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#1 - H. A. Winne
#2 - Zay Jeffries, Pittsfield
#3 - C. G. Suits, Schenectady
#4 - G. R. Prout
#5 - J. R. Rue
#6 - C. N. Gross
#7 - A. B. Greninger
#8 - F. R. Creedon
#9 - Hanford Operations Office
Attention: F. C. Schlemmer, Manager
#10 - Hanford Operations Office
Attention: F. C. Schlemmer, Manager
#11 - Hanford Operations Office
Attention: F. C. Schlemmer, Manager
#12 - Hanford Operations Office
Attention: F. C. Schlemmer, Manager
#13 - Hanford Operations Office
Attention: F. C. Schlemmer, Manager
#14 - Hanford Operations Office
Attention: R. W. Richardson, Historian
#15 - 700 File
#16 - 700 File
#17 - 700 File

JUN 21 1949

June 17, 1949

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By Authority of CG-RLO-4
WA Snyder 1-7-92
DR Krishna 1-24-
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HANFORD WORKS

MONTHLY REPORT

MAY 1949

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

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HW 13561-DEL
June 17, 1949

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GENERAL SUMMARY

MAY 1949

Manufacturing Divisions

A total of 44 tons of metal was discharged from the three piles at an average concentration of 285 MWD/ton. The operating efficiency was 87.9 percent and the nominal power level of 275 M.W. was maintained throughout the month except at D pile which was operated at 290 M.W. after May 23, 1949. The new D pile level is the highest yet achieved at Hanford.

Class IV metal (alpha-rolled, triple-dipped, but not 100% beta transformed) continued to give difficulty when discharged at concentrations above 320 MWD/ton. Future discharges of this metal, amounting to approximately 70 tons total, will be at concentrations not higher than 320 MWD/ton. Class V material (completely beta transformed Class IV metal) continued to be satisfactory at high concentrations. One ton was pushed at 368 MWD/ton.

A total of 55 tons of acceptable slugs was canned in May at a yield of 90.9 percent. The machining yield continued to improve as a result of better quality rods, the May yield of 71.6 percent representing a new high.

A total of 44 batches was processed through the Separations operation.

The Traffic Section of the Transportation Division was transferred to the Purchasing and Stores Division as of May 16, 1949.

In addition to continuing activities on the 100-H Area Program, the Redox Program, and the Rala Program, the Section prepared for and participated in the initial stages of design effort for a DR Water Works.

Construction progress has been generally satisfactory. Packing of the process unit was completed on May 17, 1949. A total of only twelve days was used for this work. There was no need for any tailoring, and tolerances were nowhere exceeded. The care and cleanliness exercised on the job was excellent. The Section arranged for P Division checking on the packing. Coverage on all shifts was provided.

Technical Divisions

Neutron diffusion tests show that the purified graphite in place in the H Pile is of high quality and free of contamination.

Immediate concern over the life of the pile shields has been eliminated by analysis of masonite samples removed from the innermost layer of the top shield of the F Pile.

The power level of the D Pile was raised to 290 MW as the first step in a planned rise to 305 MW. No adverse effects were encountered.

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The carbon dioxide concentration in the atmosphere of the F Pile was raised to 60%. The top shield of the F Pile has ceased its upward rise but outward motion of the far side shield may be continuing. No beneficial effects on expansion of the B Pile have been observed from the 40% carbon dioxide in use.

Extraction of lithium fluoride slugs for tritium production has been completed and the P-10 facility is being converted for operation on lithium-aluminum alloy slugs.

In the Separations Plant extraction conditions are being modified as metal enrichment progresses. Savings in metal waste volume are being realized with higher g/t material. An analysis received recently from Argonne indicates that approximately 50% of the alpha activity in an old metal waste from high g/t material is due to elements other than plutonium. The Research Section is engaged in identifying these elements which lead to apparent high extraction losses when processing high g/t metal. Work is under way to establish the amount of I^{131} evolution at various stages in the separations process. Preliminary results indicate that about one-half the theoretical I^{131} content is released during metal dissolution, and perhaps three-quarters of this amount retained by the present water scrubbers on the dissolver off-gas line.

Preparations for start-up of 234-5 continue. Operating Logs and Operating Standards are being prepared. Process bay equipment taken over from Construction at the end of last month is being checked and placed in condition for initial operation on dummy runs. Maintenance aspects of the mechanical line being designed at Schenectady have been reviewed by representatives of the Manufacturing Divisions and the local AEC, with generally favorable comments as regards the extent of anticipated maintenance and the hazard involved in such work.

Additional Redox Scale-Up studies were carried out during the month with the O.R.N.L. flow sheet and the 5-inch column. The IB Column runs demonstrated that this column will have at least a two-fold range in throughput while maintaining the uranium content of the IBP stream at its specified limit.

Similarly, the IC Column will have at least a 2.5-fold range of capacity through which uranium losses will be less than the specification figure of 0.1%. Revision of the Demonstration Unit to provide for cascade operation of all columns to increase capacity of operation is about 60% complete.

Redox laboratory research studies of the reactions between hexone and nitric acid have continued, with further clarification of the mechanisms involved. Preliminary investigations are under way on the recovery of uranium and plutonium from aqueous Redox wastes by uranium precipitation. Further work has been done on the preparation of a Redox feed from metal waste solutions. Combinations of alkaline precipitation-metathesis, diuranate-peroxide, and uranyl hydrogen phosphate-uranyl hydroxide are being studied to determine the preferred means of removing the interfering phosphate ion and extraneous salts. Improved ruthenium removal by ozonization (decontamination factors up to 10^5) has followed the use of very fine dispersal of the ozone-bearing gas stream. Zirconium scavenger studies have been extended to establish means of minimizing plutonium holdup, and work has been started on the fundamental chemistry that would be involved in a consolidation of the present wet processing steps carried out in 231-4-5 operations.

Five billets of uranium containing only 0.03 percent U-235 were made available by Oak Ridge. Two of these billets were rolled at Lockport early in May, and have been received in rod form. These will be processed into slugs and pile tested for distortion tendencies. The other three billets are being reserved here for other experimentation.

Further research in the development of Redox analytical methods has led to the completion and preliminary testing of an all-automatic titrating unit, the "auto-titrator." This instrument performs a coulometric titration and contains an indicator device and trigger circuit that automatically stops the titration at the endpoint; many applications are foreseen.

The initial phases in the development of 234-5 analytical procedures have been practically completed; personnel from the Control Groups have been trained in most of the methods, and transfer of analytical equipment to the 234-5 Bldg. laboratory has been started.

Health Instrument Divisions

The force decreased by three. There was one Special Hazards Incident, without serious consequence.

Health Instrument Operational Division findings were generally normal. Weak points in protection were observed in the P-10 operation, and in contamination control in the canyon buildings.

Control results from the Development Division were also normal. Concern about water table contamination below the 5-6 crib in the 200-E Area has diminished.

Speculations are reported on the reason for anomalous decay rate of mixed polonium-boron sources. If confirmed, this information should be disseminated to other laboratories relying on such sources.

Biology Division control monitoring showed no exceptional result. Rabbit thyroids in the 200-W Area were 2 - 5 times more active than the stated permissible limit, but this is entirely compatible with the existing I^{131} contamination.

Plant Security and Services Divisions

The Records Control Division of the Office Services Division was organized on May 1, 1949.

There were no lost-time injuries for the month, reducing the cummulative frequency rate to 1.01.

There were 20 fire alarms in the plant area with a damage loss of $10. Grass fires accounted for the majority of fire alarms.

Employee and Community Relations Divisions

Open requisitions for additional personnel increased from 22 at the beginning of the month to 177 at the end of the month. Total plant roll decreased by 136 employees during May due to the general reduction of force. Turn-over rate,

including terminations due to lack of work, during May amounted to 2.54%. Turn-over rate, exclusive of terminations due to lack of work, amounted to 1.88%.

Employee Services Counselors made 1,323 contacts during May. Ten employees retired during May; seven were on optional retirement basis. One employee death occurred. Twenty-two suggestion awards, totaling $395, were granted. One award of $175 was given to a retired employee upon a revaluation of his suggestion. A damage suit in the amount of $42,912 was filed against J. A. Terteling and Sons for negligence in protecting an excavation. Reimbursement was made to the Company by the Washington State Department of Labor and Industries in the amount of $102,029.64, as the result of excesses created in the Pension Fund due to marriage and death of widowed pensioners.

A forty-hour, five-day training program for new supervisors was held by the Training and Program Development Group the week of May 16, with a total of 49 supervisors selected by the various divisions participating. Arrangements were made for presenting to supervisors, during the first week of June, the talk given by Mr. G. H. Pfeif, Manager of Union Relations, Schenectady, to all Division Managers and Superintendents. This presentation will be made through the use of wire recordings of Mr. Pfeif's talk. Plans are also being made for a follow-up program covering the union contract in detail with all supervisors.

The activities of the Labor Relations and Wage Rate Division during the month of May have been primarily directed toward the handling of negotiations with the Hanford Atomic Metal Trades Council and developing working arrangements for applying the resulting contract. Formal negotiations ceased on May 17, 1949, after which a number of informal discussions were held with representatives of various unions and supervision. The Company and the Union ratified the contract on May 31, 1949, contingent upon AEC approval. The N.L.R.B. conducted a payroll check to ascertain whether a substantion number of employees were involved in the petition requesting bargaining rights by Hanford Guard Local No. 21. In addition, a formal hearing was scheduled for June 8, 1949. A total of 38 grievances have been processed during the last three months in accordance with the interim grievance procedure. One reimbursement authorization was submitted to the AEC during May requesting an additional classification and three reimbursement authorizations submitted previously are pending approval.

Correction of misinformation concerning the amount of profit General Electric is to make on its contract with AEC was a project with received considerable attention from Community Relations during the month of May. This was accomplished through releases to general newspapers, and through a statement in which it was requested that ATOMIC ENERGY NEWS LETTER publish a correction to a misleading statement contained in a previous issue of that publication.

Arrangements were made to assure maximum coverage of news developments arising from current investigations under way in Washington, D. C.

Fields of activity in which Community Relations is participating increased materially during the month of May with the addition of responsibility for informing the public and, consequently, potential bidders, of General Electric's intention to call for bids on construction work outside perimeter barricades. Community Relations works with the Contract Supervisor, Design and Construction Division, on this particular assignment.

Preview showings of "By Their Works", a new 16 mm color sound film release which reveals the wide variety of General Electric's research, development, and manufacturing activities, were made during the month of May to 42 members of the assistant superintendent, assistant division head, and above group. Results of a "previewer's reaction" survey made among all who saw it during May indicate a strong feeling by a large majority that all supervisors, and all employees of the Company at Hanford Works should see the film.

General Electric's efforts to obtain bids from potential newspaper publishers received thorough publicity treatment through Community Relations during the month. In addition to informative releases to the press, each publisher also received copies of all bid forms, invitations to bid, and other papers being used.

Special Programs completed during the month included preparation of ideas and actual rough finished designs for four "Safety Topic-of-the-Month" posters. In addition, the Kadlec Open House publicity build-up and follow-up campaign was conducted, as well as the May portion of the Mobile Chest X-Ray publicity program.

Twenty-five releases were sent out during May to the nine newspapers and three radio stations on the "Community" list, and ten releases were sent to the forty-one leading Northwest daily newspapers and three radio stations on the "General" list.

Purchasing and Stores Divisions

The Purchasing and Stores Divisions, Nucleonics Department, was established May 16, 1949, (See Organization Announcement L-1) comprising the Purchasing and Stores Division formerly in the Services Divisions, Construction Procurement Division formerly in the Design and Construction Divisions and the Traffic Section formerly in the Transportation Division of the Manufacturing Divisions.

Considerable time was spent in merging the groups and reorganizing (See Organization Announcements L-2, L-3, and L-4). The personnel of the combined Purchasing and Procurement Divisions together with the Traffic Section are now housed in Building 720 which was the only space available at the time.

Following is a personnel summary indicating total number of employees of the Purchasing and Stores Divisions as of May 16, 1949, and May 31, 1949.

	Total Personnel as of 5/16/49	Total Personnel as of 5/31/49	Net Decrease
Exempt	62	52	10
Non-Exempt	188	185	3
Totals	250	237	13

In addition to the net decrease indicated above for the period 5/16/49 through 5/31/49, eight additional employees will terminate their services during the month of June.

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The combined work load for the Purchasing Division for the month indicated little change over the preceding month. Receipts of material for the month indicated a slight increase over the previous month; however, disbursements were approximately $82,000 less.

G. E. Hotaling visited Schenectady and New York City in connection with the proposed cancellation of five orders for stainless steel valued at approximately $1,250,000. Three of the firms involved agreed to accept cancellation without charge. The other two are reviewing their records in order to determine whether or not it would be necessary to make a charge for cancellation.

A contract was awarded Continental Coal Company for 200,000 tons of steam coal. Roslyn-Cascade Coal Company was awarded a contract for 60,000 tons.

A study of procedures in the Traffic Section has resulted in the elimination of many non-essential and time-consuming duties as well as a streamlining of other routine functions which should result in better service.

It was proposed by the Commission's Transportation Branch to change the name of the Milwaukee Road's Station presently known as "Hanford" to "Richland". As a result of this proposal, we submitted to the Commission under date of May 31, 1949, our views which were to the effect that no change should be made as it would result in confusion. The Commission agreed to withhold any action until further study could be made and as of the end of the month, the matter was still unresolved.

Savings in the amount of $56,365.39 on freight charges were affected during the month as a result of rate reductions obtained from the carriers.

Considerable progress was made by the Inventory Control Section of the Stores Division in perfecting plans designed to reduce inventory of surplus materials.

A total of nineteen lists of surplus materials officially declared to the Commission were transmitted during the month.

Sixty-two representatives of Government agencies and private businesses were escorted through our surplus warehouses and scrap yards for the purpose of negotiating purchase of scrap and transfer of surplus material.

The first group of condemned tract houses which the Commission authorized us to sell were shown to prospective purchasers and the bids were ready for opening and evaluation at month end.

Community Divisions

Sales of basic items indicate a downward trend in commercial activities, except in the sales of ice cream.

About eighty per cent of the facility operators renting government owned equipment have now purchased same.

Three new facilities opened for business during the month.

Installation of the "Bailey" bridge across the Yakima River at George Washington Way was completed.

One hundred seventeen house leases were executed during the month.

Thirty-four fire alarms were answered. Estimated fire loss to the Project was $462.84.

Pumping operations in the drainage ditch south of Area E was established to protect the central commercial area from river elevation in excess of 342 feet.

Sewage flow was started through the new plant on May 18, 1949.

Medical Divisions

The Medical Division roll decreased by 16 from 477 to 461.

The hospital administrator attended the annual meeting of the Washington Hospital Association, and later the Western Hospital Association meeting in San Francisco. An administrative assistant attended the Mid-west Hospital Conference. The division health officer attended the annual meeting of the Western Public Health Association in Los Angeles.

There was no evidence of injury to any employee during the month due to radiation.

Employee physical examinations were 3362 and first aid treatments 11,520; little change from the previous month.

Total absenteeism increased slightly to 2.33%, while that due to sickness only was up from 1.50% to 1.68%.

Sixteen major and twenty-five sub-major injuries were treated. Three of the sub-major injuries were sustained by G. E. employees.

The health topic-of-the-month dealt with emergency first-aid care.

The average daily hospital census was 74 as compared to 90 for April and 78 for May, 1948. Clinic visits dropped from 8074 to 7577. and were about the same as for May, 1948.

About 500 residents were guests of Kadlec on National Hospital Day.

A detailed study was completed, comparing Kadlec with 16 hospitals in Washington and Oregon, from the standpoint of operating efficiency. Dental clinic visits numbered 2635, a continued decline due to decreased population served.

The chest x-ray survey with portable unit was completed with a total of 5,718 x-rays taken. This gives about 88% coverage for Richland and North Richland.

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Net cost of operation of the Medical Division(before assessments to other divisions) was $108,726.00, about $20,000.00 less than for March. The major factor in this reduction was the decrease in the employee roll, which more than offset the decrease in revenue.

Net expense of Richland Hospital and Clinic was $4,241 as compared to $3,409 for March. This expense was made up of hospital $10,323.00, while the clinic operated at a profit of $6,082.

General Accounting Divisions

Hanford Works Financial Statements for the month of April were completed on May 17, and Nucleonics Department statements were completed on May 18, 1949. Operating Reports for General Divisions were completed on May 13, 1949.

A great deal of planning was done during the month, and through consultations with representatives from AEC and other G. E. Accounting Divisions with regard to the revised financing procedures, a total of eight releases were agreed upon as to content and were issued to all concerned outlining in detail the new practices to be followed. Substantially, the change in procedure resulted in a conversion from the original reimbursement routine whereby expenditures of Government funds were individually approved and reimbursed by AEC, to one where an AEC advance is to be made each month for that month's estimated expenditures. Cash Disbursements for month less receipts are used to reduce amount of monthly advance. Two files of vouchers are maintained, one for audit by AEC and General Accounting Office (this file is eventually transferred to General Accounting Office by AEC), and one copy for G. E. use. On June 1, 1949, this new procedure became effective.

Assistance was given General Divisions in the preparation of Budget Estimates for the last quarter of Fiscal Year 1949, Fiscal Year 1950, and 1951. After reviewing completed estimates and narratives, Budget Estimates were submitted for consolidation on May 20, 1949.

The following is a comparison of unreimbursed expenditures as of April 30, 1949, as compared with May 31, 1949:

	April 30, 1949	May 31, 1949
Billed on Public Vouchers	$ 7 261 177	$ 9 739 453
Submitted on Pre-Billing Audit Vouchers	2 382 348	2 301 472
Unbilled	3 820 836	2 998 748*
	$13 464 361	$15 039 673*

* Preliminary totals prior to final closing entries.

SECRET

STAFF

General Manager	G. R. Prout
Assistant General Manager	R. S. Neblett
Assistant to the General Manager (Technical and Education Matters)	W. I. Patnode
Assistant to the General Manager	J. R. Rue
Assistant to the General Manager and Manager of the Plant Security and Services Divisions	J. G. Lail
Department Comptroller	F. E. Baker
Counsel	L. F. Huck
Community Manager	E. L. Richmond
Manager, Design and Construction Divisions	F. R. Creedon
Manager, Manufacturing Divisions	C. N. Gross
Manager, Technical Division	A. B. Greninger
Manager, Health Instrument Division	H. M. Parker
Manager, Medical Division	W. D. Norwood, MD
Manager, Employee and Community Relations Division	H. E. Callahan
Manager, Purchasing and Stores Division	W. A. Jeffrey

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FORCE REPORT
MAY - 1949

	Non-Exempt		Exempt		Total	
	4-29-49	5-31-49	4-29-49	5-31-49	4-29-49	5-31-49
GENERAL	18	20	11	11	29	31
LAW DIVISION	3	3	4	4	7	7
DESIGN & CONST. DIVISIONS						
Administrative	24	23	5	5	29	28
Construction	134	121	141	137	275	258
Construction Accounting	67	64	8	8	75	72
Design	124	124	117	123	241	247
Procurement	14	-	37	-	51	-
North Richland Realty	191	159	24	22	215	181
MANUFACTURING DIVISIONS						
General	2	2	6	6	8	8
Project Engineering	69	69	55	55	124	124
Manufacturing Accounting	45	41	7	7	52	48
OPERATIONS DIVISIONS						
"P" Division	257	254	71	70	328	324
"S" Division	264	266	72	71	336	337
Power	382	391	77	77	459	468
MECHANICAL DIVISIONS						
Maintenance	415	421	68	68	483	489
Electrical	223	223	47	46	270	269
Instrument	168	169	44	43	212	212
Transportation	591	575	62	62	653	637
TECHNICAL DIVISIONS						
Technical General	1	1	6	6	7	7
Pile Technology	19	20	56	55	75	75
Separations Technology	62	58	94	99	156	157
Metallurgy & Control	331	316	114	113	445	429
MEDICAL DIVISION	385	371	96	94	481	465
H. I. DIVISION	220	216	96	96	316	312
ACCOUNTING DIVISIONS						
Accounting - Payroll	69	63	14	14	83	77
Accounting - All Others	84	83	6	7	90	90
EMPLOYEE & COMMUNITY RELATIONS	46	44	26	27	72	71
SERVICE DIVISIONS						
PLANT SECURITY & SERV. DIV'S.						
Patrol & Security	530	518	57	56	587	574
Safety & Fire	111	111	37	37	148	148
General & Office Services	227	233	20	20	247	253
PURCHASING & STORES DIVISION	167	185	26	53	193	238
COMMUNITY DIVISIONS	621	601	150	145	771	746
GRAND TOTAL	5,864	5,745	1,654	1,637	7,518	7,382

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PERSONNEL DISTRIBUTION - MAY-1949

	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
GENERAL										
Clerical	-	-	-	-	-	-	-	-	11	11
Total	-	-	-	-	-	-	-	-	20	20
	-	-	-	-	-	-	-	-	31	31
LAW DIVISION										
Clerical	-	-	-	-	-	-	-	-	4	4
Total	-	-	-	-	-	-	-	-	3	3
	-	-	-	-	-	-	-	-	7	7
DESIGN & CONSTRUCTION DIVISIONS										
ADMINISTRATIVE										
Supervisors	-	-	-	-	-	-	-	-	4	4
Engineers	-	-	-	-	-	-	-	-	1	1
Clerical	-	-	-	-	-	-	-	-	23	23
Total	-	-	-	-	-	-	-	-	28	28
CONSTRUCTION										
Supervisors	-	-	-	-	-	-	10	22	-	32
Engineers	-	20	-	-	6	-	14	22	13	75
Clerical	-	10	-	-	1	1	8	61	4	85
Others	-	25	-	-	2	-	29	6	4	66
Total	-	55	-	-	9	1	61	111	21	258
CONSTRUCTION ACCOUNTING										
Supervisors	-	-	-	-	-	-	-	8	-	8
Clerical	-	-	-	-	-	-	-	63	-	63
Others	-	-	-	-	-	-	-	1	-	1
Total	-	-	-	-	-	-	-	72	-	72

	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
DESIGN & CONSTRUCTION DIVISIONS										
DESIGN										
Supervisors	-	-	-	-	-	-	-	-	14	14
Engineers	-	-	-	-	-	-	-	-	115	115
Clerical	-	-	-	-	-	-	-	-	59	59
Others	-	-	-	-	-	-	-	-	59	59
Total	-	-	-	-	-	-	-	-	247	247
NORTH RICHLAND REALTY										
Supervisors	-	-	-	-	-	-	-	22	-	22
Engineers	-	-	-	-	-	-	-	4	-	4
Clerical	-	-	-	-	-	-	-	26	-	26
Others	-	-	-	-	-	-	-	129	-	129
Total	-	-	-	-	-	-	-	181	-	181
MANUFACTURING DIVISIONS										
GENERAL										
Supervisors	-	-	-	-	-	-	-	-	6	6
Clerical	-	-	-	-	-	-	-	-	2	2
Total	-	-	-	-	-	-	-	-	8	8
PROJECT ENGINEERING										
Supervisors	-	-	-	-	1	-	-	-	14	15
Engineers	-	-	-	-	2	2	-	-	36	40
Drafting Personnel	-	-	1	-	5	1	-	-	30	37
Clerical	-	-	-	-	1	-	-	-	15	16
Others	-	-	-	-	3	-	-	-	13	16
Total	-	-	1	-	12	3	-	-	108	124

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	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
MANUFACTURING DIVISIONS										
OPERATING DIVISIONS										
"P" DIVISION										
Supervisors	15	17	17	-	-	15	-	-	6	70
Operators	46	52	48	-	-	96	-	-	-	242
Clerical	2	2	1	-	-	3	-	-	4	12
Total	63	71	66	-	-	114	-	-	10	324
"S" DIVISION										
Supervisors	-	-	-	30	35	-	-	-	6	71
Operators	-	-	-	102	149	-	-	-	-	251
Clerical	-	-	-	5	7	-	-	-	3	15
Total	-	-	-	137	191	-	-	-	9	337
POWER										
Supervisors	16	22	14	6	7	1	6	-	-	72
Engineers	-	-	-	-	-	-	5	-	-	5
Operators	96	84	84	24	40	10	1	-	-	339
Clerical	1	1	1	-	1	-	5	-	-	9
Others	10	8	9	5	7	4	-	-	-	43
Total	123	115	108	35	55	15	17	-	-	468
MECHANICAL DIVISIONS										
MAINTENANCE										
Supervisors	2	8	7	5	15	6	12	-	2	57
Engineers	-	3	1	-	-	-	1	-	6	11
Mechanics	22	50	34	36	74	51	69	-	-	336
Clerical	-	3	2	2	2	2	5	-	1	17
Others	3	9	4	5	16	10	21	-	-	68
Total	27	73	48	48	107	69	108	-	9	489

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	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
MECHANICAL DIVISIONS										
ELECTRICAL										
Supervisors	2	2	5	1	5	3	2	-	21	41
Electricians	15	12	14	11	14	15	-	-	96	177
Clerical	1	-	1	-	1	1	2	-	6	12
Others	1	1	3	1	5	2	2	-	24	39
Total	19	15	23	13	25	21	6	-	147	269
INSTRUMENT										
Supervisors	3	4	2	2	4	6	-	-	4	25
Engineers	2	-	-	-	1	8	-	-	7	18
Mechanics	7	5	8	7	15	20	-	-	8	70
Clerical	1	1	1	1	1	5	-	-	4	14
Others	7	9	9	8	11	35	-	-	6	85
Total	20	19	20	18	32	74	-	-	29	212
TRANSPORTATION										
Supervisors	3	2	2	1	1	1	18	-	34	62
Drivers (Based on areas served)	2	9	5	3	5	7	168	-	40	239
Mechanics	9	1	1	-	4	-	1	-	66	82
Traimnen	-	-	-	-	-	-	31	-	-	31
Laborers	5	14	3	6	4	7	20	-	11	70
Clerical	-	-	-	-	-	1	10	-	11	22
Others	6	7	8	1	12	3	37	-	57	131
Total	25	33	19	11	26	19	285	-	219	637

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	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
TECHNICAL DIVISIONS										
TECHNICAL GENERAL										
Supervisors	-	-	-	-	-	-	-	-	6	6
Clerical	-	-	-	-	-	-	-	-	1	1
Total	-	-	-	-	-	-	-	-	7	7
PILE TECHNOLOGY										
Supervisors	1	1	-	-	-	10	-	-	-	12
Chemists-Engineers-Physicists	6	6	2	-	-	31	-	-	-	45
Laboratory Assistants	3	4	1	-	-	6	-	-	-	14
Clerical	-	1	-	-	-	2	-	-	-	3
Others	-	-	-	-	-	1	-	-	-	1
Total	10	12	3	-	-	50	-	-	-	75
SEPARATIONS TECHNOLOGY										
Supervisors	-	-	-	1	5	19	-	-	1	26
Chemists-Engineers & Tech. Grads.	-	-	-	5	15	55	-	-	1	76
Laboratory Assistants	-	-	-	-	-	8	-	-	-	8
Clerical	-	-	-	-	1	8	-	-	1	10
Others	-	-	-	-	1	36	-	-	-	37
Total	-	-	-	6	22	126	-	-	3	157
METALLURGY & CONTROL										
Supervisors	1	2	-	6	7	32	-	-	6	54
Chemists-Engineers-Metallurgists & Technologists & Technical Graduates	2	5	1	13	13	98	-	-	1	133
Laboratory Assistants	1	5	2	38	16	89	-	-	-	151
Clerical	-	-	-	1	1	38	-	-	33	73
Others	-	-	-	-	-	18	-	-	-	18
Total	4	12	3	58	37	275	-	-	40	429

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	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
MEDICAL DIVISION										
Physicians	-	-	-	-	-	-	-	8	29	37
Dentists	-	-	-	-	-	-	-	2	9	11
Technicians	1	1	-	1	1	-	-	4	24	32
Clerical	1	1	-	1	1	1	-	19	77	101
Others	7	1	5	4	5	2	-	24	236	284
Total	9	3	5	6	7	3	-	57	375	465
H. I. DIVISION										
Supervisors	1	1	3	3	10	15	-	-	8	41
Engineers	5	3	10	10	19	7	-	-	1	55
Clerical	-	-	2	1	1	3	-	-	5	12
Others	8	12	21	34	61	55	5	-	8	204
Total	14	16	36	48	91	80	5	[illegible]	22	312
ACCOUNTING DIVISIONS										
ACCOUNTING-PAYROLL										
Supervisors	-	-	-	-	-	-	-	-	14	14
Clerical	-	-	-	-	-	-	-	-	63	63
Total	-	-	-	-	-	-	-	-	77	77
ACCOUNTING-ALL OTHERS										
Supervisors	-	-	-	-	-	-	-	-	7	7
Clerical	-	-	-	-	-	-	-	-	83	83
Total	-	-	-	-	-	-	-	-	90	90
EMPLOYEE & COMMUNITY RELATIONS DIV.										
Supervisors	-	-	-	-	-	-	-	-	25	25
Employee Relations Counselors	-	-	-	-	-	-	-	-	2	2
Clerical	-	-	-	-	-	-	-	-	37	37
Others	-	-	-	-	-	-	-	-	7	7
Total	-	-	-	-	-	-	-	-	71	71

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	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
PLANT SECURITY & SERVICE DIVISIONS										
PATROL & SECURITY										
Supervisors	4	6	11	5	9	7	10	-	4	56
Patrolmen	37	46	127	65	120	64	9	-	34	502
Clerical	-	-	-	-	-	-	12	-	1	13
Seamstress	-	-	-	-	-	-	3	-	-	3
Total	41	52	138	70	129	71	34	-	39	574
SAFETY & FIRE										
Supervisors	9	-	-	-	4	5	9	-	10	37
Firemen	38	-	4	-	14	14	-	-	14	84
Inspectors	5	4	4	4	1	1	3	-	1	23
Clerical	-	-	-	-	-	-	2	-	2	4
Total	52	4	8	4	19	20	14	-	27	148
GENERAL & OFFICE SERVICES										
Supervisors	-	-	1	2	2	-	-	-	17	22
Laundry Operators	-	-	-	-	8	-	-	-	1	9
Janitors-Servicemen	4	6	8	6	12	14	-	-	34	84
Office Machine Operators	-	-	-	-	-	-	-	-	44	44
Clerical	-	-	-	-	-	-	-	-	38	38
Others	-	-	-	-	27	-	-	-	29	56
Total	4	6	9	8	49	14	-	-	163	253
PURCHASING & STORES DIVISION										
Supervisors	-	-	-	-	-	-	10	5	37	52
Others	1	-	-	-	2	-	-	21	162	186
Total	1	-	-	-	2	-	10	26	199	238

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	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
COMMUNITY DIVISIONS										
Supervisors	-	-	-	-	-	-	-	23	122	145
Patrolmen	-	-	-	-	-	-	-	27	28	55
Firemen	-	-	-	-	-	-	-	47	58	105
Mechanics	-	-	-	-	-	-	-	-	137	137
Laborers	-	-	-	-	-	-	-	-	45	45
Truck Drivers	-	-	-	-	-	-	-	-	40	40
Power Operators	-	-	-	-	-	-	-	-	56	56
Clerical	-	-	-	-	-	-	-	-	85	85
Others	-	-	-	-	-	-	-	-	78	78
Total	-	-	-	-	-	-	-	97	649	746
GRAND TOTAL	412	486	487	462	813	955	540	544	2683	7382

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MANUFACTURING DIVISIONS

MAY 1949

SUMMARY

Operations Divisions

A total of 44 tons of metal was discharged from the three piles at an average concentration of 285 MWD/ton. The operating efficiency was 87.9 percent and the nominal power level of 275 M.W. was maintained throughout the month except at D pile which was operated at 290 M.W. after May 23, 1949. The new D pile level is the highest yet achieved at Hanford.

Class IV metal (alpha-rolled, triple-dipped, but not 100% beta transformed) continued to give difficulty when discharged at concentrations above 320 MWD/ton. Future discharges of this metal, amounting to approximately 70 tons total, will be at concentrations not higher than 320 MWD/ton. Class V material (completely beta transformed Class IV metal) continued to be satisfactory at high concentrations. One ton was pushed at 368 MWD/ton.

A total of 55 tons of acceptable slugs was canned in May at a yield of 90.9 percent. The machining yield continued to improve as a result of better quality rods, the May yield of 71.6 percent representing a new high.

A total of 44 batches was processed through the Separations operation.

Mechanical Divisions

The Traffic Section of the Transportation Division was transferred to the Purchasing and Stores Division as of May 16, 1949.

Expansion Problems Section

In addition to continuing activities on the 100-H Area Program, the Redox Program, and the Rala Program, the Section prepared for and participated in the initial stages of design effort for a DR Water Works.

100-H Area

Construction progress has been generally satisfactory. Packing of the process unit was completed on May 17, 1949. A total of only twelve days was used for this work. There was no need for any tailoring and tolerances were nowhere exceeded. The care and cleanliness exercised on the job was excellent. The Section arranged for P Division checking on the packing. Coverage on all shifts was provided.

C. N. GROSS, MANAGER
MANUFACTURING DIVISIONS

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MANUFACTURING DIVISIONS

PATENT REPORT SUMMARY
FOR
MONTH OF MAY, 1949

Richland, Washington
June 10, 1949

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
R. M. Frederick (S Division)	Impact wrench overshot for retention of nuts.
L. M. Vik (Instrument Division)	Transducer Audio Amplifier

C. N. Gross

C. N. GROSS

MANAGER, MANUFACTURING DIVISIONS

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MANUFACTURING EXPANSION PROBLEMS SECTION

MAY 1949

GENERAL

In addition to continuing activities on the 100-H Area Program, the Redox Program, and the Rala Program the Section prepared for and participated in the initial stages of design effort for a DR Water Works.

ORGANIZATION

J. P. Langan of the Power Division was appointed Contact Engineer for the DR Water Works, effective May 27, 1949, and will serve as supervisor of the DR Water Works Group of the Section.

ACTIVITIES

1. Redox

A Redox Plant Design Committee was formally established on May 19, 1949, in accordance with Organization Announcement No. A-28. Membership of this Committee is made up of E. W. Seckendorff, Redox Design Division (Chairman); O. H. Greager, Technical Divisions; W. I. Patnode, Management; W. K. MacCready, Manufacturing Divisions.

This group will coordinate and expedite the broad aspects of the Redox Program in accordance with a general outline of responsibilities as presented in Organization Announcement No. A-28.

During the month three letters were received
(F. C. Schlemmer to G. R. Prout, May 2, 1949, GE-H-14,583
" " May 10, 1949, GE-H-14,629
" " May 12, 1949, GE-H-14,632)
which, in total, outline the general scope and scheduling requests of the Atomic Energy Commission for that portion of the Redox Program dealing with the first main production plant. Rescoping work, which was already under way was continued with greater firmness and in more detail on the basis provided by these communications from the Atomic Energy Commission. As a result of authorization contained in the May 12, letter (Document No. GE-H-14,632) work was initiated on the Stored Metal Waste phase of the Redox Program. At month-end reports, data and drawings had been obtained from the Kellex Job 11 group and a review of the Job 11 process development status and the Kellex laboratory facilities had been completed.

2. Rala

The Rala Group completed preparation of Specification Letters at month-end in accordance with schedule.

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[redacted]

Manufacturing Expansion Problems Section

During the month a "Project Proposal for Budget Purposes Only" was submitted by the Design Division. The Rala Group of the Section assisted by supplying information concerning phases of the program scheduled to be covered in Specification Letters due at a later date. The Group did not review the Budget Purpose Project Proposal prior to its submittal. This Project Proposal, while admittedly tentative and based on incomplete information indicates a total expenditure of $2,252,000 which confirms other study indications that provision of a Rala facility at Hanford for $750,000 is not feasible.

A letter to the Atomic Energy Commission (Production of Rala, C. N. Gross to F. C. Schlemmer, May 27, 1949, Document No. HW-13514) was submitted indicating that construction of a Rala facility could be achieved by July 1, 1950, if a directive is received soon after issuance of a Project Proposal (scheduled by June 30, 1949), that the Head End of 221-T Building could be used and that the cost would exceed $750,000 by a factor of two or three as indicated in the Budget Purpose Project Proposal (HDC-1210). This answered questions in a letter dated March 12, 1949, F. C. Schlemmer to G. R. Prout - PPR:DGS, Document No. GE-H-14,355. A review of the Rala Program was requested in the light of these answers.

3. 100-H Area and 105-DR (Production)

105-DR

107 Basin repairs continue. Indications are that construction forces will require all of June to complete this work. Work Order items continued to receive attention. Completion of these items in June is anticipated except in those cases where material for the jobs may not have arrived.

100-H

Construction progress has been generally satisfactory. Packing of the process unit was completed on May 17, 1949. A total of only twelve days was used for this work. There was no need for any tailoring and tolerances were nowhere exceeded. The care and cleanliness exercised on the job was excellent. The Section arranged for P Division checking on the packing. Coverage on all shifts was provided.

The use of aluminum rear-face nozzles and galvanized front-face nozzles has been approved. Although procurement has been initiated no firm delivery dates are available. Whether these improved nozzles will be available for installation prior to the start-up date is a matter of concern to the Group.

All 105-H Area procedures have been prepared with the exception of one which is being written by the Design Division. Arrangements for the carrying out of Acceptance Tests have been agreed upon with the Construction Division.

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4. 100-H and 105-DR (Power)

105-DR

Only clean-up items being carried out by Maintenance forces on Construction Work Orders remain.

100-H

Progress of construction has been generally satisfactory. Electrical work is somewhat behind.

The reservoir was tested with two feet of water starting May 27, 1949. A check on May 31, 1949, indicated that both sides of the reservoir were holding satisfactorily.

Nearly all structures are nearing completion, and equipment and piping installation is well along. Acceptance testing may start next month.

5. 100-DR (Power)

A letter, F. C. Schlemmer to G. R. Prout, dated May 19, 1949, requested immediate initiation of design for a water works and auxiliaries necessary to permit simultaneous operation of D and DR Piles.

As a result of this letter design effort has been initiated in accordance with the general scope as outlined in Work Authority - Study GEO-7, PM-1600, HDC-1242. A contact engineer and group supervisor in the Section has been appointed and the Section rendered general assistance in the preparation of the Work Authority.

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P DIVISION

MAY - 1949

I. GENERAL

The nominal operating level for both B and F Piles was 275 M.W. throughout the month except for outages listed under Area Activities. The D pile operated at 275 M.W. until May 23 when the nominal level was raised to 290 M.W. in the first step of the program covered in Production Test No. 105-260-P to evaluate the feasibility of operating piles at higher power levels.

A total of 44 tons of metal, at an average concentration of 285 MWD/ton, was discharged from the piles during the month.

Considerable difficulty was experienced during the month with stuck tubes containing Class IV (alpha-rolled, triple-dipped, randomly transformed) metal. A total of nine tubes with concentrations in the range of 320-370 MW/ton was encountered. As a result of these difficulties with the Class IV material, future discharges of this type metal will be limited to concentrations in the range 300-320 MWD.

Approximately one ton of Class V (alpha-rolled, triple-dipped, completely transformed) metal was discharged at a concentration of 368 MW/ton for test purposes. Inspection of this material indicated that all the slugs were in satisfactory condition.

All three piles were scheduled down on May 4 and May 25 to allow the Electrical Division to make a tie-in to the 230 KV lines for 100-H Area.

II. ORGANIZATION AND PERSONNEL

Number of Employees on Payroll - May, 1949

Beginning of Month	325
End of Month	322
Net Decrease	3

Two operators and one steno-typist terminated voluntarily.

R. O. Mehann was transferred from Chief Supervisor of the 300 Area to Chief Supervisor in 100-B.

W. W. Windsheimer was transferred from Chief Supervisor of 100-B Area to Chief Supervisor of the 300 Area.

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E. P. Lee visited the Mallinckrodt Chemical Company in St. Louis, Missouri, and the Simonds Saw and Steel Company in Lockport, N. Y., on May 2 and May 3 to inspect ventilation and rolling mill equipment.

III. AREA ACTIVITIES

PILE SUMMARY	PILE B	PILE D	PILE F
Time Operated (%)	91.1	88.9	87.0
Operating Efficiency (%)	90.1	87.9	85.8
*Power Level (M. W.)	275	290	275
*Inlet Water Temperature (°C)	14.0	13.8	13.6
*Outlet Water Temperature (Maximum °C., 10 tubes, 0.240" zone)	55.8	53.1	54.4
Number of Scrams	1	0	1
Number of Purges	3	2	1
Helium Consumption (cu. ft.)	52,953**	69,894	56,298**
Metal Discharged (tons)	17.34	9.91	16.53
Inhours Gained (this month)	21	8	24
*Inhours Poisoned	454	532	509
*Inhours in Rods	113	72	49

* Month end figures.
** Includes losses incident to unloading helium car.

PILE BUILDING

Outage Breakdown

Date of Outage	Scheduled: Metal Discharged	Scheduled: Maintenance	Unscheduled	Length of Outage (Hours)
5-3-49 to 5-6-49	F	F		71.7
5-4-49		B		17.0
5-4-49	D	D		21.2
5-11-49	B			16.8
5-18-49	D			23.1
*5-21-49	B		B	16.2
*5-22-49			F	0.1
5-25-49	F			21.8
5-25&26	D			36.1
5-25-49		B		16.1
**5-27-49	D			3.3

* Unit scrammed due to failure of No. 1 Beckman.
** Unit down to discharge temporary poison.

OPERATING EXPERIENCE

Production tests having operational significance are reported below:

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P Division

105-81-P (Probe Tests on Top Central Tubes)
The tubes listed below successfully passed probes as indicated:

1.485"		
4674-F	4586-B	4679-B
4561-B	4668-B	

105-114-P (Van Stone Flange Corrosion Studies)
An inspection of Van Stone flanges which have been operating under the following conditions was found to be satisfactory:

(a) Seven tubes with aluminum front face nozzles and four with aluminum rear face nozzles.
(b) Four nozzles containing coated formed aluminum gaskets. There was evidence of gasket failure and Cranite gaskets were installed.
(c) Seven rear and six front nozzles, which had formerly contained sacrificial Mg-Al alloy gaskets.

105-168-P (Replacement of Pile Helium Atmosphere with CO_2)
The CO_2 concentration in the F pile was maintained at 46% until May 10 when it was increased in increments of 3% until a concentration of 60% was reached on May 13. The CO_2 concentration at B and D piles was maintained at 40% throughout the month. No unexpected changes in operating conditions were observed at any of the piles.

105-214-P (Supplement B - Silica Feed Reduction)
The silicate concentration in the process water was reduced from 2.5 ppm to 0 ppm at F Area on May 18. A marked reduction in the rate of pressure drop build-up was observed. No change in effluent water activity was noted.

The silicate addition at B Area was increased on May 18 from 1.5 to 2.5 ppm to provide control studies for the lowered feed at F Area. D Area silicate feed remained at 2.5 ppm.

105-260-P (Increase in Power Level)
The nominal level of the 105-D pile was increased to 290 M. W. on May 23 in accordance with this production test. No unusual or unexpected conditions have been observed at the higher level.

An unscheduled outage occurred at B Area on May 21 when a voltage regulating tube in the No. 1 Beckman failed. No. 17 Vertical Safety Rod winch failed with the rod in the unit and the time consumed in removing the rod with special equipment exceeded the time available for returning to nominal level. The down time was used for a regular charge-discharge.

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The use of Mark II segmented discharge equipment on two tubes at D Area on May 18 and on two tubes at B Area on May 25 proceeded without incident. All four tubes were discharged satisfactorily leaving one quarter of the old charge in the tube but were subsequently loaded with new metal. This program to familiarize the operating crews with the equipment will continue.

The following tubes, which contained Class IV metal, were discharged with difficulty and required special handling as noted:

Tube No.	Date Discharged	Remarks
1665-F	May 5	Required forces up to 3500#.
3195-F	May 5	Required forces up to 3500#.
1163-F	May 25	Required forces up to 3500#.
1184-F	May 25	Required forces up to 3500#.
3089-D	May 25	Required forces up to 5500#.
1459-D	May 25	Required forces up to 4000#.
1488-D	May 25	Required forces up to 1000#.
1659-D	May 25	Required forces up to 1000#.
1758-D	May 25	Required forces up to 5000#.

Mechanical Experience

All Horizontal and Vertical Safety Rods are in satisfactory operating condition at month end with the exception of No. 28 Vertical Safety Rod at D Area. During the start-up of D pile on May 26, this rod bound upon withdrawal under power and was raised mechanically. It is now tied out of service pending an investigation of the binding.

Occasional difficulty is still being encountered with Vertical Safety Rods #19, 33, and 38 at the F pile. These rods sometimes fail to enter the pile completely by as much as one foot.

Work of an unusual nature performed on Safety Rods during the month included:

1. A standard type rod guide which had been shortened 22 inches was installed in #14 Vertical Safety Rod position at D Area on May 18. Borescopic examination of the thimble revealed scratches on the rear side for about four feet into the thimble. Beyond this point the thimble is scratched on the front side almost to the bottom. The thimble was not replaced, as a pneumatic test indicated that it was satisfactory for further service.

2. On May 4 the rod guide, thimble, and step plug of #20 V.S.R. at F Area were removed, disclosing a kink in the thimble just below the rod guide. A traverse of the rod opening indicated 3½" movement toward the far side. The sharp discontinuity, which had caused kinking, was relieved by installing a step plug 15 inches shorter than normal. A new thimble was installed.

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Soon after reassembly, the rod was found to bind under normal operation. This was corrected on May 25 by substitution of a new knuckle rod with the tip sections shortened to 25½", in conformity with the remainder of the rod.

3. Binding of No. 14 Vertical Safety Rod at 100-F Area was relieved on May 25 by installing a new short rod guide and the knuckle rod from No. 20 position. The No. 14 thimble was rotated 90° clockwise to distribute the wear.

The rear far neoprene seal between rows 18-46 and a section of the far side top seal, which had become taut, were replaced during the shutdown of May 3-6 in 100-F Area.

The stainless steel chute liners at D and F Areas were re-anchored to the concrete on May 18 and May 4, respectively.

Process Tube No. 1674-B, which had been used in PT-105-245-P (Poison Effectiveness of Cadmium Coated Splines) was replaced on May 4, 1949. Tube No. 2695-F, which had been discharged with difficulty on April 5, was replaced on May 4.

An inspection of the front Van Stone flanges of Tubes Nos. 2451-B and 2496-B on May 11 revealed a slight rippling of the tube at the flange. The flange of 2451-B was replaced. On May 25 the front and rear flanges of 2451-B was replaced. On May 25 the front and rear flanges of 2451-B, 2496-B, 2552-B, and 2595-B were inspected. Restriction of the inside diameter up to 130 mils by rippling was evident on the front flanges of all tubes except 2552-B. The condition of the rear flanges was good. Further investigation is planned.

Pile Development

1. The successful elimination of the silicate addition to the process water (refer to PT-105-214-P, Supplement B, this report) will result in a savings of $60,000 annually in chemical additions provided experience to date is confirmed by continued operation.

2. The adoption of an improved type of assault mask at 100-F Area during May resulted in better comfort, visibility, and freedom of movement for the wearer. Considerable savings are realized by improved personal efficiency of the worker while required to wear a mask.

3. The frequency of checking relief valves for air, water, and steam was revised from a six months to a twelve months schedule. This results in an $800 per year saving for each area.

4. The bucket loading procedure for discharged metal has been revised to eliminate 25% of present transportation requirements. This will result in a reduction of one of the train crews formerly required for the 100 Areas-200 Area run. It is estimated that this will result in a saving of $70,000 annually.

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GAS PROCESSING BUILDING

Sudden increases in the condensate recovery rate of #1 Drier at B Area on May 10 and on #2 Drier on May 25 were traced to leaking steam coils which were repaired.

SPECIAL HAZARDS

The gamma dosage rate from the beam at the top far edge of the F pile is still increasing and now shows a dosage rate of 3300 mr/hr at month end as compared to 3020 mr/hr last month.

300 AREA - METAL FABRICATION

Production Statistics

Production for the month of May was as follows:

Billets Produced	22 Tons
Rods Machined	99 Tons
Bare Pieces Machined	71 Tons
Acceptable Pieces Canned	55 Tons

Melt Plant

The casting yields were as follows:

	April	May	To Date 1949
Billet	67.2	71.3	67.8
Solid Metal	88.1	83.2	86.0

The Melt Plant was operated on a one-shift five-day week schedule until May 23, after which the schedule was increased to a two-shift five-day week. The latter was done to expedite the casting of a backlog of approximately 80 tons of scrap.

Billet yield increased appreciably as a result of approximately 45 percent of the TXB charged being processed from pickled chips. The solid yield was adversely affected by the ignition of two charges prior to processing and the charging of a large amount of remelt.

On May 16 the Stokes pumps failed to provide a vacuum on "B" furnace. An investigation revealed that a large quantity of water had been pulled into the vacuum lines and Stokes pumps from a water leak in No. 2 coil of "B" furnace. The necessary repairs were made and operation of "A" furnace was resumed on May 19 and "B" furnace on May 20.

Beginning on May 19, all billets were cast with a 30° chamfer on the bottom ends as outlined in Document No. HW-13077 (Authorization for Process Change - 300 Area). It is expected that a reduction of 1.5% in solid scrap will

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result in the machining of rods rolled from these billets.

Four additional heats were run from charges containing slug recovery rejects to determine the possible causes of high silicon in billets. Since billet analysis has indicated that sufficient heats have been run for final analysis of the test by the Statistical Group, the production phase of this test has been completed.

Machining

Machining yields were as follows:

% Yield		
April	May	To Date 1949
70.5	71.6	68.9

The machining yield continued at a favorable trend. Rods rolled at Simonds from Electro-Met billets showed a marked improvement in quality. A number of rods rolled at Vulcan had ridges or fins ranging from 0.010" to 0.015" in height extending the full length of the rods. This condition resulted in an abnormal roller turner tool mortality. Rod diameters varied within a range of 1.418" to 1.462" on all stock machined during the month.

Chip Recovery

The Chip Recovery yield was as follows:

% Yield		
April	May	To Date 1949
92.6	89.4	90.5

The entire Chip Recovery process was operated four shifts, with the press operating an additional eight shifts. A total of 39,897 pounds of TXB was produced, of which approximately 73 percent was processed from pickled chips.

The material burned in the Oxide Burner was as follows:

Weight Out - Pounds		
April	May	To Date 1949
13,123	27,754	86,124

The oxide burner was operated on a one-shift five-day week schedule until May 9, at which time the schedule was increased to a two-shift five-day week. The latter was done to expedite the burning of a backlog of approximately 48 tons of raw oxides.

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Oxides originating in the Melt Plant, and taken from storage for burning, contained high quantities of free metal. This fact has made it necessary to reburn large amounts of oxide to reduce the free metal below the allowable two percent.

Canning Operation

The canning yield was as follows:

	% Yield		
	April	May	To Date 1949
	90.5	90.9	90.8

Canning rejects by cause were:

	Percent		
	April	May	To Date 1949
Non Seating	0.3	0.5	0.8
Marred Surface	2.5	2.2	2.7
AlSi on Outside of Can	1.2	1.0	0.9
Frost Test	3.2	3.7	2.4
Bad Welds	0.6	0.7	0.7
Miscellaneous	1.7	1.0	1.7
	9.5	9.1	9.2

Frost test rejects continue to be a problem with no conclusive evidence of the actual causes. Reductions in this type of reject, as well as others, have been achieved through emphasis on quality. The effect of can age on cleaning and wetting was investigated as a possible cause of frost test rejects. Results indicated that there was little or no difference in old and new cans taken from storage. In addition, the dimensional changes of slugs during alpha-beta transformation in the canning operation were reinvestigated to determine if differences in diameter expansion might be contributing to frost test rejects. Dimensional changes were found to be the same as they were before difficulty was encountered with the frost test rejects.

The following special request pieces were canned:

Request No.	Contents	No. of Pieces
13-5	Beryllium Nitride	12
65-8	*Lithium Aluminum Alloy	113

In addition 84 papoose slugs, 1700 poison slugs, and 2545 lead slugs were canned.

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P Division

Slug Recovery

	% Recovered		Average Wt.- Lbs.	
	May	To Date 1949	May	To Date 1949
Z Slugs	88.7	87.2	3.910	3.911
X Slugs	9.3	10.5	3.860	3.858
Rejects	2.0	2.3	--	--
	100.0	100.0		

Inspection and Testing

Autoclave rejects were as follows:

April	May	To Date 1949
0.09/M	0.13/M	0.06/M

Four autoclave failures occurred in May. Two pieces were completely destroyed, one was ruptured at the base of the cap, and one had a slight swelling of the can wall about two inches above the base of the can.

Penetration within 0.010" of the outer can wall was found on the original test sample taken from "G" canning line on May 17 and 24, respectively. The three retest samples taken from both days' production on G line did not show penetration within 0.010" and the pieces involved were released for normal processing. A total of fourteen pieces tested during the month was penetrated within 0.015" of the outer can wall.

The "as received" quality of cans, caps, and sleeves inspected was as follows:

	% Usable (4")		
	April	May	To Date 1949
Aluminum Cans	92.1	92.3	94.6
Aluminum Caps	97.0	96.5	94.5
Steel Sleeves	92.5	92.9	87.5

Material Handling

A total of 167 tons of alpha rolled rods was received from Simonds Saw and Steel Company and 7.5 tons of solid scrap (UM and G) were shipped to Los Alamos.

305 Test Pile

The test pile was operated on a one-shift, five-day week schedule. A total of 81 tests was run on canned slugs, 63 on billet eggs, 482 on graphite, and the following on special work requests:

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Request No.		No. of Tests
80	To determine an accurate dih value for bars which are to be used in a special test.	6
81	To irradiate a slug to determine difference in flux between the inside and outside of the slug using uranium wire.	3
82	To calibrate the graphite stringer with boron to get a ratio of dih to absorption cross-section using a 1/v absorber.	12
83	To test daily the vacuum sweepings from the lay-up of "H" pile to guard against possible sabotage.	12
84	To determine reactivity of samples of lubricant and oil using a graphite stringer and slotted bar with "F" standards.	8
85	Irradiate a gold foil to make possible the study of the 2.7d activity and, in particular, to use the foil irradiated in a known flux to standardize a G. M. counting set up.	1
86	To determine whether a temperature indicating liquid, trade name "Templiaq", will withstand exposure to radiation in a pile.	1
87	To determine presence of boron in welding flux.	5

Special Hazards

No unusual conditions developed during the month.

Development

A study of the Chip Recovery press cycle was completed to evaluate the effect of a cooling coil installed in the oil reservoir of the hydraulic system. It was found that the daily production capacity of the press was increased from approximately 400 to 460 briquettes through the installation of the cooling coil.

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S DIVISION

MAY, 1949

OPERATING SECTION

I. GENERAL

Forty-four batches were started in the Canyon Buildings and forty-four batches were processed through the Concentration Buildings and the Isolation Building. The average purity for the completed batches was 98.5 percent.

The over-all material balance for the T and B Plants (including the Isolation Plant) averaged 95.2 and 97.3 percent, respectively, for a combined average of 96.0 percent. Waste losses for the two plants averaged 2.3 percent.

Canyon and Concentration Building Production Performance Data - (5-1-49 to 5-31-49, inclusive)

	B Plant	T Plant	Combined
Number of charges started	23	21	44
Number of charges completed	17	27	44
For completed charges:			
Percentage of starting product in waste:			
This month	2.3(a)	2.3(a)	2.3
Last month	2.5(b)	2.5(b)	2.5
Cumulative to date	4.5(c)	4.3(c)	4.4
Percentage of starting product recovered:			
This month	95.0	92.9	93.7
Last month	99.4	96.8	98.4
Cumulative to date	97.3	95.3	96.3

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S Division

	B Plant	T Plant	Combined
Percentage of starting product accounted for:			
This month	97.3	95.2	96.0
Last month	101.9	99.3	100.9
Cumulative to date	101.8	99.6	100.7
Gamma decontamination factor (Log.)			
This month	7.53	7.72	7.64
Last month	7.51	7.66	7.57
Cumulative to date	7.35	7.34	7.35

(a), (b), (c): Include waste from processing recycle. The recycle wastes are estimated as: (a) 0.017%-T Plant; 0.012%-B Plant. (b) 0.010%-T Plant; 0.010%-B Plant. (c) 0.111%-T Plant; 0.008%-B Plant.

Isolation Building Performance Data (5-1-49 to 5-31-49, inclusive)

	% of Incoming Product				
	Prepared for Shipment	Recycle	Waste	Retained Samples	Material Balance
Average for this month	96.7	4.57	0.007	0.03	101.3
Average for last month	93.4	5.46	0.001	0.02	98.9
Average to date	95.9	4.65	0.06	0.02	100.7

II. ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of month	338
End of month	342
Net increase	4

Remarks: The changes which occurred in the S Division are listed below:

2 transfers from other divisions (both weekly roll)
2 rehires from lay-off (both weekly roll)

Changes in Supervisory Organization:

T. Prudich, Assistant Chief Supervisor, 234-5 Building, is promoted to Chief Supervisor, 234-5, effective June 1, 1949.

K. C. Vint, formerly Chief Supervisor in the S Division and recently Project Engineer, Design and Construction Divisions, was transferred to the S Division as Chief Supervisor, effective May 25, 1949. Mr. Vint has been assigned to the Manufacturing Divisions Expansion Problems Section.

