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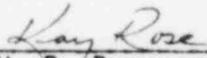
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NRC FIN No.

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INTERIM REPORT

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NRC Research and Technical
Assistance Report

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LOFT MONTHLY PROGRESS REPORT FOR AUGUST 1979

POOR ORIGINAL



EG&G Idaho, Inc.



IDAHO NATIONAL ENGINEERING LABORATORY

DEPARTMENT OF ENERGY

IDAHO OPERATIONS OFFICE UNDER CONTRACT DE-AC07-76IDO1570

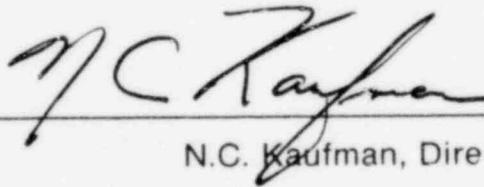
NRC Research and Technical
Assistance Report

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**LOFT
MONTHLY PROGRESS
REPORT FOR
AUGUST 1979**

September 1979

Approved: _____



N.C. Kaufman, Director LOFT Project

NRC Research and Technical
Assistance Report

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I. Director's Monthly Summary

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I. DIRECTOR'S MONTHLY SUMMARY

During August, both plant and planning efforts revised the project activities to perform a series of small break and operation transient tests. That test series, shown in Chapter III of this report, consists of tests spaced six to eight weeks apart, beginning in November. Before that time, the plant will require nuclear and nonnuclear checkout as a result of fuel changes performed in July. Additionally, the efforts of operations and experimental support personnel will require reorganization to prepare for such a rapid test sequence with attendant demands for preparation and data evaluation.

At the end of August, the test plan was still receiving some final evaluation to determine the need for a test around February 1980 to provide data requested by the Nuclear Regulatory Commission (NRC).

Schedule progress during August toward performance of the first LOFT nuclear small break tests was good, despite electrical problems encountered. These problems are associated with all incoming commercial power, after lightning and high winds damaged some lightning arrestors and circuit breakers. Repairs have proceeded as quickly as possible, with other plant work rescheduled to accommodate supply and outage impacts. In spite of these problems, the project is slightly ahead of schedule when compared with the commitment date for the L3-1 test.

During August, almost all Department of Energy (DOE)-funded work was completed. All such work will be completed and costed in September. Costs for NRC-funded work continue to lag the projected budget, although the differences were significantly reconciled by a series of completed and pending Change Control Board (CCB) actions. Preparation of the FY-1980 budget continues in order to match the new test program with the anticipated funding levels.

II. Accomplishments

II. ACCOMPLISHMENTS

1. 189a-A-500001 LOFT Integral System Design and Fabrication

- (1) On August 21 and 31, high voltage surges on the 13.8 kV power system caused failures at numerous lightning arrestors at LOFT as well as severe damage to one 13.8 kV air-circuit breaker. Extended power outages occurred on the LOFT commercial power system; the vital power system functioned as designed to maintain continuous power to critical LOFT systems. The details of the causes and recommended corrective actions are being developed by a special investigating committee designated by the EG&G Idaho general manager.
- (2) Drafting on the A3 fuel module assembly drawing was completed. Final approval and release of the drawing is pending a final design review. Assembly of S/N 004 corner fuel module for Core II was completed. Work on the S/N 005 corner fuel module is continuing.
- (3) A final design review was held on the downcomer stalk removal cask, and the design was completed. All drafting was completed and the drawings were submitted for final review and approval.
- (4) On the Facility Decontamination System, a blowdown suppression tank header spray nozzles and piping stress analysis was completed, and a LTR was started. The piping design was completed, and drawings are being prepared.
- (5) On the LOFT Spent-Resin Task, an LTR was initiated, which addressed the criticality question, assuming a LOFT 20 percent fuel pin perforation with the resulting inventory being collected on the resin batch. The LTR should be completed and ready for review by mid-September. A final design review was held on the piping modifications as well as the resin container and shield. The design, as presented, was approved. The design package is being submitted to the Safety Division for review and approval before starting construction.

