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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Area</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Area - Reactors</td>
<td>4-7</td>
</tr>
<tr>
<td>200 Area - Separations Plants</td>
<td>8-12</td>
</tr>
<tr>
<td>300 Area - Reactor Fuels Fabrication</td>
<td>13-17</td>
</tr>
<tr>
<td>400 Area - Heavy Water</td>
<td>18</td>
</tr>
<tr>
<td>Utilities and General Services</td>
<td>19-21</td>
</tr>
</tbody>
</table>
SAVANNAH RIVER PLANT
100 AREA - REACTORS

POWER ASCENSION PROGRAM

1. Fuel Rupture Location System

Part of the piping for the 25-cyclone prototype of a rupture location system was installed in 105-R during the R-2,3 shutdown. Work will continue during the succeeding two discharge periods. Initial observations of radiation levels may be made with a portable instrument or "apple picker." However, the Savannah River Plant instrument and mechanical assistance groups have developed a prototype travelling monitor system to be used in conjunction with the cyclones, and plan installation during November or December.

PRODUCTIVITY IMPROVEMENT PROGRAM

1. Increased Moderator Circulation

Building 105-C will be shutdown approximately December 27 for installation of the Bingham pumps. Designs for this installation have been approved with minor exceptions. It is expected that seven Bingham pumps will have been shipped by the manufacturer by November 6. Equipment delivery schedules appear adequate at present, but tight with respect to a few items: delivery of fabricated piping is expected in late October or November; six gate valves are scheduled for shipment on December 13; and instrument panels will probably be shipped incomplete, with final instrument mounting to be done during erection due to late delivery schedules. A source of long radius elbows for pump suction piping has not been established, but it is believed they can be obtained.

Building 105-K is now scheduled for shutdown on March 23 and drawing approvals are nearly completed for this area. Because of a delay at the foundry, the delivery of Bingham pumps for this area may become critical.

Hydraulic testing of the first two Bingham pumps has been completed, including performance over a range of temperatures to 95°C. The pumps meet specifications in every respect. It was found that the efficiency specification could be exceeded by polishing and shaping the impeller vanes. Since the cost of polishing will be recovered by savings in power cost in less than one year's operation, it was decided to apply this finish to all pump impellers.

The hydraulic tests demonstrated that suction head requirements to avoid cavitation in the pump were improved at elevated temperature. Until recently it has been considered necessary to increase the net positive suction head (NPSH) on a pump as water
PRODUCTIVITY IMPROVEMENT PROGRAM (Continued)

1. Increased Moderator Circulation (Continued)

temperature was increased, to avoid cut-off or loss of discharge head. The tests show that an increase in water temperature from 30°C to 95°C will reduce the NPSH requirements of these pumps by approximately 15% when operating at the 25,000 GPM pumping rate. As pumping rate is increased, the improvement is somewhat less but does not fall below 10% in any expected operating range. This phenomenon will materially increase safety of operation of the Savannah River Plant reactors at elevated moderator temperatures.

Facilities capable of calibrating the 42" venturi meters that will furnish the cooling water flow signal to the power calculator have not been established. The problem is complicated by the fact that upstream piping at two meters (in 105-R and P) would be expensive to simulate in any laboratory set-up. It is now believed that some meters can be calibrated in facilities of the University of Minnesota and will serve as a basis for comparison in calibrating others at Savannah River Plant.

2. New Fuel Elements - Assembly and Disassembly

Project S8-1053 has been authorized for conversion of the 100 Areas to handling new fuel elements. General arrangements for the assembly areas of Buildings 105-C, K and L have been approved. Drawing approval of loading equipment for enriched fuel elements has been largely completed, and design for disassembly of these elements is being developed. General arrangement of the disassembly equipment has been agreed upon, vendor's equipment such as optical inspection devices are being investigated, and disassembly machines, cutting equipment and storage magazines are being designed.

