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FUELS PREPARATION DEPARTMENT

Monthly Report

APRIL 1957

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MONTHLY REPORT

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RM Item 10-7-92

FUELS PREPARATION DEPARTMENT

By PM Eck 10-8-92

FOR

By Kiser 10/12/92

APRIL, 1957

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Compiled by

Fuels Preparation Department

May 23, 1957

Date 5/12/93
U. S. AEC Division of Classification

Richland, Washington

Work performed under contract No. W-31-109-Eng-52 between the Atomic Energy
Commission and General Electric Company.

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FUELS PREPARATION DEPARTMENT
MONTHLY REPORT SUMMARY FOR
APRIL, 1957

MANUFACTURING OPERATION

Four hundred eighty-two (482) tons of acceptable uranium fuel elements were produced which was 7 per cent below that forecast.

The interim conversion of equipment for the continuous processing of I & E fuel elements on the 313 Building production line has been completed.

At month end there was a 0.6 month's supply of bare uranium cores and a 1.0 month's supply of finished fuel elements available in the combined 100-300 storage areas.

Revised tooling has been installed on all Acme-Gridley lathes. Currently the solid fuel elements from 3 canning lines are being faced on one converted lathe. Prior to conversion two lathes were required for the solid fuel element production from 3 canning lines.

The first 10,000 of the 96,000 cans ordered from Hunter-Douglas for evaluation have been received.

In order to improve scheduling of production through the Plant, a revised production control program was instituted.

The prototype of a penetration etch machine loader for automatically loading fuel elements onto the etch machine is being tested.

An inventory of all uninstalled and installed equipment charged to the Manufacturing Operation was completed during April.

ENGINEERING OPERATION

Thirteen ruptures occurred in regular and cored material during April. The rupture trend was slightly higher than the previous month (excluding side split failures.) Four of these ruptures occurred in sharp projection tru-lined elements and one in a 1/2" cored piece. Insufficient data is available at present to draw completely valid conclusions concerning the performance of these elements. Evaluations will continue in this area.

Approximately 217 tons (60,000) of 1/2" cored fuel elements have been charged into C and KE reactors. Two ruptures have occurred to date. Neither has been examined due to gassing. Three tubes of non-ruptured pieces are currently waiting examination at 105-B facility for indications of dimension changes and/or stress cracking.

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Irradiation experience for I & E elements continued to be favorable. Approximately 364 tubes of I & E elements have been charged. No ruptures have occurred to date. Mixing pieces have been fabricated for I & E tubes to equalize water temperatures around the element. These pieces are currently undergoing flow laboratory tests to select the optimum design. The goal exposure of I & E pieces in C reactor has been increased to 800 MWD/T because of the favorable operating characteristics indicated. Yields of I & E elements in the manufacturing process continue low. Several process development studies are being emphasized as a means of increasing these yields. With the start-up of the Fuel Element Pilot Plant it is expected that many problems associated with the yield can be solved.

Approximately 5,000 low hydrogen dingot fuel cores were canned during the past month. Radiographic evaluations show that the material is about the same as ingot quality in regard to canning bond porosity. Acceptable low hydrogen dingot elements are being sampled, measured, and charged in production test reactor evaluations.

Materials Engineering assumed operational management of the Fuel Element Pilot Plant during April. Shake-down activities are underway to determine the effectiveness of equipment and to establish optimum operational sequences.

Joint studies with Quality Audit showed that the calibration of the primary penetration test standard was in error. This indicated that the minimum residual can wall thickness believed to be 20 mils is in actuality only 15 mils. It appears feasible to obtain the desired increase of 5 mils with the improvements which have been made in present penetration testers.

Authorization was received from the AEC to proceed with the preliminary design for the conversion of 313 Building to I & E lead-dip elements and to incur costs of \$50,000. All authorized projects are proceeding on schedule and within costs.

FINANCIAL OPERATION

The first of scheduled quarterly Financial Reviews with levels 3 and 4 management of the Department was held on April 24. Similar meetings are scheduled with exempt employees of all Operations in the Department during the coming months.

An interim progress report on Measurements was made to the Department General Manager in April. This report indicates progress to date on the accomplishment of various programs and goals established for FY-1957.

The development of the form and content of a comprehensive Measurements Manual was completed this month, and Part I of this Manual was written. The complete Manual is scheduled for issuance around September 1.

In collaboration with Data Processing representatives, methods and procedures were completed for the daily transfer of time distribution of maintenance employees direct from time distribution reports to IBM tape. With the implementation of this improved technique, a reduction in the clerical force as well as more prompt and accurate distribution of cost will result. Plans call for ultimate expansion of this system throughout the Department.

A review of depreciation rates and reserves was started April 1 and is now 50% complete. This review will include plant with a first cost of \$14,500,000 and will result in adjustments to certain composite depreciation rates as of July 1, 1957.

MAINTENANCE AND POWER OPERATION

A Committee has been formed with members of Fuels Preparation Department, Hanford Laboratories Operation, and Relations and Utilities Operation to analyze the parking lot problems relative to parking, traffic flow and pedestrian safety.

There was an emergency power outage on April 23 at 2:18 PM. The emergency generator picked up the power load. The outage was caused by a B.P.A. construction crew doing work in Richland.

Construction of office space on the mezzanine of the 313 Building was completed.

The Cost Reduction Program, in effect for one month, realized 59% of the quarterly budget. This represents an annual savings of \$23,461.

EMPLOYEE RELATIONS OPERATION

A total of 70 exempt employees participated in the initial course "Understanding People" which was completed during the month. A second series was started this month and this should provide coverage of over 90% of the Department's management.

At month end there were eight Technical Graduates on rotational assignments within the Department. Seven assignments were vacated during the month and three were filled. Of the seven Technical Graduates who left assignments, four accepted permanent assignments within the Department, this brings the total of such assignments to seven during 1957.

Five grievances were processed during the month. Of the five grievances submitted three involved jurisdictional matters, one unfair labor practice, and the other involved working hours.

The Department continued to operate without any disabling injuries. There were no serious accidents or fires during the month. Medical treatment frequency increased from the low rate of 2.88 in March to 3.88 in April.

Non-veteran employees subject to military service training under Selective Service System total 29, including 13 classified 1-A. There are 51 reservists on the roll including 37 in Ready Reserve status.

Since September 1, 1956 experienced BS/MS recruiting activity has yielded 219 candidates of interest to FPD for consideration and 38 employment offers have been extended which has resulted in 28 acceptances, including 4 yet to report.

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One college professors, one high school teacher, two graduate students and three college juniors have been engaged for the summer, thus filling total needs in this type of personnel.

PERSONNEL STATISTICS:

Number of employees March 31, 1957 757
Number of employees April 30, 1957 763

<u>OPERATION</u>	<u>EXEMPT</u>	<u>NON-EXEMPT</u>	<u>TOTAL</u>
General	1	1	2
Manufacturing	68	290	358
Engineering	41	27	68
Financial	16	23	39
Maintenance & Power	39	228	267
Employee Relations	15	14	29
TOTAL	180	583	763

Summary

FUELS PREPARATION DEPARTMENT
MANUFACTURING OPERATION

April, 1957

I. CURRENT OPERATIONS

A. Production and Productivity

1. Statistics

<u>Current Month's Production</u>	<u>8" Solid</u>	<u>8" De-pleted</u>	<u>8" Cored</u>	<u>En-riched</u>	<u>I & E</u>	<u>Total</u>
Acceptable Fuel Elements Produced(Tons)	387	0	71	3	21	482
As % of Forecast Production	90	0	118	37	95	93
As % of Past 3 Months' Production	81	0	151	100	350	90
Average						
As % of Past 12 Months' Production	92	0	254	100	300	105
Average						
As % of June, 1957 Goal	92	-	87	50	26	82
As % of June, 1958 Goal(500 MWD/Ton)	141	-	44	8	11	71
As % of June, 1958 Goal(750 MWD/Ton)	387	-	284	12	7	107
% of Forecast Achieved - Last Fiscal Quarter	112	150	89	56	38	107
% of Forecast Achieved - Last 4 Fiscal Quarters	105	150	96	56	45	103
Production Adjusted for In-Process Inventory	371	-	73	3	25	472
<u>Productivity (Adjusted for In-Process Inventory)</u>						
Pieces - Man-hour Direct Labor	6.8	-	6.1	7.4	1.9	
Forecast	-	-	-	-	-	
Previous Month	6.5	6.35	4.8	4.3	1.0	
<u>Operating Efficiency</u>						
Current Month (%)	-	-	-	-	-	87
Forecast (%)	-	-	-	-	-	90
Previous Month (%)	-	-	-	-	-	92
<u>Manufacturing Yield</u>						
Current Month (%)	81	-	79	83	36	
Forecast (%)	81	-	79	79	52	
Previous Month (%)	85	-	80	82	41	
Bare Uranium in Storage (Tons)						343
Canned Uranium in Storage (Tons)						573
Uranium Utilization (%)						95.1

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2. Activities

a. Production

During April the Manufacturing Operation worked on a two-shift basis with four canning lines for each shift. Four hundred eighty-two (482) tons of acceptable uranium fuel elements were processed which was 7 percent below that forecast in HW-47987-RD. Variance from forecast resulted from the actual operating efficiency which was three (3) percent below forecast, I & E manufacturing yield which was twelve (12) percent below forecast, and a change in product mix.

The interim conversion of equipment for the continuous processing of I & E fuel elements on the 313 Building production line has been completed. This conversion permits the I & E production from one canning line per shift to be processed down one finishing line. In the past, it was necessary to perform some of the finishing operations in the Special Products room.

b. Manufacturing Yield - Solid Production

The manufacturing yield for solid fuel element production was 80.9 percent compared to 84.9 percent for March. Principle cause for the lower yield was the increase in the inclusion reject rate from 2.2 percent in March to 4.2 percent. This increase resulted from copper particles which were introduced inadvertently into the component cleaning process. These copper particles adhered to the cleaned components and were alloyed with the aluminum cans during the canning process.

Canning rejects increased by 0.7 percent to 1.7 percent. The bad weld reject rate of 1.1 percent represented an 0.4 percent increase over March. Most of the increase in the bad weld reject rate was attributed to the use of a no-preheat, double pass welding procedure on one finishing line. Without a preheat pass in the welding process, the arc often carries oxide into the weld bead.

The marred surface reject rate increased from 2.1 percent in March to 2.7 percent due to the additional handling which resulted from etching fuel elements contaminated with copper. The bond test reject rate was 2.7 percent, which was the same as in March.

In April the miscellaneous reject rate decreased from 3.1 percent to 2.5 percent as the result of reduced caustic pitting of canned fuel elements.

c. Manufacturing Yield - Cored Production

The manufacturing yield for cored fuel elements was 79.2 percent compared to 80.4 percent for March. Canning reject rate increased by 1.8 percent. During the period when copper particles were introduced into the component cleaning process, no cored fuel elements were being produced. Consequently the cored fuel element inclusion reject rate of 2.2 percent was lower than for solid fuel elements.

c. Manufacturing Yield - Cored Production - continued

The miscellaneous reject rate decreased from 3.4 percent to 2.3 percent. Reduced caustic pitting and improved testing techniques contributed to the change in the miscellaneous reject rate.

d. Manufacturing Yield - Enriched Production

A small quantity of enriched fuel elements was processed with a manufacturing yield of 83.4 percent compared to 82.4 percent for March. The most significant gain was a reduction of the bond test reject rate due to the installation of equipment for vibrating six-inch fuel elements during the canning process.

e. Manufacturing Yield - I & E Production

The manufacturing yield decreased from 41.4 percent in March to 36.4 percent in April. The canning reject rate was 5.7 percent as compared to 5.2 percent for March. Improved tooling for the facing operation contributed to a reduction of 3.7 percent in the poor bond reject rate to 9.1 percent for April.

The internal thin wall reject rate increased from 13.2 percent in March to 17.5 percent in April. This high reject rate is due principally to the inability of the testing equipment to distinguish between actual thin walls and small wrinkles or braze layer voids in the inner tube wall.

The marred surface reject rate increased from 1.4 percent in March to 4.5 percent in April. This increase was the result of handling problems associated with conversion to in-line production.

The inner weld reject rate increased from 1.7 percent in March to 3.3 percent in April. Most of this increase was caused by attempting to weld wet fuel elements. A minor change in operating procedure corrected the difficulty.

f. Direct Labor Productivity

On April 1, 1957, a revised coding procedure for operating labor was instituted. Also the distribution of direct labor to the various products was changed. Consequently, any comparisons of direct labor productivity for March and April have little meaning because coding and distribution procedure used in March differed from that used in April.

g. Other Activities

During the month, the following Special Tests and Process Work Requests were completed in the canning facilities:

<u>PWR No.</u>	<u>Description</u>
231	To determine the lowest average canning bath temperature at which it is practical to operate utilizing the additional time for insertion allowed by this cycle (short preheat - long submerge).