- (6) The design was completed for containment isolation test connections for the compressed nitrogen lines. These test connections will reduce the time required for leak testing the containment isolation valves. Also, these connections will reduce the possibility of recording leaks that are not CIS valve leaks.
- (7) The design of the polar crane access platform was completed. This platform will make it possible for personnel to gain access to the crane when the bridge is not at the home or maintenance position.
- (8) Installation was completed on the seismic pipe supports on the diesel fuel and pressure reduction systems. These systems are now seismically qualified.
- (9) Design was initiated to modify the H&V System No. 9 inside the containment to reduce the temperature stratification noted during power range testing and to increase cooling to the control rod drive mechanism area.
- (10) Design work has been completed to add pressure differential taps between the outlet of the steam generator and the inlet of the primary coolant pump No. 2. This tap will provide liquid level measurements in the primary loop required for the L3 test series.
- (11) An AUT examination of 11 Class 1 pipe welds has been successfully performed for the inservice inspection (ISI) program. This examination completes the requirement by NDE Engineering to perform minimum of 11 weld examinations by AUT in the Class 1 piping systems in FY-79. NDE Engineering will continue to examine additional welds in the Class 1 piping systems by AUT methods until September 19.
- (12) A programming effort has been initiated to generate a computerized ISI status report. The development of the prototype for the computer program will be started in September and should be completed

by November 30. This project will provide a tracking program for ISI to monitor requirements, deficiencies, and status using a computer-data-base file in lieu of the manual practice now followed.

- (13) Work has begun on application and purchase of a loose-parts monitoring system for LOFT.
- (14) A task has been started which will attempt to apply Kalman filtering techniques to LOFT reactor power and peaking factor calculations.
- (15) Existing computer calorimetrics have been modified to improve accuracy. Existing manual calorimetrics are also being improved.
- (16) Work has started on the application of spectral analysis to Doppler coefficient measurements on LOFT.
- (17) A decay heat program is being prepared for the LOFT computer system.
- (18) The Radiation Monitoring System (RMS) is essentially completed. Both the main control room and Health Physics Office readouts are now functioning. The remaining work includes document update and minor troubleshooting of failed equipment. System operations (SO) testing is scheduled for the week of September 10. The RMS is being moved to the Health Physics Office to provide space in the main control room for expansion of the plant protection system (PPS) and for upgrade of the RMS equipment.
- (19) The PPS flow channel upgrade installation is in the final stages of completion. The week of September 10 is scheduled for acceptance testing of the flow instrument. In addition, operator and maintenance training for the flow instrument is planned. The PPS flow channel is being installed to provide a more accurate flow measurement at low flow conditions.

- (20) Design of the redundant steam generator water level indication installation has been completed and reviewed. This level measurement will be used to evaluate discrepancies in the present level measurement system and improve the reliability of the level readout.
- (21) Work is ready to start installation of panel and meteorological instrumentation on the Initial Engineering Test (IET) tower. This type of instrumentation is presently installed on the tower at LOFT; the IET tower instrumentation will provide redundant backup of the information presently available from the LOFT tower instrumentation.
- (22) Work is ready to start on modifying the LOCE panel. The modification provides an automatic scram function upon initiation of the LOCE and an inhibit of the experiment if all control rods are not on the bottom (seated position).

2. 189a-500004 LOFT Operations

- (1) August was used as a plant rework month.

3. 189a-A-6048 LOFT Experimental Measurements

- (1) Work continued on the fuel rod scanner data acquisition project. The equipment package was released for purchase to MODCOMP. Design of the I/O interface to the scanner microcomputer is commencing.
- (2) Work began on the Operator Augmentation Program. Nuclear Services Corporation was selected as the vendor. Meetings have been held with NSC and the basic system configuration has been identified. Purchase requisitions are being prepared. The equipment will be sole sourced to Prime Inc. and Ramtek, Inc. The sole source justification and the DOE-1830 Implementation Plan are being prepared. Display concepts are still being formulated.

- (3) The design concept for the PNA (pulsed neutron activation) data acquisition system has been formulated. The project will continue in two phases. Phase I will be the temporary use of the equipment developed by Dr. Paul Kehler of Argonne National Laboratory-Chicago. Software has been scoped and will be developed to accept data from this system.

Phase II will be acquisition of permanent equipment to be installed at the LOFT facility. The job has been scoped and a CCB prepared.