3. New Fuel Elements - Shipping Casks

Design is now proceeding on a long shipping cask, finned on all surfaces for heat removal by natural convection air-cooling. The cask can contain up to 45 Mark VI tubular elements or 50 Mark VI-A elements. This capacity is approximately optimum relative to shipping costs for Mark VI elements, but slightly larger than optimum for Mark VI-A, based upon 120 days' minimum cooling of 15% alloy Mark VI-A elements, irradiated at 2,000 MW to 40% burnout. However, the 50-element cask has the following advantages, based on heat transfer through the cask walls limiting the number of elements that can be shipped in the cask:

a. If longer cooling periods should prevail or if reduced burnout should be encountered, the casks may be more fully loaded so as to effect a considerable reduction in freight. For example, at 180 days' minimum cooling, the casks have been estimated to have an annual average capacity of 42 elements vs. 30 for 120 days' cooling.
PRODUCTIVITY IMPROVEMENT PROGRAM (Continued)

3. New Fuel Elements - Shipping Casks (Continued)

b. The larger cask has greater adaptability to bundles of natural fuel elements or other possible future uses.

The criticality tests with assembled Mark VI-A 15% elements have been completed at SRL. Five stacks of ten unirradiated elements, with the stacks five inches on centers and separated by 30 mils of natural cadmium, are sufficiently sub-critical to be safe, thereby providing a basis for cask design. However, measures must be taken to prevent spilling ten elements in a compact array on top of a partially loaded cask.

It is planned to use a magazine for each stack of nine or ten elements for both storage and shipping purposes. The magazine will be an open framework, constraining the elements at the ends in a vertical array and permitting free circulation of water.

4. Construction Schedules

Latest schedules of construction for the Productivity Improvement Program for Buildings 105-C and 105-K are as follows:

**Building 105-C**

<table>
<thead>
<tr>
<th>Task</th>
<th>Dates</th>
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<tbody>
<tr>
<td>Installation of assembly equipment</td>
<td>Nov. 12 to Dec. 3 and Feb. 1 to Mar. 10, 1957</td>
</tr>
<tr>
<td>Install Bingham pumps</td>
<td>Jan. 3 to Feb. 12, 1957</td>
</tr>
<tr>
<td>Alter disassembly</td>
<td>Mar. 30 to June 1, 1957</td>
</tr>
<tr>
<td>Alter transfer equipment</td>
<td>Oct. 15, 1957 to Jan. 1, 1958</td>
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</table>

**Building 105-K**

<table>
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<th>Task</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install assembly equipment</td>
<td>Jan. 1 to Mar. 15, 1957</td>
</tr>
<tr>
<td>Install Bingham pumps</td>
<td>Mar. 27 to June 19, 1957</td>
</tr>
<tr>
<td>Alter disassembly</td>
<td>June 26 to Sept. 1, 1957</td>
</tr>
<tr>
<td>Alter transfer equipment</td>
<td>Oct. 15, 1957 to Mar. 1, 1958</td>
</tr>
</tbody>
</table>

REACTOR DESIGN STUDY

The proposed design of a twin reactor installation has been modified to include an improved arrangement of annular thermal shield in which the twelve separate tank segments used in 105-C are replaced by a single built-up tank. The outer wall of the reactor tank forms the inner wall of the thermal shield, and the outer wall of the shield becomes the casing around which the concrete is poured. The nine 1-inch thick filler plates inside the tank are welded together with butt-strapsto form complete circles. Instrument sleeves are cantilevered from the outer wall, and no staybolts are needed owing to the thicker wall of the reactor (5/8 inch vs. present 1/2 inch) and a reinforcing ring at the top.
The issuance of the report on Phase 2 of this design study is on schedule. The scope of work for the supplemental studies as described above will be completed by October 15, looking forward to completion of cost estimates in November and issuance of a final report in December.

GENERAL

1. Processing of NRX and NRU Elements from Chalk River

   Shipment of NRX fuel to Oak Ridge National Laboratory has been discontinued, and Atomic Energy Commission has requested a study to establish the relative economics of processing at Hanford or Savannah River Plant. These elements are rods about 1.5 inches in diameter and 10 feet in length, and are cut into pieces of suitable length before shipment.

