technical Section; work order cost reports for Manufacturing Department, Utilities and General Services Department, and Community and Real Estate Services Department; motorized equipment cost, public health activities; pile temperature maps; pile graphite temperature calculations; special request exposures; wind studies; meteorological studies; thyroid calculations; and aquatic biology calculations.

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	CARD VOLUME	MACHINE UTILIZATION INDEX	NUMBER OF REPORTS
FOR THE FINANCIAL DEPARTMENT:			
Exempt Salary Distribution	2,500	162	2
Technical Cost Distribution Report	6,700	230	6
Manufacturing Payroll Distribution Report	61,852	1028	14
General Payroll Distribution Report	26,600	565	13
Manufacturing Work Order Cost	34,279	649	46
Community Work Order Cost	14,799	365	26
General Work Order Cost	53,607	681	36
General Motorized Equipment Cost	11,500	762	14
Electrical Billing	1,000	35	
Check Writing Deduction & Payroll Statistics	1,000	15	1
Service Orders	1,000	67	1
	214,837	4559	159
FOR THE RADIOLOGICAL SCIENCES DEPARTMENT:			
Monthly Meteorological Study	1,000	21	
Weather Station Wind Study	20,000	106	1
Zoology Thyroid Counts	500	62	2
Zoology Sheep Radioanalyses	400	63	2
Aquatic Biology	300	11	2
Smokestack Integral	2,000	23	
Pressure Tables	600	42	1
Isotope Buildup & Decay	2,000	262	
	26,800	590	8
FOR THE MEDICAL DEPARTMENT:			
Public Health Activities	3,000	71	5
	3,000	71	5
FOR THE ATOMIC ENERGY COMMISSION:			
Columbia River Studies	100	36	1
A.E.C. Quarterly Motorized Equipment Reports	2,200	75	2
	2,300	111	3
FOR THE MANUFACTURING DEPARTMENT:			
tal Quality Preparation [redacted]	750	22	
	750	22	

[redacted]

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	CARD VOLUME	MACHINE UTILIZATION INDEX	NUMBER OF REPORTS
FOR THE UTILITIES & GENERAL SERVICES DEPARTMENT:			
Stores Survey	50,000	128	1
Minimizing Variances	500	14	1
	50,500	142	2
FOR THE SALARY ADMINISTRATION DEPARTMENT:			
Exempt Salary Statistics	1,000	83	2
Salary Curve Fitting	600	4	
	1,600	87	2
FOR THE ENGINEERING DEPARTMENT:			
Pile Temperature Maps	6,000	37	2
D Pile Graphite Temperature Calculations	400	188	3
S.R. Exposure Calculations	2,000	97	2
Ruptured Slug Correlation Study	10,000	161	1
Film Buildup Calculation 100-D Flow Lab.	1,500	86	2
Diffusion Length Calculation	2,000	75	2
Bessel Function of Half Integral Order	8,000	231	1
Pile Poisoning Integral No. 2	100	114	2
Least Square Cosine Curve Fitting	1,000	140	3
Calculation of Diffusion Lengths	1,000	78	
Slug Skin & Axial Temperature	2,000	40	3
Slug Stress Analysis	7,200	1230	1
Reactivity Weight of Exposure	1,000	356	1
100-H Water Flow Power Study	1,000	40	1
Slug Failure	20	3	3
Calculation Flux in Enriched Patch	120	5	1
Separations Sampling	1,000	33	4
Fringe Tube Residual Forecast	5,000	175	1
DR Pile Leak Data Reduction	500	85	1
Tables of E-X	1,500	8	2
Tables of Y-Bessel Functions	80	30	3
Determination of Transfer Coefficient	200	12	
Group 9 Metal Studies	300	18	1
Surrounding Tube Average for H Pile	100	2	1
Group 8 Fringe Tube Power Breakdown	2,000	6	
	54,020	3250	41
GRAND TOTAL	353,807	8832	220

EMPLOYEE AND PUBLIC RELATIONS DEPARTMENT

SUMMARY -- MARCH, 1952

The number of applicants interviewed in March was 1,232 as compared with 1,160 in February. Of these applicants, 305 were individuals who applied for employment with General Electric for the first time. In addition, 112 new applicants applied by mail. Open, nonexempt, nontechnical requisitions increased from 178 at the beginning of the month to 200 at month end. Total Plant roll decreased from 9,055 to 8,955, with total separations including 34 employees laid-off for lack of work mostly resulting for assumption by the AEC responsibility for certain construction activity. Of the 82 non-exempt employees assigned to the North Richland Camp, who were made available for reassignment, 46 were offered other jobs, however, 14 rejected offers. The remaining 36 could not be placed for lack of suitable openings for which they could qualify; this total included 33 women janitors and 3 men janitors. During March, the Separations Section of Manufacturing made available for reassignment 12 chemical helpers. All were offered jobs as metalworkers in Metal Preparations; 9 accepted, 2 were reassigned by Employment; 1 elected to be laid-off. Turnover rate increased from 1.51% in February to 2.10% in March. During March, 52 new requests for transfer to other type work were received by Employment and 41 transfers were effected. Attendance recognition awards were distributed for 88 employees who qualified for one-year awards during February, and for 53 who qualified for two-year awards during February. A dessert-coffee and style show held on March 13 to further stimulate interest in the formulation of a GE Women's Club was very well received by over 200 women. Proposed by-laws were presented to about 60 women who attended a general meeting March 27, and another general meeting is scheduled for April 30 for purpose of electing officers. In the interim a membership drive is to be conducted.

Two employees died during the month, and four retired. One hundred seventy-two visits were made with employees confined at Kadlec Hospital and 74 checks were delivered to employees confined either at home or in the hospital. At month end, participation in the Pension Plan was 94.2%, in the Insurance Plan 98.2%, and in the Employee Savings and Stock Bonus Plan 48.3%. At month end there were 988 registered under Selective Service, and 738 military reservists were on the roll. Since August 1, 1950, 198 employees have terminated to enter military service, of which 17 have returned, leaving 181 still in military leave status. Twenty-four pre-retirement contacts were made in March. The Educational Assistance Program was reviewed with high school officials in Sunnyside, Grandview, Prosser, Benton City, Pasco, Kennewick, and Richland during the month.

Management Orientation Program was presented for the third time on March 3, 1952. There were 25 new supervisors and exempt personnel attending. PMS Groups 21, 22, 23, and 24, have finished session Number 15 and will complete the program on April 9, 1952. During the month tentative revisions to 109 pages of the Supervisor's Handbook were typed. Only 1 additional Handbook was issued during March. A total of 71 employees were given Orientation during the month, 85.9% choosing to participate in the Pension Plan, and 97.2% electing to participate in the

1210047

Employee and Public Relations
Summary

Group Insurance Plan. During the week of March 17-21, inclusive, the "New Supervisors 40-Hour Program" was conducted. There were 17 attending. On Thursday, March 27, the program "You and Labor Law" was presented for the first time under our schedule of Management Aids for 1952. There were 31 attending this all day session. On March 12 and 13, a "Basic Economics Program" was presented for the first time to new exempt and supervisory personnel, with 22 attending. Mr. J. J. Tagen, Supervisor of Wage Rates, explained surveys and community rates. Several films were also employed in this program. During the month a Training Manual on "Procedures" was completed. This is for use of new Training employees. On March 28 a representative of the American Economic Foundation presented a preview of the film "In Our Hands". All members of the Training staff attended. Five copies of "Men and Volts" were sold to Company employees. A presentation of HOBSO was made to the regular meeting of the Pasco Lions Club on March 19, 1952. There were 46 members and guests attending. At the request of the Richland Lions Club, a HOBSO institute has been started, and 3 members are meeting evenings to learn the technique of making this presentation.

A total of 53 news releases were distributed during the month. Of these, 27 were sent to the "local list" and two were sent to the "daily list".

A feature story and photos on protective clothing used at Hanford Works was sent to the Spokesman Review and the Oregon Journal.

A total of eight papers were cleared for oral presentation during the month. One paper was cleared for future publication.

Numerous letters to members of the G-E Speakers' Bureau were written to ascertain interest in the proposed "Science Forum" radio series, and several auditions were held to acquaint these prospective panelists with the program. The series is scheduled to go into production in the next month and will be broadcast on a regular weekly basis.

Civil Defense news stories and pictures released to local media concerned the Governor's tour of the control center, warden recruiting program and the air raid sirens test.

CD movies were shown to 342 G-E employees, 299 members of community clubs and organizations, and 1226 school children.

A warden recruiting publicity program was outlined and essentially completed.

Four Civil Defense warden service talks were given by the Chief Warden during the month.

A total of 5,573 prints of photos were produced during the month. Of the total prints produced, 4,172 were for employee identification and area admittance badges.

A total number of requests to borrow projection equipment amounted to forty-four for the month of March.

1216548

Employee and Public Relations
Summary

A total of nine University of Washington films were booked for showing in the Procedures Analysis Training Program throughout the month.

Production of seven different radio programs for the month included planning, casting, scripting, rehearsals, tape-recording and scheduling for broadcast.

A total of nine spot announcements were written during the month.

An extensive publicity program for the American Red Cross 1952 Fund Campaign has been carried out throughout the month. A supervisor of this Section was appointed Publicity Chairman for this County Drive.

The sound-slide film, "What's the Idea" produced at the request of the Suggestion System Unit, was completed and is ready for auditioning.

Two twelve-, and two ten-page Works News were published during the month.

Two letters were prepared for the signature of the Manager, Employee and Public Relations.

"Gotta Grievance?", a 12-page, 2-color booklet on Hanford Works grievance procedure was written, designed and printed.

Copies of "Handling Grievances" (which had previously been sent to all supervisors) were distributed to all exempt non-supervisory employees at Hanford Works.

Safety topic for April "Let's Not Be Fooled" was produced and distributed to all exempt employees.

The 10 employee booklet information racks were serviced on a weekly basis. The "take" on the first three booklets for which complete figures are available is as follows: "Adventures in Jet Power"...1720 copies; "Adventures in Electricity" ...1908 copies; "Thunderbolts in Harness"... 752 copies.

The Company and the Hanford Atomic Metal Trades Council jointly agreed to continue the GE-HAMTC Contract for another year, that is until May 16, 1953. The Company presented to the local unions a new cost-of-living wage increase based on any increase in the BLS Index between March 15, 1951, and March 15, 1952. This was accepted by the unions. The Company and union representatives had a series of meetings for the purpose of discussing an appropriate increase in isolation pay. Nothing was resolved on this issue and meetings on the subject are continuing.

The work stoppage involving Teamsters took place on March 13 and 14, and was renewed on March 24 and 25, as a result of a jurisdictional dispute with the Plumbers. A dispute with the Boilermakers over contract renewal was heard by the Davis Panel in New York on March 3. No decision has been forthcoming. A jurisdictional dispute between the Ironworkers and the Plumbers in the 200-E Tank Farm area resulted in the discharge of an Ironworker Foreman, two Journeymen and a Steward. Word was received on March 3, that the Ninth Circuit Court of

1216649

Employee and Public Relations
Summary

Appeals had overruled the NLRB in the Hewes Case and found AJ not guilty of certain unfair labor practices as charged by that Agency. The Wage Stabilization Board unanimously approved a policy that will permit wage increases in the construction industry up to 15 cents per hour.

Wage Rates completed its computation of the 3.58% wage increase and furnished necessary data to the Payroll Section. A representative of this unit spent two weeks contacting different industries and organizations in the Northwest incidental to a current area survey of wage rates.

1211650

EMPLOYEE AND PUBLIC RELATIONS DEPARTMENT

MARCH, 1952

ORGANIZATION AND PERSONNEL

General

Effective March 3, 1952, Harriet M. Perkins, a Secretary B assigned to the Personnel Supervisor was upgraded to Secretary A, and assigned to Manager, Employee and Public Relations Department.

Effective March 14, 1952, Norma Lea Hurley, a Secretary A assigned to the Manager, Employee and Public Relations Department terminated voluntarily.

Employment and Employee Services

There were no organizational changes during March.

Training and Program Development

Effective March 7, 1952, Darlene Schultz, a Steno-Typist B terminated voluntarily.

Effective February 29, 1952, James A. Wood, Training Supervisor was deactivated due to personal illness.

Public Relations

Effective March 21, 1952, one Supervisor, News Bureau, was re-activated. He had previously been removed from the rolls for personal illness.

Effective March 25, 1952, one Publicity Writer terminated voluntarily.

Union Relations

Effective March 20, 1952, one General Clerk C was added.

Effective March 28, 1952, one Steno-Typist B was deactivated due to personal illness.

Effective March 31, 1952, one General Clerk C was deactivated due to personal illness.

Number of Employees on Roll	March, 1952
Beginning of Month	112
End of Month	109
Net Change	- 3

1216651

Employee and Public Relations

ACTIVITIES

Employment and Employee Services

Employment

	February, 1952	March, 1952
Applicants interviewed	1,160	1,232

305 of the applicants interviewed during March were individuals who applied for employment with the Company for the first time. In addition, 112 new applications were received through the mail.

Open Requisitions	February, 1952	March, 1952
Exempt	0	1
Nonexempt	178	200

Of the 178 open, nonexempt, nontechnical requisitions at the beginning of the month, 72 were covered by interim commitments. Of the 200 open, nonexempt, nontechnical requisitions at month end, 78 were covered by interim commitments. During March, 134 new requisitions were received requesting the employment of 184 nonexempt, nontechnical employees.

	February, 1952	March, 1952
Employees added to the rolls	100	89
Employees removed from the rolls	139	189
NET GAIN OR LOSS	- 39	-100

Of the 189 employees removed from the rolls, 34 were removed due to lack of work, 1 of which was in a Bargaining Unit. The other lay offs resulted from the transfer of responsibility for certain construction activity from the Company to the Atomic Energy Commission.

Turnover:	February, 1952		March, 1952	
	Male	Female	Male	Female
Including employees who were laid off for lack of work	1.07%	3.16%	1.65%	3.81%
Excluding employees who were laid off for lack of work	0.95	2.69	1.28	3.42

Over-all Turnover:

	February, 1952	March, 1952
Including employees who were laid off for lack of work	1.51%	2.10%
Excluding employees who were laid off for lack of work	1.31	1.72

1211152

Employee and Public Relations

During March, 48 employees left voluntarily to accept other employment, 12 left to enter military service, and 9 left to enter business for self.

Transfer Data

Accumulative total of requests for transfer received since 1-1-52	154
Number of requests for transfer received during March	52
Number interviewed in March, including promotional transfers	88
Transfers effected in March, including promotional transfers	41
Transfers effected since 1-1-52, including promotional transfers	87
Transfers effected in March for employees being laid off	79
Transfers effected since 1-1-52 for employees being laid off	109
Number of stenographers transferred out of steno. pool in March	5
Transfer requests active at month end	214

Of the 82 nonexempt employees assigned to the North Richland Camp made available for reassignment early in March, 46 were offered other jobs, however, 14 rejected offers. 36 could not be placed, including 33 female and 3 male janitors for lack of suitable openings for which they could qualify.

During March the Separations Section of Manufacturing made available for reassignment 12 chemical helpers. Within Manufacturing, all were offered an opportunity to transfer to the Metal Preparations Section as metalworkers. Nine elected to make the transfer, 2 were reassigned by Employment and one elected to be laid off.

During March, 11 people whose continuity of service was broken while in an inactive status were so informed by letter.

One-year emblems and wallet cards in recognition of perfect attendance were presented to 88 employees in March, who qualified in February, and two-year emblems and wallet cards were presented to 53 employees in March, who qualified in February.

A total of sixty-four female employees were visited at the hospital and given assistance as required. Checks were delivered weekly to employees confined to the hospital or ill at home.

Difficulty is being encountered in recruiting 5 required medical technicians. The openings have been listed with 12 medical placement bureaus, 166 Schools of Medical Technology have been contacted by letter and advertisements have been placed in 3 Medical Journals.

A dessert-coffee and style show held on March 13, to further stimulate the formulation of a club for GE women was very well received by over 200 women employees. A meeting was held on March 27, and by-laws were submitted for review and discussion to about 60 women. Another meeting has been scheduled for April 30, at which officers are to be elected, and in the interim a membership drive is to be conducted.