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g. Other Activities - continued

<u>PWR No.</u>	<u>Description</u>
245	Fuel elements (I & E Caps) to be used by Testing Methods for further checking of their prototype penetration tester.
246	Fuel elements (C size I & E) to be used by Testing Methods for further checking of their prototype penetration tester.
253	To determine an optimum sleeve I.D. as regards can wall thickness and O.D. of a finished fuel element.
254	Preventing downtime on canning lines due to high reject rates in Z lots, by predicting process and pickle rejects with statistical methods.
255	To continue investigation of relationship between pulse amplitude and penetration depth.
257	To evaluate the "F" process for cleaning C size I & E components.
261	To provide M-388 clad fuel elements for fuel element cocking and corrosion studies.
264	To measure any change in fuel element length by using unmilled cans.
265	To evaluate cans made from plate stock.
PT-56A-86MT	Evaluation of low hydrogen dingot uranium.

At month's end there was a 0.6 month's supply of bare uranium cores and a 1.0 month's supply of finished fuel elements was available in the combined 100 - 300 storage areas.

The following pieces were processed through the fuel element recovery process.

	<u>Pieces</u>
8" Solid	23,853
8" Cored	6,607
I & E	11,628
4"	27
	42,115

One shipment of 64,201 pounds of solid uranium scrap was shipped to National Lead Company during April.

3. Conversion Costs

April estimated conversion cost per solid fuel element is about 10 percent higher than the March actual costs. Lower yield and production are responsible for the higher unit cost.

The April estimated conversion cost per cored fuel element is about 10 percent lower than the March actual cost. Increased production is responsible for the lower unit cost.

B. Plant Problems and Incidents

1. General

During April the operating efficiency was 87 percent which was 5 percent lower than the March experience. In March, 39 percent of the lost time was attributed to equipment difficulties as compared to 48 percent in April.

2. Bare Uranium Core Pickle Machines

The number 1 pickle machine caused the most downtime during the month. Failure of the regulating valve, malfunction of the multi-flex electric timer, and conveyor chain difficulties caused the outages.

3. Acme-Gridley Lathes

In the past these lathes have been responsible for considerable losses in operating efficiency due to equipment outages. In order to improve the operating efficiency, the number 3 lathe was used by the Manufacturing Operation for development work. A revised tooling system was installed which provided the following benefits:

- a. The spindle speed was reduced from 2633 to 1536 rpm. The actual work required to start and stop the spindle was reduced by 66 percent.
- b. By changing tool geometry, the cutting torque exerted on the cap bond layer was reduced about 10 percent.
- c. Tool life was doubled.
- d. Chip cleanout frequency was reduced by 75 percent.
- e. Air blasts for chip control and tool cleaning were eliminated.
- f. Production throughput at the lathe was increased 50 percent.
- g. Lubricating oil temperature was lowered.

In view of the above benefits, the number 1 and 2 lathes have been converted to the revised tooling system. Currently the solid fuel elements from 3 canning lines are being faced on one converted lathe. Prior to conversion the two lathes were required for the solid fuel element production from 3 canning lines.

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4. Cap and Can Preparation Machine

Some production time was lost because the cap and can preparation machine failed to clean aluminum components satisfactorily. For this reason an extensive study was made of the machine design and operating controls. As the result of this study, the degreaser stage was modified to obtain a better spray and an effective two-stage degreaser cycle. Also changes were made in the operating procedure and solutions control. Currently, all I & E components are prepared in the modified machines.

C. Operating Plans

1. Bare Uranium Metal Quality

The following improvements were noted in uranium metal quality:

- a. Transformation test reject rate for "K" material dropped from 0.1 for March to 0.03 for April.
- b. Seam and striations for recovered solid cores went from 18.9 percent in March to 15.8 percent in April and for recovered cored uranium from 12.6 percent to 6.2 percent.
- c. Porosity reject rate for "K" material dropped from 2.8 percent to 2.1 percent.

2. Control of Salt Bath Hydroxyl Content at Fernald

On April 10 the 54 percent potassium and 46 percent lithium carbonate bath was completely removed from the beta heat treating furnace and replaced with a 75 percent potassium carbonate and 25 percent lithium carbonate salt. The change of salts was made to reduce the hydroxyl content of the bath, and in that way, reduce the hydrogen content of cores being shipped to Hanford.

The hydroxyl content of the newly charged salt bath was reported to be 0.25 percent as compared with a minimum of 0.40 percent for the replaced bath. While the furnace was shut down, the carbon dioxide sparging equipment was modified to permit better contact between the gas and the salt in an effort to further reduce the hydroxyl content of the bath.

3. Uranium Core Specifications

During April representatives of the National Lead Company, Mallinckrodt Chemical Works and General Electric met to discuss uranium core specifications. Agreement reached at this meeting should permit the writing of specifications acceptable to all parties concerned.

4. Hunter Douglas Can Evaluation

The first 10,000 of the 96,000 cans ordered from Hunter Douglas for evaluation have been received. Acceptance tests show that the cans meet all specifications except for can wall thickness. Approximately 3 percent had can walls ranging from 1 to 6 mils below minimum specified thickness. The remaining 86,000 cans are scheduled for receipt at the rate of 20,000 per month. Final approval of Hunter Douglas as a can vendor will depend upon delivery rate as well as performance of the cans in the reactors.

5. Reduction in Canning Crew Size

In the past, for solid and cored production, the standard canning crew consisted of five men. By means of equipment modifications, layout changes, and reassignment of duties, the canning crew size for solid and cored production has been reduced from five to a normal four and one-half man crew.

6. Production Control

In the past few months the manufacturing process has changed from a single-product to a multi-product process. Instead of manufacturing one type of fuel element, as many as eight types are produced in the 313 Building. In order to improve scheduling of production through the Plant, a revised production control program was instituted on March 1, 1957.

Under this program the month's production is broken down into daily quantities of material to be processed by each canning crew. Production schedules are prepared which show WHAT, WHEN, HOW MANY and WHERE each product will be manufactured. Special tests are intermixed with regular production depending on availability of production facilities.

A weekly scheduling meeting is held for production, maintenance, quality control, and engineering supervisors. Production schedules for the coming two weeks are discussed. In this way all present are informed of future production problems, thus enabling them to make advance plans for coping with problems. The result has been a smoother transition from one product to another on the production line.

After two months of experience with this production control program the following benefits have been observed:

- a. Product needs for reactors are met on time.
- b. Better inventory control.
- c. Better manpower and facilities utilization.
- d. Engineering and manufacturing changes are better coordinated.
- e. More time available for planning future changes.
- f. Better coordination of special tests with regularly scheduled production.

7. Blunt Nose Truline Fuel Elements

In order that the alignment of fuel elements in the reactor tubes may be assured, an alignment feature has been designed for both ends of the fuel elements. In March, 1957, it was decided to have the vendor impact extrude the male feature of the fuel element on the can component and to have the Finishing Operation machine the female feature on the cap end of the welded fuel elements. To meet the production anticipated in July, it will be necessary to divert one canning furnace to this kind of fabrication for the full month. Concurrently, a Warner Swasey lathe will be provided on the finishing line for machining of blunt nose truline fuel elements. The

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7. Blunt Nose Truline Fuel Elements - continued

tooling for the Warner Swasey lathe has been ordered. Delivery is scheduled for June.

8. Welding Equipment Development Work

An agreement has been reached on a contract with the Nothelfer Winding Laboratories, Inc., Trenton, New Jersey, for the design, fabricating, and testing of a moveable coil welding transformer that will be essentially the same as the General Electric transformers that are now in use except for strengthening of the crater-filling mechanism and increasing the open circuit voltage from 100 to 165 volts. Current range will be 30 to 200 amperes. Delivery of the prototype transformer is scheduled for September 1, 1957.

A purchase order has been issued to the Hevi-Duty Electric Company, Milwaukee, Wisconsin, for the design, fabrication and testing of a saturable reactor type welding transformer that will deliver a sine wave of current. The successful development of a transformer of this type will permit current programming during the welding cycle. Current programming will provide smooth starting with minimum oxide and tungsten throwdown at starting, control of weld bead width, smooth uniform crater filling, and less transformer maintenance. The prototype transformer delivery is scheduled for September 1, 1957.

Work done with the moveable coil and saturable reactor transformers indicates that the mixing action in the molten weld metal is a function of the welding current wave shape. The mixing action of the moveable coil transformer is just sufficient to produce a satisfactory weld with the torch in the vertical position. To produce the best surface finish free of oxides it is desirable to tilt the torch outward. Tilting the torch outward produces inefficient mixing and AlSi stringers. By using a welding current with a rectangular wave shape it may be possible to tilt the torch for surface finish improvement. Negotiations are being carried on with Hevi-Duty Electric Company, Milwaukee, Wisconsin, for the design, fabrication and testing of a rectangular current wave saturable reactor transformer.

9. Automatic Loading of the Penetration Etch Machine

The penetration etch machine loader was designed to automatically load fuel elements onto the etch machine. In conjunction with this effort, the new increased-capacity baskets for the etch machine were designed to facilitate mechanical loading.

The loader receives fuel elements from two finishing lines simultaneously by means of skate wheel conveyors. These fuel element lines are discharged at different elevations corresponding to the level of the supports on the etch machine baskets. As the fuel elements are tripped from the skate wheel conveyors, they roll along inclined rails through a series of stops which keep the fuel elements correctly spaced for loading.

The load transfer carriage is mounted on supports, which permit both vertical and horizontal movement. At the appropriate time the carriage raises vertically to pick up the load, transfers horizontally to the correct position, lowers vertically to deposit the fuel elements on the etch machine basket, and moves horizontally back to the original position.

9. Automatic Loading of the Penetration Etch Machine - continued

The mechanical fabrication of the prototype machine has been completed, and the loader is being tested in the Manufacturing Operation mock-up room. Work is continuing on the control circuits.

It is expected that the testing of the prototype will be sufficiently advanced by June 1 that authorization will be requested through appropriation request channels for the expenditure of funds for the purchase and installation of the production equipment.

D. Financial Matters

1. Property Management

An inventory of all uninstalled equipment charged to Manufacturing Operation was completed this month. Each custodian signed for equipment charged to his code after the inventory was completed. An inventory of all installed equipment held by the Manufacturing Operation was completed during April, and documentation is being made of the findings.

E. Employee Relations

Members of the operation were treated for 33 minor injuries for a frequency rate of 5.52.

The frequency of exposures greater than 200 mrad per two-week period was 0.0. The frequency of exposures greater than 100 mrad per two-week period was 8.0 compared to 10.5 for March.

No security incidents or violations were reported in April.

II. PERSONNEL MATTERS

A. Visits & Visitors

R.E. Olson visited the National Lead Company to discuss uranium core specifications. Mr. Olson visited the Vitro Uranium Corporation, Salt Lake City, and presented a talk on uranium processing to the Great Salt Lake Chapter of the AIChE.

J.E. Bergman visited the Detrex Corporation in Seattle to observe ultrasonic degreasing of aluminum components.

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, 1957.

C. Meetings

Members of the Operation attended 9 information meetings, 25 staff meetings and 20 safety and security meetings.

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D. Significant Reports Issued

1. Routine

<u>Number</u>	<u>Title</u>	<u>Author</u>	<u>Date</u>
HW-41288-RD	Monthly Production and Inventory Report	HE Berg	4-4-57
HW-49511	Monthly Report, Quality Control Operation, Fuels Preparation Department, March 1957	KV Stave	4-1-57
HW-49571	Production Report, Fuels Preparation Department, Manufacturing Month Ending March 31, 1957	HE Berg	4-5-57
HW-49688-RD	Official Production Report Forecast Fuels Preparation Department, April 1957 through June 1963	HE Berg	4-17-57

2. Non-Routine

HW-49654	Stain & Corrosion Prone Can Investigation	JE Bergman & DC Harland	4-12-57
HW-49794	Investigation of Copper Inclusions on Canned Fuel Elements	JR Killen	4-24-57
HW-49715	Aluminum Components-Current Status of New Vendor Evaluation	JE Bergman	4-18-57
HW-49833	Routine Historical Measure on Bare and Canned Fuel Elements	GX Beard & TD Naylor	4-26-57

Wm Mathis
Manager - Manufacturing

WM Mathis:RIB:rhs

8" CANNING REJECTS BREAKDOWN BY MAJOR CLASSIFICATIONS

NOTE : - 1956 FIGURES
INCLUDE BOTH SOLID
AND CORED.

