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MONTHLY REPORT

GENERAL ELECTRIC FUELS PREPARATION DEPARTMENT

APRIL 1958

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MONTHLY REPORT

FUELS PREPARATION DEPARTMENT

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FOR

APRIL, 1958

Compiled by

Fuels Preparation Department

May 15, 1958

Richland, Washington

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FUELS PREPARATION DEPARTMENT
MONTHLY REPORT SUMMARY FOR
APRIL, 1958

MANUFACTURING OPERATION

During the month the Manufacturing Operation worked on a two-shift basis. Five canning lines per shift were operated except for thirteen days when only four canning lines per shift were operated. Six hundred forty-six (646) tons of acceptable fuel elements were produced which was 109% of the 595 tons forecast in HW-54606-RD. The variance from forecast resulted primarily from solid and I & E fuel element yields above forecast.

The manufacturing yield for solid fuel element production was 89.1% in April compared to 86.1% in March. The manufacturing yield for I & E fuel element production increased to a new high of 85.1% in April. The yield in March was 80.1% which was the previous high yield.

Operating efficiency in April was 93.0%. Although lower than the record high of 94.7% in March, it was well above the forecasted operating efficiency.

The inventory of bare uranium at the end of April totaled 516 tons or a 1.0 month supply. Finished inventory in the 100-300 Areas increased by 222 tons to 740 tons or approximately a 1.4 month supply.

On April 4, approximately eleven canning line hours of production time were lost due to an unusually high content of sand in the process water supply.

An Official Production Forecast, Fuels Preparation Department, May - 1958 through September - 1959, was issued on April 18, as document number HW-55761-RD.

ENGINEERING OPERATION

Abnormally high failure rates have occurred in M-388 clad solid pieces. It is believed that this may be attributed to weak or brittle bonding. To overcome this problem, a vigorous pilot plant effort in process improvement was carried out. Goal exposures of M-388 material already charged were reduced to 400 MWD/T to control ruptures in reactor inventories. High failure rates in enriched 6" I & E elements have also been experienced. This is attributed to the very severe reactor exposure conditions undergone by these elements. More rigid testing standards are now applied to eliminate marginal elements.

Arrangements have been completed with the American Bearing Corporation to produce 1000 C size I & E fuel cores by precision pressure casting. An

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irradiation test utilizing this material will be initiated if the quality appears satisfactory. An initial run was carried out by the Hunter Douglas Corporation to cold extrude uranium tubing directly to I & E size with promising results.

A number of tests are underway for NPR elements to further explore their performance under aggravated conditions. These include both aluminum clad (special alloys) and zirconium clad elements. Of particular interest is the successful operation, under extremely severe exposure conditions, of ten 1.6% enriched, hot pressed, washer elements clad in A-2 alloy. These were charged into a high flux zone and were generating about 1000 KW. Maximum specific power was 170 KW/ft, with core temperature of about 540 C. Exposure was about 200 MWD/T at the time of writing and was increasing at about 20 MWD/T per operating day.

Building 306 Pilot Plant modification for extrusion cladding is under consideration and a draft of the project proposal has been prepared. An exploratory trip to search for a suitable press was successful; several good presses were located which could be delivered on a short time schedule.

All design, project and construction work was on schedule and within costs.

FINANCIAL OPERATION

The first of a series of ten weekly sessions on the subject "An Introduction to Finance" was held on April 17. These sessions are being conducted for the benefit of non-financial management in order to give them a better understanding and appreciation of the Financial function within the Department.

Initial work was underway in connection with the scheduled inventory of installed plant and equipment.

Physical inventories of Coal and Special Materials were completed. No adjustment is contemplated for the variance in the coal inventory (surplus of 163 tons). Variance of 2.7 grams of platinum, due to a weighing difference, was adjusted in the records.

The quarterly Productivity Report indicated a productivity gain of 22% over the quarter ended December 31, 1957. This gain is attributed to improved yield experience coupled with lower operating costs.

MAINTENANCE & POWER OPERATION

There were six cost reductions submitted, representing a total savings for the quarter of \$4,520. This amount represents 22% of quarterly cost reduction budget and brings the total savings realized to 30% of annual budget.

Tie-ins to the 300 Area service lines for PRTR and PFPP are approximately 85% complete. The tie-ins were accomplished with a minimum of interruption to normal area operation.

On April 4 a serious water supply pollution incident occurred which adversely affected the entire 300 Area. The water was immediately declared unfit for consumption and corrective steps were taken. Tests by Public Health released the water for consumption on April 8.

A riser has been installed 36" above the floor of the ground storage tank. All 300 Area water is now passed through the reservoir prior to its delivery to the Area. This permits the majority of the sand entering the area in the supply water to settle out in the ground storage tank.

EMPLOYEE RELATIONS OPERATION

The first of a series of six planned seminars on Wage Administration was held April 11, covering the topic of General Wage Theory. This series is a HAPO-wide effort, being coordinated by Fuels Preparation Department; the first seminar was conducted by A. J. Scott.

The effectiveness of the General Manager's round table meetings with small groups of non-exempt employees has been further confirmed through anonymous survey. The frequency of this type meeting is being increased from one to two such meetings monthly to accelerate rate of coverage.

Thirteen grievances were processed at Step I during April, four of which were answered satisfactorily at Step I. Of the grievances, eleven involved jurisdiction, one overtime and one concerned transfer.

An arbitration hearing was conducted April 19, in Portland, concerning the James grievance. The case was heard by a panel consisting of Paul L. Kleinsorge - University of Oregon, W. M. Mathis representing General Electric, and H. L. Shelton representing the HAMTC. A decision has not been rendered as yet.

A canvass of Department employees who were not participating in the Stock Bonus Plan has resulted in an increase in participation from 55.6% to 60.2%, at the end of April.

The Department has operated 607 consecutive days without a disabling injury. The medical frequency rate for April increased sharply to 6.13 as compared to 4.25 in March. An analysis of injuries revealed that over 25% of the total were eye injuries caused by wind blown particles -- an unusually high experience when compared to prior months and years. There were no serious accidents or fires during the month.

PERSONNEL STATISTICS:

Number of employees March 31, 1958
Number of employees April 30, 1958

763
762

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<u>OPERATION</u>	<u>EXEMPT</u>	<u>NON-EXEMPT</u>	<u>TOTAL</u>
General	1	1	2
Manufacturing	57	298	355
Engineering	49	26	75
Financial	15	22	37
Maintenance & Power	39	230	269
Employee Relations	<u>14</u>	<u>10</u>	<u>24</u>
TOTAL	175	587	762

LL German
 General Manager
 Fuels Preparation Department

LLGerman/jak

MANUFACTURING OPERATION

April, 1958

I. CURRENT OPERATIONS

A. Production and Productivity

1. Statistics

	8"	Enriched		I & E	Total
	Solid	Solid	I & E	I & E	
<u>Current Month's Production</u>					
Acceptable Fuel Elements Produced (Tons)	394	9	28	215	646
As % of Forecast Production	131	90	80	86	109
As % of Past 3 Month's Production	104	69	117	121	108
Average					
As % of Past 12 Months' Production	86	82	280	321	114
Average					
As % of June 1958 Goal (500 MWD/Ton)	143	23		107	96
As % of June 1958 Goal (750 MWD/Ton)	394	36		72	144
% of Forecast Achieved - Last Fiscal	114	130	80	88	104
Quarter					
% of Forecast Achieved - Last 4 Fiscal	108	96	73	93	105
Quarters					
<u>Operating Efficiency</u>					
Current Month (%)					93
Forecast (%)					90
Previous Month					95
<u>Manufacturing Yield</u>					
Current Month (%)	89	84	90	85	
Forecast (%)	82	82	67	67	
Previous Month (%)	86	79	77	80	
Bare Uranium in Storage (Tons)	275	11	35	216	537
Finished Product in Storage (Tons)	390	15	25	310	740
Special Products Finished (Pieces)					505
Uranium Utilization (%)					95.2

2. Activities

a. Production

During the month the Manufacturing Operation worked on a two-shift basis. Five canning lines per shift were operated except for thirteen days when

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a. Production - continued

only four canning lines per shift were operated. The curtailment of one canning line per shift for the thirteen days was made so that some of the available manpower could be used for fuel reclamation activities such as re-welding and re-etching. Some of the manpower was used to man a second shift for one week in the pilot plant to provide processes necessary to study brittle bonding.

Six hundred forty-six (646) tons of acceptable fuel elements were produced which was 109 percent of the five hundred ninety-five (595) tons forecast in HW-54606-RD. The variance from forecast resulted primarily from solid and I & E fuel element yields above forecast.

b. Manufacturing Yield - Solid Production

The manufacturing yield for solid fuel element production was 89.1 percent in March compared to 86.1 percent in April. This gain in yield was caused primarily from a decrease in braze layer contamination rejects, and surface rejects.

Component preparation rejects decreased from 0.8 percent in March to 0.7 percent in April.

Assembly rejects decreased slightly from 1.5 percent in March to 1.2 percent in April.

Braze layer integrity rejects decreased slightly from 3.2 percent in March to 2.9 percent in April.

Braze layer contamination rejects decreased from 1.7 percent in March to 0.2 percent in April and were due in most part to the re-weld procedure in the Special Canning Operation.

Thin wall rejects decreased from 0.6 percent in March to 0.5 percent in April.

Marred surface rejects increased from 3.1 percent in March to 3.4 percent in April.

Facing rejects remained at 0.0 percent in April which was also the percentage in March.

Welding rejects decreased slightly from 0.6 percent in March to 0.3 percent in April.