1216053

Employee and Public Relations

Employment Statistics

Number of employees on rolls	2-29-52	3-31-52
Exempt - Male	1,957	1,935
Female	59	58
	2,016	1,993
Nonexempt - Male	5,153	5,108
Female	1,830	1,798
	6,983	6,906
Community Firemen	56	56
TOTAL	9,055	8,955

ADDITIONS TO THE ROLLS

	Exempt	Nonexempt	Community Firemen	Total
New Hires	3	66	0	69
Re-engaged	0	0	0	0
Reactivations	3	16	0	19
Transfers (from other Divisions)	0	1	0	1
Actual additions	6	83	0	89
Payroll exchanges	8[a]	0	0	8
GROSS ADDITIONS	14	83	0	97

TERMINATIONS FROM THE ROLLS

Actual Terminations	35	119	0	154
Removals from rolls (deactivations)	2	33	0	35
Payroll exchanges	0	8[b]	0	8
Transfers (to other Divisions)	0	0	0	0
GROSS TERMINATIONS	37	160	0	197

GENERAL

	2-1952	3-1952
Photographs taken	309	243
Fingerprint impressions (taken in duplicate)	332	252

ABSENTEEISM STATISTICS
(Weekly Salary Roll)[c]

	2-1952	3-1952
Male	2.34%	2.50%
Female	3.57	4.19
Total Plant Average	2.59	2.86

1216654

PRIVACY ACT MATERIAL REMOVED

PERSONNEL SECURITY QUESTIONNAIRES PROCESSED

	2-1952	3-1952
General Electric cases	86	71
Facility cases	99	30
TOTAL	185	101

INVESTIGATION STATISTICS

Cases received during the month	249	314
Cases closed	269	228
Cases found satisfactory for employment	118	367
Cases found unsatisfactory for employment	2	5
Cases closed before investigation completed	7	7
Special investigations conducted	2	6

PERFECT ATTENDANCE RECOGNITION AWARDS

Total one-year awards to date	2,678
One-year awards made in March for those qualifying in February	88
Total two-year awards to date	539
Two-year awards made in March for those qualifying in February	53

[a] Transferred from Weekly Payroll
[b] Transferred to Monthly Payroll
[c] Statistics furnished by Weekly Payroll

Employee Services

The following visits were made with employees during the month by a representative of Employee Services:

Employee contacts made at Kadlec Hospital	172
Salary checks delivered to employees at Kadlec Hospital	55
Salary checks delivered to employees at home	19
Disability checks delivered to employees at home	2

At month end participation in Benefit Plans was as follows:

Pension Plan	94.2%
Insurance Plan	98.2
Employee Savings and Stock Bonus Plan	48.3

Two employees died during March, namely:

Utilities and General Services; and
Manufacturing.

Thirty letters were written to deceased employees' families during March, concerning payment of monies due them from the Company, and to also answer their questions.

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PRIVACY ACT MATERIAL REMOVED

Employee and Public Relations

Since September 1, 1946, 81 life-insurance claims have been paid totaling $ 453,000.00.

Four employees retired during March, namely:

Pearl Logan, W-4449-TA, Normal Retirement
H. E. Cartel, W-5325-SJ, Normal Retirement
Elwood Hollingsworth, W-7760-VRH, Normal Retirement
J. R. Rue, M-12275-G, Optional Retirement

During March, 17 letters were written to retired employees providing them with information of general interest. To date 189 employees have retired at Hanford Works, of which 89 are continuing their residence in the vicinity.

In connection with the Pre-Retirement Program, 24 contacts were made with employees, bringing the total to 107, who will be retiring within the next five years. Also 3 retired employees were visited during the month and all expressed interest in the formation of a Pensioners' Club.

High school administrative people were visited in March at Sunnyside, Grandview, Prosser, Benton City, Pasco, Kennewick, and Richland for the purpose of again reviewing with them the Company's Educational Assistance Program.

Military Reserve and Selective Service

Statistics with respect to employees who are members of the military reserve are as follows:

Number of reservists on the rolls	738
Number who returned to active duty to date	95
Number who returned to active duty in March	4
Deferments requested to date	105
Deferments granted	98
Deferments pending	0
Deferments denied	4
Deferment requests withdrawn	3

The statistics with respect to employees registered under Selective Service are as follows:

Employees registered	1,976
Employees registered who are veterans	459
Employees registered who are nonveterans	529
Employees vulnerable to the draft	988
Deferments requested to date (including renewals)	486
Deferments granted	335
Deferments denied and appealed at state levels	17
Deferments denied and appealed at local levels	2
Deferments denied and pending at national level	1
Deferments denied by local board and not appealed	2
Deferments denied by state board and not appealed	7
Deferments denied at national level (by Gen. Hershey's Office)	1
Deferments denied at national level (by President)	1
Deferments denied by local and state boards and pending for review	1
Deferments requested, employees later reclassified	50

1 2 1 3 3 5 6

Employee and Public Relations

Deferments requested, later withdrawn	31
Deferments pending	35

Military terminations since 8-1-1950 are as follows:

Reservists recalled	95
Selective Service	101
Female employees enlisted	2
TOTAL	198

Employees returned from military service:

Reservists	16
Selective Service	1
TOTAL	17

Number of employees still in military leave status	181

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Employee and Public Relations

TRAINING AND PROGRAM DEVELOPMENT

MANAGEMENT ORIENTATION PROGRAM was presented for the third time on March 3, 1952. There were 25 new supervisors and exempt personnel attending. This is an all day program, its purpose being to welcome new exempt and supervisory personnel to the management team. This program stresses human relations, the new responsibilities, information required and how it will be supplied, and getting along with others. The entire program, however, is designed to impart the feeling of belonging which is so essential to all General Electric employees. Mr. H. E. Callahan welcomed this group on behalf of senior management. As a regular feature of this program, a luncheon was held for those attending.

PRINCIPLES AND METHODS OF SUPERVISION. PMS Groups 21, 22, 23 and 24, have finished lesson Number 15 and will complete the course on April 9, 1952. A dinner meeting is planned for April 16 at which time the completion certificates will be presented. Several members of senior management will be present as guests.

SUPERVISOR'S HANDBOOKS. During the month tentative revisions to 109 pages of the Supervisor's Handbook were typed. This was made necessary because of the recent reorganization and change in nomenclature. This represents only a partial revision to the Handbook and it is hoped that the entire job will be in the hands of the printer in the very near future. It is felt that this supervisory tool must be kept current to be effective.

Number of Handbooks distributed before March, 1952	- 1343
Number of Handbooks issued during March	- 1
Number of Handbooks in stock at end of March	- 156
Total number of Handbooks	- 1500

Of the 156 Handbooks on hand, 17 are not useable as they lack too many pages while 51 are ready for issuance and 88 have yet to be checked for completeness before reissuance.

ORIENTATION OF NEW EMPLOYEES. A total of 71 employees were given Orientation during the month, 85.9% choosing to participate in the General Electric Pension Plan, and 97.2% electing to participate in the Group Insurance Plan. It has been found from experience that the female employees, and especially the younger ones, feel that they do not need the Pension Plan and thus the percent of participation is not as high as might be expected if all of our employees were male.

SUPERVISORS 40-HOUR PROGRAM. During the week of March 17-21, inclusive, the "New Supervisors 40-Hour Program" was conducted, there were 17 attending. This program again was very well accepted and received very favorable comments. As a regular feature of the 40-Hour Program, a luncheon is provided on Friday noon which we feel does much to stimulate a warm receptive attitude and a closeness of association.

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Employee and Public Relations

TRAINING AND PROGRAM DEVELOPMENT

YOU AND LABOR LAW. On Thursday, March 27, the program "You and Labor Law" was presented for the first time under our schedule of Management Aids for 1952. There were 31 attending this all day session. Mr. J. N. Dupuy, Manager of Union Relations, was guest speaker and added a highlight to the program. This program has always been very well accepted and as expressed by those attending is something that we have always needed. This program will be presented every two months during the year.

BASIC ECONOMICS PROGRAM. On March 12 and 13, a "Basic Economics Program" was presented for the first time to new exempt and supervisory personnel, with 22 attending. This is a 2-day program covering Competitive Economy versus Controlled Economy, Rising Standard of Living, Job Security, Individual Productivity, Restrictive Practices Impede Progress, Take-Home Pay and Purchasing Power, Community Rates, Real Savings, Profits, and Big Business versus Small Business. Mr. J. J. Tagen, Supervisor of Wage Rates, was a guest speaker and explained surveys which are made in arriving at proper community rates. Several films were employed in this program, among them being, "In Balance", "Productivity, Key to Plenty", "This Is Our Problem", and finally "The Price of Freedom". Since this was the initial presentation of this program, it is planned to edit the material considerably before the next presentation in May.

MANUALS. During the month a Training Manual on "Procedures" was completed. This gives the new Training employee basic knowledge of the things he should know and how to do them upon entering this group. Obviously no procedure manual is ever complete, so it is planned to add to this to keep it current as the occasion warrants.

FILMS PREVIEWED. On March 28 a representative of the American Economic Foundation presented a preview of the film "In Our Hands". All members of the Training staff attended. It was felt that this film with the accompanying discussion will make an excellent program to take to our employees, and it is hoped that in the near future we may be able to do so.

Also previewed was the color slide film from our New York office dealing with human relations and the five proposed programs for next year.

BOOKLETS. During the month of March, 450 Pension booklets were requested and transmitted to the Weekly Payroll Section. A complete Orientation package was requested by the Investigation Section and another by the Industrial Medical Section. One of our activities is to supply other departments, sections and units with records as to attendance in our Training programs, and this occupies a considerable portion of each work day.

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Employee and Public Relations

TRAINING AND PROGRAM DEVELOPMENT

SALE OF "MEN AND VOLTS". During the month of March, 5 copies of "Men and Volts" were sold to Company employees.

OUTSIDE ACTIVITIES. A presentation of HOBSO was made to the regular meeting of the Pasco Lions Club on March 19, 1952. There were 46 members and guests attending. This program continues to draw enthusiastic comment and never seems to grow old.

At the request of the Richland Lions Club, a HOBSO institute has been started and to date 3 members have met 3 evenings to learn the technique of making this presentation. In approximately another month these men should be equipped to do a very presentable job throughout the community.

A member of the Training staff was a guest speaker at one of our Nucleonics school training programs and spoke on the subject of "Telephone Technique".

On March 6, 1952, members of the Training staff were fortunate in attending a speech by Dr. Williston who is an authority on Far Eastern Affairs. Dr. Williston is Professor of Far Eastern History at the University of Washington and spoke on the Korean situation.

ORGANIZATION. Miss Darlene Schultz, Steno-Typist for the Training Section, terminated as of March 7 to accept another job in California. To date we have had no replacement for Miss Schultz.

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PUBLIC INFORMATION

A total of 53 news releases were distributed during the month. Of these, 27 were sent to the "local list" and two were sent to the "daily list". Seven were answers to special requests. Five sets of photographs were distributed to the local newspapers. The total also includes releases on the hiring of new employees.

Nine stories were written and sent to hometown newspapers of newly hired employees.

Thirteen stories were written about community recreation. Four of these concerned the kite flying contest.

The 3.58% wage increase was the subject of two stories sent to the daily list.

Publicity for the radio health series "The Story of Empire County" consisted of news stories and photographs in the local newspapers.

Special requests were received and answered from the Tri-City Herald concerning rumors that an employee brought some radioactive contamination into Richland from a restricted area, flouridating of water in Richland, and injury of an A-J worker.

Requests received and answered from the Columbia Basin NEWS concerned a rumor that G.E. is going on a 6-day week starting April 25, 3000 injury-free days, rezoning of rose garden, moving of Purchasing Section to 762 Building from 720 Building and kite flying contest.

Ten pictures of Hanford Works were sent to Charles Plumb of the ANP Project in Cincinnati, Ohio, for use in indoctrination lecture for new employees of that project.

Information on current events in Richland that might be worthy of coverage by the OREGONIAN'S reporter-photographer team was sent to that paper.

Paul Deutschman, University of Oregon, visited Richland and received further information for his thesis, which concerns possible incorporation of Richland.

Editorial source material was gathered and sent to R. W. Jackson, G-E Public Relations man at San Francisco, per his request of February 26.

Source material was sent to Larry Germann, a school boy in Orchards, Washington, at his request. A letter accompanied the material explaining why we could not send him a sample of uranium which he also requested.

A feature story and photos on protective clothing used at Hanford Works was sent to the Spokesman Review and the Oregon Journal.

The Schenectady Office has requested a series of articles for their publication "Adventures Ahead". Two of these feature articles, on Richland youth activities, have been submitted and will appear in the May-June issue of this teen-age magazine.

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Community leaders were mailed copies of the latest News Digest and Monogram editions.

A HOBSO training program was started to instruct three members of the local Lions Club in the technique of presenting the HOBSO Appreciation Session. The Lions Club has elected to sponsor HOBSO on the community level in Richland.

A report on HOBSO presentations in the plant-community and throughout the Northwest was prepared for the Manager, Employee and Public Relations Department.

The Student-Parent Council of Richland was assisted in outlining a publicity program on bicycle safety for school children. Arrangements were made to have pictures taken that publicize the safety program.

The local high school vocational guidance program was publicized in a news story and picture released to local papers. The story was written and the picture taken at the request of the high school student counselors.

A total of seven papers were cleared for oral presentation during the month. They are: "The Principles Underlying the Measurement of Radiation", by Dr. H. M. Parker, presented to the Second Annual Cancer Conference in Cincinnati, Ohio, March 3.

"Why We Are Concerned with Protective Construction", by F. H. Shadel, for presentation to the Columbia Section of the A.S.C.E., March 13, 1952.

"Operational Safety in Electric Utilities", by Loren Holden, presented to the Richland Chapter of A.I.E.E., March 24, 1952.

"Design Safety in Electrical Equipment", by E. J. Barrett, presented to the Richland Chapter of A.I.E.E., March 24, 1952.

"Possible Modes of Action of Antibiotics", by G. N. Smith, for presentation to the National Meetings of the American Bacteriology Society in Boston, Mass., April 28, 1952.

"Atomic Energy and the Civil Engineer", by M. H. Russ, presented to the Student Chapter of the A.S.C.E., Washington State College, March 26, 1952.

"Radiotoxicological Research at Hanford Works", by Dr. Leo K. Bustad, for presentation at the 4th Annual Conference for Veterinarians, Washington State College, April 10, 1952.

"Air Raid Warning System -- Richland, Washington", by J. G. Bennett, for presentation to the A.I.E.E. in late April or early May, 1952.

One paper was cleared for future publication.

Auditions of speeches given previously which had been tape-recorded, were held for the General Manager and disks were prepared at his request.

Numerous letters to members of the G-E Speakers' Bureau, were written to ascertain

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interest in the proposed "Science Forum" radio series, and several auditions were held to acquaint these prospective panelists with the program. The series is scheduled for production in the next month and will be a permanent weekly broadcast.

Dr. Frank Williston, professor of Far Eastern History at the University of Washington, accepted an invitation to address Supervisory members of Employee and Public Relations Department, Thursday, March 6, on "Postscript Korea..."

Civil Defense news stories and pictures released to local media concerned the Governor's tour of the control center; feature article about the CD Biological Warfare Section: six news stories and/or pictures concerning the warden recruiting program: and four news stories and/or pictures concerning the air raid sirens test.

CD movies were shown to 342 G-E employees; 299 members of community clubs and organizations; and 1226 school children.

Tours of the CD control center were completed by approximately 50 people.

A CD public information program about the air raid sirens test was conducted. Pictures and stories in local papers and the Works NEWS, as well as a postcard to every resident and spot announcements over local radio stations, served to acquaint the public with the test, and prevent their becoming alarmed during the test.

The Army Public Information Officer at North Richland was visited to solicit his cooperation in publicizing civil defense. He conducted a tour of the Army administration building, introduced officers in charge of various sections, and assured full cooperation in the civil defense public information program.

Copies of a biological warfare radio script, prepared by the Public Relations Section, were sent to 40 businessess and other organizations throughout the United States. Mention of the script in a recent issue of "Public Relations NEWS", a nationally-distributed publication, prompted the requests for copies.

A biological warfare display was assembled and put on exhibit in the Public library and the lobby of the Uptown Theatre.

A warden recruiting publicity program was outlined and essentially completed. News stories, feature articles, pictures, radio announcements and programs, posters, and a motion picture were utilized in publicizing the need for volunteer wardens.