LEGEND

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ENGINEERING OPERATION

April, 1957

VISITORS: None

TRIPS

<u>Name</u>	<u>Company Visited</u>	<u>Contact</u>	<u>Date</u>	<u>Reason</u>
H. L. Libby	Chicago, Illinois		4-16/17/18	Attend "Symposium on Nondestructive Tests in the Field of Nuclear Energy"
	ANL, Lemont, Ill.	W.J. McGonnagle	4-19	Discuss testing methods problems
G. F. Jacky	Hunter-Douglas Aluminum Corp. Riverside, Calif.	R. A. Quadt	4-5	Discuss fuel element cladding
O. W. Rathbun	FMPC, Fernald, Ohio	W.T. Warner & G.W. Wunder	4-1/2	Attend conference on processing of data obtained on fabrication and irradiation of uranium.
S. M. Gill	NLO, Cincinnati, Ohio	C.E. Polson	4-26 to 5-6-57	Attend Metal Quality Working Committee meeting.

PERSONNEL

Process Engineering

<u>Name</u>	<u>Title</u>	<u>Nature of Change</u>	<u>Date</u>
G.W. Riedeman	Engineer	Transferred in	4-8
E.V. Padgett	Rot. Tech. Grad.	Permanent assignment	4-17

Drafting and Files

<u>Name</u>	<u>Title</u>	<u>Nature of Change</u>	<u>Date</u>
D.D. Parker	Draftsman	Hired in	4-17

Testing Methods

<u>Name</u>	<u>Title</u>	<u>Nature of Change</u>	<u>Date</u>
G.L. Waldkoetter	Engineer	Reactivated	4-8

PROCESS ENGINEERINGRegular Production Rupture Experience

Thirteen ruptures occurred during the month in regular solid and cored production material. The classification of the ruptures was as follows: four split, five hot spot, one side other, and three unclassified. The ruptures were distributed as follows: six in C reactor, two in DR, and one each in KW, B, H, D, and KE. Two of the four split type failures occurred in C reactor at the edges of the area where a previous high incidence of split type failures occurred presumably because of high power during reactor startup. Four of the ruptures (3 split and 1 hot spot) were in sharp projection tru-lined fuel elements. There was no apparent reason why the tru-line pieces should have sustained a higher than normal rupture rate and insufficient data is available to draw any conclusions concerning the performance of this type of element. One of the ruptures was in a 1/2 inch cored piece in KE reactor making the second rupture in this material. Like the first rupture in 1/2 inch cored material, the second rupture was a "gasser" and was immediately canned without classification as to rupture type. In general, the rupture trend was slightly higher this month than last except for split type failures. Particular areas that bear watching are the performance of the tru-line and 1/2 inch cored elements.

Cored Fuel Element Program

Approximately 217 tons (60,000 elements) of 1/2 inch cored fuel elements have been charged into C and KE reactors. The material in KE reactor is being discharged on a variable goal of 600 MWD/T. Two ruptures have occurred in this material, neither of which have been examined because of excessive gassing. Three tubes of non-ruptured cored pieces are currently waiting examination for dimensional changes and stress cracking in 105B examination facility.

I & E Program

Irradiation of I & E fuel elements continued without incident. Approximately 364 tubes of I & E have been charged to date with 85 tubes being discharged at goal exposure. Goal exposures in C reactor were increased from the range of 450 MWD/T to 800 MWD/T in April and 29 tubes were discharged at the higher goal.

Three tubes of enriched I & E and two tubes of solid enriched control pieces operating at average specific powers of 70-75 KW/ft. have reached exposures of 525 MWD/T for the I & E and 300-500 MWD/T for the solid.

The fabrication of various designs of mixing pieces to be used in a column of I & E fuel elements to equalize the water temperature around the process tube has been completed. The pieces are undergoing flow laboratory tests to select the optimum design.

Yields of I & E pieces in the manufacturing process continued low (36-50%). The major cause of rejects were as follows:

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Average reject rate, %

Internal Penetration	16.3
External and Internal Bond	10.1
Poor bonds in Weld	9.2
Bad Welds	8.1

During the early part of the month a large number of fuel elements were rejected because of can inclusions (this was true for all production). Some of the process developments being studied to improve these yields are: vibration of the core in the duplex bath, vibration of the cap (spire) during preheat in the canning bath, improved spire insertion techniques, improved component design, rewelding of bad weld rejects, methods for ironing out wrinkles in the bore of the piece, and improved or more selective testing devices. With the startup of the semi-works facility, it is expected that many of these problems can be solved more readily than in the production facility.

M-388 Alloy Program

Alternately charged M-388 alloy and standard 1245 alloy were discharged from H reactor at 900 MWD/T exposure. Fuel elements in the downstream portion of the tube (the three pieces nearest the rear face) exhibit groove-like pits which extend two-thirds the length of the element. Other elements of both types of alloy exhibit uniform attack as well as ledging attack. Pitting appears to be more serious on the M-388 alloy. The pieces are undergoing further examination in Radiometallurgy. It is still too early to draw any significant conclusions from the results of the initial irradiation experience. Irradiation of additional fuel elements canned in M-388 jackets is continuing at KE, C, and D reactors.

KER Program

The schedule for utilization of the four KER loops is currently estimated as follows:

	<u>Loop No.</u>			
	<u>#4</u>	<u>#2</u>	<u>#3</u>	<u>#1</u>
Ultimate test pieces	Washer I&E	Massive I&E	Clusters	Organic
Startup date on				
standard diameter 1/2"				
cored pieces with		May 13 -	June 1 -	
projections	May 13	June 1	June 15	--
Startup date on	May 20 -	May 20 -		July 15 -
scheduled IPR piece	June 10	June 10	July 1	Aug. 1

With the present zirconium process tubes, it is expected that maximum temperatures of 242 C can be achieved. FPD in cooperation with HLO is providing the standard, cored pieces with projections and the massive I & E as required. HLO is providing the washer I & E and the cluster fuel elements.

K Through Holes

The special basket containing three IPR size cored fuel elements (1.8 in. O.D. with 3/4 in. core hole) and canned in M-388 alloy cans with 2S aluminum bridge type supports has reached 75 per cent of the 600 MWD/T goal exposure operating at an average specific power of 60 KW/ft. without incident.

Large diameter, KER size, aluminum process tubes of special design for the K through holes are expected in May. After installation full length charges of IPR size cored fuel elements will be irradiated to high goal exposures.

MATERIALS ENGINEERING

Low Hydrogen Dingot Uranium (PT IP-56-A-86-MT)

Approximately 5000 low hydrogen dingot fuel cores, representing four MCW lots and four HAPO lots, have been canned at HAPO during the past month. A limited number of total hydrogen analyses obtained on samples from each of these lots show a hydrogen range of 1.8-2.2 ppm and 2.5-3.0 ppm before and after beta heat treatment, respectively.

Although the bond test plus voids reject rates for these lots are higher than those of typical production metal, autoradiography of the reject pieces indicates brittle bonding rather than porosity is the major cause for rejection. Radiographs show that in general the porosity in the AlSi of the canned low hydrogen dingot material is comparable with the porosity in canned production metal. Furthermore, there is evidence that the brittle bond problem exists in production metal as well as the dingot material.

The canned, acceptable low hydrogen dingot elements are being sampled, measured, and reactor charged as specified in PT IP-56-A-86-MT.

Centrifugally Cast Uranium

Four different groups of FMPC centrifugally cast, high impurity uranium fuel cores, twelve pieces per group, have been received at HAPO and are now in the laboratories for evaluation purposes. These pieces represent the low, intermediate, and high concentration levels of silicon and carbon believed necessary to produce as-cast fuel cores possessing a grain size equal to or smaller than that of the alpha rolled, beta heat treated production currently used at HAPO.

Test reactor determinations will establish the maximum loss of reactivity due to the controlled additions of impurities. These data together with the physical and mechanical metallurgical tests, chemical compositions, and densities will indicate the economic addition necessary to produce the desired structure. Such a material will then be used to centrifugally cast enough fuel cores for a small-scale irradiation test.

Extrusion of Uranium

The alpha extrusion program with Bridgeport Brass Co., halted because of lack of funds this fiscal year, has been allocated funds by Oak Ridge. Bridgeport now

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plans three more extrusion runs of hollow rod and one run of solid rod prior to July 1. Each run will consist of the extrusion of 100 billets, each billet producing a 22 ft. long rod. No complete economic evaluation has been received from the fabrication sites regarding the five extrusion runs made earlier this year. However, it has been reported by NLO that low yields have been obtained for the 10 billet hollow extrusion (C-6) made in March. It appears that a major cause for low yields was too small an outer diameter of the finished rod which failed to produce a good surface during machining to the finished size. It is now planned to increase the O. D. of the extruded rod from 1.440" to 1.488", which should allow enough stock to machine cleanly to the finished size. Some difficulty with hole eccentricity was also experienced in the C-6 extrusion. Solid cores from the previous extrusions will be canned in May for an eight tube production test. Dimensional stability will be determined on the extruded test pieces after irradiation to exposures from 300 to 700 MWD/T.

It is now planned to investigate the primary fabrication of uranium fuel cores by extrusion in the gamma phase. Binary uranium alloys of Zr, Cr, Si, and C will be used in anticipation of producing a relatively small grain size in the gamma extruded rod. The alloys will be cast at MCW some time in May and billets will be extruded to solid rod in June by the Bridgeport Brass Co.

Aluminum Components

A piece of aluminum cable cladding of unknown origin was received for examination. Numerous small blisters evident along the weld were apparently caused by foreign particles trapped in the seam of the weld. Also, in photomicrographs at 100 X, a thin line of oxide was apparent between the two sections of the cladding.

An experimental spire closure submitted by Harvey was rejected on the grounds that it would be a safety hazard. Harvey's closure, which consisted of plugging and rolling the tube end, was found in actual tests to be quite resistant to the AlSi penetration, and in fact held up better than the spire tube. However, there was a large surface fold on the outside of the closure, and a void inside the plugged end which could entrap the aqueous cleaning solutions used in component preparation. Such entrapped water would be an extremely serious hazard in the HAPO canning operation.

Hunter-Douglas has completed the tooling for an order of 5000 C reactor I & E components, and is awaiting the shipment of the one per cent nickel alloy from Kaiser.

An order was placed with Alcoa for 1000 "C" reactor I & E cans and caps to fit cores that have an outer diameter 25 mils larger than those currently used. The cans on this order have a nominal 35 mil wall as compared to the nominal 45 mil wall.

Transfer of Pilot Plant to Materials Engineering

Materials Engineering has assumed operational management of all elements of the Fuels Engineering Pilot Plant as of April, 1957. Previous to this date, Materials Engineering had accepted certain process areas as completed such as canning and

others to assume operating responsibility and to make modifications due to interim process changes or provide minor equipment and installations not included in the project.

Pilot Plant Startup Activities

Shakedown operation of the component cleaning area disclosed deficiencies such as piping and process tank leaks and malfunctioning of various solution pumps. These have been remedied and all process tanks are filled with process solution at process concentration and temperature. Processing of components on a test basis is now being performed to determine the effectiveness of cleaning and to verify established operator activity sequence to accomplish throughput requirements. Initial attempts at canning revealed malfunctioning of the mechanical skimmers on the duplex bath. Manual skimming will be necessary until skimmers are redesigned for safe operation. Also, difficulty was experienced in attaining proper submerge level of the canning jacket. Adjustment in the pneumatic piston should remedy this condition. Shakedown and de-bugging requirements of finishing area equipment will be determined on throughput of material from canning. In advance of any anticipated difficulty yet to be encountered, considerable adjustment and trouble shooting was required to ready the welders for acceptable operation. This was due to worn parts and general age condition of these welders.

Final adjustments are being made on the bond tester to bring it to a reliable operating condition. Presently this instrument is equipped with "O" size probes and adjusted for testing a number of this size fuel element fabricated in the 313 building. Conversion to "C" size will require several hours.

At the present time one supervisor and four operators are in attendance in the Pilot Plant. These operators have been occupied in furnace charging, and process solution make up, and test operation of the component and canning facility. As difficulties in the canning equipment are overcome this force will be increased by one additional operator and four metal fabricators. Initially, this will allow operation on alternate days of the component cleaning and canning operation and the finishing operation. As all processes are stabilized additional personnel may be assigned depending on the production development ratio schedule agreed upon.

TESTING METHODS

Process Fuel Element Testing

Joint studies with Quality Audit aimed at increasing the sensitivity of the Penetration Testers have shown the calibration of the primary standard to be in error. Instead of having a minimum residual can wall of 20 mils as had been believed, the minimum can wall is only about 15 mils. This discrepancy results from earlier calibrations based on penetration signals which were associated with previously unrecognized underlying voids. The void causes a larger signal than one due to AlSi alone at that depth.

Arrangements are being completed for a production test using "true" 20 and 25 mil standards. It appears feasible to obtain the desired increase of 5 mils in

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guaranteed residual wall thickness with the improvements which have been made to the present testers. However, at the true 25 mil level the instrument signal-to-noise ratio is so poor that there likely will be excessive rejection of good material.