Surface rejects decreased from 2.4 percent in March to 1.7 percent in April due to the re-etch procedure.

c. Manufacturing Yield - I & E Production

Yield for I & E fuel element production increased to a new high of 85.1 percent in April. The yield in March was 80.1 percent which was the previous high yield. April was the third consecutive month in which a new

c. Manufacturing Yield - I & E Production continued

I & E yield record has been established. Improved yield was primarily the result of decreased reject rates in assembly, braze layer integrity, and thin wall categories.

Component preparation rejects decreased from 0.4 percent in March to 0.2 percent in April.

Assembly rejects decreased from 3.6 percent in March to 2.5 percent in April due in most part to improvement of canning operator skill.

Braze layer integrity rejects decreased from 3.2 percent in March to 2.0 percent in April due in most part to decreased production of X-8001 clad fuel elements.

Braze layer contamination rejects decreased from 0.5 percent in March to 0.0 percent in April due to the re-weld procedure in the Special Canning Operation.

Thin wall rejects decreased from 5.3 percent in March to 3.4 percent in April primarily because of no large incident of internal thin wall rejects.

Marred surface rejects increased from 3.2 percent in March to 3.5 percent in April.

Facing rejects decreased from 1.1 percent in March to 0.8 percent in April.

Welding rejects decreased from 1.1 percent in March to 0.9 percent in April.

Surface rejects increased slightly from 1.5 percent in March to 1.6 percent in April.

d. Manufacturing Yield - Enriched Production - I & E

Enriched I & E fuel element yield increased from 76.6 percent in March to 89.9 percent in April. The gain was a result of decreased reject rates in the assembly, braze layer integrity, thin wall, facing, and welding categories.

e. Manufacturing Yield - Enriched Production - Solid

Enriched solid fuel element yield increased from 78.6 percent in March to 83.8 percent in April. The increase was due to less braze layer integrity rejects, and braze layer contamination rejects.

f. Other Activities

The inventory of bare uranium at the end of April totaled 516 tons or a 1.0 month supply. The inventory has increased in keeping with the wishes of the AEC that HAPO retain a large quantity of bare material in storage in order to minimize the chance of interruption of fuel element production as a result of short production outages at the National Lead Company of Ohio.

f. Other Activities - continued

Finished inventory in the 100-300 Areas increased by 222 tons to 740 tons or approximately a 1.4 month supply. The increased supply occurred in both solid and I & E inventories, with the latter reaching approximately 310 tons. It is planned to allow finished inventory to remain at approximately this level in order to provide an adequate supply of finished fuel elements during the installation stages of CG-713 - Conversion to I & E Lead Dip Fuel Elements - when production capacity may be limited.

Reporting of monthly supply of essential materials has been discontinued in favor of a monthly and yearly essential material inventory turnover rate which is considered a better measurement tool. These rates may be compared with material inventory turnover rates attained by other General Electric Company Departments. The estimated dollar turnover of essential materials for the month of April was about one-fourth or a projected annual turnover of 2.9. Turnover in this case is calculated by dividing the value of material used during the month by the value of essential material on inventory at the end of the month. The projected annual turnover is found by multiplying the quotient by twelve.

The following fuel elements were processed through the Fuel Recovery Operation during the month:

	<u>Pieces</u>
Solid 8"	17,980
I&E "C" 8"	14,570
I&E "K" 8"	3,149
I&E "O" 8"	199
Solid 6"	1,970
I&E 6"	4,242
Solid 4"	384
	<hr/>
	42,494

No shipment of uranium scrap was made during the month.

B. Plant Problems and Incidents

1. General

Operating efficiency for the month was 93.0 percent. Although lower than the record high of 94.7 percent in March it was well above the forecast operating efficiency.

2. I & E Fuel Penetration and Bond Test Operation

The 12-8 shift for operation of the I & E penetration and bond test equipment has been discontinued. This was made possible by the operation of the third I & E penetration and bond tester installed during the latter part of March.

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3. Burial of Depleted Uranium

During the month, 286 barrels of depleted uranium scrap were received from the University of California Radiation Laboratories and placed in the Hanford Laboratories Operation north burial ground.

4. Process Water Supply

On April 4, 1958, approximately eleven canning line hours of production time were lost due to an unusually high content of sand in the process water supply. The incident began at approximately 10:00 a.m. It was necessary to remove the sand and water from process equipment before production operations could be resumed.

5. Fuel Element Failures in the Autoclave

Two fuel elements failed in the autoclave operation during the month. On April 4, 1958 an 8-inch "C" size I & E (1245) failed due to a pin hole in the cap weld bead. On April 24, 1958 an 8-inch solid (X-8001) failed due to a pin hole in the weld bead.

The 8-inch "K" size I & E (X-8001) fuel element that failed on March 17, 1958 had a crack in the cap weld closure area. The crack extended into an internal void area in the weld bead. A non-wet cap surface completed the entry path to the bare uranium.

C. Operating Plans

1. Four-Inch Solid Production

Production was started on 10,000 pieces of four-inch solid fuel elements. This quantity of four-inch fuel according to present known requirements should be sufficient to meet IPD needs through the calendar year. The fuel is used to charge certain reactor process tubes that because of distortion do not accommodate the eight-inch fuel element.

2. Official Production Forecast

The latest Official Production Forecast, Fuels Preparation Department, May 1958 through September 1959 was issued on April 18, 1958 as document number HW-55761-RD. It supersedes the Official Production Forecast, Fuels Preparation Department, January 1958 through June 1963, document number HW-54606-RD for the period of May 1958 through September 1959. In HW-55761-RD two cases are given. The production schedule in Case I is based on irradiation of I & E fuel elements to 800 MWD/ton. The production schedule in Case II is based on irradiation of I & E fuel elements to 650 MWD/ton. For the period of May 1958 through June 1959 the Irradiation Processing Department's requirement for all fuel elements using irradiation of I & E fuel elements to 800 MWD/ton is approximately 10 percent less than requirements as shown in HW-54606-RD using irradiation of I & E fuel elements to 650 MWD/ton.

3. Bond Test Quality Control Standards

To further guarantee bond quality of the finished fuel element the bond test quality control standard has been tightened for all products. The rejection limit has been changed from 1.05 cm. maximum to 0.75 cm. maximum measured along the circumference of the fuel element. In addition, for the I & E enriched fuel element a standard has been established for total unbonded area. The total unbonded area standard is designed to reject fuel elements having clusters of individual small unbonded areas.

D. Employee Relations

Members of the Operation were treated for 35 medical treatment injuries for a frequency of 5.84.

The frequency of exposures greater than 200 mrad per two-week badge period was 1.0. The frequency of exposures greater than 100 mrad per two-week badge period was 14.5.

II. PERSONNEL MATTERS

A. Visits and Visitors

Mr. Amos Van Vorst, Edgewater, New Jersey, and Mr. John Finley, Seattle, Washington, representatives of Alcoa, visited J. E. Bergman April 29 and 30 to discuss aluminum component quality problems and cost improvement.

D. L. Cornell, R. O. Budd, J. R. Killen and W. R. Krehbiel attended the Northwest Regional Conference of the American Society for Quality Control, Seattle, Washington April 11 and 12, 1958. W. R. Krehbiel gave a talk entitled "Quality Data Feedback System with Electrical Reporting".

Mr. K. W. Kepner of the General Electric Company, San Jose, California, visited the Manufacturing Operation on April 24 and 25, 1958 to discuss fuel element fabrication.

W. M. Mathis attended an Arbitration Meeting in Portland, Oregon on April 19, 1958.

On April 22 - 25, 1958 R. R. Cahall visited the General Electric Company in St. Petersburg, Florida.

W. G. Tews attended the American Chemical Society Convention, San Francisco, California on April 14 - 18, 1958.

B. Reports of Invention

Members of the Operation 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 April, 1958.

C. Meetings

Members of the Operation attended 23 staff meetings, 15 safety and security meetings and 10 information meetings.

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D. Significant Reports Issued

1. Routine

<u>Number</u>	<u>Title</u>	<u>Author</u>	<u>Date</u>
HW-54445-RD	Monthly Production and Inventory Report, FPD-Manufacturing Operation, March 1958	HP Kraemer	4-7-58
HW-55554	Monthly Report, Quality Control Operation, Fuels Preparation Department, March 1958	KV Stave	4-1-58
HW-55572	Uranium Quality Control Analytical Results	GB Hansen	4-2-58
HW-55637	Production Report, FPD-Manufacturing Operation, Month Ending March 31, 1958	HE Berg	4-8-58
HW-55761-RD	Official Production Forecast, FPD, May 1958 Through September 1959	HE Berg	4-18-58
HW-55815	Uranium Core Requirements, FPD, May 1958 through September 1958	HE Berg	4-21-58
HW-55847	Uranium Quality Control Analytical Results	GB Hansen	4-25-58
HW-55851	Fabrication History of Uranium Cores, March 1958	RE Olson & DF Miller	4-24-58
HW-55885	General Analytical Control Program I	GB Hansen	4-29-58

Manager - Manufacturing

WM MATHIS:RRC:rhs

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LEGEND

SOLID
1957

1958

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PREPARED BY G.X. 77-100

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8" CANNING REJECTS
BREAKDOWN BY MAJOR CLASSIFICATIONS

LEGEND

1957
1958

1958

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ENGINEERING OPERATION

April, 1958

VISITORS

<u>Name</u>	<u>Company</u>	<u>Contact</u>	<u>Date</u>	<u>Reason</u>
Lou Coffin	GE Res. Lab., Schenectady	HF Zuhr	4-16/17	Fuel element re-search & development consultation.
JM Simmons	Div. of Reactor Development, AEC, Wash.	RS Paul	4-24	Discuss AEC non-destructive testing programs.
ZD Sheldon	GEL, Schenectady	PH Reinker	4-28 thru 5-6	To consult with HAPO managers of Engineering components.