- (4) A system has been designed to automatically store and expose the source for the nonnuclear densitometer at PC-3. This will allow for determination of the nuclear background. For the first 70 seconds following test initiation, the source will be alternately stored for two seconds, then exposed for three seconds. After 70 seconds, the source will be stored for two seconds and exposed for 28 seconds. The circuitry to do this has been assembled and is presently undergoing bench checks.
- (5) The branch assisted in the initial study to determine the feasibility of the transit time flowmeter for LOFT. Equipment and wiring similar to final configuration were used and results look promising. High gain transformers, which will eliminate some noise, are being purchased. These transformers will be installed after L3-1. The installation package is being written.
- (6) The analysis of Wyle data started. Load cell data is being analyzed. Load cell sensitivity to extraneous stimuli is being evaluated. Static load cell accuracy at low pressure is ± 43 lb. Pressure sensitivity of the load cells is being evaluated.
- (7) Considerable progress on the LOFT wiring table data base was made. This data base will be a controlled document and will replace the previous drawing tables. Estimated completion date is January 1, 1980.

(8) The data reduction technique and data processing program for the transit time flowmeter have been completed.

(9) Gamma Densitometer

- a. BL-1 detectors were removed and are being repaired. The detectors will be reinstalled by September 15.
- b. An SWR was released to remove the PC-3 detectors. An SWR and associated FCF were written and are being reviewed to install the air-actuated control box. The drawing updates required to install the actuator box are in drafting.
- c. Arrangements have been made to obtain two detectors and place them in the vicinity of the pressurizer surge line for background measurement. The results will be used in determining shielding requirements for the test L3-4 surge line densitometer. An SWR and FCF have been written to install the detectors and connect the cabling.

(10) ECC Pitot Tube Rakes

- a. The pitot tube rake installation is proceeding on schedule. SAI has delivered the second two rakes, serial numbers 3 and 4. Rake serial numbers 2 and 5 have been accepted by Quality and will be installed at the PC-1 location for L3-1. All four rakes have been inspected on-site for a functional strain gage, for bolt circle alignment, and for quality of the stellite hard face. Quality made a trip to SAI and resolved the problem of incomplete data books.
- b. The bushing installation into the mock-up was completed successfully and identified that only minor tooling changes were required for installation into LOFT. FCF 8413, Rev. 1 has been approved by DOE and installation of the bushing into LOFT is ready to begin.

- c. Two new bushings that will go into LOFT have been fabricated. These incorporated larger radii in stress concentrated areas to alleviate potential cracking and are documented in Drawing 209884, Rev. A.

(11) Liquid Level Transducers

- a. The required electronics for the LLT performance test were assembled and calibrated.

(12) Pressure Transducers

In August, the pressure transducer system was being reworked to prepare for L3-1. Additional instruments were being added and installed transducers recalibrated. Specific accomplishments in August were:

- a. A subcontract for 53 differential pressure transducers was awarded to Genisco Technology.
- b. Continued fabrication of six free field pressure transducers.
- c. Facility Change Forms for four additional pressure measurements were completed.
- d. Fabrication of eight differential pressure transducers' panels was begun. These panels will supply three new measurements and replace five older transducer installations in LOFT.
- e. Twelve pressure transducers removed from LOFT were decontaminated and recalibrated at ARA-III. This marks the first time at INEL that contaminated pressure transducers have received a full recalibration.
- f. One absolute pressure transducer was re-ranged to facilitate the new subcooling meter system.

(13) Transit Time Flowmeter

- a. Drawings for fabrication and assembly have been started and are 95% complete.
- b. Type "E" thermocouples have been chosen to be used on the TTF because of their high sensitivity. They have been bought and are in house where the tip of the thermocouples will be swaged to .010 mil.
- c. Fabrication of the dummy blocks for mounting the thermocouples has been started.
- d. Assembly procedures for the transit time flowmeter rake are complete and assembly will begin when parts are delivered.

(14) Drag Disc Turbine Transducer

- a. Testing of drag disc module modifications to eliminate spring bending and to improve performance has started. Modifications that have had preliminary testing include a positive stop on the drag disc carrier, moving the shield from the coil mandrell to the coil housing and shortening of the coil to prevent the carrier from hitting the coil.
- b. The failure analysis of MDTTs from the L2-3 test has started. The analysis was delayed because the instruments are contaminated and it was difficult to find a place to perform the disassembly.
- c. MDTT support for the small break series has been modified slightly. PC-1 will have a pressure measurement only. An ECC rake will be installed near this location so the temperature measurement will not be necessary. PC-2 will have a MDTT rake installed. Only the pressure and one thermocouple are required but the rake will be connected to establish if

the turbines will respond to the low flow rates. BL-1 will have a transit time flowmeter rake installed. BL-2 will have pressure and temperature measurements only.