   For future shipping of about 200 NRX rods and 1650 NRU flat plate assemblies a year, it is proposed that uncut elements be shipped in long casks to the 100 Areas for storage before dissolving. The NRU facility has been designed for shipping long elements but the NRX facility will require modification.
TRITIUM PROCESSING

1. 232-H Building - First Line (Project S8-1036)

Design of the first line will be essentially completed during October. Building completion and process hood fabrication are proceeding. The most limiting item for completion of the first line appears to be the 20-tube 8-liter Sprengel pump. The primary unresolved problem is the specification of a reliable mercury pump for the Sprengel and an intensive program is under way to demonstrate several types of mercury pumps. One approach is the use of a pump similar to that used on the 8-liter Sprengels except that larger (4 inch diameter) bellows are used. Another approach is the use of multiple small bellows duplicating those successfully used in the 2-liter Sprengels. The third approach is the use of a diaphragm pump; a commercially available Lapp Pulsa Feeder is being tested.

2. 232-H Building - Second Line

Meetings have been held between Atomic Energy Division, plant personnel and the Engineering Department to prepare a "basic data report." This report will list all known design criteria and serves to point out unavailable information required for design. The required data are being obtained.

3. 232-F Building - Isotope Separation Column

The Engineering Department is estimating for project preparation the cost of a larger diameter column for Building 232-F to provide the desired capacity without operation at pressures above atmospheric. Design of the new column is proceeding and procurement has started on critical delivery materials. The completion date is February 1957, with installation in March. Fabrication by Wilmington Shops may be required to meet this stringent schedule.

4. 232-F Building - Improved Extraction Furnaces

One of the improved extraction furnaces was performance tested at the National Research Corporation's plant and, based on the results obtained, the furnace was accepted. No mechanical or operating difficulties were encountered. The cooling rate of the furnace was slower than was desired, but it is believed that this may be corrected by removal of part of the heat shields. It is anticipated that the furnaces will be tested further at the plant to determine how many shields may be removed to achieve the optimum cycle time.
TRITIUM PROCESSING (Continued)

5. 234-H Building

Design and procurement for Building 234-H was nearing completion and, except for various studies and clean-up items, will be essentially complete by the end of October.

A decision has been made to suspend development work on the liquid piston (mercury) compressor, and to concentrate the effort of all groups concerned on development of the diaphragm compressor designed by Pressure Products Industries. The principal problem with the diaphragm compressor has been leakage of the fourth stage head. Since the leakage rate is small, on the order of $10^{-5}$ cc/sec., it has not yet been possible to locate the source of the leak or to determine the cause. The test program includes trying various techniques for welding the diaphragm to the head, demonstration of the feasibility of running with double "0" ring seals, the use of better quality materials in fabrication of diaphragms, and testing of a redesigned head of heavier construction and higher bolt loading. It is expected that all of these items will have been tried in the test compressor by the middle of November. In the meantime, an order is being placed with Pressure Products for two four-stage diaphragm compressors with a "hold" being placed on the diaphragm heads.

Development of "pinch-welding" as an alternate means of closing the reservoir filling tube is proceeding. Over 2,500 welds have been made successfully, with 10,000 to 15,000 psi helium pressure inside the tube. A few samples were tested to failure, which occurred generally in the range of 30,000 to 35,000 psi, with the lowest at 21,000 and the highest at 46,000 psi. The customer is now interested in this closure, and is having several test reservoirs equipped to demonstrate the techniques of fabrication, filling and closing. Design of the loading hoods in Building 234-H is based on use of the transverse tube closure. The effect on schedule and cost of making the changes required to handle the "pinch-weld" closures has not been evaluated, but is currently under study.

200-F INCREASED CAPACITY

1. Canyon and Related Facilities

In view of an earlier need for a long element dissolver to process Chalk River (NRU) fuel elements and demonstrated higher dissolving rates with existing equipment than was contemplated in the original scope for this project, the Atomic Energy Commission has been notified that the following revisions to the scope for Project S8-1025 are being made:

a. The third slug type dissolver and its associated off-gas equipment will not be installed.
200-F INCREASED CAPACITY

1. Canyon and Related Facilities (Continued)

b. The coating waste tank will be relocated to space previously occupied by the third dissolver in order to allow installation of a by-cylindrical tank as the feed vessel for the high activity waste evaporators. This larger vessel would ultimately have been required when the NPE dissolvers were installed and the current change in scope avoids much complex canyon piping and the fabrication of a non-standard canyon vessel for interim service.

While these changes will reduce the work load in the center section of the 221 Building and eliminate the outside facilities associated with the dissolvers, overall cost of the project will not be appreciably reduced because of the increased cost of the larger tank and the cost of abandoned design.