I & E Fuel Element Testing

The prototype automatic internal Bond and Penetration tester has been operated in 313 building throughout the month. Several difficulties with the automatic handling mechanism have been remedied and at month's end it was operating satisfactorily.

Operation of the internal Bond test has been good. Destructive examinations have verified its effectiveness in detecting undesired voids.

The prototype internal Penetration tester continues to give reject rates of 10 to 40 per cent due to interfering signals from surface irregularities and braze layer voids. Radiographs of the aluminum spires have indicated that some of these irregularities may exist before canning. Equipment is being set up to test these spires with an eddy current method to determine if the Penetration tester reject rate can be reduced by pre-canning testing.

Attempts are also being made to reduce the magnitude of the unwanted signals by special probe design. Experiments with a small shielded probe coil mounted on a spring leaf suspension to maintain surface contact have not been too promising. These failed to show sufficient signal magnitude differences between AlSi penetrations within 30 to 20 mils of the surface and large voids below 30 mils depth. A second scheme using a differential type probe does show some advantages in discriminating against the deep voids. This scheme is based upon controlling the electromagnetic field in the material such that the deep voids give signals of a different polarity than do the moderately deep penetrations. Tests are now being made to define the sensitivity of this method, to determine the optimum design, to determine if the probe must ride on the surface, and to determine the sensitivity to surface irregularities.

The pilot plant prototype automatic Bond and Penetration tester (inside and outside) is ready for use. Installation of the automatic Transformation tester is being completed. This unit was completely checked out and satisfactorily operated in the laboratory. The Metal Quality tester is not ready for use.

Methods Development

Orders have been placed for fabrication of a prototype ultrasonic attenuation analyzer for uranium testing. This includes four transceiver chassis of 1, 2.25, 5, and 10 megacycles frequency, a timer-gate chassis, and an integrator gate. Also included is a version of the Savannah River nonbond tester to be used in evaluation of that method and evaluation of barium titanate transducers.

An ultrasonic test has been devised for detecting very small unbonded areas between the can and cap of hot pressed fuel elements.

A number of surface defects in uranium cores have been sectioned and photographed for the evaluation and calibration of the new ultrasonic surface inspection method. Some of the desired information was lost through improper sectioning, but it is believed that there is enough to permit this work to be reported in the next several weeks. The development of prototype equipment for this test is being completed.

Development of the copper and nickel plating thickness meter for the Plutonium Metallurgy group is near completion. An order is being prepared for fabrication of one prototype unit.

Some experimental evaluations have been made of the "induction thermometry" method of poor bond detection. The results were satisfactory within the limitations of the available induction heating apparatus. Voids in some vacuum canned elements gave indications. However, no signals were obtained from poorly bonded areas in production dip canned pieces. This is believed due to the low temperature rise of 15-20 C obtainable with the heater. A report is being prepared on the first phase of this study.

Hanford Test Reactor

Metal testing continued routinely. Experiments are underway to recalibrate the metal and graphite stringers to establish true conversion factors for measuring cross-sections of unknown absorbers.

DESIGN & PROJECTS

Status of Projects

CG-646 - Modification of Pickle Machines - Modification of the second pickle machine is expected to be completed on May 8 and the machine tested on May 9. Project completion date is May 15. Charges to date indicate a project cost under-run of 20 per cent.

CG-676 - Fuel Element Pilot Plant Semi-Works - The facility was turned over to operating forces on April 18 at which time final adjustments on Bond and Penetration, Metal Quality and Transformation Test equipment remained to be done. Utilization and preparation of As-Built drawings is now in progress. Indicated costs plus commitments to complete the project are \$393,760, which includes \$33,600 for procurement of an Acme-Gridley lathe. The project cost estimate was \$400,000 with Beneficial Use of 5-1-57.

CG-713 - Conversion to I & E Lead-Dip Fuel Elements - On April 17 a directive was received from the AEC authorizing \$50,000 for the purpose of preparing the preliminary design. The indicated work has begun under the following ground rules: (1) During conversion the capacity of the present plant shall not be decreased below that necessary to meet the official production forecast. (2) After completion the production of facility shall be sufficient to meet anticipated production requirements for the next five years. (3) Production equipment will have the capacity to produce solid, cored, I & E's for all reactors, E's and D's. Where conversions and/or adjustments to equipment is

necessary when fuel element type is changed, these conversions can be made in a minimum of time (less than one hour). (4) Except for the canning furnaces, equipment for 25 per cent excess capacity will be required for all operations.

Initial discussions on the pre-scoping study now underway will be held during the latter part of May.

CG-737 - Electric-Pneumatic Control System - AEC has still taken no action on this project which would replace the present furnace timing controls for the canning lines.

CG-746 - Relocation of Dormitory to 300 Area - AEC declined to authorize this project on the basis of a shortage of funds and lack of justification. FPD office space per person in the 300 Area is 15 per cent below AEC criteria.

IR-210 - Oil, Paint and Solvent Storage Facility - Preparation of the bid package is underway. It is anticipated that a lump sum contract for construction will be awarded during June, 1957.

New Projects

Evacuation Warning System - Preparation of an informal request along the lines suggested by AEC is nearly completed. The scope will not include additional public address equipment.

Additional Steam Generation Capacity, 300 Area - The plant and equipment analysis report for an additional 60,000 pounds per hour steam generating capacity was submitted earlier in the month. Preparation of the project proposal is nearly complete. Estimated project cost is \$600,000 and scheduled beneficial use 12-1-58.

DRAFTING & FILES

Principal Jobs in Drafting

306 Building	16 As-Built drawings (of 40)
306 to 313 Building	Intertie - Furnace Alarm Circuit
313 Building	Several baskets, conveyor changes, gages, tool holders, mandrels, hollow pieces, perfs.
	Automatic welder chuck
	Transformation Tester - Reject Circuit
	Ultrasonic Bond Tester
384 Building	Addition to Power House
	Proposed Steam Condensate return - 306 and 313 to 384
	As-Builts - Floor and Roof plans
300 Area	Maps - Burial grounds #4 and #5
I.P.D.	Lettering Panels and Relays for Charging Machine

Drawings Produced

New	47
Revised	60
Small Charts	2
Large Charts	18
Miscellaneous	39

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, 1957, 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.

HW-48506   Report of Invention - Fluidized Moderator
Reactor, R. G. Post

P. H. Reinker
Manager - Engineering

PH Reinker:mbs

FINANCIAL OPERATION

APRIL, 1957

AUDITS AND PROCEDURES

Auditing - The following revised schedule of audits to be completed by end of the audit year July 31, 1957 was prepared for transmittal to the Commission:

Management of Capital Assets	May 1957
Inventories and Reserves	May 1957
Travel Expenses	June 1957
Cash Control	July 1957
Contracting and Procurement	July 1957
General Accounts	July 1957

In general these audits will include additional coverage deemed necessary to supplement the work performed by the Traveling Auditors as well as cover the period January 1, 1957 through the indicated audit date. Working papers of the Traveling Auditors were obtained during the month; however, their formal reports have not yet been received.

Office Procedures - In connection with improved cost accounting and time distribution practices for Manufacturing operations, four daily time distribution forms were prepared and presented with appropriate explanation to Manufacturing managers and supervisors. The significant procedural change is from a distribution of hours at week end by supervisors to a daily distribution by individual operators.

Arrangements were also made to eliminate requirement of Manufacturing supervisors to compile monthly distribution of hours by cost account and product.

Additional effort was expended in clarifying and simplifying procedures for preparation of weekly canning operating reports. These reports are now being issued on a routine basis.

An improved procedure was developed and appropriate form designed for certifying the delegation of authority for receivers of unirradiated SS material. Use of this form will eliminate interim revisions of the Authorized Receivers List which is distributed to 114 holders.

Present practices and procedures were reviewed and appropriate suggestions made to maintenance organizations for maintaining current lists of employees, particularly IBM listings of overtime hours and home telephone numbers required for call-in purposes.

Design work was continued on the Salary Administration key-sort record card with objectives of making the card adaptable for possible use by other Departments at HAPO and of replacing the present Exempt Salary Record Card. Primary advantage will be to have a permanent historical record as well as a means for rapidly obtaining a wide range of statistical information.

AUDITS AND PROCEDURES (Continued)

A suitable report form was prepared and arrangements were completed with Personnel Accounting for a monthly compilation of hours worked, as required for health and safety statistical purposes. The improved procedure will provide timely data which is more accurate and will eliminate necessity of obtaining portions of the information from seven different sources.

A preliminary draft of the General Ledger Procedures Manual was thoroughly reviewed and appropriate suggestions were made. Also revisions to 25 AEC Manual Chapters were examined and routed to interested managers during the month.

Forms Control - To supplement a revised cost procedure for handling maintenance loaned labor and overtime premium cost, an improved loaned labor request and time distribution form with an explanatory flow chart was prepared.

Preliminary design of a daily individual time distribution card was further improved and made adaptable both for Maintenance and possible use by Manufacturing Operation. Purpose of the form is to provide earlier and more accurate cost distribution information.

Receipt of orders for forms, summarized as follows, continued at a reasonably high level:

<u>Forms Classification</u>	<u>Orders</u>	<u>Quantity</u>
New designs	8	4 400
Revisions or redesigns	4	4 200
Reviewed for first time	6	1 100
Reorders	<u>7</u>	<u>8 625</u>
Total orders received	<u>25</u>	<u>18 325</u>

GENERAL ACCOUNTING OPERATION

Two new General Ledger accounts were established April 1, 1957 to accumulate year to date costs for Research and Development and Startup and Standby. Costs presently reported from the account, Cost-Current Fiscal Year, will now be distributed in total each month to end functions or other interim accounts.

A detailed study was made of the monthly closing activity to determine ways to publish monthly reports at an earlier date. The study revealed that six to eight hours could be gained on the issuance of the Trial Balance by consolidating all SS Material Accounts used exclusively for FPD control into one account - Work in Process. This will permit issuance of the Trial Balance immediately after the final product cost entry is received. Details were arranged with the Product Cost Operation and the accounts were consolidated prior to opening the ledgers for April business. The April Trial Balance will be published earlier than usual; however, the Balance Sheet will continue to be published at the usual time in order to reflect individual inventory balances for each of the SS materials inventory accounts.

GENERAL ACCOUNTING OPERATION (Continued)

In an effort to improve service rendered by General Ledger, the detailed activities of all other FPD Financial components are being reviewed. Time was spent during April with the Cost Accumulation group. In addition, a trip was made to the 200-E Area to review the methods and procedures of the General and Cost Accounting Operations employed in CPD.

Tentatively, June 3, 1957, has been set for the effective date of a new procedure for distributing copies of purchase orders. A letter to FPD level 4 managers has been drafted requesting information necessary in establishing distribution lists.

To assist in preparation of journal entries, descriptions for each standard journal entry were compiled and furnished to all FPD Financial components. Each description includes references to any related vouchers or supporting details and a complete, concise explanation of the entry. In addition, a listing of "do's" and "don'ts" on preparation of journal entries was published in an effort to obtain uniformity.

Information obtained from Contract Administration in regard to the fiscal year end closing is that instructions will be forwarded to all components as soon as plans are completed. Contract Administration held one meeting with the Commission during April to discuss FY 1957 closing requirements.

To ensure complete coverage of all General Ledger responsibilities during the approaching vacation season, a considerable amount of time was expended training the Business Graduate assigned to the General Accounting Operation in all matters pertaining to the General Ledger function.

During April, 56 voucher checks amounting to \$129,028 were prepared and forwarded to Relations and Utilities Operation for signing.

Concentrated effort on reducing the volume of paper flow in the FPD Financial Operation has been successful. This has been accomplished, primarily, through the use of multiple department billings and monthly journalization of inter-department billings. Vouchers processed for October 1956, with a comparison to March 1957, number as follows:

	<u>March 1957</u>	<u>October 1956</u>
Incoming Second Class Invoices	117	132
Outgoing Second Class Invoices	43	51
Journal Entries	31	63

The new Accounts Payable procedure was inaugurated April 1, 1957. In many cases, copies of vendors invoices are not available to forward to FPD as detail supporting IBM tabulations. As yet we have experienced no major difficulties in identifying charges as adequate reference to purchase orders or contracts is included on the IBM tabulations.

One nonexempt employee was transferred to the Product Cost Operation on April 15. The replacement has been chosen from RUO and will be available some time in May.

GENERAL ACCOUNTING OPERATION (Continued)

A suggestion pertaining to standard numbers on Second Class Invoices was evaluated during April.