Four civil defense warden service talks were given by Chief Warden during the month. They were: March 10, Civil Defense Control Center, District three, zone warden meeting at which time recruiting block wardens instructions were suggested. training and publicity program plans explained; March 20, Spaulding School P. T. A. when all of the zone wardens were present and introduced to the audience; March 27, Safety Meeting at 222U and 221U for G.E. employees.

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The Chief Warden, District Warden in District No. two, District Warden in District No. six and Chairman of C.D. development committee participated in a panel discussion on the Warden Service which was broadcast over the local radio stations.

Two-thirds of the zone maps for all wardens are completed and are being placed in booklets being distributed to each District. Also included in the booklet to date is a Warden Service map of Richland and North Richland and a copy of Warden Organization Function, Bulletin No. one. This eventually will be the warden's manual as he completes his training.

The Warden Service participated in the "Yellow Alert" on March 31, 1952. The Chief Warden was called by the Manager of Public Relations at 6:58 p.m. The warden in charge of schools and all District Wardens were notified by 7:05 p.m. All school principals were notified by 7:07 p.m. The District Warden in No. 3 Spaulding School tested communications further by calling all of the Zone Wardens in his district. This was completed by 7:15 p.m.

District No. four has now completed filling all its zone warden positions. District No. five which has been poor up to now recently has recruited four out of the seven zone wardens. District No. one, two, and six are within one of completing their zone roster.

Publicity on the Civil Defense Warden Service has been successful in changing the attitude of the public toward our present program from one of skepticism to one of public acceptance and good faith.

Recruitment advertising for interns, medical technologists, and an industrial physician was prepared and placed in five medical publications.

PHOTOGRAPHIC SERVICES

A total of 5,573 prints of photos were produced during the month. Of the total prints produced, 4,172 were for employee identification and area admittance badges.

Aid was given to Chief Joseph Jr. High School to set-up and teach a regular course in Photography. Proper address and contacts with Eastman's Kodak School and Club Unit were given. Suggestions for an outline of teaching and text books were made. Our service for talks on Photography and use of equipment for demonstrations were also offered.

Films were processed and prints produced for the F.B.I. Normal photographic work is sent to Seattle for processing. Jobs that require haste, are processed by Photographic Services as an aid to the F.B.I.

The total number of requests for projection equipment amounted to forty-four for the month of March.

See Statistical Report of Photographic Services attached.

PROGRAM DEVELOPMENT

A total of nine University of Washington films were booked for showing by the

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Procedures Analysis Training Program throughout the month. These films were booked on a weekly basis and are shown to approximately 200 persons each week.

Motion picture previews were held for Safety and Fire Protection Unit officials on the 700 area film -- "Safe on Third", in addition to planning and final scripting preparations.

Extensive radio work this month included: two fifteen-minute broadcasts for Civil Defense; two fifteen-minute broadcasts by juvenile groups sponsored by Recreation and Civic Affairs; an hour-long broadcast employing live talent and a national figure on a remote hook-up, for the American Red Cross Fund Campaign, and two 15-minute programs of the planned and scheduled 13-weeks health series, "The Story of Empire County". Production of these programs included planning, casting, scripting, rehearsals, tape-recording and scheduling for broadcast.

A total of nine spot announcements were written during the month. Three additional announcements were written, tape-recorded and scheduled for release, advertising "Block Warden Recruitment", for Civil Defense.

An extensive publicity program for the American Red Cross 1952 Fund Campaign has been carried out throughout the month. This time-consuming project has included weekly and sometimes daily newspaper coverage in the Works NEWS and local papers, extensive radio coverage, both by spot announcements and by programming, stage productions and the distribution of posters and bumper cards. A supervisor of this Section was appointed Publicity Chairman for this County Drive.

The sound-slide film, "What's the Idea" produced at the request of the Suggestion System Unit, was completed and is ready for auditioning.

Final photography and narrative script for the sound-slide film, "Shall Not Perish", produced at the request of the Richland-North Richland Civil Defense organization has been completed and will be assembled ready for preview on April 9. Final production and recording will be completed immediately following the preview.

Services of the Works NEWS were offered to A.E.C. in publicizing the proposed sale of homes in Richland. Employees were encouraged to submit questions regarding the sale to the Works NEWS for answers by the A.E.C. Special question and answer column is being run currently in each issue.

The date wage increases were to be paid on a current basis was announced in a Works NEWS story.

Changes in the shuttle service, as requested by Transportation, were fully outlined by means of pictures, stories and maps. Reasons for the changes in the shuttle system were outlined in detail, and pictures were used to graphically describe the unsafe conditions existing under the present system.

The Suggestion System received special promotion in a feature type article including pictures of all suggesters with special emphasis to the top woman

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suggester at Hanford Works.

Human interest features included activities of teen-agers and Hanford Works people in presenting miniature circus in Richland, and the job of men working on high lines on the project.

Two twelve-page, and two ten-page papers were published during the month.

Four women's pages appeared in four issues of the Works NEWS during March. Announcement of plans for the General Electric Women's Club style show was the feature for March 7. A feature on benefits of a good breakfast for a good working day appeared on March 14. A full-page feature covering the Women's Club style show appeared on March 21. On March 28, the women's page featured short cuts and tips for spring housecleaning.

About 45 patterns were sent to women's page readers as the result of a feature which ran during February.

Two full-page features were prepared for the Works NEWS in addition to the regular women's page.

Two letters were prepared for the signature of the Manager, Employee and Public Relations. One was sent to all exempt employees and related to the recent cost of living wage increase. The other letter, which was sent to members of the Nucleonics Division Advisory Committee, concerned AEC Announcement 166.

One Union Relations news column was prepared and published in the Works NEWS. This one concerned public reaction to the government's attempt to force the Union Shop onto the country.

Kadlec Hospital's visitor control program was assisted through the production of an insert to the hospital patient's booklet and a two-sided poster for installation on the doors leading to the hospital wings.

At the request of Kadlec Hospital, a one-page notice was prepared to give information about the hospital's private duty nurses.

"Gotta Grievance?", a 12-page, 2-color booklet on Hanford Works grievance procedure was written, designed and printed. It was mailed to the homes of all Hanford Works non-exempt employees with an employee newsletter signed by the general manager. Advance copies of the booklet with a letter from the general manager and a letter from H. E. Callahan were sent to the office addresses of all Hanford Works exempt employees.

Copies of "Handling Grievances" (which previously had been sent to all supervisors) were distributed to all exempt non-supervisory employees at Hanford Works.

Safety topic for April "Let's Not Be Fooled" was produced and distributed to all exempt employees.

The following posters were distributed on a regular basis to all areas: AEC Property Management; AEC-GE Security posters; Sheldon-Claire employee relations

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posters; and G-E Photo News Service posters. In addition, all Suggestion System boxes were serviced on a regular weekly basis.

The 10 employee booklet information racks were serviced on a weekly basis. The "take" on the first three booklets for which complete figures are available is as follows: "Adventures in Jet Power"...1720 copies; "Adventures in Electricity"...1908 copies; "Thunderbolts in Harness"...752 copies.

Art work this month included: three editorial cartoons, one layout and two designs for publication in the Works NEWS and publicizing the 1952 Red Cross Fund Campaign; lettering on the North Richland bus schedule was accomplished; three colored civil defense warden recruitment posters completed.

Three watercolor paintings of production areas were completed for "1951 at Hanford Works". Layouts for front cover and title page of this publication were also completed.

Miscellaneous art work throughout the month included: retouching of four photographs and inking lines on a photograph of a chart; assisting photographer in shooting color photographs of two calendar subjects; four sketches of potential 1952 G-E calendar subjects.

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Hanford Works Photo House
Month of March, 1952

	2 x 2	2 x 4	5 x 7	8 x 10	Neg.	35mm	3½ x 4	Color Prints	Processing
COMMUNITY REAL ESTATE & SERVICES									
Housing				2	4				
Police			94	78	9				
EMPLOYEE AND PUBLIC RELATIONS									
Employment	840				233				
News Bureau			103	38	49				
Special Programs			34		19				
Radio & Special Events			167	7	51	104			
Works NEWS			225	4	145				
Art Work - PR Illustrator				5	5			5	
ENGINEERING									
Design & Construction				46	39		6		
Engineers							40		
Technical			65	76	113				5 rls.
MEDICAL							9		
MANUFACTURING									
Plant Engineers				110	24				
Metal Preparation Section				60	5				
Reactor Section				72			20		
Separations Section				15	10		3		
RADIOLOGICAL SCIENCES									
Operational			26	16	57		34		
Biology			12	13	2		14	2	
UTILITIES & GENERAL SERVICES									
Security	2728	604							
MISCELLANEOUS									
Civil Defense			77	16	45				
AEC Safety			6						
F.B.I.			23	1					
TOTAL	2728	604	842	559	709	104	126	7	5 rls.

	January, 1952	February, 1952	March, 1952
Total Negatives	844	798	709
Total Assignments	126	113	156
Total Prints	8763	5902	5573

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NEWSPAPER SPACE REPORT
February, 1952
As compiled from the Nucleonics Division News Bureau clipping files

SUBJECT	NEWSPAPER	COL. IN.	PHOTOS
Civil Defense	Columbia Basin NEWS	21½	1
	Tri-City Herald	5	2
Community Housing	Walla Walla Union Bulletin	7½	1
Community General	Seattle D. J. of Commerce	12	2
	Walla Walla Union Bulletin	29½	2
	Tri-City Herald	9	2
	Columbia Basin News	15½	2
Fire Protection	Tri-City Herald	8	
Personnel General	Columbia Basin News	3	1
	Tri-City Herald		1
Coffin Award Winners	Hanford Works NEWS	16	3
	Tri-City Herald	8½	3
	Oregonian		3
	Columbia Basin News	9	3
	Spokesman Review	5	3
	Walla Walla Union Bulletin	5	
	Seattle Times	2	
	Oregon Journal	5½	
Plant Hiring	Walla Walla Union Bulletin	12	
Speakers	Tri-City Herald	2½	
	Walla Walla Union Bulletin	2	
Recreation	Walla Walla Union Bulletin	39½	
	Columbia Basin News		1
	Tri-City Herald	7½	1
Plant General	Columbia Basin News	21	
	Oregonian	2	
	Walla Walla Union Bulletin	3½	
	Tri-City Herald	3½	
	TOTAL	256 col.in.	28

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Union Relations

UNION RELATIONS - OPERATING PERSONNEL

On March 3, this office transmitted to the National Labor Relations Board copies of "Stipulation for Consent Election" in the case of Electrical Dispatchers and Wire Chiefs who had petitioned for representation. However, on March 13, the NLRB advised the Company that the union had failed to conform to filing requirements of the Act and, therefore, they were presently postponing any action in this case. It is assumed that such postponement will be of a temporary nature.

On March 7, the Company was advised by the NLRB that a petition for decertification had been sent to that agency by members of the Hanford Guards Union, Local 21. The NLRB indicated that since the Guards had been certified for a period slightly less than twelve months, any action in this matter would be delayed until after the anniversary of the certification date, said date being April 2, 1952. An examiner from the NLRB office is expected in the immediate future to review the Company's position in this decertification action.

The Hanford Atomic Metal Trades Council informed the Company on March 13, that it did not intend to reopen the GE-HAMTC Contract for renegotiation. The deadline for such decision was Midnight, March 17, so this Contract is automatically extended to May 16, 1953.

The NLRB advised the Company on March 13, that it was scheduling a hearing for April 24, to be held in Richland, for the purpose of reviewing facts and circumstances of the E. B. Brown (Bus Driver) discharge case. It will be recalled that the CIO filed an unfair labor charge against the Company in this matter, contending that E. B. Brown was discharged not for fighting on the job, but because of his activity in aiding in the organization of the CIO.

On March 6, the Company presented to the local unions an offer of an additional cost-of-living wage increase which would be gauged on any increase in the Bureau of Labor Standards' report Consumers' Price Index between March 15, 1951, and March 15, 1952. By March 18, the four local unions had indicated their acceptance of the Company's wage offer but amendments to the respective contracts had not been executed by monthend.

The Richland and North Richland Firemen met with the Company on March 13, to seek consideration for modifying the GE-HAMTC (Firemen) Contract in order to provide for premium pay for holidays worked. The Company indicated that it was agreeable to extending to these Firemen the policy of double time pay for holidays worked. The modification to the Firemen's Contract was prepared for their signature but at month-end they had not become signatory to this agreement.

The Company had a number of informal discussions with union representatives and one formal meeting on March 27, to discuss the feasibility of increasing isolation pay for operations personnel. The unions made no specific demands in this regard, nor did the Company make any positive commitments. However, the Company did imply that any adjustment in isolation pay might of a necessity be construed as an arbitrary amount since the recent decision of the Wage Stabilization Board in the

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case of Atkinson-Jones (increase of 62½ cents per day) was apparently arbitrary and not based on any realistic factors. The Company implied that it would be agreeable to some adjustment in isolation pay but that it considered an increase of 35 cents per day as an absolute ceiling. Further meetings on this subject have been scheduled for the near future.

Grievance Statistics:

Status of Grievances

	1952 Unit	1952 Non-Unit
Received this month	20	1
Received this year	58	2
Settled at Step I this month	7	1
Settled at Step I this year	28	1
Pending settlement at Step I at end of month	3	1
Settled at Step II this month	8	0
Settled at Step II this year	18	0
Pending settlement at Step II at end of month	76*	0
Pending settlement by arbitration	5**	0
Total number pending settlement	84	1

*Includes 60 received prior to January 1, 1952, but not processed by Union.

**Includes four grievances received prior to January 1, 1952, which are pending further action by Union.

Analysis of Grievances Received this Month

Department	Subject	Unit	Non-Unit	Total
Manufacturing Department				
Reactor Section	Vacations	2	0	
	Jurisdiction	2	0	
	Wage Rates	1	0	
	Sick Leave	1	0	
	Hours of Work	0	1	7
Separations Section	Overtime Rates	2	0	
	Jurisdiction	3	0	
	Vacations	2	0	
	Wage Rates	1	0	8
Metal Preparation Section	Health, Safety, Sani.	1	0	
	Hours of Work	1	0	
	Wage Rates	1	0	3
Total for Department		17	1	18

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Employee and Public Relations

Utilities & General Services Dept.				
Transportation Section	Wage Rates	1	0	
	Vacations	1	0	2
Purchasing & Stores Section		0	0	
Plant Security & Services Section		0	0	
Statistical & Computing Serv. Section		0	0	
Total for Department		2	0	2
Medical Department				
Kadlec Hospital	Subject not covered by Contract	1	0	1
Total for Department		1	0	1
Law Department		0	0	
Financial Department		0	0	
Employee and Public Relations Dept.		0	0	
Radiological Sciences Department		0	0	
Engineering Department		0	0	
Community, Real Estate and Services		0	0	
GRAND TOTAL		20	1	21

Vacations	5
Jurisdiction	5
Wage Rates	4
Sick Leave	1
Hours of Work	2
Overtime Rates	2
Health, Safety, Sanitation	1
Subjects not covered by Contract	1
Total	21

Three meetings were held during the month for the purpose of processing grievances at the Step II level.

CONSTRUCTION LIAISON

The Boilermaker Dispute was heard in New York by the Davis Panel on March 3, 1952. No recommendation has been forthcoming.

Word was received on March 3, that the Ninth Circuit Court of Appeals had overruled the National Labor Relations Board in the Hewes Case and found Atkinson-Jones not guilty of certain unfair labor practices as charged by that Agency.

1215672

Employee and Public Relations

At a meeting on March 27, the Ironworkers presented demands which were limited to: (1) a 15-cent per hour across-the-board increase and (2) double time for Saturday while the Project is on a six-day week. No agreement was reached.

Acting on the recommendation of the Construction Industry Stabilization Commission, the Wage Stabilization Board issued its unanimous approval of a policy for the building and construction industry for 1952, which provides that as a normal rule the Commission will approve wage increases up to 15 cents an hour over the 10 per cent allowable under the old formula. Negotiations with certain Project crafts have been held up pending this statement of policy and it is expected that future wage demands will reflect the 15-cent increase in the wage ceiling.

No answer was forthcoming from the Davis Panel relative to the intent of the Memorandum of Settlement referable to the Sheet Metal Vacation and Health and Welfare Plans. This issue represents the only area of disagreement between the parties.

No further action was taken on AJ's proposal to return the construction project to a five-day week.