Revisions to the canyon pump mountings to permit raising of the overflows on the mixer-settler pump tanks and lowering of the support frames under the 1C and 1E mixer-settlers make it possible to install heat exchangers between all jumbo mixer-settlers in the canyon using only gravity flow rather than the paddle pumps previously required. Air lifts have also been substituted for electric paddle pumps for returning solvent from the decanters to the mixer-settlers. The air lifts offer a simple means of obtaining variable flow rates, have no moving parts and simplify the mixer-settler electrical system.

Very preliminary tests using variable voltage for pump speed regulation appear promising as a means of obtaining accurate flow control. Tests will start immediately to more accurately define shaft deflections and critical speeds for the ten-foot over-hung shaft required for pumps in the deep canyon tanks.

2. "JB" Line

Construction of the building to house the "JB" Line has been started, with the release of the East, West and South walls of the building.

Design of the various stations in the mechanical line has reached the point where final detail design will be done. Stage 4 (approval) drawings will be submitted starting about the middle of October.

WASTE DISPOSAL

1. 241-F Building - Additional Low Level Waste Storage - Project S8-1030

Questions regarding the shielding adequacy of the earth cover on the new tanks and about the effect of relatively high temperature operation (210°F) on the tank structure have been answered satisfactorily; design and construction of this new
WASTE DISPOSAL (Continued)

1. **241-F - Additional Low Level Waste Storage - Project S8-1030**

   facility is proceeding. A construction cost estimate is being prepared and will be reviewed before the end of October.

2. **242-F Building - Waste Evaporation**

   A review of the current waste situation has been made considering the predicted waste tank filling schedule, cost estimates for the various evaporation proposals studied and the Griscom-Russell test results. Conclusions reached are:

   a. Waste tank fill rates are such that an evaporator is not urgently needed.

   b. The technical feasibility of the central farm evaporator is questionable at high concentration ratios whereas that of the G-R evaporator has been demonstrated.

   c. There appears to be the potential for operating concept changes on the large G-R evaporator (being considered for installation on the new tanks) which could lead to significant cost reductions in the evaluation estimate as presented. These will be explored further and a revised scope and operating concept given to the Engineering Department with the request that an Order-of-Magnitude Estimate be prepared for revision of the authorized project for waste evaporation.

3. **241-H Building - Waste Pumps**

   The waste pump that had been under test at TNX was disassembled and inspected by interested parties in the Engineering Department and Atomic Energy Division. The pump appeared to be in excellent condition, after simulated operation at TNX equivalent to over a year's normal operation. The pump is being reassembled and will be turned over to Construction for installation in the pump tanks and jumper fabrication.

"25" PROCESS

Recently developed flowsheets, details of the critically safe slab mixer-settler and preliminary estimates of vessel size and spacing for criticality control have been given to the Engineering Department for their use in studies preparatory to development of a scope for preparation of an Order-of-Magnitude Estimate. Preliminary studies are under way on an experimental slab type dissolver for use at TNX to evaluate the mechanical and chemical aspects of this type vessel.
MISCELLANEOUS

1. Chalk River Fuel

Sketches have been prepared showing in principle a type of shipping container and dissolver charging device for the processing of NRX fuel rods in the existing dissolvers. Essentially, the shipping container consists of an aluminum can 9 inches outside diameter by about 18 inches high, the largest dimensions compatible with the existing SCRUP casks and the charging opening in the Savannah River Plant dissolvers. Cut NRX fuel rods would be loaded into this can under water and a top, containing a sintered metal vent filter to prevent escape of small particulate material attached. The can would remain full of water once loaded and would have to be at least partially submerged in water during shipment and storage to avoid approaching the boiling point.

A temporary storage area would be provided in the canyon adjacent to a dissolver. Containers would be charged to the dissolver by placing several at a time on a sloped chute from which a gate can be remotely removed by the crane to allow them to slide into the dissolver. All handling by the remote crane may be accomplished with existing hooks and yokes.