Travel and Living - Expenditures and commitments for attendance at professional and trade society meetings for April amounted to \$806 for seven trips. Total FY-to-Date expenditures and commitments amount to \$4,716 or 91% of the \$5,200 budget. A schedule of the FY-to-date expenditures and commitments, and available funds to each level 3 operation follows:

	<u>FY-to-Date Expenditures & Commitments</u>	<u>Budget Remaining</u>	<u>April Commitments</u>
Employee Relations	\$ 546	\$(12)	\$232
Engineering	2 228	57	155
Maintenance & Power	342	75	-0-
Manufacturing	<u>1 600</u>	<u>364</u>	<u>-0-</u>
	<u>\$4 716</u>	<u>\$484</u>	<u>\$387 *</u>

*Includes meeting of the American Society for Personnel Administration and a symposium on Non-Destructive Testing.

Funds for Off-Site Training Courses were increased \$500 through a transfer from CPD which increased the Department's FY 1957 budget to \$1,800. The additional funds will allow an employee of the Financial Operation to attend a Budgets and Measurements Seminar.

Letters were drafted requesting budget data from each level 3 operation for the FY 1958 budgets for Attendance at Meetings of Professional and Trade Societies and Attendance at Off-Site Courses and Seminars. The letters contain historical data and statistics on FY 1957 activity and will be issued early in May.

Travel and Living Statistics are summarized as follows:

	<u>April</u>	<u>March</u>	<u>Increase or (Decrease) over March</u>
Travel Advanced to Employees:			
Balance at beginning of month	\$4 088	\$5 664	\$(1 576)
Advances to employees - April	<u>5 694</u>	<u>6 843</u>	<u>(1 149)</u>
	<u>9 782</u>	<u>12 507</u>	<u>(2 725)</u>

GENERAL ACCOUNTING OPERATION (Continued)

	<u>April</u>	<u>March</u>	<u>Increase or (Decrease) over March</u>
Less:			
Travel, living and conference expenses reported by employees	5 525	5 515	10
Cash refunded by employees	1 740	2 429	(689)
Billings to other HAPO components	<u>130</u>	<u>475</u>	<u>(345)</u>
	<u>7 395</u>	<u>8 419</u>	<u>(1 024)</u>
Balance at end of month	<u>\$2 387</u>	<u>\$4 088</u>	<u>\$(1 701)</u>
Outstanding Travel Advances to Employees:			
Current	\$2 073	\$3 885	\$(1 812)
Outstanding over 15 days	<u>314</u>	<u>203</u>	<u>111</u>
Balance at end of month	<u>\$2 387</u>	<u>\$4 088</u>	<u>\$(1 701)</u>
Number of expense reports submitted	30	27	3
Number of Cash Advances	20	26	(6)

The April balance of \$2,387 in the Cash Advance Account is the lowest month-end balance since September. This is due, primarily, to fewer cash requests and the promptness with which employees are clearing up their account balances. The April balance includes eight expense accounts, two of which are outstanding over 15 days. Thirty expense reports amounting to \$5,524 were submitted in April, as compared to 27 amounting to \$5,496 in March.

Reimbursements - Documents reviewed for reimbursement included 175 purchase requisitions and 137 work orders.

Organization and Policy Guides and Advices - Fifteen Advices were distributed to issuers and users during April for a scheduled six months' review. April activity for OPGs and Advices follows:

OPGs issued	2
Advices issued	4
Revisions issued	4
Guides prepared for management review	<u>7</u>
	<u>17</u>

OPG and Advice distribution lists were prepared for each level 3 operation and will be forwarded to level 3 managers for review to ensure that lists are current.

GENERAL ACCOUNTING OPERATION (Continued)

Plant and Property Accounting - The following Appropriation Requests were processed during April, 1957:

57-FP-27	Methanol Storage and Pumping System	\$ 2 584
57-FP-28	Equipment for Three Man Canning Line	53 800

Property Accounting Documents Processed - Property Accounting Documents processed during April were as follows:

Excess Declarations	2
Property Disposal Requests	3
Plant & Equipment Transfers	2
Purchase Requisitions Reviewed	168
Commodity Codes Assigned	32
Tagging Requests Issued	8
Capital Work Order Closing Reports Issued	20
Custodian Cards and Tags Issued for Research and Development Equipment	20

Status of Equipment Funds - The status of the FY 1957 Financial Plan for Equipment Not Included in Construction Projects as of April 30, 1957, is shown below:

	<u>FY 1957 Financial Plan</u>	<u>Obligated and In Process</u>	<u>Uncommitted Balance</u>	<u>Percent Obligated & In Process</u>
Engineering	\$ 41 175	\$ 38 729	\$ 2 446	94
Maintenance & Power	97 290	68 354	28 936	70
Manufacturing	<u>253 535</u>	<u>230 213</u>	<u>23 322</u>	<u>91</u>
Total	<u>\$392 000</u>	<u>\$337 296</u>	<u>\$54 704</u>	<u>86</u>

Custodian Accountability Cards - In the future, all custodian accountability cards issued to Property representatives will be marked to indicate whether the card represents an additional item for which the custodian had no card or a correction or change in information to a card in their possession.

Arrangements were made with the Data Processing Operation to install this procedure with cards issued in April. This procedure provides for a numerical "type of entry" code to be printed on the card directly under the block marked "system." A listing of the various type of entry codes, together with a description of each, will be furnished each custodian.

Reconciliation of Uninstalled Equipment - Reconciliation of uninstalled cataloged equipment is continuing. Results to date are as follows:

Initial distribution of custodian cards	1 000
Cards distributed April 4, 1957	<u>250</u>
Total	<u>1 250</u>

GENERAL ACCOUNTING OPERATION (Continued)

Correct cards	1 041
Cards requiring changes	127
Cards covering items to be transferred excessed, or disposed of by P.D.R.	14
Cards covering items the custodian has been unable to locate	50
Cards not yet returned	<u>18</u>
Total	<u>1 250</u>

Items located by the custodian for which custodian cards were not furnished	97

The situation whereby items are located but not found on record can arise from a number of circumstances. Three of the more likely ones are:

1. Split-out of centralized property records whereby the records went to one component with the property going to another.
2. Previous misclassification of an item as uncataloged.
3. Items not previously on record.

A listing of items on record but not on hand, and on hand but not on record, is being prepared for distribution to other HAPO components. Replies will be requested within 30 days, at which time an adjustment to property records will be made for items and records not claimed. If, however, any component indicates the information requested cannot be furnished within the time allowed, it will be necessary to delay the adjustment until such information is available.

Subject to the previously stated condition, it is expected all correcting vouchers will have been written by July 1, 1957, with posting and IBM processing to follow during July.

Meeting of Property Representatives - A meeting was held Friday, April 5, 1957, with Property representatives to explain certain systems and procedures in use by Plant and Property Accounting, planned future activity and goals, and to discuss any questions or problems the representatives might have. Those present were:

N. L. Black	R. D. Ellingson
L. L. Brammer	A. B. Jackson
Mary Case	W. A. Shanks
L. C. Clossey	

Topics discussed included:

1. Methods by which property is charged to custodians
2. Project unitizations

GENERAL ACCOUNTING OPERATION (Continued)

3. Procedure and purpose for the issuance of tagging requests
4. Communications between Plant and Property Accounting and the operating components
5. Method by which plant records were split at the time of reorganization
6. General inventory dates and procedures
7. Uninstalled equipment reconciliation

Review of Depreciation Reserves - The review of depreciation reserves for plant accounts was started during April and is estimated to be more than 50% complete. The review covers 45 accounts containing approximately 2,500 items with a value in excess of \$14,500,000. Completion, along with necessary reports and recommendations, is expected by the end of May or early in June. As a by-product of this review new composite depreciation rates are being determined for application commencing in July 1957.

Equipment Funds Available - Letters were forwarded to the Manager - Manufacturing, and the Manager - Maintenance and Power Operation, advising them of the status of their equipment funds and requesting the General Accounting Operation be advised of those funds over \$2,000 for which they have no foreseeable need. No correspondence was addressed to the Engineering Operation since current funds available are less than \$2,000.

Screening for Excess Office Equipment - Requests were issued for each operation to screen for items of excess office furniture and equipment. Results of this screening revealed very few excess items. Those noted will be screened against over-all FPD requirements and then made available to the Relations and Utilities Operation.

Financial Closing - Project 640, Noise Reduction Program - The Financial Closing for Project 640, Noise Reduction Program was prepared and approved during the month. Issuance will be accomplished early in May.

MEASUREMENT PROJECT

An interim progress report to the General Manager covering over-all Department activities was completed during April. The report, in three parts, analyzed and measured the progress of the Department in relation to the calendar year 1957 goals, the fiscal year to date in applicable areas and other measurable items. A copy of this report was routed to all level 3 managers.

Measurement Services, New York, recently completed their manual on the Key Result Area of Productivity. Copies of this manual, in addition to the Key Result Areas of Profitability, Market Position and Product Leadership, have been supplied to all level 3 managers.

MEASUREMENT PROJECT (Continued)

Preliminary rough draft of the first section of the Measurement Manual has been completed. This section of the Manual will require the General Manager's approval, inasmuch as Department policy regarding Objectives and Goals is covered in this section. It is anticipated that this section of the Manual will be ready for distribution by June 1. Completion of the entire Manual is scheduled for September 1, 1957.

PERSONNEL ACCOUNTING OPERATION

The March 1957 Consumer Price Index, published by the U. S. Bureau of Labor Statistics, was reported at 118.9, compared with the September 1955 Index of 114.9. In accordance with the cost-of-living provision of General Electric's five-year, Better Living Program, an increase of 0.59% of base salaries was granted most nonexempt employees effective April 29, 1957. This latest adjustment brings the total cost-of-living adjustments to salaries since September 1955 to 3.54% and increases the total "adder" to 24.54%.

Approved Appendix "B" Modification No. 10, received during April, authorized payment of shift differential to exempt salaried employees, retroactive to February 1, 1957. Shift differential, when applicable, will be paid at the rate of 10% of the employees' earnings including overtime payments. On April 29, 1957, shift differential was paid to all eligible exempt employees for shift work during February and March. These payments are summarized as follows:

<u>Month</u>	<u>No. Payments</u>	<u>Amount</u>
February	19	\$ 578
March	23	<u>612</u>
Total		<u>\$1 190</u>

The effect of the cost-of-living increase for nonexempt employees and payment of shift differential to exempt employees on the Department annual going rate of payroll is as follows:

	<u>Increase in Annual Going Rate of Payroll</u>
Cost-of-Living Increase (0.59%)	\$14 521
Shift Differential to Exempt Employees (10%)	<u>7 200</u>
Total	<u>\$21 721</u>

Approval No. 105, authorizing modification of the exempt salary structure by an increase of approximately 2% in the position rates and maximum rates for all levels of the salary structure, effective April 1, 1957, was received from

PERSONNEL ACCOUNTING OPERATION (Continued)

the AEC. This represents the fourth increase in the exempt salary structure since the basic Company-wide salary plan was placed in effect at HAPO on January 1, 1955. Previous increases were as follows:

August 1, 1955	3%
July 1, 1956	3%
December 1, 1956	2%

The following is a comparison of Absenteeism in Fuels Preparation Department with total HAPO:

<u>Month</u>	<u>FPD</u>	<u>HAPO</u>
September, 1956	2.44%	2.09%
October, 1956	3.24%	2.70%
November, 1956	2.41%	2.37%
December, 1956	2.50%	2.42%
January, 1957	2.95%	2.58%
February, 1957	2.46%	2.76%
March, 1957	3.77%	3.11%
April, 1957	3.08%	Not Available

The above statistics indicate, except in February, Fuels Preparation Department absenteeism has consistently exceeded the HAPO average. Man-hours lost by absenteeism during the first four months of 1957 total 15,800 hours, a loss equivalent to the services of 23 full-time employees for the entire 17 week period. Absence payments during the current year-to-date total \$43,000. If absenteeism were to continue its present trend, time loss payments during the current calendar year will approximate \$135,000.

Account statements for employees participating in the GE Savings and Stock Bonus Plan were distributed on April 4, 1957. These statements indicated the dollar value at maturity of U. S. Savings Bonds purchased and the number of shares of General Electric stock credited to the employee's account for each year from 1951 through 1957. The statements also indicated the accumulated income on the shares of General Electric stock. During the first four months of 1957, U. S. Savings Bonds, with maturity value of \$15,800 were withdrawn from the Stock Bonus Plan by Fuels Preparation Department employees.

Eighty-three insurance claims for Medical expense and Weekly Sickness and Accident benefits were received during April. Eighty-nine insurance claims were processed and forwarded to Metropolitan Life Insurance Company. No claims were on hand at the close of business April 30, 1957. Checks totaling \$16,041.46, covering 109 insurance claims were received from Metropolitan and distributed to employees, hospitals, doctors, etc., during April.