TRIPS

<u>Name</u>	<u>Company Visited</u>	<u>Contact</u>	<u>Date</u>	<u>Reason</u>
HF Zuhr	AEC Headquarters, Wash. DC	WJ Lindsay	4-2/3/4	Discuss fuel element production.
SM Gill	Oregon Metallurgical Corp., Albany, Oregon	SM Shelton	4-14	Discuss casting of uranium
	MCW-Weldon Springs, Mo.	JA Fellows	4-21	Attend Working Comm. of the FEDC.
	American Bearing Corp., Indianapolis, Indiana	H Lambertus	4-25	Discuss progress on uranium casting contract.
GW Riedeman	Hunter Douglas Aluminum Corp. Riverside, Calif.	RA Quadt	4-20 thru 5-5	Oversee uranium extrusion and investigate sources for Al fabrication.
AJ Karnie	Tippins Machinery, Pittsburgh, Pa.	G. Tippins		
	Feller Eng'g. Co., Pittsburgh	EG Klein	4-6	Extrusion press
	Sutton Eng'g. Co., Bellefonte, Pennsylvania	D Russell	thru 4-16	Availability
	Watson Stillman Div., Rochester, N.Y.	AJ deMateo		
	Lake Erie Eng'g., Buffalo, NY	L. Coleman		
	Loewy Hydropress, NY, NY	HG Mayer		
	Eagle Picher Lead, Dover, NJ	Plant Mgr.		

TRIPS (cont'd.)

<u>Name</u>	<u>Company Visited</u>	<u>Contact</u>	<u>Date</u>	<u>Reason</u>
DC Lehfeldt EN Wells	Verson Allsteel Press Co., Chicago, Ill.	RW Gardner	4-14	Investigate "lost punch" method of cladding fuel elements.
	Vapor Blast Mfg. Co., Milwaukee, Wisc.	HF Patin LC Radway	4-17	Equipment design discussion of the vapor hone machine.
	National Lead Co. of Ohio, Fernald, Ohio	J Mead	4-18	Investigate processing of scrap material.
DC Lehfeldt	ASME Design Conf. & Show, Chicago, Ill.		4-20	Attend conference
CE Fitch CL Frederick	Univ. of Wash. Seattle		4-25	Attend Nondestructive Testing Exposition
PH Reinker	GEL, Schenectady	D Chambers	4-7	Consult with Eng'g. Services
	G.E. Personnel Register, NYC	G Hupman	4-8	

PERSONNEL

<u>Name</u>	<u>Title</u>	<u>Nature of Change</u>	<u>Date</u>
Testing Methods:			
DC Worlton	Engineer	Transferred in from San Jose	4-21
RD McCormick	Rot. Tech. Grad.	Transferred in	4-7
Research & Projects:			
VL Hammond	Rot. Tech. Grad.	Transferred out	4-21
Materials Engineering:			
RE Olson	Engineer	Transferred in	4-1

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PROCESS ENGINEERING

Regular Production Rupture Experience

Twenty-five ruptures, 17 solid normal uranium and 8 enriched (3 solid, 4 I & E, 1 cored) occurred in the reactors during the month. Of the 17 solid normal failures, 3 were classified as core split, 6 as hot spot, 2 as side other, and 6 either unclassified or not examined. Of these failures, 2 were dingot metal and 4 were clad in M-388 alloy jackets. Of the 8 enriched failures, 1 (a solid) was a core split, 3 were side hot spot, 1 was side other and 3 were unclassified. Distribution of failures by reactor was 5 in B, 1 in C, 1 in D, 6 in DR, 1 in F, 5 in H, 5 in KE, and 1 in KW. Four normal uranium failure suspects (3 solid and 1 I & E) have not been confirmed and are not included in the 25 ruptures reported.

I & E Program

Charging of I & E in the C & K reactors continued on schedule. One thousand nine hundred seventy-seven tubes (81% of the central zone loading) have been charged at KE and 1840 tubes (75% of central zone loading) have been charged at KW, without incident. C reactor has been operating with a fully loaded I & E central zone since January without a confirmed rupture. During the month, one tube of I & E was discharged from C reactor at an exposure of 470 MWD/T because of a high pig tail reading. Examination of the discharged fuel elements has failed to confirm a rupture. Old reactor "to-rupture" test at D reactor has reached an exposure of 1220 MWD/T for the I & E and 1120 MWD/T for the solid controls.

The I & E yield in the 313 Bldg. production facility was 85.1% for the month. For the same period the solid yield was 86.1%.

Dingot Program

No dingot charges were loaded during April. Four hundred forty-five tubes of low hydrogen dingot material (solid) have been discharged from DR reactor. Two ruptures were sustained in this material during the month at exposures of 278 and 374 MWD/T. One rupture was a side hot spot and the other unclassified.

M-388 Program

The goal exposure on the in-reactor inventory of M-388 clad solid fuel elements has been reduced to 400 MWD/T because of the abnormally high failure rate (14 to date) of this alloy, particularly in KE reactor. No further charging of solid, M-388 jacketed fuel elements is planned until the problems associated with the high failure rate are resolved. Charging of M-388 clad I & E fuel elements will continue as scheduled in a proportion of about 50-50 with 1245 standard alloy.

Four of the M-388 ruptures have been examined in Radiometallurgy with only slight evidence of intergranular corrosion being observed. Only one of the four pieces examined gave evidence of slight intergranular attack and this did not appear to be the cause of failure on this piece. The failures appear to be predominately in a hot spot area 90 to 180° from the rib marks. Considerable undercutting has been noted between the core and the jacket on the failed pieces which supports

the theory that weak or brittle bonds may be more prevalent on the M-388 jacketed pieces. Process improvements are currently being incorporated in the production process which essentially eliminates brittle bonds and improves the overall toughness of the bond. These are: (1) 6" submerge in lead in duplex bath, (2) higher lead temperature, (3) lower silicon content in the AlSi cover for the lead, and (4) more uniform agitation of the core in the lead duplex bath.

Enriched I & E Fuel Elements

An unusually high number of failures (8) have occurred in 6 inch enriched I & E's. The failures are corrosion type failures and are associated with severe reactor operating conditions (100 KW/ft. specific power and 1200-1300 MWD/T exposure). IPD has taken steps to minimize power peaking in the tubes and FPD is subjecting the I & E enriched fuel elements to more rigid testing standards to reject some borderline fuel elements that may have clusters or bonds of small voids which would normally pass the bond test but which might contribute to hot spots under the reactor operating conditions.

Process Technology

Recovery of I & E Leakers: Over 1500 I & E fuel elements rejected because of AlSi leaking into and filling the inner tube have been recovered in a special furnace designed to melt off the jacket prior to the normal recovery process. This melt-out process replaces the previously used and more costly drilling operation that was performed before normal recovery.

Fuel Element Recovery by Can Melting: Recovery of reject fuel elements by melting off the jackets and recycling the cores directly into the canning bath is being investigated. Examination of the compound layers of 300 fuel elements processed by this method has revealed cracked and excessively thick compound layers. Studies are continuing to overcome this difficulty.

Electron Beam Welding: A \$2,500 contract was initiated with GEL to design magnetically coupled drives for the handling equipment for the electron beam welder.

Sylvania-Corning Fuel Elements Evaluation: A report on the evaluation of the 1500 SCNC hot pressed I & E fuel elements has been completed and jointly authored with IPD. The report will be issued within the next two weeks.

MATERIALS ENGINEERING

Heat Treatment of Uranium

A recent large scale test on dingot uranium reaffirmed the fact that a chloride salt (Nu-Sal) is better than the present lithium-potassium carbonate salt for production test treating. The chloride heat treated fuel cores evolve considerably less hydrogen during canning and many fewer are rejected for bond layer porosity. National Lead Company of Ohio is currently reinstalling an old gas-fired heat treating furnace for further semi-production evaluation of the chloride heat treatment.

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Casting - Uranium Washers and I & E Fuel Cores

Additional washers and massive I & E cores were received this month from the American Bearing Company and examination of these confirmed previous observations. Micro and macro-cracking were found in the washers and some porosity was noted in the massive I & E cores. X-ray diffraction studies of these pieces before and after heat treating show very little preferred orientation. The orientation after heat treating the massive I & E cores is in the same general range as production ingot material after heat treating.

Arrangements have been made with American Bearing to produce 1,000 C-size I & E fuel cores using slightly greater mold preheat to avoid porosity. It is anticipated that these will be at HAPO by July 1, and if the quality appears satisfactory, some of these will be used for a production test of performance under irradiation.

Cold Extrusion of I & E Cores

As previously reported, an arrangement was made with Hunter Douglas Aluminum Corporation to evaluate cold extrusion of uranium tubing directly to I & E fuel core size. This work was started late in the month and two pieces were extruded after some initial delays with a lubricant problem. These pieces display dimensional control within a few mils of I & E tolerances. It is anticipated that the remainder of this effort, extrusion of about fifty more of these short tubes, will be completed in the next two weeks.

Extrusion Cladding

Extrusion cladding tools used for plate cladding development at BMI have been obtained for use at HAPO. Modifications necessary for cladding cylindrical fuel elements are underway, and it is planned to install the tools in the 306 Building, 400-ton vertical press in June. The tools are designed to simultaneously extrude two 2" diameter billets at a right angle to direction of ram travel, using two parallel extrusion stems.

Corrosion testing of eight extrusion clad fuel elements in 95 C 300 Area process water flow tubes was terminated after 19 days exposure. Three to six mils of can wall were corroded away, not significantly different from the three AlSi dip-canned elements used as controls. Accelerated corrosion (pitting and grooving) attack occurred on three of the extrusion clad pieces, while the remainder appeared to perform about the same as the controls. Process data and the metallography results indicate the pitted specimens probably have large grain size jackets; this apparent relationship will be further investigated by metallographic examination of the corroded specimens, since it indicates a potential process problem.