Requests for Reimbursement Authorization handled during the month:

1. Isolation Pay - Plumbers
2. Electrician (Wiremen) - Isolation Pay
3. Boilermakers - Wage Rates
4. Electrician (Linemen) - Saturday Overtime
5. No. 105 Plug Welders - Wage Rates
6. Plumbers - Isolation Pay
7. Plumbers - Call Time

Reimbursement Authorizations received during the month:

1. Plumbers - Isolation Pay
2. Sheet Metal Workers - Wage Rates
3. Boilermakers - Wage Rates
4. Electrician (Linemen) - Saturday Overtime

Work Stoppages - Actual or Threatened:

On March 13, all Teamsters remained off the job in protest over the continued assignment of loading and unloading plumbing materials to the Fitters which had been a jurisdictional practice since the start of construction. An interpretation of the "Green Book" decision relative to jurisdiction in this case prompted AJ to reassign certain phases of the disputed work to the Teamsters. On the basis of this reassignment and a pending meeting between international representatives of the two Unions, the Teamsters returned to work on March 15. The meeting of the international representatives failed to materialize and the flow of material within the areas was hampered by the refusal to handle on the part of both parties. On March 22, the National Joint Board notified AJ that they were in violation of procedural rules regarding jurisdictional disputes, instructed them to reassign the work in accordance with historical practice on the Project, and instructed the Unions to continue on the job on this basis pending a National Joint Board decision on the matter.

121073

Employee and Public Relations

AJ's notice of this change was published on March 24, and on March 25 all Teamsters were again off the job. On March 26, an unfair labor practice charge was filed by AJ with the NLRB against the Teamster Union. A partial return to work resulted on March 27, with a normal complement of men on the job the following day. At this time, the disputed work is being performed by Fitters and AJ is continuing with the unfair labor practice charge against the Teamsters.

A jurisdictional dispute occurred in the 200-E Tank Farm on March 1, over the assignment of certain work to the Fitters. An Ironworker Foreman who refused to comply with the decision was discharged and the two Journeymen on his crew quit. The Foreman's action was later found to be the result of orders from the Steward. Following a March 4 meeting with Union officials, the Steward refused a transfer offer and was also discharged.

WAGE RATES

Wage Stabilization Board approval was received on March 6, 1952, for a productivity increase of 2.5 per cent, which, when added to the cost-of-living increase of 1.08 per cent on which Wage Stabilization Board approval was received on February 18, 1952, makes a total general increase of 3.58 per cent, retroactive to September 17, 1951.

Reimbursement authorization for the 3.58 per cent general increase was received from the Atomic Energy Commission on March 18, 1952.

New rates for more than seven thousand nonexempt employees were computed and checke by the Wage Rates Unit and sent to the Payroll Unit. The 3.58 per cent increase was included in the pay checks distributed on March 28, 1952.

All Wage Rates records on nonexempt employees were revised to reflect the new rates retroactive to September 17, 1951.

Job classification manuals, including the conversion tables and progression schedules, were revised to include the new rates, and these revisions were distributed to supervision on March 22, 1952.

On March 11, 1952, the Wage Stabilization Board approved the rates of the new classifications of Executive Secretary, Grade 21, and Executive Secretary, Grade 19.

Reimbursement authorization was received from the Atomic Energy Commission for the following new classifications:

Classification	Grade
Calibrator A	12
Calibrator B	10
Calibrator C	8
Field Inspector A	18
Field Inspector B	16
Field Inspector C	14
Engineering Assistant	19
Engineering Assistant	17
Engineering Assistant	8
Executive Secretary	21
Executive Secretary	19

1215574

Employee and Public Relations

We received from the AEC reimbursement authorization for the payment of the job rate to individuals hired into the classifications of "Business Graduate" and "Technical Graduate" when such employee possesses two BS Degrees in related fields or a BS Degree as the result of graduating from a regular five-year course at a recognized institution of higher learning.

A petition was submitted to the Wage Stabilization Board for permission to correct the rate of pay for one Area Fireman (fire fighter) on the basis of an intraplant inequity.

Preliminary work was started on a survey to determine the prevailing rates of pay for technical illustrators. Conferences were held with officials at Seattle, Renton and Portland in regard to this type of work.

Instructions outlining a revised method of reporting area survey figures were received from the New York Office. As a result of this change in method, visits were made to all participants in the General Electric Company's annual Northwest Area Rate Survey to explain the revision and renew the contacts. Questionnaires were left with all those contacted, and requests were made to complete and return the questionnaires by April 18, 1952, if possible. Seven new organizations (two in Washington and five in Idaho) were contacted and invited to participate in the survey. All seven accepted.

During March, 1952, 131 job reclassifications were studied and approved, and 41 temporary reclassifications were checked and processed. Requisitions for 193 people were investigated. Sixty-two new hires and 13 reactivations were investigated concerning replacement, job pay grade and qualifications. Five merit raises and 521 automatic increases were reviewed and processed. Interdepartmental transfers for 135 employees involved a check as to job grade, type of transfer, replacement and seniority.

SUGGESTIONS AND INSURANCE

Suggestion System:

	February, 1952	March, 1952	Total since 7-15-47
Suggestions Received	205	195	8643
Investigation Reports Completed	169	284	
Awards Granted by Suggestion Committee	29	36	
Cash Awards	$ 1,125.00	$ 770.00	
Estimated Savings	30,346.54	9,597.00	

The highest award of $300 was made to an employee in the Technical Services Unit for her suggestion of rearrangement of stock room resulting in moving the cardex file near the dispensing window so that the stock room helpers could do the posting and continue to be available for customer services. This suggestion resulted in a considerable savings in labor.

Workmen's Compensation:

One case under litigation was closed during the month of March.

1216675

Employee and Public Relations

Liability:

One case under litigation was closed during the month.

Life Insurance:

Code information which is known only to Home Office Life Underwriters Association has been furnished 43 insurance companies and investigation agencies during the month of March, 1952. 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.

Insurance Statistics:

	February, 1952	March, 1952	Total since Sept., 1946
Claims reported to the Department of Labor and Industries	180	272	6051
Claims reported to Travelers Insurance Company	10	12*	607

*Of the claims reported to Travelers Insurance Company during March, eleven were property damage claims and one was bodily injury.

COMMUNITY REAL ESTATE AND
SERVICES DEPARTMENT
SUMMARY
MARCH - 1952

ORGANIZATION AND PERSONNEL

Number of employees on roll:	Beg. of Month	End og Month
Administration	20	18
Community Services Section - (Total 204)		
Public Works	83	84
Recreation & Civic Affairs	9	9
Library	10	10
Police (Richland)	42	41
Fire (Richland)	50	50
Engineering	10	10
Community Real Estate Section - (Total 196)		
Housing and Maintenance	182	184
Commercial Property	13	12
700-1100-3000 Area Services Section - (Total 115)		
700-1100 Maintenance	60	60
Patrol (North Richland)	22	22
Fire (North Richland)	33	33
	534	533

There was a decrease of one employee in the Department during the month of March, 1952.

GENERAL

A seventy-five year ground lease with Bauer-Day, Inc., for the construction of five hundred dwelling units in Richland was approved during the month of March. These dwellings are to be constructed with private capital.

Total housing applications pending - 685.

The Community Real Estate and Services Department participated in the Civil Defense Yellow Alert which was held on March 31, 1952.

An extensive clean-up campaign of the public lands was carried on for a two week period in March. This included the burning of weeds and getting rid of debris which had accumulated over the winter months.

Notification was received through the Richland Chamber of Commerce, local campaign sponsors, that Richland was awarded first place in the nation for cities of 20,000 to 50,000 population, in the National Fire Waste Contest conducted annually by the Chamber of Commerce of the United States.

The School Board and Community Council elections were held in Richland on March 11, 1952.

HARoot/jak 1216677
4/10/52

CONTRACT SECTION

Contract Number	Contractor	Title and Status	Project Number
G-390	D & H Paving Company	1951 Street Improvements, Parking Lot at the Mart (south) and Campbell's; Construction of Sidewalk to Jason Lee School; Extension of Parking Lot Dorm. W-20. Modification of contract adjusting final quantities submitted to contractor for signature.	C-426 L-575 L-589 K-611
AT-(45-1)-608	Associated Engineers, Inc.	Site Grading Irrigation, Landscaping, Construction of Rest Room, Sewer Lines, Water Lines and Shelterbelt. Contract is approximately 40% complete.	C-425 C-408 L-262 K-562
AT-(45-1)-613	Anderson Brothers, Inc.	Exterior Painting 329 Conventional Houses, Two Tract Houses and Three Non-Commercial Buildings. Notice to Proceed issued to contractor March 24, 1952.	S-909 K-918
Invitation to Bid. AT-(45-1)-617	--	Additional Fire Protection Desert Inn and Richland Theater; Fire Hydrant Installation Birch Avenue; Sewer Line Installation Along Gillespie from Duane Avenue to Gillespie Property Line. Bid opening scheduled for April 14, 1952.	S-552 L-641 AEC W/O 0219
Invitation to Bid. AT-(45-1)-618	--	Site Grading, Top Soiling, Lawn Seeding and Related Work. Bid opening scheduled for April 3, 1952.	C-426
Invitation to Bid. AT-(45-1)-619	--	Elimination of Odors at Sewage Lift Station. Final specifications and drawings completed. Request for additional funds to AEC March 31, 1952.	L-608
Invitation to Bid. AT-(45-1)-620		Repair of Fire Damaged Prefab and Repair of Damaged "A" Type House. Bid opening scheduled for April 15, 1952.	S-922 L-921

Payments to contractors during the month totalled $29,599.79.

1216678

COMMUNITY SERVICES SECTION

SUMMARY

MARCH, 1952

ORGANIZATION AND PERSONNEL:

	BEGINNING OF MONTH		END OF MONTH	
	Exempt	Non-Exempt	Exempt	Non-Exempt
ENGINEERING	7	3	7	3
FIRE	50	0	50	0
LIBRARY	4	6	4	6
POLICE	16	26	16	25
PUBLIC WORKS	15	68	15	69
RECREATION & CIVIC AFFAIRS	5	4	5	4
	97	107	97	107

Mr. F. X. Olanie attended the Federal Civil Defense Administration Western Training School at St. Mary's College, California, from March 3 to 14, 1952.

Stop signs at Van Giesen and Goethals, Van Giesen and Thayer, Swift and Wright, and Swift and Cottonwood intersections were reversed during the month. These changes were made as a part of the continuous program to improve traffic conditions.

The Community Services' Fiscal Year 1954 Operating Budget, as well as the proposed Construction Program for Fiscal Year 1954 and the revised budgets for Fiscal Year 1953 were submitted for approval during March.

The 1952 Shelterbelt Program for the southwest portion of the community and the Recreational Area Development Project for the Jason Lee School were approved by the Plant A & B Committee and submitted to the Atomic Energy Commission on March 31, 1952.

An extensive clean-up campaign of the public lands was carried on for a two week period in March. This included the burning of weeds and getting rid of debris which had accumulated over the winter months.

The public schools accepted the proposal for the segregation of responsibility for maintenance of joint-use areas which was recommended by the Community Services Section. The schools will maintain 33.3 acres and the Community Services Section 67.3 acres.

1216679

COMMUNITY REAL ESTATE AND SERVICES DEPARTMENT
PUBLIC WORKS UNIT
MARCH 31, 1952

ORGANIZATION AND PERSONNEL

	Exempt	Non-Exempt
Employees Beginning of Month	15	68
Transfers In	--	3
Transfers Out	--	2
New Employees	--	--
Terminations	--	--
Total - End of Month	15	69

SANITATION

Waste material collected and disposed of during March weighed 1,118 tons.

ROADS AND STREETS

Patching of pot holes which broke out during winter months was started in the latter part of March, when weather became satisfactory for this work. This program will continue as weather permits.

Approximately five miles of streets, (parts of Douglas, Delafield, Davenport, Cullum, Armistead, Symons, and Knight Streets), will be treated with a seal-coat of asphalt and rock during May, and preparatory repair work is now in process.

Other routine maintenance of streets, sidewalks, and street drainage system was continued.

PUBLIC GROUNDS MAINTENANCE

Discing and rilling of established shelter-belts was started during March, and water will be turned in during April.

Renovation of Columbia Playfield hard-ball diamond has been completed and work has been started on twenty-two combination hard and soft-ball fields.

1211580

PUBLIC GROUNDS MAINTENANCE (CONTINUED)

Setting out of hoses and sprinklers on all assigned areas has been started in preparation for irrigation.

A concerted clean-up program on all open areas in the city was carried out during the latter part of March.

Other seasonal grounds maintenance was continued in Park areas.

A project proposal for planting of the South-west Shelter-belt and development of Jason Lee Playfield was approved by the A & B Committee on March 31, 1952, and has been forwarded to the AEC for their concurrence.

A progress report on C-425 at the end of March shows the placement of new equipment completed, shelter-belt plantings completed, and park plantings about 95% completed. General clean-up and sod repair remains to be done.

Twelve street trees were planted on Project C-405 during March, and the placement of eight more trees early in April will close this project.

About sixty trees were planted for Real Estate.

DOMESTIC WATER

Normal operation and maintenance were continued and average daily water consumption was 6.1 million gallons. The highest consumption was recorded on March 26, 1952, when 9.75 million gallons were used.

Production and consumption recordings for March are as follows:

Domestic Water

	Well Production Million Gallons	Avg. Daily Production	Total Consumption Million Gallons	Avg. Daily Consumption
Richland	91.7267	2.9589	119.2184	3.8458
No. Richland	53.1910	1.7158	41.9981	1.3548
Columbia Field	42.7500	1.3790		
300 Area			28.0290	0.9042
Total	187.6677	6.0537	189.2455	6.1048

1211681

SEWERAGE

About 25 ft. of 8" sewer main on Atkins Street was replaced. This was necessary to eliminate repeated stoppages caused by severe settlement.

Normal operation and maintenance of the collection system and treatment plants were continued and average daily flow was 2.7 million gallons.

Flow through the Treatment Plants was as shown below.

Sewerage

	Total Sewage Flow Million Gallons	Average Daily Flow Million G. P. D.	Average Rate of Flow Gals. per Min.
Plant #1	20.290	0.655	455
Plant #2	63.480	2.048	1,422
Total	83.770	2.703	1,877

IRRIGATION SYSTEM

Water was turned into the entire canal system during the first week in March, but was cut off three times - once to allow for repairs to the Yellow Bridge (by County forces), and twice because high winds filled the canals with weeds and floating debris.

Overhaul and resetting of irrigation pumps has been completed and activation of the four pressure irrigation grids is in process. At this time #1 and #2 are in operation and #3 is 50% operable.

1216602

RECREATION AND CIVIC AFFAIRS UNIT
MONTHLY REPORT

March, 1952

ORGANIZATION AND PERSONNEL

	Exempt	Non-Exempt
Beginning of Month	5	4
New Hires	0	0
Terminations	0	0
Transfers - IN	0	0
OUT	0	0
	5	4

SCHOOLS

The following is a tabulation of full-time paid School District #400 personnel as of March 31, 1952:

Administration	6
Principals & Supervisors	14
Clerical	24
Teachers	279
Health Audiometer	1
Cooks	40
Nursery School & Extended Day Care	12
Bus Drivers	1
Maintenance	9
Operations	45
	431

CLUBS AND ORGANIZATIONS

As of March 31, 1952, the employees of the listed organizations, exclusive of those included in the Real Estate, Commercial and Other Properties 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
Chamber of Commerce	1
	11

The Richland Pony League began work on the installation of a baseball field at the Carmichael Playground on Saturday, March 1, 1952. The group completed installation of a backstop, outfield fence and scoreboard during March.

On Tuesday, March 11, 1952 the School Board and Community Council Elections were held in Richland. Arrangements were made by this Unit for the delivery of the election equipment and materials to the voting places and pickup of same after

1211683

the elections. The staff assistant of the Unit assisted the election officials throughout the elections and final tabulation of votes.

On Saturday, March 15, 1952 a scrap metal drive was held in Richland, under the combined sponsorship of the Richland Boy Scouts, Girl Scouts and Camp Fire Girls. Arrangements for the loan of seventeen goverment owned pickups to be used by the group during the drive were made. A location at Duane and Gillespie Street for depositing the metal obtained in the drive was made available to the sponsors through arrangements made by the Unit.

The Richland Junior Rider's Club prepared a small race track on their leased property on Saturday, March 15, 1952. Arrangements for the loan of a road scraper and bulldozer to be used by the group to complete the race track were made.