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234-5 Organization:

Fifteen operators were transferred from the T and B Plants and the Isolation Building to the 234-5 Building during the month, bringing the total 234-5 weekly roll staff to its full quota of 27 operators.

III. AREA ACTIVITIES

PRODUCTION PERFORMANCE

T and B Plants

Volume Reduction - Production Test 221-T-13

Operation at 30 percent volume reduction at the completion of the extraction step was continued during the month. There were no significant changes in waste losses or decontamination factors which may be attributed to volume reduction. Operation at 30 percent volume reduction has now been adopted as standard.

Extraction Waste Losses

Extraction waste losses for material being processed from the 100-B Pile are now comparable to the extraction losses for material processed from the 100-D and 100-F Piles. The average original analysis of extraction waste from the T (21 runs) and B (19 runs) Plants for the month were 0.61 and 0.59 percent respectively. These are slightly higher than normal, probably as a result of the increased MWD/T level which averaged 243 at T Plant and 227 at B Plant. Average throw-away waste losses were 0.44 percent at T Plant and 0.41 percent at B Plant.

In accordance with the enrichment program, which reduces the amount of uranium per unit of plutonium, and the necessity of holding the uranyl-hexahydrate concentration constant (22.5 percent to 23.5 percent UNH) for extraction, the necessary reductions in waste volumes and chemicals consumed have resulted in an average savings of $400 to $500 per run to date.

Isolation Building

Use of 50 Percent Hydrogen Peroxide - Production Test 231-9

During the last week of May, Production Test 231-9, "Use of 50 Percent Hydrogen Peroxide in the Isolation Process," was started in Cell 2. The test involves the use of 50 percent Hydrogen Peroxide instead of 27.5 percent Hydrogen Peroxide in making the first and second cycle purification precipitations for the purpose of reducing the volume and total plutonium content of the material being recycled

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to the Concentration Buildings. No results are available at month end.

WASTE DISPOSAL

241-BY Tank Farm - Project C-271

Construction progress by the sub-contractor continued satisfactorily during the month. Concrete domes have been poured on all tanks, and dome facilities are approximately 50 percent complete. One tank, X-102-BY, has been inspected and accepted. Backfilling of all tanks is approximately 60 percent complete. It is expected that the sub-contractor's phase of the project will be completed early in July.

241-TX Tank Farm - Project C-163

Work on the General Electric phase of Parts II and III continued during the month. All encasement cover blocks have now been installed and all lines have been tested and found to be alright with the exception of the 3-5R dissolver off-gas line which had previously been removed. This line will be repaired or replaced. It is expected that the project, with the exception of the proposed Part IV, which involves tieing in the 224-U Concentration Building waste system, will be completed during the coming month.

Cribbing of Second Cycle Waste - T Plant

The cribbing of second cycle waste supernate from tank X-112-T which was started in March, was completed with 55,000 gallons being cribbed during the month. A total of 525,000 gallons was cribbed, making space available for the storage of the second cycle waste from 184 batches.

Concentration Building Wastes - T Plant

The 224-T Concentration Building wastes were diverted from the X-201-T settling tank to the X-202, 3, 4-T settling tank system on May 24, 1949. At the time of the change, the X-201-T tank contained twenty feet of rather compact sludge and approximately three feet of a light sludge. Overflow to the cribs is at twenty-four feet. Six hundred and forty-three standard runs and thirteen acid runs had been cribbed through the X-201-T settling tank which was put into service during October, 1946.

Waste Status

The status of the Waste Storage Areas as of May 31, 1949, is shown in the following table:

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S Division

B Plant

Bldg. 241 Tanks	Waste	Percentage Full B	C	BX	Reserve Capacity in Batches to Process B	C	BX	Total
x101,2,3	Metal	100	100	100	0	0	0	0
x104,5,6	Metal	-	100	49.6	-	0	136	136
x201,2,3,4	Metal	0	100	-	-	0	-	-
x112	Metal	-	-	0	-	-	90	90
x107,8,9	Metal	-	-	-	-	-	-	-
x107,8,9	1st Cycle	100	100	53.3	0	0	206	206
x110,11,12	1st Cycle	-	100	-	-	0	-	-
x104,5,6	1st Cycle	-	-	-	-	-	-	-
x109,10,11,12	1st Cycle	-	-	-	-	-	-	-
x104,5,6	2nd Cycle	42.4	-	-	366	-	-	366
x110,11,12	2nd Cycle	100	-	-	0	-	-	0
x110,11	2nd Cycle	-	-	0	-	-	424	424
x113,14,16,17	2nd Cycle	-	-	-	-	-	-	-

T Plant

Bldg. 241 Tanks	Waste	Percentage Full T	U	TX	Reserve Capacity in Batches to Process T	U	TX	Total
x101,2,3	Metal	100	100	0	0	0	437	437
x104,5,6	Metal	-	100	0	-	0	437	437
x201,2,3,4	Metal	0	0	-	-	42	-	42
x112	Metal	-	-	-	-	-	-	-
x107,8,9	Metal	-	91.1	-	-	27	-	27
x107,8	Metal	-	-	0	-	-	291	291
x107,8,9	1st Cycle	100	-	-	0	-	-	0
x110,11,12	1st Cycle	-	100	-	-	0	-	0
x104,5,6	1st Cycle	100	-	-	0	-	-	0
x109,10,11,12	1st Cycle	-	-	13.8	-	-	685	685
x115,18	1st Cycle	-	-	0	-	-	410	410
x104,5,6	2nd Cycle	-	-	-	-	-	-	-
x110,11,12	2nd Cycle	71.9	-	-	165	-	-	165
x110,11	2nd Cycle	-	-	-	-	-	-	-
x113,14,16,17	2nd Cycle	-	-	0	-	-	1123	1123

MECHANICAL PERFORMANCE

Jet Assembly Failure - T Plant

The 8-3 to 8-1, extraction catch tank to precipitator tank, jet assembly, failed because of a gasket leak at the jet. The assembly was

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replaced by standard remote control methods. The defective assembly will be disposed of to the burial ground as excessive radiation precludes repair.

Agitator Failure - B Plant

The 15 H. P. agitator assembly on the 7-1 extraction precipitator tank failed and was replaced by standard remote control methods. Exact cause of the failure cannot be determined because of excessive radiation. The assembly had been placed in service on November 24, 1948.

Thermohm Well Failures - B Plant

The thermohm wells on the 8-1 extraction precipitator and on the B-3 lanthanum fluoride catch tank failed and were replaced. The former thermohm well was part of the original installation, whereas the latter had been placed in service when the operation of B Cell was started in April of 1948.

Centrifuge Skimmer Failures - B Plant

Both skimmers of the lanthanum fluoride product (E-2) centrifuge were replaced. The right skimmer had corroded beyond use and the left skimmer was corroded to the extent that replacement was deemed advisable. Both of these skimmers were of the reinforced "Holt Type" and had been in service since December 31, 1946.

Filter Replacements - Isolation Building

Due to a partial restriction of the filter in the B position over Cell 2 and the C position over Cell 4, the filters were removed and replaced. Both of these filters were replaced with filters of the old rock wool design since two of these filter boxes were on hand as spares.

234-5 Construction Status

Several delays were experienced during the month in the completion of the 234-5 Building such as: Poor workmanship on the dampers of the ventilation system, discovery of fractured glass liners in the three purification supernate hold-up tanks and one recovery evaporator tank necessitating their return to the factory and the failure of several sections of tantalum tubing also necessitating factory repairs.

The training of operators is in progress and the processing of simulated runs will get under way early in June.

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S Division

SPECIAL HAZARDS

Stack Gas Decontamination

Operation of the sand filters was satisfactory during the month; efficiency and through-put remaining essentially unchanged for both T and B Plants.

The project proposal for the installation of the dissolver off-gas filter units was approved by the Appropriation and Budget Committee and submitted to the Atomic Energy Commission. Design and preparation of a project proposal for the installation of a silver nitrate reactor for the removal of iodine from the dissolver off-gases is in progress.

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POWER DIVISION
MAY 1949

GENERAL

On May 7, the Power Division assumed the responsibility for the operation of all power equipment in the 234-5 Test Plant and the 291-Z Process Stack Fan House in the 200 West Area. Thirteen power operators have been assigned to this operation.

PERSONNEL AND ORGANIZATION

Number of employees on payroll	May
Beginning of month	462
End of month	473
Net Increase	11

The indicated net increase is the result of the hiring of four operators, the transfer into the Division of eight operators and one stenographer, and the termination of one operator and one stenographer.

100 AREAS

The replacement of Crane swing type check valves by Chapman tilting disc check valves in the 100 D, 190 Process Pump House was completed during the month. The installation of the Crane valves during the DR construction program had never been acceptable for operations.

The study and testing of sodium silicate additions to the process water, as started in August 1948, continues at an accelerated rate. On May 18, the use of this chemical was discontinued in the 100 F Area in conjunction with this test program.

The emergency generator in the 100 D Area was placed in service 4.5 hours on May 25 in order to re-wire the control circuit for three phase protection. This change had previously been made in the F Area and remains to be scheduled in the B Area.

On May 26, the sodium dichromate mixing equipment and one transfer pump was removed from the 108 Chemical Mixing Building in the 100 F Area and placed in service in the 185 Deaeration Building.

Space in the 100 B Area 108 Chemical Mixing Building has been made available to the Technical Division for their P-10 and P-10A projects. Work which was started several months ago is still in progress. Equipment no longer needed by the Power Division at this location has now been excessed.

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Power Division

A 6-inch temporary connection from the export water line was placed in service for the 100 H Area on May 27 in order to supply water for test purposes.

200 AREAS

The construction of an additional tile field for the sewage disposal effluent from septic tank No. 2607-E2 in the 200 East Area was completed and it was placed in service on May 6.

On May 4, the pH of the filtered water in the 200 East and West Areas was raised from 7.2 to 8.0 in an effort to reduce corrosion in the steel process and sanitary water lines.

300 AREA

The installation of a new ash sluice pump at the 300 Area Boiler House was completed and the pump placed in service on May 9.

A section of the main service water line serving the First Aid, Fire Station, Badge House, and 3706 Change House was removed from service for 6 hours on May 20 in order to install a connection to the Health Instrument Building.

101 SHOPS

On May 17, the No. 1 boiler was inspected by the Traveler's Insurance Company inspector and was found to be satisfactory for operation with minor repairs recommended.

The installation of a new 2-inch galvanized steel water line from the Laundry Zeo-Carb softeners to the Boiler House feed water make-up tank was completed on May 24. This will supply the boiler house with soft water for boiler feed purposes.

On May 25, the dual drive pump at Durand Well No. 7, which normally supplies the 101 Shops water system developed serious vibration as a result of a broken clutch collar and dislocated gears. Pumps at the No. 1 and No. 4 wells were placed in operation and water for the 101 Shops was then routed through 2500 feet of 6-inch invasion pipe line from the Hanford Booster Station.

WHITE BLUFFS

Operations normal.

Ice in storage at the month's end was 3,512,700 pounds.

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Power Division

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From May 1, 1949

Through May 31, 1949

			AREAS		
			100-B	100-D	100-F
RIVER PUMP HOUSE (Building 181)					
River stage	Feet above sea level	(max)	* 406.2	* 395.0	* 381.9
		(min)	* 395.7	* 386.2	* 372.6
		(avg)	402.0	391.4	378.0
River temperature	avg. °F.		49.8	49.8	50.5
Water Pumped to Reservoir	gpm avg. rate		40054	39236	36500
Water pumped to Refg. Condensers	gpm avg. rate			0	0
RESERVOIR (Building 182)					
Water pumped to Filter Plant	gpm avg. rate		35023	34569	32706
Water pumped to Condenser System	gpm avg. rate		3483	3254	3256
Water pumped to Export System	gpm avg. rate		1548	1413	538
	gpm normal rate		3499	3499	3499
Chlorine added at #1 inlet	pounds		17091	21300	15000
FILTER PLANT (Building 183)					
Filtered Water to Power House	gpm avg. rate		246	245	234
Filtered water to Process	gpm avg. rate		30432	30020	29880
Filtered water to Fire & Sanitary	gpm avg. rate		114	187	158
hlorine used in Water Treatment	pounds		8070	8700	8000
	ppm avg.		1.8	2.1	1.8
Lime used in Water Treatment	pounds		156816	116460	137500
	ppm avg.		12.0	9.1	11.3
Coagulant used in Water Treatment	pounds		345721	320700	286500
	ppm avg.		26.4	24.9	23.6
Raw Water pH	pH avg.		7.79	7.8	7.9
Finished Water pH	pH avg.		7.60	7.53	7.63
Alkalinity, M. O. - Raw	ppm avg.		58	57	61
Finished	ppm avg.		57	50	56
Residual Chlorine - Settled	ppm avg.		.22	.22	.20
Finished	ppm avg.		.07	.12	.15
Iron - Raw	ppm avg.		.74	.81	.55
North Clearwell	ppm avg.		.01	.02	.02
South Clearwell	ppm avg.		.01	.02	.02
Hardness - Finished	ppm avg.		82	72	82
Turbidity - Raw	ppm avg.		29.8	26.0	25.0
Filtered	ppm avg.		0	0	0

*Actual Maximum and Minimum
Formerly reported as Maximum Average Day and Minimum Average Day

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Power Division

From May 1, 1949

Through May 31, 1949

POWER HOUSE (Building 184)

Steam generated - Total	M pounds	92580	89540	89485
Average rate	lbs./hr.	124435	120349	120276
225 psi Steam to plant (est.)	M pounds	78266	75688	75726
15 psi Steam to plant (est.)	M pounds	242	242	157
Coal consumed	Tons	7014	8675	7709
Coal in storage (est.)	Tons	23567	26078	25417

DEAERATOR PLANT (Building 185)

Water flow	gpm avg. rate	30182	29770	29630
Chemicals consumed:				
Dichromate	pounds	21500	24200	20800
Sodium Silicate	pounds	84000	130455	59760
Chemical Analysis:				
pH	pH avg.	7.65	7.61	7.64
Dichromate	ppm avg.	1.9	1.9	1.8
Silica	ppm avg.	1.9	2.5	1.2
Dissolved Iron	ppm avg.	.02	.02	.02
Free Chlorine	ppm avg.	.04	.12	.16

PROCESS PUMP ROOM (Building 190)

Total water pumped	gpm avg. rate	30007	29595	29455
	gpm normal rate	31748	31580	31298
Water temperature	avg. °F.	53.3	53.2	53.1

VALVE PIT (Building 105)

Chemicals consumed:						
Solids		pounds		1950	4000	1900
Chemical analysis:						
A, B, C, & D Heeders	Standard limits					
pH	7.5-7.8	pH	(max)	7.75	7.65	7.65
			(min)	7.55	7.60	7.55
			(avg)	7.63	7.61	7.63
SiO_2		ppm	(max)	2.5	3.0	3.0
			(min)	1.0	2.0	0
			(avg)	1.8	2.5	1.3
$Na_2Cr_2O_7$	1.8-2.2	ppm	(max)	2.0	2.0	2.0
			(min)	1.8	1.8	1.8
		ppm	(avg)	1.9	1.9	1.9
Iron		ppm	(max)	.03	.03	.02
			(min)	.01	.01	.01
			(avg)	.02	.02	.02
Chlorides		ppm avg.		1.7	2.1	1.7

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Power Division

From May 1, 1949

Through May 31, 1949

		200 AREAS	
		200-E	200-W
RESERVOIR (Building 282)			
Raw Water Pumped	gpm avg. rate	1670	1760
FILTER PLANT (Building 283)			
Filtered Water Pumped	gpm avg. rate	295	485
Chlorine Consumed	lb.	219	333
Alum Consumed	lb.	3176	4856
Chlorine Residual - Sanitary Water	ppm	.60	.69
POWER HOUSE (Building 284)			
Steam Generated - Total	M lb.	15968	25086
Steam Generated - Ave. Rate	lb./hr.	21462	33717
Coal Consumed (Est.)	tons	1284	1681
Coal in Storage (Est.)	tons	10589	9949

		300 AREA
POWER HOUSE (Building 384)		
Steam Generated - Total	M lb.	7461
Steam Generated - Avg. Rate	lb./hr.	10026
Coal Consumed - Total (Est.)	tons	570
Coal in Storage (Est.)	tons	1408
SANITARY AND FIRE SYSTEM		
Well Water Pumped - Total	gal.	27,430,200
Well Water Per Day	gal/day	884,736
Well Water	gpm avg. rate	614
Chlorine Residual	ppm	.39

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INSTRUMENT DIVISION

MONTHLY REPORT

MAY, 1949

GENERAL

Instrument Division organization changes were effected which incorporated the 700-1100 Area group under the administration of the 300 Area Engineer. This released the 700-1100 Assistant Area Engineer who was transferred to Schenectady.

A tentative reclassification of all non-exempt personnel has been completed to conform to the union contract.

During the month, the Co-ordinating Committee on Radiation Detection Instruments visited Hanford Works.

Specifications have been prepared for the use of A.E.C. in purchasing radiation detection instruments. These instruments will be used at sites other than Hanford.

100 AREAS (Reference Report HW-13540)

Construction at 100-H has progressed to the point where it appears advisable to plan the assignment of responsible operations Instrument Supervision, and the first of needed mechanic forces, to this area by June 20, 1949.

A five-fold B&G hand and foot counter was installed at Riverland for monitoring railroad personnel.

A Brown motion transmitter was installed on the back face, top center, at Station B-61 on the 100-D unit. This is to measure horizontal movement of the back face with respect to the top.

Instrumentation to the water softening system and boilers at Building 101, Hanford, was checked and repaired.

The installation of pH meters in 183-F pump room was completed. This job was done as a preliminary step as part of a water treatment study being conducted by the Technical Division in cooperation with the Power Division.

Responsibility for "scrams" at 105-B on May 21, 1949, and 105-F on May 22, 1949, was traced to failure of the OD3/VR-150-30 tube in each case. As a result, a new procedure for tube replacement has been adopted.

A meeting was held with representatives of the "P", Technical, Project Engineering, and Instrument Divisions to discuss a practical solution and elimination of the difficulties in gas analysis which developed in 100-F simultaneously with the increase in CO_2 concentration beyond 40%. A representative of the Leeds and Northrup Company was present in an advisory capacity.

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Instrument Division

200 AREAS (Reference Report HW-13541)

Replacements of all contaminated instruments in Sections 12 and 13, 221-B, has been completed.

Installation of nickel thermohm resistance elements for measurement of inlet and outlet gas temperature to the sand filter at 291-T was completed.

Attempts at decontamination of the Ring Balance instrument removed from Section 9, 221-B, failed to decontaminate it enough for unrestricted use. It is felt advisable to procure a new instrument for replacement.

The rate-meter type counter in the Laundry Building 2723 was replaced by a G.M. probe and scaler.

Increased work load at Building 234-5 has necessitated the temporary addition of two mechanics to the crew assigned to that work.

300-700-1100 AREAS (Reference Report HW-13542)

Nine out of ten Neutron survey meters have been completed and accepted by the Health Instrument Divisions. One unit is being retained for shop testing of new chambers.

Project C-220, Optical Shop Building 3708, has been completed and the project closed.

Preliminary test work has been completed in determining the feasibility of an explosion-proof Poppy. Work orders have been received for construction of a working model.

As an aid to the Plant Accounting Division, a new system of instrument accountability was devised and presented for approval.

DESIGN AND CONSTRUCTION (Reference Report HW-13543)

Two Instrument Specifications Letters, Nos. 23 and 25, Rala Study, G.E.T. 12, were issued. No. 23 concerns instrumentation in general and No. 35 concerns radiation measurements.

Design of a rapid scanning device for tube exit temperatures is in progress for use in the 100-G Area.

During May, graphite stacking with thermocouple installation was completed at 100-H. Installation of pressure monitor tubing between face of block and control room was also completed.

All Simplex rate of flow controllers and filter controls for 183-H have been completely installed.

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All instrumentation for Building 181-H is complete.

Instrument installation for Building 234-5 is complete.

Remodeling at Building 321 is in process to show the feasibility of cascade operation of one column directly into another in a 3 column unit.

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MAINTENANCE DIVISION
MAY, 1949

A major injury occurred in the division when a painter, assigned to the 200 Area, was hospitalized for industrial dermatitis. A sub-major injury occurred when a mechanic working in the 321 Building, moving a steel tank, received a tuft fracture of the right hand, middle finger.

As of May 31, 1949, the Maintenance Division backlog was 14,212 mandays, of which 9,338 mandays was Minor Construction work. This represents an increase of 30% from the April backlog.

100 Areas:
It was necessary to replace approximately 25 feet of the far rear vertical neoprene seal on the "F" pile, due to expansion which had stretched it to a critical stage. Also, approximately 6 feet of the neoprene seal at the joint of the top far side was replaced.

The #20 vertical safety rod thimble was removed from the "F" pile to remove an abrupt 5/16 offset in the graphite immediately below the shielding. A modified step plug was installed which had a 13/16" offset center hole. A new thimble with a tapered end was installed in this bore. An improved design knuckle jointed vertical safety rod was installed in this position and is functioning satisfactorily. The knuckle jointed rod of the first design and the shortened stainless steel rod guide that had previously been in this position were installed in #14 position. Approximately 14 feet of the experimental "E" hole thimble was cut off in order to remove stuck test pieces. A new flange was welded to remaining damaged tip portion of the thimble which permitted this test hole to be used again.

At the 101 Building Area at Hanford a complete overhaul of #1 and #2 boilers has been completed, and soft water was provided for these boilers by running approximately 250 feet of pipe from the water softeners located in the laundry of the 101 Building. This overhaul and the use of soft water will increase the life of this steam generating plant considerably.

Maintenance forces are continuing with the completion of items left unfinished by the construction forces in the DR pile Building.

200 Areas:

In the "B" Canyon Building it was necessary to replace the 1" exhaust manifold and gang valve assembly from Section 12 panel board, due to contamination. In the "B" Area Concentration Building the skimmers from the E-2 centrifuge were replaced as they were no longer serviceable. The improved Holt-type skimmers were installed as replacements.

The 200 East Area fabrication shop has completed approximately 25 cell-type connectors as replacements for connectors that have failed in service in "T" and "B" Canyon Buildings. Also, a portion of these connectors are going to the "U" Canyon Building as replacements for connectors that have been utilized from that area as replacements in "T" and "B" Canyons on an emergency basis. This shop has completed an assembly and run-in of two 15 HP agitator units for placement in Canyon Building service as replacements are for units 9-4 and 7-1 units which have failed.

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A dissolver offgas scrubber has been assembled and fitted up for standby, to be utilized at such time as is necessary.

Minor Construction forces have completed the extension of tile field E-2 in the 200 East Area.

300 Area:

A water leak in one of the "B" furnace cooling coils in the 314 Melt Plant caused the failure of three Stokes vacuum pumps. The water from this leak had collected in the bottom of the furnace over the weekend and upon starting up, water vapros were drawn into the vacuum pumps, causing them to lose efficiency. All three pumps were completely dismantled, repaired and reassembled.

101 Shops Section

General

During the past month pack-out and final erection work for the Construction Division was completed by the 101 Shops. Final erection operations commenced on May 6, 1949, and were completed May 17, 1949. Pack-out and final erection operations were extremely satisfactory.

During the current month some drawings have been received from the Technical Divisions for 105-B, D and F, nine-tube mock-ups. These drawings have been reviewed and suggestions made to Technical relative to fabrication needs. In addition, some discussion has been held with Technical relative to future work requirements for the 101 Shops on expotential piles.

Operation

Work has continued on the receiving and storing of raw material received from the National Carbon Company. Surfacing and end mailing of sample material is being continued. Sample material is still being transported to the 300 Area for testing and raw materials moved to color storage warehouse on the basis of Technical test results.

Some special machine work was performed on special details during 105-H final erection.

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ELECTRICAL DIVISION

MAY, 1949

GENERAL

During the month, the backlog of unfinished work increased 1735 mandays to a month end total of 12,130 mandays. A decrease of approximately 500 mandays (10 percent) backlog in the Distribution Section was achieved, but the total Divisional backlog was substantially increased by release of new Project work, especially in 100-B, 100-F, and 300 Areas. In view of this increase, and of Project work expected for release in the near future, it will become necessary to increase the force substantially.

The Telephone Section is now functioning as an independent unit of the Electrical Division with Mr. E. S. Staples (formerly of the Design and Construction Division) as Area Engineer.

The total personnel of the Division remains unchanged at 270.

Efforts of the Electrical Standards Committee during the month were directed toward final specification development for ungrounding 440 volt systems and toward final approval of general design and installation standards, being developed by the Electrical Division for incorporation in "Electrical Standards" for the guidance of Designers and Architect Engineers.

Final plans for enlargement of 251 (A8) Substation, supplying 200 Areas, were developed with the Design and Construction Division.

The load chart for the peak day of the month, May 3, is attached, showing a peak of 59,280 KW for the entire project with coincidental demand of 24,280 KW for the combined 66 KV and 115 KV systems (Richland, 300 Area and vicinity), both figures only slightly reduced from the previous month.

AREA ACTIVITIES

Projects P-10 and P-10A in 100-B Area continue on accelerated electrical minor construction schedule. Installation of lines 3, 4 and 5 is 55 percent complete electrically and on schedule.

Final adjustments, clean up of small details, and partial replacement of defective back face wiring in the 105-DR Pile Building is nearing completion.

Design Change No. 61 (installation of back-up limit switch on bridge crane) is complete in all 190 Buildings.

Preliminary tests and relay settings for 151-H Substation are essentially complete and will be ready for scheduled energization of 100-H Area by single tap to 220 KV loop.

On May 17, the Division assumed responsibility for all electrical maintenance in 234-5 Building (ventilation and refrigeration system excepted) and work was started toward installation of special equipment, completion of testing, and modifications required by last minute design changes. Induction heating equipment is not

performing satisfactorily, and it appears that a re-design of coils will be necessary. Substation 252-Z has been accepted with the exception of 125 ampere oil circuit breakers which do not trip correctly despite rebuilding of one unit at the Westinghouse factory. The problem has been referred to Design and Construction for adjustment with the supplier.

In the 314 Melt Plant (300 Area), the first original induction heating coil failed (pin point hole). This original 11 turn coil was replaced with a re-designed 12 turn coil which loads equally well but with reduction of ampere load. (Generator was running slightly overloaded.) New spare 12 turn coils will be ordered.

TRANSMISSION AND DISTRIBUTION

The new "F" Housing Area has been inspected and accepted; unsatisfactory construction to be corrected by operational forces on construction work order.

A project proposal has been requested for dismantling the 66 KV system upon final tie-in of the 3000 and 300 Areas to new 115 KV system. Work has been started and is 25 percent complete on construction of 300 Area 115 KV Substation and re-routing of feeders (Project C-177).

Both steel structures at 220 KV taps to 100-H Area have been completed and are ready to tie-in. Sixteen additional radiators have been removed from 220 KV 100-D and F transformers, completing a group of 20 delivered to Construction for 100-H main transformers.

Osmose treatment of poles in the 300 Area is complete. Inspection of some treated poles indicates satisfactory stoppage of rot at ground line, but no effect is noted on internal heart rot which exists in some 30 percent of untreated poles.

Substation maintenance schedules have been revised with reduction of routine maintenance frequency. Reduction of four men will not be apparent immediately because maintenance has already been deferred in favor of construction of 115 KV substations.

There was one scheduled outage of an emergency nature on the 220 KV system requiring establishment of Critical Power Grade W conditions. This occurred on May 19 for one hour and 17 minutes at 5:43 p.m. At the by-pass switching station on the Midway-100 B line, an insulator pulled out of the clevis due to a thin pin erroneously used in the factory assembly, and installed on the original construction.

TELEPHONE SECTION

Project C-138, Richland Dial Exchange, is now expected to be ready in early October. All equipment is on the site and installed with three percent of the testing work complete. All other telephone work is on schedule.

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POWER STATISTICS - ELECTRICAL DIVISION
FOR MONTH ENDING MAY 31, 1949

ITEM	ENERGY - MW HRS. April	ENERGY - MW HRS. May	MAX. DEMAND - KW April	MAX. DEMAND - KW May	LOAD FACTOR - % April	LOAD FACTOR - % May
230 KV SYSTEM						
A-2 Out (100-B)	7,010	7,180	11,000	11,100	88.5	86.9
A-4 Out (100-D)	7,230	7,440	12,700	12,700	79.1	78.7
A-6 Out (100-F)	6,790	6,840	11,600	11,400	81.3	80.6
A-8 Out (200 Areas)	2,450	2,540	4,500	4,800	75.6	71.1
TOTAL OUT	23,480	24,000	39,800**	40,000**	82.6	80.6
MIDWAY IN	23,868	24,359	36,800*	36,800*	90.1	89.0
Transm. Loss	388	359	-	-	-	-
Percent Loss	1.6	1.5	-	-	-	-
66 KV SYSTEM						
B3-S4 Out (300 Area)	195	210	456	576	59.4	49.0
B3-S5 Out "	482	494	1,480	1,280	45.2	51.9
B1-S4 Out (N.Richland)	1,843	1,632	3,686	3,456	69.4	63.5
B7-S10 Out (W.Bluffs)	306	285	945	877	45.0	43.7
B9-S11 Out (100-H)	509	528	1,320	1,320	53.6	53.8
Hanford Out	271	331	500	500	75.3	89.0
TOTAL OUT	4,920#	3,480	15,687#	8,009**	43.6	58.4
Hanford In	3,503#	1,969	8,600#	7,600*	55.8	34.8
Pasco In	1,438#	1,711	9,600#	3,200*	31.2	71.9
TOTAL IN	4,941#	3,680	15,000#	10,800**	45.7	45.8
Transm. Loss	21	200	-	-	-	-
Percent Loss	0.4	5.4	-	-	-	-
115 KV SYSTEM						
BB1-S1 Out (Richland)	3,080	3,214	9,720"	8,640**	44.0	50.0
BB1-S2 Out "	2,828	3,056	7,920	9,720**	49.6	42.3
TOTAL OUT	5,908	6,270	17,640**	18,360**	46.5	45.9
Benton In	3,120	3,360	8,640*	9,900*	50.2	45.6
S. Richland In	3,120	3,528	9,720*	8,100*	44.6	58.5
TOTAL IN	6,240	6,888	18,360**	18,000**	47.2	51.4
Transm. Loss	332	618	-	-	-	-
Percent Loss	5.3	9.0	-	-	-	-
PROJECT TOTAL						
230 KV Out	23,480	24,000	39,500**	40,000**	82.6	80.6
66 KV Out	4,920	3,480	15,687**	8,009**	43.6	58.4
115 KV Out	5,908	6,270	17,640**	18,360**	46.5	45.9
TOTAL OUT	34,308	33,750	73,127**	66,369**	65.4	68.3
230 KV In	23,868	24,359	36,800*	36,800*	90.1	89.0
66 KV In	4,941	3,680	15,000**	10,800**	45.7	45.8
115 KV In	6,240	6,888	18,360**	18,000**	47.2	51.4
TOTAL IN	35,049	34,927	59,160*	59,280*	82.3	79.2
Transm. Loss	741	1,177	-	-	-	-
Percent Loss	2.6	3.4	-	-	-	-

* Coincidental Demand
** Non-Coincidental Demand
" Denotes Estimate
\# Included B1-S1, S2 and S3 last month - Stations abandoned.

Average Power Factor - 230 KV System--97.8
Average Power Factor - 115 KV System--85.9
Average Power Factor - 66 KV System--89.7

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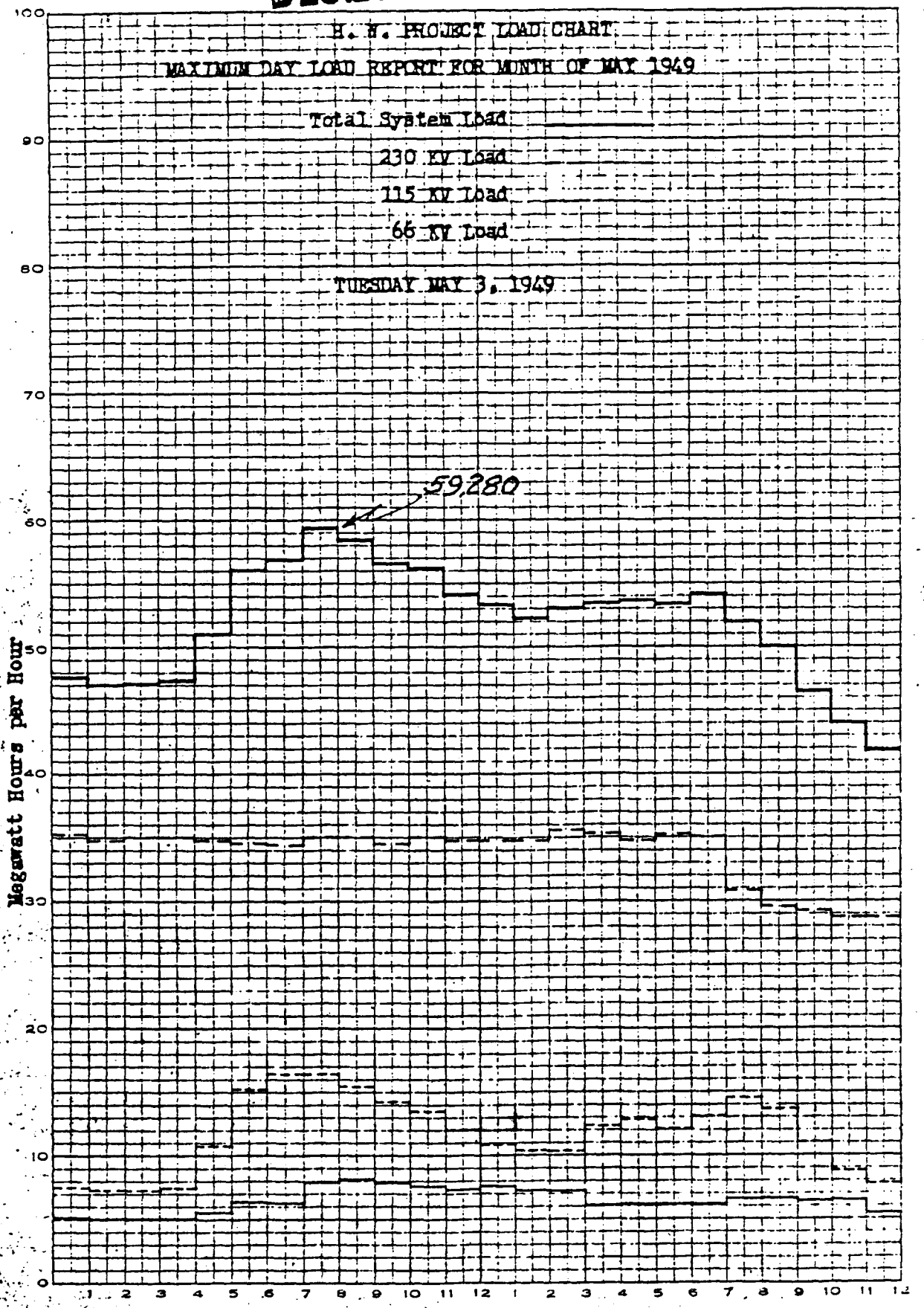

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TRANSPORTATION DIVISION
MONTHLY REPORT
MAY, 1949

GENERAL

Transportation Division personnel forces were decreased during the month from 653 to 635 in the following manner: One re-hire, seven transfers in, sixteen transfers out, five reduction of force terminations, and five terminations for other reasons.

Effective May 16, 1949, the Traffic Section of the Transportation Division, consisting of one exempt and seven non-exempt employees, was removed from the Manufacturing Divisions to become a part of the newly established Purchasing and Stores Divisions.

RAILROAD ACTIVITIES

Commercial inbound movements increased approximately 48% over April. Process movements continued slightly below normal. Two thousand and forty cars were handled in May compared with 1,376 in April and 2,274 in March.

Work train service was provided for the movement of concrete aggregate from the Central Mix Plant to the 241 BX Area and for the weed spraying program which was completed May 26, 1949.

All locomotives were monitored by the Health Instrument Division. Baldwin Locomotive 39-3721 was found to be contaminated and moved to the 200 West Area for cleaning.

Locomotive 39-3725 was returned to service May 12 after being out of operation for a major engine overhaul since March 8, 1949.

Morrison-Knudsen, track maintenance sub-contractor, continued to progress satisfactorily on the Plant Railroad Rehabilitation Program and should complete their contract on or about June 30, 1949. Their total force as of May 31 was 151 which is a decrease of 45 over April.

AUTOMOTIVE ACTIVITIES

Area and Village Bus Systems registered a combined decrease of 7,966 passengers over April.

Effective May 23, 1949, new shift schedules were placed into effect for Area Bus System personnel. This new schedule provides for less driver coverage during off peak periods and will make possible a future reduction of bus drivers plus eliminating the need for previously approved overtime which was required to operate the bus system at peak periods.

The Drivers Test Section was moved to the 1131 Bus Terminal and tests will be given on Tuesday and Wednesday only of each week. This arrangement permits the utilization of manpower elsewhere on other days.

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Transportation Division

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Date: [redacted]

Received approval of the Atomic Energy Commission to extend intervals between Class "A" and "B" preventive maintenance inspections on certain types of general purpose vehicles.

Revised location schedules for the picking up of Store Orders in order to expedite Area Cargo Trucking Service.

Transferred two sedans and 24 pick-ups to Arco, Idaho.

CONSTRUCTION AND LABOR ACTIVITIES

Labor and transportation activities were supplied for Projects C-163, C-177, C-184, C-268, C-276, C-277, C-291, C-308, C-331, C-334, Well Drilling Operations and the 101 Area.

(Statistical information is attached to the file copies of this report)

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PROJECT ENGINEERING DIVISION

MONTHLY REPORT
May 1949

PRESENT STATUS OF WORK

Projects Authorized and Under Construction

100 AREAS

Project Number		% Phys. Complete	Date Auth	Est. Cost
C-172	Dismantling of Equipment in Demineralization & Deaerating Plants (Remaining Work Deferred)	15	8-19-47	$ 486,000
C-184 (Rev.)	Experimental Animal Farm	1	4-28-49	288,000
C-192 (Rev.) Pt. I	Biology Lab. Bldg. 108-F	55	4-20-49	101,000
C-290	Fabricate & Install Spectrometer	47	9-29-48	17,400
C-294	Mock-Up Facilities for Metallurgical Studies - 111-B Bldg.	100	10-22-48	47,700
C-306	Revised Pile Shielding - Front Face Shield Nozzle Caps (Postponed until after July 1, 1949)	0	11-30-48	88,000
C-323	Vertical Rod Replacement - 105 BD&F	66	3-10-49	280,600
C-334	P-10 Alloy Facilities	50	1-28-49	242,000
	TOTAL Estimated Cost Active 100 Area Projects			$1,550,700

200 AREAS

C-163	Additional Waste Storage & Tie Lines 200-W (G.E. Portion Only- Subcontract not Included)	97	7-25-47	800,000

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Project Engineering Division

Projects Authorized & Under Construction (Cont'd)

200 AREAS (Cont'd)

Project Number		% Phys. Complete	Date Auth.	Est. Cost
C-298	Decontamination Stations for Small Equipment - 221-T,B	67	11-15-48	$ 33,000
	TOTAL Estimated Cost Active 200 Area Projects			$ 833,000

300 AREA

C-189	Bldg. 3745-A X-Ray Facility	92	8-20-47	33,000
C-219	Construction of Additional H. I. Instruments	81	1-27-48	97,200
C-227	Conversion of Offices to Labs Bldg. 3706 & Construction of 3707-C Change House	95	3-15-48	557,000
C-287	Experimental Metallurgy Lab. Bldg. 3730 (Postponed until after July 1, 1949)	0	12-2-48	140,000
C-308	Process Development Lab. Bldg. 3732	58	1-17-49	50,000
C-330	Improved Ventilation 313 & 314 Bldg.	1	9-24-48	540,000
C-331	Rehabilitation of Bldg. 321 (Including Remodeling & Vent.	43	1-31-49	227,000
	TOTAL Estimated Cost Active 300 Area Projects			$1,644,200

GENERAL PLANT AREAS

C-138	Richland Telephone Exchange - Bldg. 702	74	5-12-47	470,500
C-144	Additional Tel. Cables - Richland	43	5-12-47	71,000
C-177	115 KV Power Transmission Line	76	8-14-47	1,364,000

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Project Engineering Division

Projects Authorized & Under Construction (Cont'd

GENERAL PLANT AREAS (Cont'd)

Project Number		% Phys. Complete	Date Auth	Est. Cost
C-214	Rehabilitation of Plant Railroad	95	2-18-48	$3,206,000
C-265	Additional Telephone Cable - Richland to Kennewick	97	7-29-48	30,000
C-276	Overall Plant Telephone Project	82	10-6-48	1,232,000
C-291	Security Fences - All Areas	5	10-18-48	441,800
C-279	Improvements to Area Administration Buildings (Project Re-activated at Request of A. E. C.)	80	(Rev.Dir.) 5-18-49	167,800
C-333	H. I. Operational Survey Insts.	0	4-20-49	85,000
C-322	Osmose Treatment of Plant Elec. Poles & Replacements where Necessary (Postponed Until After July 1, 1949)	56	2-1-49	154,000
	TOTAL Estimated Cost Active Plant General Projects			$7,222,100
	GRAND TOTAL Est. Cost Authorized Work - ALL AREAS			$11,250,000

Informal Project Requests Authorized and Under Construction

Request Number	ALL AREAS	% Phys. Complete	Date Auth	Est. Cost
M-704	Special Cadmium Plated Splines	5	2-7-49	$ 18,300
M-711	Experimental Algae Filter - 107 Bldg.	0	5-6-49	13,000
MED-1	Surgical Wing Air Conditioning - Kadlec Hospital	0	5-5-49	16,100
			TOTAL	$47,400

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Project Engineering Division

Projects Being Routed for Authorization

E.R.No.	Project No.		
2469	C-326	Underground Geological & Hydrological Investigation Program Including Test Wells & Other Fac.	$193,000
2460	C-337	Dissolver Off-Gas Filtration Fac.	337,000
A-3075	C-338	Nine Tube Test Unit With B, D, & F Style Blocks	25,400
A-3062	C-339	300 Area Rolling Mill	1,340,000
A-1093	C-340	P-11 Project (Part I)	130,000
A-532	C-192 Pt. II	Biology Laboratory Bldg. 108 F	1,020,000
TOTAL Est. Cost of Projects Awaiting Authorization			3,045,400

Project Engineering Division Area Reports

Status of Engineering Study & Design Work in Progress During Month of May

100 AREAS

E. R. No.		% Engineering Complete
A-1001	As-Built Drawings	0
A-1002	G. E. C. Study	10
A-1034	Alterations to Bldgs. 186 & 185	38
A-1066	Mock-Up Facilities for Metallurgical Studies (Designs for Project. C-294)	100
A-1068	Prepare Informal Request for Developing a Flexible Vertical Rod	30
A-1074	Design Moisture Extraction System for Gas System - 105 Building	2
A-1075	Recommend Adequate Warehousing for 100 Areas 200 & 300 Areas	8

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Project Engineering Division - Area Reports (Cont'd)

Status of Engineering Study & Design Work in Progress During Month of May

100 AREAS (Cont'd)

E. R. No.		% Engineering Complete
A-1076	Prepare Project to Replace V.S.R. and Guides in 105 B, D, F (Designs for Project C-323)	80
A-1077	Prepare Project for P-10 Alloy Facilities (Designs for Project C-334)	72
A-1080	Thermocouple for 105 Process Tube	52
A-1083	Hot Thimble Mock-Up	90
A-1085	Prepare Project for Pile Operation with 100% CO_2 Atmosphere, 100 F Area	15
A-1086	High Tank Control Valves - 105 Area	100
A-1089	Design Draft Free Glass Blowing Table P-10	5
A-1093	Prepare P-11 Project (Parts I & II) Designs for C-340	30
A-1094	Prepare Informal Request for Algae Removal	60
A-1096	Study Lubrication of Process Tubes During Charging	5
A-1097	Prepare Project for Hot and Cold Exponential Experiments in 101 Building	2
A-1098	"B" Hole Casks	95
A-1099	Magazine Feeding Induction Furnace Lid	0

200 AREAS

2266	As-Built Drawings	20
2279	Prepare Project for Regasketing Facilities 221 T & B	85
2355	TX Waste Storage (Field Engr. for Project C-163)	100

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Project Engineering Division - Area Reports (Cont'd)

Status of Engineering Study & Design Work in Progress During Month of May

200 AREAS (Cont'd)

E. R. No.		% Engineering Complete
2459	Design Facilities for Diluting Caustic Solution 221 Areas	75
2460	Design Filter for Dissolver Off Gas (For Project C-337)	100
2461	Survey Sanitary Tile Field Addition 200 EW	35
2467	Engineering Contact on New Processes	15
2472	Design Equipment for Radioactive Source Building 234-5	100
2474	Design & Est. Railing & Mirrors for Diversion Boxes	90
2479	Design Temp. Device for #1 Tank Spray Building 221-B	100
2481	Revise Drawings for Agitator Shafts Bldgs. 221 TB	50
2482	Design & Install Drain Line From 292-B to Waste Cribs	100
2484	Design Apparatus for Pulling Pipes in Concrete	100
2489	Revise Bucket Lifting Yoke 221-B	0
2490	Prepare Project for Iodine Removal	0
2491	Design Evaporation Facilities First Cycle Waste	0
2492	Design Shipping Cask - 100 Milliliters Capacity	100

300 AREA

A-3002	As-Built Drawings	25
A-530	Change in Air Conditioning System 321 Bldg.	90
A-3060	Temporary Melting & Fabrication Bldg. (Designs for Project C-287)	80

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Project Engineering Division - Area Reports (Cont'd)

Status of Engineering Study & Design Work in Progress During Month of May

300 AREA (Cont'd)

E. R. No.		% Engineering Complete
A-3061	Increased Ventilation - 313 & 314 Bldgs. (Designs for Project C-330)	50
A-3062	Install Rolling Mill - 300 Area (Designs for Project C-339)	12
A-3063	Evaluate CO_2 System for Rooms 4A and 6 Building 3706	100
A-3066	Revise Maps - 300 Area Water and Sewer Systems	0
A-3067	Billet Lifting Tongs (Design sent to "P" Division for Approval)	60
A-3069	Solvents Storage - 3706 Building	2
A-3075	Design for Nine Tube Mock Up for 105 BDF Design (Designs for Project C-338)	70
A-3077	Design Installation for Three Automatic Screw Machines 313 Building	27
A-3080	Design and Estimate Loading Platform & Acid Storage Area, Bldg. 3706	0

GENERAL PLANT AREAS

E-403	Install Traffic Signals at Richland Railroad Crossings	75
E-405	Electrical As-Built Drawings	0
E-406	Prepare Project - Additions to Village Distribution System	40
E-407	Prepare Project - Inst. Htrs. on Evacuation Busses & Service Facilities	95
E-411	Study Design & Est. Cost of Dual Feed of Sewage Lift Station	50

APPENDIX "A"

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Project Engineering Division - Area Repprts - (Cont'd)

Status of Engineering Study & Design Work in Progress During Month of May

GENERAL PLANT AREAS (Cont'd)

E. R. No.		% Engineering Complete
A-420	Engineering Work for Rehabilitation of Plant Railroad. Project C-214	95
A-452	Prepare Project for Expansion of Main Plant Telephone System (Design Work Only)	95
E-505	Electrical Standards	15
A-509	Drafting for 300 Area Planning Committee	100
A-514	Prepare Project for Improvement to Area Fence Lighting (Cancelled)	15
E-413	Study & Project - Telemetering 115 & 230 KV Lines & Remote Control on 115 KV Substation	10
A-526	Special Field Information for 300 Area As-Builts	75
A-530	Design Work for Rehabilitation of Bldg. 321 Project C-331	95
A-532	Design Work for Project C-192 Construction of Biology Lab. - Bldg. 108-F, Pts I & II	15
A-534	Remodel Refrigeration Cooling System Kadlec Hospital	100
A-536	Additional Capacity for Sewage Lift Pumps Richland	15
A-537	Survey for Maintenance of R. R. Inside Restricted Areas	20
A-538	Survey to Check Boiler House Stacks for Alignment 100 B, D, F Areas	100
A-539	Survey to Check Boiler House Stacks for Alignment 300 Area	100
A-540	Survey for Tap on 230 KV Line to 100 H Area	100
941	Designs for Experimental Animal Farm Project C-184	90

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Project Engineering Division - Area Reports (Cont'd)

Status of Engineering Study & Design Work in Progress During Month of May

GENERAL PLANT AREAS (Cont'd)

E. R. No.		% Engineering Complete
E-962	Designs for 115 KV Power Line Through Richland	95
PM 1310	Fence Layout & Cylinder Storage Removal Personnel Meters Bldg.	100

ENGINEERING STUDIES GROUP REPORT

Studies Completed This Month

E. R. No.		Date Completed

No formal reports were issued during the reporting period

Studies Added this Month

E. R. No.		Date
E-413-S	Electrical Power Conservation	5-4-49

Active Studies

E. R. No.		% Complete
4326	Use of Inhibited Oil in Turbines - 190 Building	99
4327	Maintenance of Pitched Roofs - 700 Area	80
4336	Review Oil Coding System	70
4361	Chip Recovery Method	95
A-505-S	Electrical Equipment Standards	50
4362	Manufacturing Divisions Personnel Analysis	75
4363	P. E. D. Personnel Analysis	75
4364	Railroad Track Maintenance	85
4365	Methods Studies - P Division, 300 Area	0
E-413-S	Electrical Power Conservation	0

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Project Engineering Division

BACKLOG SUMMARY

	Work on Hand 4-30-49 Estimated Man Days	Work on Hand 5-31-49 Estimated Man Days
Studies	244	246
Project & Design	7,592	7,634
	7,836	7,880

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TECHNICAL DIVISIONS

May 1949

SUMMARY

Pile Technology Division

Neutron diffusion tests show that the purified graphite in place in the H Pile is of high quality and free of contamination.

Immediate concern over the life of the pile shields has been eliminated by analysis of masonite samples removed from the innermost layer of the top shield of the F Pile.

The power level of the D Pile was raised to 290 MW as the first step in a planned rise to 305 MW. No adverse effects were encountered.

The carbon dioxide concentration in the atmosphere of the F Pile was raised to 60%. The top shield of the F Pile has ceased its upward rise but outward motion of the far side shield may be continuing. No beneficial effects on expansion of the B Pile have been observed from the 40% carbon dioxide in use.

Extraction of lithium fluoride slugs for tritium production has been completed and the P-10 facility is being converted for operation on lithium-aluminum alloy slugs.

Separations Technology Division

In the Separations Plant extraction conditions are being modified as metal enrichment progresses. Savings in metal waste volume are being realized with higher g/t material. An analysis received recently from Argonne indicates that approximately 50% of the alpha activity in an old metal waste from high g/t material is due to elements other than plutonium. The Research Section is engaged in identifying these elements which lead to apparent high extraction losses when processing high g/t metal. Work is under way to establish the amount of I^{131} evolution at various stages in the separations process. Preliminary results indicate that about one-half the theoretical I^{131} content is released during metal dissolution, and perhaps three-quarters of this amount retained by the present water scrubbers on the dissolver off-gas line.

Preparations for start-up of 234-5 continue. Operating Logs and Operating Standards are being prepared. Process bay equipment taken over from Construction at the end of last month is being checked and placed in condition for initial operation on dummy runs. Maintenance aspects of the mechanical line being designed at Schenectady have been reviewed by representatives of the Manufacturing Divisions and the local A.E.C., with generally favorable comments as regards the extent of anticipated maintenance and the hazard involved in such work.

Additional Redox Scale-Up studies were carried out during the month with the O.R.N.L. flow sheet and the 5-inch column. The IB Column runs demonstrated that this column will have at least a two-fold range in throughput while maintaining the uranium content of the IBP stream at its specified limit.

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Similarly, the IC Column will have at least a 2.5-fold range of capacity through which uranium losses will be less than the specification figure of 0.1%. Revision of the Demonstration Unit to provide for cascade operation of all columns to increase capacity of operation is about 60% complete.

Redox laboratory research studies of the reactions between hexone and nitric acid have continued, with further clarification of the mechanisms involved. Preliminary investigations are under way on the recovery of uranium and plutonium from aqueous Redox wastes by uranium precipitation. Further work has been done on the preparation of a Redox feed from metal waste solutions. Combinations of alkaline precipitation-metathesis, diuranate-peroxide, and uranyl hydrogen phosphate-uranyl hydroxide are being studied to determine the preferred means of removing the interfering phosphate ion and extraneous salts. Improved ruthenium removal by ozonization (decontamination factors up to 10^5) has followed the use of very fine dispersal of the ozone-bearing gas stream. Zirconium scavenger studies have been extended to establish means of minimizing plutonium holdup, and work has been started on the fundamental chemistry that would be involved in a consolidation of the present wet processing steps carried out in 231-4-5 operations.

Metallurgy and Control Division

Five billets of uranium containing only 0.03 percent U-235 were made available by Oak Ridge. Two of these billets were rolled at Lockport early in May, and have been received in rod form. These will be processed into slugs and pile tested for distortion tendencies. The other three billets are being reserved here for other experimentation.

Further research in the development of Redox analytical methods has led to the completion and preliminary testing of an all-automatic titrating unit, the "auto-titrator." This instrument performs a coulometric titration and contains an indicator device and trigger circuit that automatically stops the titration at the endpoint; many applications are foreseen.

The initial phases in the development of 234-5 analytical procedures have been practically completed; personnel from the Control Groups have been trained in most of the methods, and transfer of analytical equipment to the 234-5 Bldg. laboratory has been started.

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PILE TECHNOLOGY DIVISION

MAY, 1949

VISITORS AND BUSINESS TRIPS

There were no visitors during the month of May.

Business trips of Pile Technology Division personnel during May were as follows:

P. F. Gast and J. M. West visited Oak Ridge National Laboratory, Oak Ridge, Tennessee, on May 2 and 3, 1949, to discuss the K-25 Experimental Program.

P. H. Reinker, A. A. Johnson, W. A. Horning, and C. W. J. Wende visited Los Alamos Scientific Laboratory, Los Alamos, New Mexico, from May 5-7, 1949, to attend the Information Meeting.

J. C. L. Chatten visited Argonne National Laboratory, Chicago, Illinois from May 16-20, 1949 for P-10 Consultation.

ORGANIZATION AND PERSONNEL	April	May
Pile Physics Section	43	38
Pile Engineering	23	28
P-10 Project	6	6
Administration	3	3
Special Assignment	1	1
	76	76

Seven members of Pile Physics Section transferred to Pile Engineering Section during the month. One Engineer (Assignment) and one Laboratory Assistant D were terminated. One Steno-typist C transferred into the Division from Plant Security and Services and one Steno-typist D transferred into the Division from D & C.

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Pile Technology Division

PILE PHYSICS

H - Pile Graphite Purity

The purity of the graphite of H Pile after layup was checked by determination of the diffusion length of thermal neutrons. This work was greatly accelerated and simplified, as compared to the measurements previously made at the DR Pile, by the use of small boron trifluoride proportional counters instead of indium foils. The purified graphite in the H Pile is of high quality and no evidence was found of any contamination.

Shielding - Pile Life

In order to investigate the present condition of the masonite in the inner layers of the biological shield, a sample was removed by drilling into the lowest layer of masonite when the No. 20 vertical rod guide, thimble, and stepped plug were removed from the F Pile for maintenance work. The masonite chips obtained in this way did not differ in appearance from chips obtained from unirradiated material. Chemical analysis revealed no significant difference in the hydrogen and carbon content, by weight, of irradiated and unirradiated samples. Due to the nature of the samples a density comparison was not possible, and therefore the hydrogen density in the irradiated samples could not be determined. However the evidence is sufficient to eliminate any immediate concern over the life of the shield. A solid core sample, for density determination, can be obtained only from certain rod openings which are sufficiently close to a T beam web. When the stepped plug is removed from one of these holes, for other reasons, a core sample will be obtained.

Graphite Development

Experimental variations in the purification process have demonstrated that the following changes are beneficial and they have been adopted as standard: 1) The amount of carbon tetrachloride has been doubled, 2) Oversize orifices have been retained only under the extreme end bars in the purification furnace, 3) The rate of freon addition has been increased so that the total addition is carried out in four hours instead of four and one-half to five hours. In the same series of experiments it was indicated that addition of increased amounts of freon was harmful.

Attempts to produce high quality purified, gas baked carbon from Whiting coke have continued to be unsuccessful. Attempts to produce high quality material by the GBF process from pitch coke have likewise been unsuccessful.

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Pile Technology Division

Reduction of Start Up Time

In order to avoid dangerously short pile periods it is necessary, when starting up, to wait after each withdrawal of one-half a rod. At present this waiting period is 10 minutes. A determination of the residual flux due to photoneutrons in a shutdown pile has indicated that this waiting period can safely be reduced to five minutes after shutdowns of normal duration. This reduction would result in saving 15 minutes during the startup period which is about one hour duration.

Critical Mass Experiments

This project will be referred to by the code designation P-11. The project has been formally approved by the Appropriations and Budget Committee and has been submitted to the Atomic Energy Commission.