Pilot Plant Activities

The month of April was devoted entirely to development activity to reduce or eliminate brittle bonding in the canning process. Solid fuel elements canned in nickel alloy components are the most susceptible to this canning defect.

Consequently, these fuel elements and components were used as the product in all investigations. Various experiments performed isolated the source of the problem to the duplex preheat processing step.

The principal variations which affected this bonding condition were:

1. Depth of lead cover over cores being preheated in the lead layer
2. Silicon content of the duplex AlSi
3. Duplex temperature
4. Duplex basket design

By optimizing the above variables, it was possible to can fuel elements with greatly reduced bonding frangibility, and in the most recent duplex basket modification to produce a canned element having complete uniformity in bonding appearance over the entire length.

During the week beginning April 7, the pilot plant operated on a two shift basis to accelerate progress in the described development work.

Other activities in this development area involve canning in nickel enriched AlSi and installation of a device to part the AlSi lead interface area for cores as they are removed from the lead to AlSi layer after preheat.

Pilot Plant - Equipment Development

The lead agitator was modified to increase lead cover four inches in an attempt to decrease brittle bonding. Additional modifications were made to the agitator to permit the installation of an interface skimmer designed by the Quality Control Operation.

A five horsepower air compressor has been obtained and is being installed to satisfy the air requirements of vibrating equipment used in canning.

TESTING METHODS

Fuel Element Testing

More restrictive requirements have been applied to the external bondtest to provide greater protection against passing elements with brittle bonds or areas of small voids in the braze layer. The maximum permissible single unbond for all production is now 0.75 cm, rather than 1.0 cm, as measured along the circumference. This action has reduced the total yield about one-half to one per cent.

Total count instrumentation has also been added to the three I & E test stations. This is being used to further segregate about 50% of the 6" I & E enriched elements. Ultrasonic mapping of the "total count" rejects has demonstrated successful detection of areas of general porosity which are ignored by the regular "count-rate" test. Data are being accumulated to determine the optimum segregation point and the applicability to testing other type elements. Laboratory studies are also being made of alternate methods for detecting general porosity based on circuit changes or Lamb Wave transducers.

DECLASSIFIED

HW-55940

Attempts were made to fracture brittle or weak bonds by heat cycling in the autoclaves. No appreciable differences were found in the Bondtest results before and after this treatment.

The transistorized preamplifier installed on the I & E transformation tester successfully eliminated interferences and false rejects caused by electrical transients.

Project CG-713 - 313 Building I & E Conversion

Fabrication and debugging of the major electronic and mechanical components is on schedule with completion of the first complete console unit expected May 15. Assembly of the transducers, final circuit drawings, and manual writing are slightly behind schedule but are not expected to delay installation.

NPR and Category II Development

HW-55912 - Bondtesting Zircaloy Clad Coextruded Fuel Elements - T.G. Lambert, was issued. This study concludes that the present quality of integral end closure zircaloy clad rods requires a test for bond integrity, and that this test may be performed in several ways. A 20 megacycle ultrasonic Lamb Wave system was most sensitive. Internal cracks in the core were also detected by a through transmission test but this requires further development.

The new fully transistorized Metrol Radac Model 300 rod and tubing eddy current testing system was received and placed in operation. It is being used in developing tests for the NMI rods and also for some HLO developmental swaged fuel elements.

New Methods Development

Final results of the X-ray diffraction grain orientation tests failed to show any significant correlation with the prototype Sonic Orientation Resonance Test. The large longitudinal resonance frequency differences as measured by SORT between as-rolled and heat-treated cores did not show corresponding X-ray differences. Suggestions that the SORT differences may be due to residual stresses were examined by testing two as-rolled cores before and after annealing. No observable change was found in either the longitudinal or torsional resonance, and presumably residual stresses do not affect the SORT readings.

Development of the prototype Ultrasonic Attenuation Test continued with attention to crack detection and increasing the signal strength to improve testing of dingot and large grain ingot metal.

A simple thickness meter for zircaloy and stainless steel was devised by adaptation of a Tektronix L-C meter.

Significant results were obtained in the inductive thermometry bondtesting study. By heating fuel elements in an induction heater and passing them by an eddy current probe, hot spots were successfully detected over regions of poor

bonding. The surface temperatures over unbonds were found to be up to 50°F higher than normal jacket temperatures. This method gives promise of yielding very useful information regarding bond quality.

Hanford Test Reactor

Metal testing continued routinely. Several special tests were completed including measurement of the relative power generation of 1.7", 1.6% enriched, I & E elements in a KER loop mockup. A complete control rod calibration was completed in two days. The results were in good agreement with the original calibration and no changes are required in existing calibration charts.

Several circuit improvements were made to the sub-critical neutron flux monitor. This equipment is operating satisfactorily in the laboratory and is now ready for further reactor tests and installation.

RESEARCH & PROJECTS

Status of Projects

CG-713 - Conversion to I & E Lead Dip Fuel Elements: Fabrication by vendors is on schedule. Fabrication by Minor Construction is also in progress. Installation by M.C. on fixed-price basis is scheduled to start 6-6-58.

CG-759 - Additional Steam Generating Facility: Invitations to bid on the design and construction of the proposed facility are scheduled to be opened 5-22-58. A large number of bidders has requested site visits thus far.

CA-774 - 300 Area Water System Modifications: Architect-Engineer drawings have been submitted for AEC approval. Review is in progress. Specifications to follow early in May.

CG-787 - Sprinkler System - 313 Building Addition: G.E. prepared criteria and special conditions for a fixed price contract being reviewed by the AEC. Bid invitations anticipated toward the end of May. Estimated project cost is \$49,000.

CAF-792 - Warehouse Space - FPD: The AEC is preparing Work Authority for installation of prefabricated building equipped with sprinkler system and unloading facility. Estimated project cost is \$61,000. Completion of criteria by G.E. anticipated during week of May 12.

306 Semi-Works Plating Facility: A study is in progress to determine the feasibility of increasing the capacity of the existing plating facility and adapting it for plating tubular shapes. A report was prepared stating that this increase can be made. A cost estimate is in progress.

Hot-Press Canning: A study is underway to determine the economics of converting existing facilities to the hot-press method.

306 Building Pilot Plant Modification: A draft of a project proposal for installing an extrusion press in the 306 Building has been prepared. It is scheduled for routing during the early part of May. An exploratory trip in search of a suitable press for this project was made. Two good presses were located for short delivery - a 2200 ton Watson-Stillman which could be delivered in 24 weeks and a 2750 ton Schloemann rod-and-tube press with mandrel cooling and turning device.

Research and Development - Irradiation Testing

A. Status of Test Facilities

Loop 1 - The 7-rod zirconium clusters are ready for charging into this loop as soon as the production test is signed and the loop is operating satisfactorily. Four rod stainless steel clad cluster elements are still being irradiated; exposures about 650 MWD/T.

Loop 2 - The loop was charged with ten 1.6% enriched hot press canned washer fuel elements clad in A-2 alloy. The charge was placed in a high flux zone and is generating about 1000 KW. The maximum specific power is about 170 KW/ft, which will give a core temperature of about 540 C. The exposure is about 200 and is increasing at the rate of 20 MWD/T per operating day.

Loop 3 - This loop continued to operate with 4-rod stainless steel clad cluster elements. The current exposure is about 1600 MWD/T.

Loop 4 - Operation continued without incident. Exposure is about 300 MWD/T of 1.6% enriched hot press washers.

Research and Development - Fuel Element Development

A. Aluminum Clad

Ten hot-pressed fuel elements clad in aluminum alloy A-2 were charged into KER-2 on 4-18-58. The test is designed to obtain uniform corrosion data. The tests running in KER-2 and KER-4 together will determine the effect of aluminum ion concentration in the coolant on cladding corrosion. Two charges of alloy C-2 are available for charging.

Coupons of aluminum alloys A2 and C2 have reached exposures of 2400 hours in 360 C deionized autoclave water. Examination at 2400 hours is not complete, but at 1900 hours, both alloys still were following parabolic corrosion curves. This means that A2 and C2 are more resistant to intergranular corrosion than X8001.

An Elmo 7 test of fuel elements clad in A1, A2, C1 and C2 aluminum alloys was terminated after 755 hours. Conditions were: 300 C water, pH 4.5 and variable flow. The light pitting corrosion observed at 150 hours had not increased significantly. Mechanical damage to the pieces precludes further testing. Newer elements are being tested under the same conditions,

except that flow has been stabilized at 20 FPS. Exposures have reached 907 hours. As before, the elements showed light pitting at 150 hours; in addition, there is light blistering of alloys A2 and C2.

Aluminum coupons treated to produce cast structures have reached exposures of 1000 hours in 360 C water; they continue to show corrosion resistance which is superior to wrought forms. First results indicate that the coupons can be cold-worked to an undetermined degree without loss of corrosion resistance. Several KER-sized elements with cast structure cladding (Alloys C2 and X8001) have been prepared for flow tube tests.

B. Zirconium Clad

A bar with 20 mils cladding was swaged from .650" diameter to .550" diameter in steps of .025" reduction per pass to observe the effects. Samples were cut after each pass for sectioning and examination. Surface finish after each pass was excellent. No difficulties were observed. The weld closure and end cap were swaged with good results. This method may be used to reduce grain size of the weld area and to insure integrity by eliminating small pinholes or voids in the weld zone.

C. Restraint of Uranium

The zirconium clad restraint specimen charged into the MTR in March is still operating with core and surface temperatures of 425 C and 225 C respectively. Tests to measure the flux for better control of the next specimen was unsuccessful.