The Richland Little League baseball field at Spalding Playground was completed during the month by interested volunteers and parents of Little Leaguers.

Work on the juvenile fishing area, located at the northend of the Wellsian Way well field was completed during March by members of the Richland Rod and Gun Club. Although a large number of fish are to be planted in the area this spring, the State Game Commission representative suggested that no fishing be allowed in the lake this year in order to satisfactorily establish the lake for future fishing. It is anticipated that a large number of legal size trout will be planted in the drainage ditch north of Van Giesen Street and west of George Washington Way to provide adequate fishing for the youngsters this year.

The Parks and Recreation Board held its regular monthly meeting on Thursday, March 6, 1952 at the Community House. The Board was notified of the Atomic Energy Commission's decision to permit the Unit to use the Burlin Camp area as in the past, but felt that the area should not be included as part of the Park System. The Board recommended that the Community House Committee act in a representative capacity to the Board with respect to restrictive useage of the Community House by any organization which might be involved in a public controversy. Their next regular meeting is scheduled for April 3, 1952 in the Community House.

A request was received from the American Legion Post #71 for assistance in the planning of their annual Fourth of July Celebration. This event is to include a children's parade and a fire works display at the Bomber Bowl.

The number and types of organizations presently served by the Recreation and Civic Affairs Unit include:

Business and Professional organizations		23
Churches and Church organizations		27
Civic organizations		19
Schools		13
Fraternal organizations		25
Political organizations		5
Recreation & Social Clubs -	Alumni	3
	Art,Music,Theatre	10
	Bridge	3
	Dance	5
	Garden	2
	Hobby	10
	Social	11
	Sports	19

1215534

Recreation and Civic Affairs Unit

Veteran & Military organizations	14
Welfare groups	7
Youth - Boy Scouts	20
Girl Scouts	49
Camp Fire Girls	36
Miscellaneous organizations	14
	315

RECREATION

The adult physical activities program at the Spalding Grade School Gymnasium came to a close with the Badminton session Wednesday night, March 26. An attendance figure of 5,576 was shown for the 23 weeks of operation of the program.

The Post-Intelligencer Hoop Shoot Finals for the State of Washington championship were held March 15 at Seattle. One of the members of our Unit accompanied the Tri-City area winner, George McDonald of Richland, to Seattle where he placed 4th in a field of 16 contestants.

An instructional and demonstrational kite making and flying session was held at the Community House Craft Room in preparation for the Kite Flying Tournament on March 8.

The Kite Flying Tournament was held at Riverside Park softball field on Saturday, March 15 with 30 contestants and approximately 58 spectators in attendance.

Stakes and bases for the ball fields are being placed for the outdoor season.

Attendance figures for March, 1952 of participants in the Fall and Winter Adult and Family Group Program, sponsored by this Unit and held in the gymnasium at Spalding Grade School, are as follows:

	Children	Adults	Totals
General Attendance		1,135	1,135
Special Events - Participants	52		52
Spectators	40	51	91
Assisted Activities			
Totals for Month	92	1,186	1,278

Indoor Total to Date - 9,157

Organized groups and classes conducted during March, 1952 by this Unit, were as follows:

	Children	Adults	Totals
Kite Tournament	52	91	143
P-I Hoop Shoot State Finals, Seattle, Wash.	1	1	2
	53	92	145

COMMUNITY HOUSE

The Community House was used by 38 different groups and classes during March.

1211365

Recreation and Civic Affairs Unit

The Community House recreation program from April through June, 1952 has been completed. There will be changes as a few programs will discontinue until next fall.

The Junior Leaders, a program that teaches leadership for youngsters between the ages of 11 and 13, held their last meeting the 18th of March. A party was given to them for the outstanding work that they accomplished in the past few months.

On March 16 the Girls Scouts held a Vesper Service with approximately 60 people in attendance. The yearly scrap book for the Unit was completed and is to be displayed at the Northwest District National Recreation Conference at Eugene, Oregon in April.

The Beta Sigma Phi sponsored a style show which was held in the Community House. It was attended by over 400 people of the Community.

Plans have been initiated to correlate the Community House program and the Athletics and Playground program so that certain groups that have been using the Community House facilities might use outside facilities to further the summer program.

The Rec-A-Teers dance was attended by over 200 people. The music was provided by the 770th Army band.

The elementary and junior high square and folk dancing will be changed from the Social Hall to the Games for the month of April. The Elementary Program will cease operations as of March 31.

The total attendance for the month was 11,969 with 11,096 people participating in classes, special events or organized groups either as spectators or participants.

Attendance - Community House	Children	Adults	Totals
General Attendance	6,870	5,099	11,969
Special Events - Participants	53	119	172
Spectators	216	1,157	1,373
Assisted Activities	87	1,105	1,192
Totals for Month	7,226	7,480	14,706
At End of Previous Month	51,930	40,605	92,545
Fiscal Year Total to Date	59,156	48,095	107,251

Indoor to Date - 107,251
Outdoor to Date - 78,538

1210506

COMMUNITY SERVICES

RICHLAND PUBLIC LIBRARY

MARCH 1952

ORGANIZATION AND PERSONNEL

	Exempt	Non-Exempt
Employees - Beginning of Month	4	6
Transfers In	0	1
Transfers Out	0	0
New Hires	0	1
Terminations	0	2
End of Month	4	6

GENERAL

Circulation		
Books	16,320	(Adult - 9,810; Juvenile - 6,510)
Magazines	443	
Records	837	
Pamphlets	7	
Special Loans	48	
Interlibrary Loans	88	
Grand Total	17,743	
Books added this month	317	(Adult - 232; Juvenile - 85)
Current Book Stock	19,105	
Registration		
Adult	324	
Juvenile	99	
Total	423	
Total Registered Borrowers	9,500	
Children's Story Hour Attendance	326	(233 pre-school children; 93 - Kindergarten - 5th grade)

1216697

A third section of the pre-school story hour to be held on Thursdays at 10:30 was started this month. This was necessary because the attendance at the Tuesday and Wednesday morning pre-school story hours was too large to be efficiently handled.

Twenty-five Brownies made a "get acquainted with the library" visit this month.

Fifteen meetings were held in North Hall during March.

The three library window displays this month featured American Heritage, Civil Defense and Oriental Art.

1 2 1 3 6 6 6

COMMUNITY SERVICES

RICHLAND POLICE DEPARTMENT

MARCH 1952

ORGANIZATION AND PERSONNEL

	Exempt	Non-exempt
Employees - Beginning of Month	16	26
Transfers In	0	2
Transfers Out	0	0
New Hires	0	0
Terminations	0	3
Total - End of Month	16	25

GENERAL

The Richland Police Department received 4 new police cars during the month. These were 1952 Ford 4-door automobiles which were replacements for four old police cars which had attained excessive mileage and were no longer in good repair.

Judge Earl W. Brown attended the Law Enforcement Program and Justice Court Administration Conference at the University of Washington Law School in Seattle this month.

This department participated in the Civil Defense yellow test alert held Monday, March 31, and results of our staff mobilization and all other activities associated with the test were very successful.

A Period Control Traffic Counter was added to our equipment which will greatly expedite our traffic law enforcement.

Two groups of cub scouts and one brownie scout troop were escorted through Police Headquarters during the month.

Fifteen safety films were available for the use of personnel groups, civic organizations and schools during the month of March. Approximately 450 people viewed these safety films during the month.

During the month 116 letters of inquiry were received along with 1 request for assistance.

During the month of March, 44 prisoners were processed through the Richland Jail. Twenty-two of these were from North Richland.

During the month, 14 gun registrations were recorded.

During the month, 98 bicycle registrations were recorded.

During the month, 209 traffic violations reports were received. These consisted mainly of illegal parking, speeding, running stop signs and negligent driving. A total of 126 other reports were received.

1216689

TRAFFIC

There were 20 reportable accidents in Richland during the month of March. This is 4 less than the preceeding month and 5 less than the same month last year. These accidents bring the total for this year to 92 as compared to 61 for the same three months last year. This is a 50.8% increase.

There were 3 injury accidents this month which resulted in one fatality, one major injury and two minor injuries. The total this year is one fatality and 13 injuries as compared to 16 persons injured in automobile accidents during the same period last year.

Property damage caused by vehicle accidents this month was greatly reduced with an average of $271.25 per accident as compared to $377.00 for the month of February this year. However, the average for the month of March in 1951 was $141.78. There were 4 government vehicles involved in accidents this month.

Fifteen of the above accidents were investigated at the scene by members of the Richland Police Department and as a result 13 of the drivers were charged with traffic violations and criminal complaints signed against them.

Driving violations which contributed to the 20 accidents this month were:

Failure to yield right-of-way	5	Following too close	2
Negligent Driving	4	Reckless Driving	1
Improper Backing	4	Improper Passing	1
Inattention to Driving	2	Disregarding stop sign	1

Fourteen of the above accidents occurred in the residential district and the other 6 were in the business district.

The fatality which occurred on March 25 is the first since July 7, 1951 and the second since June 5, 1947. This fatality is contributed to negligent driving on the part of the driver. The pavement dip and curve of the street contributed to the accident but to a minor degree as neither is a factor to be considered at legal speeds.

There were three traffic safety meetings conducted by members of the Police Department during March. These meetings were given at the request of plant groups and attended by approximately 90 employees.

Daily checks were made at intersections where school boy patrol are stationed. They are all operating very efficiently and the new group at Jason Lee seems to be working as well as the rest. This group is now completely outfitted and doing a good job.

A work order has been issued for the painting of crosswalks throughout the city and this work should be started in the near future. As soon as this work is completed, the street center-lining will be started.

During the month of March there were 8 new traffic control signs installed, 3 traffic control signs replaced, 5 new parking signs installed and 15 replaced. There were also a number of traffic signs straightened which had been bent or damaged by traffic. This work required 101 feet of galvanized pipe and 118 man hours.

1210690

TRAINING

Advance training for police members at the Small Arms Range for the period in Field Instruction consisted of two hours pistol instruction.

Total number of men reporting at the Range was 5.
Total number of men instructed in the Field was 5.
Number of men fired over the Army-L Course was 5.

Qualifications on the Army-L Course were as follows:

Score	No. of Men	Per Cent
Expert	2	40
Sharpsheoter	2	40
Marksman	1	20

ACTIVITIES AND SERVICES

	January	February	March
Doors and windows found open in facilities	55	55	53
Children lost or found	8	21	26
Dogs, cats reported lost or found	43	33	29
Dog, cat, loose stock complaints	23	26	29
Persons injured by dogs	4	7	5
Bank escorts and details	1	2	0
Fires investigated	16	17	18
Miscellaneous escorts	4	13	19
Complaints investigated (no enforcement action)	43	15	12
Deaths reported	1	4	0
Property lost or found	25	16	47
Records inquiries	147	110	115
Law enforcement agencies assisted	14	2	4
Private individuals assisted	14	2	11
Plant departments assisted	118	80	53
Emergency messages delivered	39	47	47
Street lights out reported to Electrical	124	98	65
Totals	679	548	533

1210091

MONTHLY REPORT
RICHLAND POLICE DEPARTMENT
MARCH 1952

	OFFENSES	KNOWN	UNFOUNDED	CLEARED OTHER*	CLEARED ARR
PART I					
1.	Murder				
2.	Rape				
3.	Robbery				
4.	Aggravated Assault				
5.	Burglary - Break & Ent.	3	-	-	2
6.	Larceny - Over $50.00	3	1	3**	
7.	Larceny - Under $50.00	32	1	4**	3
	Bicycle Theft	27		24	-
7.	Auto Theft				1**
	TOTAL PART I CASES	65	2	31	6
PART II					
8.	Other Assaults				
9.	Forgery & Counterfeit	3	-	-	2
10.	Embezzlement & Fraud				
11.	Stolen Prop:Buy:Rec:Poss.				
12.	Weapons:Carrying:Poss.	1	-	-	1
13.	Prostitution				
14.	Sex Offenses	1	-	-	1
15.	Offense Ag.Fam. & Child				
	Narcotics - Drug Laws				
	Liquor Laws				
18.	Drunkenness	8	-	-	8
19.	Disorderly Conduct				
20.	Vagrancy				
21.	Gambling				
22.	Driving while Intox.	4	-	-	4
23.	Violation Rd. & Dr. Laws:				
	Speeding	32	-	-	32
	Stop Sign	15	-	-	15
	Reckless Driving	4	-	-	4
	Right of Way	2	-	-	2
	Negligent Driving	13	-	-	13
	Defective Equipment	3	-	-	3
24.	Parking	39	-	-	39
25.	All Other Traffic Viol.	11	-	-	11
26.	All Other Offenses:				
	Public Nuisance	2	-	-	2
	Prowlers	1	-	2**	-
	Dest. of Pers. Property	1	-	-	-
	Malicious Mischief	5	-	2	-
	Vandalism	5	-	-	-
	Car Prowl	1	-	-	-
	Contribute to Del. of Minor	1	-	-	1
	Dog Nuisance	2	-	1	-
	Unauthorized wearing of Uniform	1	-	1	-
	Family Disturbance	2	-	2	-
27.	Suspicion	5	-	2	-
	TOTAL PART II CASES	162	-	10	138

OFFENSES	KNOWN	UNFOUNDED	CLEARED OTHER*	CLEARED ARREST
PART III				
28. Missing Persons	8		8	
Lost Persons	2	-	2	
Lost Animals	3	-	2	
Lost Property	10	-	3	
29. Found Persons	-	-	-	-
Found Animals	6	-	4	-
Found Property	4	-	2	-
TOTAL PART III CASES	33		21	
PART IV				
30. Fatal Mat. Veh. Traf. Acc.	1			
31. Pers. Inj. Mot. Veh. Traf. Acc.	2			
32. Prop. Dam. Mat. Veh. Acc.	17			
33. Other Traffic Accid.				
34. Public Accid.				
35. Home Accidents				
36. Occupational Accidents				
37. Firearms Accidents				
38. Dog Bites				
39. Suicides				
40. Suicide Attempts	2		2	
1. Sudden Death & Bodies Fd.				
2. Sick Cared For				
43. Mental Cases				
TOTAL PART IV CASES	22		2	
COMPOSITE TOTALS PARTS I, II, III, IV CASES	282	2	64	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 only in that there were no arrests.

** Five cases of Larceny in Part I, (Under $50.00 — 3 cases)(Over $50.00 — 2 cases) in the "Cleared Other" column, occurred during the previous month.

** One Prowler case, shown in Part II, was cleared by "Cleared Other", occurred during the previous month.

** One Auto Theft in Part I was cleared by "Arrest", occurred during the previous month. One stolen automobile was recovered for an outside agency.

Property reported stolen $4,775.97 (including 27 bikes)
Property recovered $4,393.10 (including 24 bikes)

1216693

Number of offenses known to police per 25,000 inhabitants in cities of 25,000 persons:

	Wash. Ore. & Calif. Six months (Jan.-June 1951)	One month average	Richland January - June 1951	Richland February - March 1952	1952
Murder	1.36	.23	0	0	0
Robbery	37.4	6.2	0	0	0
Agg. Assault	26.6	4.4	1	0	0
Burglary	259.5	43.2	17	1	3
Larceny	823.9	137.3	141	23	35
Auto Theft	128.5	21.2	8	2	-
Bicycle Theft			158	34	27

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 (Jan. - June 1951)	One month average	Richland January - June 1951	Richland February - March 1952	1952
Murder	.34	.056	0	0	0
Robbery	9.35	1.56	0	0	0
Agg. Assault	6.65	1.10	1	0	0
Burglary	64.87	10.81	17	1	3
Larceny	205.9	34.3	141	23	35
Auto Theft	32.12	5.35	8	2	0
Bicycle Theft	-	-	158	34	27

The portion of offenses committed by persons under the age of 25 years is shown:

	National Average Percentage of cases (January - June 1951)	Richland January - June 1951	Richland February - March 1952	1952
Robbery	53.6	0	0	0
Burglary	61.7	4	0	2
Larceny	45.2	25	2	6
Auto Theft	69.7	0	0	2

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 because of the practice of some jurisdictions not to fingerprint youthful offenders."