Reactivity

A coefficient test at the D Pile indicated no deviation from previously established values. At month-end the reactivity status of the three operating piles was as follows:

	B Pile	D Pile	F Pile
In rods	113 ih	72 ih	49 ih
In xenon	489	484	475
In over-all coefficient	-170	-195	-243
Total cold, clean reactivity	886	893	790

Large changes have been made in the values of the over-all coefficient at the D and F Piles in line with recent observations that the graphite coefficient measured over a small range near the normal operating level is smaller than the average coefficient over the range from a cold pile to operating levels. For this reason the gains during the month cannot be obtained by comparison with last month's tabulation. In the case of the B Pile, a loss of 20 inhours occurred when cooling water was introduced into a Test Hole facility. True gains during the month are 20 inhours for the B and D Piles and 10 inhours for F Pile.

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Pile Technology Division

PILE ENGINEERING

Blistering of Slugs

Alpha-rolled, triple dipped, completely transformed metal (Group 5 material) has shown inconsistencies in blistering and dimensional stability. Tubes discharged during the month at 368 MD/ton showed only 10% moderately blistered pieces compared to 30% for 348 MD/ton previously reported. A moderate amount of warping (7 mils) has been observed.

The incompletely transformed metal (Group 4 material) caused seven slightly stuck tubes during the month. The maximum exposure was 341 MD/ton. Higher exposure of this metal is considered unwise and the remainder of the Group 4 material therefore will be discharged at less than 320 MD/ton.

Corrosion Inhibition Procedure for H Pile Hydrostatic Tests

A study has been made to determine a positive means of preventing a recurrence at the H Pile of the Van Stone flange corrosion observed on the DR unit following the hydrostatic test. Tests with combinations of aluminum alloy nozzles, zinc galvanized nozzles, stainless steel nozzles, and flanged process tubes were performed with the assemblies full of water and with the assemblies drained after 8 hours. In all cases the addition of 0.5% of sodium dichromate prevented corrosion and pit formation.

Magnesium Alloy Test Program

Commercially pure magnesium has been found to react rapidly with CO_2 at 200° C. The test is being repeated with a magnesium aluminum alloy.

Aluminum and Van Stone Flange Corrosion

Laboratory flow cup tests have shown that the rate of film formation on aluminum increases with water temperature and that thick film deposits prevent the occurrence of pits or large deposits of corrosion products on the specimens. These observations indicate that at high temperatures when thick films are present the corrosion may be of the general type rather than of a pitting nature and can be tolerated.

Sacrificial magnesium slugs placed over the front face Van Stone flanges have protected the flanges for a six month period with at least a year's life predicted for the sacrificial slugs.

Short duration tests still in progress have shown that aluminum nozzles are protecting badly pitted rear face Van Stone flanges. Similar tests are showing that zinc galvanized stainless steel nozzles are protecting flanges for water temperatures below 50° C.

Pile Technology Division

Borescope Observations at D Pile

An examination of the No. 14 VSR revealed a severe bowing of the thimble which is causing rod abrasion of the bottom of the rod guide and a considerable portion of the length of the thimble.

Improper and inadequate honing of the gunbarrel was found to be the apparent cause for the difficulty in replacing tube 1176-D.

Experimental Facility for Water Recirculation Tests in H Pile

A complete survey is in progress and a program is being developed to provide a facility for testing all the aspects involved in recirculation of cooling water through a pile.

Effect of Water on H Pile Control Rods

Experimental results have shown that control rods coated with boric acid anhydride will absorb water and evolve heat. If the rods are mounted in the control rod assembly, the swelling merely consolidates the coating and does not effect the bond between the coating and the aluminum rod or reduce the effectiveness of the rod. The poresof the coating and the annular space surrounding the control rod can accommodate the swelling without unduly stressing any portion of the control rod assembly.

Graphite Expansion

Measurements of the motion of the B Pile since addition of carbon dioxide do not indicate a significant reduction in rate of graphite expansion as was experienced at the D and F Piles. The carbon dioxide in the F Pile was increased to 60% during the month. There has been no rise of the center of the Top of the F Pile during the past three months; the Far Side, which continued its outward movement during March and April, showed decreased motion during May. The program of installation of improved instruments for measuring graphite expansion was continued at B, D, and F Piles.

Measurements were made of the displacement of the No. 20 VSR hole in the graphite at the F Pile during thimble replacement. There was no displacement of the thermal shield and the top surface of the graphite with respect to the Top shield. Four feet below the thermal shield the displacement was 2.5 inches toward the Far Side and at 8 feet below the thermal shield a maximum displacement of 3.2 inches was observed. Inspection of the thimble showed that it had been kinked at the lower end of the rod guide because of the angle between the rod guide and hole in the graphite.

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Pile Technology Division

Increase in Power Level at D Pile

The power level of the D Pile was increased from 275 MW to 290 MW on May 23 as the first step in Production Test No. 105 260-P. This caused an increase of 8° C in the average central graphite temperature. No effect on the thermal movement of the shields was observed.

Development of U-235 Slug

Results of studies on the use of U-235 slugs for Rala production are presented in Document HW 13511.

Graphite Monitoring

Additional results indicate that GBF-CS (gas baked-purified CS) type graphite and CSF graphite expand at the same rate. These results are not in agreement with the preliminary results previously reported which indicated that the rate of expansion of GBF-KS was lower than that of KSF.

Samples of CSF and KC graphite exposed for 276 and 162 MD/CT respectively at ambient pile temperature (~265° C.) expanded less than 0.01%.

The total stored energy content of three samples mined from 3169-F varied from 457 cal./gram for a position three feet upstream from the location of the ruptured SR-15 piece to 385 cal./gram for a position about 1.5 feet downstream. Results on samples from intermediate positions have not been obtained. Samples have been mined from the bore of a metal-bearing tube to obtain information on the maximum stored energy now present in pile graphite.

Electrical resistance monitoring during exposure of a CS graphite sample was continued to an exposure of approximately 110 MD/CT. The simple equation reported last month to represent the data at exposures to 75 MD/CT must be modified at higher exposures by the addition of a linear term.

P-10 Project

A total of 326 fluoride slugs was processed to complete the extraction of all irradiated fluoride slugs.

Production operations have been temporarily suspended pending completion of the alloy slug handling equipment and the conversion of the extraction lines for alloy slug extraction. A review at the end of the month with all divisions concerned with this construction indicated that the first line would be completed by the end of July and that the other three lines would be completed in August. Construction work in the experimental line (No. 5) has been completed and equipment is being installed to make gas analyses of billets and slugs prepared by the P-10A group.

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Pile Technology Division

Urine analyses have indicated the presence of tritium in three of the operating personnel. Although the concentrations observed are all well below the conservative estimates of body tolerance, a careful study is being made to determine the cause of the contamination and to prevent its recurrence. Additional air monitoring equipment will be installed before operations are resumed.

A total of 1127 alloy slugs is being irradiated. Argonne has examined and extracted slugs with a total of 5 month's irradiation. No irregularities were observed and yields and purities were in line with previous results.

INVENTIONS

All Pile Technology Division personnel engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work during 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	Item
R. E. Nather and U. M. Staebler	Sample Retriever for B Test Hole Facilities

Signed W. K. Woods
W. K. Woods
Division Head

WK Woods:bb

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June 10, 1949

SEPARATIONS TECHNOLOGY DIVISION

MAY, 1949

VISITORS & BUSINESS TRIPS

C. E. Winters of the Oak Ridge National Laboratory visited the Hanford Works from May 9 to 12 for discussions on waste disposal.

T. E. Hicks from the University of California Radiation Laboratory, Berkeley, visited this site May 12 and 13 for an employment interview.

D. H. Marquis of the General Engineering & Consulting Laboratory visited this site from May 16 to 19 for a 234-5 Project meeting.

L. B. Bragg, J. Marsden, V. B. Coplan, and E. L. Zebroski from the Knolls Atomic Power Laboratory attended a SPRU Program conference here from May 16 to 20.

G. W. Watt, G.E. Consultant from the University of Texas, visited this site from May 16 to 20 for inspection and consultations.

G. W. Pomeroy's loan to the Oak Ridge National Laboratory for assistance to Redox pilot plant operations was extended from May 1 to June 1.

P. E. Collins visited the General Engineering & Consulting Laboratory for technical consultations on the 234-5 Project from May 9 to 13.

C. A. Rohrmann, F. J. Leitz, Jr., C. Groot, and J. G. Bradley visited the Kellex Corp. on May 16 to 23 for Job 11 consultations. C. Groot also visited the Knolls Atomic Power Laboratory on May 20 and 21, and F. J. Leitz, Jr. visited the Argonne National Laboratory on May 20 and 21.

W. H. McVey worked at the Radiation Laboratory, University of California, from May 23 to June 3, on the separation of alpha-emitting elements from Hanford Works $BiPO_4$ extraction wastes.

Separations Technology Division

ORGANIZATION AND PERSONNEL

Effective May 1, 1949, three Technical Graduates in the Process Section, W. B. Kerr, F. J. Quinn, Jr., and W. C. Schmidt, were transferred to the monthly roll as Chemical Engineers.

Personnel totals in the Separations Technology Division are summarized as follows:

	April	May
Administration	2	2
Process Section	28	28
Development Section	93	94
Research Section	32	32
	155	156

Two new hires were added to the Division, a Chemical Engineer to the Development Section and a Chemist to the Process Section. One Steno-Typist A terminated from the Process Section.

200 AREA PLANT ASSISTANCE

Canyon Buildings

Pre-extraction and extraction conditions have been set on a sliding scale at B Plant to follow the progress of the enrichment schedule. The UNH concentration in extraction will be maintained between 22.5% and 23.5%. This should result in metal waste volumes of approximately 3850 gallons in the storage tanks per ton of metal processed rather than 5900 gallons of waste for each run processed. The maximum allowable batch size in total alpha counts is also calculated from the results of the 6-1 MS (balanced metal solution) assay. These calculations are based on the assumption that metal solution is uniform in uranium content. Since successful run adjustment based on assay of metal solution requires accurate analysis, a prediction of the metal solution assay has been made from the MWD/ton level of material dissolved. This prediction is used as the basis for resampling the metal solution. The data thus far indicate that the predicted analysis of metal solution from dissolver 3-5R is approximately 2% higher than actual analysis while that of metal solution from dissolver 4-5L is approximately 2% lower. The reason for this discrepancy has not been determined. It is planned to initiate this method for determination of batch size and extraction conditions at T Plant as soon as scale tank connections to the 6-3 Tank are made.

A sample of the extraction waste of 385 g/t material processed at B Plant during May, 1948, was submitted to the Argonne National Laboratory for analysis of alpha-emitting elements. This analysis has been received recently, transmitted through Document No. GEH-14,633. It is indicated that approximately 50% of the alpha activity expected to be counted in the routine waste analysis originated with elements other than plutonium. This ratio may be significantly different from that of material processed routinely since the average cooling period for the major portion of the metal from which the samples were taken was approximately

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450 days and the interval between extraction and analysis was presumably long. The 150-day Cm^{242} would, therefore, have decayed to a low value during this time.

The agitator failed during the extraction centrifugation of Run B-9-05-F-12 a B Plant. This resulted in an incomplete transfer of the precipitate to the centrifuge thereby necessitating an acid flush of the precipitator tanks foll the standard cake solution. The acid flush was processed as a standard run containing approximately 30% of the original batch. The extraction loss was (

Concentration Buildings

The combined lanthanum fluoride by-product waste assay of Runs T-9-04-F-13 an F-14 at T Plant was 1.16% after the routine rework. This waste was reworked large volume with a total loss of 0.34%.

A slight increase in metathesis waste losses at T Plant was traced to erratic jetting rates. Repair of a faulty steam valve corrected the condition and lo returned to normal.

Investigation of the amount of product held in the bismuth phosphate by-produ precipitation tank following each run has shown this hold-up to be approximat 0.035%. Since this is about 20% of the loss at this point, an attempt is bei made to correlate the loss with the size of the heel.

Isolation Building.

The simulated N-1 to P-1 transfer prior to Run T-9-05-F-4 resulted in the tra of approximately eleven liters of solution instead of the average one liter. is believed that this was condensate collected from an open transfer jet. The solution was returned to the Concentration Building containing an estimated 3. of a run.

Production Test 231-9, Use of 50% Peroxide, was initiated with Run T-9-05-F-11 An insufficient number of runs has been processed to permit a preliminary evaluation at this time.

REDOX DEVELOPMENT

Solvent Extraction Studies

A series of four IB simple scrub column runs and a series of five IC Column ru were completed during the month to determine H.E.T.S. and flooding capacity da in the 5-inch diameter column (packed with 1/2-inch rings) using the O.R.N.L. #1 Flow Sheet. Data from these runs are abstracted below.

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the feed point. Disengagement time tests carried out using IBS and IBFX feed solutions for runs 5"-1- through 4-BU indicated that the low disengagement times (under 20 seconds for 5/1 organic to aqueous volume ratio) were not significantly affected by (a) increasing the acid concentration of the IBS ten-fold (i.e., from 0.05 M to 0.5 M HNO_3), or by (b) using c.p. grade ferrous sulfamate, technical grade ferrous sulfamate, or no ferrous sulfamate.

Static pressures measured by a mercury manometer at the base of the 5-inch IB simple scrub column indicated the following apparent specific gravities of the continuous-phase zone below the feed point:

Run No.	Gal./(Hr.)(Sq.Ft.), Sum of Both Phases	Apparent Sp. Gr., (Continuous Phase Zone)	Sp.Gr. of IBP
5"-1-BU	420	1.14	1.21
5"-2-BU	780	1.12	1.21
5"-3-BU	1260	1.10	1.21
5"-4-BU	1630	1.07	1.21

Prior to Run 5"-4-BU the 5-inch column was packed by dropping 1/2-in. by 1/2-in. stainless-steel Raschig rings into the empty column from the top. Subsequent to this run the column was repacked with the same rings by dropping the packing into the column which was filled with water. The resulting data on packing bulk-density may be of interest:

Method of Packing	Approx. % Void Pkg. Vol.	Packing Bulk Density Lb./Cu.Ft.	% Difference
Dry	85	75.3	16
Filled with water	87	64.8	0

Data for Run 5"-4-BU do not appear to have been influenced significantly by the different method of packing, but it is proposed to pack all future columns filled with water.

Data for the 5-inch IC Column runs are abstracted below:

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IC COLUMN O.R.N.L. #1 FLOW SHEET RUNS: 5-INCH COLUMN

Packing: 19.6 ft. of 1/2-in. by 1/2-in. stainless-steel Raschig rings.

Compositions: ICX 0.04 M HNO_3.
ICF (Composite of IBU from Runs 8"-1- and 2-BU) UNH 0.25 M, HNO_3 1 to 2 g./l. (approx.).

Run No.	Gal./(Hr.)(Sq.Ft.) Sum of Both Phases	Short Tons U Metal /24 Hr.	% of Feed U in ICW	No. of Theo. Stages	H.E.T.S., Ft.	No. of Transfer Units*	H.T.U., Ft.*
5"-45-CU	620	0.4	0.0002	2.7	7.3	13.0	1.5
5"-46-CU	855	0.5	0.0008	2.8	7.0	12.0	1.6
5"-47-CU (Part I)	1090	0.7	0.004	2.6	7.5	10.5	1.9
5"-47-CU (Part II)	1210	0.76	0.028	2.3	8.5	8.5	2.3
5"-48-CU	1530	0.9	0.035	2.2	8.9	8.4	2.3
5"-49-CU	1650	1.0	0.069	2.2	8.9	7.5	2.6

* Transfer unit calculations on an "overall hexone-film basis".

This series of runs demonstrates that a waste loss in the ICW stream of less than 0.1% of the feed uranium can be attained over at least a 2.5-fold range of flow rates. The number of equivalent theoretical stages required for uranium, with the low HNO_3 concentrations prevailing through the column during the above series of runs, is less than 3, compared with approximately 4 for the A.N.L. Flow Sheet. H.E.T.S. values for the above O.R.N.L. #1 Flow Sheet conditions are approximately one-third higher than for the A.N.L. Flow Sheet IC runs, whereas H.T.U. values (on an "overall hexone-film basis") appear to be approximately the same as for the A.N.L. Flow Sheet IC runs in the same column.

The maximum volume velocity at which the 5-inch IC Column would operate on the above Flowsheet without excessive entrainment of organic phase with the ICU stream was determined to be approximately 1650 to 1700 gal./(hr.)(sq.ft.) sum of both phases. At 2500 gal./(hr.)(sq.ft.) the phases were still passing through the column counter-currently but the ICU stream contained aqueous and organic phases in approximately equal volumes.

The 5-in. IA simple extraction column studies (at O.R.N.L. #1 Flow Sheet conditions), which were reported last month, have been recalculated on the basis of improved equilibrium data which were correlated to permit appropriate corrections for small variations from run to run in ANN and Na NO_3 salting strengths. The revised data are abstracted below:

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IA COLUMN O.R.N.L. #1 FLOW SHEET RUNS: 5-INCH COLUMN

Packing: 19.6 ft. of 1/2-in. by 1/2-in. stainless-steel Raschig rings; simple extraction column.

Approximate Compositions:

IAFS: 1.0 M UNH, 1.1 M ANN, 0.5 M $NaNO_3$, 0.2 M HNO_3 deficient.

IAX: Neutral hexone.

Volume ration IAX/IAFS = 2.

Run No.	Gal./(Hr.)(Sq.Ft.), Sum of Both Phases	Short Tons U/24 Hr.	% of Feed U in IAW	H.E.T.S., Ft.	H.T.U.,* Ft.
5"-16-U	530	0.6	0.006	1.8	1.2
5"-14-U	710	0.8	0.013	1.8	1.3
5"-15-U	900	0.9	0.016	2.0	1.3
5"-17-U	1080	1.1	0.025	2.2	1.4

* Transfer unit calculations on an "overall water-film basis".

Although the above H.E.T.S. and H.T.U. values range up to approximately 50% higher than for 5-inch IA Column runs using the A.N.L. June 1, 1948, Flow Sheet, uranium waste loss values were exceedingly low -- partly because the combined salting strength of ANN and $NaNO_3$ was equivalent to approximately 30 g.ANN/l. higher than the Flow Sheet value, and partly because the O.R.N.L. #1 Flow Sheet requires only approximately 2/3 as many equivalent stages as the A.N.L. Flow Sheet for uranium transfer in the IA Column extraction section.

The Scale-Up 16-inch diameter steam stripper functions so as to reduce the hexone content of ICU streams from 16-20 g./l. to 0.25- 0.1 g./l. There is evidence, however, that the unit may be operating close to the flooding point and thereby causing a small amount of overhead uranium entrainment which ultimately is sewered to the pond. The effect of operating conditions on stability of operation and the efficiency of stripping is being examined and 1-inch ceramic Raschig rings are being procured to replace the 1/2-inch stainless-steel type currently being employed. One batch of ICU has been submitted to HNO_3 removal by evaporation for the purpose of subsequent IAF feed make-up. The solution was reduced to 0.3 M deficiency in HNO_3 prior to concentration adjustment. The need has become quite urgent for Scale-Up feed pumps of a submerged nature where maintenance on packing glands and seals can be eliminated. A greater than normal number of pump failures was encountered during the month.

Demonstration Unit Revisions

The installation of a IA-IB-IC cascade unit together with increased feed and solvent handling facilities is approximately 60% complete. This does not include an estimate of the time which will be required (approx. 300 hours) for revisions to the column pumping system to permit completely automatic flow control. Of the $16,700 allotted for these revisions about $8,500 (including IME) has been expended to date. It is possible that the pumping revisions may be covered by the original allotment.

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Equipment Development

Bench-type bearing tests to simulate conditions in the Jan. 23 solvent explosion were concluded with the ignition of a hexone-air mixture by a seized bearing. The seizure was presumably caused by removal of grease lubricant by the solvent. Evidence of overheating was clearly evident from the deposition of a thick oxide coat on the outside bearing surfaces.

A Roth turbine pump has been operated alternately on water and 2.0 M $Al(NO_3)_3$ for 400 hours. Shutdown was necessitated by failure of packing gland and scoring of the shaft at the gland. A Fischer Scientific Company vane pump (for future Demonstration Unit installation) has been on life test in 2.0 M $Al(NO_3)_3$ at 3200-4400 rev./min. for 200 hours. During this period the carbon vanes have decreased 8% in width. The shaft seal has not leaked. The discharge capacity has decreased from 0.936 to 0.886 gal./min. at 20 p.s.i.g. discharge pressure. Studies of the performance of all-stainless controlling rotameters are continuing.

Amercoat No. 1523 (American Pipe and Concrete Company) applied to a steel rod failed after 3 days exposure to IAX and 60% HNO_3 Amercoat No. 1528 applied to concrete block failed after 4 days exposure to IAX. Lithcoat and Catalin have shown resistance to IAX for 74 and 31 days, respectively.

Production Plant Design

During the month, assistance was rendered the Design Division in examining the economics of aluminum nitrate salting agent recovery and re-use. In addition, the following design information was issued.

(1) Document HW-13320 - "Redox Production Plant Chemical Flow Sheet" - dated 5-10-49.

(2) Document HW-13452 - "Redox Production Plant Metal Feed Preparation-Chemical Flowsheet" - dated 5-19-49.

(3) Document HW-13534 - "Redox Production Plant Column Design Specifications" dated 5-27-49.

(4) "Specifications for a Submerged Pump and Drive Assembly" - V. R. Cooper and J. T. Stringer to File - dated 5-16-49.

(5) Document HW-13499 - "Tentative Redox Production Plant Pumping Requirements" - dated 5-26-49.

Process Laboratory

During the month, attention was given to a study of the variables affecting the crystallization of $Al(NO_3)_3.9H_2O$ from acidified Redox wastes. It was determined that sodium and ammonium ions were not carried by the crystals. Only 50% of the iron and chromium were removed. It was also determined that HNO_3 carried by the crystals can be markedly reduced by washing coarse crystals with water and returning the wash containing 2 to 8% salt to the head end of the system.

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Separations Technology Division

A series of O.R.N.L. #1 IA type equilibrium samples were received from A.N.L., analyzed, and the data correlated. The effectiveness of sodium aluminate as a neutralizing agent for ICU, IAF, etc., is being determined.

REDOX RESEARCH

Preparation of Solvent Extraction Feed from Metal Wastes

The application of an alkaline precipitation - metathesis procedure to unneutralized current waste has been studied further. Quantitative precipitation of uranium, presumably as uranyl sodium phosphate, is obtained by adding 42 volumes of 20% sodium hydroxide to a mixture of 100 volumes of current waste and 1 volume of 85% phosphoric acid. The efficiency of metathesis to sodium diuranate was investigated as a function of caustic volume and concentration. No significant variation was observed in the U/PO_4 mole ratio in the diuranate on varying the metathesis volume from 3-5 times that of the precipitate or on varying the excess caustic concentration from 3-5 molar. The U/PO_4 mole ratios observed in all cases were 5-7, as compared with the 28 previously reported obtained using much more exhaustive conditions of metathesis and washing. These results suggest the desirability of conducting the precipitation with sufficient caustic to produce largely sodium diuranate initially, and then to metathesize the much smaller phosphate content as previously suggested for stored waste supernate.

Precipitation of uranium peroxide from a nitric acid solution of sodium diuranate shows promise of increasing phosphate removal if carried out at low pH and would be expected to remove sodium from uranium for IAF preparation. Such peroxide precipitation of current waste uranium processed through alkaline precipitation and metathesis yielded U/PO_4 mole ratios of 8 at pH 3 and 30-50 at pH $\leq$ 0.3. On the basis of earlier work, more effective removal of phosphate in the peroxide precipitations could have been achieved had the removal of phosphate in the diuranate steps been greater than that obtaining in these experiments ($\underline{M}\ U/\underline{M}_{PO_4}$ = 5-7). The uranium peroxide is readily converted to UNH by Fe(III), an internal catalyst, or platinum black, a contact catalyst, and, presumably, by heating.

Another promising method of achieving additional phosphate removal and uranium-sodium separation involves coupling a uranyl hydrogen phosphate precipitation for the former with a uranyl hydroxide precipitation for the latter. Addition of 70% nitric acid to sodium diuranate obtained from current waste to give pH 5.0 left >99% of the uranium precipitated. Further addition of nitric acid to this washed precipitate to give pH 1.0 left 15% of the uranium precipitated, presumably as UHP which would be recycled to process. The supernate at pH 1.0, containing 85% of the uranium, had a U/PO_4 mole ratio of 140 and a U/Na mole ratio of 8.

The solubility of uranyl hydrogen phosphate is being studied as a function of UNH and HNO_3 concentrations to determine the phosphate tolerance in process solutions derived from stored or current waste metal. The UHP solubility is measured in solutions corresponding to IAF, IAFS, IAW, and intermediate stages in the extraction section of the first column. Rate of attainment of equilibrium

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in such systems is very slow, making this study time consuming and the results of uncertain process development value considering the comparatively short residence times in column operation.

For the ORNL #1 Flow Sheet, in which the acid deficiency is relatively constant at ca. 0.2 molar, the UHP solubility versus UNH concentration curve has a minimum at ca. 0.25 M UNH. This minimum, which is still rising after five days shaking, corresponds to a U/PO_4 mole ratio required in the IAF of ca. 125. At lower acid deficiencies, e.g., -0.05 M HNO_3, the phosphate solubility decreases with time, suggesting possible slow conversion of UHP to some less soluble phosphate. The minimum, which is still falling after seven days, corresponds to a U/PO_4 mole ratio in the IAF of 1500. Neglecting rate considerations, this low phosphate solubility in the region of "zero" acidity would make the introduction of nitric acid into IAX objectionable in an otherwise acid-deficient IA Column for metal waste recovery. The phosphate solubility in IAF at 0.05 molar acid deficiency is lower than the minimum solubility at any UNH concentration in the 0.2 molar acid deficient system. This suggests the possibility of removing phosphate as UHP from IAF at "zero" acidity, thus reducing the phosphate concentration to a level tolerable for 0.2 molar acid-deficient column operation without introducing any additional ion into the system.

Further increase of acidity to $\geq$ 0.2 M HNO_3 increases the phosphate solubility above that in the 0.2 molar acid-deficient system. Preliminary results indicate that in these acid systems minimum UHP solubility is obtained at maximum uranium concentration, i.e., at the feed plate.

Plutonium and Uranium Recovery from Redox Aqueous Wastes

Preliminary investigation has been made of plutonium and uranium recovery by uranium precipitation from the following Redox aqueous wastes: (1) still bottoms from ANN recovery of II AW, (2) still bottoms from ANN recovery of pooled IAW, II AW, III AW, IDW, and IFW, and (3) IAW. In simulating these wastes Pu(IV) was used for plutonium spiking and it was assumed that Cr(VI) would be converted to CR(III) and ferrous sulfamate to Fe(III), NH_4^+, and $SO_4^=$.

Attempted precipitation of uranium peroxide from II AW after ANN recovery was unsuccessful even on addition of Versene F-3 as a sequestering agent for Fe(III) and Cr(III). Permanganate titration indicated catalytic decomposition of hydrogen peroxide in Versene's absence. Even in its presence, where permanganate titration is not possible, visually the rate of gas evolution appeared the same. Further study of II AW still bottoms, initially chosen because of its complexity, has been deferred in favor of investigation of pooled wastes and IAW.

Still bottoms from ANN recovery of the pooled aqueous wastes were simulated assuming 3% residual ANN and the modified ORNL #1 Flow Sheet of HW-13320. A 10^{-4} scale solubility test of the mixture of salts expected in this waste indicated that they could be conveniently dissolved to give 400 gallons of solution per 1.5 tons uranium processed. A 10^{-5} scale alkaline precipitation was then carried out on this solution spiked with 10 times the flow sheet uranium and plutonium losses by adding 100% by volume water and 70% by volume of 50% sodium hydroxide. Centrifugation after one hour yielded a precipitate, presumably largely sodium diuranate and ferric hydroxide, which carried 90% of the plutonium and had a volume equivalent to 120 gallons per 1.5 tons uranium processed. After two days standing,

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the plutonium recovery had risen to 96% and the precipitate volume to the equivalent of 200 gallons. Under the same conditions omitting only the plutonium to permit uranium analysis, uranium recovery was about 94%.

Recovery of uranium and Pu(IV) directly from IAW was attempted by sodium diuranate precipitation. Thirty-five percent by volume of 50% NaOH is required to keep all the Al(III) and essentially all the Cr(III) in solution at pH 12.5. At a uranium concentration equivalent to 0.7% loss in IAW the addition of this amount of caustic precipitated 60% of the uranium, this recovery being increased only to ca. 80% by doubling the sodium hydroxide added. Cr(III) appears to be responsible for this low recovery, since in the absence of Cr(III) 98% of the uranium was precipitated in the presence or absence of Al(III). However, doubling the uranium concentration increased the uranium recovery from 60% to $>$95%, equivalent to a net uranium loss of $<$0.1%. Precipitation of sodium diuranate from IAW spiked with such a uranium concentration, equivalent to 1.4% uranium loss, and with the equivalent of 1.2% plutonium loss gave only 60% carrying of plutonium. Addition of La(III) to assist in carrying Pu(IV) with the diuranate did not increase plutonium recovery. Oxidation of Pu(IV) to PU(VI) prior to diuranate precipitation might increase plutonium carrying.

Ruthenium Tetroxide Distillation

Recent experiments with Hanford dissolver solution diluted one to one-hundred with synthetic dissolver solution have shown the expected marked improvement in ruthenium removal upon ozonization with fine dispersal of the gas stream. Both air and oxygen have been used as the starting material in the preparation of ozone. With oxygen as the ozone source, a ruthenium decontamination factor of 10^5 was obtained in six hours with a flow rate of one ml gas/ml solution/min. With air under similar conditions, the ruthenium decontamination factor was 3000. It appears possible that oxides of nitrogen present in the air-ozone stream produce beneficial effects similar to those obtained by the addition of nitrite. For example, in the above experiments, the weight of ozone required for removal of 99.9% of the ruthenium was only one-third as great when using air as when using oxygen.

Since silver nitrate has been employed as catalyst during ozonization and since the solubilities of silver chromates and of silver oxide are low, an investigation of the permissable concentration limits of silver nitrate and sodium dichromate has been initiated. With 0.05 M $AgNO_3$ and 0.1 M $Na_2Cr_2O_7$, a reddish-brown precipitate (presumably a silver chromate) forms in synthetic IAF solutions containing from 0.2 M HNO_3 to 0.2 M NaOH. In one solution 0.2 M acid deficient and 0.05 M $AgNO_3$, no precipitate formed with 0.02 M $Na_2Cr_2O_7$. When the dichromate concentration was increased to 0.04 M, turbidity resulted. A concentration of 0.02 M $Na_2Cr_2O_7$ should be satisfactory since complete oxidation to Pu(VI) is obtained during ozonization and dichromate need be present thereafter only at a "holding oxidant" concentration.

Further studies on the rate of ruthenium removal from an ORNL IBP solution have shown that the acidity of the solution during ozonization is a significant variable. When 0.75 meq./ml of nitric acid was added, the ruthenium distilled out with a rate constant of 0.21 l^{-1}. When 1.4 meq./ml of nitric acid were added, the rate constant was 0.63 l^{-1}.

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A sample of ICU from an ORNL run has been employed to test the feasibility of removing ruthenium from such solutions by volatilization with ozone. The solution was made 0.3 M HNO_3 before ozonization and 0.025 M $AgNO_3$ was used as catalyst. As anticipated from earlier studies, the rate of removal was rather slow and first order with respect to the ruthenium. The relatively slow rates of ruthenium removal from ICU and IBP solutions are not a cause of concern since a removal factor of about 100 is all that would ever be needed in these solutions. Furthermore, use of a gas disperser would greatly increase the rates of removal.

Further studies have indicated that the gross ruthenium activity hold-up on stainless steel coupons in the gas phase is gradually decreased over a series of several distillations, even though the same amount of activity was employed in each run. Pretreatment of the coupon with dichromate cleaning solution resulted in a lower initial hold-up of activity. After six distillations, a coupon which had not been pretreated in any manner held up no more activity than the cleaned one, although the initial hold-up was considerably greater.

Effects of Allyl Alcohol and Other Organic Reagents on Distribution Ratios

When acid, aqueous solutions of ruthenium tracer and aluminum nitrate were treated at room temperature with allyl alcohol (0.5 to 1%), then with dichromate, (0.1 M) and finally extracted with hexone, ruthenium distribution ratios (hexone/aqueous) of 10^{-3} to 10^{-4} were observed in contrast to values of ca. 0.1 obtained in the absence of allyl alcohol. The distribution of Zr(IV) into the hexone phase was also reduced, but to a lesser extent. Similar results were obtained employing glycerol or ethyl alcohol. Considerable reduction of dichromate occurred in these instances. On the other hand, employing oxalic acid or isopropyl alcohol, where no effect on ruthenium distribution was observed, no reduction of dichromate occurred.

The above procedure appears to be of no practical value in solutions containing plutonium because of an extreme effect on the distribution ratio of Pu(IV) and an inhibitory effect on the oxidation of plutonium to the (VI) state by dichromate. A procedure whereby the allyl alcohol treatment is preceded by the dichromate treatment has, therefore, been investigated. Under these conditions a distribution ratio of ca. 10^{-3} is obtained for ruthenium and the effect on U(VI) distribution is slight. The effect on Pu(VI) distribution is still in doubt, being slight in some instances and considerable in others.

It is significant that the distribution data noted above are similar to those that would be expected with acid deficient systems. Furthermore, solutions which have been treated with allyl alcohol and dichromate have been found to be 0.06 to 0.1 M acid deficient.

Scavenging Studies

Several concentrations of HNO_3 have been tested as wash liquids for plutonium (VI) removal after contacting Filtrol with dissolver solution (60 g/l). The percentage of plutonium adsorbed was 0.29, 0.13, 0.12, and 0.04 employing as washes distilled water, 0.01 M HNO_3, 0.05 M HNO_3 and 0.10 M HNO_3, respectively. The zirconium removed also increases with increasing acid concentrations, being negligible with distilled water or 0.01 M HNO_3 washes but 0.014% and 0.34% at 0.05 M HNO_3 and 0.10 M HNO_3, respectively. Washing with 0.1 M HNO_3 followed by recycling to the dissolver would appear to be an acceptable production plant procedure.

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Preliminary data show that Pu(VI) desorption from Vycor is satisfactory, $<0.01\%$ being retained, upon washing with 0.01 M or 0.1 M HNO_3. Some removal of zirconium is also accomplished and the amount, although not yet definitely established, appears to be greater than for Filtrol.

A decrease in particle size of Vycor from 48-80 mesh to >325 mesh did not indicate any marked difference in the adsorption characteristics of the Vycor.

IAW solution was prepared by extracting a IAFS solution of ORNL #1 Flow Sheet composition (prepared from plant dissolver solution) with ten separate portions of hexone, 0.2 M in HNO_3. The pH was adjusted to 0.3 and the solution was contacted with Filtrol at a concentration of 60 g/l for one hour at 100°C. 99.8% of the zirconium and 99.8% of the columbium was removed in three contacts. This procedure is an alternate to head-end Filtrol scavenging and could be of value for (a) the recovery of active Zr and Cb, and (b) the beneficiation of subsequent treatment of the IAW for ANN recovery.

Reactions of Hexone and Nitric Acid

A method of synthesis of methylisopropyldiketone in 30-40% yield has been developed by modifying the work of Pauly and Lieck /Ber. 33, 500 (1900) / and involves (1) bromination of mesityl oxide, (2) dehydrohalogenation, (3) esterification with KOAc to acetoxymesityl oxide, and (4) hydrolysis. The product is free of hexone and thus can be purified easily by fractional distillation.

Study of the reactions at 100° in systems containing 1.3 M $Al(NO_3)_3$ solution and pure hexone have been continued. The function of $Al(NO_3)_3$ in these experiments is to furnish by hydrolysis a convenient, constant source of HNO_3 at a moderate concentration. The systems have been varied by addition or omission of NaOH, NH_4NO_3, or elemental iron, which serve, respectively, to decrease the hydrogen ion concentration, maintain a low nitrite concentration and maintain a high initial nitrite concentration. In the early stages of all experiments rapid growth of methylisopropyldiketone and dinitroisobutane was observed, but with the former always at the higher concentration in any given system. The effectiveness of the added agents in order of increasing rates of reaction was as follows: NH_4NO_3, NaOH, no agent added, Fe. These results indicate the dependence of the rate of reaction of hexone on both hydrogen ion concentration and nitrite concentration. After perhaps passing through slight maxima the concentrations of the diketone and dinitroisobutane assumed a fairly constant and uniform value of ca. 0.05 M beyond the 100-hour mark. In contrast to the diketone and dinitro compounds, the organic acids increased continuously, and after 100 hours at a fairly uniform rate of ca. 5×10^{-4} moles/l/hr. in all cases. The overall pattern of these reactions is consistent with the postulated mechanism whereby organic acids are formed largely as products of reactions of the diketone and dinitro compounds.

Kinetic studies of the reaction between nitrous acid and hexone at 25°C. have indicated that there is a maximum concentration of HNO_3 in hexone below which HNO_2, when added in small amounts, disappears, and above which the reaction products generate more HNO_2 resulting in a greatly accelerated reaction. For 2×10^{-3} M HNO_2 this limit is between 0.05 M and 0.5 M HNO_3. The half-life of HNO_2 in 0.05 M HNO_3 in hexone is about one hour.

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A preliminary experiment on the reaction of methylisopropyldiketone with 0.5 M HNO_3 at 100°C. showed a 45% loss of diketone in 20 hours. An adequate balance between diketone lost and organic acids formed was obtained.

Properties of Redox Systems

Continued work on infrared studies of hexone-water systems has indicated a shift in the position of the hydroxyl vibration bands from 3617 and 3722 cm^{-1}, characteristic of water monomer, to the 3500-3600 cm^{-1} region for water dissolved in hexone and water dissolved in acetone. This can be compared to the shift to a lower frequency ca. 3330 cm^{-1} for pure water. This shift to an intermediate frequency for the liquid system probably indicates a specific hydrogen bonding between hexone and water.

Pulse Column Studies

A one-inch x 69-inch compound pulse column has been put into operation and the results compared with those previously obtained using the one-inch diameter x 20-inch pulse column. The feed plate was located 18.5 inches from the top of the column. Column IA operation was tested under conditions of both the ORNL #1 Flow Sheet and the ORNL #1 modified by making the IAX 0.2 M in HNO_3. H.E.T.S. values were comparable to those obtained with the 20-inch column ($<5''$). Waste losses were greatly reduced when acidified IAX was employed. Preliminary studies indicate the satisfactory use of the 69-inch pulse column in IC Column operation.

Tests on a one-half-inch diameter pulse column with a 21-1/2-inch extraction section gave an H.E.T.S. of five inches operated as a compound column at a total flow of 872 gal/sq.ft./hr., a pulse frequency of 50 cycles/min. and 0.27 gal/sq.ft. half cycle displacement. It is planned to use this column for laboratory-scale solvent extraction studies with plutonium and fission products.

231-4-5 Investigations

It has been demonstrated that a filtered plutonium peroxide precipitate may be readily dissolved in hydriodic acid to produce a Pu(III) solution from which Pu(III) oxalate may be precipitated. Thus eliminating several steps currently employed in production operations. Using 703 mg of plutonium in one test, a solubility of 0.020 g/l was obtained from such a solution in the oxalate precipitation step.

Apparent Product Loss in the $BiPO_4$ Extraction Step

The nature of the apparent plutonium losses (on the basis of alpha assays) in 8-3-WS and 8-3-WS-2 solutions has been studied by Hanford Works personnel working in the Radiation Laboratory, University of California. Although calculations and data are not complete, they appear to be consistent with the assumption that the alpha activity loss in 8-3-WS-2 solutions is due principally to Am^{241} and Cm^{242}. The alpha activity due to Cm^{242} is about four times that due to Am^{241}.

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STACK GAS DISPOSAL

Spot check evaluation of the plant sand filters was continued at both plants during the month. During the evening of May 5, the water seal was lost in the ventilation duct at B Plant. This was apparently caused by evaporation of the water to a level where the fans were able to overcome the hydrostatic head. This condition of bypassing the sand filter existed for nine hours. The relatively low activity level of the ventilation air at the time (1.07×10^{-5} mrep/hr.ft^3) prevented the discharge of any unusual amount of activity from the stack.

As a result of three successive weekly determinations at T Plant indicating a filtration efficiency in the range of 98.6 to 98.9%, a thorough check was made on the monitoring equipment. Several faults and errors were found in the installation. Following correction of these factors, two determinations were made. A return to an efficiency level of 99.3% indicated that the previous lower efficiencies were caused by errors in the monitoring system.

Routine activity traverses of the plant sand filters with ionization chambers lowered into the vertical monitoring ports continued to show the maxima at the base of the Type G sand layer. The monitoring measurements at both plants indicate that the continued build-up of the activity level within the sand filter ceased after 5 to 6-month operation and has since fluctuated below this value.

The study of the effect of steam injection upon the contamination removal efficiency of the No. 55 Fiberglas pilot plant filter was continued. A series of runs is in progress employing a bed depth of 48 inches at a packing density of 3 pounds per cubic feet, and a linear velocity of 25 and 50 ft./min. This is being conducted in an attempt to confirm the indication that steam injection results in improved contamination removal in instances where the filtration efficiency, without steam addition, is less than 95%.

A special test to determine the course of the I^{131} evolution, from metal dissolution through extraction, and its distribution in the effluent water and air was conducted. For the purpose of the study, all Canyon operations, with the exception of the process being investigated, were suspended. Three dissolvings, one reduction, and one extraction were followed. Samples were taken from the dissolver off-gas line, various points in the ventilation system, and the Canyon process solutions. The resultant data are consistent and in good agreement with one exception. The curies of I^{131} activity measured at the 50-foot level of the stack were in all instances greater (by a factor of 3 to 9) than the sum of the I^{131} measurements in the gas streams passing to the stack. The values obtained for the nitrogen dioxide removal efficiency of the water scrubber were from 58 to 64%, and the percent of the total I^{131} evolved, contained in the water scrubber effluent ranged from 71 to 79%. The I^{131} removal efficiency of the sand filter ranged from 27 to 68%. The values for the percent of the theoretical I^{131} present in the cut, which was evolved during metal dissolution, were 42, 29, and 47%.

Analyses of the water effluent from the dissolver cell scrubber indicated removal of 3 to 10 grams of uranium and 200 milligrams of plutonium from the off-gas per dissolving. The correlation of the curies of beta activity per gram

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of uranium in the water effluent, with the ratio present in the 6-3MR solution tends to confirm that this uranium value is in the correct order of magnitude. However, the plutonium value is subject to question since it is considerably higher than that which would be expected in association with this quantity of uranium. A definite breakdown of the distribution of the I^{131} throughout the dissolution, reduction, and extraction cycle has been prevented by the difficulties in analyzing the Canyon process solutions. The Analytical Section is developing an improved method of analysis for these solutions, and it is planned to repeat this determination when their work is completed.

An evaluation of the contamination removal efficiency of the Farr Wire Impingement Air Filter was made. Canyon ventilation air was passed through the filter at the specified linear flow rate of 500 ft./min. The efficiency range of 20 to 30% indicated that a single unit is insufficient for the filtration of the ventilation air.

234-5 PROJECT

Plant Assistance

Delays occurred in completion of Hoods 5, 6, and 7. The glass lining of the supernate hold-up tank in each hood was found to be broken and the tantalum piping was found to leak in several places. Both items have been sent away for repairs. The spare glass-lined tank was installed in one of the hoods.

In dry runs with Hood 10, difficulty has been experienced in operating the Tocco induction heating unit at the necessary efficiency. After numerous adjustments, a mild steel vessel could be heated at the required rate but not the stainless steel vessel. Work is in progress to alter the coil design so as to improve the efficiency of the unit.

First rough drafts of the Operating Standards to cover process operations in the 234-5 Building were completed. A special procedure for determining the heat cycle in Hood 10 was also completed. Preparation of Operating Logs for start-up procedures and stand-in runs was almost finished.

Process Development

Starting with plutonium nitrate solution (containing some sulfate) from a "cut" sample can, ten-gram scale runs have been carried through peroxide precipitations, hydrofluorination, and reduction.

Conditions for the plutonium peroxide precipitations were similar to those used in the Isolation Building except for changes necessitated by the higher initial Pu concentration and except for a decrease in the amount of ammonium sulfite used in the later runs. The latter change was made after spectrophotometric examination of the starting solutions disclosed low concentrations of Pu(VI). Peroxide cycle yields for the four runs completed were 99.7, 96.6, 98.9, and 99.2%.

Hydrofluorination of the first peroxide precipitates was performed according to a cycle recommended by the Los Alamos development group. This procedure was found to lead to considerable spattering from the boat and undesirable corrosion

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of the scow and reaction tube, presumably due to insufficient drying time at an initial low temperature. The plutonium fluoride product was noted to be lighter in color and in density than that obtained via the oxalate.

The procedure for reduction to metallic plutonium in these runs was identical to that previously used with fluoride obtained from oxalate. Reduction yields for the four runs were 75.8, 96.6, 74.5, and 96.2%; the low initial value was ascribed to the necessity for splitting the charge and making two reductions (due to low bulk density), but the cause of the other low yield is not known.

Assistance has been given for start-up of Hood 10 in the 234-5 Building. A special crucible is being prepared for calibration of the induction heating equipment.

Design work has been completed for the radiography equipment and the cobalt slug has been charged to the pile.

Schenectady Liaison

The rate of progress of design and procurement work under its present curtailed status is estimated by Schenectady at 1% per month. Instrumentation for 3 tasks remain to be submitted to Hanford for approval. All other tasks have been approved or approved subject to suggested changes.

Messrs. J. F. Heberer and P. E. Collins (G.E.), J. M. Musser and R.E.L. Stanford (A.E.C.) visited General Engineering & Consulting Laboratory during the week of May 9 to evaluate the equipment and its arrangement with respect to the amount of maintenance required and the ease and safety with which this work could be done. None of these men anticipate excessive maintenance or hazardous work during maintenance of the equipment. Tasks 1, 2, 4, and 6 were reviewed and equipment mock-up and models were operated. The following suggestions and comments were offered in a final meeting of these men with General Engineering & Consulting Laboratory personnel:

1. Where possible studs should be used instead of screws to fasten items to Zone 4 surfaces of hoods.

2. Either neoprene or metal bellows may be used (no preference between these) in cases where a flexible seal is required between Zone 3 and Zone 4.

3. Where possible, solenoid valves should be kept free from contamination and located in Zone 3.

4. The base of the Task 5 hood should be redesigned to enable easier repacking of the hydraulic cylinder if this should become necessary.

Mr. Heberer plans to visit the laboratory again about the end of June to review the remainder of the equipment and interim work on equipment already covered. No plans are made for further coverage of design work at this time by the Maintenance Division.

Button storage requirements were recently changed from 100 to 24 in the R.M. Line.

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Knurled studs have been approved as a means of fastening windows and all other equipment to the walls of hoods. Finish. (inner surface) and rounded corner construction requirements have been relaxed for the upper sections of hoods.

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INVENTION AND DISCOVERY STATEMENT

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 of Invention or Discovery
None	None

R. H. Beaton
by OHS

R. H. Beaton, Head
Separations Technology Division

Date: June 1, 1949

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HW-13561 -DEL

METALLURGY & CONTROL DIVISION

MAY 1949

VISITORS & BUSINESS TRIPS

Prof. H. H. Willard, of the University of Michigan, spent May 4-6 with the Analytical Section in consultation on analytical techniques.

C. F. Metz, of the Los Alamos Scientific Laboratory, spent May 19-20 with the Analytical Section in discussions of final product assay and sample exchange.

Business trips of personnel in this Division were as follows:

R. Ward visited the Los Alamos Scientific Laboratory on May 4-6 to attend the Project Information Meeting and to discuss metallurgical aspects of DP West operations.

Miss M. G. Freidank represented the Information Group at an AEC conference of project site document librarians and files supervisors in Washington, D. C., on May 9-11.

C. G. Craig spent May 10-11 at the Argonne National Laboratory participating in discussions relative to methods for abstracting and organizing metallurgical literature pertinent to project work.

ORGANIZATION & PERSONNEL

Personnel totals in the several subdivisions are summarized below:

	April 30	May 31
300 Area Plant Assistance Group	12	10
Metallurgy Laboratory Section	23	23
Analytical Section	343	326
Statistics Group	11	12
Information Group	53	56
Administrative	3	3
Totals	445	430

A further reduction of 17 was effected in Analytical Section personnel, chiefly in the laboratory assistant classifications, and primarily the result of consolidating T and B Plant control analyses in the 222-B Laboratory. Only four no-work layoffs were given, the balance having terminated voluntarily or accepted transfers to the Information Group and the Health Instrument

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Divisions. The voluntary quits included one shift supervisor, who is going into business for himself, and one female non-exempt chemist who is to be married. The force reduction indicated for the 300 Area Plant Assistance Group represents the two metallurgists who terminated in late April. The supervisor of the 700 Area Classified File resigned May 27 to accept employment elsewhere.

The Statistics Group employed a well-trained statistician as an engineer (assignment). An experienced technical librarian was employed and assigned to the Information Group.

300 AREA PLANT ASSISTANCE

Uranium Metal Quality

Several studies have been undertaken with a view to improving the quality of the uranium metal from which slugs are made. Billets cast locally from solid and turnings scrap have shown surprisingly high silicon content. A test was conducted to determine the effect on the silicon content of B billets resulting from the use of (a) zirconite mold wash, (b) magnesium oxide mold wash, (c) no mold wash, (e) furnace charge composed principally of turning chips, (f) charge composed chiefly of solid scrap. Results to date have indicated that the silicon content of the billets is greatest where the charge is composed principally of briquetted chips, and that the other tested factors contribute very little silicon. Different approaches are being tried in an effort to discover the source of the silicon in the briquettes.

Another study relating to metal quality was initiated in accordance with an agreement reached at the April Metal Quality Meeting at Hanford. Work was started on the further evaluation of the reactivity of metal made from old and new green salts, cast at Electromet. The new green salt differs from the old in that it has a lower water content, a larger particle size, and a greater density. It is also thought by some to have a greater oxide content, although this has not been confirmed by analysis. Previous work has shown that the new green salt is superior as far as reactivity is concerned, although the small sample size made the difference of questionable statistical significance.

Electromet has been using metal biscuits from old and new green salt in alternate charges up through billet C-4558, which appeared in shipment B-797. During the week of May 9-14 a clean break was made in the Electromet metal of this shipment. Lots 146, 147, and 150 all contain rods made from both old and new salts. Lots 141, 142, 143, 144, 145, 148, and 149 consist entirely of metal from the new salt. Some of these lots have been machined, and the P Division plans to machine the remainder as promptly as possible. Arrangements have been made for thorough 305 Test Pile checking of this material after canning. It is hoped that the data thus obtained may be related to previous reactivity data to obtain an estimate of the importance of the change from old to new green salt.

Still another study bearing upon both quality and yield is covered by P.T. 314-59-4, designed to test the effect of varying furnace pressures. Fifty-two

billets cast in furnace atmospheres exceeding 100 microns pressure have so far been held out for analysis and observation during rolling and further processing. There has been some delay in completing this work due to trouble with the vacuum system and leaky furnace coils.

Uranium Rolling

In compliance with a recent process change (Doc. HW-13077, dated April 1, 1949), B billets are now being cast in the Hanford melt plant with a chamfer on the bottom end 30° to the longitudinal axis. On the basis of tests previously reported, this simple expedient is expected to increase the rod-to-slug yield about 1-1/2% by reducing the length of "fish-tails" at the rod end. This change took effect with billet No. B-9070 and will apply to all billets cast here except those bearing sample eggs (every 20th billet).

Rods rolled at Simonds in the May shipment are understood to have received special attention during rolling with a view to improving diameter uniformity. However, measurements taken on 150 randomly selected rods from two of the four carloads included in the May shipment failed to show any improvement over previous shipments with respect either to rod-to-rod diameter uniformity, or to ellipticity, although the average rod diameter runs 0.010" to 0.015" smaller than in the previous shipments. Diameters in the May material range from 1.396" to 1.472", with maximum and average ellipticity of 0.052" and 0.008", respectively. Measurements of the last two carloads of this shipment will be made as soon as storage arrangements permit.

Slug Canning

Studies of the causes of increased numbers of frost test rejects, especially those in which the faulty area lies within 1/2 inch of the end of the slug (type 4 rejects) have led to the conclusion that this type of reject is almost entirely due to mechanical fracturing of the bond at the cap end. Presumably this fracturing is caused by excessive torque being applied during the facing operation.

Penetration checks on 15 slugs canned with the canning bath near the maximum allowed by the operating process, and with the specified canning cycle followed closely, showed the thickness of unpenetrated can wall to range from 0.0100" to 0.0165", and on eleven of the fifteen slugs it ranged from 0.010" to 0.0110". This leads to the conclusion that excessive solution of the can wall is favored by operating the canning bath process specifications, when the slugs have been dipped in bronze

Induction Heating Experiments

Experimental equipment has been designed and is being fabricated for use in induction heating and quenching uranium rod sections. In this way it is hoped that the metal may be heated and quenched several times without causing the end swelling which is experienced with slugs when they are repeatedly cycled. Production Test 313-108-41 covering the induction heat treatment and lead-dip canning of 200 alpha-rolled slugs for pile evaluation has been drafted.

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P-10 Alloy

Minor Construction and Electrical work is continuing on the installation of facilities in Bldg. 108-B, under Project C-334.

METALLURGY LABORATORY

Uranium Alloys

Spectrochemical analyses have been completed on 47 uranium alloys which showed grain refinement tendencies or other effects upon metallographic examination. Wet chemical analyses are in process on these selected samples. These results will be studied in the light of conclusions obtained from metallographic work in order to determine the most desirable compositions. Work has been started on the special uranium-molybdenum alloy rods which were made at the Argonne National Laboratory.

Examination of standardized samples of uranium having different heat treatments, prepared by Battelle and to be investigated by all the laboratories cooperating on the alloy program, has been completed and the report on these samples is in preparation.

X-Ray Crystallography

Orientation work was initiated on some of the more promising alloys being studied in the uranium alloy program. The first group of samples run were from "as rolled" alloys which, in the metallographic examination, appeared to be more randomly oriented than normal alpha rolled metal. X-ray data indicated that these samples did have a much more random orientation than normal rolled uranium; however, the alloy rods had been reduced 71 percent as compared to 88 percent for production rod.

In conjunction with the Statistics Group, a statistical analysis was made on the orientation data for alpha rolled, duplex, triple-dipped, and beta quenched uranium. In general, this analysis confirmed the results as previously reported. A detailed report of it will be issued by the Statistics Group.

An investigation of the orientation of alpha rolled and gamma extruded slugs which had been induction heated and quenched from the beta phase a number of times was started.

Design of preliminary equipment for studying methods of x-ray examination of irradiated material was begun.

Radio-Metallurgy

Physical testing equipment, formerly used in the underwater laboratory at Building 212-N, was transferred to the 100-B Area maintenance shop for clean-up and for future installation in the Bldg. 111-B laboratory. Since the bend tester has never been used, calibrations of the stress gages were begun in the 300 Area before transferring to 111-B.

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The South Bend lathe which had been previously used in the Metallurgy Laboratory was placed in 111-B and decontaminated in preparation for a general repair job. It is hoped that this machine will provide suitable samples for dilatometric and tensile testing.

A new type of cell lighting has been assembled and installed in the mock-up cell. Evaluation of this lighting arrangement is awaiting the release of the Payne manipulator and the installation of a new manipulator of different design. Although the Payne manipulator has demonstrated its dexterity, it does not appear to be adaptable to the type of cell construction desired.

Construction of an optical plug in the mock-up cell has been started. A simple lens system is planned to replace the more complex photographic system previously designed.

A Dutch Oven cask has been placed in the shop for construction. Design of a frame for the model UTU hardness tester has begun.

Dilatometry

Dilatometer curves on a 1.0 atomic percent indium alloy of uranium in the "as rolled" condition showed this alloy to behave similar to normal rolled uranium. It exhibited a low initial alpha coefficient on heating and a higher, random alpha coefficient after cooling from the beta phase.

A quenching chamber was designed and constructed for the dilatometer to permit water quenching of the samples. The equipment was also altered so that the samples could be cycled through the alpha-beta transformation a number of times during a single run.

U-238 from Oak Ridge

Five billets of uranium containing only 0.03 percent U-235 were made available by Oak Ridge. Two of these billets were rolled at Lockport early in May, and have been received in rod form. These will be processed into slugs and pile tested for distortion tendencies. The other three billets are being reserved here for other experimentation.

Redox Corrosion Testing

All tests incorporating low carbon steel plate approximating the SAE 1010 specifications to be used as tank liners for Redox waste solutions are in progress. The stressed welded samples have finished two 48-hour and one 8-day exposure period in complete immersion tests at 72° C. The specimen in ANN recovery solution at pH 1.3 exhibited considerable corrosion and the test has been terminated. Other specimens in ANN recovery solution, pH 11, 200 Area waste synthetic solution, pH 10 and 11, and LAW ORNL #1, pH 11-13, show only slight local attack in the form of rust spots. Welded specimens in partial immersion tests at 72° C have completed one 48-hour test period, with results comparable to those of the stressed-welded samples.

In addition, two welded specimens were exposed in partial immersion tests at

72° C to LAW ORNL #1, pH 2.95 and 7.3. The specimen in the solution having pH 2.95 pitted badly at the liquid vapor interface. A portion of the specimen exposed to the liquid showed rusting, while the portion exposed to the vapor showed discoloration. The specimen in the solution having a pH of 7.3 showed tarnish and rust in spots.