D. Diffusion Testing

Diffusion rates of M-388/Ni/U couples are being determined at 400 and 450 C for periods of two, four and six weeks. Similar tests are being conducted using A-2 alloy couples. Aluminum-nickel diffusion rates are also being determined.

DRAFTING & FILES

Major Jobs in Drafting

306 Building:	Electron Beam Welder - Design layouts
313 Building:	CG-713 - miscellaneous changes
	Automatic Facing Lathe Unloader
	Automatic I & E Testers - miscellaneous equipment
	Caps, Cans, Sleeves, revisions and new
	Pickle Tank - Piping, Instrument and Electric
	Pickle Area Conveyor
	Core, Component and Fuel Element master drawings

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HW-55940

Drawings Produced:	New	60
	Revised	65
	Large Charts	3
	Small Charts	45
	Misc.	28

ADVANCED ENGINEERING

HW-55969 "Fuel Element Fabricating and Cladding Processes and Economics, Part I: Aluminum Clad - Metallic Uranium" has been completed and is being readied for formal issuance.

A rough draft of the 1958 Fuel Survey was issued for comments.

An analysis of the manufacture of substantial tonnages of fuel elements of smaller diameter by the lead dip process was completed. Such variation to our product mix can be achieved with tooling expenditures of less than \$100,000 and shop costs per piece comparable with present production.

The Department's contributions to the HAPO Five Year Program Document were submitted to IPD, the compiling Department.

INVENTIONS

All Engineering Operation 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 April, 1958, except as listed below. Such persons further advise that for the period therein covered by this report, notebook records, if any, in the course of their work have been examined for possible inventions or discoveries.

NONE

Manager - Engineering

PH Reinker:mbs

FINANCIAL OPERATION
APRIL, 1958

GENERAL

The first of ten discussion sessions on the subject "An Introduction to Finance" was conducted on April 17, 1958. These sessions are held with non-financial personnel in order to acquaint them with the basic purposes and techniques of the accounting function. Representatives from the various Financial Operations are acting as discussion leaders.

The General Electric traveling auditors arrived at HAPO on March 31, 1958. Their initial audit work in Fuels Preparation Department began on April 10. Assistance rendered them to date includes such as abstracting the general ledger accounts and verification of outstanding cash advances. Copies of all financial reports have been supplied them along with other miscellaneous data. The FPD Internal Auditor has been assigned to work with the traveling auditors.

GENERAL ACCOUNTING OPERATION

General Engineering Laboratory was authorized to expend \$2 500 to accomplish design work on Magnetic couplers for electron beam welders. Work falls within the provisions of Approval Letter 119 - Consulting Work or Other Special Services to be Performed by Other General Electric Company Components as Assistance to Hanford. Other commitments against the FY 1958 allocation of \$35 000 total \$19 400, leaving \$13 100 available for the balance of the fiscal year.

Travel and living expenses reimbursed by the AEC totaled \$4 321, covering settlement of 17 trips on which 93 days were spent in travel status. A comparison with March activity is summarized below:

	<u>April</u>	<u>March</u>	<u>Increase or (Decrease) Over March</u>
Travel advances to employees;			
Balance at beginning of month	\$4 063	\$5 451	\$(1 388)
Current month charges	<u>5 778</u>	<u>3 961</u>	<u>1 817</u>
	<u>9 841</u>	<u>9 412</u>	<u>429</u>
Less:			
Expenses accounted for	4 473	4 377	96
Advances refunded	<u>868</u>	<u>972</u>	<u>(104)</u>
	5 341	5 349	(8)
Balance at end of month	<u>\$4 500</u>	<u>\$4 063</u>	<u>\$ 437</u>
Outstanding travel advances:			
Current	\$4 500	\$4 063	\$ 437
Outstanding over 15 days	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>
	<u>\$4 500</u>	<u>\$4 063</u>	<u>\$ 437</u>
Number of expense reports submitted	25	21	4
Number of Cash Advances	29	17	12

GENERAL ACCOUNTING OPERATION (continued)

The regular quarterly meeting of HAPO OPG representatives was held in April. The Relations and Utilities Operation representative informed the group that they are preparing a plant-wide Security Manual to replace all Security OPGs and Advices. The manual is the result of feasibility studies conducted BY RUO as well as recommendations from other HAPO Departments. The possibility of issuing a plant-wide Safety Manual was discussed; however due to the diversity in safety rules and requirements between Departments, it was decided that it would not be feasible.

A new Advice A 1.9.1, Visits to AEC Offices and Meetings, was issued in April to establish the procedure for notifying both the Department and HAPO General Manager of offsite visits to other AEC installations or formal AEC Meetings.

Approval was received April 29, 1958 for project CAF 792 - Warehouse Space-FPD, authorizing expenditures of \$61 000 for design and construction of a storage facility for essential materials. The project will be managed by the AEC and completion is scheduled for February, 1959.

The estimated quarterly expenditure pattern for equipment was submitted to Contract Accounting on April 21, 1958.

Four appropriation requests totaling \$25 122 were processed and approved during the month. Final approval was obtained for 12 requests processed earlier in the year having a total value of \$72 073.

Pre-inventory work has been started on installed equipment records. Records will be revised to conform with the new Plant Record Unit Catalog.

The Department-wide cross training program was inaugurated during April. The Specialist-Plant and Property Accounting was temporarily assigned to the Maintenance and Power Operation and D. W. Hayes from the Instrument and Electrical Maintenance Operation was temporarily transferred to the Financial Operation to serve as Specialist-Plant and Property Accounting.

Effective April 16, 1958, the Specialist, Reimbursements was transferred to the position Specialist, Payroll Preparation, the latter position being vacated by a transfer to the IPD Financial Operation. Effective May 1, 1958, the business graduate assigned to the General Accounting Operation was promoted to the position of Specialist, Reimbursements.

MEASUREMENTS

The current measures of janitorial productivity and unit costs were analyzed, and improved measures recommended to the Power and Maintenance Operation. The original measure of square feet of floor space cleaned per man year has been changed to man-hours per square foot per year. This new measure which is directly related to payroll dollars provides a measure of applied labor unit costs as well as a more accurate measure of labor productivity.

The addition of a measure of direct operating unit costs per square foot of floor space cleaned was added to the current measure of total unit costs per

MEASUREMENTS (continued)

square foot floor space cleaned. The current method of distributing administrative expense to the janitorial operation distorts the true total unit costs.

Final analysis of contributed value as a functional measure for Manufacturing Operation was completed and recommendations forwarded to the Manager-manufacturing Operation. It was recommended that current measures be continued inasmuch as they provided the same basic data as contributed value. It was further recommended that, output per square foot of Manufacturing floor space and Shop Labor Input Productivity be included as Manufacturing measures.

A study to develop a more meaningful measure of portable instrument repair productivity and unit costs was started during the month. It is anticipated that the study with recommendations will be completed May 30, 1958.

PERSONNEL ACCOUNTING OPERATION

The March, 1958 Consumer Price Index was 123.3. This represents a 7.3% increase over the September, 1955 base index of 114.9, and in accordance with provisions of the Five Year "Better Living" Program increases the "adder" factor to non-exempt salaries 1.77% effective April 28, 1958. Base aggregate annual salaries of nonexempt employees increased approximately \$45 000.

Since September, 1955, the base index year, nonexempt salaries have increased by an "adder" factor of 14.26%. This increase is comprised of two 3% general increases (October 1, 1956 and October 1, 1957) and 8.26% cost-of-living based on the Consumer Price Index.

Participation in the Savings and Stock Bonus Plan increased during April as a result of a promotional campaign conducted by Personnel Practices. There was also an increase in the number of employees withdrawing bonds from the Plan during the first quarter of 1958 as shown by the following schedule:

	<u>No. Employees Withdrawing Savings Bonds</u>
First Quarter 1958	42
Fourth Quarter 1957	27
Third Quarter 1957	29
Second Quarter 1957	31
First Quarter 1957	34

Benefit Payments to FPD employees under the Group Insurance plan for the first four months of calendar 1958 were comparable to the corresponding months of 1957. Payments made during these periods were as follows:

<u>Comprehensive Medical Expense</u>	<u>1957</u>	<u>1958</u>
Claims Paid	490	479
Amount Paid	\$45 106	\$45 190

PERSONNEL ACCOUNTING OPERATION (continued)

<u>Weekly Sickness and Accident</u>	<u>1957</u>	<u>1958</u>
Claims Paid	45	33
Amount Paid	\$1 777	\$2 337

Arrangements were made with Data Processing for a revised Weekly Force Report which eliminated the need for two other reports and simplified the preparation of reports on participation in the benefit plans. The revised Weekly Force Report will also enable Personnel Practices to utilize the information more effectively.

The possibility of preparing payrolls on an exception basis is being studied. In general the system will call for Data Processing to prepare payrolls and checks each week and/or month for fixed amounts for each employee unless notified to the contrary by Personnel Accounting.

PRODUCT COST OPERATION

Considerable time was spent investigating and writing the proposal to dispense with the present work order system and utilize a fixed fee or estimated billing system.

A request was made to Data Processing for a Stores run with description. The tentative date has been advanced from September to May or June. This run is highly desirable in view of the amount of money involved in Stores purchases and the ever-increasing requests for analysis of the account. One problem which should be eliminated or at least partially corrected by receiving this run is the pricing of 401 material on the basis of one or two-year-old Stores catalogues.

A meeting was held with Area Maintenance foremen to review reports and costs. Additional meetings will be held in the near future.