121694

MONTHLY REPORT RICHLAND POLICE DEPARTMENT JUVENILES INVOLVED MARCH, 1972

OFFENSE	NO. CASES	JUVENILES	SEX	9	11	12	13	14	17	TOTAL
Petit Larceny	3	6	M			2	1		3	6
Sec. Deg. Burg. & Auto Theft	1	2	M						2	2
Second Degree Burglary	1	1	M				1			1
Auto Theft	1	2	M				2			2
Illegal use of firearms	1	3	M	1	1	1				3
TOTALS	7	14		1	1	3	4		5	14

1216695

RICHLAND POLICE DEPARTMENT
RICHLAND JUSTICE COURT CASES
MARCH 1952

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.
Defective equipment	4	2	1	1						1	2	$ 7.50	$ 7.50	$ 7.50
Disregarding flagman	1	1								1			3.50	
Drivers license	13	4	6	2		1				1	10		5.00	5.00
Drunken driving	4	3		1					3				230.00	
Failure to appear in court after written promise.	1			1										
Failure to dim lights	1		1								1			
F.T.S. & I.	4		2		2					2		50.00		
F.T.Y.R.C.N.	8	3	4	1						2		57.50	22.50	
Hit and run	1			1										
Illegal parking	28	12	12	3	1					4		42.00	42.00	38.50
Illegal passing	1		1									7.50		
Improper license plates	9	6	3							4		17.50	35.00	25.00
Negligent driving	19	14	3	1		1			1	3		82.50	235.00	
No registration	1	1									1			
Operating motor vehicle while lic. under susp.	1			1						1				
Permitting unlicensed person to operate vehicle.	1		1									15.00		
Reckless driving	5	2		3					1				87.50	
Resisting & obstructing an officer.	1		1									37.50		
Speeding	28	15	9	3	1					2		99.50	160.00	
Stop sign	16	7	6	2	1					2		52.50	35.00	5.00
Carrying a concealed weapon	1			1										
Larceny by check	2	2											90.00	65.00
Public intoxication	8	3	5						1			62.50	77.50	
Public nuisance	2	1		1									15.00	15.00
TOTAL	160	76	55	22	5	2			6	23	14	$531.50	$1045.50	$161.00

NOTE: One drunken driving case amended to negligent driving.
One reckless driving case amended to negligent driving.
One driving without drivers license case taken to Superior Court.
One driving while license under suspension case taken to Superior Court.
One failure to appear in court after written promise case taken to Superior Court.

1216696

POLICE DIVISION - TRAFFIC CONTROL STATISTICS
MARCH 1952

MOTOR VEHICLE ACCIDENTS:

	Total Number		Fatalities		Major Injuries		Minor Injuries	
	Feb.	Mar.	Feb.	Mar.	Feb.	Mar.	Feb.	Mar.
Richland	24	20	0	1	1	1	3	2

ACCIDENT CAUSES:

	Negligent Driving		Failure to Yield Right of Way		Reckless & Drunken Driving		Other Cases	
	Feb.	Mar.	Feb.	Mar.	Feb.	Mar.	Feb.	Mar.
Richland	4	4	8	5	3	1	9	10

PLANT WARNING TRAFFIC TICKETS ISSUED:

Richland: NO WARNING TICKETS ISSUED FOR FEBRUARY AND MARCH 1952.

TRAFFIC CHARGES AND COURT CITATION TRAFFIC TICKETS ISSUED:

Speeding		Stop Sign		Drunken Dr.		Reckless Dr.		Right of Way V.		Neg. Drvg.		Parking V.		Other V.		Totals	
Feb.	Mar.	Feb.	Mar.	Feb.	Mar.	Feb.	Mar.	Feb.	Mar.	Feb.	Mar.	Feb.	Mar.	Feb.	Mar.	Feb.	Mar.
52	26	31	14	6	5	4	4	6	6	21	16	74	24	45	28	239	123

TRAFFIC VOLUME: Average 24-Hour Traffic Volume Count for week ending March 14, 1952, north of Lee on Geo. Wn. Way-11,422 car

NOTE: Traffic Control Statistics show ORIGINAL CHARGES ONLY.

1216697

COMMUNITY SERVICES

RICHLAND FIRE DEPARTMENT

MARCH 1952

Organization and Personnel	Exempt	Non-Exempt
Employees - Beginning of the Month	50	0
Transfers In	0	0
Transfers Out	0	0
New Hires	0	0
Terminations	0	0
Employees - End of Month	50	0

Fire Protection

Fire Loss for the Month	0.00
Response to Fire Alarms	12
Investigation of Minor Fires and Incidents	17
Ambulance Responses	37
Inside Drills and Schools	37
Outside Drills	12
Safety Meetings	8
Security Meetings	5
Fire Alarm Boxes Tested	196
Airport Standby	2
Fire Hydrants Tested	2
Burning Permits	312

A lieutenant from No. 1 Station was detailed to assist the Fire Marshal's office on inspection of certain buildings.

On three occassions one engine company was dispatched to assist a Civil Defense photographer take publicity photos.

On March 11th, the Assistant Fire Chief and one fireman gave a demonstration of artificial respiration to 140 students at Carmichael Junior High School.

On the evening of March 31st, the Fire Department participated in a practice "Yellow Alert", dispersing five trucks and personnel to the outskirts of Richland and manning reserve pumpers in each station.

Fire Prevention

A total of 183 building and 54 exterior hazard inspections were made during March. These inspections resulted in 12 hazard reports.

A total of 210 fire extinguishers and 82 fire hose standpipes were inspected. Six additional extinguishers were installed, 49 recharged, 11 test-weighed and 8 removed. One standpipe required repairs. All CO_2 fire extinguishers stored in the Fire Department warehouse were recharged. Usable parts were salvaged from 34 damaged fire extinguishers before they were excessed.

1215198

Fire Prevention (Continued)

On March 24th a fire extinguisher demonstration was given for 30 employees of General Accounting at 722-A Building.

Instruction in the use of the building fire alarm system and installed fire protection equipment was given to Jason Lee School personnel.

Conferred with tenant at 1306 Kimball regarding proposed nursery school in residential basement. An informational report was filed on the matter.

At the request of AEC Engineering and Safety Offices, the Fire Marshal assisted on the final acceptance inspection of the Jason Lee School. Items reported in the Fire Marshal's pre-acceptance inspection were reviewed and AEC agreed to bring about corrections.

Inspection of Free Methodist Church, under construction at Wright and Symons, revealed sub-standard fire-stops in exterior walls. The matter was referred to Community Engineering.

Fire alarm legend and floor plan map was prepared for posting at fire alarm annunciator panel in Jason Lee School. Photostatic enlargements were made of the floor plan and pertinent information added for Fire Department training purposes.

Word was received through the Richland Chamber of Commerce, local campaign sponsors, that Richland was awarded first place in the nation for cities of 20,000 to 50,000 population, in the National Fire Waste Contest conducted annually by the Chamber of Commerce of the United States.

1216699

COMMUNITY REAL ESTATE AND SERVICES DEPARTMENT

ENGINEERING UNIT
March, 1952

Personnel	Exempt	Non-exempt	Total
Employees - Beginning of Month	7	3	10
Employees - End of Month	7	3	10

The Status of Active Projects is as follows:

K-562 - Automatic Irrigation Levee 2-C - Construction work scheduled during the month of June. Difficulty in getting pipes causing delay in job.

L-262 - Water and Sewer - Assembly of God Church - Construction work complete with exception of cleanup. Final inspection to be held during the month of April.

L-608 - Odors Emanating from Sewage Lift Station - Plans and specifications 100% complete.

S-405-B Street Tree Planting - Additional Erosion Control - Twelve trees were planted during the month. Project to be closed out about April 15.

S-552 - Additional Fire Protection - Desert Inn and Richland Theater - Design and bid package prepared and in hands of Contract Unit.

C-408 - Additional Erosion Control - All shelterbelt plantings in place. Cleanup and irrigation incomplete. Job ready for final inspection about April 15.

C-425 - 1951 Park Development Program - Sanitary sewer plans completed. Site grading at Chief Joseph School and the Library is complete. Columbia Playfield is incomplete. Trees and shrubs planting complete with exception of one row of trees at Columbia Playfield and cleanup. Parking Lots, Curb and gutter complete. Construction work on surfacing to start April 1. Restroom and equipment storage building started. Irrigation mains at Columbia are installed, chlorinated, and inspected. No other work started on irrigation system as of this date. Lawn seeding not started.

C-426 - Street Improvement Program 1951 - Design and specifications complete. Opening of Bids slated for April 3, 1952.

C-486 - 1952 Street Improvement Program - Design 95% complete. Revision of specifications to start about March 31, 1952.

Status of Active ESRs

235-PW Town Planning Board Work - Closed Out

369-CA Site Map CAP Field - Def. for other work.

473-M Westside United Protestant Church - Building materially complete.

510-M Roads and Streets Drawings - 1950 Construction - Def. for other work

544-SD Tree Planting for Schools - Plants selected by high school and planting is in progress.

547-MD Fixed Irrigation System - Design in progress.

Monthly Report - March 1952

561-SD Chief Joseph Grounds - Site grading complete. Installation of irrigation mains approximately 50% complete. Irrigation system to be installed during month of April with lawn seeding to follow.

[illegible]-RC Site South of Tract House 0-1224 - Def. for other work.

572-M First Baptist Church - Work 50% complete.

579-MS Goethals Drive to Williams - Study of intersection - Def. for other work.

581-RC "As Built" plans for LDS Church - Plans returned to building committee for correction.

585-M Anderson Motors Addition - Work complete. Final inspection to be made.

586-M Standard Oil Station - Work 100% complete and accepted.

591-M Preparation of Advice Pamphlet for Contractors - Rough completed. Temporarily delayed for other work.

596-M Store Building #3 - C. D. Joseph - Materially complete. Final inspection to be made.

597-RC Additions to Mart - Plans rejected for non-conformance to U.B.C.

603-RC Legal Description - McVicker Building #3 - Being processed

605-PR Erosion Control - Project Proposal completed. No additional work started.

-RC Legal Description - 89 Lee - 100% complete.

609-M Plan Checking - Store Bldg. #4 - CD Joseph - Construction work progressing. 80% complete.

612-RC As Builts for Richland Thrifty Drug - Returned to Architect for correction.

613-RC Building Alteration Permit #11 - Central United Protestant Church -

615-M Plan Checking - McVicker Bldg. #4 - Construction progressing. Bldg. 93% complete.

616-M Level Control Valve - Sewage Treatment Plant - Def. for other work.

617-RC "As Built" plans for Theater Building - Def. for other work.

619-M Alteration of Greenway for Parking Area - Project proposal completed. Design not started.

620-M Fire Hydrant Installation - Birch Street between Kuhn Street and Swift Blvd. - Design completed and in hands of Contract Unit.

621-RC Housing Plots - Bauer-Day Lease - 100% complete.

622-RC Gillette Building - 100% complete.

-M Request for preliminary Engineering on Additional Erosion Control - FY 1952 - Work in progress.

624-M Landscaping Estimate for Central Fire Station - Preliminary work is completed. Design to follow construction of building.

1211701

Monthly Report - March 1952

625-M Kirkpatrick Building No. 2, Block 4 - Work progressing - 55% complete.

628-M Prepare "as built" plans for Richland Fire Alarm System - Work progressing.

629-M Temporary Loan of Employees to Design - Still active.

630-M Correction of Master Plan - Work progressing.

631-M "As Built" Plans for Sewer System - to be developed as time permits.

632-M "As Built" plans for Water System - to be developed as time permits.

633-M "As Built" plans for Streets - To be developed as time permits.

634-M Engineer Liaison - Richland Water Expansion - Prepared and submitted data as requested by AEC - work continuing.

635-RC Uptown Business District - Legal Description - 100% complete.

637-M Engineering - Parking Lots - Chief Joseph School - Design not started, preliminary survey completed.

638-M Flow Diagram - Sewage Treatment Plant - Work 100% complete.

639-RC Legal Description - Bus Depot - Being processed.

640-RC Anderson Motors - "As Built" Plans - Plans received. To be checked.

641-RC Sewer Service to Gillette Property - Being processed for contract.

642-M Cost Estimate - Boiler at #2 Fire Station - Estimate completed and sent to Fire Department.

643-RC Legal Description for McVickers Bldg. - Being processed.

644-RC Legal Description for Safeways Store Site on Harding And Cullum - being processed

645-RS Richland Public Library Alterations - Work progressing.

646-M Engineer Liaison - Central Fire Station - Following construction of building.

647-RC Parish - All Saints Episcopal - Extend Utilities - Waiting for decision of legal status of work.

648-M Small Street Map of Richland - 100% complete.

650-M Addition to Spencer-Kirkpatrick Building - Work progressing - 20% complete.

1210702

COMMUNITY REAL ESTATE SECTION

SUMMARY

MARCH
1952

ORGANIZATION AND PERSONNEL:

	BEGINNING OF MONTH		END OF MONTH	
	Exempt	Non-Exempt	Exempt	Non-Exempt
Commercial Property Unit	7	6	7	5
Housing & Maintenance Unit	22	160	22	162
	29	166	29	167

Net Increase in Employees for month of March 1

GENERAL

A seventy-five (75) year ground lease with Bauer-Day, Inc. for the construction of 500 dwelling units in Richland was approved during the month of March. These dwellings are to be constructed with private capital.

1216703

HOUSING AND MAINTENANCE UNIT

March, 1952

ORGANIZATION AND PERSONNEL		March
Number of employees on payroll:		
Beginning of month	22 Exempt	
	160 Non-Exempt	
	182	182
End of month	22 Exempt	
	162 Non-Exempt	
	184	184

1216704

Richland Housing

ing utilization as of Month Ending March 31,1952

Houses occupied by Family Groups

	Conventional	A & J	T	Precut	Ranch	Prefab	Apt	4th add	Tract	Total
G.E.Employees	2219	260	9	381	823	1163	56	267	38	5216
Commercial Facilities	90	11	1	36	80	58	8	8	5	291
Community Activities	9				5	4			1	19
Medical Facilities	4	15			2	1		3		25
Post Office	5				3	11		1	3	23
AEC & other government	100	29		19	51	22	4	16	3	244
Schools	49	1		5	10	53	1	2		121
Atkinson & Jones	7	13		3	10	5	4	1		43
Vitro Corporation	6	3		2	9	3				23
Charles T. Main	1			2	3	11				17
Newberry Neon	3	1		1			1	1		7
Urban-Smythe-Warren					2			1		3
Robert's Filter	1									1
V.S.Jenkins					1					1
Universal Foods						1				1
Vernita Orchards									4	4
Total	2494	333	10	449	999	1332	74	300	54	6045
Assigned,Leases written										
Assigned,Leases not written	2			1	1	6			1	11
Available for Assignment	3					3				6
vers	1					1				2
Total	2500	333	10	450	1000	1342	74	300	55	6064

	Begin Month	Moved In	Moved out	Month End	Diff.
Conventional Type	2496	28	29	2495	Minus 1
A & J Type	332	—	—	332	—
"T" type	10	—	—	10	—
Precut Type	451	6	6	451	—
Ranch Type	997	13	11	999	Plus 2
Prefab Type	1336	37	41	1332	Minus 4
Apartments	76	4	5	75	Minus 1
Fourth Addition	297	4	3	298	Plus 1
Tract	55	1	2	54	Minus 1
Total	6050	93	97	6046	Minus 4

1211705

DORMITORY STATISTICS

Dormitories:

		Occupants	Vacancies	Total Beds
Men Occupied	15	616	---	616
Women Occupied	12	*481	---	481

Women's Dormitories
Occupied by:

G.E. Office	2
Education	1
Apartments	1

*This includes space of 2 beds in W-9 used for supply rooms and dormitory offices.

There are 161 men waiting for rooms in Richland.
There are 2 women waiting for rooms in Richland.
There are 52 men waiting for single rooms.
There are 96 women waiting for single rooms.