It has been found that the ORNL #1, LAW Redox solution, undergoes a pH drop which appears to stabilize between pH 10 and pH 11. This change is being investigated and means of maintaining desired pH are under consideration.

Welded specimens of T-309 SCb, T-347, T-316 ELC, and T-318 in a partial immersion test in LAW Redox solution have completed their first 3-month exposure period at room temperature. No significant differences were noted.

Miscellaneous

Design and assembly of the equipment required for measuring torsional creep and damping of uranium was nearly completed.

All preliminary work required on the beryllium creep and aluminum-magnesium hardness experiment was completed. Assembly of the capsules for pile charging will proceed as soon as the AEC approval for this KAPL special irradiation request is received.

ANALYTICAL LABORATORIES

Work Volume Statistics

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

	April		May	
	Samples	Determinations	Samples	Determinations
Routine Control - 200	2122	3772	1986	3679
Routine Control - 300	373	977	482	1240
Water Control - 100, 700	510	2874	527	2972
Redox Program Analyses	1622	4766	2172	6135
Process Reagents	1003	1889	935	1817
Essential Materials	73	258	60	218
Special Samples	2837	9225	3337	8462
Stack Gas Filters	136	162	116	137
Totals	8676	23929	9615	24660

200 Areas Process Control

As part of the Stack Gas Program, the 222-B Control Laboratory was requested to determine radio-iodine in 6-1-MR, 6-3-MR, 8-1-MR and 8-3-MS solutions from the separations process. Difficulties were experienced due to a contaminant, tentatively determined to be ruthenium, which tracks through the analytical procedure. With assistance from the Analytical Research Group, it has been

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established that the current extraction procedure is sound and that preliminary extraction (NaOCl) and reduction ($NaHSO_3$) steps or sublimation procedures are also sound. Work is currently under way to eliminate by absorption techniques trace amounts of ruthenium associated with the AgI precipitate in the prepared sample. Another consideration is to study the decay curve and apply a correction for this impurity.

Tests on various solutions throughout the separations process show that colorimetric and titrimetric analytical procedures for the determination of uranium, if applied to solutions where uranium is not the major constituent, yield unreliable results.

The potentiometric titration of reduced uranium with ferric sulfate solution (method RUV-2) has been tested on five canyon starting solutions (6-3-MR). The maximum difference from the calculated amount found was 2%.

Data are being accumulated in the Isolation Bldg. Laboratory showing comparative results for chemical assay of plutonium, radio assay of plutonium and MWD exposure for the material involved. This is being done as part of the overall program of checking the isotope correction factors currently in use.

Routine geometry measurements of the methane proportional alpha counting instruments (accepted value 50.50%) in the 200 Area Laboratories were as follows:

Laboratory	Ave. Geometry (%)	No. of Tests
B Plant (222-B)	50.46	102
Isolation Bldg. (231)	50.52	39

The precision of the analytical results of the canyon starting solution (6-3-MR), the Isolation Bldg. starting solution (P-1) and the final product solution (AT) may be summarized as follows:

Sample	Precision		
	Expected	April Average	May Average
6-3-MR	1.43	1.19	1.59
P-1	2.39	2.29	1.99
AT	1.98	1.73	1.63

The results from the assay of the synthetic 8-1-MR solution are tabulated below. The standard precipitation procedure, CA-2a, was used and the percent recovery based on 2.077×10^6 c/m/ml.

Month	Laboratory	Ave. Results ($\times 10^6$)	No. Assays	% Recovery
April	222-B	2.074	5	99.9
	222-T	2.063	15	99.3
May	222-B	2.065	19	99.4

The standard iron solution used in the Isolation Bldg. Laboratory to check the chemical titration of plutonium was analyzed a total of 80 times during the month. There were 66, 14 and 0 results inside ± 1%, ± 2%, and outside ± 2%

of the assay value, respectively. The average precision of duplicate titrations was ± 1.38% as compared to ± 1.33% for April.

Assay Value	Group Ave.	% Diff.	No. Determinations	Precision (±%) Single	Precision (±%) Duplicate
12.65	12.69	+ 0.3	18	1.78	1.26
14.98	14.99	+ 0.06	22	2.18	1.54
10.22	10.22	0	18	2.17	1.53
14.98	14.98	0	22	1.57	1.11

300 Area and Essential Material Control

The total number of samples submitted to the 300 Control Group increased about 30 percent over the preceding month. This resulted from (1) the additional billet samples due to the two-shift operation of the melt plant, and (2) increased activity in the processing of uranium oxides.

Preliminary work necessary for the establishment of a spectrographic procedure for the control of the tin baths has been completed. The final procedure will be evaluated early in June.

Redox Program Control

Based on April 1949 statistics, an additional load of approximately 35 percent was noted in this program. Operation of the Bldg. 321 scale-up unit accounted for most of this increase, the balance originating in the Chemical Research Section. One new method, a procedure for controlling the processing of uranium waste solutions, was installed during this period. At month end, there were 68 people assigned to the Redox Control Laboratory.

Methods Adaptation

The acidimetric method for the determination of aluminum, which depends upon complexing the aluminum with potassium fluoride at a pH of 10.8, was studied to determine its limitations. In Redox solutions, uranyl nitrate and ferric nitrate are the primary interferences; both react with fluoride ion to some extent and their hydroxides tend to coprecipitate aluminum.

In the case of uranium, these factors tend to counterbalance one another if the samples contain approximately 150 mg of ANN (aluminum nitrate nonahydrate) and less than 300 mg UNH. However, the effect of the reaction of iron with fluoride is only one-fifth as important as its coprecipitation. In normal concentration ranges, the errors to be expected from these sources are not serious. At the same time, the procedure was tested on a micro-scale, the sample size being adjusted so that the aluminum content was decreased to 1-5 mg; the accuracy obtained was comparable to that on a macro scale. When applied to samples containing less than 1 g/l ANN, the precision obtained was not adequate and the effects of iron and uranium interference were more pronounced. A procedure for the determination of trace amounts of aluminum by measuring the fluorescence of the aluminum complex of Pontachrome Blue-Black R is now being investigated.

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A satisfactory calibration curve has been established for the polarographic determination of UNH in chromium-free LAW type solutions covering the range of 0.2 to 10 g/l. One of the difficulties in the application of this method to control purposes has been the necessity of recalibrating the instrument whenever an electrode capillary was replaced. It now appears possible that capillaries with nearly the same characteristics can be substituted by determining the drop time and mass of mercury per drop and applying the Ilkovic equation. Where necessary, a calculated correction can be applied.

Recent experiments indicate that a modification of method RNA-2 (use of KF to complex UNH and ANN) may be an improvement over method RNA-1C (oxalate complexing) for the determination of nitric acid under ORNL Redox flow sheet conditions. To avoid the difficulty of variable blanks previously associated with the KF method, an excess of KF is used and the reagent is adjusted to a definite pH prior to the addition of the sample. For acid-deficient solutions, nitric acid is added in known slight excess and the solution is titrated with standard base to the original pH.

A modification of the Redox method for the fluorimetric determination of uranium has been applied to the determination of this element in 200 Area process streams. This work is reported in a memorandum from D. F. Shepard to D. W. Pearce entitled "Analysis of 200 Area Process Samples for Uranium," issued on May 25, 1949, under document number HW-13484. The principal difficulty encountered in the analysis of these solutions was the quenching of the uranium fluorescence by the other solids in the samples. In cooperation with the Isolation Building Control Laboratory, some experiments were made on the practicality of removing lanthanum and plutonium by fluoride precipitation prior to the determination of uranium. Results to date indicate that this modification of the method results in improved usefulness.

Counting Standards

Several new instruments were received and installed during the month. These included a Potter Predetermined Decade Scaler, two Instrument Development Laboratories ASP type counters, and a methane-flow proportional beta counter. The latter instrument is not yet in full operating condition.

The study of the characteristics of the Tracerlab Mica window tube continued. Previous data had indicated that the operation of this tube was entirely satisfactory and current tests support this conclusion. The tube has now been installed in a service instrument and will be used for routine work under normal operating conditions and loads.

A special Hanford mica window tube employing a neon-amyl acetate atmosphere was subjected to extensive tests. The original period of operation was characterized by marked instability, especially in plateau lengths which varied over relatively short periods of time. The stability of the tube improved with operating time, until at the end of two weeks, statistical control was obtained. However, the tube was still subject to excessive fatigue, counting rate losses greater than 7% being observed.

Preliminary work with the Instrument Development Laboratories ASP instruments

has demonstrated that they are not stable when operated at 50.5% geometry. A geometry of 50.9% seems to be the optimum from an operating standpoint. The relationship of these instruments to the reference ASP instruments operating at the normal 50.5% geometry will be determined.

Miscellaneous Analyses

A method for the determination of bromine in organic halides has been tested and accepted as satisfactory. In addition, a gravimetric procedure for the determination of sodium is now in routine use.

A series of uranium alloys is being analyzed for carbon, hydrogen, nitrogen, silica and the major alloying constituent. Wet methods are being employed exclusively since the concentrations, 0.1 to 10 atomic percent, are outside the present spectrographic ranges. Alloying elements include Al, B, Ba, Co, Cr, Fe, Ga, Mn, Mo, Pb, Pt, Si, Ti, and Zr.

Two blood serum samples, submitted by the Medical Division, were analyzed for their potassium to sodium ratios. Anomalous results were obtained by the standard chemical procedures and the final determinations were made using the flame-photometer.

Service Groups

Experimental Shop

At month-end this Bldg. 3706 shop was operating with a back-log of approximately 800 man-hours. Items completed during the month included a special auto-feed shaping tool for the preparation of special electrodes used in the spectrographic laboratory; development of an automatic vacuum release trip for use in protecting vacuum systems from contamination; and the development of a modified panel unit for uranium analysis. Six instrument makers are currently assigned to fabrication on a two-shift basis.

Prints on 13 separate items have been submitted to the on-site shops for cost estimates on a quantity fabrication basis. Fabrication of such items by these other shops relieved the experimental shop of all but strictly experimental first-model fabrication and design. Off-site fabrication of quantities of four special pieces of apparatus is proceeding on schedule. Leupold-Stevens Instrument Company in Portland, Oreg., is currently engaged in this work.

Glass Shop

As of May 31 the Glass Shop had a total back-log of 120 man-hours. An increase in the amount of work of a complex nature has been noted. Completion of these items will be slow due to the limited space and equipment in this shop.

Analytical Research and Development

The hematoxylin colorimetric method for the determination of aluminum has been modified to permit determination of microgram quantities of that element in the presence of large quantities of uranium.

A new technique has been applied in an attempt to remove selectively certain fission products from samples. As applied to the removal of cerium, the technique involves passing the sample solution through a filter paper impregnated with inactive cerium oxalate; several such contactings were found to introduce quantitatively the active isotope into the filter bed.

Studies directed toward an understanding of the behavior of ruthenium in its various valence states has continued. Individual polarographic waves were obtained and identified as reductions from Ru (IV) to Ru (III), and thence to Ru (II) and to Ru (0). Evidence has been obtained from related experiments that Ru (III) disproportionates to Ru (IV) and Ru (0).

Further research in the development of Redox analytical methods has led to the completion and preliminary testing of an all-automatic titrating unit, the "autotitrator." The instrument performs a coulometric titration and contains an indicator device and trigger circuit that automatically stops the titration at the endpoint; many applications are foreseen.

In cooperation with the Chemical Research Section, an investigation is being conducted to determine the nature and concentration of the products formed by the nitric acid decomposition of hexone. Attempts are under way to determine, by application of infrared absorption techniques, the various organic acids formed in solution. Some of the gaseous decomposition products have been separated by use of selective absorbing media and have been determined by colorimetric and volumetric methods.

The initial phases in the development of 234-5 analytical procedures have been practically completed; personnel from the Control Groups have been trained in most of the methods, and transfer of analytical equipment to the 234-5 Bldg. laboratory has been started. Difficulties in the form of high blanks in the boron determination have been overcome by the exhaustive treatment of the equipment and the use of highly purified reagents.

STATISTICAL STUDIES

300 Area Plant Assistance Data

Data from the following melt plant studies were examined statistically: (1) effect of mold washes and charge material on silica content of B billets; and (2) effects of silica, vacuum, and pickling of chips on pour yield.

300 Area P Division Data

A statistical study has been made of the number and probability of incompletely transformed slugs produced from August 1948 through April 1949, under the current canning procedure.

300 Area Analytical Data

Duplicate results from analyses run for the 300 Area P Division are being analyzed statistically to determine the analytical precision of the methods involved.

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One of the routine accuracy and precision studies on Redox solution analysis was completed and reported.

200 Area Plant Assistance Data

Analysis of sand filter test results revealed a statistically significant downward trend in calculated sand filter efficiency at the B Plant (200-E Area). Estimates of the precision of efficiency figures were made for both T and B Plants.

Results of the study of correlations between high extraction losses and relative amounts of alpha-emitters other than Pu^{239} that might have been formed in material from 100-B pile were reported (Document HW-13332). The highest correlation was obtained with the mechanism leading to the formation of Cm^{242}.

200 Area Analytical Data

Statistical control of the within-chemist precision of extraction waste analyses is now a routine function, and results will be included in the Weekly Precision Reports.

Data compiled for the purpose of disclosing possible differences in 6-3-MR analyses between T and B Plant Control Laboratories were investigated statistically. No significant differences were apparent. These data incidentally revealed a substantial improvement in precision of 6-3-MR results as a consequence of having two chemists analyze each sample.

Data for comparison of AT chemical analyses by both volumetric and gravimetric burette measurements were studied. No significant difference was found.

The precision of the polarographic analysis for uranium was evaluated for various UNH concentrations.

Chemical Development Data

A study is in progress to measure the effects of various chemical constituents and properties of the solution on the disengaging time of hexone from aqueous solutions.

Instrument Division Data

The sequential sampling plan for Victoreen G-M tubes was completed and reported to the Instrument Division.

LIBRARY AND FILES

General

The Information Group was represented at a conference at the Argonne National Laboratory in Chicago, May 10 and 11, where the abstracting and organization of metallurgical literature pertinent to nuclear science was discussed. The consensus of the meeting was that the index to be developed should use some type

of punch card. A tentative set of metallurgical subject headings was developed, and an agreement was reached on cooperative indexing by the nine sites interested--MIT, KAPL, BMI, ORNL, Argonne, U. S. Bureau of Standards, Iowa State College, Brookhaven and Hanford.

During the month a statistical record was completed of the services supplied by the Plant Technical Library and the Classified Files to the various other Divisions, etc., of Hanford Works. For the Classified Files, this included a breakdown of the number of classified documents issued for each Division, the number of documents routed to personnel in other Divisions, and the number of reference services rendered each. For the Plant Library, the figures included the number of books purchased at the request of each Division, books and periodicals circulated to personnel, and the number of reference services rendered. From these figures will be determined percentages for accurate liquidation of the operating costs of the Library and Classified Files.

Plant Library

An index to the photostats and reprints available in the Library was established by withdrawing a backlog of entries from the dictionary catalog and incorporating these with another newly completed index unit. Experience has shown that filing the photostat and reprint entries in the book catalog tended to confuse the users. In the separate photostat and reprint index, entries will be filed under the title of the periodical, relying upon the standard Library indexes for subject information. All new reprint and photostat requests will be checked against this index to avoid duplication.

Literature searches were undertaken during the month of such varied topics as: Magnesium base alloys with low beryllium content; dimensions and load capacities for various types of cables; use of lithography in duplicating work; safety precautions in handling various chemicals, etc.

Library statistics were as follows:

	April	May
Number of books on order received	57	84
Number of books fully cataloged	146	96
Number of bound periodicals processed but not fully cataloged	148	0
Pamphlets added to pamphlet file	47	29
Miscellaneous material received, processed, and routed (Included maps, photostats, patents, etc.)	136	20
Books and periodicals circulated	1276	1135
Unclassified reports processed	295	427
Unclassified reports circulated	127	127
Reference services rendered	958	579

	Main Library	W-10 Branch	Total
Number of books	4346	1659	6005
Number of bound periodicals	3354	100	3454

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Classified Files

Two new office forms were developed for expediting current Classified Files procedures. One is a "Document Correction Receipt" which will enable information regarding changes in already distributed documents to be easily disseminated and taken care of. The other is a simplification of the present "Receipt of Material" form to adapt it more specifically for Files use, and to reduce the amount of typing necessary in the transmittal of documents offsite.

With assistance from the Stenographic and Typing Section, the basic framework for a technical index based on CA-1927 (List of Current Subject Headings Used For The Indexing of Reports) was completed by the preparation of over 5,000 typed dividers to be used as main headings, sub-headings, cross-references, etc. Index cards covering GEH and HW documents are being interfiled into this basic framework from which will be built the 700 Area Classified Files technical index.

Work statistics for the Classified Files were as follows:

	April	May
Documents routed	10,157	9,182
Documents issued	4,945	2,957
Reference services rendered	2,077	1,864
Reports abstracted	625	802

Files Assistance Unit statistics were as follows:

Ditto masters run	859	802
Mimeograph stencils run	1,146	1,098
Ditto master copies prepared	33,048	31,300
Mimeographed copies prepared	52,989	52,029
Volume of mail handled	14,630	17,680

INVENTIONS

All Metallurgy & Control Division personnel engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work during 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(s)	Item
T. C. Nelson, Jr.	Portable Low Level Sample Cask
T. J. Birchill	Automatic Vacuum Release Trap
T. J. Birchill	Auto-feed Rod Shaping Tool

Signed T. W. Hauff
Division Head

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MEDICAL DIVISION

MAY 1949

Summary

The Medical Division roll decreased by 16 from 477 to 461.

The hospital administrator attended the annual meeting of the Washington Hospital Association, and later the Western Hospital Association meeting in San Francisco. An administrative assistant attended the Mid-west Hospital Conference. The division health officer attended the annual meeting of the Western Public Health Association in Los Angeles.

Industrial

There was no evidence of injury to any employee during the month due to radiation.

Employee physical examinations were 3,362 and first aid treatments 11,520; little change from the previous month.

Total absenteeism increased slightly to 2.33%, while that due to sickness only was up from 1.50% to 1.68%.

Sixteen major and twenty-five sub-major injuries were treated. Three of the sub-major injuries were sustained by G. E. employees.

The health topic of the month dealt with emergency first aid care.

Communities - Hospital and Clinics

The average daily hospital census was 74 as compared to 90 for April and 78 for May, 1948. Clinic visits dropped from 8074 to 7577, and were about the same as for May, 1948.

About five hundred residents were guests of Kadlec on National Hospital Day.

A detailed study was completed, comparing Kadlec with sixteen hospitals in Washington and Oregon, from the standpoint of operating efficiency.

Dental clinic visits numbered 2,635, a continued decline due to decreased population served.

Public Health

There was a great increase in communicable disease control visits, with measles and chicken pox the major offenders.

The chest x-ray survey with portable unit was completed with a total of 5,718 x-rays taken. This gives about 88% coverage for Richland and North Richland, taking into consideration routine employee examinations.

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1221676

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Summary (continued)

Costs (April)

Net cost of operation of the Medical Division (before assessments to other divisions) was $108,726., about $20,000. less than for March. The major factor in this reduction was the decrease in the employee roll, which more than offset the decrease in revenue.

Net expense of Richland Hospital and Clinic was $4,241., as compared to $3,409. for March. This expense was made up of hospital $10,323., while the clinic operated at a profit of $6,082.

1221677

MEDICAL DIVISION

MAY 1949

Plant Medical Section

General

The total number of examinations decreased from 3,420 in April to 3,362 in May. G. E. termination examinations decreased from 413 to 141. First aid treatments remained about the same, from 11,590 to 11,520. There were 16 major injuries and 22 sub-major injuries to sub-contractor employees cared for during the month. There were three sub-major injuries to General Electric employees.

The industrial physicians' scientific meeting dealt with a review of the A. E. C. information meeting recently held in Oak Ridge, and the American Association of Industrial Physicians' meeting recently held in Detroit.

The Health Activities Committee met on May 19th, and the coming month's health topic "When the Unexpected Happens" was discussed. This subject dealt with first aid procedure which all of us at some time may be called on to perform. Absenteeism due to sickness only was 1.68% as compared to 1.50% for the previous month.

Inspection trips made during the month were to the biological experimental farm, the 105-H degreasing operation, and the 234-5 building in the 200-W area, also the railroad yard and repair shops at Riverland.

Two special hazard incidents occurred during the month which involved contamination to open wounds or breaks in the skin.

Photographing of hands for certain employees potentially receiving exposure to hands is well under way, and will provide a photographic record in these cases.

Physical Examinations	Apr. 1949	May 1949	Year to date
Pre-employment (G.E.)	23	76	408
Annual	542	422	2341
Food Handlers	49	52	380
Sub-contractors	1639	1937	12043
Rechecks	220	186	1519
Interval Rechecks (Area)	526	544	2773
Terminations & Transfers (G.E.)	413	141	1508
Government	8	4	41
Total	3420	3362	21013

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1221678

MEDICAL DIVISION

MAY 1949

Laboratory Examinations

Clinical Laboratory	Apr. 1949	May, 1949	Year to date
Government	53	24	188
Pre-employment, terminations, transfers	3317	2346	25784
Annual	3289	2611	14345
Rechecks (Area)	2596	2848	14293
First Aid	74	47	303
Clinic	3686	3758	19539
Hospital	3556	2675	18097
Public Health (Inc. food handlers)	321	258	2163
Total	16892	14567	94712

X-Ray			
Government	5	5	34
Pre-employment, terminations, transfers	279	324	3415
Annual	550	427	2411
First Aid	242	205	1461
Clinic	344	310	1944
Hospital	196	190	1385
Public Health (Inc. food handlers)	53	60	374
Total	1669	1521	11024

Electrocardiographs			
Industrial	149	115	799
Clinic	13	18	85
Hospital	26	15	147
Total	188	148	1031

Allergy			
Skin Tests	31	26	251

Pathological Slides			
Hospital	326	170	706

First Aid Treatments			
Occupational Treatments	1326	1261	8886
Occupational Retreatments	6003	4699	33150
Non-occupational Treatments	4261	5560	28535
Total	11590	11520	70571

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MEDICAL DIVISION

MAY 1949

Major Injuries	Apr. 1949	May 1949	Year to date
General Electric.....	1	0	7
Sub-contractors.....	17	16	72
Total.....	18	16	79
Sub-major Injuries			
General Electric.....	2	3	20
Sub-contractors.....	21	22	177
Total.....	23	25	197
Absenteeism			
Weekly employees, all causes.....	2.28%	2.33%	2.69%
Weekly employees, sickness only.....	1.50%	1.68%	1.87%
Total lost by males due to sickness.....	1440	1193	8181
Total lost by females due to sickness....	1019	802	5478
Total days lost due to sickness.....	2459	1995	13659
Investigation:			
Total calls requested.....	14	13	107
Total calls made.....	14	13	107
No. absent due to illness in family....	0	1	1
No. not at home when call was made.....	5	1	9

Village Medical Section

General

Two physicians terminated and will not be replaced.

Mr. Pullen attended the annual meeting of the Washington Hospital Association in Seattle and the Western Hospital Association in San Francisco. Mr. Bakke attended the Upper Mid-west Hospital Conference.

The average daily census was 74, as compared to 90 for April and 78 for May, 1948.

Clinic visits decreased from 8074 to 7577. This is 6% lower than April and about the same as May, 1948. The North Richland medical center accounted for 13% of the current total.

The pharmacy at the North Richland hospital has been closed due to the reduction in business.

The net expense of the Richland community medical program was $4,241. as compared to $3,409. for March. This was made up of Kadlec Hospital expense of $10,323., a decrease of $2,414. over March, together with the clinic which operated at a profit of $6,082. Clinic profits decreased by $3,246.

1221630

MEDICAL DIVISION

MAY 1949

Village Medical Section - General (continued)

The practice of transferring about $5,000. in salary expense from the clinic to industrial was discontinued during this month. Doctors commissions are not in this statement since the April commissions are not paid until May.

The net expense of the North Richland clinic was $7,481., as compared to $6,463. for March. This is due to the seasonal reduction in illness and the sharp reduction in population.

Clinic Visits	Apr. 1949	May 1949	Year to date
Medical	1437	1239	8726
Pediatrics	736	693	3990
Well Babies	245	106	1075
Surgical	890	868	4515
Gynecological	614	651	3294
Obstetrics (new)	85	84	502
Obstetrics (recheck)	851	937	4505
Venereal Disease	120	121	1284
Ear, Nose & Throat	515	416	2626
Eye	345	272	1380
Visits handled by nurses	1447	1414	8689
Night clinic visits	789	776	4199
Total	8074	7577	44785
Average clinic visits per day	311	291	321

Home Visits			
Doctors	137	280	1565
Nurses	280	322	2539
Total	417	602	4104

Kadlec Hospital			
Census	542	492	2838
Dischargos:			
Surgical	136	102	586
Medical	99	66	625
Obstetric & Gynecologic	123	135	651
Eye, Ear, Nose & Throat	95	63	331
Pediatrics:			
Children	40	30	273
Newborn	64	88	393
Total dischargos	557	484	2859
Patient Days	2688	2295	15267
Average stay	4.6	4.6	5.2
Average daily census	89.6	74.0	101.5
Discharged against advice	3	2	13
One-day cases	116	95	465

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1221631

MEDICAL DIVISION

MAY 1949

Operations	Apr. 1949	May 1949	Year to date
Transfusions	55	50	235
Eye, Ear, Nose, Throat	83	56	270
Dental	0	2	6
Casts	20	20	111
Minors	82	62	359
Majors	81	66	333
Vital Statistics			
Deaths	6	1	28
Deliveries	69	83	390
Stillborn	0	3	5
Physiotherapy Treatments			
Clinic	100	130	528
Hospital	95	36	283
Industrial:			
Plant	305	225	1568
Personal	68	75	312
Total	568	466	2791
Pharmacy			
No. of prescriptions filled	3364	2913	19005
Patient Meals			
Regulars	3109	2853	21202
Lights	176	40	780
Softs	1482	1181	7727
Surgical Liquids	89	100	510
Tonsils & Adenoids	221	123	639
Specials	1386	1010	5881
Liquids	236	224	1257
Total	6699	5531	37996
Cafeteria Meals			
Noon	2354	2322	12521
Night	338	320	1625
Total	2692	2642	14146
Nursing Personnel			
First Aid Nurses	41	38	
Clinic Nurses	17	17	
Public Health Nurses	13	13	
Hospital General Nurses	79	71	
Aides & Orderlies	47	52	
Total	197	191	

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MEDICAL DIVISION

MAY 1949

Public Health Section

General

During the month communicable disease control visits increased tremendously. Measles and chicken pox remain the outstanding diseases.

The chest x-ray survey was completed with a grand total of 5,718 x-rays.

The new section of the sewage disposal plant was placed in operation the latter part of the month.

Administration	Apr. 1949	May 1949	Year to date
Newspaper Articles	40	15	113
Committee Meetings	0	3	48
Attendance	0	50	650
Staff Meetings	1	1	10
Lectures & Talks	20	2	22
Attendance	2529	150	2679
Conferences	90	20	218
Attendance	350	70	870
Radio Broadcasts	3	0	3
Immunizations			
Cholera	0	0	3
Diphtheria	1002	199	1501
Influenza	0	0	5
Rocky Mt. Spotted Fever	4	29	33
Small Pox	622	18	731
Tetanus	7	3	14
Typhoid	7	3	14
Whooping Cough	1	0	2
Vollmer Patch Test	6	1	7
Total	1649	253	2310
Social Service			
Cases carried over	89	93	415
Cases admitted	30	19	124
Total	119	112	539
Cases closed	26	12	103
Remaining case load	93	100	436
Sources of Referral			
Public Health	3	1	23
Doctors	12	6	53
Interested Person	7	2	10
School	2	2	5
Personnel Office	0	0	1

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1221633

MEDICAL DIVISION

MAY 1949

Sources of Referral (continued)	Apr. 1949	May 1949	Year to date
Personal Application	2	1	14
Housing	0	1	1
Other Agency	2	4	7
Miscellaneous	2	2	10
Total	30	19	124
Sanitation			
Inspections made	244	263	1726
Bacteriological Laboratory			
Treated water samples	186	190	965
Milk samples (Inc. cream & ice cream)	131	123	646
Other bacteriological tests	233	180	1529
Total	551	493	3141
Communicable Diseases			
Amoebic Dysentery	0	0	1
Chicken Pox	65	81	461
German Measles	62	34	155
Gonorrhea	6	3	26
Impetigo	0	0	2
Influenza	0	0	8
Measles	52	195	262
Meningococcic Meningitis	0	0	3
Mumps	7	0	25
Pediculosis	0	10	12
Pinkeye	6	8	33
Ringworm	3	1	13
Scabies	1	0	8
Scarlet Fever	2	2	12
Syphilis	7	1	71
Tuberculosis	3	0	5
Vincent's Infection	0	0	2
Whooping Cough	0	3	3
Total	214	338	1112
Total No. Nursing Field Visits	1111	1458	7477

Dental Section

General

The number of patients treated in the Dental Section decreased from 3,032 to 2,635, or 19%, over the previous month. There was very little difference over the same period a year ago.

Patients treated	3032	2635	15832

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MEDICAL DIVISION

PERSONNEL SUMMARY

May 31, 1949

	1100 Area					3000 Area					
	Div. Admin.	Industrial	Clinic	Hospital	Public Health	Admin.	Industrial	Clinic	Hospital	Public Health	Sub-total
Physicians	2	5	18	3	1		3	5			37
Dentists			9					2			11
Nurses		11	14	71	9		3	3		4	115
Nurse Aides		1	4	34	1			1			41
Orderlies				6				1			7
Ambulance Drivers		4									4
Techn - Dent. Hyg.			2								2
Techn - Clin. Lab.	2			12.8			2				16.8
Techn - Bact. Lab.				1							1
Techn.- X-Ray Lab.				6			2				8
Techn - Phys. Therapy		1									1
Accounting Clerks	2					1					3
Secretaries	2										2
Cler. Work. Leaders	1			1							2
Steno. & Typists	1			4	2						7
Off. Mch. & Tele. Opr.	4	1				1					6
General Clerks	22	15	8	13	1	2	12	2			75
Pharmacists				3					2		5
Dietitian				1							1
Cooks				7							7
Kitchen Workers				13							13
Soc. Serv. Counselors					3						3
Sanitarians					3						3
Health Educator					1						1
Dental Assistants	1		7					2			10
Janitors	1			16				7			24
Bacteriologists				2							2
Records, Supervisors	2										2
Jr. Engineer	1										1
Acctg Supervisors	3										3
Admin. & Assts.	2					1					3
Others			3	6	2						11
Total	46	38	65	199.8	23	5	22	23	2	5	427.8

Medical Division personnel located in outlying areas are shown on next page.

1221685

MEDICAL DIVISION

PERSONNEL SUMMARY May 31, 1949

Outlying Areas

	Sub-Total	100-DR	100-H	234-5	White Bluffs	Pasco	101	100-B	100-D	100-F	200-E	200-W	300	241-BY	Plant General	Grand Total
Physicians	37															37
Dentists	11															11
Nurses	115		4		1			1	1	5	4	5	2	1		139
Nurse Aides	41															41
Orderlies	7															7
Ambulance Driver	4															4
Techn-Dent. Hyg.	2															2
Techn-Clin. Lab.	16.8							.4	.4	.4	.4	.8	.8			20
Tecnn-Bact. Lab.	1															1
Techn-X-Ray Lab.	8															8
Techn-Phys.Ther.	1															1
Acctg Clerks	3															3
Secretaries	2															2
Cler.Work.Leader	2															2
Steno. & Typist	7															7
Off.Mch.-Tel.Opr.	6															6
Gen'l Clerks	75		1					.5	.5	1	.5	.5	1			80
Pharmacists	5															5
Dietitian	1															1
Cooks	7															7
Kitchen Worker	13															13
Soc.Serv.Couns.	3															3
Sanitarians	3															3
Health Educator	1															1
Dental Asst.	10															10
Janitors	24															24
Bacteriologist	2															2
Records, Supv.	2															2
Jr. Engineer	1															1
Acctg. Supv.	3															3
Admin. & Assts.	2															2
Others	11															11
Total	427.8	0	5	0	1	0	0	1.9	1.9	6.4	4.9	6.3	3.8	1	0	461

Number of employees on payroll:

Beginning of month	477
End of month	461
Net decrease	16

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HEALTH INSTRUMENT DIVISIONS

MAY 1949

Summary

The force decreased by 3. There was one Special Hazards Incident, without serious consequence.

Health Instrument Operational Division findings were generally normal. Weak points in protection were observed in the P-10 operation, and in contamination control in the canyon buildings.

Control results from the Development Division were also normal. Concern about water table contamination below the 5-6 crib in the 200-E Area has diminished.

Speculations are reported on the reason for anomalous decay rate of mixed polonium-boron sources. If confirmed, this information should be disseminated to other laboratories relying on such sources.

Biology Division control monitoring showed no exceptional result. Rabbit thyroids in the 200-W Area were 2 - 5 times more active than the stated permissible limit, but this is entirely compatible with the existing I^{131} contamination.

[redacted]

Health Instrument Divisions

HEALTH INSTRUMENT DIVISIONS

MAY 1949

Organization

The composition and distribution of the force as of 5/31/49 was as follows:

	100-B	100-D	100-F	200-W	200-E	300	700	P.G.	Total
Supervisors	1	1	3	10	3	15	8	0	41
Engineers	5	3	10	19	10	7	1	0	55
Clerical	0	0	2	1	1	3	5	0	12
Others	8	12	21	61	34	55	8	5	204
Total	14	16	36	91	48	80	22	5	312

Number of Employees on Payroll	May 1949
Beginning of Month	315
End of Month	312
Net Decrease	3

Added to the roll were a technical graduate and one laboratory assistant; another returned after extended illness. A laboratory assistant was displaced by a longer service employee. One technical graduate and four general clerks terminated. A technologist was temporarily removed from the roll.

General

Last month's account of a plutonium deposition case may have been premature, as supposedly more accurate checks have shown conflicting results.

Generally unsatisfactory control is reported from the P-10 operation, with demonstrable amounts of tritium (presumably as T_2O) in the body. It had not been anticipated that T_2O would be formed in this operation (except by explosion), and the hazard control will require critical revision.

Conditions in the T and B Plant canyons are also below the standard normally maintained by the "S" Division. Prolonged maintenance work has been a contributing factor, probably aggravated by reduced ventilation forced by the sand filter installations.

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Health Instrument Divisions

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One Class 1 Special Hazards Incident was reported. This concerned plutonium contamination of the nose and mouth during sampling.

The following trips were reported:

CC Gamertsfelder - Technical Cooperation Meeting in Oak Ridge; Information Meeting in Los Alamos

FE Adley and DP Schively - Conference at Simonds Saw & Steel Co., Lockport, N.Y.; FE Adley also visited University of Rochester, Rochester, N.Y.

FP Seymour - Schenectady, N. Y.

W.Singlevich - Schenectady, N.Y.

HM Parker - Raymond B. Allen Lectureship, University of Washington, and final lecture in the Medical School, University of Washington.

Visitors included Dr. Yalman, Dr. Mead and Mr. Bradley, Monsanto Chemical Co.; and Mr. A.W. Green, U. of Wash., to study techniques in JW Healy's group.

Dr. R. E. Zirkle, consultant, came to examine the final plans for the Biology Laboratory and the Animal Farm. Both were approved. Dr. Meyers, U. of Texas, came to study the work on radioactive contamination of algae.

During the period covered by this report, all persons in the Health Instrument Divisions 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
R.C.Thorburn and J.W. Healy	Rapid Determination of Radon in Water.
F.E. Adley	Scalomatic - a device for the rapid measurement of small particles.

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1221689

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Health Instrument Divisions

OPERATIONAL DIVISION

100 Areas

General Statistics

	April				May				1949
	B	D	F	Total	B	D	F	Total	To Date
Special Work Permits	600	699	759	2058	575	717	581	1873	10,145
Routine & Special Surveys	547	521	574	1642	516	481	550	1547	8,288
107 Effluent Surveys	136	102	90	328	102	96	93	291	1,460
Air Monitoring Samples	124	112	98	334	111	110	105	326	1,513

Retention Basin Effluent

The activity of the water leaving the retention basin was as follows:

	100-B	100-D	100-F
Power level (MW)	275	275-290	275
Average beta dosage-rate (mrep/hr)	1.2	1.0	0.9
Average gamma dosage-rate (mr/hr)	2.0	2.4	2.2
Average total dosage-rate (mrep/hr)	3.2	3.4	3.1
Average integrated dose in 24 hours (mrep)	77	82	74
Maximum integrated dose in 24 hours (mrep)	89	108	86
Maximum integrated dose in 24 hours (1949)(mrep)	108	132	106

100-B Area

A film survey of tube #0453, (containing P. C. tube) with a new shield in place, showed a dosage rate of 220 mr/hr with the unit at 235 MW. The radiation was in the form of a beam which showed 10 mr/hr at 10 feet. No neutrons were indicated. The beam was eliminated by lead shielding until the following shutdown. At that time it was found that two perforated aluminum dummies had been omitted from the front end of the tube.

During the replacement of a center process tube, numerous globules of hot aluminum were scattered over the lower nozzles of the pile and into the discharge area basin. Uncorrected dosage rates greater than 35 rep per hour were obtained on these globules and about 20 of them were found and removed.

A fire broke out in the P-10 section of the burial trench. Paper in the trench was burned and the shoring at that portion was scorched. Fire fighting personnel were exposed to a maximum dosage rate of 100 mr/hr. Respiratory protection was worn and no contamination to personnel was observed. The cause of the fire was not definitely established.

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During pile shutdown a "P" Division operator reported a high dosage rate at the edge of the #9 cubicle at the north end of the Gas Purification Building. Investigation revealed that the valve had not reseated properly after testing.

A high background level was observed in the "P" Division office and in the control room. Investigation showed that there was a leak in the sealed vent for the horizontal rod effluent water line. This vent is located in front of the air intake of the two above rooms. The background activity was undoubtedly due to water vapor from the effluent water line. The vent was sealed and the condition alleviated.

A sample of rust and sludge taken from the viewing pit manipulator and analyzed by the H.I. Methods Laboratory showed 0.89 μc/g beta activity and 4850 d/m/g alpha, about 90% of which was Pu.

P-10 Operations - 108 Building

A mercury diffusion pump on one of the process hoods collapsed following an attempt to clean a clogged return tube An employee of the Technical Division was standing in front of the pump with the hood doors open. A thorough check of the man revealed no injury or contamination. There was no sign of mercury or glass, or contamination outside the hood. Particles of glass and mercury inside the hood did not indicate any contamination. The hood air and room air Kanne chambers did not exceed 5×10^{-12} and 2×10^{-13} amperes respectively. Urine and blood samples from the man involved were significantly high, however, showing an estimated 5.5 μc/liter of tritium oxide in each sample.

During the subsequent clean-up, the trap for the pumps was transferred to the decontamination sink. At the completion of the transfer, the room air Kanne chamber showed greater than 10^{-12} amperes and personnel evacuated the room. The calculated Kanne chamber reading for permissible concentration in air is 1.2×10^{-12} amperes.

A minor injury was sustained in the hood room. An operator was handling an ice-cream carton filled with the tips of the product flasks which remain when the main portions are sealed off. A sharp point of glass of one of these tips had ruptured the side of the carton and punctured the operator on the back of the middle finger of the left hand. A tourniquet was applied both to the finger and to the arm. No contamination was observed but the man was sent to the Kadlec Hospital for treatment. Blood and urine samples were taken and were sent to the H.I. Methods Laboratory for analysis and showed 0.8 μc/liter blood and 3.3 μc/liter urine.

Because of the high urine sample obtained from the operator involved in the mercury diffusion pump incident, urine samples were taken from the rest of the P-10 personnel. Two other operators showed significant readings but not as high as that of the first man. Personnel from the H.I. Methods Laboratory visited the building and took samples to prove the presence of tritium oxide.

1221691

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They have definitely shown that there is tritium oxide in the system.

On May 26th the final run of Special Request #15 pellets was completed. Further work in #1 and #2 hoods has been postponed until a thorough study of the tritium oxide problem can be made.

Metallurgical Operations - 111 Building

Three sections of vertical thimbles were received from the 100-F Area. The maximum personnel exposure during the unloading of the sections was 1.2 roentgens per hour.

100-D Area

The storage area basin was pumped down in order to repair and anchor the discharge chute liners. Dosage rates up to 35 mrep/hour were found at the floor level in the storage area. Airborne contamination as high as 3×10^{-4} μc/liter was observed near the #3 drain. Exposure rates as high as 250 mr/hour were encountered for a limited time when irradiated metal pieces were dislodged from under the mattress plates. Gross contamination was encountered but was confined to the work site.

During the vacuuming of vertical thimbles the vacuum line became plugged and caused clouds of rust to emerge from the thimbles. An air sample taken at the time jammed the counting mechanism. Personnel were evacuated immediately and checked for contamination. Some contamination was found on the neck and portions of the face of those working near the thimbles. All contamination was successfully removed.

On May 23rd the power level was increased from 275 to 290 MW. Extensive radiation surveys around the pile showed no unusual conditions or unusual increases in radiation levels.

A steel spline, with the retrieving mechanism attached to the end, was used for the first time for removal of samples from the "B" experimental hole and eliminated previously encountered hand exposures. It also afforded improved contamination control.

The radiation beam at the top far edge of the pile showed a dosage rate of 1.8 roentgen per hour at 1½ inches from the seal. The gamma dosage rate on the 50 foot far roof was 45 mr/hour.

100-F Area

Sample irradiation in the experimental holes was continued. Unusually high dosage rates were observed from samples stored in the loading mechanism. However, after the addition of four inches of lead shielding, the dosage rate was 120 milliroentgens/hour. Once again a sample became lodged between the loading mechanism and the cask and efforts to remove this sample involved exposure rates of 1.5 roentgens/hour. The need for improved equipment for all experimental work is apparent.

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Process tube #1184 was converted to an air tube but was not adequately shielded. As a result, a radiation beam showing an uncorrected dosage rate of about 127 mrem/hr was observed.

During discharge operations water was sprayed onto the pile face when two tube caps were inadvertently removed on the wrong header. Fortunately no personnel contamination occurred. On one entry to the discharge face an irradiated dummy piece was found on one of the tip-offs. The exposure rate was 1 roentgen/hour. Spread of contamination from the discharge face resulted in some shoe and hand contamination, all of which was satisfactorily removed.

High dosage rates were encountered during the replacement of the #20 vertical safety rod thimble. Air samples taken during the work showed a maximum of 8×10^{-6} μc/liter. Poor handling of gloves and respiratory protection resulted in low level hand contamination in several instances. After start-up, neutron surveys with the new thimble in place and with a shortened step-plug indicated a total neutron flux of 114 mrem/hour.

A trace of the beam at the top far edge of the pile was observed for the first time at the far front corner of the pile. The maximum gamma dosage rate observed in the beam was 3.3 roentgens/hour just to the rear of the #4 seam.

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Health Instrument Divisions

200 Areas T and B Plants

General Statistics

	April			May			1949
	T	B	Total	T	B	Total	To Date
Special Work Permits	418	477	895	394	430	724	4131
Routine & Special Surveys	395	585	980	521	536	1057	5368
Air Monitoring Samples	471	667	1138	322	685	1007	5725
Thyroid Checks	162	91	253	94	73	167	1095

Canyon Buildings

In the T Plant, decontamination of the canyon deck is in progress. Contaminated powdery substance removed showed dosage rates of up to 200 rep per hour at 3 inches (Betty Snoop). The maximum personnel exposure rate during cleaning was 500 mrep/hr. Hand contamination to a sampler of 20,000 c/m was reduced to 450 c/m, and then to background the following day. His protective gloves, the supposed cause of contamination, showed a dosage rate of 500 mrep/hr surface, including 20 mr/hr at 2 inches. Surface dosage rates of 3 rep per hour were encountered when the 16-2 centrifuge dip leg was replaced. An air sample taken during the work showed a maximum of 3×10^{-6} µc f.p./liter and 1.7×10^{-9} µg Pu/cc. About 28 µg of product were detected at the site of this job. A survey of deck sections 12 through 17 showed about 37 µg Pu. The need for more rigid contamination control was indicated when routine surveys found all of the canyon step-off mats contaminated from 200 c/m to 80,000 c/m, 15,000 c/m on a Danger Zone sign in the R-13 change room, and 100,000 d/m Pu on a sampler's shoe in the 271-T locker room. Ninety-five of the canyon air samples showed significant concentrations, with the maximum occurring when section 8 was opened; the spot sample filter showed a dosage rate of 40 mrep/hr surface. Air sample filters representing about 76,000 cubic feet of air in the canyon when the concentration was below 10^{-6} µc f.p./liter showed 441 particles per 10,000 cubic feet, substantiating the need for assault masks in the canyon at all times. This concentration can be compared to 1.4 particles per 10,000 cubic feet found in 223,000 cubic feet of air sampled outside the canyon building. An air sample taken during maintenance work in the pipe gallery showed a concentration of about 8×10^{-7} µc f.p./liter and indicated about 300 particles in the sample.

In the B Plant, cell filters were removed from eleven sections during the month. Contamination spread from this work was confined mostly to protective paper which showed dosage rates of up to 3.8 rep per hour at the surface. Ground contamination adjacent to the tunnel door showed a maximum of 60,000 c/m. No contamination was detected 50 feet outside the door. Forty-one canyon air samples showed significant concentrations, with a maximum of 2×10^{-5} µc f.p./liter reported during impacting in cell 18L. The higher

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condition existed for three hours following the impacting and it was believed that some of this was due to reduction operations carried out in sections 6 and 7. Air samples taken during reduction operations in section 6 have indicated the presence of I^{131}.

Control Laboratories

In the B Plant, 267 items, not regulated with respect to handling, were found contaminated on surveys by Technical and H.I. personnel. In addition, 34 contaminated floor locations were reported. Four cases of product and four cases of fission product hand contamination were reported and successfully cleaned. An additional case of fission product contamination of the nose and chin was cleaned with liquid soap.

Concentration Buildings

In the T Plant, smears from all roof fans ranged from a maximum count of 50,000 d/m from the A Cell exhaust fan to 500 d/m from G Cell exhaust fan. Decontamination work in C Cell removed an estimated 57 μg Pu. Outer coverall contamination of about 100,000 d/m was reported during the patching of the F-10 tank with Koroseal. No contamination was detected on the inner coveralls. Later this leak was welded without contamination spread.

In the B Plant, continuous air samples at the D Cell roof fan indicated the emission of about 10 μg Pu/24 hours. Sampling equipment has now been set up for continuous sampling in A, B, and D Cells, and at their respective roof fans. First results showed the following:

	In Cell	Roof-Vent
A Cell	9×10^{-10} μg Pu/cc	5.6×10^{-10} μg Pu/cc
B Cell	4.2×10^{-11} μg Pu/cc	2.4×10^{-10} μg Pu/cc
D Cell	1.1×10^{-10} μg Pu/cc	1.6×10^{-10} μg Pu/cc

The air samplers in A and D Cells are near tank vents and in the general cell area in B.

Considerable maintenance work was done with good contamination control. The only instance of personnel contamination (hands, neck and ankles) occurred during F-7 sample line gasket replacement and was easily cleaned.

Stack Areas

In the T Plant, 22 contaminated spots were reported in the 291 and 292 building with a maximum surface dosage rate of 15 mrep/hr. A routine dosage rate measurement at the elbow of the inlet duct to the sand filter showed 360 mr/hr at 2 inches.

In the B Plant, decontamination in the vicinity of the fans was completed.

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Cleanup at the base of the stack, where contaminated ground showed dosage rates of greater than 35 rep per hour at 2 inches was done with maximum exposure rates of 600 mrep/hr at five feet. Cans of dirt removed for burial showed dosage rates of up to 2.5 roentgens per hour at 2 inches.

Waste Disposal Areas

In the T Plant, the tie-in of the TX waste lines to the 151 and 152-T diversion boxes was completed with a maximum exposure rate of 100 mr/hr. The 224-T waste now cascades through tanks 204, 203, and 202 before overflow to the cribs. Additional surveys of the Industrial Burial Ground showed ground contamination of up to 1.4 rep per hour surface including 100 mr/hr at 2 inches.

In the B Plant, a new burial trench was excavated in the Industrial Burial Ground.

Riverland Roundhouse

A five-fold hand and shoe counter was installed at Riverland, and Special Hazards lectures were presented to the railroad personnel.

Plant Laundry

A total of 37 continuous and 59 spot air samples was taken during laundry operations and showed a maximum concentration of 6×10^{-11} µg Pu/cc. Spot samples during monitoring room operations showed up to 9×10^{-7} µc f.p./liter. Three pairs of washed coveralls showed up to 300,000 d/m. These could have been detected and removed for burial at the point of use. Water from the laundry washline backed up to the carpenter shop in the 272 Building. Samples showed about 5×10^{-3} µc/liter. The condition was remedied when the laundry ditch was cleaned of silt and weeds.

The Isolation Building

General Statistics

	April	May	1949 to date
Special Work Permits	27	34	185
Routine and Special Surveys	309	310	1557
Air Monitoring Samples	497	511	2157

Operating Cells

During paint removal and maintenance work in the cells, when assault masks were worn, five significant air samples were obtained with a maximum concentration of 3×10^{-10} µg Pu/cc during paint chipping in Cell #3. Five significant samples were obtained during normal operations in Cells #2 and 4 with a maximum concentration of 2×10^{-11} µg Pu/cc. All follow-up spot

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samples and all continuous samples run in these cells did not show any other significant air concentrations.

A total of 30 items, not regulated with respect to handling, was found contaminated on surveys by H.I. personnel. Three items showed above 20,000 d/m including one of greater than 80,000 d/m.

After extensive cleaning and paint removal from the Cell #3 contaminated floor location resulting from an April spill, about 0.1 μg Pu was measureable in small cracks, and the area was repainted. Four other incidents of floor contamination involving a maximum of 0.07 μg Pu were successfully cleaned.

An operator's face was spattered with a drop of P-1 solution while removing the sampling tube from the port, and an estimated 0.3 μg Pu was located on the nose, lips, and cheek. This was reduced to four spots of about 1,000 d/m each before tender skin conditions prevented further cleaning. The acid burns were treated at the hospital, and surveys seven days later showed no detectable contamination present. A feces sample showed about 0.7 d/m; the first urine sample showed about 0.4 d/m, but the second sample showed no significant count, and a third sample is planned. Two other incidents of low level skin contamination were easily cleaned.

Two rock wool filters were replaced without contamination spread. Samples of filtered air from "A" legs showed maximum concentrations of 4.6×10^{-9} μg Pu/cc from Cell #2 (rock wool filter), and only 2.2×10^{-11} μg Pu/cc from Cell #4. Samples from the "A" leg of Cell #3 showed maximum concentrations of 2.2×10^{-10} μg Pu/cc in the unfiltered air and less than 2×10^{-12} μg Pu/cc in the filtered air. Twelve continuous samples of the 903 exhaust system air showed a maximum concentration of 2.3×10^{-11} μg Pu/cc, which is slightly lower than the previous two months.

Maximum gamma radiation levels encountered were 20 mr/hr on P.R. Containers, 3½ mr/hr at process hoods, and 5 mr/hr on S.C.

Control Laboratories

Three slightly positive air samples of less than 2×10^{-11} μg Pu/cc were obtained near hoods in Rooms 34 and 35.

A total of 328 items, not regulated with respect to handling, was found contaminated on surveys by Technical and H.I. personnel. Of these, 16 showed greater than 20,000 d/m, including two of greater than 80,000 d/m.

About 0.5 μg Pu was found on a wall in Room 35, and five incidents of floor contamination were reported involving a maximum of 0.55 μg Pu. All spots were successfully cleaned.

Skin contamination of about 0.07 μg Pu on the hands and 0.04 μg Pu on the face and neck was detected. The hands were cleaned, and the contamination

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on the face and neck was cleaned with liquid soap on the advice of the Medical Division as small skin lacerations were present in the area of neck contamination. Special urine samples showed no positive results. Two other cases of low level skin contamination were easily cleaned.

Development Laboratories

Four significant air samples were obtained during normal operations in Room 44, with a maximum concentration of 4×10^{-11} µg Pu/cc. Institution of the practice of sealing cartons of dry waste items immediately upon removal from the hood appeared to have removed the source of the air contamination.

After the occurrence of three significant air samples with a maximum concentration of 2.3×10^{-10} µg Pu/cc in Room 38, assault mask coverage was instituted. Since then, five additional significant samples have been obtained, but the source of the air contamination has not yet been detected.

A total of 14 items, not regulated with respect to handling, was found contaminated on surveys by H.I. personnel. All were below 20,000 d/m. One incident of floor contamination involving about 0.04 µg Pu was cleaned.

One case of skin contamination involving about 0.01 µg Pu was successfully cleaned.

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Health Instrument Divisions

The 300 Area

General Statistics

	April	May	1949 To Date
Special Work Permits	219	238	1039
Routine and Special Surveys	204	175	860
Air Monitoring Samples	47	108	491

Metal Fabrication Plant

Twenty-two of 46 air samples taken showed a concentration above 5×10^{-5} μg U/cc as follows:

Location	No. Taken	No. above 5×10^{-5} μg U/cc	Maximum Conc. (μg U/cc)	Conditions
Chip Recovery	20	4	1.2×10^{-4}	By hopper
Machining	9	1	5.7×10^{-5}	Normal Operation
Burn-out	1	1	1.1×10^{-3}	Burners on
314 Building	16	16	7.1×10^{-3}	CRD - 2 Barrel blow-off

A barrel of recovered uranium waste blew its contents into the air while being opened by a melt plant operator. Pressure had apparently built up within the drum due to the heat of the material. Full protective clothing was being worn, including respirators. An air sample taken in the vicinity immediately following the explosion showed 7.1×10^{-3} μg U/cc.

Nineteen Melt Plant crucibles were temporarily retired from use due to surface dosage-rates above 1.5 rep per hour. A dosage-rate of 3 rep per hour was reported on "pancake" neels from crucibles in the burn-out room. Remote handling equipment is being procured and the pancakes are temporarily stored. Further respirator controls wee established by "P" Division around the rod straightener, cutamatic, and free-metal burning table operations.

100 Areas Associated Laboratories

All air samples taken were below 5×10^{-5} μg U/cc and 5×10^{-7} μc beta/cc.

A total of 34 aluminum tubes was machined on the remote control lathe in the 3741 Building. Dosage rates of 800 mr/hour at 6 inches and 50 mr/hour at 18 inches were reported.

Technical Building

A routine survey of room 57, revealed a spot of contamination in a hood of 10,000 d/m due to plutonium. Decontamination was successful. Surface contamination of 300 mrep/hr was reported in a hood in room 19. Decontamination

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to below 5 mrep/hr was accomplished.

The interior surfaces of a hood in room 98 became highly contaminated during the evaporation of a 750 mg sample of plutonium. Contamination levels as high as 350,000 d/m were observed. Decontamination was successful to about 1,000 d/m. No skin contamination was reported.

Cold Semi-Works Building

An operator was badly splashed while opening a drum of 1 AU solution. A complete body survey after showering showed less than 500 d/m.

A total of about 662 lbs. of U has been discharged to the 300 Area pond through 5-27-49 of which about 245 lbs. were added in May. No uranium waste solution was disposed of to the 300 N crib during the month, total to date is about 63 lbs.

Plant General

Particle inhalation rates estimated by filming Moto Air filters showed the following results at certain key locations:

Location	Inhalation Rate Particles per Month	
	April	May
200-E Area Gatehouse (outside)	0.1	0.2
200-E Area Gatehouse (Inside)	0.2	0.3
"B" Plant Exclusion Gatehouse (outside)	0.3	0.5
222-B East side (outside)	No sample	3.0
200-W Area Gatehouse (outside)	0.2	0.4
200-W Area Gatehouse (inside)	0.4	0.5
"T" Plant Exclusion Gatehouse (outside)	0.2	1.0
3 Foot Level Meteorology Tower	0.2	0.4
250 Foot Level Meteorology Tower	0.2	0.1
400 Foot Level Meteorology Tower	0.1	0.8
100-D Area	0.1	0.2
100-B Area	0.1	None
Benton City	None	None
Richland	None	0.1
Pasco	None	0.2

Continuous air samples taken inside various 200 Areas buildings showed the following estimated inhalation rates:

Location	Inhalation Rate Particles per Month	
	April	May
East Area Maintenance Shop	0.2	0.2
West Area Maintenance Shop	0.2	0.3
222-T Hall	4.8	No sample

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Location	Inhalation Rate Particles per Month April	May
222-B Hall	10.0	2.5
222-B Rm 7	No sample	4.5
"B" Plant Operating Gallery	0.5	0.5
224-T Air Conditioning Room	0.3	0.4
2704-E Administration Buildings	0.1	0.1

Continuous air samples taken at locations off the project showed the following results for the month:

Location	No. Particles	Cu. Ft. Sampled
Boise, Idaho	None	80,000
Great Falls, Montana	None	141,000
Klamath Falls. Oregon	None	125,000
Lewiston, Idaho	None	140,000
Moachum, Oregon	2	70,000
Stampede Pass, Washington	None	139,000
Walla Walla, Washington	None	130,000
Spokane, Washington	1	97,000

Hand Score Summary

A total of 37,083 alpha and 45,488 beta hand scores was recorded. About 0.13% of the alpha and 0.11% of the beta scores were high. No attempted reduction was recorded for 11 high alpha scores in the 300 Area and 13 high beta scores, 7 of which were in the 300 Area and 6 in the 100-F Area. Where decontamination was attempted it was successful in all cases.