A recent study by a representative group of operating departments of the Company, on the length of time consumed in settling insurance plan claims was compared with Fuels Preparation Department performance. The comparison revealed that we bettered the average by eight-tenths of a day between January 15, 1957 and February 15, 1957 and by thirteen and eight-tenths days between March 1, 1957

PERSONNEL ACCOUNTING OPERATION (Continued)

and March 31, 1957. We are currently bettering, by one-half day, the suggested goal of three days for calculating and processing claims and mailing checks.

PRODUCT COST OPERATION

Cost Accumulations - Individual meetings were held with level 4 managers of Manufacturing Operation to discuss the manufacturing cost report and its presentation. March costs were presented on a new form designed to disclose the costs of each production process related to each element in a compact form. Additional detail of indirect labor has been added, and terminology has been defined to promote better understanding and interpretation of costs. Follow-up meetings will be held during May to review the cost presentation and to give them further opportunity to discuss the report.

Effective with April costs inventories of SS Materials will no longer be reported in detail on the Trial Balance. This should reduce reporting time to General Ledger by several hours by reporting valuation of SS Inventories in total; consequently, the Trial Balance will be issued sooner. The customary classifications (raw, in process, finished, etc.) will be detailed on the Balance Sheet.

All level 4 managers of Maintenance and Power Operation were visited for the purpose of discussing their operating costs. Numerous requests for special information were received and have been or will be complied with. The general feeling is the cost reports are satisfactory for their management needs, and with the additional supplementary information requested, adequate cost control can be maintained.

Inventories - Results of the annual physical inventory of coal located in the 300 Area were distributed during the month. The survey disclosed an overage of 541 tons when compared to the book inventory. Value of current difference, using average ledger unit cost, amounts to \$4,210. Value of the physical overage compared to actual value of consumption since the last physical inventory (12 months) yields a percentage overliquidation of 1.98%.

The method of calculating work-in-process equivalent production will be changed in the current month's product cost report issued for AEC. This proposal was discussed with AEC and change in procedure was made with their concurrence. Actual percentage complete will be applied rather than assuming that production is 50% complete as has been assumed previously.

A revision of the AEC Manual stipulates that all fabrication costs applicable to rare and special metals will be charged to using components. This procedure will be followed in all future acquisitions. Fabrication costs on material presently contained in the inventory will remain in the inventory.

PRODUCT COST OPERATION (Continued)

The following two classes of spare parts are to be added to those captions converted to AEC classifications:

- 4157 Laboratory Equipment and Parts
- 4161 Water Purification, Sewage Treatment and Parts

With the addition of the above two classes, a total of six has been converted.

Budgets - Schedules for the Budget for FY 1959 and Revision for FY 1958, totaling 13 in number, were submitted to Contract Administration on or before established due dates.

Assistance was given to the AEC regarding Research and Development and Production Cost data for FY 1959, which was not a part of the regular budget submission.

Cost Analysis - At the request of the AEC a detailed study was prepared which compared the cost of producing solid fuel elements at HAPO with those produced at SRO. This analysis covered the second quarter fiscal year 1957.

Cost information was furnished for the chart illustration used in presenting the Quarterly Financial Review.

Time cards for direct labor employees have been reviewed and corrected weekly. This practice was initiated to insure that direct labor charges in April were in conformance with recently issued coding instructions. Operational supervision will begin to use the procedure in May. The review of time cards will continue until Manufacturing personnel become completely familiar with revised procedures.

The report, Summary of Production Costs, was completely revised this month. The revised report includes a summary of costs and production by products for the current month, previous three months' average, and fiscal year to date, together with additional cost and production statistics. From this report a more comprehensive appraisal of the status of the business can be made by management.

Manager - Finance

WS Roe:whm

MAINTENANCE AND POWER OPERATION

APRIL, 1957

I. RESPONSIBILITY

There were no changes in responsibility during the month.

II. ACHIEVEMENTS

A. Statistics

	<u>April</u>	<u>March</u>
Average Steam Generated (M lbs/hr)	43.5	56.8
Maximum Steam Generated (M lbs/hr)	62.0	79.0
Total Steam Generated (M lbs)	31 301	42 247
Coal Consumed (Tons)	2 065	2 768
Evaporation Rate (Steam/#coal)	7.58	7.63
No. Boilers on 2 3 2		
Date of Change 1 27 29		
Sanitary Water from 3000 Area (Million Gallons)	60.8	65.8
Total Water from 3000 Area (Average Rate GPM)	1 408	1 474
Soft Water from #3 and #4 Wells (M Gallons)	12.6	13.3
Water from #2 Well (M Gallons)	.30	.30
Peak Water Consumption for 24 Hours (Million Gals.)	2.3	2.4

<u>Duplicating Process</u>	<u>No. of Orders Processed</u>	<u>No. of Copies Made</u>
Multilith	753	384 815
Verifax	76	1 669
Ozalid	54	2 343
		<u>388 827</u>

Productive Maintenance Program

Outstanding orders as of 3/27	92
Orders issued in April	54
Orders completed in April	35
Outstanding orders as of 4/22	111

Materials and Property

Declarations of Excess issued	3
Stock Adjustment Requests issued	2
Spare Parts Decrease	0

Fire Responses

HAPO	4	Loss	\$500
Construction	0	Loss	None
Private	0	Loss	None
Outer Area	0	Loss	None

B. Operating Experience

Spare Parts Usage Reports on Classes 11 and 61 were reviewed.

A Committee from FPD, HLO and R&U Operations met to analyze the parking lot problems relative to parking, traffic flow and pedestrian safety.

Street lights were installed along the street between the 3760 and 3703 Buildings.

The 300 Area Weed Control Program was completed. The grounds were sprayed for weeds for approximately \$1500 less than originally estimated due to the clean and orderly condition of the Area.

Revised and new inspection schedules for ladders, welding hose, cranes and hoists, and abrasive wheels were established as a part of the Productive Maintenance File.

Construction of office space on the mezzanine of the 313 Building was completed.

General renovation work in the 3702 Building was finished. This work involved the relocation of partitions to improve the office layout for HLO's Financial Operation.

There were 1,107 portable radiation instruments repaired during the month. The average time per instrument was 1.18 man-hours.

The quarterly inspection of the 300 Area Fire Alarm System was completed.

The Fire Responses were:

Hanford Laboratories Operation, 326 Building - Notified by Patrol of odor of smoke in building. A thorough check by firemen was made; however, no fire was found. The odor of smoke dissipated. Cause: Undetermined.

Hanford Laboratories Operation, 329 Building - The transformer on a fluorescent light fixture shorted out over Room 18-B, causing smoke odor in building.

Hanford Laboratories Operation, East of 306 Building - A drum of uranium ignited by spontaneous ignition. The drum was covered and the material allowed to burn itself out. Loss: \$500.

Hanford Laboratories Operation, 3714 Building - False alarm due to a water leak which activated the system.

C. Equipment Experience

The automatic collator was received by the Duplicating facility. The operating personnel have become proficient in its use. This machine eliminates hand collating of all orders larger than three pages. Formerly all collating was done manually at a rate of 800 sheets per hour. The new machine has a collating rate of 6500 sheets per hour. One person can operate the machine, doing the work of four people necessitated by use of the manual method.

Of the 17 dosage rate integrating instruments put into service early in February, only 2 have been returned for repair to date.

The boiler inspector from the Travelers' Insurance Company inspected the No. 1 Boiler following a complete overhaul to the boiler and stoker.

The sulphuric tank on the west end of the 384 Building was elevated onto a structural steel saddle to permit gravity flow to the water softening room. This installation will permit the elimination of all pumps associated with this system.

Replacement of the present coal crusher by the new 3/4" Hammermill type crusher was initiated. The manufacturer, Stephens-Adamson Company, has not supplied parts lists and drawings for the BPF. Plant Engineering has recommended that payment be withheld until this information is provided to the Company.

The No. 1 Air Compressor in the powerhouse was taken out of service for its annual overhaul. The cylinder was rebored and new bearings put in the motor.

There was an emergency power outage on April 23, 1957 at 2:18 P.M. The emergency generator picked up the power load. The outage was caused by a B.P.A. construction crew doing work in Richland.

The west high tank was emptied to permit inspection and repairs. Leaks in the downcomer header and in the valves in the pit were corrected. The design of the downcomer was corrected to permit complete draining and sediment removal from the tank. The valve pit was cleaned and all pipes and valves sandblasted and painted.

D. Inventions and Improved Methods

No reports of inventions were filed during the month.

E. Costs and Savings

Billing costs to the customers for the repair of portable radiation instruments were reduced 7.4 per cent. This reduction will result in customer savings of over \$9,000 per year.

The Cost Reduction Program, in effect for one month, realized 59 per cent of the quarterly budget. This represents an annual savings of \$23,461.

G. Special Reports Issued

Unscheduled Electrical Outage, dated April 26, 1957 to E. Hilgeman from B. E. Page.

Storage Space, dated April 16, 1957 to W. A. Shanks from R. S. Quarles.

III. PERSONNEL

A. Organization Changes

T. D. Gibbs was transferred from the Instrument and Electrical Maintenance Operation to the Plant Engineering Operation as Engineer, Facilities Analysis.

R. W. Colby was promoted to the exempt roll as Foreman, Electrical Maintenance.

K. F. Erickson was reassigned to the position of Transportation Foreman.

M. D. Lawell was temporarily assigned as Foreman, Laboratory Area Mechanical Maintenance.

C. P. Gibbons was placed on Special Assignment.

B. Safety, Security and Radiation Experience

Medical Treatment Injuries	13
Frequency Rate	2.84
Disabling Injuries	0
Near Serious Accidents	0

No cases of radiation overexposure were reported.

No security violations were reported.

C. Meetings and Training

Round Table - Staff	26
Safety and Security	33
Information	10

The Department expended 240 class man-hours in formal maintenance craft training programs, presented by the Plant Engineering Operation. These formal training courses included Electrical Theory, Operation and Maintenance of Steam Traps, Theory of Operation and Maintenance of Bond Tester, Theory of Operation and Maintenance of I&E Penetration Tester, and Boiler Feed Water Testing.

The 300 Area Rotational Welding Craft Training Program was initiated to prepare the weldors for the formal qualification tests.

Representatives of the Amercoat Corporation discussed the utilization and application of paints with the painters.

An informal meeting was held with the secretaries and their supervisors during National Secretaries' Week. This meeting recognized the valuable contributions made by the secretaries to the organization.

Manager
Maintenance and Power

E. Hilgeman:JPF:mkm

EMPLOYEE RELATIONS OPERATION

April, 1957

PERSONNEL DEVELOPMENT

The six groups attending the initial Understanding People course completed this 12-hour course during the month; a total of 70 exempt employees participated. A second series was started during the month, and altogether should provide coverage of better than 90% of Fuels employees.

Arrangement was made with the Atomic Energy Commission for a Department representative to attend a two-day course in Letter and Report Writing prepared by the General Services Administration. The Fuels representative will serve as course leader in presenting this course to Fuels employees, with the first course scheduled to start during June.

As part of the report writing training requested by Maintenance and Power, a seminar on this subject was held during that Operations April 2 staff meeting.

The training schedule for the balance of the year for Fuels was prepared on a Gant chart which will be duplicated for distribution to appropriate members of management.

A brainstorming session to devise ideas for increasing employee identification with the Company was conducted jointly with the Manager-Personnel Practices. A training session in Creative Thinking was conducted for participants prior to the 45-minute brainstorming session. The session developed a total of 85 ideas which are to be evaluated.

A total of eight technical graduates were on rotational assignments at month's end. Seven assignments were vacated during the month and three were filled. Of the seven tech. grads. who left assignments during the month, four accepted permanent assignments within the Department, bringing the total of such assignments to seven during 1957.

Two tech. grad. assignment positions within Maintenance and Power were removed from the available openings to a special category. This change was made because the assignments are to be filled primarily by any "excess" tech. grads. that may be available during "peak" arrivals of tech. grads.

New descriptions of Fuels Preparation assignments for tech. grads. were prepared and forwarded to the Relations and Utilities rotational training supervisor for inclusion in a revised version of the "Horizons at Hanford" booklet. Included was a general statement of the Department's activities which was highly oriented to the interests of technical graduates.

COMMUNICATION

Savings and Stock Bonus Plan materials were distributed to supervisors of nonexempt employees as an aid in planning round table meetings on this subject. The material was developed for and with the assistance of the Employee Benefits and Service.

A one-day Communication Workshop for Fuels management was developed for presentation on May 17 and 24, and on June 6 and 13.

Plans for holding the 300 Area Open House for 300 Area employees and adult members of their families were completed. The HAPO General Manager requested AEC approval to hold the affair and reimbursement authorization for intended expenses. Communication to employees is being withheld pending Commission approval.

Communication aspects of changes in the canning line procedure were discussed with the Manager-Canning.