Manufacturing Maintenance began submitting daily time cards April 29, 1958, for the purpose of recording detailed maintenance costs. Data Processing costs will be \$2 600 for the initial programming - \$320 monthly and \$300 for year-end summaries.

Results of physical inventories conducted during March, 1958, were compiled and distributed. The semi-annual physical inventory of Special Materials disclosed a book deficit of 2.7 grams of platinum valued at \$8.00. Difference was attributed to the difference in an assigned weight and actual weight on one pair of tong tips (2.2 grams) and operational losses of .5 gram. Records were adjusted to reflect the physical inventory count.

The annual physical inventory of coal disclosed a book surplus of 163 tons, valued at \$1 270. Previous physical inventories disclose a definite tendency to a surplus (physical over book). Current inventory surplus was the lowest since March, 1954. No adjustment is planned to the coal quantity record.

PRODUCT COST OPERATION (continued)

Present plans include a physical inventory in September of the balance of process materials and a semi-annual physical inventory of special materials. These tentatively scheduled inventories will complete the physical inventory requirements for calendar year 1958.

Unit liquidation values of process materials for the fourth quarter of fiscal year 1958 were calculated and distributed. The liquidation value distributed do not include the current blanket decrease offered by Alcoa, which became effective on May 1, 1958. The reduction by Alcoa was made in order to meet competition and includes the following changes:

1. I & E Caps

- 6¢ reduction on 1245 alloy
- 4% reduction on M-388 alloy

2. Two cents per pound reduction on all types of Cans and regular boss-type caps.

Current month transactions include the transfer of 268 200 Aluminum End Plugs to the Reserve Account at a net book value of \$5 632. Items are related to the Cored program and are considered obsolete.

The productivity report for the first quarter of CY 1958 has been completed and will be issued during the first week of May. Comparison of results for the first quarter of CY 1958 with those for the fourth quarter of CY 1957 indicates a productivity gain of approximately 22%. This productivity gain can be attributed to substantial yield improvements in the two principal products and efficiencies accomplished under the cost reduction program.

Efforts are continuing in the development of a suitable format for reporting profitability on a responsibility basis. To date, individual reports have been prepared for each of the three product departments. These reports are currently being reviewed by the Managers - Finance to determine the feasibility of such a report and the relative ease with which proposed formats can be consolidated into a HAPO summary of operations.

Revised budgets for fiscal year 1959 and for fiscal year 1960 have been completed, using production assumptions contained in Document HW-54946-RD.

Minor adjustments in personnel, salaries, materials and Hanford Laboratories support were made in the Engineering Operation for Process Technology costs. An adjustment was made in salaries and personnel in the Maintenance and Power Operation to reflect the need for less janitor service than originally planned.

Schedules covering total cost and distribution of costs by level 3 components have been prepared for both FY 1959 and FY 1960. In addition, unit cost schedules for both years have been prepared by type of fuel element. The production budget for FY 1959 amounts to \$10 451 000. For FY 1960, budget estimates production cost at \$10 937 000.

PRODUCT COST OPERATION (continued)

At the request of FPD Engineering Operation, direct labor and direct material unit cost information was furnished for each step of the canning line operation. This data was needed to determine the economic feasibility of hot-press canning of uranium fuel elements.

Another special study involved the determination of the economic feasibility of maintaining an inventory of "doe" fuel elements for use in the event of failure of the enriched program. Financially, this program is not worthwhile, due to the high original cost of a doe piece and the fact that recovery costs are equal to or greater than the original cost of this fuel element.

Manager - Finance

WS Roe:mh

MAINTENANCE AND POWER OPERATION

APRIL 1958

GENERAL

Productive Maintenance Program

Outstanding orders as of 3/31	62
Orders issued in April	105
Orders completed in April	108
Orders cancelled in April	2
Outstanding orders as of 4/30	57

There were 6 cost reductions submitted, representing a total savings for the quarter of \$4,520. This amount represents 22 per cent of quarterly Cost Reduction Budget and brings the total savings realized to 30 per cent of annual budget.

To make telephones available for the PRTR construction area, three lines were released by the Maintenance and Power Operation and two lines by the Manufacturing Operation.

The Adams Engineering Company of Spokane was retained on a consulting basis to make a traffic engineering study of the 300 Area Parking Lot. Their recommendations were submitted and have been reviewed in detail by FPD and HLO representatives. Their report has not been accepted in its entirety and, to get further expert opinion on this problem, the University of Illinois, School of Engineering, has been contacted. They have been requested to review the problem and make recommendations. No answer has been received from them to date.

AREA MAINTENANCE

<u>Process</u>	<u>No. of Orders Processed</u>	<u>No. of Copies Made</u>
Multilith	868	298,200
Verifax	108	2,690
Ozalid	75	7,010

There were 7 Formal Reports completed, consisting of 2,059 copies -- 54,249 pages.

The new Ozamatic printer was put into service, replacing the Bambino. The new equipment is working satisfactorily and has reduced the time required to make Verifax reproductions. In addition, the quality of the finished product has been improved and customer costs have been reduced.

The collator was serviced by the multilith factory representative. It has been operating satisfactorily since serviced. A 30-day service schedule has been established to insure continuous satisfactory operation.

General Maintenance

The installation of equipment in the 321 Building, in support of the Darex Project is ahead of schedule. A caustic scrubber, off-gas vacuum pot, caustic constant

head tank, nitric acid constant head tank, plastic lined storage tank and acid receiver tank were installed in support of this program.

A new exhaust duct and filter box was installed in the 325 Building. This installation was required to remove exhaust fumes and potential contamination from a cobalt source.

Tie-ins to the 300 Area service lines for PRTR and PFPP are approximately 85 per cent complete. The tie-ins were accomplished with a minimum of interruption to normal area operation. Future tie-ins of steam, condensate return, air and propane will necessitate shutting down all HLO Buildings. These tie-ins have been carefully scheduled to reduce down time in the Lab Area.

INSTRUMENT AND ELECTRICAL MAINTENANCE

The Portable Shop repaired 1,129 portable radiation detection instruments. Average time per instrument was 1.15 man-hours.

The lighting installation in the 321 Building pipe galleries was completed. In addition, the remote control station for the cutoff saw, located in the canyon of the 321 Building, was completed. This installation permits the operation of this saw from a distance of 15 feet. It is used to cut experimental fuel elements.

The installation of two 256 Channel Analyzers in the 325 and 329 Buildings was completed.

A request was received by the factory representative of the Radiation Counter Laboratories of Skokie, Illinois and the IPD Maintenance Operation that our specialist in the servicing of 256 Channel Analyzers assist them in correcting troubles in the new analyzer being installed in 100-F Area. The specialist located the trouble with no difficulty, in less than 1 man-day. This specialist had attended the RCL Training School on this equipment earlier in the year. The value of this type of training in the maintenance and servicing of specialized equipment of this type cannot be overemphasized.

POWER

<u>Statistics</u>	<u>April</u>	<u>March</u>
Average Steam Generated (M lbs/hr)	43.6	53.3
Maximum Steam Generated (M lbs/hr)	63.0	93.0
Total Steam Generated (M lbs)	32,136	39,632
Coal Consumed (Tons)	2,118	2,620
Evaporation Rate (Steam/#Coal)	7.59	7.56
Efficiency - Actual	58.7%	60.5%
Efficiency - Theoretical	66.8%	66.4%
No. Boilers on 2 3 2 3 2		
Date of Change 1 8 9 21 22		
Sanitary Water from 3000 Area (Million Gallons)	64.5	65.7
Total Water from 3000 Area, Average Rate GPM	1,494	1,471
Total Water from #3 and #4 Wells (Million Gallons)	10.8	12.0
Total Water from #2 Well (M Gallons)	.30	.30
Peak Water Consumption for 24 Hours (Million Gallons)	2.4	2.5

On April 4, 1958 a serious water supply pollution incident occurred, which adversely affected the entire 300 Area. A summary of the incidents which preceded the April 4 condition follows:

1. On Wednesday, April 2, 1958 an 8" valve on the west lateral in North Richland was closed. This valve is located at the intersection of George Washington Way and 9th Street. The 300 Area supply pressure dropped to 0 psi at 12:40 P.M., and remained at zero for one hour.
2. At 11:00 A.M., Thursday, April 3, 1958 the 300 Area supply pressure dropped to 10 psi.
3. At 12:45 P.M., Thursday, April 3, 1958 Construction Operation and the Post Engineer personnel located a 12" gate valve at the intersection of George Washington Way and 9th Street, which was buried and closed. This valve was opened immediately and 300 Area pressure increased to between 45 and 55 psi.
4. At 1:00 P.M., Thursday, April 3, 1958 T. D. Naylor, Supervisor, Quality Control Engineering, was contacted and advised of water supply problems and informed of the potential for turbidity in incoming water.
5. At 8:30 A.M., Friday, April 4, 1958, unknown to 300 Area personnel, the Army Post Engineer personnel opened a 12" main line valve located at the Post high tank on Q Avenue and 8th Street.
6. At 9:00 A.M., Friday, April 4, 1958 a telephone call was received from J. A. Cowan, Manager, Manufacturing Maintenance, stating that the 313 Building turbidity was out of control.

Immediately following the telephone call from the 313 Building, the Maintenance and Power Operation personnel investigated the condition. The Manager, Maintenance and Power Operation condemned the 300 Area water for drinking until Public Health could analyze the situation and release the water. Public Health immediately responded and samples of the drinking water were taken. These initial samples indicated pollution in some zones of the 300 Area. Subsequent sampling permitted full release of the drinking water in the 300 Area on April 8, 1958.

Corrective action included: (1) The 300 Area Fire Protection Operation began flushing the water distribution system through the fire hydrants at approximately 9:30 A.M., on April 4, 1958. (2) Chlorine feed to the 300 Area water system was increased 10-fold to aid in sterilizing the lines. (3) Sanitary drinking water was obtained in stainless steel containers and water barrels from R&U Operation and CEO.