PERSONNEL METERS

Pencils	100-B	100-D	100-F	E&N 200	200-W	300	Total	1949 To Date
Pencils read	10,754	11,654	12,640	25,923	39,872	39,248	140,091	777,004
Single Readings (100 to 280 mr)	18	30	14	20	66	46	194	1,370
Paired Readings (100 to 280- mr)	1	0	0	0	1	1	3	*9
Single Readings (Over 280 mr)	29	61	22	26	70	107	315	1,370
Paired Readings (Over 280 mr)	0	0	0	0	2	1	3	14

No significant pencil result above 100 mr was confirmed by the badge result. Investigation of lost readings showed no possibility of an overexposure.

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Health Instrument Divisions

Badge Resume, Construction Areas

	105-DR	241-TX	384	241-BY	Total	1949 To Date
Badges Processed	481	3,315	139	1,103	5,038	57,608
No. of Readings (100 to 500 mrep)	0	2	0	8	10	169
No. of Readings (Over 500 mrep)	0	0	0	0	0	19
Lost Readings	0	5	24	1	30	50

No badge result was above 200 mr. Lost readings were accounted for as follows:

Sensitive film not packaged	24
Overdeveloped	4
Lost in Area	2

Badges

	100-B	100-D	100-F	200-E	R.R.T. 200-N	200-W	300	Total	1949 To Date
Badges Processed	1,719	2,860	2,977	2,413	492	3,236	5,930	19,627	102,407
No. of Readings (100 to 500 mrep)	0	3	12	51	0	1	193	260	1,366
No. of Readings (Over 500 mrep)	0	0	0	2	0	0	0	2	7
Lost Readings	33	1	2	0	0	1	4	41	88

Investigations of readings above 500 mrep showed exposures were due to gamma rays and when a gamma film calibration was used results were 200 mr and 185 mr; pencil totals for the two employees showed 185 mr and 175 mr, respectively. Four results were above 300 mrep, all in the 300 Area, with a maximum of 410 mrep, reported.

Lost readings were occurred as follows:

Sensitive film not packaged	33
Lost in processing	3
Lost in Area	3
Stuck Film (sensitive only)	2

Investigation of lost readings showed no possibility of an overexposure.

Badges processed, 1949	Operations	102,407
	Construction	57,608
	Total	160,015

In addition, 2,901 items of non-routine nature were processed. The 1949 total to date is 13,632.

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Health Instrument Divisions

CONTROL AND DEVELOPMENT DIVISION

Water Monitoring

Two hundred and twenty-nine 500 ml. samples and seventy seven 12-liter samples of drinking water were analyzed during the month. The maximum alpha activity of 30 dis/min/liter was found in the Benton City water supply. This result as well as other normal trace amounts have been shown to be due to uranium by fluorophotometer analysis. The maximum beta activity was 65 micromicrocuries per liter from a single sample of water from 3000 Area Well B. Resamples failed to confirm this result.

Thirty one 500 ml. samples and ten 12-liter samples were taken from test wells. The maximum alpha activity was 39 dis/min/liter from 300 Area Well #3. There was no beta activity as great as 50 micromicrocuries per liter.

Fifty-five samples were obtained from the Columbia River. All alpha results were less than 6 dis/min/liter. The maximum beta activity was 1100 micromicrocuries per liter from a sample at 181-F. Twenty-five samples were taken between 100-B and 100-F to determine possible effects of the high water on the mixing. Twelve samples from the Yakima River gave less than 6 dis/min/liter of alpha activity, and less than 50 micromicrocuries per liter of beta activity.

Atmospheric Monitoring

The highest average reading on an air filter was 1.3×10^{-9} μc/liter at Gable Mountain. Iodine scrubbers gave values as high as 9×10^{-10} μc/liter in the 200-West Area. Twenty nine rain samples were obtained from one rainfall. The maximum result was 49 millimicrocuries per liter from 200-West Area.

The Integrons and C Chambers indicated average dosage-rates as follows:

	Integrons (mrep/24 hrs)		C Chambers (mrep/24 hrs)	
Location	May	April	May	April
100-B	0.5	0.8	0.3	0.3
100-D	0.2	0.2	0.3	0.3
100-F	0.4	0.4	0.3	0.4
200-W	0.6	0.1	0.3	0.5
200-E	0.1	0.1	0.5	0.5
Riverland	0.1	0.5	--	--
300 Area	1.1	< 0.1	0.7	0.5
700 Area	0.3	0.1	--	--
Kennewick	0.2	0.7	--	--
Pasco	0.3	< 0.1	--	--
Benton City	0.3	0.1	--	--
3000 Area	0.1	0.1	--	--

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Land and Vegetation Contamination

The average activity measured in vegetation samples during May was:

	mμc I^{131}/kg			mμc Non-volatile Beta/kg.		
Location	Maximum	Average	Average April	Maximum	Average	Average April
North of 200 Areas	4	2	2	20	< 10	11
Near the 200 Areas	19	2	5	34	10	< 10
Route 3	163	36	53	94	25	61
200-West Gate	158	63	225	45	27	173
Meteorology Tower	33	21	27	30	22	17
South of 200 Areas	14	< 2	3	18	< 10	10
Richland	2	< 2	< 2	14	< 10	10
Pasco	2	< 2	< 2	14	< 10	< 10
Kennewick	< 2	< 2	< 2	13	< 10	< 10
Benton City	2	< 2	< 2	22	< 10	< 10
Richland Y	< 2	< 2	< 2	11	< 10	< 10
Hanford	2	< 2	< 2	13	< 10	13
Ringold to Pasco	3	< 2	2	16	< 10	11
Wahluke Slope	7	< 2	< 2	34	< 10	< 10

The results from special surveys in the region for the month of May were:

	mμc I^{131}/kg		mμc Non-volatile Beta/kg.	
Location	Maximum	Average	Maximum	Average
Goose Egg Hill	5	2	18	< 10
300 Area to Hanford	2	2	13	< 10
Pasco to Eltopia	< 2	< 2	10	< 10
Pasco to Ringold	3	< 2	16	< 10
Rattlesnake	10	2	20	< 10
Sunnyside-Ellensburg	2	< 2	10	< 10
Benton Gap.	< 2	< 2	23	< 10

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Health Instrument Divisions

Waste Monitoring

The results from waste surveys are tabulated below:

Location	Type Sample	Alpha -dis/min/kg Maximum	Alpha -dis/min/kg Average	Beta - muc/kg Maximum	Beta - muc/kg Average
300 Area-Old Pond Inlet	Water	8900	3600	300	160
300 Area-Old Pond Inlet	Mud	--	3×10^6	--	200
300 Area-New Pond Inlet	Water	14,000	4300	500	150
200 Areas- T Swamp	Water	50	30	200	90
" " " "	Mud	3.9×10^5	1.6×10^5	1×10^5	42,000
" " U Swamp	Water	<30	<30	200	50
" " Laundry Ditch	Water	70	<30	180	70
" " 231 Ditch	Water	85	<30	110	50
" " Retention Ponds	Water	<30	<30	210	60
" " B Ditch	Water	80	<30	640	290
" " B Ditch	Mud	<30	<30	2.5×10^5	1×10^5
100-B-Effluent Water	Water	<30	<30	5.2×10^5	3.7×10^5
100-D " "	Water	99	<30	9.7×10^5	3.8×10^5
100-F " "	Water	<30	<30	4.7×10^5	3.2×10^5

Geology

It was indicated last month that there might be some additional water table contamination resulting from operation of the 5-6 crib in the 200-East Area. Samples taken this month have dropped to previously reported levels which show no increase in the water table contamination. A sample of sediments from well 361-B-13, which extends beneath the 5-6 crib, have been analyzed for plutonium and fission products. A rough calculation and comparison between the activity in the waste liquid and the volume of sand and gravel necessary to contain that amount of liquid indicate that about 60 times the activity of fission products is concentrated in the sand and gravel as is present in the waste liquid that would saturate the sand. The factor for plutonium is about 100 on the same basis.

Alpha activity in well 303-2 in the 300 Area and the beta activity in the 108-B wells has decreased due to the river rise and increase of water movement in the water table near these wells.

Continued study on the ground water mound beneath the 200-West Area shows that the level is increasing at the rate of about 2.5 feet per year. The lack of rise in wells between the 200-W Area and the Yakima Range indicates the rise of the ground water mound is due solely to 200-W Area effluents, and not to addition of water from the Yakima Range. The ground water mound beneath the 200-E Area is essentially at equilibrium.

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Health Instrument Divisions

Meteorology

8-hour production forecasts: Ninety three were made. The average accuracy was 87.5%

24-hour general forecasts: Sixty two were made. The average accuracy was 83.1%

Special Forecasts: Fourteen were made; twelve right - Accuracy 85.7%

The weather for May 1949 was both warm and dry. Only measurable precipitation occurred on the 1st and 31st. The monthly total of 0.16 inches was well below the normal amount of 0.44.

Daily mean temperatures during the past month averaged 67.0°F., or 4.8° above normal. However, the past month was not quite as warm as May of 1947, when temperatures averaged 68.8°F. The warmest portion of the past month was from the 7th to the 15th, incl. During this period there were 7 consecutive days of 90 or above temperatures. The 11th was the warmest day with a maximum of 98°, and a mean of 83° which was about 23° above normal.

In spite of unseasonably warm weather over most of the month, there was a cool period during the first 5 days. On three of those days, the temperature dropped below 40°, and on the 3rd, the minimum of 31° was the lowest May temperature yet recorded at 622 building. The mean of 46 on this day was about 12° below normal.

Although the average monthly wind speed was slightly above normal, there was only one day in which a really high wind occurred. This was on the 16th, following passage of a cold front marking the end of the heat wave at 1700 on the 15th. Blowing dust accompanied the high wind on the 16th, and the relative humidity on this day dropped to 8% at 1500. This was one of the lowest values of relative humidity yet recorded at the station.

Bioassay

Four hundred and eighty two urine samples, and one feces sample, were analyzed for plutonium during the month. The blank samples average was 0.04 d/m, and the average yield was 86%.

A 7-day sample was obtained from the man reported as positive last month. This sample was divided into two parts, one collected at home and one at work. The sample taken at work gave 7.5 d/m, while the one from home gave essentially zero. Plans are underway for further resampling. A feces sample taken after an accident involving plutonium gave a value of 0.70 d/m. A urine sample taken at the same time gave 0.3 d/m, but a resample several days later gave less than 0.1 d/m.

A series of urine samples from the workers in P-10 has been analyzed for T_2O by the Methods Development Group. Positive results were found in two men, with a third somewhat questionable. The maximum result was 5.5 μc/liter (estimated), which would give about 300 - 400 μc in the body.

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Health Instrument Divisions

Two hundred and five urine samples were analyzed on the fluorophotometer. The uranium content of these samples was:

Location	μg U/liter Urine Maximum	Average
Melt Plant	31	21
Material Handling	21	10
Machining	28	6
Canning and Dipping	12	3
Inspection	13	5
305 Building	2	1
Other plant Areas	10	1

Methods Development

Only a few values of radon concentration in water were obtained because of the use of the instrument for H^3 determinations. Measurements of radium solutions calibrated by Ra alpha count about 30 days earlier indicated that yields are on the order of 100%. What is believed to be a novel method involving the precipitation of RaB and RaC with a lead carrier and subsequent counting on a mica window counter or an alpha counter has been developed. This method allows determination of a sample in 15 - 30 minutes, and the results calculated from known geometries and decay curves have spread to within ± 10% of the values obtained on the vibrating reed for the three samples run by both methods. Several additional checks between the mica window GM counters and the coincidence counter appear to verify the value of 85 - 90% for the M.W. count, compared to the coincidence count. The electroplating of plutonium in amounts of 5000 - 6000 d/m is now giving more consistent results around 85 - 90% yield. Tests on the plates indicate that the plutonium is tenaciously bound with only 5 - 10% of the activity removed by rubbing for two minutes with a paper towel. Tests of the alpha film indicate about the same geometry as the alpha counters. A study of an alpha source spread over a 1½ inch plate versus a point source indicates a 9% loss due to the spreading.

The use of resin columns in analyzing urine for fission products appears favorable with a procedure now being tested. Transmission tests on a piece of cloth woven from lead glass fibers were made using beta rays from cobalt, strontium, and ruthenium. A new uranium spike prepared with extreme care for use on the fluorophotometer has pointed up apparent discrepancies in the counting techniques used.

Methods Control

Sixteen special samples as groups of samples were analyzed during the month. A careful review of the methods of preparing spiked samples is being made in an attempt to eliminate some of the variations noted in past procedures. Three thousand one hundred and eight measurements were made for alpha emitters, and four thousand eight hundred and seventy eight measurements were made for beta emitters, for a total of seven thousand nine hundred and eighty six measurements. In addition, two hundred and seventeen measurements were made on decay

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curves, twenty-one absorption curves were run, and one thousand eight hundred and ninety-one control points were measured. Six hundred and eighteen analyses were made on the fluorophotometer.

Physics

One of the five new aluminum counters mentioned in last month's report has been operated successfully as a fast neutron counter. The counter is filled with methane at atmospheric pressure and demonstrates the following characteristics: 1) It shows no sensitivity to slow neutron fluxes of the intensity available in the calibration building. 2) It does not paralyze in gamma fields up to at least 10 r per hour. 3) It gives reproducible results with a simple calibration test. "Bias curves" from this counter show that the pulses from secondary electrons produced by gamma radiation can be completely eliminated with a very modest discriminator bias, which reduces the number of proton pulses produced by the laboratory neutron sources only slightly.

Data has been obtained with a boron trifluoride counter moderated by various combinations of paraffin and cadmium using the laboratory neutron sources. It is hoped that this method can be made to yield at least qualitative information about neutron spectra in the energy range from 0.3 to 5×10^5 electron volts, which is inaccessible by present survey methods. A number of indium foils has been calibrated in the standard pile for use with moderators.

The third determination of the neutron fluxes from the large laboratory polonium sources was made this month. The Po-B (Pb-107) source gives a flux significantly less than that expected from the polonium half-life. Both sources have been smeared frequently and neither has shown any loose alpha contamination. It appears that the polonium in source Pb-107 is leaking slowly from the inner container, but is being retained by one of the two outer capsules.

Industrial Hygiene

A particle size study of airborne contamination of the oxide burner room of the Melt Plant is in progress. At the present time, some difficulty is being experienced in the use of the thermal precipitator because of the excessive temperatures caused by the operation of the furnace in this relatively confined room.

Instrument Development

Introduction of argon into a standard low background alpha chamber decreased the microphonic response considerably, but did not appreciably lower the background. Investigations on electrical leakages, voltage surges, and amplifier characteristics have led to some changes which resulted in a consistent lowering of the background to 0.05 counts/min.

Tests are being made on a scintillation counter which was built by the General Engineering and Consulting Laboratory of General Electric in Schenectady. Tests at room temperature indicate a geometry of only 22%, with a background of 0.11 counts/min. Work is continuing on the development of the combined alpha and beta hand monitor, the soft beta monitor, and of corrective measures for the "Neut" survey meter.

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Health Instrument Divisions

Calibrations

The routine calibrations were:

	Number of Calibrations	
	April	May
RADIUM CALIBRATIONS		
Fixed Instruments		
Gamma	392	441
Portable Instruments:		
Alpha	152	177
Beta	327	425
Gamma (radium)	604	668
X-ray Scanning	0	35
Neutron	150	15
Total	1233	1320
Personnel Meters:		
Beta	503	1124
Gamma (radium)	6359	8842
X-ray	6879	5068
Neutron	0	13
Total	13741	15047
GRAND TOTAL.....	15366	16808

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Health Instrument Division

BIOLOGY DIVISION

Aquatic Biology

1. Effect of Pile Effluent on Aquatic Life

Young chinook salmon held in less than 10% strength area effluent water continue to develop satisfactorily. A high rate of mortality and emaciated condition persist among the young salmon held in undiluted pile water. A large part of this effect is due to chemical poisoning, sodium silicate being one of the contributing factors.

The activity accumulated in young salmon held in dilute amounts of the effluent water has increased to about 40 times that of the water.

A new test has been started to determine the effect of prolonged exposure of trout to 5% area effluent water. It is anticipated that the trout can be held in this strength effluent water throughout their life-span since no effect is usually observed at this level during the juvenile stages of chinook salmon.

2. Biological Chains

The activity accumulated by trout from eating active crayfish or carp continued to build up during May, but in trout feeding upon active algae, it remained at about the same level attained last month. Trout formerly on a diet of active snails continue to lose their activity at a half-life rate of about 12 days. If the retained activity is predominantly P^{32}, this implies a biological half-life of about 75 days.

3. Radiobiological Survey

Rising river levels continue to prevent the collection of quantitative bottom samples. The number of plankton in the river per unit volume increased by a factor of about 3 over that found last month, due to a marked increase in the abundance of diatoms with a concurrent decrease in activity to a maximum of 0.76 μc/kg. In general, the amount of activity in the fish also decreased, a maximum of 0.19 μc/kg being found in the scales of a sucker. The reduced amount of activity found in the organisms is probably due to the larger dilution factor in the river during the freshet stage.

Zoology

1. Chronic Toxicology of I^{131} in Stock Animals

The thyroids of six yearling lambs from British Columbia showed considerably less histological variation than that noted in sheep and goats which had received varying amounts of thyroid irradiation. Six thyroids from older sheep have recently been received as additional controls. Six goats were purchased off the project to serve as semi-controls to goats previously studied. Tissue study is now in progress on the six animals. The level of radioactivity in all tissues of these animals from near The Dalles was less than 0.002 μc/kg.

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Health Instrument Divisions

Zoology - continued

2. Biological Monitoring

Nineteen Canada goslings, seven Mallard ducklings, and seventeen Pekin ducklings are on hand to supplement the monitoring station at 100-F Area.

External contamination of a native rabbit from the 200-E Burial pit amounted to 8,000 c/m. Thyroid activities of two rabbits from 200-W were 10 and 20 μc/kg.

Botany

1. Agricultural Field Station

The experimental area irrigated with river water is in good condition, but the control area recently planted is extensively damaged, due to the failure of the well water irrigation system. River water is being used to irrigate both the experimental and control orchards however, to prevent loss of peach trees. Beta activity of the soil and vegetation in recent sampling was not above background.

2. Separations Area Control

It has been observed that 7% of the activity in Russian thistle seeds resulting from plants grown in the R-3 danger zone will be transferred to growing seedlings. Activities in leaf and stem were less than 0.05 μc/kg, and the root less than 0.03 μc/kg.

3. Miscellaneous

Seven species of algae have been cultured for future decontamination studies. The green algae (Chlamyclomonas) is presently being investigated for its value as a decontaminant of effluent water.

Biochemistry

1. Collection of Active Particles

Shipment of active particles to the University of Rochester has been stopped, pending work on particles they already have on hand. In the interim, radiochemistry analyses of particles collected by electrostatic precipitation has been initiated.

2. Exposure of Rabbits to Active Particles

A third dry run of animal exposure to active stack gas was performed. The procedure was found satisfactory and exposure of a rabbit to the actual effluent followed. Preliminary work on methods for autoradiography of frozen lung sections was begun.

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GENERAL ACCOUNTING DIVISION.

MAY 1949

GENERAL

Hanford Works Financial Statements for the month of April were completed on May 17 and Nucleonics Department statements were completed on May 18, 1949. Operating Reports for General Divisions were completed on May 13, 1949.

A great deal of planning was done during the month and through consultations with representatives from AEC and other G. E. Accounting Divisions with regard to the revised financing procedures, a total of eight releases were agreed upon as to content and were issued to all concerned outlining in detail the new practices to be followed. Substantially, the change in procedure resulted in a conversion from the original reimbursement routine whereby expenditures of Government funds were individually approved and reimbursed by AEC, to one where an AEC advance is to be made each month for that month's estimated expenditures. Cash disbursements for month less receipts are used to reduce amount of monthly advance. Two files of vouchers are maintained, one for audit by AEC and General Accounting Office (this file is eventually transferred to General Accounting Office by AEC), and one copy for G. E. use. On June 1, 1949, this new procedure became effective.

Assistance was given General Divisions in the preparation of Budget Estimates for the last quarter of Fiscal Year 1949, Fiscal Year 1950, and 1951. After reviewing completed estimates and narratives, Budget Estimates were submitted for consolidation on May 20, 1949.

The following is a comparison of unreimbursed expenditures as of April 30, 1949 as compared with May 31, 1949:

	April 30, 1949	May 31, 1949
Billed on Public Vouchers	$ 7 261 177	$ 9 739 453
Submitted on Pre-Billing Audit Vouchers	2 382 348	2 301 472
Unbilled	3 820 836	2 998 748*
	$13 464 361	$15 039 673*

* Preliminary totals prior to final closing entries.

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General Accounting Division

STATISTICS

Employees and Payroll	Total	Monthly Payroll	Weekly Payroll
Employees on Payroll at beginning of month	7 511	1 669	5 842
Additions and transfers in	55	9	46
Removals and transfers out	(170)	(26)	(144)
Transfers from Weekly to Monthly Payroll	--	4	(4)
Transfers from Monthly to Weekly Payroll	--	(4)	4
Employees on Payroll at end of month	7 396	1 652	5 744

Employees on Payroll at end of month	April	May
Manufacturing	2 925	2 923
Design and Construction	886	782
Community	767	746
Other	2 933	2 945
Total	7 511	7 396

Overtime Payments		
Weekly Paid Employees	$22 134	$30 699
Monthly Paid Employees	2 417	3 100
Total	$24 551	$33 799

Number of changes in Salary Rates and Job Classifications	694	649

Gross Amount of Payroll		
Manufacturing	$1 010 345	$1 006 284
Design and Construction	314 997	282 385
Community	245 093	226 079
Other	905 689	905 771
Total	$2 476 124*	$2 420 519*

Annual Going Rate of Payroll		
Manufacturing	$12 701 017	$12 647 820
Design and Construction	3 773 498	3 316 534
Community	2 971 046	2 826 241
Other	11 264 866	11 391 989
Total	$30 710 427	$30 182 584

Average Salary Rate Per Hour**	April			May		
	Weekly	Monthly	Total	Weekly	Monthly	Total
Manufacturing	$1.949	$2.587	$2.059	$1.953	$2.608	$2.066
Design and Construction	1.506	2.610	1.916	1.515	2.651	1.933
Community	1.709	2.235	1.811	1.706	2.301	1.823
Other	1.585	2.491	1.788	1.590	2.503	1.804
Total	$1.739	$2.522	$1.910	$1.746	$2.544	$1.923

*Includes four weeks in case of weekly paid employees.

**Includes Shift Differential, Isolation Pay and du Pont employees on loan to General Electric Company. Excludes overtime premiums, commissions, Suggestion Awards, etc.

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General Accounting Division

Employee Plans

Pension Plan

	April	May
Number participating at beginning of month	6 329	6 369
New participants and transfers in	125	107
Removals and transfers out	(85)	(65)
Number participating at end of month	6 369	6 411
% of eligible employees participating	93.0%	92.6%

Employees Retired	May	Total to Date
Number	8	73
Aggregate Annual Pensions including Supplemental Payments	$2 713	$16 186*
Amounts contributed by employees retired	$ 533	$ 5 420

*Amount before commutation of pensions in those cases of employees who received lump sum settlement

Group Life Insurance

	April	May
Number participating at beginning of month	6 312	6 159
New participants and transfers in	51	57
Cancellations	(19)	(42)
Removals and transfers out	(185)	(70)
Number participating at end of month	6 159	6 104
% of eligible employees participating	79.2%	78.6%

Insurance Claims	May	Total to Date
Number of deaths	0	27
Amount of insurance	0	$135 843
Premiums paid by employees who died	0	$ 1 678

Group Disability Insurance - Personal

	April	May
Number participating at beginning of month	7 117	6 744
New participants and transfers in	61	58
Cancellations	(11)	(10)
Removals and transfers out	(423)	(167)
Number participating at end of month	6 744	6 625
% of eligible employees participating	90.9%	89.4%

Group Disability Insurance - Dependent

Number participating at beginning of month	4 253	4 073
Additions and transfers in	23	25
Cancellations	(7)	(6)
Removals and transfers out	(196)	(64)
Number participating at end of month	4 073	4 028

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General Accounting Division

Employee Plans (continued)

Group Disability Claims	April	May
Number of claims paid by insurance company:		
Employee Benefits		
Weekly Sickness and Accident	82	109
Daily Hospital Expense Benefits	94	106
Special Hospital Services	93	115
Surgical Operations Benefits	63	85
Dependent Benefits Paid		
Daily Hospital Expense Benefits	112	126
Special Hospital Services	116	125
Amount of claims paid by insurance company:		
Employee Benefits	$10 268	$13 304
Dependent Benefits	3 924	4 215
Total	$14 192	$17 519

Group Disability Insurance - Premiums		
Personal - Employee Portion	$12 009	$11 394
- Company Portion	7 592	7 200
- Total	$19 601	$18 594
Dependent- Employee Portion	$ 3 789	$ 3 643
- Company Portion	479	451
- Total	$ 4 268	$ 4 094
Grand Total	$23 869	$22 688

Annuity Certificates (For du Pont Service)	May	Total to Date
Number issued	4	62

U. S. Savings Bonds	Mfg.	D&C	Comm'y	Other	Total
Number participating at beginning of month	1 918	398	389	1 564	4 269
New authorizations	12	7	6	23	48
Voluntary Cancellations	(30)	(11)	(7)	(38)	(86)
Removals and Transfers out	(13)	(13)	(13)	(11)	(50)
Transfers in	12	--	--	8	20
Number participating at month end	1 899	381	375	1 546	4 201
% participating	65.0%	49.3%	50.3%	52.5%	56.9%
Bonds issued					
Maturity value	$105 300	$18 500	$16 775	$76 825	$217 400
Number	2 923	773	746	2 945	7 387
Refunds issued	48	25	7	55	135
Revisions in authorizations	23	4	7	29	63
Annual going rate of deductions					
New Plan	$ 841 303	$164 469	$145 342	$642 653	$1 793 767
Old Plan	237 796	40 095	34 979	150 834	463 704
Total	$1 079 099	$204 564	$180 321	$793 487	$2 257 471

Suggestion Awards	May	Total to Date
Number of Awards	21	348
Total Amount of Awards	$215	$3 640

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Employee Plans (continued)

Employee Sales Plan

	May		
	Total	Major Appliances	Traffic Appliances
Certificates Issued	276	61	215
Certificates Voided	9	1	8

Salary Checks Deposited	April	May
Monthly	877	869
Weekly	988	893
Total	1 865	1 762

Special Absence Allowances Requests		
Number submitted to Pension Board	8	14

Absenteeism (Weekly Paid Employees)	1948	1949
January 1 to May 22	2.42%	2.63%

PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING	April	May
Number of Employees		
On Payroll at beginning of month	184	172
Removals and transfers out	(12)	(6)
Additions and transfers in	--	1
Number at end of month	172	167
Net increase (or decrease) during month	(12)	(5)
% of terminations and transfers out	6.6%	3.5%
% of absenteeism	3.4%	4.2%

Robert M. Watkins was transferred from General Office, Schenectady, effective May 6, 1949, and was appointed Supervisor of the Cost Section of General Accounting Division.

Changes by division in number of Accounting Division employees during May were as follows:

General Accounting - General: No Change

Accounts Payable: Decrease of one employee

One on Leave of Absence

Cost: Increase of one employee

One transfer from Schenectady

General Accounts: No Change

Plant Accounting: No Change

Weekly Payroll: Decrease of three employees

Two removals due to illness
One termination

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General Accounting Division

PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING (continued)

Monthly Payroll: Decrease of two employees

One removal due to illness
One termination

Special Assignments: No Change

Injuries	April	May
Major	0	0
Sub-major	0	0
Minor	1	0

Number of Accounting Division employees as of May 31, 1949, were as follows:

	Number of Employees		
	Non-Exempt	Exempt	Total
General Accounting - General	2	3	5
Accounts Payable	25	1	26
Cost	9	1	10
General Accounts	16	1	17
Plant Accounting	22	3	25
Weekly Payroll	63	5	68
Monthly Payroll	11	1	12
Special Assignments	0	4	4
Total	148	19	167

Non-Exempt employees may be summarized as follows:

Classification	Number as of	
	4-30-49	5-31-49
Accounting B	3	3
Accounting C	1	1
Accounting D	4	4
Clerical Working Leader	6	6
Cost Clerk A	1	1
Cost Clerk B	1	1
Cost Clerk D	2	2
Field Clerk C	3	3
General Clerk A	27	29
General Clerk B	34	33
General Clerk C	25	24
General Clerk D	15	13
General Clerk E	2	2
Office Machine Operator B	17	14
Secretary B	1	1
Steno-Typist A	1	1
Steno-Typist B	3	3
Steno-Typist C	1	1
Steno-Typist D	7	6
Total	154	148

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General Accounting Divisions

	April	May
Accounts Payable*		
Balance at Beginning of Month	$ 59 334	$ 22 899
Vouchers Entered	7 646 522	999 263
Cash Disbursements	7 770 185 Dr.	1 109 893 Dr.
Cash Receipts	14 194	18 488
Miscellaneous Credits	73 034	69 420
Balance at End of Month	$ 22 899	$ 177
Number of Vouchers Entered	1 850	1 582
Number of Checks Issued	1 431	1 264
Number of Freight Bills Paid	254	208
Amount of Freight Bills Paid	$ 8 118	$ 5 241
Number of Purchase Orders Received	673	625
Value of Purchase Orders Received	$ 61 787	$ 98 025
Public Vouchers (1034) Submitted to AEC		
Not Reimbursed at Beginning of Month	$ 8 376 146	$ 7 261 177
Submitted During the Month	10 112 201	9 004 308
Sub Total	18 488 347	16 265 485
Reimbursements During the Month	11 227 170	6 526 032
Not Reimbursed at End of Month	$ 7 261 177	$ 9 739 453
Public Vouchers (1034) Submitted to AEC		
Not Reimbursed at Beginning of Month	228	276
Submitted During the Month	392	388
Sub Total	620	664
Reimbursements During the Month	344	302
Not Reimbursed at End of Month	276	362

* General Divisions Only.

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General Accounting Divisions

	April	May
Pre-Audit Vouchers (1035) Submitted to AEC Not Yet Approved		
Community	$ 13 981	$ 11 639
Design and Construction	1 388 396	1 425 912
General	979 473	822 592
Manufacturing	498	41 329
Sub Total	$ 2 382 348	$ 2 301 472
Not Submitted to AEC on Pre-Audit Vouchers		
Community	$ 161 515 Cr.	$ 79 069 Cr.
Design and Construction	2 935 948	2 237 172
General	709 441	643 375
Manufacturing	336 962	178 113
Sub Total	$ 3 820 836	$ 2 979 591
Total Unbilled Items	$ 6 203 184	$ 5 281 063
Bank Balances at End of Month		
Chemical Bank & Trust Company, Contract Account	$ 7 757 206	$ 6 404 463
Seattle First National Bank - Richland		
Contract Account	1 992 390	2 000 566
Salary Account No. 1	20 000	20 000
Salary Account No. 2	30 000	30 000
U. S. Savings Bonds Account	216 851	151 564
Seattle First National Bank - Seattle		
Salary Account No. 3	5 000	5 000
Escrow Account	59 806	59 806
	$10 081 253	$ 8 671 399
Cash Disbursements		
Community	$ 77 487	$ 56 660
Design and Construction	6 663 846	4 968 280
General	9 843 166*	2 791 395
Manufacturing	408 213	522 350
Total	$16 992 712*	$ 8 338 685
Accounts Payable	$ 8 413 352	$ 6 415 484
Payrolls (Net)	2 072 980	1 681 501
U. S. Savings Bonds	6 380	241 699
Liquidation of Advance	6 500 000	-0-
Total	$16 992 712	$ 8 338 684

* Includes liquidation of $6 500 000 advance

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General Accounting Divisions

	April	May
Number of Checks Written		
Community	285	250
Design and Construction	763	633
General	1 431	1 264
Manufacturing	475	432
Total	2 954	2 579
Cash Receipts		
Community	$ 99 410	$ 94 204
Design and Construction	75 010	89 807
General	17 819 981*	6 729 282
Manufacturing	18 459	15 545
Total	$18 012 860*	$ 6 928 838

*Includes $6 500 000 advance

Detail of Cash Receipts**		
U. S. Government	$11 227 170	$ 6 526 032
Hospital	73 034	69 420
Scrap Sales	12 248	14 026
Miscellaneous Accounts Receivable	516	663
Educational Program	245	149
Employee Sales	1 312	1 044
Refunds from Vendors	210	3 259
All Other	5 246	114 689
Advances to G. E.	6 500 000	-0-
Total	$17 819 981	$ 6 729 282
Travel Advances and Expense Accounts		
Cash advance balance at end of month**	$ 7 459	$ 7 881
Cash advance balance outstanding over one month**	-0-	1 058
Traveling and Living Expenses:		
Paid Employees	15 058	10 535
Billed to Government	14 059	10 171
Balance in Variation Account at end of month	2 465 Cr.	2 100 Cr.
Hospital Accounting		
Balance at Beginning of Month	$ 101 425	$ 112 325
Invoices Issued	108 283	90 319
Refunds	433	352
Cash Receipts	(73 034)	(69 420)
Payroll Deductions	(24 782)	(28 050)
Miscellaneous Journal Entries	-0-	-0-
Balance at End of Month	$ 112 325	$ 105 526

** General Divisions Only

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General Accounting Divisions

PLANT ACCOUNTING	April	May
Number of Transfer Notices Received	389	594
Number of Items Affected	1 002	2 692
Number of Receiving Reports Classified	3 766	3 458
Number of Items Tagged at beginning of month	90 188	90 805
Number of Items Tagged this Month--Metal	1 034	438
Number of Tagged Items dropped from record	(417)	(416)
Total Tagged Items Recorded	90 805	90 827
Number of Items Recorded in quantity only at beginning of month	13 531	13 529
Items added to record during month	-0-	2
Dropped from record during month	(2)	-0-
Total Items Recorded in Quantity	13 529	13 531
Total Items on Record	104 334	104 358

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General Accounting Divisions

ACCOUNTS PAYABLE

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The number of accounts payable vouchers entered during May was 1,582 amounting to $999,263.00. This represents a decrease of 268 in number from the 1,850 vouchers entered in April.

Total vouchers on hand the end of May requiring additional supporting data before they could be billed to AEC was 503 amounting to $121,721.00, compared to 523 in April amounting to $124,070.00. Of the 503 on hand, 304 were paid and 199 were unpaid (or uncollected credit vouchers).

During May, 208 freight bills were paid amounting to $5,241.00, as compared to 254 in April amounting to $8,118.00. The balance in the general ledger freight account the end of May was $177.00, representing paid freight bills not yet distributed to other ledger accounts.

The balance in Accounts Payable on May 31 was $177.00, compared to $22,899.00 at the end of April.

The number of paid vouchers more than 60 days old and not billed to AEC again decreased during the month. There were 116 on hand May 31 amounting to $61,879.00 as compared to 135 the end of April amounting to $123,891.00. Of the 116, 45 were on 1035's as of May 31.

Reconciliation of the ledger account on Returnable Containers shows a balance of $16,204.00 on May 31, compared to $17,129.00 the end of April.

One employee was transferred to the Cost Section during May and one employee was on leave of absence for the whole month. Total personnel in accounts payable on May 31 was 25, composed of 1 exempt and 24 non-exempt employees. Of the 24 non-exempt, 4 have been working at North Richland on special assignment to the Design and Construction Accounting Division since May 18.

COST

General Division Operating Reports for the month of April, 1949 were issued and distributed on May 13, 1949.

Reports covering Research and Development Expense were revised to include actual and budget totals for the fiscal year to date.

Considerable time was spent on preparation of Budget Estimates of General Divisions for the 4th Quarter of Fiscal Year 1949, Fiscal Years 1950, and 1951. This reduced to some extent the work on new studies. However, revisions of previous studies were made for Purchasing and Stores, Employee and Community Relations, and 700 Area General.

R. M. Watkins was transferred from Schenectady to fill the vacancy of cost supervisor. One other non-exempt employee was transferred from Accounts Payable resulting in the following personnel total as of May 31, 1949.

Exempt	1
Females	3
Males	7
	11

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General Accounting Divisions

GENERAL ACCOUNTS

Final closing entries for April were received on May 16, Hanford Works Financial Statements for the month of April were completed on May 17 and Consolidated Financial Statements were completed on May 18.

A great deal of time was spent on reconciliation of the Advance Account. A complete reconstruction of financial transactions since accounting decentralization on October 1, 1948 was started and has progressed to a point where positive reconciliation in complete detail is assured early in June.

Unbilled expenditures as of May 31, 1949 on the General Accounting Divisions books as compared with those of April 30, 1949 may be summarized as follows:

	April	May	Difference
Salaries	$1,495,085	$1,372,104	$ 122,981 cr.
Continuity of Service	311,736	164,849	146,887 cr.
Accounts Payable	190,809	121,544	69,265 cr.
Accounts Receivable	285,609 cr.	174,414 cr.	111,195
Freight	15,856	7,047	8,809 cr.
Payroll Deductions	37,547 cr.	24,553 cr.	12,994
All Other	1,416	610 cr.	806
	$1,688,914	$1,465,967	$ 222,947 cr.

In addition to normal work assignments, considerable thought was given to the new AEC reimbursement procedure. In meetings with AEC representatives and others from the General Accounting Division, each individual item comprising the $25,000,000 advance from AEC was discussed and agreements were reached as to the method of ultimately liquidating these items.

A new Travel Advance Bank Account was opened in the Richland Branch, Seattle First National Bank in the amount of $15,000. Disbursement and receipts in connection with travel of G.E. employees will be recorded in this account.

Average daily cash receipts amounted to $331,090 as against $548,275 in April and average daily disbursements were $395,118 as against $508,078 in April. Average bank balances were $2,410,286 in the Richland Bank and $3,919,853 in the New York Bank.

MEDICAL ACCOUNTING

The consolidated accounts receivable balance of $105,526 is $6,799 less than the April balance of $112,325. Kadlec Hospital balance decreased $5,937 and North Richland Hospital balance decreased $862. The decrease in the ledger balance is the result of a decrease in sales and an increase in payroll deductions and cash payments on account.

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MEDICAL ACCOUNTING (Cont.)

Operating Reports for the month of April were issued on May 15, 1949.

Budgets Estimates for the fiscal years 1950 and 1951 for the Medical Division were issued on June 10, 1949.

Revision of the Medical Division cost code book was started during the latter part of the month. It is expected to have the new revised book distributed by the latter part of June. This new revised cost code book will contain descriptions of the accounts in effect and will be a decided improvement over the original issue.

PLANT ACCOUNTING

The Plant Accounting Section continued to follow the established routine of plant accounting and no changes in procedure have been formally adopted. Early in the month the pricing of Class B property for plant appraisal purposes was completed and the additions and retirements occurring since December 31 are now being scheduled in order that their effect may be noted as adjustments to the appraisal figures. Several people from this group are still assisting with the appraisal.

New forms for the recording of uninstalled property and equipment (formerly Class B Property) have been designed and ordered. The transfer of information contained on the old record to the new forms will be started as soon as the new forms are received.

SPECIAL ASSIGNMENTS

One employee on special assignment spent full time during the month investigating changes in routines and in preparing procedures that will be necessary under the new financing procedure which becomes effective June 1, 1949. Under this procedure GE will receive monthly from the AEC an allotment of cash equal to estimated expenditures less estimated receipts. These monthly allotments of cash to GE, including cash receipts, will be accounted for by submitting summary Public Vouchers to the AEC detailing daily cash disbursements and receipts. The new financing procedure will supplant the present procedure under which GE operates on a $25,000,000 cash advance from the AEC, and as expenditures are made and required documentation is obtained, the expenditures are billed to the AEC on Public Vouchers and reimbursement of these vouchers is made by AEC thru Cash payments to GE.

Considerable discussion relative to operating details and requirements of the new financing procedure was had during the month with AEC representatives and with section supervisors from the four Accounting Divisions. The principal points covered by these discussions were included in the first three Releases written and distributed to interested individuals to assist in developing procedures and routines.

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SPECIAL ASSIGNMENTS (Cont.)

Accounts payable procedure, to become effective June 1, 1949, was written and incorporated in Release Number 4 issued May 23.

For the new financing procedure, it was determined that a separate bank account should be established for the purpose of issuing travel advances to employees and depositing refunds representing unused portions of cash advanced. Arrangements were made to open Travel Advance Account with the Richland Office, Seattle First-National Bank. A supply of checks for this account was ordered and obtained from Schenectady. Procedure to be followed in making travel advances to employees was written and included in Release Number 5 issued May 23. Also included in this Release was the procedure to be followed in making settlement of expense accounts rendered by employees.

Procedure to be followed in handling payments of transportation charges to carriers was written and included in Release Number 6 issued May 25.

Report of Disbursements, Form HW 1.471, and Cash Advance Receipt, Form HW 1.470, were designed and Report of Cash Receipts, Form HW 1.152 was revised for use under the new financing procedure. Supplies of forms were procured and were delivered to the Accounting Divisions.

The method of liquidating the AEC advance to GE outstanding May 31, 1949 was determined and was included in Release Number 7 issued May 26. Also included in this Release was an outline of how the estimate of cash requirements is to be submitted to the AEC, and an outline of what will constitute the balance of the advance account as of June 30, 1949.

Releases Numbers 8, 9, and 10 were issued at the end of the month and detailed the preparation of checks and Reports of Disbursements, the distribution and filing of copies of checks and reports, and additional operating details relative to employees' travel advances and expense account settlements.

At month end the Accounts Payable Sections of the four Accounting Divisions had been advised of the required basic changes in procedure and were ready to begin operations under the new financing procedure.

Considerable work was done during the month in assembling the consolidated budget reports which were completed and delivered to Classified Files on May 27, 1949. During the month, as free time permitted, some further work was done on revising the cost code book for the General and Manufacturing Divisions.

Five employees have been assisting Design and Construction Accounting Divisions during the month of May on special assignment.

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PAYROLLS

During May there were 170 Removals from Payroll, of which 37 were removals due to lack of work.

Weekly Payrolls have been billed to the Government on Form 1035-A through the week ended May 15, 1949, and Monthly Payrolls have been billed on Form 1035-A through the month of March, 1949.

Payrolls have been reimbursed by the Government as follows:

1. Weekly Salary Payrolls to and including the week ended May 1, 1949.
2. Weekly Vacation Payrolls to and including the week ended April 24, 1949.
3. Monthly Salary Payrolls to and including the month ended March 31, 1949.

Preliminary Payroll work in connection with the revised method of distribution of weekly salary checks was completed during the month of May. Hanford Works Instructions Letter No. 120 was issued on May 19, establishing June 10 as the effective date of the change and setting forth procedures and regulations with respect to distribution of checks.

There were 207 time cards received late in Payroll during May, although we have repeatedly called such cases to the attention of the interested Divisions.

In connection with the designation of Purchasing and Stores as a separate Division, Payroll Records have been changed to show the segregation between Purchasing Division and Stores Division for use of Employees and Payrolls Reports, etc.

Effective May 30, Payroll Records of Health Instrument Division employees were segregated to show the following breakdown of Health Instrument Division for the purposes of Employees and Payrolls Report, etc.

1. General
2. Operational
3. Development
4. Biology

U. S. Savings Bonds and Custody Receipts for U. S. Savings Bonds purchased by employees through Payroll Deductions in April were delivered to employees on May 20, 1949. The number of bonds delivered was 893 and the number of receipts delivered was 4,351.

During May, 141 employees participating in the Stock Bonus Plan withdrew from the Plan 495 U. S. Savings Bonds having a total maturity value of $22 300.

1221726

General Accounting Divisions

PAYROLLS (cont.)

Approximately 52,000 items were addressographed in May for Service Division, Employee and Community Relations, and Community Divisions.

Request for Reimbursement Authorization was submitted to the Atomic Energy Commission in May covering Reimbursement of one exception to salary schedules.

As of May 31, 1949, the number of du Pont employees on loan to General Electric Company had been reduced to nine.

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PLANT SECURITY AND SERVICES DIVISIONS

SUMMARY - MAY 1949

The Records Control Division of the Office Services Division was organized on May 1, 1949.

There were no lost-time injuries for the month, reducing the cummulative frequency rate to 1.01.

There were 20 fire alarms in the plant area with a damage loss of $10. Grass fires accounted for the majority of fire alarms.

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PLANT PROTECTION AND SERVICES DIVISIONS

MONTHLY REPORT - MAY 1949

ORGANIZATION AND PERSONNEL

Number of employees on payroll:

	Beginning of Month	End of Month	Increase	Decrease
Staff	3	3 (a)		
Patrol & Security	590	578		12 (b)
Safety & Fire Protection	147	147		
Office Services (General Services, Clerical Services, & Records Control)	247	250	3 (c)	
TOTALS	987	978	3	12

NET DECREASE - 9

(a) - Staff:
1 - Transferred to the newly established Records Control Division of Office Services
1 - Transferred from Patrol & Security (Special Assignment)

(b) - Patrol and Security:
1 - Transferred to Staff (Special Assignment) - (Patrol)
1 - Transferred to Records Control Division (Security)
2 - Removed from Roll due to Leave of Absence (Patrol)
1 - Discharged (Patrol)
1 - Deceased (Patrol)
6 - Terminations - Voluntary Quit (Patrol)

(c) - General Services:
2 - Terminations
1 - Removed from Roll due to Leave of Absence
1 - Retired
3 - Rehired

Clerical Services:
8 - New Hires
4 - Terminations
4 - Transfers to other Divisions
2 - Transferred to Records Control Division

Records Control Division:
1 - Transferred from Staff (Special Assignment)
2 - Transferred from Clerical Services
1 - Transferred from Employee & Community Relations
1 - Transferred from Security
1 - Transferred from Stores

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SAFETY AND FIRE PROTECTION

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Injury Statistics

Days since last Major Injury	37
Accumulated Exposure Hours since last Major Injury	1,449,624
Major Injury Frequency Rate (start-up to date)	0.869

	April	May	Year to Date
Major Injuries	2 *	0	7
Sub-Major Injuries	2	2	13 **
Minor Injuries	337	303	1913
Exposure Hours	1,242,833	1,251,058	6,912,494
Major Injury Frequency Rate	0.80	0.0	1.01
Major Injury Severity Rate	0.06	0.0	0.041
Minor Injury Frequency Rate	2.71	2.42	2.77

* Major Injury No. 65 to 63½ retroactive to 4/4/49.
**Sub-Major Injury No. 138½ retroactive to 2/12/49.

Major Injury No. 65 to 63½

April 4, 1949 at 3:00 p.m. , an employee of the Maintenance Division 200-West Area, reported to First Aid with Dermatitis. This employee, a painter by trade, was treated for rash on hands in December 1947. October 1948, he received similar treatment for rash on his face, and was again treated on April 4, 1949. On May 9, 1949 investigation by his foreman disclosed that the rash was spreading to both hands and legs, and the latter insisted that the injured report to First Aid immediately for treatment. The injury was then classified by Medical as occupational dermatitis. On the morning of May 13, Injured was admitted to the Hospital where he is still confined.

Sub-Major Injury No. 138½

February 12, 1949 at 12:00 midnight, , an operator of the "S" Division 200-East Area, incurred a fracture of scaphoid in the right wrist while using a cheater on a skimmer handle. Skimmer handle was being forced against hydraulic pressure that could have been relieved through a valve. When pressure was exerted, the extension handle broke causing the operator to fall and fracture his wrist.

Sub-Major Injury No. 142

May 2, 1949 at 11: 30 a.m., an employee of the Maintenance Division 300 Area, incurred a tuft fracture to the right middle finger while assisting three other Maintenance employees who were attempting to place a large steel tank on a cart. As the weight of the tank was being transferred from the floor to the cart, the cart moved from the point of contact with the tank, spun to the side striking the injured's finger causing the injury.

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Plant Security & Services Divisions

Sub-Major Injury No. 143

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May 11, 1949 at 4:15 p.m. , an employee of Maintenance Division, 200-West Area, incurred a sliver fracture of right trochlea and fissure fracture head of radius; also lacerations to right elbow and abrasion on left thumb. Employee fell or was tripped as he approached the bus loading strip.

Safety Meetings

There were 645 safety meetings held during the period of May 1 through May 31, 1949 with a total attendance of 6,861.

Safety Spectacles

There were 58 pairs of prescription safety spectacles ordered during the period of May 1, through May 31, 1949; 38 pairs of prescription safety spectacles were checked, received, and fitted; and 195 adjustments and repairs were made to all types of safety spectacles.

100 Areas Activities

On May 27, 1949, the 100-B Area completed its fourth year without a lost-time injury.

On May 17, 1949, the final acceptance inspection was made of the 100-H First Aid Station, Building 1719-H.

A memo was issued to all 100 Areas' Supervision relative to safeguarding ventilating fans used in offices.

An accident was investigated in the 105-DR Building in which a large pane of 1¼" Herculite glass broke due to an increase of water pressure against it when the overflow failed to accommodate the volume of water being fed into the reservoir. Changes to prevent a recurrence are under way.

A study was made of the past year's experience of maintenance on pressure relief valves in the 100-F Area "P" Division building; and this was compared with Power Division's experience on similar equipment.

The "P" Division has been testing their equipment every six months, and Power once each year. In accordance with the Maintenance Division's Safety and Relief Valve Test Procedure, the "P" Division, Maintenance, and Safety agreed to reduce the frequency of test on "P" Division steam, water, and air relief valves to once each year. This will result in a savings of $880 annually.

A list of emergency safety equipment recommended for the Power Buildings, 100-H Area, was drawn up and submitted on May 10, 1949.

Project No. 481, which is under way in the 108-B Building, is nearing completion. Technical Group responsible for operating this Project has submitted operating safety rules to the Safety Engineer for approval.

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Plant Security and Services Divisions

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200-Area Activities

In the May meeting of the 200-West Area Council Meeting, the Chairman called attention to the safety posters for the May Topic-of-the-Month which shows a steady climb of the severity and frequency rates of major injuries for the past three years, with emphasis on "What about 1949!".

The 200-West Area had another incident where safety glasses were credited with saving a man's eye when the glasses were broken by a piece of slag from scrap iron.

The Safety Engineer for 200-West Area and the Division Supervisor of the Fire Protection Division have been cleared to give the 234-5 Building adequate safety and fire protection coverage.

The 200-East Area and the "S" Division's fine safety record was broken when an employee of the "S" Division slipped on the 221-B Building floor on December 28, 1948 and injured his knee; the injury did not become of a disabling nature until May 30, 1949, when it was necessary to hospitalize injured and correct a defective cartilage and repair a slight bone chip. This constituted a major injury retroactive to December 28, 1948, and dropped the injury-free days in the 200-East Area and the "S" Division to 153 on May 30, 1949.

The drop in minor injuries in the 200-East Area during the month was approximately five percent.

300 Area Activities

Plans for inert gas producing equipment have been approved for the 321 Building. Orders are being placed now, and equipment is to be delivered 30 days after receipt of order. Equipment will be installed immediately upon receipt of equipment; this will eliminate the use of gas cylinders.

Temporary changes in gas cylinder use and storage are being made at the 321 Building to correct sub-standard practices until the inert gas equipment can be installed.

Participation with the other Safety Engineers produced a very effective booth and display at the Maintenance Derby picnic, Saturday, May 21, 1949.

Recommendations were provided to the Health Instrument Supervision relative to safe treds for the old wooden steps in the 3745 Building.

A new sheet metal roller was installed, inspected, and placed in use in the 3713 sheet metal shop.

A new 14-inch grinder was inspected in the 3717 Instrument shop, and recommendations were made relative to washers and flanges for additional safety in operation.

Suggestions for the improvement of the hazards on the 3706 gas cylinder dock were agreed upon, and action for improvement is to be taken immediately by the Analytical group.

1221732

Plant Security & Services Divisions

700-1100 Areas Activities

A thorough survey is being conducted on compressed gases; emphasis is being placed on acetylene use and handling. The extremely hazardous practice of transferring acetylene from one tank to another has been discontinued in all locations where the practice has been discovered and will be covered with supervision of all groups concerned.

Gas mask procedures have been covered with supervision who have masks assigned to their groups to assure the following of standards on inspection, use, reporting, and servicing after each use.

On June 2, 1949, the 700 Area will have completed 500 no-lost-time days for an accumulated total of approximately 5,170,145 hours, which is the highest accumulation of injury-free days and exposure hours of any area to date. This also exceeds the over-all plant high which is slightly less than 5,000,000 hours. Although the over-all hazard exposure is not as great as in some locations, when based against national averages the performance is exceptional--in that the industrial cross section is comprised of material handling and stores, transportation, automotive repairs, machine shop, electrical, wood-working shop, power supply, sheet metal shop, outside carpentry, painters, industrial laundry, industrial printing, refrigeration maintenance, plumbing, steam fitting, welding shop, industrial laboratories, chemical and instrument, and other phases of industrial activity.

A safety display is to be set up on Saturday, June 4th for the Village Public Works picnic at the park.

An investigation is being made on the purchase, use, types, and issuance of safety cans to determine quality and safety features of cans now used.

Safety shower survey is being conducted to determine method of testing, operation, location, etc.

Checks are being made of acid battery installations and ventilation methods of gas generated when charged.

FIRE PROTECTION

	Number of Fires		Estimated Damage	
	April	May	April	May
Industrial	8	20	$1300.00	$ 10.00
Construction	4	5	2260.00	15.00
Community	11	17	40.00	412.00
A. E. C.	0	0	0.00	0.00

An over-heated sprinkler head caused $100.00 water damage

Routine Duties

Fire Extinguishers

Inspected	3,131
Installed & Relocated	103
Refilled	785
Resealed and Repaired	238
Salvage	13

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SAFETY DIVISION - INJURY AND ACTIVITY STATISTICS

	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	300 Area	700 - 1100 Areas		3000 Area	Pasco Area	101 Area	Misc. Area	TOTAL
Minor Injuries	22	19	22	38	43	60	23	39	18	0	15	4	303
Sub-Major Injuries	0	0	0	0	1	1	0	0	0	0	0	0	2
Major Injuries	0	0	0	0	0	0	0	0	0	0	0	0	
Days since last Tabulatable Major Injury	370	138	162	154	57	37	498	104	260	670	61	89	
Days since last Sub-Major Injury	333	119	100	60	20	29	169	143	215	138	61	236	
Days without a Minor Injury	19	21	16	11	10	11	17	9	19	31	19	28	
Safety Meetings Conducted	61	78	62	60	85	50	47	114	30	24	8	26	645
Number in Attendance	442	562	499	417	706	990	770	1530	317	113	222	293	6861
Safety Spectacles Delivered	2	4	4	4	9	6	9		0	0	0	0	38
Safety Spectacles Serviced	26	28	31	30	45	10	17		0	0	8	0	195

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MONTHLY INJURY ANALYSIS

MAY

Minor Injuries

	Burns	Abrasions	Contusions	Lacerations	Punctures	Splinters	Strains & Sprians	Foreign Body	Blisters	Unclassified	TOTAL MAY	TOTAL LAST MONTH
GENERAL	0	0	0	0	0	0	0	0	0	0	0	1
"P" DIVISION	1	2	2	0	0	0	1	1	3	1	11	12
"S" DIVISION	3	5	1	1	0	2	0	0	1	1	14	14
POWER	4	2	1	0	0	0	1	2	0	1	11	9
MAINTENANCE	9	14	8	17	4	7	2	10	3	8	82	84
PROJECT ENGINEERING	0	0	0	0	0	0	0	0	0	0	0	0
ELECTRICAL	3	4	3	2	1	1	1	2	0	1	18	31
INSTRUMENT	0	1	2	7	1	0	0	0	1	0	12	15
TRANSPORTATION	0	6	4	6	1	1	2	2	0	1	23	26
COMMUNITY	0	4	4	12	1	1	4	4	1	2	33	38
ACCOUNTING	0	0	0	0	0	0	0	0	0	0	0	0
TECHNICAL	6	2	2	11	4	2	2	1	0	0	30	40
MEDICAL	1	3	2	2	3	1	1	1	0	0	14	8
HEALTH INSTRUMENT	2	2	1	8	1	1	1	0	1	2	19	12
SERVICE	2	4	3	5	1	0	2	3	0	2	22	36
EMPLOYEE AND COMMUNITY RELATIONS	0	0	0	0	2	0	0	0	0	0	2	0
DESIGN AND CONSTRUCTION	2	2	2	2	1	0	1	0	0	2	12	10
TOTAL	33	51	35	73	20	16	18	26	10	21	303	
LAST MONTH	45	72	41	83	20	17	17	20	7	15		337

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Plant Security and Services Divisions

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Gas Masks	
Inspected	89
Serviced	16

Fire Drills and Lectures	
Outside	85
Inside	73
Auxiliary Brigade	126
Safety Meetings	30

All fire alarm boxes in the Industrial Areas were tested.

All fire hose houses, hydrants, and lines in Plant Areas were inspected.