Members of management were informed of the April 29 cost of living adjustment for nonexempt employees through channels.

The booklet "Hidden Brain Power" was distributed in Fuels lunch rooms and womens rest rooms.

Arrangements were made for an Employee Relations Operation information meeting for all ERO employees.

FPD publicity in the GE News totaled 75 column inches during the month. This represents slightly less than one-third of a page per issue.

Four Management News Bulletins were issued during the month and two issues of the FPD Newsletter. In addition three General Manager's information meetings were arranged.

One speech was cleared for presentation during the month and one paper was submitted for approval.

SALARY AND WAGE ADMINISTRATION

There were three positions audited to date during April. Excluding Level 2 and 3 Managers, fixed rate and vacant positions, 32 of the 106 positions have been audited, or 103.5% on a monthly basis. A total of 35 audits have been completed of the 155 incumbents.

As a research project initiated by Salary Administration, all 1956 year end appraisals were reviewed. This review provides background information from which possible revisions of the appraisal plan or the form itself may be developed.

The position of Principal Engineer, Fuel Elements was established effective April 1, 1957, upon approval by the HAPO General Manager.

The position of Supervisor, 306 Semi-Works was established.

An information and reconciliation trip to New York City and Schenectady, New York, was made April 8-12. Information was gained regarding other departments of similar size manufacturing a single product. This information will be quite useful for planning future reconciliation efforts. A summary of the information obtained is being prepared for file.

The nonexempt job audit program is on schedule. All nonexempt jobs within the Engineering Operation and the Administration Operations of Maintenance and Power and Manufacturing are included in a group to be completed by May 15. All necessary new job descriptions have been received and are being evaluated as time permits.

Installation of the new secretarial plan has been completed. Of the four assignments eligible for promotion upon institution of the plan, three have received merit increases. The appraisal feature of the plan has received generally favorable comments; however, several worthwhile suggestions have been made which will be included in the plan at the time it is reprinted.

Three conferences presented by Messrs. Blesh and Hutchinson were attended. Although the proportion of time devoted to nonexempt wage administration was small, many interesting and worthwhile ideas were received.

Fuels Preparation Department has been asked to prepare several detailed job descriptions for use by Relations and Utilities Operation in completing a survey of jobs peculiar to the atomic energy industry. The survey will be designed to collect rate data on such jobs as the Metal Operator, Engineering and Laboratory Assistant assignments. This survey is tentatively planned for completion by mid-summer.

Seven charts, showing various comparisons and relationships concerning the salaries, salary levels, positions and appraisals for Fuels Preparation Department exempt employees as of the end of 1956, were completed early this month.

The code for Function, Title, Work Description and Reporting Level was provided for the Salary Data Run for Schenectady.

In accordance with Level 3 Managers instructions, the FLSA classification on 27 exempt employees in Fuels Preparation Department was changed from Administrative to Professional on salary card and current IBM run and a copy of the letter to support the change was filed in each employee's folder.

Prepared slips containing salary information after Salary Structure Change effective April 1, 1957 for level 2, 3 and 4 Managers to give them the salary status on exempt employees reporting to them.

Forty-two documents for exempt salary changes and 78 documents on nonexempt employees were provided during the month.

HEALTH AND SAFETY

	<u>April</u>	<u>March</u>
Disabling Injuries	0	0
Serious Accidents	0	0
Medical Treatment Cases	50	35
Medical Treatment Frequency	3.88	2.88
Employee Hours of Exposure	128,920	121,541
Orientation		
Presentations	3	3
Attendance	18	6
Rotational Trainee Orientation		
One Hour Each	2	3
Safety Meetings Attended	1	5
Talks Given	1	5
Employee Attendance	40	170
Inspections	8	11
Suggestions Evaluated	8	5
Medical Examinations Scheduled	80	89
Supervisors Training	4	1

Program Development

Traffic study of the private vehicle parking lots was completed during April, and recommendations will be submitted to the Central Safety Council for approval. On April 17, a study group composed of representatives from Relations and Utilities Transportation, HLO Health and Safety, FPD Health and Safety, FPD Plant Engineering, FPD Suggestion Evaluation, and the FPD Landlord, met for the purpose of discussion and preparing appropriate recommendations. The FPD Landlord will prepare the layout report.

FPD Secretarial, Steno-Clerical personnel attended the regular monthly safety meeting on April 24. Subjects covered included office safety, health and security.

Instruction was given to 40 Manufacturing Maintenance employees on the selection, use, and limitations of respiratory protective devices used in FPD.

Supervisors accident prevention instruction has been completed for 5 first line management members since March. Scheduling the training periods to fit the individual's work loads has been readily accepted.

The regular monthly inspection conducted by the Central Safety Council was completed on April 8.

A change in new employee orientation has been put into effect during April. On the third and fourth Wednesday of each month, new employees will report to the 3703 Building conference room at 8:00 a.m., for orientation in Employee Benefits, Radiation Hazards Disclosure, Health and Safety, and Fire Prevention and Civil Defense. This will require that new employees leave their work only once to complete regular orientation coverage.

Area Accident Prevention Committee chairmanship and secretarial responsibilities have been exchanged for the next six month period by the Specialists - Health and Safety, HLO and FPD. The Specialist - Health and Safety HLO will be chairman for the period.

Activities

April activity included contacts on the following items: Traffic control, underground work, respiratory protection, ventilation, publicity, eye protection, flammable solvents, coal handling equipment, stairway hazards, solvent storage, compressed gases, water supply, welding hazards, hazardous liquids, materials handling, safety rules, job hazard breakdowns, high pressure air, sanitation facilities, toxic gases, codes, standards, inspections, solvent usage, noise, acid handling, hand rails and barricades, painting, heating and cooling equipment, explosion hazards, chemical hazard control, hoisting apparatus, hose couplings, vehicle use, ladders, grinding equipment, lock and tag procedures, and tank construction.

FIRE PREVENTION AND CIVIL DEFENSE

	<u>March</u>	<u>April</u>
Fires and Investigations	0	0
Building Inspections	45	43
Surveys	2	0
Hazard Reports Submitted	17	11
Orientation Program		
Nonexempt Employees	6	18
Rotational Trainees	0	1
Supervisors	1	3
Total Number of Presentations	3	6
Suggestions Evaluated	1	2

Program Development

Revised FPD Master Evacuation Plan to include a combined procedure for entire 300 Area. Conducted a meeting with FPD, HLO, R&U and AEC key personnel to review the final draft and obtain joint approval. Distribution is scheduled for May 17.

Painting program for fire hydrants, water control valves and barricades is approximately 50 percent complete. Arrangements were made to change the Hanford Standard's color code for crash posts to eliminate the high cost of striping. Post barricades will be solid color with two bands of Scotch-Lite.

General Activities

Obtained approval for replacing 14 obsolete fire hydrants in the 300 Area and arranged with Property Management Operation - R&U to release 10 in-place hydrants at White Bluffs. Further arrangements are being made to obtain the balance of hydrants from Camp Hanford.

Approved factory specifications for railroad track insulators for use at the 311 Tank Farm.

Condemned one make of fire extinguisher being purchased by R&U on a Store Stock Request as a result of a safety suggestion approved by FPD. Arranged for replacement of 13 of these extinguishers in FPD buildings.

After Laboratory tests failed to adequately remove acid corrosion from heat detector heads, request was made to replace 75 corroded heads in the 313 Building.

Conducted field studies of the area fire alarm system and other fire protection devices throughout the 300 Area. Furnished Drafting Operation with sufficient information to complete As-Built prints of area fire alarm system and area fire map.

Inspected Power House modification plans for replacing coal crusher and instructed Maintenance in the precautions to take for eliminating the potential coal dust explosion hazard during welding and cutting operations. Arranged for firemen to stand by during these operations.

Provided advice and assistance on the following subjects: Project proposals for Area Defense Warning System, solvent storage building, increased water system and office space in 3706 Bldg.; installation of fire doors in 313 Bldg.; storage racks for flammable liquid drums; classification of laboratory; location of new proposed burning pit; process machine welding; modifying 3717 Bldg., sprinkler system and air conditioning systems.

UNION RELATIONS

A meeting was held with the Chemical Workers concerning the reduction of the canning line from 5 to 4 employees. Strenuous objection was registered to the reduction, however the Union was advised that we planned on initiating reduction on April 15. This was effected and on April 24 a grievance was received protesting the reduction based upon alleged violations of contractual as well as other legal provisions. A Step I Answer was provided the Union on April 25. The Union then requested a meeting for further discussion and such a meeting was held April 30. The problem was not resolved and the Union indicated that they are going to take the case to the National Labor Relations Board charging that the Company took unilateral action in instituting the change.

In connection with the canning line grievance, the HAMTC requested that D. E. Williams, Business Agent be permitted to review the canning line along with the Manager - Union Relations, FPD. Arrangements were made for Mr. Williams to view the operation on April 17.

The Operating Engineers protested the use of employees in the Photograph Lab furnishing negatives to the Reproduction Unit on the grounds that such work normally should be performed by the Print Shop. The Photograph Lab is a non-bargaining unit shop. The Operating Engineers who represent the Reproduction Unit were requested to provide the Company with whatever evidence is available to substantiate their position. The R&U Photo Lab was served with a grievance concerning this matter and, without consulting the customer nor R&U, Union Relations, an answer was provided at Step I advising that the Photo Lab would discontinue the practice of furnishing negatives to our Reproduction Unit. We have protested this action to the R&U, Union Relations Operation and they are presently investigating the matter.

Union Relations (Continued)

Effective April 15, 1957 R. B. Britton was transferred to Employee and Community Relations Operation of R&U Operation. W. D. Smyth replaced Mr. Britton on the same date and effective May 1, 1957 W. A. Shanks will replace W. D. Smyth as Personnel Practices Manager in FPD.

The electricians proposed a plan for overtime distribution which essentially is that of confining the distribution of overtime to foreman groups. This arrangement is extremely satisfactory to our management, however, the Union further proposed a 16-hour differential between high and low man. This, in the opinion of management, is too restrictive and it was recommended that the differential be increased to 32 or 48 man hours. This will be communicated to the Union.

Grievance Statistics:

A total of five grievances were received and four Step II grievance meetings were held. The following is a breakdown of the status of these grievances:

	<u>UNIT</u>	<u>NONUNIT</u>
Received this month	5	0
Received since 1/1/57 (See # Below)	21	0
Step I		
Answer unsatisfactory	4	0
Answer satisfactory	1	0
*Pending time limit	0	0
Settled this month	1	0
Step II		
Discussed this month	3	0
**Pending time limit	1	0
Settled this month	2	0

*Step I Grievances which Council indicated desire to discuss at Step II but not scheduled are considered settled at Step I at three months.

**Step II Grievance which Council indicated their intention to arbitrate but no further action taken are shown settled at Step II after three months.

Subject of April Grievances: (5 Total)

	<u>Mfg.</u> <u>Oper.</u>	<u>Eng.</u> <u>Oper.</u>	<u>Maint &</u> <u>Pwr. Oper.</u>	<u>Empl.</u> <u>Rel.</u>	<u>Finan.</u>
Jurisdiction	1		2		
Hours of Work			1		
Recognition (NLRB)	1				

Union Relations (Continued)

Subjects of Grievances for 1957: (21 Total)

	<u>Mfg.</u> <u>Oper.</u>	<u>Eng.</u> <u>Oper.</u>	<u>Maint &</u> <u>Pwr.Oper.</u>	<u>Empl.</u> <u>Rel.</u>	<u>Finan.</u> <u>_____</u>
Jurisdiction	5		6		
Overtime	3				
Absence (Pers.Transp.)			1		
(Illness)			1		
Ratios	1				
Hours of Work (48Hr)	1				
(end of shift)			1		
Seniority	1				
Recognition (NLRB)	1				

TECHNICAL PERSONNEL PLACEMENT

College Recruiting

F. E. Jochen participated in callback meetings at the University of Washington, Seattle University and Oregon State College during the month. He did not attend callback meetings at Kansas State College and the University of Kansas, as it was decided that Hanford representatives would not participate in these meetings. This concludes the callback meetings for this college year, in which Mr. Jochen will participate. To date, as a result of his recruiting and callback trips to the University of Washington, Seattle University, Oregon State College, Washington State College, Gonzaga University, the University of Idaho, Kansas State College, and the University of Kansas, which are included in his district, HAPO has extended 70 program offers to BS-MS candidates in engineering and science. In addition, 10 are being considered for direct placement. As of this date, 18 offers have been accepted.