2. Canyon Pumps

The canyon pumps installed in connection with FDM 262-H, Solvent Washing, have been placed in operation and are performing satisfactorily.
SAVANNAH RIVER PLANT

REACTOR FUELS FABRICATION - 300 AREA

INCREASED PRODUCTIVITY PROGRAM

1. Extended Surface Enriched Elements - Mark VI Program

   a. General

   The Project Analysis for Project 38-1044, prepared by Engineering, shows the following dates for initial turnover to Operations:

   Building 321-M - Fuel Production Facility

   1) Casting and Machining Area - August 1957
   2) Start-up of entire facility - October 1957

   Building 320-M - Expansion of Target Facilities

   1) Machining area complete - April 1957
   2) Furnace room expansion complete - July 1957

   Production commitments require partial turnover of the casting and machining areas in Building 321-M in time to begin actual production with this equipment by June 1, 1957 and to begin production with the second vacuum furnace in Building 320-M by May 1, 1957. In order to facilitate start-up at the accelerated dates required by production commitments, Engineering has been furnished with a complete list of the dates on which each piece of process equipment in Buildings 321 and 320-M should be ready for operation.

   b. Fuel Facility - Building 321-M

   Construction work on outside service facilities, such as installation of outside lines, installation of the railroad spur and excavation of the sewer line to the seepage basin, is currently proceeding. Pouring of sidewalls for the reinforced concrete storage vault has been completed. Installation of sub-floor piping and conduits is under way.

   The first air melting furnace was shipped by Ajax Electrothermic Corporation on September 28. The associated controls for this furnace are scheduled for shipment by October 10. When received at Savannah River Plant, the furnace will be temporarily installed in Building 313-M for use in the interim production program.

   All extrusion press approval drawings issued to date by Lake Erie Engineering Corporation have been reviewed and any differences on design details have been resolved.
INCREASED PRODUCTIVITY PROGRAM (Continued)

1. Extended Surface Enriched Fuel Elements - Mark VI Program (Contd.)

b. Fuel Facility - Building 321-M (Continued)

A preliminary issue of general arrangement drawings on the 20,000 pound McKay draw bench has been received for approval and is currently being reviewed. It is anticipated that the vendor will be released for fabrication during the first week in October.

Concern over inflammability of present disposable cardboard shipping container design has prompted a study of methods for minimizing the hazard for this source. The possibilities of adding a chemical flame retardant to the cardboard containers or of using a more fire resistant material are being investigated.

c. Target Facility - Building 320-M

Construction work on Building 320-M was initiated at month end. Progress to date includes cleaning up the furnace room extension site, removal of the concrete pad in this area, and initiation of work on increasing the bearing area of outside column footers.

The majority of approval prints on the vacuum furnace, being fabricated by National Research, and the outgassing equipment, being furnished by the Stokes Machine Company, have been reviewed and approved with minor exceptions. Both vendors have been released for fabrication on all major job components. National Research has moved their promised vacuum furnace shipping date from December to January 28.

Promised shipment of the six turret lathes being furnished by the Gisholt Company was erroneously reported last month as sometime during November. The actual commitment made by Gisholt was for completion of the lathes order during December 1956.

2. Extended Surface Enriched Elements - Mark VI-A Program

In response to an Atomic Energy Division request, Engineering has initiated work on the preparation of an Order-of-Magnitude estimate covering the cost of conversion to Mark VI-A fuel element production in the 300 Area. A process scope has been forwarded to the Estimating Section and specialist scopes on the Mark VI-A program are due in to Estimating by October 15.
INCREASED PRODUCTIVITY PROGRAM (Continued)

3. Extended Surface Natural Uranium Elements

a. Extrusion Cladding Facilities - Building 773-A

Shipment of the extrusion press was not made in mid-September as originally scheduled because of a delay in receiving rams from Moczik Tool and Die Works. The rams are needed by Wilmington Shops to complete final alignment tests prior to shipment. The rams were received in mid-September and shipment of the press is expected during the first week in October. The electrical panel, instrument panel and first furnace assembly have been delivered to the plant.

Preliminary issue of Engineering drawings for the material handling equipment have been made for field procurement. Final issue of the drawings is expected early in October.