OFFICE SERVICES DIVISION

General Services

Laundering volumes were as follows:

	April	May
Plant Laundry (Building 2723)		
Coveralls - Pieces	31,723	27,726
Towels - Pieces	7,534	7,781
Miscellaneous- Pieces	62,714	59,880
Total Pieces	101,971	95,387
Total Dry Weight - Lbs.	149,567	135,849
Richland Laundry (Building 723)		
Flatwork - Pieces	83,824	88,226
Rough Dry - Pieces	28,814	53,061
Finished - Pieces	4,671	4,496
Total Pieces	117,309	145,783
Total Dry Weight - Lbs.	76,251	94,759
Monitoring Section (Building 2723-W)		
Poppy Check - Pieces	66,923	63,880
Scaler Check - Pieces	103,375	88,471
Total Pieces	170,298	152,351

723 Laundry - This laundry is operating at maximum capacity on one shift. The high volume for this month was due to the special work done for the 101 Bldg. We were able to accomplish this by transferring an operator from the 200-West Laundry and working him in this laundry on a 4 to 12 shift.

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Plant Security and Services Divisions

2723-W Laundry - During the past month the Health Instrument Division consented to the use of a higher contamination tolerance level in the testing of 300 Area operations protective clothing. This new procedure has lowered our wash volume considerable due to the fact that it has eliminated approximately 75% of the rewash from this area.

Clerical Services

Telephone Exchange

A contract was entered for an outside firm to print the telephone directory which is being printed now for issuance June 15, 1949. Future directories will be printed by contract twice annually on a no-charge basis in return for the rights to sell advertising. In addition to saving printing costs formerly charged to the Plant, there is a possibility of the Plant receiving an income from the sale of advertising if the revenues are sufficiently high.

A new cost distribution was worked out to cover charges to the Community Division and will be based on actual peg counts showing the quantities of official and unofficial calls.

	April		May	
Lines working as 1 - 0 Lines	629		625	
2 - 0	55		100	
0 - PBX	31		31	
1 - N	26		26	
2 - N	4		8	
2-0-R Combination	1		2	
Total Official Lines		746		792
Lines working as 1 - F Lines	100		102	
2 - F	24		26	
F - PBX	7		7	
1 - R	8		8	
2 - R	1187		2137	
2 - RF	85		180	
3 - RF	2		6	
Total Non-Official Lines		1413		2467
Vacant Lines		41		57
Total Lines in Multiple Bank		2200		2200

Traffic counts during the month were as follows: 29,482; 29,382; and 30,624.

Mail Room

Volume was high this month due to numerous special letters which were handled.

	April	May
Pieces of First Class Mail received	25,463	30,020
Registered	422	497
Insured	---	---
Special Delivery	166	129
	26,051	30,646

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Plant Security and Services Divisions

	April	May
Pieces of mail sent out	12,980	13,945
Amount of postage used in Postage Meter	$ 1,133.80	$ 2,304.88
Teletypes sent out	296	329
Teletypes received	342	329
Total Teletypes	638	658

Office Equipment

	April	May
Office Machines repaired in shop	206	209
Office Machine service calls	193	195
Total machines services	399	404

Printing

Work has been heavy in this Section during the month and a considerable backlog exists. This condition was aggravated by two equipment breakdowns.

	April	May
Multilith Orders received	124	204
completed	132	182
on hand at month end	22	44
Mimeograph Orders received	2346	2531
completed	2228	2629
on hand at month end	118	20
Ditto Orders received	2161	1919
completed	2161	1919
on hand at month end	0	0

Stenographic Services

The pool personnel was increased by three girls, from seven to ten, in order to meet an increased workload.

Records Control Division

The Records Control Division of the Office Services Division was organized on May 1, 1949 with the Organization Announcement A-27 setting up the Hanford Works Records Sub-Committee, S. B. Badgett as Secretary. Responsibility for Records Storage Hutments, 712-A and 712-B transferred from the Clerical Services Division to the Records Control Division on this date. T. G. Stanfield was transferred from the Clerical Services Division on May 12, 1949, as Assistant Supervisor of the Records Control Division.

Records surveys have been made of McNeil Construction Company, Contract C-190, and J. A. Tertling & Sons Construction Company, Contract G-173. The Records Sub-Committee made a decision to keep McNeil Records in Hanford Works Records Depository.

Initial contacts have been made on C. C. Moore & Company Contract G-157 and Morrison-Knudsen Company, Inc., Contract G-222 preparatory to conducting a survey of the records in the immediate future.

1221738

Plant Security and Services Divisions

A survey was made of "vital" records as described in A.E.C. Bulletin GM-113 and a list given the A.E.C. for discussion at their Records Meeting in Washington.

Tentative procedures have been written and have been approved by the Records Sub-Committee for receiving and handling of records of General Electric and Sub-contractors.

	May
File Cases of Records Received and Processed	195
References to General Electric Records during month	60
File Cases Issued	206
Additional Pieces received for Filing	3000
Crates built for Carton Storage	78

PATROL AND SECURITY

General

On May 2, 1949, an additional Patrolman was assigned to the 234-5 Building, 200-W Area, making a total of six Patrolmen assigned to this building.

Use of the 272-Z Badge House for entrance and exit to the 231 Building, 200-W Area was discontinued May 2, 1949.

HW Instructions Letter No. 80, Revision No. 1, entitled "Central File Established for Recording of Combination, Lock File Cabinets and Procedures concerning Reports and Inspections of Unlocked Files" was issued to all General Electric personnel May 6, 1949.

Beginning May 6, 1949, the control room in the 105-H Area was designated as an "Exclusion" Area within the 105-H "Restricted" Area.

The east and west doors of the 761 Building, 700 Area, were locked and sealed Friday, May 6, 1949, and remained locked until 7:30 a.m., May 8, 1949. This procedure will remain in effect until further notification.

Twenty-seven, 4-inch barrel, .38 caliber colts and twenty-three, 4-inch barrel, Smith and Wesson revolvers were released to Stores Receiving for shipment to Kansas City, Missouri, on May 11, 1949.

On May 12, 1949, an ambulance was loaned to the Patrol Training School for use in the Ambulance Procedure Class. Dr. E. J. Quigley, of the Medical Division, gave instructions in this procedure to the Instructors at the Training School.

An Injury Recording Board was put into use at the Training School May 12, 1949, in order to currently record injuries of the Security Patrol. This board will be used each day for training purposes.

On May 13, 1949, a memorandum was issued to all Division Managers "Survey of Classified Repository Contents" listing "lost or unaccounted for documents" chargeable to Works' personnel.

The Training School files were transferred from the Pistol Range at 10:00 a.m., May 16, 1949, to the 770 Building, thus eliminating one Patrol Clerk. This clerical work is being divided among the Administration Staff in the 770 Bldg.

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On May 16, 1949, the Scientific Law Enforcement School sessions were begun at 10:00 a.m. There were 67 Security Patrol personnel in attendance. An attendance of 100 was recorded for the evening class which included five AEC personnel.

On May 24, 1949, a notice was issued to all 700 Area Personnel, regarding the series of lecture demonstrations on the "Use of Combination File Cabinets" to be conducted by the Field Security Section, on May 31, 1949. There were eight classes held and approximately 150 employees attended these lectures.

A notice was issued to all Division Heads May 26, 1949, regarding the 101 "Exclusion" Area. Security requirements were reviewed concerning all persons entering this area.

The post at the 105 Tube Shop, 100-H Area, was discontinued May 26, 1949.

Beginning May 26, 1949, any authorized member of the F.B.I. will be permitted to escort individuals through the North Vehicle Gate and Badge House, 700 Area, on his request to the 762 Building. Full responsibility will be assumed by members of the F.B.I.

The "pat" search procedure was intensified on May 26, 1949.

New blue-colored Photo Passes, bearing the location "Nucleonics Department", signed by M. A. Edlund, Schenectady AEC Security Officer, were honored at this site effective May 27, 1949.

PATROL

The 200 Areas handled 686 process escorts between the areas.

Requests handled totaled 843, mainly consisting of opening doors, gates and escorts for employees of other departments.

A total of 53 Construction employees were escorted into areas for First Aid Treatment.

There were 80 Unusual Incident Reports received; consisting mainly of lost badges, pencils, contrabands picked up at barricades, traffic accidents, and fires.

Patrol supervision handled one First Aid case during the absence of the area nurse.

There were 43 classified escorts handled during the month.

Practice evacuations were held as follows:

100-B Area	5/26/49	9:04 a.m.
100-F Area	5/26/49	10:06 a.m.

ARREST SUMMARY (next page)

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Plant Security and Services Divisions

ARREST SUMMARY

	April	May
Citation tickets issued	2	0
Number of violations	2	0
Continued from March	0	0
Cases cleared	2	0
Cases pending	0	0
Fined	2	0
Jailed	0	0
Dismissed	0	0
Total amount of fines	$100	0
Operators License revoked	0	0

ACCIDENT SUMMARY

	April	May
Total accidents	12	7
Government permits revoked	1	1
Warning tickets issued	0	0
Verbal warning given	15	0
Citation tickets issued (traffic only)	2	0

Training

There were ten .50 caliber machine guns, ten .30 caliber machine guns, and the three M-8 Light Armored Cars assigned to the Training School thoroughly cleaned.

The courses received at the Training School this month were as follows: Pistol-2½ hours; Machine Gun-1½ hours; Laws of Arrest-1 hour; Ambulance Procedure-1 hour; Railroad Crossing-½ hour; Safety Topic, "Minor Injuries"-½ hour; Security Topic, "Film on Security from Oak Ridge" -½ hour; Health Talk on Mosquitos-½ hour.

The Competetive Safety Program is being continued.

SECURITY

Operations Section

There were 339 Security Meetings held and attended by 4,764 General Electric employees.

Employee Clearance

Class "Q" clearances received on old employees this month	15
Class "Q" clearances received on old employees to date	4,451
Class "Q" clearances received on new employees this month	24
Class "Q" clearances received on new employees to date	5,871

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Plant Security and Services Divisions

Class "Q" clearances received on both old and new employees since February 17, 1947: 10,322

Formal "P" clearances awaiting change to "Q" 8

Authorization clearances issued this month 21

Statistical Summary of Outstanding Area Badges

	April					May			
	A	B	C	Total		A	B	C	Total
100-B	630	1515	518	2663	100-B	630	1517	508	2655
100-D	669	1536	569	2774	100-D	691	1518	550	2759
100-F	659	1533	510	2702	100-F	659	1528	495	2682
200-E	975	1613	406	2994*	200-E	954	1627	384	2965*
200-W	1322	1557	416	3295	200-W	1338	1546	378	3262
200-N	47	854	140	1041	200-N	49	846	137	1032
300	1355	1583	280	3216	300	1338	1580	267	3185
234-5	3044	269		3313	234-5	3141	249		3390
241-BY	327	104		431	241-BY	409	109		518

*Includes 42 "A" badges at Riverland Yards

Visitors or Temporary Badges

Area	April	May
100-B	338	352
100-D	556	591
100-F	587	608
200-E	484	530
200-W	833	277
200-N	271	905
300	1012	1071
234-5	145	167
241-BY	93	101
Total	4319	4602

Special Clearance Section

Following is a statistical summary of clearance status of vendor and consultant vendor companies:

Total companies forwarded to AEC this month:	9	Personnel:	27
Total companies forwarded to AEC last month:	9		38
Total companies forwarded to AEC to date:	198		2,062
Total companies cleared for restricted data this month	7		21
Total companies cleared for restricted data last month:	25		78

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Plant Security and Services Divisions

New companies forwarded to the Atomic Energy Commission this month:

Harry Mickey - General Hauling
Sumner, Washington

The Mills Company (sub-contractor for J. Gordon Turnbull)
Cleveland 10, Ohio

The Sanymetal Products Company (Sub-contractor for J. Gordon Turnbull)
Cleveland, Ohio

Number and type of clearance granted by the Atomic Energy Commission this month to vendors and consultants:

Formal "Q"	22
Formal "P"	23
Emergency "Q"	2

Two emergency clearances were requested this month.

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HANFORD WORKS
General Electric Company
Richland, Washington

REPORT OF VISITORS FOR PERIOD ENDING MAY 31, 1949

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
MEDICAL DIVISION						
I. Visitors to this Works						
S. T. Cantril Tumor Institute Swedish Hospital Seattle, Washington	Medical consultation	W. D. Norwood, M.D. P. A. Fuqua	5-31-49	6-1-49	X	
CONSTRUCTION DIVISION						
I. Visitors to this Works						
W. P. Foote Bristol Company Seattle, Washington	Balance ventilating system on order HWC 5684	H. A. Hauser	5-10-49	5-10-49		X
S. A. Thomas Johnson Service Company Seattle, Washington	Balance ventilating system on order HWC 5684	H. A. Hauser	5-10-49	5-10-49		X
R. H. Angel Johnson Service Company Seattle, Washington	Balance ventilating system on order HWC 5684	H. A. Hauser	5-10-49	5-10-49		X
W. C. Smith Hartford Boiler Inspection & Insurance Company Seattle, Washington	Inspect steam boilers in 184-H Building	L. F. Reilly	5-2-49	5-5-49		X

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
H. P. Bish Combined Aircraft, Federal and Marine Division General Electric Company Schenectady, New York	Inspection in connection with equipment furnished by Apparatus Division, GE	T. G. LaFollette V. D. Nixon	5-9-49	5-11-49	X	
II. Visits to other Installations						
T. M. Pettey, Jr. to: Berkeley Scientific Co. Berkeley, California	Regarding inspection of material supplied on HWC Order	Mr. Hardin	5-20-49	5-31-49		X
T. M. Pettey, Jr. to: Jensen Machinery Company Oakland, California	Regarding inspection of material supplied on HWC Order	Mr. Osburne	5-20-49	5-31-49		X
T. M. Pettey, Jr. Production Engineering Company Oakland, California	Regarding inspection of material supplied on HWC Order	Mr. Lambert	5-20-49	5-31-49		X
DESIGN DIVISION						
I. Visitors to this Works						
R. A. Jackson Chicago Bridge & Iron Company Seattle, Washington	Discussion of field tanks	T. Williams	5-2-49	5-3-49		X
K. E. Atwood Bailey Meter Company Seattle, Washington	Engineering discussion	E. Hilgeman	5-2-49	5-5-49	X	
H. W. King Worthington Pump Company Seattle, Washington	Discussion of pumps for for plant	R R. Henderson	5-4-49	5-4-49		X
S. Dunning Sheldon Dunning Company [illegible] Washington	Discussion of acid resistant coatings	W. B. Webster D. D. Streid	5-11-49	5-11-49		X

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restrict Data Classified	Restrict Data Unclassified
L. W. Williams Brown Instrument Company Portland, Oregon	Discuss instruments	C. O. Clementson	5-11-49	5-11-49		X
H M. Schmitt Brown Instrument Company Portland, Oregon	Discuss instruments	C. O. Clementson	5-11-49	5-11-49		X
C. V. Gardner Republic Steel Company Seattle, Washington	Discussion of stainless steel materials	W. B. Webster	5-25-49	5-25-49		X
F. B. Chamberlin Arthur Forsyth Company Seattle, Washington	Discuss ventilation and heating equipment	B. O. Shaver W. W. McIntosh	5-25-49	5-25-49		X
F. B. Chamberlin Arthur Forsyth Company Seattle, Washington	Discuss equipment as manufactured by the Aerofin Corporation	R. T. Jaske B. O. Shaver W. W. McIntosh	5-26-49	5-26-49		X
E. G. Weed Aerofin Corporation San Francisco, California	Discuss equipment as manufactured by the Aerofin Corporation	B. O. Shaver R. T. Jaske W. W. McIntosh	5-26-49	5-26-49		X
II. Visits to Other Installations						
E. E. Scott to: General Electric Company Seattle, Washington	Inspection and engineering discussion	E. M. Johnson	5-1-49	5-3-49		X
P. P. Smith to: Remington Rand Company New York, New York	Design conference	W. L. Norvell J. Brustman J. J. Lamb	5-10-49	5-23-49		X
P. P. Smith to: Diamond Power Specialty Co. Detroit, Michigan	Design Conference	L. T. Nones	5-10-49	5-23-49		X

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
P. P. Smith to: Vickers and Automatic Valve Company Detroit, Michigan	Design conference	R. C. Andrews R. E. Erskine G. P. Peterson	5-10-49	5-23-49		X
P. P. Smith to: B. F. Goodrich Company Akron, Ohio	Design conference	G. A. Rausch C. Leguillon A. Chamberlin	5-10-49	5-23-49		X
P. P. Smith to: Knolls Atomic Power Laboratory Schenectady, New York	Design conference	H. H. Zornig H. E. Finke J. Payne	5-10-49	5-23-49	X	
J. B. Medlin to: Puget Sound Navy Yard Bremerton, Washington	Contact vendor on aluminum process tube machining	S. L. Allison	5-8-49	5-10-49	X	
T. Williams to: General Mills Corporation Minneapolis, Minnesota	Observe and report on status of Development Program	Mr. Jaynes Mr. Jewett	5-17-49	5-27-49		X
T. Williams to: Roth Pump Company Rock Island, Illinois	Observe and report on status of Development Program	Mr. Roth	5-17-49	5-27-49		X
T.Williams to: Robbins & Myers Pump Co. Springfield, Illinois	Observe and report on status of Development Program	R. D. Scovill G. Zimmerman	5-17-49	5-27-49		X
T. Williams to: Syntron Pump Company (Homer City) Pittsburgh, Pa.	Observe and report on status of Development Program	W. V. Spurlin	5-17-49	5-27-49		X
G. E. Halm to: Kellex Corporation New York, New York	Design consultations	H. H. Willis	5-15-49	5-23-49	X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
H. W. Huntley to: Kellex Corporation New York, New York	Design consultation	H. H. Willis	5-15-49	5-23-49	X	
E. V. Plock to: Oak Ridge National Laboratory Oak Ridge, Tennessee	Technical discussion	L. B. Emlet	5-17-49	5-26-49	X	
E. V. Plock to: Sharples Corporation Philadelphia, Pennsylvania	Technical discussion	Mr. Ambeler	5-17-49	5-26-49		X
E. V. Plock to: Udylite Company Detroit, Michigan	Technical discussion	Mr. Scott Mr. Day	5-17-49	5-26-49		X
L. H. Hildebrandt to: Puget Sound Navy Yard Bremerton, Washington	Revew tentative design of special gauge	S. L. Allison	5-17-49	5-17-49	X	
H. S. Isbin to: Gen. Engineering & Consulting Schenectady, New York	Conference on Process Tube Heat Transfer Tests Planning	H. A. Johnson L G. Gitzendanner	5-17-49	5-23-49	X	

HEALTH INSTRUMENT DIVISION

I. Visitors to this Works

Dr. Yalman Monsanto Chemical Company Dayton, Ohio	Study counting techniques, waste disposal and general health problems	J. W Healy	5-9-49	5-11-49		X
Dr. Mead Monsanto Chemical Company Dayton, Ohio	Study counting techniques, waste disposal and general health problems	J. W. Healy	5-9-49	5-11-49		X
Mr. Bradley Monsanto Chemical Company Dayton Ohio	Study counting techniques, waste disposal and general health problems	J. W. Healy	5-9-49	5-11-49		X

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
A. W. Green University of Washington Seattle, Washington	Consultation on laboratory design	J. W. Healy	5-26-49	5-26-49		X
R. E. Zirkle Argonne National Laboratory Chicago, Illinois	Biology Seminar	H. M. Parker	5-31-49	6-2-49	X	
II. Visits to other Installations						
H. M. Parker to: University of Washington Seattle, Washington	Lecture	-	5-27-49	5-27-49		X
C. C. Gamertsfelder to: Oak Ridge National Lab. Oak Ridge, Tennessee	Technical Cooperation Meeting	R. L. Butenhoff	5-2-49	5-4-49	X	
C. C. Gamertsfelder to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Information meeting	N. E. Bradbury	5-5-49	5-7-49	X	
F. E. Adley to: Simonds Saw & Steel Co. Lockport, New York	Health Instrument Conference	-	5-3-49	5-3-49	X	
F. E. Adley to: University of Rochester Rochester, New York	Study of health problems	-	5-4-49	5-5-49	X	
D. P. Schively to: Simonds Saw & Steel Co. Lockport, New York	Study health problems	-	5-1-49	5-8-49	X	
F. P. Seymour to: General Electric Company Schenectady, New York	Health Physics consultation	L. R. German	5-31-49	6-15-49	X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
W. Singlevich to: General Electric Company Schenectady, New York	Site Survey Problems	L. L. German	5-16-49	5-20-49	X	
I. Visitors to this Works (Cont'd)						
P. E. Church University of Washington Seattle, Washington	Meteorology conference	D. E. Jenne	5-13-49	5-16-49	X	
R G. Fleagle University of Washington Seattle, Washington	Meoeorology conference	D. E. Jenne	5-13-49	5-16-49	X	
W. L. Schallert University of Washington Seattle, Washington	Meteorology conference	D. E. Jenne	5-13-49	5-16-49	X	
J. Meyers University of Texas Austin, Texas	Biology consultation	R. F. Foster	5-26-49	5-26-49		X
INSTRUMENT DIVISION						
I. Visitors to this Works						
K. E. Atwood Bailey Meter Company Seattle, Washington	Inspect instrument installation	E. Hilgeman	5-2-49	5-5-49	X	
S. B. Biddle, Jr. Leeds & Northrop San Francisco, California	Consultation on gas analysis problems	W. M. Mathis	5-12-49	5-13-49	X	
E. M. Bendig Panelitt, Incorporated Chicago, Illinois	Repair gauges	E. Hilgeman	5-16-49	5-31-49	X	

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Name - Organization	Puurpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
MANUFACTURING MANAGEMENT						
I. Visits to other Installations						
J. E. Maider, Jr. Knolls Atomic Power Laboratory Schenectady, New York	Inspection and consultation on 432 Project	R. S. Neblett	5-24-49	5-26-49	X	
S. D. Smiley to: Knolls Atomic Power Lab. Schenectady, New York	Inspection and consultation on 432 Project	R. S. Neblett	5-24-49	5-26-49	X	
PROJECT ENGINEERING DIVISION						
I. Visits to other Installations						
J. S. McMahon to: Mallinkrodt Chemical Co. St. Louis, Missouri	Inspection of various processes	K. J. Caplan Dr. Harrington Dr. Keller Mr. Koenig, AEC Mr. Karl, AEC	5-2-49	5-2-49		
V. W. Wood to: Mallinkrodt Chemical Co. St. Louis, Missouri	Inspection of various processes	K. J. Caplan Dr. Harrington Dr. Keller Mr. Koenig, AEC Mr. Karl, AEC	5-2-49	5-2-49		X
J. S. McMahon to: Simonds Saw & Steel Company Lockport, New York	Regarding rolling mill	Mr. Klevin, AEC Mr. Epp, AEC	5-3-49	5-3-49	X	
V. W. Wood to: Simonds Saw & Steel Company Lockport, New York	Regarding rolling mill	Mr. Klevin, AEC Mr. Epp, AEC	5-3-49	5-3-49	X	
MANAGEMENT						

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
I. Visitors to this Works						
J. E. Baker Knolls Atomic Power Laboratory Schenectady, New York	Concerning handling of radioactive materials to operate SPRU	W. I. Patnode	5-16-49	5-20-49	X	
K. R. Ballard Knolls Atomic Power Laboratory Schenectady, New York	Concerning handling of radioactive materials to operate SPRU	W. I. Patnode	5-16-49	5-20-49	X	
A. J. Bushel Knolls Atomic Power Laboratory Schenectady, New York	Concerning handling of radioactive materials to operate SPRU	W. I. Patnode	5-16-49	5-20-49	X	
R. C. Faught, Jr. Knolls Atomic Power Laboratory Schenectady, New York	Concerning handling of radioactive materials to operate SPRU	W. I. Patnode	5-16-49	5-20-49	X	
L. T. Fish Knolls Atomic Power Laboratory Schenectady, New York	Concerning handling of radioactive materials to operate SPRU	W. I. Patnode	5-16-49	5-20-49	X	
W. G. Urbon Knolls Atomic Power Laboratory Schenectady, New York	Concerning handling of radioactive materials to operate SPRU	W. I. Patnode	5-16-49	5-20-49	X	
I. F. Kinnard West Lynn Works West Lynn, Massachusetts	Radiation instruments	W. I. Patnode	5-23-49	5-24-49	X	
G. Dessauer Knolls Atomic Power Laboratory Schenectady, New York	Radiation instruments	W. I. Patnode	5-23-49	5-24-49	X	
G. F. Metcalf Electronics Park Syracuse, New York	Radiation instruments	W. I. Patnode	5-23-49	5-24-49	X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
M. A. Edwards Gen. Eng. & Consulting Lab. Schenectady, New York	Radiation instruments and 234-5 Project	W. I. Patnode	5-23-49	5-24-49	X	
"P" DIVISION						
I. Visits to other Installations						
E. P. Lee to: Mallinkrodt Chemical Co. St. Louis, Missouri	Inspect facilities pertinent to Hanford	C. L. Karl, AEC	5-2-49	5-2-49	X	
E. P. Lee to: Simonds Saw & Steel Co. Lockport, New York	Inspect facilities pertinent to Hanford	F. Epp, AEC	5-3-49	5-3-49	X	
"S" DIVISION						
I. Visits to other Installations						
R. S. Bell to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Attend information meeting and discuss matters on DP West and 234-5	R. D. Baker M. Roy	5-4-49	5-6-49	X	
J. R. Cartmell to: General Mills Minneapolis, Minnesota	Confer on development equipment	F. Jewett T. K. James	5-17-49	5-22-49	X	
S. D. Smiley to: General Electric Company Schenectady, New York	Inspection and consultation on 432 Project, KAPL and SPRU	R. S. Neblett	5-24-49	5-26-49	X	
TECHNICAL DIVISIONS						
I. Visitors to this Works						
C. E. Winters Oak Ridge National Laboratory Oak Ridge, Tennessee	Waste disposal discussions	J. B. Work	5-9-49	5-12-49	X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
T. E. Hicks Radiation Laboratory Berkeley, California	Employment interview	R. H. Beaton	5-12-49	5-13-49	X	
D. H. Marquis Gen. Engineering & Consulting Lab. Schenectady, New York	234-5 Project Meetings	R. H. Beaton	5-16-49	5-19-49	X	
L. B. Bragg Knolls Atomic Power Laboratory Schenectady, New York	SPRU Program Conference	R. H. Beaton	5-16-49	5-20-49	X	
J. Marsden Knolls Atomic Power Laboratory Schenectady, New York	SPRU Program Conference	R. H. Beaton	5-16-49	5-20-49	X	
V. B. Coplan Knolls Atomic Power Laboratory Schenectady, New York	SPRU Program Conference	R. H. Beaton	5-16-49	5-20-49	X	
E. L. Zebroski Knolls Atomic Power Laboratory Schenectady, New York	SPRU Program Conference	R H. Beaton	5-16-49	5-20-49	X	
C. F Metz Los Alamos Scientific Laboratory Los Alamos, New Mexico	Analytical chemical discussions	D. W. Pearce A. H. Bushey H. R. Schmidt L. M. Knights	5-19-49	5-20-49	X	
II. Visits to other Installations						
R Ward to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Attend AEC Information meeting	-	5-4-49	5-6-49	X	
M. G. Freidank to: Atomic Energy Commission Washington, D. C.	Attend conference of librarians called by AEC	B. M. Fry	5-9-49	5-11-49	X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
C. G. Craig to: Argonne National Laboratory Chicago, Illinois	Study methods of abstracting & organizing metallurical literature	F. G. Foote	5-10-49	5-11-49	X	
G. W. Pomeroy to: Oak Ridge National Lab. Oak Ridge, Tennessee	Assist Redox Pilot Plant Operations	D. G. Reid	5-1-49	6-1-49	X	
P. E. Collins to: Gen. Eng. & Consulting Lab. Schenectady, New York	234-5 Technical consultation	D. H. Marquis	5-9-49	5-13-49	X	
C. A. Rohrmann to: Kellex Corporation New York, New York	Job 11 consultations	K. C. Vint	5-16-49	5-23-49	X	
F. J. Leitz, Jr. to: Kellex Corporation New York, New York	Job 11 consultations	K. C. Vint	5-16-49	5-23-49	X	
C. Groot to: Kellex Corporation New York, New York	Job 11 consultations	K. C. Vint	5-16-49	5-23-49	X	
J. G. Bradley to: Kellex Corporation New York, New York	Job 11 consultations	K. C. Vint	5-16-49	5-23-49	X	
C. Groot to: Knolls Atomic Power Laboratory Schenectady, New York	Redox consultations	J. A. Ayres G. E. McCullough	5-20-49	5-21-49	X	
F. J. Leitz, Jr. to: Argonne National Laboratory Chicago, Illinois	Redox consultations	S. Lawroski	5-20-49	5-21-49	X	
W. H. McVey to: Radiation Laboratory Berkeley, California	Conference and use of equipment	S. Thompson	5-23-49	6-3-49	X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
P. F. Gast to: Oak Ridge National Lab. Oak Ridge, Tennessee	Discussion of experimental program, K-25	C. K. Beck	5-2-49	5-3-49	X	
J. M. West to: Oak Ridge National Lab. Oak Ridge, Tennessee	Discussion of experimental program, K-25	C. K. Beck	5-2-49	5-3-49	X	
P. H. Reinker to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Information meeting	N. E. Bradbury	5-5-49	5-7-49	X	
A. A. Johnson to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Information meeting	N. E. Bradbury	5-5-49	5-7-49	X	
W. A. Horning to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Information meeting	N. E. Bradbury	5-5-49	5-7-49	X	
C. W. J. Wende to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Information meeting	N. E. Bradbury	5-5-49	5-7-49	X	
J. C. L. Chatten to: Argonne National Lab. Chicago, Illinois	Consultation on P-10	C. E. Stevenson	5-16-49	5-20-49	X	
CONSULTANTS TO THIS WORKS						
I. H. H. Willard University of Michigan Ann Arbor, Michigan	Consultation on analytical techniques	D. W. Pearce A. H. Bushey H. R. Schmidt	5-4-49	5-6-49	X	
G. W. Watt University of Texas Austin, Texas	Inspection and consultation	R. H. Beaton	5-16-49	5-20-49	X	

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PURCHASING AND STORES DIVISIONS
SUMMARY
MAY, 1949

The Purchasing and Stores Divisions, Nucleonics Department, was established May 16, 1949 (See Organization Announcement L-1) comprising the Purchasing and Stores Division formerly in the Services Divisions, Construction Procurement Division formerly in the Design and Construction Divisions and the Traffic Section formerly in the Transportation Division of the Manufacturing Divisions.

Considerable time was spent in merging the groups and reorganizing (See Organization Announcements L-2, L-3, and L-4). The personnel of the combined Purchasing and Procurement Divisions together with the Traffic Section are now housed in Building 720 which was the only space available at the time.

Following is a personnel summary indicating total number of employees of the Purchasing and Stores Divisions as of May 16, 1949 and May 31, 1949.

	Total Personnel as of 5-16-49	Total Personnel as of 5-31-49	Net Decrease
Exempt	62	52	10
Non-Exempt	188	185	3
TOTALS	250	237	13

In addition to the net decrease indicated above for the period 5-16-49 through 5-31-49, eight additional employees will terminate their services during the month of June.

The combined work load for the Purchasing Division for the month indicated little change over the preceding month. Receipts of material for the month indicated a slight increase over the previous month; however, disbursements were approximately $82,000 less.

G. E. Hotaling visited Schenectady and New York City in connection with the proposed cancellation of five orders for stainless steel valued at approximately $1,250,000. Three of the firms involved agreed to accept cancellation without charge. The other two are reviewing their records in order to determine whether or not it would be necessary to make a charge for cancellation.

A contract was awarded Continental Coal Company for 200,000 tons of steam coal. Roslyn-Cascade Coal Company was awarded a contract for 60,000 tons.

A study of procedures in the Traffic Section has resulted in the elimination of many non-essential and time-consuming duties as well as a streamlining of other routine functions which should result in better service.

It was proposed by the Commission's Transportation Branch to change the name of the Milwaukee Road's Station presently known as "Hanford" to "Richland." As a result of this proposal, we submitted to the Commission under date of May 31, 1949 our views which were to the effect that no change should be made as it would result in confusion. The Commission agreed to withhold any action until further study could be made and as of the end of the month, the matter was still unresolved.

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PURCHASING AND STORES DIVISIONS
SUMMARY

Savings in the amount of $56,365.39 on freight charges were effected during the month as a result of rate reductions obtained from the carriers.

Considerable progress was made by the Inventory Control Section of the Stores Division in perfecting plans designed to reduce inventory of surplus materials.

A total of nineteen lists of surplus materials officially declared to the Commission were transmitted during the month.

Sixty-two representatives of Government agencies and private businesses were escorted through our surplus warehouses and scrap yards for the purpose of negotiating purchase of scrap and transfer of surplus material.

The first group of condemned tract houses which the Commission authorized us to sell were shown to prospective purchasers and the bids were ready for opening and evaluation at month end.

1221758

PURCHASING AND STORES DIVISIONS
PURCHASING DIVISION
MAY, 1949

GENERAL

Effective May 16, 1949 a consolidation of the former Operations' Purchasing Division and the former Construction Procurement Division took place. The new Purchasing Division is a part of the Purchasing and Stores Divisions and is responsible for all phases of General Electric procurement at the Hanford Works. The main subdivisions of the Purchasing Division are Purchasing, Expediting, Inspection, and Clerical.

The work load during the month was approximately the same as for the preceding month. 937 purchase orders were placed as compared to 913 placed in April. 1,499 purchase requisitions were received as compared to 1,367 received during April. Requisitions on hand at month end totaled 385 as compared with 298 at the end of the previous month.

The increase in the number of requisitions on hand at month end over the previous month was due to two factors. The major factor was the combining of Operations and Construction requisitions; the other factor was the time lost in the physical movement of furniture, filing cabinets, office machines and supplies plus the combining of records and establishment of correlated operating procedures.

During the month nineteen additional orders were placed for Project P-10-A. Satisfactory deliveries have maintained for materials and supplies required for this Project.

Cancellations were effected on several HWC orders. These cancellations were requested because of the completion of certain projects and design changes on other projects.

A contract was awarded the Continental Coal Company for 200,000 tons of steam coal. The contract contains an option of increasing the tonnage to 400,000 tons if tests being conducted prove Reynolds-Updike Coal Company's coal does not meet their quoted analysis.

Nine of the thirty carloads of coal ordered from Reynolds-Updike for test purposes were received on May 31, 1949. The balance of the cars have been shipped and as near as can be determined, we will have the complete results of the test in approximately two weeks.

Roslyn-Cascade Coal Company was awarded a contract for 60,000 tons of steam coal. It is planned to use the tonnage in the 3000 area steam plant and 700 area power house.

PERSONNEL

Administrative Supervision	1
Purchasing	
Supervision	1
Employees Exempt	10
Employees Non-Exempt	8

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PURCHASING AND STORES DIVISIONS
PURCHASING DIVISION

PERSONNEL (Cont.)

Expediting	
Supervision	1
Employees Exempt	3
Employees Non-Exempt	3
Inspection	
Supervision	1
Employees Exempt	11
Employees Non-Exempt	1
Clerical	
Supervision	1
Employees Non-Exempt	10
TOTAL	51

Included in the total number of personnel are seven exempt employees who are working out their Reduction of Force notice.

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	1
Safety and Security Meetings Held	0
Minor Injuries	1

STATISTICS

Requisitions on hand 5-1-49 (includes 18 assigned to Govt.)	298
Requisitions received during May	1,499
Requisitions placed during May	1,412
Requisitions on hand 5-31-49 (includes 40 assigned to Govt.)	385
HW orders placed	912
HWC orders placed (May 23 - May 31 inclusive)	25
TS orders placed	71
M.O.'s placed	0
O.R.'s placed	2
Alterations issued	115
Number of new orders requiring inspection during month	10
Number of completed orders requiring inspection during month	22
Number of orders outstanding requiring inspection at close of month	61
Orders expedited (special request)	118
Orders expedited (routine)	217

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PURCHASING AND STORES DIVISIONS
STORES DIVISION
MAY, 1949.

GENERAL

During the month of May, the Stores Division for Hanford Works was established as announced in Nucleonics Department Organization Announcement No. L-1. As a result three sections were created; Receiving, Warehousing and Disbursing; Inventory Control (Active Inventories); and the Surplus Salvage and Scrap Section. The Stores Division will be responsible for all phases of Stores activity, including receiving, warehousing, disbursing and inventory control as well as surplus salvage and scrap.

Receipts for material for the month of May reflected a slight increase over the preceeding month. Disbursements, however, were approximately $82,000.00 less than for the month of April.

Procedures were established at month end whereby the Inventory Control Section was making definite progress in reducing inventories of surplus items. Cooperation of all divisions will be required in reducing inventories to a reasonable level.

Excess lists Nos. 77, 88, 89, 92, 93, 95, 98 through 110, a total of nineteen were transmitted to the Atomic Energy Commission during the month. Thirty-two field lists were circulated throughout the Project. Nineteen lists were approved as excess and thirteen lists are pending.

Sixty-two representatives of Government agencies and private businesses were escorted through our warehouses and scrap yards for the purpose of negotiating the purchase of scrap and transfer of excess property.

232 truckloads of material and/or equipment were received and warehoused at the Pasco General Depot during the month.

Concentrated effort was made during the month to clean up our various scrap lumber yards. A listing and subsequent sale of reclaimable metal at the Old Central Shops Area is in progress.

The first group of scrap houses to be sold has been shown to prospective buyers and the bids are ready to open.

PERSONNEL

Administrative Supervision	1
Receiving, Warehousing & Disbursing	
Employees Exempt	5
Employees Non-Exempt	70

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PURCHASING AND STORES DIVISIONS
STORES DIVISION

PERSONNEL (Cont.)

Inventory Control

Employees Exempt	5
Employees Non-Exempt	34

Surplus, Salvage & Scrap

Employees Exempt	7
Employees Non-Exempt	48
TOTAL	170

SAFETY AND SECURITY

Receiving, Warehousing & Disbursing

Safety and Security Meetings Scheduled	5
Number of Employees Attending	74
Minor Injuries	1

Inventory Control

Safety and Security Meetings Scheduled	4
Number of Employees Attending	36
Minor Injuries	0

Surplus Salvage & Scrap

Safety and Security Meetings Scheduled	4
Number of Employees Attending	55
Minor Injuries	1

STATISTICS

Receiving, Warehousing & Disbursing

Receiving Reports issued	2,669
Emergency Store Orders filled	6
Returnable containers on hand at month end	5,045
Returnable containers on hand over six months	1,008
Shipments processed (containers and material) during this month	159

Inventory Control

Number of items added to Stores stock	221
Number of items deleted from Stores Stock	224
Items in Stores stock at month end	49,913
Store Orders filled	17,876
Inventory valuation (903-all captions, 906 & 912)	$2,964,607.48

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PURCHASING AND STORES DIVISIONS
STORES DIVISION

Inventory Control (Cont.)

Inventory valuation (Spare Parts) at month end	$1,555,292.91
Total value inventories at month end, including Spare Parts	4,529,900.39
Value of Disbursements, not including cash sale items	181,660.10*
Value of Cash Sales	1,214.74
Value of transfers from Surplus, Salvage & Scrap to Stores	4,552.63
Value of materials declared excess and removed from Stores stock	51,174.42
Value of materials returned to Stores stock for credit	68,690.05

*Includes $16,865.73 disbursed to Construction and CPFF subcontractors.

Surplus, Salvage & Scrap.

Excess Account #10.10 Balance 4-25-49		$4,294,763.75
Receipts 4-26-49 to 5-25-49		
Lumber	$ 6,606.75	
Process Equipment	37,583.60	
Automotive Equipment	990,210.30	
Machine Tools & Equipment	33,610.57	
Office Furniture, Machines	3,901.79	
Household Furniture, Etc.	450.28	
Material & Supplies	283,517.23	
Miscellaneous Equipment	82,367.77	
	$1,438,248.29	1,438,248.29
		$5,733,012.04
Disbursements 4-26-49 to 5-25-49		
On Project:		
Automotive Equipment	2,901.85	
Office Furniture, Machines, etc.	347.90	
Household Furniture, etc.	3.75	
Material & Supplies	13,377.40	
Miscellaneous Equipment	393.05	
Off Project:		
Automotive Equipment	37,210.36	
Machine Tools & Equipment	95.00	
Office Furniture, Machines	1,795.75	
Household Furniture, etc.	1,222.55	
Material & Supplies	6,716.51	
Miscellaneous Equipment	8,829.98	
	$ 72,894.10	72,894.10
Balance of Account #10.10 as of 5-25-49 (See attached list for breakdown of materials in this account by classification)		$5,660,117.94

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Surplus, Salvage & Scrap (Cont.)

Total Receipts to Date		$6,588,242.52
Total Disbursements to Date		928,124.58
Scrap and Salvage Disbursed		
Scrap Sales Completed	10	
Scrap Sales in Process	8	
Scrap sale revenue for the month		$16,577.19
Total Scrap sale revenue to date		$59,065.80

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PURCHASING AND STORES DIVISIONS
STORES DIVISION

RECAPITULATION BY CLASSIFICATION OF ACCOUNT 10.10

Class	Description	Monetary Value
1.	Gun Emplacements, Fire Control Instruments	$ 1.25
2	Small Arms	784.52
3	Lethal Device Equipment	10.00
4	Ammunition	1,032.98
5	Flags, Bunting, Pennants, Etc.	201.71
7	Fuel	10.34
8	Motor Vehicles: Electric trucks, tires, tubes	208,705.66
10	Outboard Motors and all accessories	298.00
11	Pumps and Pump Parts	78,811.58
12	Marine Hardware	174.72
13	Engine & Fireroom Fittings	116.32
14	Lubricants	882.97
15	Electric Cable and Insulated Wire	7,428.74
16	Radio and Sound Signal Apparatus	10,886.81
17	Electric Apparatus	735,055.72
18	Instruments of Precision & Photographic Equipment	22,866.67
19	Blocks	4,485.08
21	Cordage: Hemp, Jute, Oakum, Twine, etc.	222.56
22	Wire Rope, Bare Wire, etc.	937.23
24	Canvas, Duck, Tentage, etc.	173.90
26	Furniture	108,526.97
27	Textiles: Thread, findings, floor coverings	25,202.93
29	Toilet Articles	24.38
30	Bathroom and Toilet Fixtures	4,567.68
31	Non-Electric Lighting Apparatus	2.40
32	Fire-Surfacing and Heat Insulating Materials	27,979.04
33	Gaskets, Hose, Packing, Sheets and Strip Rubber, Hose Fittings, Flexible Tubing	10,202.15
34	Belting, Harness (Leather) etc.	201.40
36	Music and Musical Instruments	8.50
37	Special Wearing Apparel and Athletic Equipment	13,672.84
38	Brooms and Brushes	3.00
39	Lumber	1,905,853.28
40	Machine Tools	103,337.60
41	Hand Tools	18,875.70
42	Builders and General Hardware	22,407.52
43	Bolts, Nuts, Rivets, Screws, Washers, etc.	11,339.37
44	Pipe and Non-Flexible Tubes and Tubing	155,542.94
45	Pipe Fittings	243,425.57
46	Metal in Bars: Including Flat, Hexagon, etc.	11,283.78
47	Metal in Plates and Sheets	2,020.31
48	Metal Shapes and Structural	111.84
51	Acids, Chemicals, Etc.	13,748.73
52	Paints and Paint Ingredients	69,553.12

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PURCHASING AND STORES DIVISIONS
STORES DIVISION

RECAPITULATION BY CLASSIFICATION OF ACCOUNT 10.10 (Cont.)

Class	Description	Monetary Value
53	Pens, Pencils, Paper, Drafting Room and Printers' Supplies	$ 18,492.02
54	Office Equipment	22,346.00
55	Clothing	1,729.67
57	Laboratory Equipment	31,687.84
58	Fire Fighting Apparatus: Railway Equipment, Prefabricating Buildings, etc.	169,977.58
59	Building Materials: Asphalt, Brick, Etc.	30,713.25
60	Boilers and Power Plants	841.45
63	Tableware	9,100.83
64	Kitchen Utensils and Apparatus	26,995.75
65	Ovens, Ranges, Stoves, etc.	25,125.23
66	Machinery: Pneumatic Tools, etc.	45,010.52
69	Animal and Hand-Drawn Vehicles	3,877.43
70	Agricultural Implements	1,969.67
73	Caps, Hats, Gloves, etc.	354.64
74	Infantry and Landing Force Equipment	512.62
78	Motorized Equipment & Heavy Construction Equipment	1,450,351.23
83	Airplane Accessories, Equipment and Parts	55.00
	Total Account 10.10	$5,660,117.94

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PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION
MAY, 1949

GENERAL

Effective May 16, 1949, the Traffic Section of the Transportation Division was removed from the Manufacturing Divisions and consolidated with the Construction Traffic Section under the newly formed Purchasing and Stores Divisions. The consolidation has resulted in reduction in force of four employees, as two exempt employees from the Construction Traffic Section have been given lay-off notice, two non-exempt employees have been transferred to other Divisions and two non-exempt employees have been transferred to the consolidated Traffic Section.

A study of procedures which were in effect in both Traffic Sections prior to the consolidation has now resulted in the elimination of many non-essential time-consuming duties and the streamlining of other routine functions which will result in better service to other Divisions and a savings in manpower and supplies within the consolidated Traffic Section.

As a result of informal request from Mr. R. I. Harris of the Atomic Energy Commission, memorandum dated May 27, 1949 was prepared outlining in full our views regarding proposal to change the name of The Milwaukee Road's station "Hanford" to "Richland." At the request of the Chief of Office of Administrative Services, a meeting was held on May 31, 1949 to discuss this problem further, at which General Electric Company was represented by Messrs. W. A. Jeffrey, R. T. Cooke, and J. A. McSwigan. Copies of the memorandum referred to above were presented to the Commission as representing General Electric's position on this important question. It was mutually agreed that if after further study the Commission did not concur in our statements, they would furnish General Electric Company with a reply in writing. It was further understood that if the Commission disagreed with our recommendations, opportunity would be afforded us to present any further views before positive action was taken on effecting this change.

Effective May 31, 1949 Revised Service Order No. 775, as amended, was cancelled. This will have the effect of reinstating Rule 9, Item 540-C of B. T. Jones' Freight Tariff No. 4-V - ICC 3963 in its entirety, which will result in the major changes listed below:

1. Reduce demurrage charges from $3.30 to $2.20 per car per day.
2. Permit four debit days instead of two.
3. Permit credits to be applied to offset debits up to a total of four credits at the ratio of one credit for one debit instead of the former rule permitting only two credits at the same ratio.

Effective May 27, 1949, Return Material Orders will be routed through the Traffic Section where proper description for the bill of lading, in accordance with tariff requirements, will be furnished the Shipping Department.

As a result of rate reductions obtained from the carriers, there was a total savings in freight charges for the month of May amounting to $56,365.39. This makes a total savings to date of $1,085,450.60.

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PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

PERSONNEL

Administrative Supervision	1
Employees Exempt	2
Employees Non-Exempt	10
TOTAL	13

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	1
Safety and Security Meetings Held	0
Minor Injuries	1

STATISTICS

Savings Report

The following are savings made through May, 1949 resulting from:

1. Rate reductions obtained from the carriers:

Commodity	Origin	Savings for May	Savings thru April	Total Savings to Date
Coal, grate	Kleenburn, Wyo.	$ 2,952.40		
Coal, screenings	"	44,056.52		
Liners, furnace	Morganton, N.C.	8,585.00		
Soda, Caustic	Tacoma, Wash.	771.47		
		$ 56,365.39	$1,029,085.21	$1,085,450.60
2. Freight Bill Audit		1,098.71*	43,868.19**	44,966.90
3. Loss, Damage & Overcharge Claims		1,019.64	68,483.14	69,502.78
4. Ticket Refund Claims		380.31	5,207.46	5,587.77
5. Household Goods Claims		28.30	13,542.99	13,571.29
		$ 58,892.35	$1,160,186.99	$1,219,079.34

* Includes $669.44 for the AEC
** Includes $19,166.68 for the AEC

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PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS (Cont.)

Work Volume Report

Reservations Made	Rail	47
	Air	86
	Hotel	45
Expense Accounts checked		81
Household Goods and Automobiles		
	Movements arranged inbound	4
	Movements arranged outbound	7
	Shipments traced	2
	Insurance riders issued	6
	Insurance Bills approved	8
	Furniture Repair Orders	1
	Claims filed	2
	Claims collected - number	2
	Claims collected - amount	$28.30
Ticket Refund Claims		
	Filed	16
	Collected - number	8
	Collected - amount	$380.31
Freight Claims		
	Filed	10
	Collected - number	16
	Collected - amount	$1,019.64
Freight Bill Audit Savings		
	GE	$399.27
	AEC	699.44
Freight Shipments Traced		37
Quotations	Freight Rates	138
	Routes	49
Bills Approved	Carloading - GE	99
	AEC	6
	Express - GE	130
	AEC	43
	Rail - GE	540
	AEC	14
	Truck - GE	167
	AEC	82
Carload Shipments	Inbound	876
	Outbound	31

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PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS (Cont.)

Report of Carloads Received

General Electric Company			
	Anthrafilt	9	
	Asphalt	3	
	Bichromate of Soda	1	
	Cable	1	
	Caustic Soda	9	
	Cement	21	
	Chemicals	4	
	Chlorine	4	
	Coal	709	
	Containers	1	
	Express	2	
	Filters	1	
	Furnace Liners	13	
	Gas	1	
	Gravel	10	
	Machinery	1	
	Merchandise	6	
	Nitrate of Soda	1	
	Nitric Acid	8	
	Packing	1	
	Phosphoric Acid	2	
	Pipe	4	
	Poles	7	
	Salt	3	
	Sand	18	
	Soda Ash	2	
	Steel	16	
	Valves	1	859
Atkinson and Jones Company			
	Flooring	1	
	Lumber	1	
	Plaster	2	
	Sash	1	
	Steel	5	10
Acme Fast Freight	Merchandise	1	
Eyros Trans. & Whse.	Paper	1	
Graysport	Asphalt	3	
Haughton Elevator	Machinery	1	
C. C. Moore	Steel	1	7
Total Entire Project			876

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EMPLOYEE AND COMMUNITY RELATIONS DIVISIONS

SUMMARY - MAY, 1949

Open requisitions for additional personnel increased from 22 at the beginning of the month to 177 at the end of the month. Total plant roll decreased by 136 employees during May due to the general reduction of force. Turn-over rate, including terminations due to lack of work, during May amounted to 2.54%. Turn-over rate, exclusive of terminations due to lack of work, amounted to 1.88%.

Employee Services Counselors made 1,323 contacts during May. Ten employees retired during May, seven of whom were on optional retirement basis. One employee death occurred. Twenty-two suggestion awards, totaling $395.00, were granted. One award of $175.00 was given to a retired employee upon a revaluation of his suggestion. A damage suit in the amount of $42,912.00 was filed against J. A. Terteling and Sons for negligence in protecting an excavation. Reimbursement was made to the Company by the Washington State Department of Labor and Industries in the amount of $102,029.64, as the result of excesses created in the Pension Fund due to marriage and death of widowed pensioners.

A forty-hour, five-day training program for new supervisors was held by the Training and Program Development Group the week of May 16, with a total of 49 supervisors selected by the various Divisions participating. Arrangements were made for presenting to supervisors, during the first week of June, the talk given by Mr. G. H. Pfeif, Manager of Union Relations, Schenectady, to all Division Managers and Superintendents. This presentation will be made through the use of wire recordings of Mr. Pfeif's talk. Plans are also being made for a follow-up program covering the union contract in detail with all supervisors.

The activities of the Labor Relations and Wage Rate Division during the month of May have been primarily directed toward the handling of negotiations with the Hanford Atomic Metal Trades Council and developing working arrangements for applying the resulting contract. Formal negotiations ceased on May 17, 1949, after which a number of informal discussions were held with representatives of various unions and supervision. The Company and the Union ratified the contract on May 31, 1949, contingent upon A.E.C. approval. The N.L.R.B. conducted a payroll check to ascertain whether a substantial number of employees were involved in the petition requesting bargaining rights by Hanford Guard Local No. 21. In addition, a formal hearing was scheduled for June 8, 1949. A total of 38 grievances have been processed during the last three months in accordance with the interim grievance procedure. One reimbursement authorization was submitted to the A.E.C. during May requesting an additional classification and three reimbursement authorizations submitted previously are pending approval.

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Correction of misinformation concerning the amount of profit General Electric is to make on its contract with A.E.C. was a project which received considerable attention from Community Relations during the month of May. This was accomplished through releases to general newspapers, and through a statement which it was requested that ATOMIC ENERGY NEWS LETTER publish to correct a misleading statement contained in a previous issue of that publication.

Arrangements were made to assure maximum coverage of news developments arising from current investigations underway in Washington, D. C.

Fields of activity in which Community Relations is participating increased materially during the month of May with the addition of responsibility for informing the public and, consequently, potential bidders, of General Electric's intention to call for bids on construction work outside perimeter barricades. Community Relations works with the Contract Supervisor, Design and Construction Division, on this particular assignment.

Preview showings of "By Their Works", a new 16 mm color sound film release which reveals the wide variety of General Electric's research, development, and manufacturing activities, were made during the month of May to 42 members of the assistant superintendent, assistant division head, and above group. Results of a "previewer's reaction" survey made among all who saw it during May indicate a strong feeling by a large majority that all supervisors, and all employees of the Company at Hanford Works should see the film.

General Electric's efforts to obtain bids from potential newspaper publishers received thorough publicity treatment through Community Relations during the month. In addition to informative releases to the press, each publisher also received copies of all bid forms, invitations to bid, and other papers being used.

Special Programs completed during the month included preparation of ideas and actual rough finished designs for four "Safety Topic of the Month" posters. In addition, the Kadlec Open House publicity build-up and follow-up campaign was conducted, as well as the May portion of the Mobile Chest X-Ray publicity program.

Twenty-five releases were sent out during May to the nine newspapers and three radio stations on the "Community" list, and ten releases were sent to the forty-one leading Northwest daily newspapers and three radio stations on the "General" list.

Four issues of Hanford Works News were published during May.

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EMPLOYEE AND COMMUNITY RELATIONS DIVISIONS

MAY, 1949

ORGANIZATION AND PERSONNEL

Employee Relations

Employment:

Effective May 2, 1949, a Stenographer-Typist "B" was transferred from the Procurement Group to the Training and Program Development Group.

Effective May 9, 1949, a General Clerk "D", assigned to the Investigations and Files Section, was temporarily removed from the roll due to illness.

Effective May 23, 1949, an Employment Interviewer and Investigator "B" was transferred to the Plant Security and Services Division.

Employee Services:

Effective May 1, 1949, K. O. Barker and W. W. Chamberlain, Counsellors, were transferred to the Training and Program Development Group.

Effective May 9, 1949, a Stenographer-Typist "C" was transferred to the Technical Personnel Division.

Training and Program Development:

Effective May 1, 1949, K. O. Barker and W. W. Chamberlain were transferred to the Training and Program Development Group as Staff Assistants.

Effective May 1, 1949, V. J. Byron was transferred from the Public Works Group of the Community Divisions to the Training and Program Development Group as a Staff Assistant.

Effective May 2, 1949, a Stenographer-Typist "B" was transferred from the Procurement Group to the Training and Program Development Group.

Labor Relations and Wage Rates

No organization changes were made in this Division during the month of May.

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Community Relations

Effective May 4, one General Clerk B was added to this Division to replace a General Clerk A who will assume new duties within the Division, effective July 1, 1949.

Number of Employees on Payroll	May, 1949
Beginning of Month	72
End of Month	71
Total Decrease	1

This decrease was due to the temporary removal, due to illness, of one employee in the Employee Relations Division.

1221774

Employee and Community Relations Divisions

ACTIVITIES

Employee Relations

Employment:

	April, 1949	May, 1949
Applicants interviewed	284	603
Open requisitions		
Exempt	2	2
Nonexempt	22	175

Of the 22 nonexempt open requisitions at the beginning of the month, 14 were covered by interim commitments. At the end of the month, of the 175 nonexempt open requisitions, 88 were covered by interim commitments. Of the 2 exempt open requisitions at the beginning of the month, both were covered by interim commitments. At the end of the month these same requisitions still existed with the applicants scheduled to report in June.

	April, 1949	May, 1949
Employees added to the rolls	27	53
Employees removed from the rolls	471	189
Net Gain or Loss	- 444	- 136

The turn-over rate for the month of May, including those who were terminated due to lack of work, amounted to 2.54%. The turn-over rate of employees exclusive of those who were removed for lack of work was 1.88%.

During the month 10 new requests for inter-Divisional transfers were received and reviewed by the Employment Office. As a result of these requests, 6 transfers were effected. In addition, during May, 39 transfers were effected for employees who had received notice of termination due to lack of work.

Employee Services:

During the month of May, the Counselor was removed from the 300 Area, and transferred to another group in the Employee and Community Relations Divisions. No replacement was obtained for this Counselor in the 300 Area, and it is planned to remove the Counselors from other Areas in the very near future, with the Employee Services work in the Areas being handled directly out of the 700 Area through periodic visits by members of the Employee Services staff.

During the month of May, there were a total of 1,323 contacts made by Employee Services Counselors. These contacts resulted in 1,518 inquiries. Of these contacts, 685 were made by exempt employees, and 638 by nonexempt employees.

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Employee and Community Relations Divisions

There were 23 re-engaged employees, 1 transfer, and 18 new employees given orientation during the month of May. Of this number, 42% elected to participate in the Group Life Insurance Plan, and 85% elected to participate in the Group Disability Insurance Plan.

Employee Services Counselors attended 2 Area Council meetings during the month, with a total of 30 members of supervision attending. Five meetings were conducted by Employee Services Counselors, with a total of 197 employees in attendance. Each of these meetings were concerning Employee Benefit Plans.