GENERAL

Houses Allocated to new tenants	37
Exchanges Houses	24
Moves(Within the Village)	13
Turnovers	8
Total Leases Signed	93
Terminations	50
Total Cancellations	97
Applications Pending	685

ALLOCATION SECTION STATISTICS

Voluntary Terminations	30
R.O.F.	0
Discharge	1
Transfers	1
Retirement-Divorce-Death-Misc.	6
Houses Assigned "AS IS"	38
Move off Project	12
Houses sent to Renovation	29

121706

DORMITORY REPORT FOR MARCH - 1952

183	MINOR REPAIRS TO FUSES, PLUMBING, ETC.
18	WORK ORDERS STEAM, GLASS, EQUIPMENT, ETC.
28	PIECES OF FURNITURE REPAIRED.

LINENS LAUNDERED

8,575	SHEETS
4,445	PILLOW CASES
177	BED SPREADS
67	BED PADS
216	SHOWER CURTAINS
5	PAIRS DRAPES

1216707

MISCELLANEOUS STORES WAREHOUSE INVENTORY SUMMARY
MONTH ENDING March - 1952

	EXPENDABLE ITEMS	FURNITURE (GEN. LEDGER)	FURNITURE (KARDEX CONT.)	PLANT ITEMS	TOTAL
BEGINNING BALANCE	$18,504.84	$10,966.06	($9,888.22)	$47,534.05	$77,004.95
RECEIPTS:					
On Purchase Orders	1199.50				
On Store Orders	609.23				
From Housing	118.68		306.00	1676.47	
From Dormitories	94.19		282.06		
TOTAL RECEIPTS	$ 2021.60	$	$ 588.06	$ 1676.47	$
TOTAL AVAILABLE DISBURSEMENTS:	$20,526.44	$10,966.06	$10,476.28	$49,210.52	$
Cash Sales (Backcharge)	70.24				
To Salvage	113.25			6494.94	
To Housing	938.06		3.36	2380.75	
To Dormitories	1695.71		509.23		
To Dormitories-Linens	2190.14				
Dorm-Shades & Reflectors	9.51				
To Warehouse Supplies	2.98				
To Other (Misc.)	12.85		79.43	6.40	
Grass Seed				1018.24	
TOTAL DISBURSEMENTS	$ 5032.74	$	$ 592.02	$ 9900.33	
ENDING BALANCE (1) (2) (4)	15,493.70	10,966.06	($9,884.26)	$ 39,310.19	$65,769.95
NET CHANGE	$ 3011.14	$10,966.06	$ 3.96	$ 8,223.86	$11,235.00

ENDING BALANCE GENERAL LEDGER (BALANCE -COL. 1 PLUS COL. 2) $26,459.76

COLUMN 3 FOR LOCATION CONTROL ONLY-COLUMN 4 MEMO ACCOUNT ONLY

EXCHANGED:	PIECES	COMMENT:
Dorm. Furniture	15	
Ranges	11	
Refrigerators	5	
Prefab Heaters	14	

1215700

TENANT RELATIONS WORK ORDER AND PROGRESS REPORT - MONTH OF MARCH, 1952

Processing of Service Orders, Work Orders & Service Charges

	Orders Incomplete as of February 29	Orders Issued 2-29 to 3-31	Total Orders Incomplete as of March 31, 1952
Service Orders	130	2014	72
Work Orders	1069	623	1160
Service Charges		312	

Principal Work Order Loads

	Incomplete as of February 29, 1952	Incomplete as of March 31, 1952
Laundry tub replacements	5	25
Bathroom Renovations (tub, tile., lino.)	42	52
Tileboard only (Bathroom)	4	-
Kitchen cabinet linoleum	19	22
Kitchen floor linoleum	6	25
Shower stalls	16	10

Alteration Permits Issued During the Month of March totaled 81 compared to 83 issued in February.

Floor sanded	1	Basement partitions	3
Install fence	31	Raise threshold	1
Install auto. washer	9	Install air conditioner	2
tall auto. dryer	3	Remove clothes poles	1
Basement excavations	4	Install patio	5
Install wall receptacle	1	Cut hole in floor	1
Install driveway	7	Install fireplace	1
Install water softener	11		

1668 Inspections were made during the month of March compared to 1341 made during February.

Alteration permits	6	Shades	5
Bathtubs	92	Shower stalls	34
Cupboards	6	Sidewalks	15
Drainage	8	Sinks	18
Floor boards	17	Tileboards	79
Grass seed	61	Toilet seats	42
House siding	1	Top soil	42
Jack & shim	23	Trailers	2
Leaking basements	11	Walls	17
Linoleum	242	Shows (new tenants)	71
Lot lines	47	Cancellations	64
Paint	69	Renovations	29
Porch & steps	29	Windows	[illegible]
Screen doors	58	Miscellaneous	419

1215709

HOUSING MAINTENANCE

March, 1952

I. HOUSING MAINTENANCE BACKLOG REPORT

TYPE OF WORK	OLDEST ISSUE DATE	BACKLOG	RATE OF REPLACEMENT
Bathtubs; including tile board (bath) floor lino. (bath) Painting (bath)	2-6-52	52	10 per week
Painting (Misc.)	Orders ready 2-6-52	37	20 per week
Kitchen floor lino. Prefabs	3-13-52	4	1-2 per week
Kitchen floor lino. Conventional	3-13-52	21	8 per week
Bathroom floor lino. Prefabs	2-12-52	2	Waiting for Shower install.
Bathroom floor lino. Conventional	11-28-50	4	Waiting for Shower install. (D houses)
Kitchen sink lino. Prefabs	3-17-52	5	1-2 per week
Kitchen sink lino. Conventional	3-7-52	17	7-8 per week
Shower stall install.	12-7-50 D houses 6-13-51 1 BR 5-29-51 Tract	10	4-5 per week
Laundry Trays	3-13-52	25	5-8 per week

II. MAINTENANCE TRANSPORTATION EQUIPMENT

TRUCK TYPE	NO. IN POSSESSION	CRAFT
1½ ton Flatbeds	8	Carpenters
1/2 ton Pickups	6	Carpenters
1/2 ton Pickups	2	Sheetmetal
Panels	3	Millwrights
3/4 ton Walkin	1	Millwrights
Panels	2	Painters
1½ ton Flatbeds	3	Painters
1/2 ton Pickups	4	Painters
1/2 ton Pickups	5	Plumbers
3/4 ton Pickups	3	Plumbers
Subtotal:	37	

1215710

(Maint. Trans. Equip. Cont'd)

TRUCK TYPE	NO. IN POSSESSION	CRAFT
SERVICE ORDERS:		
3/4 ton Pickups	2	Plumbers
1/2 ton Pickups	2	Plumbers
1/2 ton Pickups	4	Electricians
1/2 ton Pickups	2	Carpenters
1/2 ton Pickup	1	Locksmith
1/2 ton Pickup	1	Glazier
Subtotal:	12	
RENOVATION & LABOR:		
Chevrolet Carryall	1	Painters & Janitresses
1/2 ton Pickup	2	Carpenters
3½ ton Dumps	2	Labor
3/4 ton Power Wagon	1	Labor
Subtotal:	6	
GENERAL:		
Sedans	2	Supervision
Subtotal:	2	
GRAND TOTAL:	57	

III. PROGRESS REPORT

A. INTERIOR PAINT PROGRAM:

Minor carpentry repair work was done in 152 units of housing prior to painting. This work consisted of repair and replacement of cupboard doors; checking of doors and windows for free operation; replacement of sash balances, cabinet door catches; repair of loose molding, etc. This work is done in the part of the house that is to be painted.

Interior painting on Interior Paint Cycle Program was completed in 141 units of housing.

Interior painting of Dorms M-1 and M-2 was completed, and the interior painting in Dorm W-2 is 25% complete.

B. FIELD CARPENTRY - LINOLEUM & TILE:

The following units of work were completed by this group during the month.

Jacked & Shimmed houses:	16	Repaired screens:	2
Replaced broken sinks:	6	Repaired P.O. floor:	1
Repaired front porches and steps:	7	Cut access holes in Dorms:	1
Coated roofs:	8	Repaired showers in Dorms:	5
Repaired doors:	3		

1216711

Repaired ceilings:	2	Installed bath lino.:	42
Replaced doorjamb:	1	Installed tile board:	48
Replaced back door in 3 BR Prefab:	1	Installed kitchen floor lino:	28
Installed swinging doors in Prefab cabinets:	1	Installed sink lino:	43
Repaired roofs:	4	Installed work bench lino:	6
Replaced post under Prefab:	1	Repaired asphalt tile floor:	1
Repaired overhead doors in Service Station:	1	Installed metal edging on lino:	8
		Chempoint:	28 units

C. CARPENTER SHOP:

Effective March 24, the saw filer was transferred to 700-1100 Maintenance and Steam so as to put him in the same section as the Tool Crib. Prior to that date, the Carpenter Shop filed saws and sharpened tools for the 700-1100 Areas. The other work accomplished by this group during the month is as follows:

Completed exterior repairs on A & J Apartments:	64
Installed new screen doors:	40
Repaired screen doors:	90
Completed exterior repairs on "V" houses:	50
Completed exterior repairs on "U" houses:	50

Item	Hrs. Used	Completed during month
KC chairs, UP.	24	7
KX dining chairs	12	12
Davenos	9	1
Repaired two (2) Drs.' coats	3	2
	48	21

(Covering 28 day period for Upholstery Shop).

D. PLUMBING:

During the past month the Plumbing group accomplished the following units of work:

Replaced bathtubs:	44	Replaced laundry tubs:	11
Replaced water heaters:	31	Replaced shower stalls:	25

Cleaned 13 outside sewer lines that were stopped up.
Completed 53 plumbing Work Orders consisting of repairing and replacing pipe lines, valves, fixtures, etc.
Completed 36 linoleum repairs; such as, taking up and resetting toilet bowls in bathrooms so linoleum could be replaced.
Completed plumbing work for installation of 25 shower stalls.
Completed 25 steam Work Orders consisting of repairing or replacing pipe lines, radiator valves and traps.
Repacked steam valves in boiler rooms of all Dorms.
Repaired domestic water line to Tract houses L 903 and L 864.
Replaced two (2) septic tank drain fields for Tract houses K-780 and K-772.

E. MILLWRIGHTS: 4 men.

1. This group has been working on routine furnace inspection and on Service Orders most of the time.
2. Routine inspection of "C" and "K" house furnaces is 90% complete at this time.
3. Lubrication and inspection of Commercial Facilities was completed during March.

(Millwrights, cont'd)

4. The coolers on "Village and "Richland" Theaters were serviced.

F. SHEETMETAL: 3 men.

1. Shower stalls were made and installed in Dorms M-2, M-1, W-5, W-6 and W-7.
2. Shower stalls were made and installed in fifteen one-bedroom Prefabs.
3. Installed showers in twenty-five other Prefabs.
4. Gutters were made and installed on twenty-five houses.

G. RENOVATION:

During the month of March there were twenty-six (26) houses processed by the Renovation Group. Of these twenty-six houses, one received complete interior painting and cleaning. Two houses were partially painted on the interior and were completely cleaned. The remaining twenty-three houses received cleaning only.

H. SERVICE ORDERS:

The following is a status report on Service Orders:

A.	On hand at the beginning of the month:	130
B.	Received during the month:	2014
C.	Completed during the month:	2072
D.	On hand at the end of the month:	72
E.	Time spent on Work Orders:	442 man hours.

F. The Locksmith has a backlog of approximately 225 hours.
G. The carpenters have a sizeable backlog; electricians backlog is declining slightly.
H. Plumbers are operating on daily order basis for the first time in two years.

I. LABOR:

Trash pickups from vacant houses:	46	
Coal deliveries to vacant houses:	13	
Hauled tumbleweeds:	3	loads
Removed, cut up and hauled away trees:	3	
Delivered topsoil:	31	loads

Cleaned out steam drain pits under all "M" and "W" Dorms.
Cleaned up grassed area around Seattle First National Bank.
Filled and corrected drainage at north end of block; Perkins & Torbett.
Excavated, raised and backfilled vent pipe at 78 Willis.
Filled and graded around foundations at 79 Hodges Court and [illegible]
Removed dead wood from trees around Tract House K-78[illegible]
Cleaned and disinfected basement after sewer stoppage at 220 [illegible]
Hauled ashes from 784 Building. (Weekly routine.)
Pumped settling basins at 784 and 784-A Buildings. (Weekly routine.)

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REAL ESTATE ENGINEERING UNIT
MARCH 31, 1952

Following is the status of active projects being handled by this unit:

K-918, Exterior Painting - Three Government-Owned Buildings

Contract awarded to Anderson Brothers, Inc. Notice to Proceed dated 3-21-52.

L-911, Resurface Parking Lot Between Campbell's Food Store No. 2 and Village Pharmacy

Plans completed March 26, 1952.

L-921, Repair of Fire Damaged Prefab - 1004 Wright Avenue

No job activity this month. Bids to be opened 4-15-52.

S-909, Exterior Cycle Painting-331 Houses - Divisions II and III

Contract awarded to Anderson Brothers, Inc. Notice to Proceed dated 3-21-52.

Following is the status of active ESRs being handled by this unit:

903-RH, Alteration Inspections

No activity this month.

904-RM, Procurement Aid and Material Studies

Routine duties performed as required.

910-RC, Approval of Pasture Land Permits

Routine work.

913-RH, Study of Kitchen Light Fixtures in A & J Ranch Houses

Recommendation report made to Real Estate Maintenance Group.

917-RH, Drainage of Inner Block Area

Study in progress.

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919-RC, Approval of Alterations-Desert Inn Hotel

Additional wiring being installed.

923-RH, Ranch House Furnace and Flue Cleaning

Cancelled.

924-RH, Exterior Painting - M, Q, R, & S Houses

Estimate and specifications in progress.

925-RH, Exterior Cycle Painting - U & V Houses

Estimate and specifications in progress.

926-RM, Inner Block Area Drainage - 1400 Block Perkins to Potter

No job activity this month.

927-RH, Siding and Painting - 6 B. O. Q. Dorms

ESR cancelled March 28, 1952.

928-RH, Exterior Painting - 14 Tract Houses

Estimate and specifications in progress.

929-RH, Study-Possible Alterations - 413 George Washington Way

Checked sewer invert. Recommendation report being written.

930-RH, Concrete Walks and Steps - 552 Houses

Deferred for other work.

931-RC, Study of Tract House Removal

Report made to Facilities Unit.

932-RH, Exterior Painting - 6 B. O. Q. Dorms

Estimate and specifications in progress.

933-RM, Electrical Alterations - The Mart

New service installed by Electrical Department. New distribution panel to be installed.

934-RH, Floor Plan Sketches - All House Types

Sketches being made.

1216715

COMMERCIAL PROPERTY - REAL ESTATE SECTION

MARCH, 1952

PERSONNEL - COMMERCIAL PROPERTY:

	March
Beginning of month	13
End of month	12
Net difference	1

PERSONNEL - COMMERCIAL AND NONCOMMERCIAL FACILITIES:

	Commercial	Noncommercial	Total
February	1,331	118	1,449
March	1,368	117	1,485
Net difference	37	1	36

SUMMARY OF ROUTINE ITEMS PROCESSED:

Work Orders	54	5	59
Back Charges	6	2	8

CONTRACTS AND NEGOTIATIONS:

A. Commercial:

1. Assignment of Lease:

   a. Paul's Inc. - by M. R. Petersen, an Individual, to Paul's, Inc.

2. Letter of Award:

   a. To Automatic Laundry Company for an addition to Building #2 in Block 1.

3. Letters of Approval:

   a. C. D. Joseph Company's sublease with A. J. Raber for barber shop in C. D. Joseph Company Building #2, Block 5.

   b. C. D. Joseph Company's sublease with Montgomery Ward in Building #1, Block 6.

   c. Automatic Laundry Company's sale of Building #1, consisting of Lot 5, 6, 7 and 8 in Block 4, to L. R. and Sarah D. Bailey.

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d. C. D. Joseph Company's sublease with Pleiss-Davis in Building #2, Block 5.

e. E. J. Hanson's sublease of barber shop to Otto Souder.

f. Vance Properties' sublease with Kaymax Travel Agency.

B. Noncommercial:

1. Lease:

a. Parish of All Saints - covering the construction, operation and maintenance of an Episcopal church building on Kimball Street, between Williams Boulevard and Symons Street.

2. Letters of Authorization:

a. West Side United Protestant Church - covering the rental of certain Government-owned equipment for use in grading the church premises.

b. Southside United Protestant Church and Parish of All Saints - as confirmation that the Atomic Energy Commission will relieve General Electric Company of its agency as landlord upon termination or expiration of the principal contract.