Although the water supply pollution disrupted manufacturing operations (see Manufacturing Operation portion of this report), no cases of personnel being adversely affected have been received.

As a result of opening the valve mentioned in Item 3 above, 300 Area water supply pressure has increased from an average of 45 psi to an average of 55 psi.

The establishment of a right of way to permit the city of Richland or the 300 Area Power Operation to control the valving in the feed mains through North Richland

has been requested. Establishment of this right of way will permit the individual responsibility for the Operation of the 300 Area water supply to control the mains rather than an intermediate (the Army) having this control.

A riser has been installed 36 " above the floor of the ground storage tank. All 300 Area water is now passed through the reservoir prior to its delivery to the Area. This permits the majority of the sand entering the Area in the supply water to settle out in the ground storage tank. Information received from the 313 Building indicates that the sand problem has been greatly reduced; however, until additional storage facilities are available, this procedure will not work during ash sluicing and other high rate consumption periods, such as fire fighting and line flushing in the construction area. Additional storage capacity is included in the 300 Area Sanitary Water System Project (CA-774) which will permit settling of all 300 Area water at all times.

PLANT ENGINEERING

There were 35 training classes held for craftsmen of HLO and FPD. This represents 459 man-hours of craft training. A request was received from IPD to prepare training manuals on the sanitation supplies used in that location. In addition, our training group has been requested to conduct a janitor training course in 100-H Area.

A consultant from the Breslove Separator Company, Pittsburgh, Pennsylvania was retained to study the 300 Area fly ash problem. A report of this study is to be received next month.

FIRE PROTECTION

<u>Fire Responses</u>		<u>Loss</u>
HAPO	1	None
Construction		--
Private		--
Outer Area	1	None

There were no significant fires reported; however, a small amount of uranium was left in a stainless steel pot on a hotplate in the 325 Building on April 5, 1958. During routine fire watch tours, the condition was detected. The uranium had ignited and burned out the bottom of the stainless steel pot. No further fire resulted.

SIGNIFICANT REPORTS ISSUED

Historical Report, 300 Area Water Supply Pollution, 4/4/58 by G. A. Huff
Emergency Procedure, 300 Area Water Supply 4/23/58 by E. A. Pfistor

INVENTIONS

Information concerning the Swaged Thermocouples being tested in the Measurements Lab, Instrument Department, West Lynn, Massachusetts indicated that these thermocouples did not perform as well as their standard junctions. The effect of this

determination upon the patent application is not known; however, plans are to continue the use of these thermocouples here. If not patented, we will further publicize our activities in this field in Company or trade publications.

Supplemental information on an HLO invention of a Remote Target Drive for the Electron Accelerator (HWIR-923) was submitted. This information credited the work done by George M. Allen, Instrument and Electrical Maintenance Operation on this invention. It was agreed by all concerned that this should be considered a joint invention.

L. M. Palmer, Supervisor, Portable Shop, has reported a possible invention. The title of this invention is a Portable Radiation Detection Instrument called "Wand GM" of two types -- straight line and boxed. This invention is being processed.

All other personnel of the Operation engaged in work which might lead to inventions and discoveries advised that, to the best of their knowledge, none were made in the course of work during April 1958.

SAFETY, SECURITY AND RADIATION EXPERIENCE

Medical Treatment Injuries	40
Frequency Rate	8.71
Disabling Injuries	0
Near Serious Accidents	0

There were no radiation overexposure cases reported.

There were no security violations reported.

MEETINGS

Round Table-Staff	26
Safety and Security	30
Information	6

Manager
Maintenance and Power Operation

E. Hilgeman:JPF:mkm

EMPLOYEE RELATIONS OPERATION

April, 1958

SALARY AND WAGE ADMINISTRATION

Six positions were audited in April. Excluding Level 2 and 3 Managers, fixed rate and vacant positions, 6 of the 112 positions as of January 1, 1958 have been audited, or 32.1% of the two year goal on a monthly basis.

Three studies of comparisons of FPD engineers' salaries were completed during the month. Results of these studies are summarized as follows:

- a. Salaries of FPD Technical College Graduates compared with Company data of October 1, 1957 by age and by years since degree indicate reasonably favorable agreement. FPD engineers over 40 years old whose pay appeared low in comparison to Company data were analyzed by individual and a special report issued to the Employee Relations Manager.
- b. FPD Technical Graduates' pay was compared with 1957 Los Alamos survey data. While this comparison showed that FPD salaries had not moved upward as fast as the Los Alamos survey data for incumbents of positions in level 6, we believe the 1958 salary review will improve these conditions significantly.
- c. Comparisons between various groups of FPD engineers from their point of origin organizationally prior to September, 1956, revealed no significant statistical variations. This study however provides a good basis for detecting future trends in salary treatment which may prove useful.

The positions, Junior Engineer (Engineering Operation) and Specialist, Reimbursements (Financial), a provisional position, were evaluated and established during the month.

A functional organization chart revision which more closely indicates the Maintenance and Power Operation's responsibilities for maintenance of HLO facilities was transmitted to R&U for inclusion in the next chart issue.

A revised plan for the individual appraisal and salary review which provides for the scheduling of such actions on an individual basis was presented to the General Manager and functional managers. The plan was approved and initial information sent to supervisors of exempt employees.

Certain revisions proposed for the Salary Administration Manual were issued to HAP0 Salary and Wage Managers for consideration and approval prior to processing through Relations and Utilities. These revisions were intended primarily to simplify the location of material in the Manual.

The Manufacturing Operation production job study is progressing well. A factor analysis point evaluation plan for evaluation of the jobs has been completed and the plan used to re-evaluate the eight key jobs in the Manufacturing process. These evaluations were necessary for validation purposes. Results of the validation were reviewed and endorsed by the interested Level 4 Managers of the Manufacturing Operation. Evaluations of all remaining jobs are now under way and are more than half completed. The Manager, Union Relations has been kept informed of the progress of this study.

The first of a series of six seminars on Wage Administration was held April 11, 1958. The series is being coordinated by Fuels Preparation Department and the first seminar, covering the topic of General Wage Theory, was conducted by Fuels Preparation Department. It is planned to hold about one each month and the chairmanship of the seminars will rotate among the other HAPO departments.

Wage rates information was provided to the Manager, Union Relations in support of the Company's position on the Engineering Assistant arbitration case heard in Portland April 19, 1958.

Three individual assignments were evaluated during this reporting period at the request of supervision. These jobs were:

- a. 411-4 Statements & Financial Analysis Clerk - Accounting B, grade 16.
- b. 438-6 Instrument Specialist, grade 24.
- c. 423-1 Personnel Development & Communications Records Clerk, General Clerk B, grade 8.

Reclassification was recommended for job 411-4 (Accounting Clerk B, to Accounting Clerk A). The assignment of an additional employee to job 438-6 was approved and study of job 423-1 is still in process.

PERSONNEL DEVELOPMENT

Six Personnel Development programs were concluded, initiated or in progress during the month.

1. Professional Business Management I course sessions 11-15 were completed during the month by 16 participants.
2. Fifteen participants, 8 of whom were exempt, completed the Written Communication course.
3. Sixteen participants continued the Work Simplification course using actual Department problems in their studies.
4. A course in Accounting Fundamentals for other than Financial employees was initiated during the month with 10 participants.
5. One employee continued participation in the Creative Approach Seminar being presented in IPD.
6. One employee began participation in the Reactor Process Fundamentals course being presented in IPD. Another FPD participant was scheduled for the series starting in July.

Total in-plant training, appropriate portions of which were conducted on employees' own time, totaled 1.4% of exempt employees' normal working hours.

Plans for a summer presentation of PBM-I were cancelled due to the present work load in proportion to the number of exempt personnel.

The personnel development course needs of all exempt employees were requested during the month from Department management, and this information for about

50% of the Department's exempt employees had been received by April 30.

Two representatives of the Hanford Operations Office of the AEC audited the personnel development and communication activity in FPD. Copies of reports and other related material showing how needs are determined and activities measured were supplied at their request.

Three Technical Graduates assignments were filled during the month and three were vacated by Tech Grads who had completed their rotations. This left a total of five Tech Grads in FPD assignments at month's end.

Manufacturing Personnel Inventory submissions from Manufacturing and Maintenance and Power Operations were reviewed and discussed with appropriate individuals in those components. B. B. Delack, Manufacturing Personnel Inventory and Placement Service Consultant, reviewed the MPI&PS services and procedures with representatives of Manufacturing, Maintenance and Power, and Employee Relations.

Personnel Development representatives from the various HAPO components met during the month to discuss concepts of an exempt personnel inventory, at which time progress on a study on this subject was presented by the FPD Specialist - Personnel Development.

COMMUNICATION

A cost reduction communication program aimed at further improving savings associated with aluminum fuel element components was developed and approved during the month.

The problem of polluted water in the 300 Area was communicated to employees through all appropriate channels of communication, including a letter announcing the end of the ban on drinking water as soon as water was determined safe. Appropriate releases to local news media were arranged through Public Communication.

Four Management News Bulletins were issued during the month, plus two FPD Newsletters.

GE News column inches covering Fuel's activities and employees totaled 151 during April. Of this number, 30 column inches were devoted to routine items and 121 column inches to planned communication in support of Department programs. This represents an average of slightly more than one half GE News page per issue.

Programs given extensive publicity during the month included the FPD Safety Essay Contest, approaching achievement of the General Manager's award, and the Savings and Stock Bonus Plan re-canvass which at month's end had raised participation from 55.6% to 60.2%.