The following employees retired during the month of May:

Alvin S. Neumann, North Richland Realty Division (Optional)
William B. Jewett, Purchasing and Stores Division
Roselba L. Englehart, North Richland Realty Division (Optional)
Ova A. Gray, North Richland Realty Division (Optional)
Ruth E. Jewett, Metallurgy and Control Division (Optional)
Bessie K. Aldrich, North Richland Realty Division (Optional)
Bertha K. Barker, North Richland Realty Division (Optional)
J. B. Herndon, North Richland Realty Division
James A. Carmichael, Plant Security and Services Division
William Barnes, North Richland Realty Division (Optional)

The above named employees were participating in the Pension Plan, and all were interviewed prior to their retirement and fully informed as to the benefits each would receive under this Plan.

One employee death occurred during the month of May, namely:
Plant Security and Services Divisions. Mr. was residing alone in Richland. His family was located in eastern Pennsylvania, and were contacted and refused to assume any financial responsibility toward his burial. At the time of his death, Mr. had in his possession the sum of $ 60.00. Examination of his personal effects failed to reveal that he carried any insurance whatsoever, and the only other asset was a week's salary due him from the Company. The original sum in his possession was used to help finance burial expenses, and the balance of his burial expenses was obtained by voluntary contribution of his fellow employees.

Fourteen salary checks were delivered to employees absent during the month of May because of illness.

Suggestion System:

In February, 1948, an award of $ 75.00 was made to Hugh T. Simpson for a suggestion involving the manufacture of a mold which facilitated the making of samplers in the Process Area. This award was based on an estimated savings of $ 2160.00. A revaluation of the suggestion revealed that the actual savings over a two-year period resulted in a net savings of $ 5475.20. As a result of this revaluation, Mr. Simpson, who has retired since the original award, was granted an additional $ 175.00 for his

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suggestion. A check has been mailed to Mr. Simpson to his home in Denver, Colorado, where he is presently residing.

At the end of May, the volume of work in the Office of the Secretary of the Suggestion System was as follows:

	April, 1949	May, 1949	Total since 7-15-1947
Suggestions Received	82	58	3526
Investigation Reports completed	174	65	3332
Awards granted by Suggestion Committee	17	22	352
Cash awards	$ 200	$ 395	$ 3850

Insurance and Compensation:

v.s. J. A. Terteling and Sons, Inc., Claim No. -- During the month of May, a complaint was filed in the Superior Court of Spokane County, alleging damages in the amount of $ 42,912.00, as the result of an accident in which the plaintiffs, in this case, drove their car into an excavation on Stevens Drive on June 17, 1948. The complaint alleged that proper barricades were not posted. The Travelers Insurance Company was notified of this complaint, and are arranging to see that an appropriate answer is made.

v.s. General Electric Company, Claim No. -- Attorney for the insurance company, as well as the insurance company, recommends that an appeal be filed in this case. Based on this recommendation approval was obtained from the Atomic Energy Commission for the filing of such an appeal, and the Travelers Insurance Company appropriately notified. It is believed that the effect of this appeal may result in a settlement out of court for a sum considerably less than the judgment rendered in the Superior Court.

Life Insurance

Code information for use by insurance companies in issuing insurance to employees of this Works was furnished to fourteen insurance companies and investigation agencies during the month of May.

A schedule of job titles made as the result of a survey conducted by Mr. R. C. Stratton, Supervising Chemical Engineer, Travelers Insurance Company, representing the Home Office Life Underwriters Association was forwarded to this Works for comment. Recommendations and revisions, as the result of this review, have been prepared and the schedule of job titles returned to Mr. Stratton.

Workman's Compensation

Industrial Insurance Law -- The 1948 session enacted several revisions in the Industrial Insurance Law. The important revisions are the creation of a Board of Industrial Insurance Appeals, which replaces the Joint Board

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of Appeals. This Board will consist of three members, to be appointed by the Governor; one of whom shall be an attorney and a member of the Washington State Bar; the second an active member of organized Labor; and the third a representative of the employers, selected from a list of three names submitted to the Governor by a state-wide organization of employers. The three members will devote their full time to the duties of the Board of Industrial Insurance Appeals.

deceased, Claim No. -- An order granting a pension to the parents of the above named complainant was entered by the Department of Labor and Industries. This complainant was a former employee of the Scott-Buttner Electric Company, a sub-contractor on Construction at this Works. A review of this case indicates that the parents were not actually dependent on the deceased. For this reason an appeal was submitted to the Joint Board on May 23.

On May 23, 1949, the Department of Labor and Industries were contacted again relative to supplying the General Electric Company with copies of all correspondence on all claims submitted by employees of the contractor or sub-contractor at this Works.

On May 5, 1949, a letter was directed to the Supervisor of Industrial Insurance, Department of Labor and Industries, relative to the procedure which had been established by the Department concerning claims arising as a result of eye glasses broken during the course of employment. On May 31, a letter was received from the Department advising that this procedure had been changed, and that an order, dated May 27, had been issued to the effect that no claims will be approved unless there is evidence of physical injury, which caused the breakage of the glasses.

A check in the amount of $ 102,029.64 was received from the Department of Labor and Industries as re-inbursement for an excess of money set up in the Pension Reserve Fund. These excesses were created through marriages of widowed pensioners, and death of other pensioners, over a period of approximately five years.

Training and Program Development:

Training and Program Development Staff Assistants, together with the Supervisor of Training, attended all union negotiations during the month of May. As a result of these meetings, plans were made to present, through the Training and Program Development Group, the talk delivered on May 17, 1949, by Mr. G. H. Pfeif, Manager of Union Relations from Schenectady, in which he presented some of the Company's philosophy necessary to supervisors in operating under a union contract. This talk was recorded on a wire recorder, and it was planned to rebroadcast it to all supervisors at a later date. In addition, transcriptions were prepared for distribution to supervisors. Arrangements are also being made for a detailed coverage of the contract with supervisors at a later date.

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Employee and Community Relations Divisions

Inasmuch as the Training and Program Development Group was just recently organized, the objectives of this Group have been set forth in writing and furnished to the various Division Managers and Superintendents. Information concerning these objectives was also forwarded to the Employee Relations Manager in New York, with the request that they furnish us any material on training that might be of assistance to us.

During the week of May 16, 1949, a forty-hour training program for new supervisors was held. An opportunity was presented prior to this meeting to all Divisions to select three supervisors to attend. As a result of this selection, a total of 49 supervisors participated for the entire five days during that week. Very favorable comments were received from those who participated as to the value of this course. It is planned to give this program one week each month.

Plans are being made by the Training and Program Development Group to take over the Women's Training Program as soon as it is possible to obtain an individual to handle this assignment.

STATISTICS

Number of employees on Rolls	4-30-1949	5-31-1949
Exempt	1, 654	1, 637
Nonexempt	5, 864	5, 745
Totals	7, 518	7, 382

ADDITIONS

	Exempt	Nonexempt	Total
New Hires	8	11	19
Re-engaged	0	26	26
Re-activations	0	8	8
Transfers from other Plants	0	0	0
Actual additions	8	45	53
Payroll exchanges	6*	4**	10
Gross Additions	14	49	63
TERMINATIONS			
Actual Terminations	22	142	164
Removals from Roll	1	24	25
Payroll Exchanges	4***	6****	10
Gross Terminations	27	172	199

* Transferred from Weekly Salary Roll
**Transferred from Monthly Salary Roll
***Transferred to the Weekly Salary Roll
****Transferred to the Monthly Salary Roll

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Employee and Community Relations Divisions

Approximately 70 % of all terminations were on a voluntary basis, and most of these were for the following reasons: (a) Personal Reasons (b) Another Job.

GENERAL

	4-30-1949	5-31-1949
Applicants interviewed	284	603
Photographs processed	2, 612	3, 621
Fingerprint impression taken (in duplicate)	214	283
Procurement Letters written	296	342

ABSENTEEISM STATISTICS
(Weekly Salary Roll)*

Male	1.97%	1.72%
Female	3.49%	3.52%
Total Plant Average	2.37%	2.20%

INVESTIGATIONS STATISTICS

Cases at beginning of month	846	748
Cases received during the month	101	200
Cases closed	199	126
Cases pending at end of month	748	822
Number found satisfactory for employment	65	93
Number found unsatisfactory for employment	1	0
Cases closed before investigation completed	6	0
Special investigations conducted	8	14

Insurance and Compensation

	4-1949	5-1949	Total since 9-1-1946
Claims received and reported to the Department of Labor and Industries	171	126**	2,668
Claims received and reported to the Travelers Insurance Company	10	14	321

*Statistics furnished by Weekly Payroll Division
**This total includes 32 broken glass claims which were forwarded direct to the Department of Labor and Industries by the optometrist.

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Employee and Community Relations Divisions

Labor Relations and Wage Rates

Labor Relations

The activities of this division relative to Labor Relations continue to be primarily concerned with negotiations of the formal agreement together with the working arrangements for such agreement with the Hanford Atomic Metal Trades Council.

During the early part of the month negotiations have been held almost daily until May 17, 1949 when formal negotiations were completed. Subsequent to this date a number of meetings had been held with various interest groups of the Council relative to discussing the administration of the contract in regard to specific unions. Also, informal meetings have been held with the Council representatives for the purpose of discussing some of the over-all provisions of the contract such as seniority. Mr. George H. Pfief, Manager Union Relations, left this Works on May 18, 1949 having completed his assistance here. A meeting was held on May 31, 1949 between representatives of the H. A.M.T.C. and Management of the Nucleonics Department in which the proposed contract was ratified by the Company and the Council, pending approval by the Atomic Energy Commission. Copies of the contract were provided to the A.E.C. Following this ratification, drafting of a Reimbursement Authorization was commenced constituting the formal reimbursement authorization request to the A.E.C.

In regard to the pending petition of the National Labor Relations Board requesting bargaining rights for certain employees engaged in guard work at this Works by the Hanford Guard Union, Local No. 21, the following action has taken place. During the early part of the month the N.L.R.B. requested certain information from the Company for the purpose of drafting a proposed stipulation and in determination of the Company's position in the matter. The Company complied with this request.

On May 6, 1949 Mr. J. N. Draznin, Field Examiner for the N.L.R.B., visited this office during which time he conducted a payroll check to ascertain whether a substantial number of employees are involved. The Company was later notified that a formal hearing would be held by the N.L.R.B. on May 6, 1949.

Grievance Statistics

Employee contact reports received during May	- 6
Employee contact reports received during April	- 31
Employee contact reports received during March	- 1
Total	38

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Employee and Community Relations Divisions

Employee contact reports received from following Divisions:

Health Instrument	1
Mfg. Electrical	4
Mfg. Instrument	3
Mfg. Project Engineering	1
Mfg. Maintenance	2
Mfg. Power	6
Mfg. Transportation	4
Mfg. "P"	5
Service	3
Security Patrol	2
Purchasing and Stores	3
Technical - Metallurgy & Control	1
Technical - Separations Technology	1
Village Maintenance	2
Total	38

Employee contact reports are regarding the following subjects:

Absence	4
Company Clothing	2
Downgrade	1
Job Classification	2
Lunch Period	3
Overtime	1
Preferential Pay	1
Seniority	4
Supervision	1
Tardiness	1
Transfer	1
Transportation	1
Upgrade	5
Wage Rate	3
Work Assignment	8
Total	38

Number of employees involved in employee contacts made through May 31 - 91

All grievances received to date remain at the step one level in accordance with the interim grievance procedure. Each case has been reviewed by the Labor Relations and Wage Rate Division so that the circumstances responsible for the grievance can be investigated in the event that those cases which have not been processed to the mutual satisfaction of the parties go to the step two level at a later date as outlined by Section XVIII of the General Electric Company and Hanford Atomic Metal Trades Council contract which is pending A.E.C. approval.

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Employee and Community Relations Divisions

Wage Rates

The principal activities of this Division relative to Wage Rates continues to be that of working with the wage rate plan of the proposed contract.

During the early part of the month work in this group was concentrated on conducting studies for developing proposals for contract negotiations. At the close of the formal negotiations a number of meetings were held with various union representatives for the purpose of discussing job descriptions and the working arrangements in the administration of the classification system. Also, a number of meetings were held with various members of supervision whose people were involved in the negotiations to gain information relative to the proposed wage rate structure's effect on the activities of their divisions.

Plans have been developed for the handling of the changing from our present wage rate system to that of the contract when the contract is approved by the A.E.C.

The following Reimbursement Authorizations which have been submitted to the A.E.C. are pending approval: --

Request for additional pay for Auxiliary Firemen, submitted April 12, 1949.
Request for a change in working arrangements for the Village Fire Department, submitted April 15, 1949.
Request for the additional classification of Recreation Leader, submitted April 25, 1949.
Request for the additional classification of Business Graduate, submitted May 27, 1949.

In addition to the above, a number of job reviews have been made together with the day-to-day handling of terminations and transfers, etc.

STATISTICS

Transfers from Weekly to Monthly Payroll	4
Transfers Approved	66
Job Relcassifications Approved	144
Automatic Increases	367
Merit Increases	70

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Employee and Community Relations Divisions

Community Relations

Correction of misinformation concerning the amount of profit General Electric makes from the contract it has with the Atomic Energy Commission to serve as prime contractor for the operation of Hanford Works was one of the important efforts in Community Relations during the month of May. The misinformation arose from two sources; one was an Associated Press story which quoted figures given out by the Bureau of the Budget in Washington, D.C. and which stated that G.E. gets $200,000 per month for operation of the community. Another source of the misinformation was the Atomic Energy News Letter, published in New York City, which picked up the fact that rental collections total approximately $303,900, and implied that G.E. gets this amount, in addition to the $200,000 monthly figure for operating the town of Richland.

The public correction was made in the form of a news release revealing what G.R. Prout had stated at a Kiwanis meeting in Richland held during the month. The Atomic Energy News Letter misstatement of fact was corrected in the form of a statement, quoting G.R. Prout. This statement was forwarded, after approval had been obtained from all interested parties locally, to the General News Bureau in Schenectady for further transmittal to Atomic Energy News Letter publishing offices in New York.

Community Relations continued to receive requests for speakers, and to make arrangements for the speeches to be given by various Hanford Works people. Arrangements were completed during the month of May for talks to be given on June 9 in Butte, Montana and on June 10 in Great Falls, Montana before the A.I.E.E. Chapters in both towns. A member of the Project Engineering Division will give these talks.

The Nucleonics Department General Manager addressed the Wenatchee Rotary Club on May 26. His subject was "Hanford Works in the Atomic Energy Program."

Arrangements were made during the month to keep Community Relations posted on developments arising in Washington, D.C. during the course of the current investigations by the Joint Committee on Atomic Energy. One part of the testimony by the AEC General Manager was answered via statements prepared by the staff of the Vice President of Advertising and Publicity, and it was phoned to the Nucleonics Department General Manager for clearance. Community Relations assisted in the clearance and final arrangements for this statement.

It is significant to note the increasing fields of activity in which Community Relations is participating. Whereas the development of commercial facilities publicity has been a continuing responsibility of Community Relations, the responsibility of informing potentially interested parties of the intentions of General Electric to invite bids on various construction contracts became an active one during the month of May. In the latter instance, Community Relations works with the Contract Supervisor of the Design and Construction Divisions.

The details planned being followed in the handling of this responsibility includes the contact with Community Relations by the Construction Supervisor. Following this he notifies all the contractors on the Design

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and Construction mailing list. The G.E. Nucleonics Department News Bureau, a part of Community Relations, sends a news release to all newspapers on its list, in addition to the UNITED STATES GOVERNMENT ADVERTISER and DODGE REPORTS.

The program of the work involved in disposal of excess property was the request for informative releases during the month of May. Announcement releases were prepared as follow-up releases stating the results of the various sales.

Information for Employees--another Community Relations activity--receives considerable impetus from the opportunity to show "By T eir Works" to assistant superintendents, assistant division heads and above during the month of May. Two showings were scheduled on May , and they were attended by 42 members of the group described above. A survey was taken of the reaction of these "previewers," and it was learned from the statements made on the questionnaires that a large majority are in favor of showing this film to all supervisors and to all employees of Hanford Works.

A subject of considerable discussion and effort by Community Relations during the month was the method by which newspaper publishers could go into business in Richland, Washington. The Allied Daily Newspapers Association of Washington had expressed keen interest in the question of whether or not more than one newspaper would be allowed to operate in the town of Richland.

As soon as the decisions were reached concerning the method of calling for bids on the daily newspapers, the G.E. Nucleonics Department News Bureau collected together and forwarded copies of all pertinent papers, including lease forms, invitations to bid, the bid form, and certain supplementary information concerning the development of Richland to all editors of daily newspapers on its list.

The strong point made in all releases of information concerning the efforts to obtain newspaper publishers in Richland was that th were to be no restri tions as to the number of publishers who would be allowed to go into business in Richland, and that only those qualifications must be met which are normally required from any other type of commercial business.

"Public Information" - Community

Informative newspaper releases made during the month to the "Local List" of newspapers and radio stations served, which includes the VILLAGER, TRI-CITY HERALD, SPOKANE, CHRONICLE, HANFORD WORKS NEWS, WALLA WALLA UNION-BULLETIN, PASCO EMPIRE, PASCO HERALD, YAKIMA MORNING HERALD, radio stations KPKW, KIT, KWIE, including release dates were as follows: (A large number of both local and general news releases are being sent out for immediate release. In such cases the date on which the release was sent from this office is indicated below).

5/5 An informative release was sent to local media stating that the Mobile Chest X-ray Unit would provide free chest X-rays in North Richland from May 10 through May 14.

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Employee and Community Relations Division

5/5 An appeal was made to Richland residents to assist the Public Works Division in maintaining asphalt parking lots in those locations where crushed rock has been swept away, exposing the asphalt.

5/5 An electrical outage scheduled for May 6 from 1 to 3 p.m. was announced.

5/9 A photograph and caption showing the inventory of Red Cross Blood kept at Kadlec Hospital was furnished to the TRI-CITY HERALD for the purpose of stimulating interest in the Annual Open House.

5/10 A new type telephone directory similar to the ones now used in Kennewick and Pasco will be distributed prior to the cutover to dial telephones in Richland was announced. The new directory will be prepared by W. J. Hunt Advertising Agency in Pasco.

5/11 A public exhibition of the work of the art class in Oil Painting, which is part of the General Electric Education Program, was announced.

5/11 More details about the Richland Telephone Directory to be prepared prior to the dial telephone system announced.

5/11 Two photographs and captions drawing attention to Kadlec Hospital's Open House were released.

5/11 It was announced that National Hospital Day would be observed at Kadlec Hospital on May 12, when Kadlec Hospital held its second annual open house.

5/11 A local release stated that more than 3,500 chest X-rays were taken during the free chest X-ray program in Richland.

5/12 The drainage ditch that enters the Columbia River south of Williams Boulevard was filled in to prevent high water from hindering construction work in the new business district, it was stated in an informative release.

5/16 It was requested that Richland residents cooperate with the Community Safety Division by filling out accident report forms after reporting to Kadlec Hospital because of a non-occupational accident.

5/16 It was announced that 5,718 free chest X-rays were taken in Richland and North Richland during the chest X-ray campaign.

5/16 A three-hour electrical outage to take place May 18 was announced.

5/17 Residents in the ranch house area were urged to discourage children from playing in caves in sand banks found in that part of town.

5/17 An informative release requested that persons pay particular attention to "No Parking" signs when parking their automobiles in the vicinity of Richland schools and churches.

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Employee and Community Relations Divisions

5/17 An informative release stating that approximately 500 people attended Kadlec Hospital Open House and outlining the highlights of the affair was furnished to the VILLAGER.

5/18 Photographs of the filled drainage ditch south of Williams Boulevard distributed with captions to the local newspapers.

5/18 Two photographs and captions depicting activities at the Kadlec Hospital Open House were released.

5/19 It was announced that fire alarm boxes had been installed in the ranch house area.

5/19 An informative release stated that a Training and Program Development group had been established as part of the Employee and Community Relations Division at Hanford Works.

5/20 Photographs of ground breaking ceremonies at the site of a new Union Oil Station in the new commercial district were sent to local media.

5/20 A news story and photograph were distributed to announce the beginning of operation of Richland's new sewage disposal plant.

5/22 Improvements to be made to Richland's sidewalks, roads, parking areas through contracts to be awarded in the near future were announced.

5/23 An informative release stated that the sale of the first half of the old houses and other buildings near Hanford Works was successful. It stated that the remaining 15 buildings would be sold during the next two weeks.

"Public Information" - General

Informative newspaper releases were sent to 41 of the leading daily newspapers in the Pacific Northwest during the month. The release date is given for each story, and they are as follows:

5/7 On this date an informative release was distributed which stated that invitations to bid on the construction of the new rail connection for Richland would be issued on or about May 16, 1949.

5/9 A statement by the Nucleonics Department General Manager explaining that General Electric's contract with the AEC for the operation of Hanford Works specifies that the prime contractor will receive $1 for the term of the 4 1/3 year contract was released to all news media on our local, daily, and weekly lists. It was pointed out that no part of the $200,000 which G.E. gets monthly from the AEC for administrative expenses can be considered as profit.

5/10 A news release was prepared and distributed announcing that bids would be invited on a contract for paving, earthwork, sewers,

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water lines, and related work in Richland. Major items in estimated quantities were listed and it was stated that the invitations to bid would be issued on or about May 13.

5/13 The opening of Dawson and Richards Mens' and Boys' wear store was announced in an informative release that was sent to the daily list.

5/19 Announcement was made that long term ground leases had been awarded to four business concerns who would construct buildings to house 10 new enterprizes in Richland's new business district. One building will house a barber shop and two or three retail stores; another will house a jewelry and gift shop, a restaurant and a book and stationery store; another will contain a retail bakery; the fourth will house fountain lunch facilities.

5/23 Newspaper publishers who wish to construct and equip their own buildings and operate local newspapers in Richland would be extended invitations to bid, it was stated in a general release sent out on this date. The story also stated that publishers could submit proposals to construct their own building or rent available space for the establishment of circulation, advertising and news gathering offices here.

5/23 An informative release was sent to our daily list announcing that a long term ground lease had been awarded Davis and Walker of Seattle and Vancouver for the construction and operation of an auto supply and parts store in Richland's light industrial area.

5/25 An informative release was sent out for immediate release stating that negotiations for a collective bargaining contract between G.E. and the HAMTC had been completed, as a joint statement of the General Manager of the Nucleonics Department and an organizer for the HAMTC, several highlights of the contract were revealed.

5/26 Creation of the Purchasing and Stores Divisions was announced. W. A. Jeffrey was named manager of the divisions. Parts of three divisions were combined to form the Purchasing and Stores Divisions. Photographs of the new divisions manager and G.E. Hotaling, Stores Division Manager, were sent to a selected group of newspapers.

Other "Public Information"

In response to a request from Arthur Leroy Sheetz, a free lance writer in Yakima, a comprehensive general story about the Hanford Works Medical Division was prepared and mailed to Mr. Sheetz.

Larry Wise, of the ENGINEERING NEWS-RECORD, a McGraw-Hill publication, spent two days in Richland for the purpose of gathering material for publication in the RECORD. A member of this division arranged for interviews with the Community Manager, Public Works Division Manager, Construction Manager and others at Hanford Works. The Division Member accompanied Mr. Wise on the interviews and also conducted him on a tour

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of the new sewage plant and garbage disposal area and new business district. Arrangements were made to send several photographs and more information to Mr. Wise after he left Richland.

A card file was set up to contain in an orderly fashion facts about each story distributed by the news bureau. A card is prepared for each story which identifies the story, tells the source and writer, what clearances were obtained, the date of its release, and its distribution.

Two hundred copies of the Northwest Industries series pamphlet on Hanford Works, 200 copies of "Adventures Inside the Atom," and 200 copies of "Eight Hours a Day with the Atom" were supplied to local post office authorities to be distributed to a convention of post office employees from all over the sate which was held in Richland.

During the month 14 films were obtained from Portland for use of groups in the plant and in Richland.

"Employee Information" - Special Programs

Special Programs assisted in the preparation of a covering letter to all supervisors which accompanied the first issue of the new G.E. publication, "Employee Relations News Letter." The covering letter served to explain to Hanford Works supervisors that they would receive weekly copies of the new publication which deals with employee relations problems and policies within the Company as a whole.

The design of the Safety Topic of the Month poster for June was accomplished by the division artist, and was handled as a Special Programs function. A color visual of the poster was prepared for the Safety Division, and members of that division arranged for silk screen reproduction. The Safety Topic of the Month for June which was selected by the Safety Program Committee is "Foresight is Better Than Hindsight". In view of recent criticism of Hanford Works top management in a local newspaper, attempts were made to have this "topic" changed to read, "Safety Forethought Prevents Accident Afterthought". However, the Nucleonics Safety Council decided against the change.

Designing of the covers for the forthcoming Richland telephone book was handled as a Special Programs project. Visual rough drawings of the four covers and finished artwork were executed by the division artist. The inside front cover was devoted to the Kadlec Hospital; the inside back cover, to safety; and the outside back cover, to security. It was necessary for the artist to produce the cover designs and finished artwork in an extremely short period of time.

Special Program's plan for promoting the second annual Kadlec Hospital Open House included: a poster display in the Municipal Building display case, posters, a plant office letter, letters of invitation to local church groups and organizations, newspaper publicity, a proclamation by Mayor Crowder, after the fact newspaper publicity, and souvenier pamphlets. The objectives of the Open House were to acquaint project employees and their families with the modern medical facilities which are available to them, to develop civic pride in the hospital and to separate operation of the hospital in the public's mind from plant operation, in so far as possible.

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The Open House posters were designed by the division artist and posted throughout the plant and in Richland and North Richland business houses Medical Division personnel. Arrangements for the reproduction of the posters in the plant sign shop were made by Special Programs, and liaison was maintained with the sign shop to assure satisfactory reproduction and delivery date.

Hospital Open House news stories and pictures with captions were released to the Works NEWS and local newspapers in an effort to create a desire on the part of "hospital shy" residents to attend the Open House, and to point out the modern medical facilities and services which are provided. News pictures released for publication included photographs of various hospital sections, new medical equipment and hospital personnel. As an additional press contact, a proclamation of "Open House Day" at Kadlec Hospital by the Mayor of Richland was prepared and released after appropriate approvals were obtained.

Approximately 500 employees and members of their families attended the Open House. Pictures taken during the function and news stories reporting the event were released as after the fact publicity. In addition to providing another opportunity for presenting the hospital "story" to Hanford Works people, this publicity also may stimulate some carry over interest which will be of value in promoting future Open Houses at Kadlec Hospital.

Each visitor received a souvenier pamphlet which contained a plan of the tour of the hospital, names of Medical Division personnel listed medical specialty, and other information about the Medical Division its activities during the past year. Artwork for the pamphlet cover was designed and executed by the division artist, and printing was accomplished through the plant printing section. Editorial matter in the pamphlet was prepared in rough draft form by hospital personnel and was edited from a public relations standpoint by Special Programs. Liaison was maintained with the Printing Section to expedite proof-reading by medical division personnel and to assure satisfactory delivery date.

Special Programs promotion of the Mobile Chest X-ray Campaign, which began in Richland during April and continued through May 14 in North Richland, was completed during May. Promotion activities included news releases, pictures with captions, preparation of a five-minute radio script, material for the display case near the municipal building, and assisting the chest X-ray program publicity chairman in conducting certain portions of the publicity campaign. In addition to advance newspaper publicity, periodic releases were prepared which informed residents of the total number of X-rays taken and the locations of the Mobile Chest X-ray unit which was in operation at different neighborhood locations in Richland on different days. A map of Richland showing these locations and dates was prepared by the division artist for press release. An estimate from Public Health indicates that 90 per cent coverage was achieved among nonemployed residents of Richland and North Richland who had not received a chest Xpray during the past year.

A map of Richland, suitable for reproduction, was supplied to a Richland advertising agency for use with Richland Chamber of Commerce promotional activities for the town.

Employee and Community Relations Divisions

Special Programs assisted in the preparation of a covering letter for attachment to an employee's suggestion that the Company provide regional recreation area for employees, and comments on the suggestion by Vice President L. R. Boulware. The material is to be sent to all assistants to superintendents and division heads, and above to provide a better understanding of Company policy in such matters.

One four-inch G.E. logotype was supplied to the Technical Division during May. It is to be used as a signet on wax seals for classified documents.

"Employee Information"--Works NEWS

Four issues of the WORKS NEWS were published in May, and "Candid Camera" was inserted in the May 27 issue.

The story announcing the steps to be followed in gaining ratification of the new Union Contract and highlights of the final contract was published.

"Employee Information" - Women's Activities

Three women's pages appeared in four issues of the plant paper during the month of May. For the fourth issue, a full page mat entitled " What Is a Speed-up" was run.

The Women's Training Program material has been turned over to the Training Section under J. A. Wood.

Every week a column appears in the Works NEWS listing rides or riders seeking transportation to various week-end and vacation spots. One hundred sixty-four calls were received during the month of May for rides or riders to the following destinations: Alabama, San Francisco, New England States, Denver, Oklahoma, Wisconsin, Nebraska, Virginia, Tennessee, Iowa, Louisville, Houston, Kansas City, Illinois, Missouri, Los Angeles, North Dakota, Spokane, Seattle, Portland, Bend, Boise, Lewiston, Omak, Coeur d'Alene, and Olympia.

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COMMUNITY DIVISIONS

SUMMARY - MAY, 1949

ORGANIZATION AND PERSONNEL

Number of employees on roll:	Beg. of Month	End of Month
Community Administration	6	6
Community Accounting	27	27
Community Public Works	436	424
Community Safety	2	3
Community Commercial Facilities	17	16
Community Housing	37	37
Community Fire	144	139
Community Patrol	85	84
Community Activities	11	12
	765	748

Force reductions were effected in the Community Divisions during the month of May as follows:

	Reduced	Increased
Community Administration	-	-
Community Accounting	-	-
Community Public Works	12	-
Community Safety	-	1
Community Commercial Facilities	1	-
Community Housing	-	-
Community Fire	5	-
Community Patrol	1	-
Community Activities	-	1
	19	2

TOTAL REDUCTION, MAY, 1949- 17

GENERAL

Sales of basic items indicate a downward trend in commercial activities, except in the sales of ice cream.

About eighty per cent of the facility operators renting government owned equipment have now purchased same.

Three new facilities opened for business during the month.

Installation of the "Bailey" bridge across the Yakima River at George Washington Way was completed.

Nine hundred eighty-three dollars in fines were assessed, and twenty-four prisioners were jailed during the month.

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COMMUNITY DIVISIONS SUMMARY - MAY , 1949 (Continued)

One hundred seventeen house leases were executed during the month.

Thirty-four fire alarms were answered. Estimated fire loss to the Project was $462.84.

Pumping operations in the drainage ditch south of Area E was established to protect the central commercial area from river elevation in excess of 342 feet.

Sewage flow was started through the new plant on May 18, 1949.

MTB/jak
6/10/49

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COMMUNITY DIVISIONS
PUBLIC WORKS DIVISION
MAY 1949

ORGANIZATION & PERSONNEL

Number of employees on payroll:	Exempt	Non-Exempt	Total
April 30, 1949	60	376	436
May 31, 1949	57	367	424
	- 3	- 9	- 12

Personnel changes made during the month:

New Employees		7
Transfers:		
From Transportation Divn.		7
" Maintenance Divn.		1
" Construction Division		3
" Plant Sec. & Svce. Divn.		1
To : Electrical Divn.		2
" Power Divn.		3
" Maintenance Divn.		17
" Transportation Divn.		6
" Emp. & Comm. Relations	1	
Terminations	1	2
Returned from Leave of Absence		1
Transferred Exempt to Non-exempt roll	- 1	

GENERAL:

When the Columbia river elevation reached 342 ft. it became necessary to dike off the drainage ditch which crosses George Washington Way south of the 64 apartment area and install two gasoline driven 5000 GPM pumps. This was done to prevent water from backing up into the concrete box culvert under the new central commercial area, which culvert at the south end is at approximately elevation 339. Pumping will be continued until the water has again receded to a safe level.

It has been determined that it will be necessary to increase the water supply for the 1949 season in order to assure a sufficient quantity. A project proposal is being prepared which proposes the installation of two pumps in existing wells.

The enlarged sewage system is nearing completion and trial operations have been carried on for approximately one week. It is expected that the plant will be in full operation during the coming month.

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Community Public Works Division

PROJECTS

C-134 - RICHLAND VILLAGE DUST CONTROL AND LANDSCAPING. Request to close project was written 5-5-49

C-146 - IRRIGATION EXTENSIONS. Plans were completed and approved for an extension in the 500 block, Caples Street and Goethals Drive. Work began May 27 on installation and will be completed by June 15, 1949. Remaining funds in C-146 will be closely checked in order that the project may be successfully closed out as of July 1, 1949. It is planned that unencumbered funds as of this date will be largely used for material to complete the snap-on valve exchange at playgrounds and public areas.

C-205-R - THIRD ADDITION TO HOUSING. Inspection and acceptance for streets and sidewalks was made in Area "F".

C-218 - PATCHING AND SEAL COATING OF VILLAGE STREETS. Inspection and acceptance of seal coating operations over Richland Village was made. Part II of Project C-218 was submitted for approval on May 12, 1949.

C-253 - NORTH STORAGE RESERVOIR REPLACEMENT, BUILDING 1182. This project was submitted for approval, Part II.

C-254 - PAINTING OF 514 PERMANENT HOUSES - RICHLAND. Modification to Directive HW-60 to extend completion date was submitted for approval on May 16, 1949.

C-282 - Revised, DUST AND POLLEN CONTROL PROGRAM. Field release of project was distributed May 3, 1949. To date all areas in the south section and north section west of Thayer to be seeded by subcontractor have been graded and fertilized. Of these the areas in the south section have been seeded. There has been a delay in seeding due to several days this month being too windy for this operation. The areas south of Adams suffered some during a three day water shut-down from irrigation pump #2, due to a break in the intake line.

364 stakes for street trees were placed during the month on Sanford Ave. A message was distributed to all tenants asking them to cooperate by digging the tree hole. Trees were planted in all holes that were dug by the 22nd of May, and all stakes were lifted on all which were not dug. Out of the possible 364 trees, 294 holes were dug by the tenants and the same number of trees were planted. This planting puts on Sanford Avenue 80.7% of the possible trees. This is probably a better percentage than can be expected under the same tenant cooperation on streets where gravel will be encountered in the digging. Costs will also be higher where gravel must be removed and topsoil supplied.

All remaining nursery stock not lined out during the month of April will be in place by June 1, 1949.

C-311 - WATER LINES TO TRACT HOUSES. Request to close the project was made 5-17-49.

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Community Public Works Division

ENGINEERING SECTION

Organization & Personnel

Number of employees on payroll:	Exempt	Non-Exempt	Total
April 30, 1949	17	12	29
May 31, 1949	17	13	30
Transfers:			
From Security & Services Divn.		1	

General

The following routine items were processed during the month:

Requisitions	37
Store Stock Requests	5
Store Stock Adjustments	8
Purchase Orders Expedited	7

Items of control mechanisms for oil furnaces are in the process of being returned to the manufacturer for replacement. Processing will be continued to include control parts on coal furnaces in the Ranch House area which have failed during the first year of operation under warranty.

Vendor contacts were made to determine a source of supply for best possible product available for controlling water weeds in irrigation ditches.

Leased area plot plans and descriptions were completed for the following:

Plot #28, Rev. #1 - Hanson's Barber Shop
" #33 - Church of Christ
" #34 - Morgan Warehouse
" #35 - American Lumber Company
" 36 - Northwestern Fuel Company
" #28, Rev. #2 - Hansen's Barber Shop
" #37 - Midstate Amusement Corp. - Theater
" #38 - Richland Auto Parts & Accessories, Davis & Walker

Arrangements were made to store surplus Bailey Bridge parts at the old burning grounds fenced in area.

The status of facility sponsored construction is as follows:

FACILITY	PRELIMINARY PLAN REVIEW	DET. SPECS & PLANS REVIEWED	BLDG. PERMITS ISSUED	CONST. STARTED
Block's Shoe Store E.S.R. #124CF	Approved 3-15-49	Approved 4-21-49	4-21-49 50% complete	4-21-49
Carlston & Hanson E.S.R. #164CF	Approved 3-8-49	Approved 5-11-49	5-18-49	5-18-49

122179b

Community Public Works Division

ENGINEERING SECTION (Continued)

FACILITY	PRELIMINARY PLAN REVIEW	DET. SPECS & PLANS REVIEWED	BLDG. PERMITS ISSUED	CONST. STARTED
Morning Sun Dairy E.S.R. #145 CF	Approved 3-9-49	Det. Plans & Specs reviewed Awaiting conf. with arch.		
Densow's Drug E.S.R. #163	Approved 3-15-49	Approved 5-11-49	Awaiting award of cont.	
Theater E.S.R. #160CF	Approved 5-23-49	Awaiting Det. Plans & Specs.		
House Dry Cleaners E.S.R. #157 CF	Approved 3-9-49	Det. Plans & Specs. being reviewed		
Anderson Motors E.S.R. #119CF		To be redesigned. Reduction in building size		
Barr's Apparel E.S.R. #153CF	Approved 2-9-49	Approved 5-16-49	Withdrew 5-23-49	
Shell Serv. Station E.S.R. #123CF	Approved 2-17-49	Approved 3-23-49	4-13-49	4-13-49
Sowell's Fountain Lunch ESR #135CF	Approved 3-21-49	Approved 4-5-49	4-19-49 60% complete	4-20-49
Yakima Tent & Awning E.S.R. #122CF	Approved 2-1-49	Approved 3-4-49	3-8-49 95% Complete	3-9-49
Dawson & Richards E.S.R. #120CF	Approved 1-28-49	Approved 3-7-49	3-8-49 95% complete	3-9-49
Mobiloil Serv. E.S.R. #121CF	Approved 2-23-49	Approved 4-12-49	Awaiting start of construction	
Davis Furniture E.S.R. #156CF	Approved 3-2-49	Approved 5-16-49	Awaiting start of construction	
Morgan's Whse. E.S.R. #155CF	Approved 3-25-49	Approved 3-30-49	3-30-49 30% complete	3-31-49
Diamond 5 & 10¢ Add. ESR #169CF	Disapproved 3-29-49	Awaiting resubmittal of prel. plans.		
Washington Investment Bldg. ESR #167CF	Approved 4-21-49	Approved 5-11-49	5-24-49	5-24-49
Natl. Bank of Comm. E.S.R. #165 CF	Approved 4-5-49	Approved 5-16-49	Awaiting Award of Contract	
Standard Serv. E.S.R. #171CF	Approved 1-25-49	Approved 2-9-49	3-31-49 45% complete	4-1-49

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Community Public Works Division

ENGINEERING SECTION (Continued)

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FACILITY	PRELIMINARY PLAN REVIEW	DET. SPECS & PLANS REVIEWED	BLDG. PERMITS ISSUED	CONST. STARTED
Deymonaz E.S.R. #192.CF		Awaiting Preliminary plans.		
E. J. Hansen Barber Shop, ESR #172CF	Approved 4-27-49	Reviewing Det. plans and specs.		
Union Oil Serv. E.S.R. #101CF	Approved 3-9-49	Approved 4-28-49	4-28-49	5-2-49
NW Fuel & American Lbr. Co. ESR #201CF		Awaiting information		
Davis & Walker Auto Parts, ESR #212CF		Prel. plans being reviewed.		

The status of community activities sponsored construction is as follows:

L.D.S. Church E.S.R. #180CA	Approved 1-20-49	Approved 1-38-49	1-28-49 15% complete	2-5-49
S.S.U.P. E.S.R. #177CA	Approved 10-28-48	Approved 11-2-48	11-2-48 90% complete	11-5-48
Richland Baptist E.S.R. #183CA	Approved 11-10-48	Approved 11-18-48	11-22-48 90% complete	11-27-48
Assembly of God E.S.R. #181 CA	Approved 5-16-49	Awaiting resubmittal of det. plans and specifications		
Church of Nazarene E.S.R. #179CA	Approved 3-2-49	Approved 4-5-49	4-21-49	4-12-49
Church of Christ E.S.R. #184CA	Approved 2-18-49	Awaiting detailed plans		
Richland Lutheran E.S.R. L75CA		Approved 4-7-49	4-8-49	4-8-49
Junior High School #2 E.SR #190CA		Awaiting preliminary plans		
New Elementary School E.S.R. #191CA		Awaiting preliminary plans		
Flagpole & Marker Base Lighted Softball Park E.S.R. #206CA	5-20-49		100% complete	5-24-49

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Community Public Works Division

ENGINEERING SECTION (Continued)

Alteration Permits

FACILITY	DESCRIPTION	PERMIT APPROVED	REMARKS
Robley L. Johnson Studio ESR 118	Extend front porch	3-23-49	Const. 95% complete
Campbell's Food Mkt. ESR 118	Install self service meat case	4-26-49	Const. complete (Pending arrival of as builts)
Village Pharmacy ESR 118	Cut opening for refrigerator	3-9-49	75% complete
Safeway Store ESR 118	Add'l Floor Space	3-11-49	95% complete
Richland Laundry	Construct Small box	3-15-49	Awaiting contractor
Desert Inn ESR 118	Install banquet room and bar	3-23-49	95% complete. Final inspn to be made.
Seattle 1st Natl. Bank ESR 118	Repaint interior and esterior and various adjustments.	5-18-49	50% complete
Central UP Church ESR 207	Provide and install asphalt tile on kitchen & social rooms.	5-12-49	100% complete. Inspn. complete.
Seattle Tent & Awning ESR 118	Install neon signs (different sizes)	5-19-49	95% complete. Inspn. to be made.
Seattle Tent & Awning ESR 118	Install neon signs	5-23-49	

Inspection and acceptance was made for the following:

1. Finished grading in Area F, Blocks 13, 14, 21, 23, 24, 25, 26, 27, 30, 31, 32, 42, and Block 12 from Helena St. to Elm St. This completes the grading in Area F.

2. Fire alarm system in Area F.
3. Electrical system in Area F.
4. Clothes poles in Area C and Area F.
5. 713 Ranch type houses in Area F for loose or damaged shingles. It was reported to Construction that 501 of them were unsatisfactory and unacceptable.
6. Water, sewer and storm sewer lines in the North Commercial Area.

Regular field inspections were made in compliance with Building Permit Requirements. The following is a report on continuous engineering service requests completed during May, 1949.

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Community Public Works Division

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ENGINEERING SECTION (Continued)

E. S. R.	#97CH	Elect. & Struct. Inspection	1
"	#98CH	Alteration Inspections	195
"	#100CH	Back Charge Estimates	2
"	#115CF	Back Charge Estimates	6
"	#118CF	Approved Alteration Permits	3
"	#134CA	Back Charge Estimates	1
"	#207CA	Alteration Permits	1

The following Engineering Service Requests were completed:

Job No.	Description	Completion Date
29-PW	Excavation Procedure	5-27-49
91-CA	Heat for Jefferson Grade School Kitchen	5-23-49
94-CA	Designation of Bldg. sites for Non-Profit Organizations	5-17-49
151-CA	Survey & Layout Ball Diamond	
189-TR	Movement of Village Bus Dispatch Building and Installation of Rest Rooms.	5-20-49
196-CA	Air Condition Room 126, Lewis & Clark Grade school	5-18-49
198-CF	Richland Plumbing & Heating	
199-CA	Cost Estimate to Install Gate at high school tennis courts.	5- 4-49
202-CA	Installation of 4 ft. fence at Village Park Pool	5-11-49
203-CA	Cost Estimate for Supplying Ball Park with Drinking Water.	5- 9-49
204-CA	Installation Cost Estimate of a Fence along Southeast Perimeter of Park.	5-11-49
206-CA	Flagpole & Marker Base, Lighted Softball Park	5-27-49
208-PW-1	Cost Estimate, Installation of Pumps & Chlorination Wells 3000 F and 1100-8	5-27-49
208-PW-2	Drawing Showing Tile Outlet from Sewage Lift Station	5-31-49

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Community Public Works Division

MAINTENANCE SECTION

Organization & Personnel

Number of employees on payroll:	Exempt	Non-Exempt	Total
April 30, 1949	19	175	194
May 31, 1949	18	157	175
	- 1	- 18	- 19

Transfers:	
From Maintenance Division	1
To Electrical Division	2
Maintenance Division	17
Terminations	2
Returned from sick leave	1

Transferred from Exempt to Non-exempt roll - 1

General

During the month 54 renovations were completed of which 27 were permanent type houses and 27 were prefabs. Five of the permanent type houses were complete paint jobs, 16 were partially painted, and 6 were cleaned only. Seven of the prefab renovations were complete paint jobs, 17 were partially painted and 3 were cleaned only. There were on hand at the end of the month 17 orders for renovations not completed.

On the exterior and interior paint program 116 houses were trimmed with the first coat, 40 houses were sprayed and 19 were painted on the interior. The cemetery fence was spray painted.

Kitchen faucets were replaced in 50 houses; 3 bath tubs were replaced and seven were repaired; 15 kitchen sinks were replaced; 3 hot water heaters were replaced and 8 prefab homes required replacement of stop and waste valves.

The irrigation water lines servicing the lighted ball park near the bus depot was connected to the domestic water system and will furnish drinking water.

Approximately 150 hours were required for removing oakum stones and sections of faulty pipe in the ranch house area.

Excavation is now under way for the installation of domestic water service to Tract Houses L-865 and L-894.

Desert coolers have been installed at the 1131 dispatch office, 716 garage, Community section of the 720 building, shoe bus, and 706 building. Coolers are now being repaired for stores section of the 720 building, small office at 1131 garage area and hospital kitchen.

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MAINTENANCE SECTION (Continued)

The repair to the fire damaged ranch house at 650 Chestnut is delayed pending the arrival of a new aluminum window frame and sash.

There were 1639 electrical patrol order calls completed during the month. Fifty-seven of these calls were on household refrigerators and 133 were on hot water heaters. There were 128 calls where the tenant was not at home when the first call was made.

A summary of work performed in the furniture and upholstery shop, and the carpenter shop is as follows: 164 screen doors were repaired, 12 roofs were repaired, 6 chairs were recovered, 10 tables were repaired, 1 desk was repaired and linoleum was repaired around 53 sinks.

UTILITIES SECTION

Organization & Personnel

Number of employees on payroll:	Exempt	Non-Exempt	Total
April 30, 1949	9	64	73
May 31, 1949	9	61	70
		- 3	- 3
Transferred to Power Division		3	

General

Operations were normal at 784 boiler house throughout the month. While overhauling #1 boiler, several tubes were found defective because of grooving and pitting on the water sides of tubes. A total of 30 of these tubes are being replaced.

On May 9, a boiler inspector from Travelers Insurance Company inspected boilers #1 and #4 at the 784 building, both boilers at the 1131 garage, and both boilers at the multiple apartment boiler house. An official report of this inspection has not been received as yet.

Operations of domestic water system were normal throughout the month. Well pumps #5 and #12 were completely overhauled, and top shaft was replaced in the #4 well pump during the month. At Horn and Whitten Streets approximately 200 ft. of underground water line from water main to fire hydrant was uncovered and relocated from 12 to 18 inches deeper. This section of line being very shallow had frozen and broken during the past winter.

An industrial type climb proof fence was installed around the north open reservoir at the 1182 building during the month.

A reservoir level recorder and a temporary flow recorder was installed at the Columbia Field Pump Station during the month.

On May 11, 1949, feeding of .25 ppm of copper sulphate into percolation pit at the 3000 Area was started. This is being done in an attempt to eliminate

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UTILITIES SECTION (Continued)

attempt to eliminate algae growth which tends to seal off the bottom of the pit and retards percolation of water to wells. Satisfactory results are being obtained to date.

On May 16, the north open reservoir at the 1182 Area was drained and cleaned. About 15 yards of sand was removed from the reservoir inlet.

Operations at the sewage disposal plant have been somewhat abnormal during the month. This has been due to starting up part of the new plant. On May 18, sewage flow was started through the new plant. Some difficulties and conditions that needed correcting were found. Most of the items that needed correcting have been taken care of and that part of the plant that has been put in service seems to be functioning as it should.

Construction forces are having some difficulty in trying to stop the leakage in primary digester. As soon as this condition is corrected the remaining equipment of the new plant can be put in service.

Irrigation system operations were normal throughout the month. Some excessive maintenance work on the Distribution System has been necessary because of lines and outlets becoming plugged with scale rust, algae, and other particles carried in the irrigation ditch water. An engineering request has been issued to design a better screening device for pumping stations.

Operations at the Pasco Warehouse Area were normal throughout the month. Several leaks in fire water distribution mains have been located and repaired during the month.

1221003

MONTHLY REPORT OF UTILITY OPERATIONS
700, 1100 AREAS & NORTH RICHLAND

Period From May 1, 1949 To May 31, 1949

STEAM

784 Building	Total M. Gal.	Total M. Lbs.	Rate	Unit
Water Softened	2,350.	19,599.	52.64	G.P.M.
Steam to Auxiliaries		2,800.	3763.	lbs/Hr.
Boiler Feedwater		22,399.	30106.	"
Steam Generated		15,786.	21218.	"
Blowdown		6,613.	29.52	Percent
Steam Leaving Plant		12,986.	17454.	Lbs/Hr.
Coal Consumed		2,627.	3531.	"

B.T.U./Lb. Dry Coal	11,942
Evaporation/Lb. Coal	6.01
Average CO_2 - %	6.9
Salt Used, Lbs.	3,500
Sulphuric Acid Used, Lbs.	7,130
Phosphate Used, Lbs.	149
Sulphite Used, Lbs.	40

WATER ANALYSIS - PPM	Raw Avg.	Soft Avg.	Boiler Maximum	Boiler Minimum
Phenolphthalein Alkalinity	--	--	233	62
Methyl Orange Alkalinity	199	26	305	110
Chlorides	19	19	190	100
Hardness	145	--	--	--
Phosphate	--	--	90	10
Sulphite	--	--	24	5

RICHLAND AND NORTH RICHLAND DOMESTIC WATER (PRODUCTION)

	Richland	North Richland	Combined
Total Pumpage, Million Gals.	120.4222	181.8293	329.3104
Avg. Daily Flow, M.G.P.D.	3.885	5.865	10.623
Rate of Flow, G.P.M.	2698.	4073.	7377.
Chlorine Used, Lbs.	658	7789	10,447
Avg. Chlorine Residual, PPM	0.25	0.75	0.3

Water to 300 Area 28.024 Million Gallons

SEWAGE DISPOSAL PLANT

Sewage Flow: 100.600 Million Gals. Total 3.245 Million GPD Avg.
Sewage Flow: 2254 GPM Average.
Chlorine Used 6712 Lbs. Lime Used 1550 Lbs.
Average B.O.D. 152 Raw Sewage 41 Final Effluent.
Average Suspended Solids 134 Raw Sewage 39 Final Effluent.

/s/ Harold N. Petty, Supervisor.

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Community Public Works Division DECLASSIFIED

LABOR SECTION

Organization & Personnel

Number of Employees on Payroll:	Exempt	Non-Exempt	Total
April 30, 1949	12	123	135
May 31, 1949	11	134	145

During the month the following personnel changes were made:

New Employees		7
Transfers:		
From Transportation Division		7
" Construction Division		3
To Transportation Division		6
Terminations	1	

General

Watering and discing of those orchards which are to be maintained has been done as necessary to keep the trees alive. Watering of street trees was also performed during the month.

Public areas and parks were watered and mowed during the month. Weather was such that a minimum amount of watering was required. It is anticipated that manpower requirements will increase during the next two months because of warmer weather. In addition to this areas now being seeded by Puyallup Gardens will be turned over as planted grass reaches the second mowing stage. This will require additional personnel for maintenance.

The group normally engaged in preparing personal furniture for shipment off the plant handled nine shipments during the month. During the time the men were not engaged in this work their time was utilized on grounds maintenance work.

The 30 inch wood lateral leading from the irrigation ditch to No. 2 pump broke and it was necessary to replace the entire section of pipe, approximately 335 feet. This was replaced with a 24 inch steel asphalt coated pipe. The failure of this line shut down the No. 2 irrigation pump so that no irrigation water was available in certain areas in the south end of town. Since seeding was being performed by subcontractor in this area every effort was made to return the line to service as rapidly as possible.

The irrigation canal bank for the stretch within the village and in the vicinity of the 3000 area was treated with a weed killer.

The Road and Street Maintenance Crew has been patching the outer roads as well as the town areas. Much time is being spent at present on drainage in the Village. Several siphons have been installed and more are to be installed. 1789 man hours were used in May by our road crew.

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Community Public Works Division

LABOR SECTION (Continued)

Material used during May as follows:

260	Gals.	Bitumuls.
4	Tons	1/4 minus Pre-mix on walks
280	Tons	3/4 minus Pre-Mix on Roads & Streets
90	Tons	3/4 minus Pre-Mix - Pad in 700 Area Paint Dept.
200	Tons	1/4 minus chips on bleeding streets.

FUEL INVENTORY

COAL

Beginning Inventory (Corrected estimate)	1,072,000	
Receipts	4,400,000	
Consumed in Village Houses	174,000	
3000 Area	4,400,000	
Lewis & Clark School	6,000	
Marcus Whitman	4,000	
Columbia Camp	108,000	
Heavy Duty Garage	88,000	
Pasco T-131 Garage	12,000	
#2 Fire Station	8,000	
Pennywise	8,000	
Amount on Hand 5/31/49		664,000

OIL

Beginning Inventory	4,847	
Consumed in Village Houses	773	
Apartment Boiler House	913	
Jefferson School	620	
Amount on Hand 5/31/49		2,541.

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COMMUNITY DIVISIONS

COMMUNITY ADMINISTRATION

MAY, 1949

ORGANIZATION AND PERSONNEL

Number of employees on payroll:	May
Beginning of month	6
End of month	6

GENERAL

The following appropriation requests were approved during the month:

No. 54, Revised, Additional Housing - Village of Richland; Project Proposal C-136, Part II, covering this work, was also approved by the Appropriations and Budget Committee and transmitted to the Commission.

No. 56-A, Bailey Bridge Across Yakima River Replacing Portion of Yakima Trestle, was approved by the Appropriations and Budget Committee and Project Proposal C-335, Part II, transmitted to the Commission.

A total of seventeen part time business permits were issued during the month of May.

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COMMUNITY COMMERCIAL FACILITIES DIVISION

May, 1949

ORGANIZATION AND PERSONNEL	MAY
Number of employees on payroll:	
Beginning of month	17
End of month	16
Net decrease	1

COMMERCIAL FACILITIES

The following figures indicate trends in commercial activities as related to various basic items:

	April	May
Cafeteria meal customers	63,020	56,164
Percent of room-day occupancy - Desert Inn	71%	66%
Gallons of ice cream sold	6,675	7,226
Carnation milk and cream deliveries	91,648	81,325
Darigold milk & cream deliveries	4,050	3,069
Morning Sun Dairy milk and cream deliveries (Units)	22,793	29,564
Theater customer count	50,292	41,806
Gallons of gasoline sold	152,537	111,323

Total number of Commercial Facility Operators' employees, full and part-time as of May 31, 1949 - 998.

The redecorating of the building housing the local branch of the Seattle-First National Bank, was started on May 16. Work is being done at Operator's expense with General Electric furnishing interior and exterior paint.

The sale of Government-owned equipment and fixtures was completed for the following facilities: Campbell's Food Store, Standard Oil Company (Chevron Service Station), Richland and Village Theaters, Greyhound Post Houses, Inc. (Bus Depot).

Carnation Company was authorized by letter dated May 18, 1949 to alter the existing Milk Depot building at Operator's expense.

Final inventories were taken of equipment in the following facilities: Elite Shop, Klopfenstein's, True's Oil Company, Railway Express, Riverside Stables, Richland Motor, Richland Shoe Salon, Safeway Food Store, Tidewater Associated Oil Company, and Western Union, preparatory to purchase of this equipment by Operators.

1221808

COMMUNITY COMMERCIAL FACILITIES DIVISION

CONTRACTS AND NEGOTIATIONS

Supplemental Agreement #1, dated September 10, 1948, was entered into between General Electric Company and Vance Properties, Inc., covering the assignment of space in the Desert Inn to four sublessees.

Supplemental Agreement #1, dated April 29, 1949, was entered into between General Electric Company and Hurt's Apparel, covering a change in rental provisions of the basic Operating Agreement of December 15, 1947.

Supplemental Agreement #1, dated April 1, 1949, was entered into between General Electric Company and Klopfenstein's, Inc., covering alteration and modernization of existing structure at Operator's expense.

Supplemental Agreement #2, dated May 1, 1949, was entered into between General Electric Company and D. F. McGuire, covering the improvement and modernization of Mickey's Shoe Renewing Facility at Operator's expense.

An Assignment and Acceptance of Contract, dated April 25, 1949, was entered into by which Vance Properties, Inc. assigned to Richland Maintenance Company all of its rights, title and interest in and to the Contract dated April 13, 1948, covering maid service furnished the dormitories in Richland.

Operator of Food Store #2 (Groceteria) was authorized by letter dated May 16, 1949 to establish a cleaning service in the northwest corner of the facility building, which was previously utilized as a fish market.

Vance Properties, Inc. was authorized by letter dated May 18, 1949 to sublet space formerly occupied by Arctic Fur Company at the south side of the hotel lobby, to John T. Kennell (Kennewick Flower Shop).