College Recruiting (September 1956 to September 1957)

Rotational Assignments	Rotational Assignments for PDP	Permanent Assignments from PDP		
		Non-Exempt	Exempt	Total
<u>Engineering</u>				
Chemical	14	1	3	4
Electrical	3	0	0	0
Mechanical	5	0	1	1
Metallurgical	0	0	1	1
<u>Science</u>				
Chemistry	2	0	1	1
Physics	1	0	0	0
<u>Other</u>	3	0	1	1
TOTALS	28	1	7	8

Summer Program

The Fuels Preparation Department's requirements for college professors, high school teachers, graduate students, and college juniors for summer program assignments will be satisfied according to the following schedule:

<u>Name</u>	<u>Educational Status</u>	<u>Field and School</u>	<u>Assignment</u>
CoVan, Jack P.	Industrial Engineering professor at Texas A&M	MS/ME/Texas A & M	Manufacturing Operation
Lawrence, James	Graduate student, teaching in Mechanical Engineering Department, Texas Tech	BS/ME/Texas Tech	Manufacturing Operation Manufacturing Engineering
Alton, Larry R.	Junior student	BS/ME/WSC/ 1958	Manufacturing Operation Manufacturing Engineering

Summer Program, continued

<u>Name</u>	<u>Educational Status</u>	<u>Field and School</u>	<u>Assignment</u>
True, Robert	High school math and physics teacher	BA/Education BS/Chemistry	Engineering Operation Process Engineering
Klenck, Michael	Graduate student	BS/Physics/ U of Ariz/52	Engineering Operation Testing Methods
Fisk, Henry E.	Junior student	BS/Phys/U of Wyoming/1958	Engineering Operation Testing Methods
Cooper, Gary T.	Junior student	BS/EE/WSC	Engineering Operation Design & Projects

Experienced, BS-MS Recruiting

Seven technical or experienced personnel were added to the exempt roll this month, and one technical graduate was permanently assigned to F.P.D. on the non-exempt roll, making eight technical or experienced personnel added to the F.P.D. roll this month, a total of 25 added from October 1, 1956 to April 30, 1957. This represents a 113% achievement on the roll in relation to the requirements as forecast for the year October 1, 1956 to October 1, 1957 (including attrition allowance) pro rated for the first seven months covered by this forecast.

Four of our ads covering three engineering openings in our Engineering Operation, which had previously been placed with Deutsch & Shea, appeared in the April issue of the following publications. No applications as a result of these ads have been received as of this date.

<u>Position Opening</u>	<u>Publication</u>
Electrical Engineer	Instruments & Automation
Electrical Engineer or Experimental Physicist	Physics Today
Engineering Physicist	Nucleonics Journal of Applied Physics

We have been informed that San Jose will have a number of engineers available for placement in other G.E. components. T. G. Marshall and E. P. Galbraith visited San Jose during the week of April 22 to represent Hanford in screening these people for possible consideration for openings at HAPO. F. E. Jochen supplied Marshall and Galbraith with a listing and brief description of current F.P.D. openings in order that they may submit applicable referrals to us.

A survey was made of HAPO components to determine available and suitable candidates for the opening of Supervisor - Craft Training and Manual Writing, in the F.P.D. Maintenance and Power Operation. The results of this survey, including a detailed resumé of each candidate, were submitted to our Maintenance and Power people to assist them in making a selection of the most suitable candidate to fill this opening. Mr. Foy A. Leach was the selectee for this assignment, to be effective May 1.

Experienced, BS-MS Recruiting (9-1-56 through 4-30-57)

	Cases		INVITATIONS							
	Considered		Extended		Visited		To Visit		Open	
	FPD	HAPO	FPD	HAPO	FPD	HAPO	FPD	HAPO	FPD	HAPO
<u>Engineering</u>										
Chemical	32	48	10	9	7	5	0	0	0	1
Electrical	26	54	13	17	8	7	0	0	0	1
Mechanical	34	66	21	25	15	18	1	0	1	2
Industrial	9	16	4	6	2	4	1	1	0	1
Metallurgical	14	23	10	11	7	6	0	0	1	1
Civil	6	20	0	0	1	0	0	0	0	0
Geological	0	3	0	0	0	0	0	0	0	0
<u>Science</u>										
Chemistry	12	57	1	7	1	3	0	0	0	0
Physics	10	45	4	9	2	4	0	0	0	0
Mathematics - Statistics	5	27	1	6	1	4	0	0	0	0
<u>Other**</u>	71	205	14	14	15	11	0	0	0	0
Totals	219	564	78	104	59	62	2	1	2	6

Experienced, BS-MS Recruiting, (Continued)

	OFFERS						ON THE ROLL	
	Extended		Accepted		Open			
	FPD	HAPO*	FPD	HAPO*	FPD	HAPO*	FPD	HAPO
<u>Engineering</u>								
Chemical	8	14	6	7	1	3	6	5
Electrical	5	8	3	5	0	0	1	4
Mechanical	10	14	4	6	2	3	4	5
Industrial	1	4	1	2	0	0	0	1
Metallurgical	2	4	2	4	0	0	2	2
Civil	0	1	0	1	0	0	0	1
Geological	0	0	0	0	0	0	0	0
<u>Science</u>								
Chemistry	1	7	1	4	0	2	1	2
Physics	0	3	0	1	0	0	0	1
Mathematics - Statistics	0	6	0	3	0	0	0	3
<u>Other**</u>	11	16	11	14	0	2	10	13
Totals	38	77	28	47	3	10	24	37

* HAPO offers totals include 6 carryovers from the 1955-56 season, of which 4 were acceptances not on the roll as of 9-1-56, and 2 were open offers at that time.

** Included in the above statistics under "Other" are 6 FPD qualified, experienced non-degree people up-graded from the non-exempt roll, and 2 qualified, experienced persons transferred from other HAPO components to the FPD exempt roll.

PhD Recruiting

A total of 9 PhD candidates was referred to the Fuels Preparation Department for consideration this month. F.P.D. has interviewed three PhD's this month, but expresses no interest in extending employment offers to any of the three. We have not yet received the General Electric Company preferences of the PhD candidate who was interviewed in March. We have filled one of the F.P.D. openings for PhD's by the transfer of Mr. Guy Forbes from the Tulsa office of the Apparatus Sales Division, effective May 1. Although Mr. Forbes is not a PhD, his background and experience satisfy and are equivalent to the requirements for this opening. Seven PhD candidates are still to visit, who have been referred to F.P.D. components for expression of interest in interviewing.

PhD Recruiting (9-1-56 through 9-30-57)

	<u>F P D</u>		<u>H A P O</u>		<u>H A P O</u>
	<u>April</u>	<u>To Date</u>	<u>April</u>	<u>To Date</u>	<u>9-01-55</u> <u>through</u> <u>4-30-56</u>
Candidates	dna*	dna*	70	682	595
Invited	dna*	dna*	9	276	228
Visited	3	19	20	71	91
Offered	0	1	12	49**	32
Accepted Offers	0	0	2	10	4
On the Roll	0	0	1	5	8

* Applications and invitations are processed by the PhD Coordinator of the Relations and Utilities Operation on a HAPO-wide basis, not departmentally.

** This figure includes 12 carryover cases.

Terminations and Transfers

Transfer and termination activities for the month of April are as follows: No exempt employees of the Fuels Preparation Department terminated employment, and no transfers were completed this month. There are two active transfer cases. Negotiations have been completed for one of these cases, Ross L. Brown, who will be transferred to ANPD effective May 3. Three cases remain dormant as a result of a lack of openings at the components for which the employee applied, with the possibility of future consideration by that component.

Terminations and Transfers (Technical and/or Exempt Personnel), 9-1-56 through 4-30-57

	<u>F P D</u>	
	<u>April</u>	<u>To Date</u>
TERMINATIONS	0	11
TRANSFERS TO OTHER COMPONENTS		
Requests Received	0	19
Completed Transfers	0	5*
Closed Cases	0	9
Active Cases	2	-
Dormant Cases	3	-

* Includes two transfers within HAPO

EMPLOYMENT

Unfilled Request for Personnel 27

Personnel Requirements Cancelled 0

Employees Added to the Rolls 23

Employees Removed from the Rolls 11

Transfer Data (Concerns Requests for Transfer - FPD)

Total Requests for Transfer Active at Start of Month	54
Number of Requests Received	6
Number Interviewed	8
Requests for Transfer Effectuated During Month	4
Requests for Transfer Cancelled	5
Requests for Transfer Active at Month's End	51

Procurement

Offers	11
Interviews	12
Requests for Personnel	
Received	23
Transfers (all)	9
New Applications	
Received	7

Upgrades within FPD 13

Personnel Records

Letters to Outside Agencies Regarding Information 8

Perfect Attendance Recognition Awards 3

Service Recognition Pins   10 Year 4   5 Year 1

General

Supervisory Selection Evaluations 5

EMPLOYEE BENEFITS AND SERVICE

General

A quarterly report of employee participation in the Pension, Insurance and Stock Bonus Plans as of March 31, 1957 was distributed to Level #3 and #4 Managers.

Secretarial personnel of the Department were honored on National Secretaries Day by Level #3 Operation at an after lunch dessert.

Department Orientation for new employees has been consolidated into one meeting and will be held on the 3rd and 4th Wednesday of each month. Information is presented to new employees on the Department functions and organization, Employee Benefits and Service, Radiation Hazards, Safety and Health, and Fire Prevention and Civil Defense.

Insurance Plan

Two insurance information meetings were held during the month. A total of 34 employees attended.

Visits to Ill or Hospitalized Employees

Employees visited at Kadlec Methodist Hospital 5.

Pre-Retirement

To date there have been a total of 11 Pre-Retirement contacts all held in the month of April except for two held in the month of March.

Pension Plan

During the month one employee retired:

MILTON H. COMBS   W-3954-4530   Normal Retirement

Stock Bonus Plan

Round table conference information on the Stock Bonus Plan consisting of investment examples, Plan provisions, and sign-up forms have been delivered to Supervisors for assisting them in their employee meetings to be held prior to June 30th.

Employee Benefits Plans

Participation in the Employee Benefit Plans as of the end of March and April is listed as follows by Department or Operation:

	Pension Plan		Insurance Plan		Savings & Stock Bonus	
	Mar.	April	Mar.	April	Mar.	April
Fuels Preparation	99.9	99.7	99.7	99.7	51.3	52.3
Chemical Process	98.6	98.8	99.7	99.7	56.9	57.5
Irradiation Process	99.3		99.7		56.8	
Hanford						
Laboratories	97.7		99.4		58.6	
Relations and						
Utilities	99.7		99.7		46.8	
Construction						
Engineering	98.7		99.7		60.9	

313 Building Tours

During the month 16 F.P.D. employees and 2 employees from other HAPO Depart-

ments toured the 313 Building.

Suggestion Statistics

	Fuels Preparation Department		From Other Departments		Total	
	Mar.	April	Mar.	April	Mar.	April
Received	62	58	17	19	79	77
Completed (all suggestions re- jected or all approvals re- ceived)	42	56	19	21	61	77
Adopted	20	9	1	0	21	9
Percent Adopted	47.6	15.5	5.2	0	34.4	13.0
Net Savings	\$2,693.04	\$124.10	0	0	\$2,693.04	\$124.10
Cash Awards	\$545.00	\$95.00	0	0	\$545.00	\$95.00
<u>Awards</u>						
Net Savings	20.2%	77%	0	0	20.2%	77%
No. referred to other Depts.	12	7			12	7
Suggestions Awarded	32	9			32	9

Cumulative Statistics (Since 1-1-57)

Prior Backlog	145	165	12	10	157	175
Present Backlog	165	167	10	8	175	175
Received	162	220	53	72	215	292
Adopted	56	65	5	5	61	70
*Net Savings	\$11,093.04	\$11,217.94	\$65.00	\$65.00	\$11,158.04	\$11,282.94
Awards	\$1,340.00	\$1,435.00				

<u>* Awards</u>		
Net Savings	12.1%	12.8%
No. outstanding to other Depts.	19	14

*Figures corrected to adjust for error reported in March report.

Selective Service and Reserve Statistics

Total number of non-veteran employees subject to military service training through Selective Service System   Total 29

Number classified IA	13	Number classified 4F	5
" " 3A	4	Total	<u>29</u>
" " 2A	7		

Number of Technically Trained and Engineering Personnel for whom deferments are currently being requested 7.

Reservists Data - Total Number of Reservists on Roll 51.

Number of Ready Reservists	<u>37</u>
Number of Standby Reservists	<u>14</u>

Number of employees on military leave 3.

Letters have been sent to 9 different military reserve components requesting names of G. E. employees who are subject to annual summer encampment.

The Analyst, Personnel Results, arranged for a series of secretarial tests. Two thirds of our secretarial and stenographic personnel have agreed to take the tests during the first part of May.

W. A. Shanks assumes the responsibilities of Manager - Personnel Practices on May 1, 1957.

SECURITY VIOLATION

One security violation occurred in April in Fuels Preparation Department.

Manager - Employee Relations

**DATE
FILMED
02/01/93**