The effect of the delayed delivery of the press upon start-up is being reviewed by the Construction Division.

b. Extrusion Cladding Facilities - Building 320-M

A delay in obtaining the container for the 320-M press has resulted in a two weeks' delay in initial extrusion tests. One test was conducted, however, on a short length undersized steel plate. Results of the initial test were promising; however, modifications must be made on the die and container to correct for the uneven cladding and off-centering of the plate experienced during the test.

It is anticipated the die and container will be returned from the vendor during the latter part of October and tests will follow using both undersized and nominal uranium and steel plates.

c. Alternate Production Facilities - Building 314-M

Engineering has presented various building and equipment layouts for converting a building primarily designed for step-pressing of Mark III-A elements to the manufacture of Mark III-A or Mark V elements by any of the other processes under consideration. One layout, Scheme I-A which incorporates vertical plating of the cores, was chosen as the most feasible layout and further design work will be based on this scheme.

In addition, Engineering has been requested to prepare evaluation estimates by November 1, 1956 on the following four schemes:

1) A building for the manufacture of Mark III-A elements by step-pressing.
INCREASED PRODUCTIVITY PROGRAM (Continued)

3. Extended Surface Natural Uranium Elements (Continued)
   c. Alternate Production Facilities - Building 314-M (Contd.)

   2) Conversion of facility in 1) to manufacture of either Mark III-A or Mark V elements by pneumatic pressing.

   3) Conversion of facility in 1) to the manufacture of either Mark III-A or Mark V elements by extrusion cladding.

   4) A building designed to process Mark III-A or Mark V elements specifically by extrusion cladding.

   The facilities are to be designed for five reactor operation; however, in the case of Mark III-A manufacture an alternate interim production capacity of two reactor operation is to be considered. The reduced capacity estimates will contain buildings designed for full production, but will have the equipment for two reactor capacity.

4. Consolidated Metallurgical Control Laboratory

   Approximately 70% of the design of Building 322-M has been completed during the month; however, some changes are being made to the original design concepts. These changes include the following major items:

   a. The outside equipment layout was changed in order to relocate all auxiliary equipment, exclusive of a condensate flash tank, from the road side of the building to the opposite or east side of Building 322-M.

   b. The contaminated exhaust system has been changed to include single rather than double absolute filters.

   c. Welded aluminum exhaust ducts will replace riveted galvanized iron ducts in the metal preparation area.

   d. Building 322-M will obtain instrument and service air from a main supply station used jointly with Building 321-M.

   Delivery of the duriron pipe for the process sewer has been completed and installation is expected early in October. The foundation for the building steel has been poured and the steel is now at the site. The main building pad is currently scheduled to be poured early next month.

   Construction is reviewing the cost estimate and it is anticipated it will be transmitted to Atomic Energy Division by mid-October.
General

Vertical Salt Bath Installation - Building T-1001

Construction has completed all work on this installation and it is expected Savannah River Laboratory will test and accept the facility during the first week in October.
DANA PLANT

Hydrostatic testing, partial replacement of corroded 410 SS bubble cap tray assemblies and inspection of Unit 203 have been completed. Re-startup of the unit was in progress at month end.

GENERAL

The project for procurement of additional stainless steel storage drums for heavy water has been cancelled. Future drum purchases will be made on cost rather than on a capital account. Present plans call for immediate placement of an order for 1000 more type 304 SS drums with Inland Steel on the basis of low bid, and for 500 drums from U. S. Steel Products on the basis of required delivery.
SAVANNAH RIVER PLANT
UTILITIES AND GENERAL SERVICES

ADMINISTRATIVE, TECHNICAL AND GENERAL

Tentative agreement has been reached with the Technical Division to locate the proposed Intermediate Level Cells on the 1-C Service Floor of Building 773-A. A work request for preliminary engineering design and Order-of-Magnitude Estimate of the subject facilities was authorized September 17, 1956. The Design Division is presently preparing a preliminary equipment layout sketch and reviewing the feasible methods and materials of construction for the most economical facility.

Partial occupancy (office section) of the Engineering Assistance Facility, Building 723-A, has been effected. Inspection of the Heat Treating facilities was held September 27, 1956 and occupancy of this section is scheduled for October 13, 1956. Construction work now stands approximately 90% complete with the transfer of shop equipment from Building 232-H the only major item of work remaining.