Commercial Facility Leases were entered into between General Electric and the following firms for the construction of buildings and operation of businesses as outlined below:

John F. Gerdes and Petroleum Transportation Company (Co-lessees) - Automotive Service Station. Lease dated April 15, 1949.

Davis Furniture Company - Furniture and Electric Appliance Store, with additional space to sublet to persons upon conditions approved by the Lessor. Lease dated May 1, 1949.

Virgil O. McVicker - Multiple Business Building. Lease dated May 16, 1949.

L. N. Jarech and C. W. Graumann, a partnership, were awarded a location to construct "Bozo's" Drive-In Restaurant in the North Commercial Area.

A Singer Sewing Center location in the New Commercial Area was awarded to Singer Sewing Machine Company, 1511 Third Avenue, Seattle 1, Washington. This firm will construct its own building.

DECLASSIFIED

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CONTRACTS AND NEGOTIATIONS (CONTINUED)

Construction was started May 24, 1949 on C&H Food Market at Swift and Wright Streets.

Construction was started May 17, 1949 on McVicker's Multiple-Business Building in the North Commercial Area.

Dawson and Richards Men's and Boys' Wear in the North Commercial Area held their formal opening on May 10.

Frank Berry's Sporting Goods Store in the North Commercial Area held their formal opening on May 26.

Stanfield Florist and Sportlets, Inc., sublessees of Frank Berry, opened for business on May 26 and May 31 respectively.

Letters requesting formal proposals on bids were mailed on the following prospective facilities to be established in Richland:

Beverage Store
Drugstore
Radio Station
Food Store
Subletting of Old Richland Electric
Facility Building on George
Washington Way and Knight Streets

Invitation to Bid was mailed on Newspaper(s) to be established in Richland.

Radio Station bids were received. It is anticipated that Lessee will be selected in the near future.

Construction on the following facility buildings has been delayed because of the carpenters' strike:

Block's Shoe Store, North Commercial Area
McVicker's Multiple-Business Building, North Commercial Area
Davis Furniture and Electrical Appliance Store, North Commercial Area
National Bank of Commerce, North Commercial Area
Service Station, George Washington Way and McMurray Road
Service Station, North Commercial Area
Service Station, Swift and Wright
Food Store, Swift and Wright
Drugstore, Swift and Wright
Barber Shop, North Commercial Area

REQUESTS FOR ESTABLISHMENT OF BUSINESSES IN RICHLAND

A number of individuals and firms, the majority of which were not interested in constructing their own buildings, expressed a desire during the month

1221310

REQUESTS FOR ESTABLISHMENT OF BUSINESSES IN RICHLAND (CONTINUED)

to establish and operate businesses in Richland. The types of establishments desired are shown in the following list:

Auto Service (Car Wash)
Beverage Store
Delicatessen
Electrical Appliance
Fish Market
Food Store
General Business
Hardware Store
Multiple Business Building
Malt and Lunch Shop
Public Accountant's Office
Photographic Studio
Restaurant
Shoe Repair
Sporting Goods Store
Upholstery Shop
Women's Wear

DECLASSIFIED

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COMMUNITY DIVISIONS

COMMUNITY HOUSING DIVISION

May, 1949

ORGANIZATION AND PERSONNEL

Number of employees on payroll	May
Beginning of month	37
End of month	37
Difference	0

RICHLAND HOUSING

Housing Utilization as of Month End

Houses Occupied by Family Groups	Conventional	Block	T	Precut	Ranch	Prefab	Apts.	Tract	Total
Operations	2184	256		374	866	1093	61	39	4873
Facilities	146	4		21	54	119	2	9	355
Government	99	32		13	21	31	4	6	206
Kellex Corporation		8		3		3	1		15
Morrison-Knudsen	4			1	1		1		7
Atkinson-Jones	20	20		16	19	14	3		92
J. Gordon Turnbull	1	2		3	3	15			24
Giffels & Vallet	2			1	8	11			22
J. A. Terteling & Sons	1		10	2		2			15
McNeil Construction Co.	2			2		3			7
Newberry Neon Electric	1	2		2	1	1			7
Urban, Smythe & Warren	2	2		1	2	2	1		10
Robert's Filter	1								1
Graysport Construction				1				8	9
Newport-Kern Kibbe								1	1
Vernita Orchards								5	5
TOTAL HOUSES OCCUPIED	2463	326	10	440	975	1294	73	68	5649
Houses utilized for special purp.								1	1
Houses assigned (leases written)	17	1		4	9	7			38
Houses assigned - awaiting tenants	20	6		6	16	31	1	1	81
Government houses - unassigned								** 36	36
TOTAL HOUSES	2500	333	10	450	1000	1332	74	106	5805

* Occupancy figure includes 4 houses occupied by Bonneville Power in Priest Rapids and White Bluffs.

** This includes 31 Tract Houses boarded up for salvage.

1221812

COMMUNITY HOUSING DIVISION

Housing Turnover During Month	Begin Month	Moved In	Moved Out	Month End	Difference
Conventional Type	2472	29	38	2463	Minus 9
Block Type	331	2	7	326	Minus 5
T Type	10	1	1	10	None
Precut Type	446	9	15	440	Minus 6
Ranch Type	970	34	29	975	Plus 5
Prefab Type	1302	38	46	1294	Minus 8
Apartments	73	2	2	73	None
Tract	68	2	2	68	None
	5672	117	140	5649	Minus 23

Dormitory Statistics

Dormitories		Occupants	Vacancies	Total Beds
Men - Occupied	14	474	82	556
Men - Unoccupied				
Women - Occupied	14	522	*70	592
Women - Unoccupied				

Women's Dormitories Occupied by:

G. E. Office	1
Education	1
Apartments	1
	31

* This includes space of 6 beds in W-9 being used for Supply Rooms and Dormitory Offices.

GENERAL

Tract House N-1101 located at 1006 Gillespie was rented on May 16.

	Allocation Section Statistics
Total houses allocated to new tenants	60
Exchanged houses	29
Moves (within the Village)	12
Total new leases signed	117
Houses sent to Renovation	54
Houses assigned "As Is"	43
Terminations	80
Total Cancellations	140
Houses to be released at end of School Term	38

One Steno-Typist "B" was transferred to another department on May 1, 1949.

One Steno-Typist "D" was transferred into this department on May 23, 1949.

1221613 DECLASSIFIED

TENANT RELATIONS

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The processing of Patrol Orders and Work Orders during the month is as follows:

	Incomplete 4-30-49	Issued Dur. May	Incomplete 5-27-49	Issued Prev. Mo.
Patrol Orders - Days	618	2300	816	2852
Patrol Orders - Off Shift-Elect.	0	462	0	509
Patrol Orders - Off Shift-Maint.	0	498	0	489
Regular Work Orders	343	135	307	206
Backcharges	28	58	22	89

19 Conventional Type houses were painted by Project forces as compared to 62 the previous month (Interiors).

20,451 Pounds of grass seed were issued during the month of May. 15,405 pounds were issued during the month of April.

ITEMS OF INTEREST

	Total Outstanding	Outstanding in May	Outstanding Previous Month
Window glass replacements	173	129	132 (+ 41)
Sink Linoleum replacements	73	27	37 (+ 36)
Bathroom Painting	40	13	25 (+ 15)
Faucet Repairs	52	34	48 (+ 4)
Miscellaneous	518	463	275 (+243)

Alteration permits issued during the month of May, 1949, totaled 340 as compared to 169 during the month of April.

Fence	56	Fireplace	1
Air Conditioner	225	Shelving	1
Refinish Floors	11	Install Clothes Poles	1
Automatic Washers	8	Remove Hot Air Duct	1
Patios	8	Tool Shed	1
Driveways	6	Sidewalk	1
Awnings	3	Antenna	1
Back Door - Prefab	2	Work Bench	1
Basement Excavation	2	Deep Freeze Unit	1
Trellis	2	Dormer Window - Tract	1
Change position of Clothes Poles	2	Wishing Well	1
		Sprinkler System	1
Raise Threshold	2	Playhouse	1

1053 Inspections were made during the month of May. A breakdown of the inspections shows the following distribution:

Grass Seed and Lot Lines	466
Linoleum	76
Recaulk Bathrooms	56
Sidewalks	44
Top Soil	40
Walls	27
Floorboards	21
Shades	18
Leaking Basements	2
Miscellaneous	303

1221814

TENANT RELATIONS

Total Inspections 1053.

In addition to the above, inspectors also covered calls on interior painting, contacted tenants in regard to resurfacing of streets, watering of inner-block areas, and made calls on tenants who are parking on lawns and driving on seeded areas.

M. S. Warehouse Monthly Report for May, 1949.

Orders handled for May, 1949

		Items
Recall Orders	6	89
Delivery Orders	26	43
Range & Refrigerator Orders To New Houses	0	0
Dormitory Exchange Orders	17	47
Total Orders	49	179

Received from Maintenance	68
Sent to Maintenance	35
Three-burner Ranges Exchanged in Village	6
Refrigerators Exchanged in Village	4

Trips to Pasco 1

Tenant Relations Store:

Orders Disbursed	827	
Items Disbursed	3399	
Value		$35,800.37
Items Received	127	
Value		22,065.61
TOTAL M. S. WAREHOUSE INVENTORY		$63,874.07

Note: Dormitory Supplies Used $555.23

DORMITORY PROGRESS REPORT FOR MONTH OF MAY, 1949.

In anticipation of summer weather, the air conditioning equipment has been put into service. This service is regulated entirely upon the existing temperatures.

In order to further reduce maintenance costs, the routine inspection of the boiler rooms has been undertaken by Dormitory Service, who now checks and reports necessary maintenance work to the plumbers or steamfitters, as the case may be.

A change in size and location of dormitory grounds guard-posts protecting walk-ways and seeded areas became necessary because of the irresponsible driving of some motorists. This change will further reduce unnecessary maintenance costs to the dormitory grounds.

There is still a considerable backlog of routine grounds maintenance, but consideration is constantly being given these unfinished items.

Recommendation has been made to the Richland Traffic Department to install "Through Stop" signs on dormitory service roads leading into Knight Street. These signs would materially reduce traffic hazards at these points.

1221015 DECLASSIFIED

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COMMUNITY SAFETY DIVISION
MAY 1949

ORGANIZATION AND PERSONNEL

Number of employees on Payroll:	MAY
Beginning of month	3
End of month	3

GENERAL

The Child Safety Program has been inaugurated through-out Richland, by the Community Safety Division, coordinating the efforts of the P.T.A., Boy Scouts, Toast Mistress Club, Chamber of Commerce, and various other organizations. The program will consist of posters displayed both in buses of the city and in the areas, also in the windows of the local stores, and public gathering places. There will be a fifteen minute talk on Child Safety over Station K P K W, Pasco, June the 7th, 1949. Various news releases will be made thru local papers and the Hanford Works News, during the week of June 6th to June the 11th. This program will be continued during the summer vacation season. This program will run in the same lines as the program instituted by the Metropolitan Insurance Co. of the American Pediatrics Society and Child Welfare Program.

A number of plans and specifications are reviewed by this office during the past month for new construction in the new business area. Recommendations for fire protection in the future school buildings was made by the Village Safety Division to Superintendent of the Board of Education, Mr. P. A. Wright. The recommendations covered fire stand-pipes, building fire alarm systems, sprinkler systems, draft-stop partitions, fire walls, fire doors, and general safety. The intention of these recommendations is to put in the hands of the architect the desirable needs that are existing in the present schools and to eliminate any faulty installations in the new designs.

One ranch house has been allotted for the purpose of painting furnace rooms with fire resisting paint. The purpose of this project will be to determine the cost of both labor and material with the intention of doing all ranch house furnace rooms in this manner, if economical. This will eliminate or minimize fires started by hot ashes improperly stored.

During the month of May, eleven major wells were filled by the Tenant Relations Unit. These wells were left from old Tract Houses, existing prior to Hanford Works taking over Richland. These wells run three feet in diamator, and approximately seventy-five feet deep. There will be future wells to fill as they are located in the outlying areas.

COMMUNITY FIRE DIVISION

May 1949

Organization and Personnel

Number of employees on payroll	May
Beginning of the month	144
Terminations	5
End of month	139

	Richland	North Richland
Response to alarms	26	8
Fire Loss (Estimated)		
Hanford Works	$412.00	$ 50.84
Personal	22.50	2,275.00
Investigation of minor fires and incidents	13	1
Safety Meetings held	16	7
Inside drills	67	25
Outside drills	65	57
Alarm Boxes Tested	171	72
2½" Hose tested	0	14,950 ft.
1½" Hose tested	0	1,550 ft.

Fire Department Activities

A tour of the North Richland fire station was conducted for the kindergarten class of John Ball School. Apparatus and equipment was explained to the group.

Girl Scout Troop #28 was conducted on a tour of Richland No. 1 station, apparatus and equipment being explained and demonstrated.

Apparatus stood by during a controlled burning demonstration of a wet water extinguishing agent.

After two unreported hydrants were found shut off in the "F" Area, all hydrants west of Wright Avenue were checked to insure their being in service.

An aerial ladder truck demonstration was performed for a group of project employees at the City Park.

Assistance was furnished Public Works Division for flushing fire hydrants.

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COMMUNITY FIRE DIVISION - May 1949

Fire Prevention Activities

Fire Inspections:

700 Area Buildings	192
1100 Area Buildings	244
Government Airport Buildings	5
Commercial Facility Buildings	163
Schools, Churches, Clubs	44
Homes	403
Dormitories	30
Total	1081

Fire Extinguishers:

Inspected	1357
Installed	82
Recharged	50
Condemned	42

Miscellaneous Activities:

Demonstrated the use of all types of fire extinguishers to 34 employees of the Transportation Division.

Inspected the sprinkler systems in Kadlec Hospital, Public Health and 703 Buildings weekly. With the exceptions of the Kadlec Hospital dry-pipe systems, which require weekly pumping to overcome air leaks, tests were satisfactory.

Cleaned, serviced or exchanged canisters for eleven gas masks in Community Power Division installations.

Publicity was furnished the Villager and Tri-City Herald informing residents in the ranch-house area that fire alarm boxes in this area had been placed in service.

Co-operating with sponsors of "Child Safety Week", publicity articles were prepared on these topics: Life Hazard to Children Playing in Grass and Weed Areas, Home Hazards to Unattended Children, Hazards of Gasoline Storage for Power Mowing Machines and Boats.

A re-inventory was made of all fire extinguishers in the Richland area and new permanent records made of all extinguishers installations.

Tested fire alarm system in Desert Inn on second and fourth Thursdays of the month. With exception of an evacuation horn in second floor hallway, which was promptly repaired, tests proved satisfactory.

1221818

853

COMMUNITY FIRE DIVISION - May 1949

Fire Prevention Activities

Forty-two soda-acid fire extinguishers were replaced in 703 and 760 buildings. This was necessary when tests proved a certain make of extinguisher defective and possibly dangerous to the user. Those removed were returned to the vendor.

Supervised two fire drills at the Columbia High School, blocking two regular exits which required students to use alternate exits. Both drills were quite satisfactory.

Prepared floor plan map of Spalding School listing all necessary information for Fire Department training purposes. A photostatic copy of this map, showing fire alarm circuits, was posted in the school hallway to assist firemen locate any fire in the building.

Posted eight "No Smoking" signs in the M. S. Warehouse.

Made a survey of fire extinguishers required in the new sewage disposal plant.

Purchased and installed two 5-pound CO_2 fire extinguishers in each kitchen at Spalding, Carmichael and Marcus Whitman Schools.

Home Fire Inspectors were detailed to recharge fire extinguishers for three man-days. The balance of the month was used for checking "no answers" from previous inspection attempts. Of the 862 homes re-visited, 403 inspections were accomplished.

DECLASSIFIED

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COMMUNITY DIVISIONS

COMMUNITY PATROL

MAY 1949

ORGANIZATION AND PERSONNEL

Number of employees on payroll:	May
Beginning of Month	85
End of Month	84
Net Decrease for Month	1

Reason: 1 V. T. Personal

GENERAL

On May 2, 1949, Capt. C. H. Overdahl gave a lecture on "Police Work as a Career" to a group of students at Columbia High School.

Beginning May 4, 1949, a special check was begun of the construction offices on the By-Pass road.

Beginning May 6, 1949, a special check was begun of the softball field concessions, the new swimming pool, and various lumber piles throughout the village.

On May 13, 1949, the North Richland Patrol changed to summer khaki uniforms on all shifts.

On May 18, 1949, a special assignment was designated in patrolling the dike and in checking the river condition at Benkes Trailer Camp, due to flood conditions. The latter assignment was discontinued on May 25, 1949.

Effective May 20, 1949, all requests for use of the Patrol jeep, equipped with a Public Address System, will be directed to Don Berst in the Community Activities Division.

During the month of May, 24 prisoners were processed through the Richland Jail.

During the month of May, 56 gun registrations were taken by Richland Patrol.

During the month of May, a total of 63 Unusual Incident Reports were received, which consisted mainly of Public Intoxications, Vagrancy, Public Nuisance, and Disturbance. Regular Traffic Violation and Offense Statistics are presented in separate tables attached to this report.

TRAFFIC

On May 26, 1949, the Yakima River "Bailey" bridge on George Washington Way was opened to traffic.

Providing no accident occurs involving a fatality by June 7, 1949, Richland will have experienced two full years without a traffic fatality.

1221020

During May, arterial streets in the Ranch-type area were designated and posted with stop signs.

During the month, an order for 130 School Boy Patrol jackets was placed through Klopfenstein's in Richland. Purchase of these jackets was made possible by donations from various organizations, namely, Kiwanis Club, Chamber of Commerce, Villagers Incorporated, and Atkinson Jones personnel. It is expected that these jackets will be received within the next two weeks. They are bright red in color, are made of water repellent material, and should add much to the appearance and moraleof the School Boy Patrol. Thirty more jackets are expected to be ordered at an early date.

TRAINING

Subjects covered in the lieutenant's training classes for the month of May were as follows:

Law of Arrest
Public Relations

Advance training for Community Patrol members at the Small Arms Range for the period May 13, 1949, to May 31, 1949, inclusive, was divided into field instruction as follows:

Pistol	2 1/2 hr.
Machine Gun	1 1/2 hr.

Progress of scores and qualifications on the Army-L Course:

	March		April		May	
	No.	Percent	No.	Percent	No.	Percent
Unqualified	6	7%	3	4%	2	6%
Marksman	26	32%	13	18%	4	11%
Sharpshooter	12	14%	11	16%	7	20%
Expert	39	47%	44	62%	22	63%

No scores were kept on the Machine Gun Course. Each man, however, fired practice shots and received the regular instructions on the handling and firing of the weapon.

Ptm. F. C. Bond represented the Richland Patrol at the F. B. I. State-Wide Basic Law Enforcement Training School at Fort Lewis, Washington. The training school was held from May 16, 1949, to May 27, 1949, and covered all phases of police work.

Beginning May 17, 1949, and ending June 22, 1949, the F. B. I. is sponsoring a police training school for the Richland Patrol. Duplicate sessions on different days of the week at different hours of the day to accomodate those working shift work, are being held in Dormitory W-10, Richland. Topics to be covered are:

Cooperative Functions of the FBI
Federal Jurisdiction
Fundamentals of Fingerprints
Traffic Accident Investigation
Arrest Problems
Scientific Aids to Criminal Investigation
Interrogation and the Detection of Deception
Interviews
Notes and Report Writing

DECLASSIFIED

1221821

DECLASSIFIED

ACTIVITIES AND SERVICES (RICHLAND)

	March	April	May
Check on absentees	1	5	8
*Persons assisted	196	290	266
Doors & windows found open in commercial facilities	34	33	24
Lost children found	8	27	15
Ambulance runs	40	50	29
Lost dogs reported	3	5	5
Dog & cat complaints	46	55	51
Persons injured by dogs	6	6	14
Bank escorts & details	33	41	37
Fires investigated	10	34	30
Miscellaneous escorts	54	34	27
Complaints investigated	84	126	148
Missing persons reported	4	3	0
Totals	519	709	654

*Includes: Persons admitted to residence; delivery of messages to residents who have no telephones; relay of messages; handling of requests of out of town police; miscellaneous aids to private parties; and opening trailer parking lot for individuals.

ACTIVITIES AND SERVICES (NORTH RICHLAND)

	March	April	May
Check on absentees	5	3	0
*Persons assisted	329	219	251
Doors & windows found open in commercial facilities	45	70	45
Lost children found	4	5	2
Ambulance runs	12	2	6
Lost dogs reported	0	0	0
Persons injured by dogs	1	0	1
Dog & cat complaints	11	16	6
Bank escorts & details	48	40	54
Fires investigated	17	14	8
Miscellaneous escorts	43	52	10
Complaints investigated	72	27	15
Missing persons reported	4	0	0
Totals	591	448	398

*Includes: Admitting persons to their rooms; contacting parties on long distance calls; issuing rooms and bedding; locating persons wanted for various reasons; relaying messages; assisting outside police agencies; assisting other departments; aiding private persons, etc.

1221022

250

COMMUNITY PATROL DIVISION

FORCE REPORT

MAY 1949

Patrol		Entire Patrol 4-30-49	Entire Patrol 5-31-49
Patrol Supervisor		1	1
Captains		5	5
Lieutenants		8	8
Sergeants		11	11
Patrolmen		56	55
	Total	81	80
Clerical			
Steno-Typists	Total	4	4
		85	84

Decrease

1 V. T. Personal - By Mail - 5-8-49

DECLASSIFIED

1221023

COMMUNITY PATROL DIVISION
RICHLAND JUSTICE COURT CASES
MAY 1949

VIOLATION	NO. OF CASES	NO. OF CONVICTIONS	TOTAL FINES	TOTAL SUSP.	SENTENCED TO JAIL	SENTENCE SUSP.	LICENSE REVOKED	AVERAGE FINE PAID	CASES DISMISSED	WARRANTS ISSUED
Reckless Driving	2 *	2	$27.50	0	0	0	0	$13.75	0	1
Negligent Driving	10 **	10	$146.00	0	0	0	0	$14.60	0	2
Speeding	26 ***	26	$335.00	0	0	0	0	$12.89	0	1
Stop Sign	7 ****	7	$37.50	0	0	0	0	$5.36	0	1
F.T.Y.R.O.W.	10 *****	10	$100.50	$12.50	0	0	0	$8.81	0	1
Improper Parking	4	4	$14.00	$7.00	0	0	0	$3.50	0	0
Drivers License	2	2	$13.00	0	0	0	0	$6.50	0	0
Vehicle License	2	2	$13.00	0	0	0	0	$6.50	0	0
Defective Equipment	2	2	$9.00	0	0	0	0	$4.50	0	0
Public Intoxication	11	11	$125.00	0	1	1	0	$11.36	0	0
Public Nuisance	5 ******	4	$50.00	0	1	1	0	$12.50	1	0
Vagrancy	8	8	$75.00	0	2	0	0	$9.37	0	0
Drunk and Dis. Conduct	2	2	0	0	2	0	0	0	0	0
Third Degree Assault	1	1	$37.50	0	0	0	0	$37.50	0	0
Petit Larceny	1	1	0	0	1	0	0			
	93	92	$983.00	$19.50	7	2	0	$147.14	1	6

Total Fines - - - - - - - - -$983.00
Less Suspensions - - - - - - $19.50
Total Fines Received - - - $963.50

* 2 Cases included with other violations.
* 1 Case - Driving priveleges revoked for 90 days.
** 2 Cases included with other violations.
*** 2 " " " " "
**** 1 " " " " "
***** 2 " " " " "
****** 1 Case picked up on a Bench Warrant for failure to pay balance due on $17.50. - Imposed by Justice Court for Public Nuisance. Charge on 3-7-49. Unpaid balance of $5.00. Abrogated Judge E.W. Brown and released.

122132

PATROL DIVISION - TRAFFIC CONTROL STATISTICS

May - 1949

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MOTOR VEHICLE ACCIDENTS

	Total Number		Fatalities		Major Injuries		Minor Injuries	
	April	May	April	May	April	May	April	May
Richland	19	16	0	0	0	1	4	4
North Richland	4	11	0	0	0	0	0	3
Totals	23	27	0	0	0	1	4	7

ACCIDENT CAUSES

	Negligent Driving		Failure to Yield Right of Way		Reckless & Drunken Driving		Other Causes	
	April	May	April	May	April	May	April	May
Richland	12	1	3	8	0	0	4	7
North Richland	3	2	1	4	0	0	0	5
Totals	15	3	4	12	0	0	4	12

PLANT WARNING TRAFFIC TICKETS ISSUED

	Speeding		"Stop" Sign		Parking		Imp. License		Def. Equip.		Other Violations		Totals	
	Apr.	May	Apr.	May	Apr.	May	April	May	April	May	April	May	Apr.	May
Richland	1	1	0	0	56	25	2	1	7	1	3	2	69	30
N. Rich.	4	0	1	0	81	64	1	2	27	12	0	0	114	78
Totals	5	1	1	0	137	89	3	3	34	13	3	2	183	108

COURT CITATION TRAFFIC TICKETS ISSUED

	Speeding		"Stop" Sign		Drunken Dr.		Reckless Dr.		Right of Way V.		Neg. Dr.		Parking V.		Other V.		Totals	
	Apr.	May	April	May	April	May	April	May	April	May	Apr.	May	Apr.	May	Apr.	May	Apr.	May
Richland	36	18	9	2	2	0	2	2	5	7	6	6	3	4	9	12	72	51
N. Rich.	3	6	9	3	1	0	2	0	1	4	7	5	0	0	5	2	28	20
Totals	39	24	18	5	3	0	4	2	6	11	13	11	3	4	14	14	100	71

TRAFFIC VOLUME: Average 24-hour Traffic Volume Count for week ending on May 31, 1949, Yakima River Bridge, 12,651 Cars.

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CRIME PREVENTION SECTION
MONTHLY REPORT
May, 1949

CLASSIFICATION OF OFFENSES	Offenses Known or Reported to Patrol	Offenses Unfounded	Actual April	Offenses May	Offenses by Arrest	Cleared by Other Action	Perpetrators Involved
Assault	4	1	0	3	2	1	3
Breaking & Entering	0	0	1	0	0		
Robbery	1	1					
Larceny (Except Auto & Bike)							
Over $50.00	6	0	3	6	0	4	4 (a)
Under $50.00	19	1	12	18	1	17	10 (b)
Auto Theft	1	0	1	1	0	1	1
Bike Theft	13	0	19	13	0	13	1(g)(u)
Destruction of Personal Property	2	0	4	2	0	2	1
Destruction of Government Property	5	0	5	5	0	4	5 (f)
Loss or Theft of Government Property	4	0	1	4	0	3	3
Disorderly Conduct	3	0	4	3	0	3	8
Drunkenness	12	0	28	12	12	0	12
Forgery	1	0	0	1	0	0	(u)
Gambling and or Possession	0	0	2				
Missing Persons	2	0	3	2	0	2	2 (c)
Offenses Against Family & Children	4	0	1	4	0	4	6
Prowlers	3	0	1	3	0	2	2 (d)
Public Nuisance	5	0	8	5	4	1	5
Sex Offenses			2				
Cohabitation	1	0	0	1	0	1	2
Indecent Exposure	0		1				
Vagrancy	5	0	6	5	5	0	5
Miscellaneous	8	0	11	8	1	6	15
Juveniles (Other than Above)	4	0	5	4	0	2	5 (e)
Malicious Mischief	2	0	0	2	0	2	4 (h)
	105	3	118	102	25	68	94

(a) 2 cases perp. by 4 Juv. Ages 15,17,17,18
(b) 1 case perp. by 2 Juv. Ages 11,11.
1 case perp. by 2 Juv. Ages 13,16.
14 cases perp. by 4 Juv. Ages 15,17,17,18
(c) 1 case perp. by 1 Juv. Age 16.
1 case perp. by 1 Juv.
(d) 2 cases perp. by 1 Juv. Age 17
(e) 1 case perp. by 3 Juv. Ages 15,15,13
1 case perp. by 2 Juv. Ages 11,7.

(f) 1 case perp. by 1 Juv.
(g) 2 cases perp. by 1 Juv.
(h) 1 case perp. by 2 Juv. Ages 7,10.
1 case perp. by 2 Juv. Ages 14,15.
(u) Unknown

Note: 15 of the Perpetrators involved are Colored.

Property recovered for the Month - $2,880.18

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Number of offenses known to police per 10,000 inhabitants, in cities between 10,000 and 25,000 inhabitants.

	Wash. Oregon & Calif.		Richland and North Richland		
	Six Months	One Month	Six Months	April	May
Classification	(Jan-June 1948)	Average	(Jan-June 1948)	1949	1949
Murder	181	.031	0	0	0
Robbery	3.47	.58	1.00	0	0
Aggravated Assault	1.75	.29	6.66	1.33	2.66
Burglary	35.69	5.95	4.63	.66	0
Larceny	127.06	21.18	47.16	22.66	16.0
Auto Theft	15.56	2.59	3.10	.66	.66

Number of offenses known to police per 10,000 inhabitants regardless of whether offenses occurred in cities or rural districts:

	State of Washington		Richland and North Richland		
	Six Months	One Month	Six Months	April	May
Classification	(Jan-June 1948)	Average	(Jan-June 1948)	1949	1949
Murder	.140	.023	0	0	0
Robbery	4.90	.82	0	0	0
Aggravated Assault	.78	.13	6.66	1.33	2.66
Burglary	36.91	6.15	4.63	.66	0
Larceny	92.22	15.37	47.16	22.66	16.0
Auto Theft	18.15	3.03	3.10	.66	.66

The portion of offenses committed by persons under the age of 25 years, is shown by the following figures:

	National Average	Richland and North Richland		
	Six Months	Six Months	April	May
Classification	(Jan-June 1948)	(Jan-June 1948)	1949	1949
Robbery	55.5	0	0	0
Burglary	59.9	8%	100%	0
Larceny	45.2	13%	17%	35%
Auto Theft	71.6	0	0	0

Note: Statistics of Juvenile offenses throughout the United States were taken from the Uniform Crime Report published by the Federal Bureau of Investigation, which states: "It should be remembered that the number of arrest records is doubtless incomplete in the lower age groups because of the practice of some jurisdictions not to fingerprint youthful offenders."

1221827

COMMUNITY DIVISIONS

COMMUNITY-ACTIVITIES DIVISION

May, 1949

ORGANIZATION AND PERSONNEL

Number of employees on roll

Beginning of month		11
Additions	1	
Terminations	0	
End of month		12

SCHOOLS

Representatives of the Activities Division checked Columbia High School track and track equipment in preparation for scheduled track meet on May 7.

On May 6, representatives of the Activities Division, McNeil Construction Co., and Turnbull Associates inspected the installation of stage equipment in Carmichael Junior High School.

On May 2 and 3, representatives of the Fire Protection, Safety, Public Health, and Activities Divisions conducted the regular monthly inspections of all school buildings and grounds and reported marked improvement over previous month.

On May 3, the Spalding Grade School held an Open House and more than 800 visitors were conducted through the buildings and entertained with programs and exhibits.

The Carmichael Junior High School formally opened its doors with an Open House on May 10.

On May 10, inspections were made for the correction of the ventilation system at the Marcus Whitman Grade School.

The Activities Division completed arrangements on May 18 to accompany school district representatives into the areas for the selection and clearance of lumber and angle iron for the construction of awnings for school use. On May 19, vehicles were procured and 1250 feet of angle iron was brought in from White Bluffs for this purpose.

On May 25, representatives of General Electric Construction, the Atomic Energy Commission, and the Activities Division inspected the newly seeded areas around Jefferson Grade School and Columbia High School. The areas were accepted.

Students of the Columbia High School staged a Fashion Show at the auditorium on May 17.

The Kiwanis Club of Richland entertained the Lettermen of the High School with a banquet and entertainment in their honor on May 18.

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On May 20, the American Legion Post presented its annual awards to honor students of the high school. The program was held in the auditorium and included the presentation of trophies, medals, and emblems.

Students of the Columbia High School and Carmichael Junior High School presented a Student Concert in the auditorium of the high school on May 19. Every available seat was filled.

Almost 200 fifth and sixth grade students at Sacajawea Grade School appeared in the cast of "Rip Van Winkle" which was presented at the school on May 13.

The Senior Class of Columbia High School presented the school with the gift of a $350 mahagony display case for the display of high school trophies.

There is a total enrollment increase since September 7, 1948, of 82 pupils, with 134 additional pupils at the grade schools and a decrease of 52 at the high school. During the month there was a decrease of 112 pupils in the grade schools and a decrease of 13 at the high school.

CHURCHES

The following is a tabulation of full time paid personnel, as of May 31, 1949:

	Ministers	Staff	Total
Assembly of God	1	0	1
Catholic	2	2	4
Central United Protestant	2	1	3
Church of Christ	1	0	1
Church of God	1	0	1
Episcopal Church	1	0	1
Free Methodist	1	0	1
Mission Baptist	1	0	1
Mo. Synod Lutheran (Redeemer)	1	1	2
National Lutheran	1	2	3
Nazarene	1	0	1
Regular Baptist	1	0	1
United Protestant - North Richland	1	0	1
United Protestant - West Side	1	0	1
United Protestant - South Side	1	0	1
United Protestant - Northwest	1	0	1
	18	6	24

"The Holy City," an oratorio by A. R. Gaul, was presented in the Richland Lutheran Church on May 22 by the senior choir of that church.

During the Month of May, representatives of the Fire Protection, Safety, Public Health, and Activities Division conducted inspections of all government-owned church buildings and grounds.

The Community - Activities Division requested a detailed traffic survey of the traffic problems involved at the intersection of Stevens and Long Avenue. Parking in this area is the basis of the problem.

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Community - Activities Division

An annual report of the United Protestant Churches in Richland discloses that there are now five United Protestant Churches in Richland and North Richland, each served by a full time, resident minister. The Central United Protestant Church is housed in a government-owned building at Stevens Drive and Long Avenue. It has submitted plans for expansion at that site. The South Side United Protestant Church has officially opened its own building at Goethals and Gillespie. The Northwest and the West Side United Protestant Churches have both been allotted church sites and have submitted plans for new buildings. The North Richland United Protestant Church will continue to be housed in the John Ball Grade School.

The Richland Baptist Church has completed the first major phase of its construction program at George Washington Way and Hoxie. The Church of the Nazarene has completed 50% of the construction of its new church building at Humphries and Wright. The Richland Lutheran Church started construction on its new addition to the present church building. The Episcopal Church moved two recently purchased sections of Nettleton-Sound barracks to their building site at Symons and Potter.

COMMUNITY

As of May 31, 1949, organizational personnel included:

Villagers, Inc.	7
American Legion	2
Coordinate Club	1
Youth Council	1
Boy Scouts	1
Camp Fire Girls	2
Hi-Spot Club	1
Red Cross	3
Castle Club	1
Post Office	74
Veterans Administration	2
Girl Scouts	2
	97

The Activities Division conducted a survey of utility and community services costs for the purpose of establishing basic rates for church and organization rentals under the new procedures and policies governing the servicing of such groups by the Activities Division. This included the establishing of tentative land boundaries for all existing and proposed clubs and churches and the compilation of approximate floor space in all existing and proposed buildings to be used by these organizations. The proposed scale of rental rates based upon these measurements was submitted to the Atomic Energy Commission for its approval.

The Washington State Federation of Post Office Clerks held a three day convention in Richland on May 28, 29, 30. The local Post Office employees were hosts and the convention was attended by more than 350 members and wives. This was Richland's first official convention.

The annual observance of Memorial Day on May 30 was conducted under the direction of Richland Post 71, American Legion. All veterans' organizations participated including the Legion, Veterans of Foreign Wars, Marine Corps League, and

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Organized Reserve Corps. The Civil Air Patrol and Boy Scouts were also represented. Navy memorial services were held on the banks of the Columbia River and Army services at the Richland Cemetery.

The Richland Tennis Club conducted an annual invitational spring tennis tourney which was climaxed at the Community Park courts May 15. The Activities Division collaborated with the Tennis Club in planning and scheduling the events and in procuring suitable awards and trophies.

The second annual Atomic Aerodeo model race car races were held at the Civil Air Patrol airport May 22. The races were sponsored by the Atomic City Miniature Racing Car Association and featured entries and contestants from Seattle, Spokane, and Richland.

The Veterans of Foreign Wars annual poppy sale was held May 27 and 28. The poppies were distributed by members of the V.F.W. Auxiliary. Proceeds were allotted to disabled and needy veterans and their families.

The American Legion and its Auxiliary conducted its annual poppy sale May 27 through 30. Both veteran organizations shared available collection areas and proceeds from both drives served the same general purposes.

Two hundred Girl Scouts received awards May 12 at the Girl Scout Court of Award held at the Columbia High School auditorium.

The Richland Civil Air Patrol held open house on May 22 in conjunction with the Atomic Aerodeo.

The Richland Boys Choir was presented in concert at the Columbia High School auditorium on May 7.

Richland Boy Scouts, Cub Scouts, and Sea Scouts combined their efforts to present the annual Scout Circus at the Bomber Bowl on the night of May 14. More than 700 Scouts participated in the presentation of eight featured events before an audience estimated to be 3,200 persons. Proceeds were shared by the local groups with a major portion going to the maintenance of the Scout Camp Wallowa.

The Richland Kiwanis Club sponsored the organization of a new Key Club International at Columbia High School. The student organization will be supervised and aided by the business mens organization.

A total of $3,000, representing 150% of its quota, was turned over to the American Cancer Society by the Richland Jaycees, sponsors of the recent cancer fund raising campaign. This announcement was made on May 12.

A record of 97 donor pledges turned up to contribute blood to the Red Cross Bloodmobile which visited Richland on May 3, on its monthly trip here. Prior to this third visit, 170 half pints had been contributed and 170 pints used in the community through the program.

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Community - Activities Division

The Richland Players, Inc. closed its 1948-49 season with the presentation on May 12, 13, and 14, of the three act play "Philadelphia Story". The play was presented at the Columbia High School auditorium.

The executive secretary and business manager of the American Chemical Society visited Richland on May 26 and spoke before the local section of the society.

The Richland Memorial Softball Field was officially opened for the 1949 season with a Softball Jamboree on May 8. Each of the 28 softball clubs participating in local league play was introduced and played a series of innings.

Approximately 3000 spectators watched the more than 300 entries perform in the 17-event horse show at the Richland Riding Club Arena on west Van Geisen on May 1.

The regular monthly meeting of the Recreation Advisory Committee was held on May 17, 1949. No new organizations were considered. The minutes of the April 26, 1949, meeting were approved May 13, 1949, by the Atomic Energy Commission. Organizations receiving formal approval included Benton-Franklin Squadron of the Air Force Association., and the Richland Research and Development Group of U. S. Army Reserves.

On May 16, representatives of the Fire Protection, Safety, Public Health, and Activities Division inspected the U. S. Post Office, Civil Air Patrol area, Veterans Administration, Red Cross, Coordinate Club, Castle Club, American Legion, Masonic Temple, Rifle and Pistol Club, Rod and Gun Club, Three Rivers Mineralogy Club. On the 17th inspections were made of the Riders Club, Jaycees offices and Community Library.

A penny drive conducted for the benefit of the Childrens' Orthopedic Hospital in Seattle during the Month of May was very successful and netted $2,375.

Girl Scout and Brownie Troops held "fly up" ceremonies on the Greenway on May 15 and 104 Brownies participated in the presentation of wings and pins.

The Boy Scout Troops of Richland held their Court of Honor on May 6 at the Spalding Grade School.

The Girl Scout's Court of Awards was held at the Columbia High School on May 10.

The number and types of organizations presently served by the Activities Division include 12 business and professional clubs, 24 churches and church organizations, 5 civic organizations, 16 fraternal organizations, 8 music and art associations, 9 private instructors, 43 recreation and hobby groups, 8 schools and 8 parent teachers associations, 2 social clubs and organizations, 11 veteran and military organizations, 5 welfare organizations, 19 Boy Scout troops, 15 Camp Fire Girl troops, 42 Girl Scout troops, 8 other youth groups, and 11 miscellaneous organizations.

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Community - Activities Division

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MAJOR ACTIVITIES DURING THE MONTH

May 1	Annual Horse Show	Richland Riding Club Arena
7	Richland Boys Choir Concert	Columbia High School
12	Miss Washington Beauty Pageant Contest	Spalding Grade School
12, 13, 14	Richland Players "Philadelphia Story"	Columbia High School
13	Spring Festival of Music	Sacajawea Grade School
14	Annual Scout Circus	Bomber Stadium
15	Annual Invitational Tennis Tourney	Community Park Courts
20, 21	Smiset Annual Dance Recitals	Columbia High School
21, 22, 23	Allied Art Association Exhibit	Jefferson Grade School
22	Atomic Aerodeo and C.A.P. Open House	C. A. P. Airport
23	Treble Clef Spring Concert	Columbia High School
28, 29, 30	Washington State Federation Of Post Office Clerks Annual Convention	Desert Inn
30	American Legion Memorial Parade	George Washington Way.
10	Carmichael Jr. Hi. Open House	Carmichael Jr. Hi. Sch.
3	Spalding Grade School Open House	Spalding Grade School

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Community - Activities Division

RICHLAND PUBLIC SCHOOLS PERSONNEL AND ENROLLMENT REPORT

The following is a tabulation of full-time school district paid personnel, as of May 27, 1949:

Administration	3
Clerical	16
Principals and Supervisors	17
Teachers	235
Building Custodians	47
Cooks	30
Nursery School Ex. D. C.	17
Bus Drivers	2
Total	367

On May 27, 1949, there were 54 children enrolled in the Richland Nursery School with an average attendance of 49. There was a decrease in enrollment during the month of 8. On this day there were 15 children enrolled in the Extended Day Care program of the Nursery with an average attendance for the month of 14. There was a decrease in enrollment during the month of 3.

COLUMBIA HIGH SCHOOL

	Boys	Girls	Total
Freshman (9th grade)	163	170	333
Sophomore (10th grade)	150	158	308
Junior (110th grade)	109	91	200
Senior (12th grade)	97	93	190
	519	512	1031

GRADE SCHOOLS

	Carmicheal Jr. Hi.		Jefferson		John Ball		Lewis and Clark		Marcus Whitman		Sacajawea		Spalding	
Kind.			*(3)	83	*(4)	84	*(4)	108	*(4)	84	*(2)	68	*(4)	126
1st			(3)	97	(5)	99	(5)	130	(4)	116	(4)	115	(4)	121
2nd			(3)	82	(4)	88	(4)	110	(3)	89	(4)	104	(3)	91
3rd			(2)	71	(4)	90	(4)	109	(3)	82	(3)	106	(3)	90
4th			(3)	85	(3)	85	(3)	100	(3)	96	(4)	100	(3)	86
5th			(2)	63	(3)	61	(3)	93	(3)	82	(3)	98	(3)	107
6th			(2)	56	(3)	73	(3)	76	(2)	73	(3)	88	(2)	54
7th	(8)	247					(3)	89	(3)	96				
8th	(12)	361												
		608		537		580		815		718		679		675

Totals by grades	
Kindergarten	553
1st grade	678
2nd grade	564
3rd grade	548
4th grade	552
5th grade	504
6th grade	420
7th grade	432
8th grade	361
total	4612

*Half days
() Number of classes

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GENERAL ELECTRIC COMPANY
HANFORD WORKS
COMMUNITY ACCOUNTING DIVISION

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MONTHLY REPORT FOR MAY, 1949

ORGANIZATION

Employees - Beginning of Month	27	Exempt	5	Male	10
Terminations	0	Non exempt	22	Female	17
Employees - End of Month	27	Total	27	Total	27

ACCOUNTS RECEIVABLE

RENTS

	MAY	APRIL
House leases processed:		
New leases	142	308
Modifications	0	1
Cancellations	163	236
Active total house leases	5,661	5,682
Dormitory:		
Assignments	79	117
Removals	115	148
Total Occupancy 5-31-49	1,006	
Rental revenue was as follows:		
Equipment	$ 117.74	$ 90.34
Houses	241,856.16	242,017.43
Dormitories	14,094.90	14,482.32
Facilities	45,289.76	50,585.25
	$301,358.56	$307,175.34
Unoccupied house revenue loss	$ 3,169.49	$ 1,422.02
Unoccupied dorm revenue loss	$ 1,702.65	$ 1,315.18

Twenty facilities still have equipment on a rental basis.

TELEPHONE

	MAY	APRIL
Number of work orders processed	149	175
Number of resident and facility phones in service	2,526	2,519
Revenue including services	$4,975.73	$5,017,07

MISCELLANEOUS

There were 111 invoices issued during May accounting for $3,252.45 in revenue. Revenue from dog licenses amounted to $20.00.

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Community Accounting Division

The following building permits were issued:

LESSEE	AMOUNT
L.W. Hansen and Gus Carlson	$ 161.25
Virgil McVicker	171.95
Total May fees	$ 333.20
Previously reported	1,728.21
Total fees to date	$2,061.41

Government-owned equipment located in the respective facilities was sold during May to the following at an agreed-upon price:

Campbell's Food Store	$ 1,109.19
Standard Oil Co.	383.26
	$ 1,492.45
Previous Sales	47,496.56
Total to date	$48,989.01

Twenty-eight collection letters were written resulting in the payment of twelve accounts totaling $631.23.

ACCOUNTS PAYABLE

STATISTICS

	MAY	APRIL
Accounts Payable vouchers processed	298	345
Freight bills processed	63	127
Purchase orders received	21	44
Net amount of purchase orders	$8,088 Cr.	$6,708
Receiving reports received	98	134
Total net amount disbursed	$56,702.45	$77,506.36

The volume of Accounts Payable work processed during May reached an all-time low, but the available time as a result was well spent in auditing purchase order files and declaring them complete. There were approximately 400 orders audited and placed in the "permanent" file.

GENERAL

A report showing the estimated disbursements and receipts of the Community Division during June was furnished the General Accounting Division for use in estimating the need for funds under the new financing procedure with the A.E.C..

The new financing procedures have been reviewed and preparations made as the result of discussions to place the procedures into effect on June 1, 1949.

There are only ten items open in the Accounts Payable register reflecting a debit balance of $40.72.

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One new subcontract (G-233) was received and involves a consultant service with respect to collection and disposal of refuse. This contract is in the fixed amount of $2,496.76.

Vance Properties assigned their contract to the Richland Maintenance Company as of April 25, 1949 regarding the servicing of the dormitories.

The status of active subcontracts for which the Community Division is responsible is as follows:

CONTRACTOR	SUBCONTRACT NUMBER	AMOUNT AWARDED	AMOUNT PAID	AMOUNT RETAINED
Vance Properties, Inc.	None applied	$ 98,992.34	$ 98,992.34	$ -0-
Graysport Constr. Co.	G-187	20,500.00	18,450.00	2,050.00
Puyallup Gardens	G-216	* 117,848.13	80,593.72	8,857.56
West Coast Painters	G-219	46,449.19	18,640.97	2,071.22
Lone Pine Roofing & Paving Co.	G-227	7,500.00	6,750.00	** 750.00
Graysport Constr.Co.	G-231	* 43,270.00	28,273.84	2,163.50
Greeley & Hansen	G-233	2,496.76	-0-	-0-
		$337,056.42	$251,700.87	$15,892.28

* Total amount of contract will be total of the estimates as submitted. Contract is based on a unit price award.

** Work completed but contract terms provides for final payment on July 1, 1949.

COST

REPORTS

The April Cost Report was completed and distributed on May 13, 1949 which is the earliest date we have been able to distribute the report.

We are able to estimate accurately enough our assessments to other Divisions each month so that distribution of all assessments except work order charges is made by the last day of each current month.

Because of duties involved with the Plant Appraisal Program we were unable to secure certain necessary information from the Results Engineer in order to issue the April Utilities Report during May. This will be issued as soon as the information is available.

The Comptroller's Appropriation and Project Report for April was issued on May 16, 1949.

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Community Accounting Division

BUDGET

An analysis of the budget estimate as compared with actual expenditures for the last half of Fiscal Year 1949 is presented as follows:

MONTH	ACTUAL EXPENDITURES	BUDGET ESTIMATES	MONTHLY OVER-UNDER	FISCAL YEAR TO DATE OVER-UNDER
January	268,209	182,608	85,601 (over)	85,601 (over)
February	239,405	172,610	66,795 (over)	152,396 (over)
March	188,200	158,548	29,652 (over)	182,048 (over)
April	75,908	151,722	75,814 (under)	106,234 (over)
May		154,225		
June		154,225		

As indicated above, we are now $106,234 over our budget with $308,450 budgeted for the remaining two months of fiscal year 1949. We have, therefore, a real budget of $202,216 to adhere to for May and June.

It is interesting to note the sharp decrease in expenditures during the last two months. If nothing unusual occurs, it is expected that we will be able to keep our expenditures within our yearly budget estimate.

The Operation Budget for fiscal years 1950 and 1951 was prepared in accordance with instructions as issued and forwarded for distribution on May 23, 1949. A number of unforeseen difficulties occured which delayed the preparation. However, the mid-year review and future budget preparation should flow more smoothly.

The 1950 fiscal year budget figures are being pro-rated on a monthly basis for use on the Monthly Cost Reports.

The Construction Budget and accompanying Preliminary Project Proposals were prepared and distributed on May 23, 1949.

GENERAL

Service or Patrol orders have never been "costed" individually to date but because of further requests from the Public Works Division, we are working out a procedure for this to be done beginning July 1, 1949. This is expected to be done without increasing the present IBM working force.

A review of our present work order procedure was made and revisions will be effected to give further information concerning work backlog and work order estimates will be tied into the budget on a commitment basis.

On May 12, 1949 a suspense code was opened in order to accumulate all charges as the result of flood control work. Disposition of these charges will be determined at a later date after all charges have been made.

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Community Accounting Division

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On May 24, 1949 a suspense code was opened to accumulate the cost of materials withdrawn from surplus or excess by the A.E.C. for donation to Community organizations - primarily the swimming pool. These accumulated charges will be transferred to the A.E.C. at the end of each month.

There were 1,231 work orders active during May which is an increase of 95 over the month of April. However, there were only 977 orders received in May as compared to 1,200 being received in April.

GENERAL LEDGER

The April trial balance and supporting financial statements were forwarded to the General Division for consolidation on May 12, 1949.

STATISTICS

	NO.	AMOUNT
Second class invoices received	87	$6,628,239.75
Second class invoices issued	38	147,063.51
Public vouchers forwarded for Government billing	24	49,942.21 Cr.

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DESIGN DIVISION

MAY, 1949

PILE AREA "G" - PROJECT C-300

An Interim Progress Report of the design and development of pile area "G" summarizing results and recommendations was issued May 24 (HDC 1176). The purpose of this report is to present to other divisions of the Nucleonics Department, and to the Atomic Energy Commission, the results of engineering studies to date, together with Design Division recommendations concerning proposed objectives. It was submitted as a basis for discussion and comment by all parties concerned. After this report has been reviewed and agreement has been reached concerning the design objectives, it is intended that this report as modified will then form the basis of a Part II of the project proposal in which funds will be requested for continuation of this work during the fiscal year 1950.

During the month considerable effort was devoted to establishing the design feasibility of a higher power reactor. Methods employed and the results of the calculation are presented in HDC-1176, Section "C." An 800 Mw power level appears feasible and represents a minimum of calculated departure from present pile geometry. A favorable design combination for the 800 Mw level reactor is an approximate 2% increase in tube diameter, and a 10% increase in the number of process tubes. The water plant capacity would be 64,000 GPM.

Since water plant requirements are to be increased from 40,000 GPM to 64,000 GPM, efforts of the Mechanical, Power and Water Group are being directed toward quickly concluding all work directly affected by the 40,000 GPM quantity in preparation for the restarting of this work when the new process water requirements are officially published. No effort will be lost due to this change as almost all work which cannot be used in the 64,000 GPM plant will be incorporated in the specifications for the 100-DR water system.

It is estimated that expenditures as of June 1, totaled approximately $150,000 and that the balance of the $250,000 originally authorized will be adequate to finance the project until August 1, 1949.

WATER PLANT STUDY - PROJECT C-307

Final reports on the gravity supply system and the recirculation system were received from Giffels and Vallet late in May. The report on the conventional system is expected early in June. Giffels and Vallet representatives will be here June 14 to 17 to discuss the three reports with Hanford representatives, following which, the project is to be closed.

PILE AREA "H" - PROJECT C-165-A

A detailed check on all circuits and functions of the new electrical horizontal rod drive being installed in the 105-H Building was made during the writing of a complete test procedure. Every effort is being made to provide the field with information that will enable this drive to be placed in service easily, properly and quickly, and with freedom from initial troubles. The test drive in 105-B Building has shown up a few minor weaknesses in equipment detail, which are being eliminated in the 105-H installation, but it has also demonstrated that the system is capable of performance far above that of the hydraulic drive in speed and flexibility.

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In accordance with a request from the General Manager, Nucleonics Department, a detailed estimate of the cost to complete construction of the 100-H Area was submitted on May 6. The estimated cost to complete was $36,166,118. The total cost of the project was estimated to be $81,808,594.

REPLACEMENT PILE "DR" - PROJECT C-206-A

The design for repair work on 107 DR Basin has been completed and construction is proceeding. Difficulty is being experienced in the procurement of sealing compound.

Work is continuing on the completion of "as built" drawings.

"DR" WATER PLANT DESIGN - STUDY GEO-7

At the request of the Atomic Energy Commission, a preliminary cost estimate and scope of work was prepared which outlined the additional facilities required for simultaneous operation of the "D" and "DR" reactors. The Commission issued a letter May 19, 1949, requesting that a project proposal covering detailed design of the "DR" water plant be prepared and submitted by July 1. Work on the preparation of this project proposal is in progress.

A study of the power supply and communication problems in connection with the propose added water buildings in the 100-D Area is in progress. It has been determined that the temporary substation has sufficient capacity in transformers and switchgear provided the old refrigeration feeder breaker positions can be used. One of the transmission lines into the substation will probably have to be relocated.

ENLARGED 251 SUBSTATION - PROJECT C-295

Architectural drawings on the substation building were completed, and the piping and electrical drawings for the building itself advanced to 80% completion during the month. Recommendations were made relative to the scope of the work to be performed by the electrical contractor and the General Electric Company on the station. In the scope write-up it was pointed out that the station is in operation, is supplying power to the 200 Areas, and contains equipment at high voltage; consequently, detailed planning and great care should be exercised during the performance of the work to prevent danger to personnel and possible interruptions of service to operating areas.

234-5 BUILDING PROGRAM - PROJECT C-198

During the month, thirteen design changes were requested. Of these, six were authorized, one rejected and six are being investigated.

RALA PROGRAM - STUDY GET-12

Preliminary design is essentially complete on Cell A equipment and a tentative Cell A arrangement and piping plan has been prepared. Preliminary design of Cell B equipment is underway.

Drafting board studies are continuing as to possible methods of modifying the existing 221-T Building ventilating system so as to exhaust the exhaust gases from the Rala process up the existing elevated stack. A figure of 60,000 CFM of dilution air has been requested by the Contact Engineer.

Experimental determinations of the characteristics of the existing ventilating equipment were started during the month of May. This work is being continued into June.

Studies have also been made to determine the probable sizes and locations of various proposed pipe lines which will be required outside of the 221-T Building for the operation of the Rala process. These studies included the design and location of the necessary junction boxes.

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HW 13561

PROJECT & RELATED PERSONNEL - MAY 1949

	4-29-49		5-31-49	
GOVERNMENT EMPLOYEES				
Civilian Personnel - Atomic Energy Commission	334		333	
Civilian Personnel - G. A. O.	8		8	
Total		342		341
RICHLAND VILLAGE PERSONNEL				
Commercial Facilities (Includes No. Richland)	1,387		1,313	
Organizations, Clubs, Etc.,	98		97	
Schools	355		367	
Churches	24		24	
Total		1,864		1,801
MORRISON-KNUDSEN PERSONNEL (Columbia Camp)		196		151
CONSTRUCTION SUB-CONTRACTORS				
Atkinson-Jones	4,488		3,345	
Newport, Kern & Kibbe	5		-	
Newberry Neon	558		599	
Urban, Smyth, Warren Co.,	1,509		1,287	
J. P. Head Co.,	3		2	
Kellex Corp.,	638		310	
J. Gordon Turnbull	127		125	
Giffels & Vallet Inc.,	184		184	
Morrison-Knudsen Co.,	310		264	
C. C. Moore	45		55	
Curtis Sand & Gravel	33		35	
National Carbon Co.,	283		300	
Trowbridge & Flynn Elect. Co.,	7		7	
J. A. Terteling & Son	307		159	
Graysport Construction Co.,	95		-	
Holert Electrical Co.,	2		-	
McNeil Construction Co.,	87		38	
Arnold & Jeffers Co.,	4		-	
Fox Metal Products	2		-	
West Coast Painters	3		-	
Haughton Elevator Co.,	6		5	
E. J. Bartells Co.,	31		28	
Howard P. Foley Co.,	17		2	
Combustion Eng. Co.,	1		1	

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	4-29-49		5-31-49	
CONSTRUCTION SUB-CONTRACTORS				
Hanley & Co.,	4		-	
Anning-Johnson	11		-	
National Blower & Sheetmetal	19		14	
United Refractory & Construction	12		15	
Warsaw Elevator	3		3	
Swanson & Lyle	13		-	
Jaggar-Sroufe Co.,	7		7	
Total		8,832		6,797
GENERAL ELECTRIC PERSONNEL		7,518		7,382
GRAND TOTAL		18,752		16,472

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