Two General Manager's meetings, one with exempt employees and one with non-exempt, were arranged. Results of an anonymous survey of the March meeting with non-exempt employees revealed very favorable response by employees.

Other communication activities included completion of a communication plan for introducing ERI to the Department, the monthly Safety Topic, two priority messages, and publicizing the Circle Tour of the Areas which was participated in by 1400 FPD employees and family members.

Three speeches were presented by Fuels' employees before community groups.

The 305 Test Reactor was included on a tour for college students from eastern Washington on April 18 and April 30.

UNION RELATIONS

An arbitration hearing was conducted on Saturday, April 19 in Portland concerning the James grievance. The case was heard by the panel consisting of Paul L. Kleinsorge, University of Oregon, W. M. Mathis representing General Electric and H. L. Shelton representing the HAMTC.

On April 1, 1958 a Millwright Journeyman was discharged for unsatisfactory work performance. The time has expired for the Council or the employee to grieve this discharge so that we can regard the matter as closed.

The overtime distribution proposal made to the Chemical Workers has been rejected. We will, therefore, continue to administer overtime as in the past.

Grievance Statistics:

	<u>Unit</u>	<u>Nonunit</u>
Received this month	13	0
Received since 1/1/58	53	1
Step I		
Answer unsatisfactory	9	0
Answer satisfactory	4	0
Pending time limit to close	9	0
Settled this month	9	0
Step II		
Discussed this month	3	0
Pending time limit to close	2	0
Settled this month	9	0
Pending arbitration	6	0

Subject of April Grievances: (13 Total)

	<u>Mfg. Oper.</u>	<u>Eng. Oper.</u>	<u>Maint. & Power Oper.</u>	<u>Emp. Rel.</u>	<u>Fin. Oper.</u>
Jurisdiction	2		9		
Overtime	1				
Transfer	1				

Subject of Grievances for 1958: (54 Total)

			<u>Nonunit</u>
Jurisdiction	7	32	1
Seniority		2	
Overtime	4		
Absence	6		
Unsafe Equipment	1		
Transfer	1		

HEALTH AND SAFETY

	<u>April</u>	<u>March</u>
Disabling Injuries	0	0
Serious Accidents	0	0
Medical Treatment Cases	80	54
Medical Treatment Frequency	6.13	4.25
Employee Hours of Exposure	130,589	127,095
Orientation Presentations	2	1
Attendance	20	4
Inspections	26	20
Suggestions Evaluated	8	12
Safety Talks	1	1
Attendance	67	20

Medical examinations during March totaled 96 which was 141.18% of quota.

Program

Fuels Preparation Department completed 607 days without a Disabling Injury through April 1958, for a total of 2,474,954 hours of exposure.

The monthly safety meeting for office personnel was held on April 25. L. L. Brammer was in charge of the meeting. Dr. J. C. Conant presented a talk entitled "Your Mental Health."

The Medical Treatment Frequency rate climbed to the highest level since Department organization on September 1, 1956. A total of 80 injuries resulted in a frequency of 6.13. Of this total, 21 were eye injuries caused by wind blown particles. Thirty-seven of the 80 were sustained to the hands.

Activities

April work activity included contacts on the following items: Job Hazard Breakdowns, storage facilities, toxic chemicals, barricades, road surfacing, safety awards, welding, ladders and scaffolds, first aid services, tool design, explosion proof fixtures, guarding, ventilation, Industrial Hygiene services, shop equipment, eye protection, housekeeping, material handling, respiratory protection, solvents, elevated work locations, publicity, safety showers, cranes, traffic, safety hooks, walks, vehicle use, grinding wheel safety, emergency procedures, new facilities and equipment, pressure vessels, construction hazards, lighting, excavations, compressed gases and manifolds, production equipment, mosquito control, underground pit entry, metal handling, and protective clothing.

FIRE PREVENTION AND CIVIL DEFENSE

	<u>March</u>	<u>April</u>
Fires and Investigations	0	0
Fire Loss	0	0
Number of Inspections	43	36
Fire Surveys Completed	1	0
Hazard Reports Submitted	10	4
Orientation Attendance - Nonexempt	4	17
Orientation - Technical Graduates	0	3
Supervisors - Fire Prevention Training	1	0

Program Development

Operation New Broom - 1958 evaluation results revealed that 75 percent of all hazards were corrected before the follow-up inspections were made by the 37 inspection teams. All other hazards pertaining to fire prevention have since been corrected.

The HOO-AEC Review Board approved a project proposal for construction of a new warehouse in the 303 Area to replace the substandard 3722-A Building. The proposal will be forwarded to AEC - Washington for final approval.

The 200,000 gallon water reservoir was modified to collect sand and rock entering the 300 Area through import lines, with provisions for flushing out foreign matter on a planned schedule. This will result in more efficient and dependable operation of the area fire protection systems.

An appropriation request was approved for the installation of an exhaust system over the buffer machines in the 313 Building to eliminate the aluminum dust explosion hazard and health hazard to employees.

Signs designating the controls for water main sectional valves were installed to facilitate quick shut down in event of emergency. To further identify jurisdictional authority, all valves controlling fire protection systems were painted "red," whereas all others were painted "black" upon approval of the HAPO Standards Committee.

Assisted with the development of preliminary plans for establishing procedures and authorized personnel for handling any type of area emergency not covered in Area Civil Defense Plans. Also developed procedure for using Crash Alarm phones which met the approval of HLO.

All air accelerator units on dry pipe sprinkler systems in FPD Buildings were overhauled with new replacement parts, when tests revealed that 13 years operation had lowered their efficiency.

Caused changes in substandard installation of water mains in the PRTR Project and approved replacement of post indicator valves with underground key valves at the street intersection north of 328 Building to eliminate the vehicular hazard.

General Activities

Preparations were made to conduct a civil defense practice evacuation at 9:45 a.m., May 6. An engineering study is being conducted on exhaust system in the Canning Area to determine means for reducing the oil vapor fire hazard. Assisted CEO, HLO, CPD and IPD with fire engineering problems including fire alarm standards, disposal of uranium salts, hazards of uranium fires in slug form, cutting and welding on insulated metal buildings, assignment of code numbers to PRTR fire alarm boxes, use of TMB chemical on metal fires, and filter standards. Witnessed demonstration of a new fire detecting system by a factory representative. Reviewed engineering criteria on warehouse and sprinkler system project proposals. Attended AEC-HAPO meeting on Operation Alert - 1958. Issued three welding permits. Caused installation of two draft-stop walls in the attic of 3703 Building to conform with Building Code Standards. Enrolled in three-day school conducted by AEC-Washington representative on the Fire hazards of the Uranium Industry.

PERSONNEL PRACTICES

Technical Personnel Placement

Experienced and BS/MS Recruiting (1-1-58 through 4-30-58)

	<u>Cases Considered</u>	<u>Invitations</u>				<u>Offers</u>			<u>On FPD Roll</u>
		<u>Ext.</u>	<u>Visited</u>	<u>To Vis.</u>	<u>Open</u>	<u>Ext.</u>	<u>Acc.</u>	<u>Open</u>	
Engineering	13	0	0	0	0	3	2	0	1
Science	6	0	0	0	0	0	0	0	0
Other	47	0	0	0	0	0	0	0	0

PhD Recruiting

	<u>Cases Considered</u>	<u>Interviewed</u>	<u>To be Interviewed</u>	<u>Offers</u>			<u>On FPD Roll</u>
				<u>Ext.</u>	<u>Acc.</u>	<u>Open</u>	
April, 1958	3	0	0	0	0	1	0
CY'58 to date	42	0	0	1*	0	0	0

*Carry over of 1 case from 1957

Terminations and Transfers, Technical and/or Exempt Personnel

	<u>Terminations From FPD Roll</u>	<u>T-r-a-n-s-f-e-r-s</u>				<u>Active Cases</u>	<u>Dormant Cases</u>
		<u>Considered</u>	<u>Completed</u>	<u>Closed Cases</u>			
April, 1958	2	0	2	6		9	1
CY'58 to date	8	37*	6	21		0	0

* Carry over of 5 cases from 1957 (3 active and 2 dormant)

J. C. Kindred, college graduate student, withdrew his acceptance for Summer Program assignment in the Fuels Preparation Department because of military commitment. The Summer Program assignments for FPD have now been firmed up and will include 1 college professor, 1 Richland high school teacher, and 2 college juniors.

Resumes of eight candidates from the Fuels Preparation Department were submitted to other HAPO components for consideration in filling their referred exempt openings. Three were not accepted and five are still under consideration.

Eleven referrals of available exempt personnel were received by the Fuels Preparation Department from other HAPO components and nine from other GE components to be considered for possible placement. No openings were available in Fuels Preparation Department for which these people could be considered.

Employment

Personnel: Added: 13 Removed: 14

Reduction of Force:	By FPD	0
	By Seniority bumping	8

Transfer requests active at month end: 52

Procurement:

Offers:	1	Requests for personnel:	4
Interviews:	2	Transfers (all):	12

Upgrades within FPD: 4

Perfect attendance recognition awards: 12
Service recognition pins: 10 year, 1 5 year 0

Employee Benefits and Service

Employee Benefit Plans participation is as follows: Pension 99.7% ; Insurance 99.9% ; Stock Bonus 60.2% .

Nonveteran employees subject to Selective Service are classified as follows:
1-A 9 ; 2-A 9 ; and all others 10 . In addition there are: 9 technical
occupational deferments active; 16 Standby and 36 Ready Reservists; 3 employees
on military leave.

Security Violations for April, 1958 - 2

General

One leave of absence was approved by the Pension Board during the month. No other requests are outstanding.

Geoff Barr
Manager - Employee Relations

**DATE
FILMED
02/01/93**