Initial issue of construction drawings for additional High Level Cave facilities at the Main Technical Laboratory, Building 773-A, is scheduled during the first half of October. The design is approximately 60% complete and information has been forwarded to the Estimating Section for preparation of a Construction Cost Estimate. Purchase orders have been placed for the cave windows and cave doors.

100 AREA UTILITIES

A meeting was held with Atomic Energy Commission on September 6, 1956 at the Savannah River Plant to present a report on the evaluation study of cooling ponds. The report consisted of the findings and recommendations resulting from an evaluation study of three cooling pond schemes at two site locations, Lower Three Runs Creek and Tinker Creek. A written report confirming the material presented in the meeting has been forwarded to the Commission.

During the month, core drilling was started at the Tinker Creek earth dam site. Ten holes have been drilled to an average depth of 120 feet at 500 foot intervals across the axis of the dam to establish foundation soil conditions. Drilling is now in progress on the dam abutments and reservoir ridges to establish soil conditions and water table elevations. The core drilling is being conducted in connection with the site survey program initiated to determine feasibility of the two proposed cooling pond site locations with respect to holding water within the allowable limits.
200 AREA UTILITIES

The field survey for the new 115 KV transmission line between the Urquhart Station and the Savannah River Plant has been completed. The purchase of the right-of-way is complete with the exception of two parcels of land owned by estates. Friendly condemnation action is being taken to obtain this land. Clearing of the right-of-way has started at the Urquhart end of the line and the Utility is in the process of reviewing final design with contractors who will bid on the installation of the line.

DANA PLANT

The installation of eight (8) additional cross-over tubes from the middle drum to the steam drum has been completed on all six boilers. Replacement of the original steam washer with a washer of low pressure drop design has been completed on three boilers. The installation of the additional cross-over tubes and the new type steam washers is being done to improve boiler circulation at the high boiler overloads.

The installation of 7200 KVAR in static capacitors has been completed. The power factor has been increased from 93% to 99% with five production units in service. When the sixth unit is returned to service, it is expected that the power factor will drop to 98% conforming to the design performance of the capacitors.

AUTHORIZATIONS

The following projects, Indirect Repair Orders and Engineering Work Requests were authorized during the month:

**Savannah River Plant**

<table>
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<tr>
<th>Order No.</th>
<th>Description</th>
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<td>S8-4007</td>
<td>Caustic Feed Modifications Bldg. 483-D</td>
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<td>S9-1021-2</td>
<td>Replace Tubes and Sheets in Distillation Column Condensers, Purification Area - Bldgs. 105-RPLKC</td>
<td>21,500</td>
<td>Total Parts 1-2 $85,000</td>
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<td>S9-1045</td>
<td>Improved Count Rate System for Start-Up, Bldgs. 105-RPLKC</td>
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<td>S9-1047</td>
<td>Additional Health Physics Survey Instruments</td>
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<td>S9-1048</td>
<td>Redesigned Cooling System for CT-2B Bldgs. 411-D, 412-D and 413-D</td>
<td>69,000</td>
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### Savannah River Plant (Continued)

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<tr>
<th>Project Code</th>
<th>Description</th>
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<tr>
<td>S9-1050</td>
<td>Installation of an Off-Gas Exhaust System and Equipment, Bldg. 677-G</td>
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<td>S9-1051</td>
<td>Improved Precipitation Units, Bldgs. 221 F&amp;H</td>
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<td>S9-3528-2</td>
<td>Facilities for Reactor Hydraulic Studies, Bldg. 677-G</td>
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<td>S9-4505</td>
<td>Locomotive Jacks, Bldg. 618-G</td>
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<td>IRO-D-08126</td>
<td>CS-1 Baffle Modification, 411-D, 412-D, 413-D</td>
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<td>IRO-Z-18067</td>
<td>Install High Differential Pressure Switches, Bldgs. 105-RPLKC</td>
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<td>25924-VI</td>
<td>NFE Conversion - 100 Areas</td>
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<td>Total Parts I-VI $175,000</td>
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<td>850400</td>
<td>Funds for Inspection and Expediting</td>
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<td>981025-24</td>
<td>Canyon Pump Development</td>
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<td>981053-21</td>
<td>ESD Assistance - 100 Areas</td>
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<td>981057-10</td>
<td>700 Area - Intermediate Level Caves</td>
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