JMMARY OF OCCUPANCY AND EXPANSION STATUS:

A. Commercial:

	February	March
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	16	16
c. Total businesses operating in Government-owned buildings	57	57
2. Doctors and dentists in private practice, leasing space in Government-owned buildings	21	21
3. Number of privately-owned buildings	44	44
a. Number of businesses operated by prime lessees	39	39
b. Number of businesses operated by sublessees	39	39
c. Total businesses operating in privately-owned buildings	78	78

1210717

COMMERCIAL PROPERTY -- REAL ESTATE SECTION: March, 1952

	February	March
4. Privately-owned buildings under construction	4	5
5. Total number of businesses in operation	135	135
B. Noncommercial:		
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	6	6
3. Sites tentatively allocated or leases in process of negotiation	2	2
Total	14	14
4. Pasture Land Permits	65	77

GENERAL:

A. Commercial:

1. Spencer-Kirkpatrick - construction of building addition commenced on March 27, 1952.

2. Jerry's Cleaners terminated sublease with Dawson-Richards.

B. Noncommercial:

1. Two pasture permits were cancelled and fourteen new permits were issued.

2. A proposal was received from the Richland Yacht Club for the licensing or leasing of certain waterfront property.

3. A proposal, received from the Richland Heights Baptist Church for leasing ground at Lee Boulevard and Thayer Drive, was referred to the Town Planning Board.

1216718

COMMERCIAL PROSPECTS:

Inquiries were received during the month concerning the establishment of the following types of commercial enterprises:

Dairy Queen Store	Garage
Dentist Office	Roller Skating Rink

NONCOMMERCIAL PROSPECTS:

Inquiries were received during the month, as follows:

Hobby Shop (Boat repair)

1216719

700-1100-3000 AREA SERVICES SECTION
MONTHLY REPORT
MARCH - 1952

GENERAL

This Section participated in practice Yellow Alert activities on March 31. Lists of plant craftsmen, arranged according to geographical residential locations, is being compiled for use in event of emergency.

Responsibility for North Richland Commercial Facilities is being assumed by this Section effective April 1, 1952.

700-1100 MAINTENANCE AND STEAM UNIT

General Maintenance:

The expansion joint on 4-inch steam line to Kadlec Hospital was turned 180° to allow room for foundation of the six-room addition.

Approximately 200 ft. of 6-inch and 110 ft. of 4-inch tile and concrete sewer line serving the first and second wings of the 703 Building was replaced with cast iron pipe. The old line was badly cracked and broken.

All safety relief valves on steam lines for 700 Area buildings have been repaired and tested.

Radiator valves and traps were repaired in 770 and 722-A Buildings. End-of-line traps for 760 Building were also repaired.

Only minor repairs were required to the steam system and boilers at 784 and 1131 Buildings.

The shoring, crating and banding of excess materials continues on a full-time basis for two carpenters.

Sixty-four feet of Hauserman partition was removed and 200 ft. installed during the month in 703 and 761 Buildings. New doorways were cut and others relocated for convenience of occupants.

The four A.E.C. roadside bulletin boards are installed and sign work completed.

Sign Painter worked one week in the 300 Area on miscellaneous small signs and lettering jobs. Interior painting of No. 2 Fire Station is in progress.

Handrails were fabricated and installed on basement stairs at 702 Building and entrances to Medical Arts Building.

Civil Defense sirens have been installed on towers and tested. Minor changes and adjustments, resulting from these tests, are yet to be made.

Power wiring for I.B.M. machines in 722-A completed.

All 5 h.p. and larger motors for which we have responsibility have been lubricated for summer use.

1210720

700-1100-3000 AREA SERVICES SECTION

Steam Operation:

No. 2 boiler was taken out of service on March 1 and boilers No. 1 & 3 carried the load for the remainder of the month with the exception of March 5, when No. 2 boiler was again called on to carry peak loads.

The quantity of steam generated at the 784 Heating Plant was 17.3% less than that for March of the previous year.

Substantial quantities of coal were stockpiled until the last few days of the month, after which normal receipts were resumed.

Operation of the Heating Plant at 1131 Bus Terminal was normal for the month. During several of the warm days of the latter part of the month it was possible to bank the fires.

Steam Generated	23,569.4 M. Lbs.
Steam Leaving Plant	20,034.0 M. Lbs.
Steam Delivered	17,802.0 M. Lbs.
Coal Consumed	1,813.00 Net Tons
Total Water Softened	4,035,600 Gals.
Soft Water Sent to Kadlec Hospital	1,012,540 Gals.
Soft Water Used at 784 Heating Plant	3,023,060 Gals
Soft Water Served to Kadlec Hospital	743 Hrs.

Backlog:

Foreman	Type of Work	Manhours	No. Crew Days	Men on Routine	Total
Bennett	Electrical	680	21	3	7
McCartney	Machinist	28	7	.5	1
	Welder	20	4	.3	1
	Sheet Metal	107	13	1	2
	Millwright	119	7	3	5
Vaught	Painting	300	19	—	2
	Sign Painting	120	15	—	1
	*Carpenter	720	18	4	9
Marzyck	**Steam & Plumbing	132	9	2	4
	Servicemen	—	—	2	2

* One Carpenter (Saw Filer) added 3-24-52.
** One Pipefitter Journeyman transferred to Community Public Works for seasonal work balance.

NORTH RICHLAND FIRE UNIT

Alarm No.	Response to Alarms	Cause for Alarms	How Received
46	722 "D" Ave.	Improperly operated stove.	Phone
	307 "C" Ave.	Improperly operated stove.	Phone
48	402 "D" Ave.	Faulty oil heater.	Phone
49	"Q" between 1st & 2nd	Wall jarred near auxiliary box.	Box
50	"Q" between 1st & 2nd	Wall jarred near auxiliary box.	Box
51	1205 "L" Ave.	Gas leak in cook stove.	Box
52	6th and "C" Ave.	False Alarm.	Box

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700-1100-3000 AREA SERVICES SECTION

Alarm No.	Response to Alarms	Cause for Alarms	How Received
53	11th and "C" Ave.	Unnecessary alarm.	Box
54	307 "H" Ave.	Burning trash in street.	Phone
55	Sprout & Davison Roads	Trash fire.	Phone
56	1225 "E" Ave.	Overload on electric wire.	Box
57	1217 "G" Ave.	Improper wiring.	Phone
58	S.E. of trailer compound along river.	Unknown. Possibly children playing with matches.	Phone

Investigation and Fire Loss:

Date	Location and Cause	Personal Loss	HW Loss	Total Loss
3-3-52	Bathhouse #15. Smoke scare.			
3-6-52	404 "C". Improperly operated oil stove.			
3-6-52	Barracks 134. Accidental alarm.			
3-9-52	Trailer at 409 "C". Overheated oil stove.			
3-11-52	Bks. 234-A, Rm. 12. Bed fire.	$ 19.90		$ 19.90
3-13-52	312 "B". Faulty oil stove carburator.			
3-14-52	Tavern at 5th & "Q" Ave. Smoke scare.			
3-18-52	Barracks 236-C. Smoke scare.			
Alarm No.				
51		300.00		300.00
57		5.00		5.00
	Total Loss	$324.90		$324.90

Miscellaneous Activities:

Various area inspection tours were made by eight Fire Department employees.

Tanker was dispatched to Airport for standby service.

No. 3 Company stood by for controlled burning at three different locations.

All Fire Department trucks had female fittings installed for battery charger.

Tanker was dispatched to Babe Ruth Ball Park te wet down ground for Army.

Replaced foam extinguisher in Bathhouse #67.

Yellow alert was received 3-31-52 at 6:55 p.m. Apparatus and personnel were dispatched to pre-arranged dispersal points. Off duty personnel were contacted and notified of Yellow alert.

There were four safety and security meetings; nine inside drills and schools; and five outside drills.

Eighty fire alarm boxes were tested and one fire extinguisher filled.

1210722

700-1100-3000 AREA SERVICES SECTION

NORTH RICHLAND PATROL UNIT

General:

North Richland Patrol Unit participated in Yellow Alert on March 31, 1952.

One-hundred two traffic warning tickets were issued, mainly for minor traffic violations.

Eighty traffic citation tickets were issued; 7 for Invalid Plates, 7 for No Driver's License, 17 for Illegal Parking, 10 for Negligent Driving, 16 for Speeding, 20 for Stop Sign Violation, 2 for Improper Turn, and 1 for Failure To Stop And Identify.

Twenty persons were incarcerated in the Richland jail; 3 for Vagrancy, 7 for Public Intoxication, 3 for Petit Larceny, 1 for Grand Larceny, 3 for Operating a Motor Vehicle While Under The Influence of Liquor, 2 for Third Degree Assault and 1 for Negligent Driving With Liquor Involved.

Forty inquiries, regarding formerly employed General Electric and construction personnel, were answered by this office. These inquiries came from Civil Service Commission, U. S. Army, U. S. Navy and E. I. du Pont Company.

All fire, safety and traffic hazards observed by North Richland Patrol were reported to the proper authorities.

All facilities, warehouses, buildings and the John Ball School were checked on the No. 1 and 3 shifts daily and on all shifts on Sundays.

There were 24 weekly hours and 8 monthly hours spent on escort service from Pasco.

Every Thursday, with exception of March 27, 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.

Nine firearms were checked out of Contraband Room, and 4 firearms checked in.

A Police School, In-Service Training, was held in Kennewick under the auspices of Washington State Patrol during the first three weeks in March. The following North Richland personnel attended: T. J. McGuire, W. W. Kerr, H. R. DeMeyer, R. R. Robertson, W. T. Henderson, P. L. Shuman, G. W. Benitz, C. H. Overdahl, A. G. Bals, and F. B. Lang.

On March 2 Mrs. Ira Dunn, Den Mother, and a group of Cub Scouts from John Ball School were conducted on a tour of Patrol Headquarters. They were advised of some of the police procedures and told how they could be of help to Patrol.

North Richland population is as follows (does not include Army and Army subcontractor personnel):

Bremerton Houses	636
Trailer Camp	3,936
Barracks (Men's)	1,249
Barracks (Women's)	66
Total Population	5,887

Total Lots Occupied in Trailer Camp	1,409
Total Bremerton Houses Occupied	185

There are ten posts in the North Richland Area at the present time. Five Fixed Posts and five Reposts.

700-1100-3000 AREA SERVICES SECTION

Unusual Incident Reports:

Public Intoxication	8	Driving Under Influence	3
Vagrancy	4	Negligent Driving	6
Juvenile Peeping Tom	1	Negligent Driving, Liquor Involved	2
Third Degree Assault	3	Reckless Driving	2
Petit Larceny	3	No Operator's License	1
Grand Larceny	1	Investigation	1
Lost Suit of Clothing	1	Accident (Govt. Vehicle, Govt. Property)	1
Failure to Stop & Identify	1	Accident (Patrol Vehicle)	1
Operating Vehilce While License Rvkd.	1	Destruction of Private Property	1

Special Services Performed:

Emergency Messages Delivered	69	Billfolds Turned in to Patrol	3
Emergency Long Distance Calls	136	Billfolds Returned to Owners	3
Western Union Telegrams	6	Distrubances Investigated	4
Fires (Sig. 12)	7	Suspicious Persons Investigated	10
False Fire Alarms	3	Personnel Locked out of Rooms	8
Conditions Reported to Maintenance	8	Bicycles Reported Lost or Stolen	2
Escorts to First Aid	4	Bicycles Found	3
Dog Complaints (Trailer Camp)	3	Bicycles Returned to Owners	3
Dogs Impounded	9	Soldiers Turned over to M.P.'s	5
Children Bitten by Dogs	2	Cars Impounded	6
Patrolmen Bitten by Dogs	2	Children Lost	4
Dogs Reported Lost	1	Children Returned to Parents	4
Dogs Recovered for Owners	1	Pickup for Everett Police	1
		Escort for Wide or High Loads	4

omplaints:

Petit Larceny	4	Miscellaneous	8
Grand Larceny	3	Cases Cleared	7

ORGANIZATION AND PERSONNEL

	Beginning of Month			End of Month		
No. of Employees on Roll	Exempt	Non-Exempt	Total	Exempt	Non-Exempt	Total
Maintenance & Steam Operation	8	52	60	8	52	60
North Richland Patrol	5	17	22	6	16	22
North Richland Fire	33	—	33	33	—	33
TOTAL	46	69	115	47	68	115

Personnel Changes During Month: Non-Exempt Employees

Maintenance & Steam Operation

Transfer to Community Public Works	1
Transfer from Real Estate	1

North Richland Patrol

Transfer to Richland Police Department	1
Upgrade from Patrolman to Sergeant	1

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NORTH RICH ND COURT CASES

MARCH, 1952

VIOLATION	NO.OF CASES	NO. OF CONV.	NO. OF FORF.	CASES DISM.	CASES CONT'D.	WARR. ISSU.	SENT. JAIL	LIC. RVKD.	TOTAL FINES	TOTAL SUSP.	TOTAL BAIL FORF.
Invalid Plates	7	5		1	1				$ 25.00	$	$
No Driver's License	7	3	1	2	1				18.50	7.50	7.50
Illegal Parking	17		12	2	3						43.50
Negligent Driving	10	6	2		1	1			115.00	17.50	52.50
Speeding	16	8	5		3				102.50		68.50
Ran Stop Sign	20	3	14		3				20.50	10.00	78.00
Operating While Under Influence	6	3	3					2	180.00		
Improper Turn	2			1		1					
Failure to Stop and Identify	1		1								25.00
Petit Larceny	3	3					1		65.00		
Public Intoxication	7	3	4						37.50		50.00
3rd Degree Assault	2	2							75.00	75.00	
Vagrancy	3	3					1		70.00	17.50	
Grand Larceny	1				1						
TOTALS	102	39	42	6	13	2	2	2	$709.00	$127.50	$325.00

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PROJECT & RELATED PERSONNEL
MARCH 1952

GOVERNMENT EMPLOYEES	2-29-52		3-31-52	
Civilian Personnel-Atomic Energy Comm.	387		437	
Civilian Personnel G. A. O.	5		5	
Total		392		442
RICHLAND VILLAGE PERSONNEL				
Comm. Facilities (Inc. North Richland)	1331		1368	
Government Agencies, Churches, Clubs, Etc.	118		117	
Schools	427		431	
Organizations	11		11	
Total		1887		1927
CONSTRUCTION SUB CONTRACTORS				
Atkinson & Jones	4908		4578	
Newberry Neon	399		387	
Urban Smyth Warren Co.	175		1194	
Vitro Corp. of America (Kellex Corp.)	107		107	
Erwin Const. Co.	3		1	
J. P. Head	4		3	
V. S. Jenkins	52		50	
Empire Electric Company	1		0	
Sound Const. & Engr. Company	12		5	
J. G. Shotwell	11		9	
West Coast Heating & Plumbing Company	40		18	
Electric Smith Inc.	18		15	
L. H. Hoffman	76		8	
Stier, Shelton & Schick	2		2	
Charles T. Main	185		210	
The Bay Company	52		58	
Holliday & Edworthy	5		4	
Industrial Electric Company	2		0	
Puget Sound Naval Shipyard	794		788	
A. H. Barbour & Sons	5		0	
Anderson Decorating Company	4		0	
Soule Steel Company	7		3	
Leland S. Rosener	3		3	
Head Mech. Construction Company	5		5	
Murphy Brothers	7		5	
Buchanan Co., Incorp.	4		5	
S. S. Mullen Inc.	1		2	
Pittsburg-Des Moine Steel Company	2		25	
Chicago Bridge & Iron Co.	2		35	
Hoge-Warren-Zimmermann Company	12		0	
Automatic Sprinkler Co. of America	2		1	
National blower & Sheetmetal Co.	4		4	
Emory & Bohm Electric Company	4		10	
L. D. Reeder Co.	1		0	
Associated Engr.	20		26	

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CONSTRUCTION SUB CONTRACTORS CONT.

Haughton Elevator Company	5	4
Minneapolis Honeywell Regulator Company	4	0
U. S. Sheetmetal & Blower Co.	2	0
Bumstead-Woolford	5	9
Dix Steel Building Company	5	5
E. F. Hauserman	4	4
Cain Company	2	0
Royal Roofing Company	2	4
D. H. Paving Company	3	9
Jaggar-Sroufe Co.	0	2
Portland Wire & Iron	0	2
Pacific Car & Foundry Company	0	19
Prepakt Concrete Company	0	1
Washington State College	0	5
American Pipe & Construction Co.	0	7
TOTAL SUB CONTRACTORS.	6961	7632
GENERAL ELECTRIC TOTAL	9055	8955
GRAND TOTAL	18,295	18,956

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