(15) L3-4 Pressurizer Small Break Measurement

- a. Meetings have been held with Semiscale and Advanced Instrumentation personnel to determine the alternatives available in making this small break mass flow measurement. The preliminary proposal is to use a drag device and drag turbine arrangement. It is presently felt that the gamma densitometer performance would not be good because of background radiation and the small cross-sectional area of the proposed pipe.
- b. The present consensus is that there will not be significant two-phase flow. Mass flow is expected to be primarily single-phase steam until the pressurizer steam bubble is voided than to be single-phase liquid.
- c. The present proposal is to use 1-1/4 in. schedule 160 piping. This size will accommodate the drag turbine and also permit the expected velocity to be high enough for the drag device measurement.
- d. Advanced Instrumentation has been requested to provide the expected mass flow measurement accuracy with the proposed drag device and drag turbine arrangement as well as the inaccuracy expected if two-phase flow occurs for a significant period of time.

(16) Cladding Thermocouples

- a. Zircaloy Tubing - A decision was made to buy the Zirtech-supplied zircaloy tubing. Latest eddy current testing and metallographic examination indicated that the majority of

the defects are less than 20% of the wall thickness. The new eddy current coil provides an accurate indicator of defect magnitude. A Mandrell wrap test has been performed on the thermocouple cable made from a sample of the tubing in question. No cracks propagated to the surface. The remaining action items are:

1. Perform laser weld test over defect area of cable made from tubing. Completion date is set for August 30.
 2. Eddy current test 100% of zircaloy tubing at Wespro, Salem, Oregon. Completion date is set for September 7.
- b. The Mandrell and laser weld test will provide engineering justification to change the defect criteria in the tubing specification.
- c. Zircaloy Thermocouple Qualification - Procedures approved by LEMB and Quality Division. Qualification test should be completed by September 7.
- d. A3/F1 Dummy Thermocouples - Requirements should be completed and shipped to Exxon by September 7.

(17) Standard Thermocouples

- a. Transit Time Flowmeter - .040 stainless steel sheathed, Type E, thermocouple cable has been ordered and shipped to EG&G on 8/21/79. Procedures being formalized to manufacture Level II thermocouples during week of August 27.

(18) Pulsed Neutron Activation

- a. The design is complete for the downstream detectors and the generators. The upstream detectors and the coolant design will be completed by September 4. Thermal and stress analyses

have begun. The sources and detectors have been received. The shields, electronics, and calibration sources have been shipped. The FCF requires a design review and DOE approval before completion. SWRs for the fabrication and design should be completed September 4. The required ten tons of lead brick shielding have been located. A final design review was held and accepted for the cable design.

(19) Fuel Rod Instrumentation

- a. LVDT - Eight each extension rods, four each type "A" and four each type "F", were shipped to Exxon. The acceptance test procedure was received from Kaman, reviewed, and returned for revision.
- b. CLTC - Centerline thermocouples are being delivered to Exxon on schedule for fuel rod fabrication.
- c. Plenum Thermocouples - The plenum thermocouples are completely fabricated and have been successfully source inspected for: traceability of materials, procedure approval, and personnel certification.
- d. Facility Interface Task - In August, work for the installation of the advanced fuel rod instruments in LOFT was slowed due to higher priority work for L3-1. This condition should abate in September and allow recovery of schedule. Specific accomplishments in August were:
 1. Installation of coaxial cables from the signal conditioning room, Room 219, to coaxial penetrators into the reactor containment area. These cables will first be used as a temporary installation for the pulsed neutron activation flowmeter.
 2. Review and approval of drawings of the enclosure for the fuel rod plenum pressure transducers were completed.

3. Design of a controlled system for the vortex tube cooling device was begun. This will provide a constant temperature environment for the signal conditioning electronics of the fuel pin pressure transducers.

4. 189a-A-6053 LOFT Fuel Fabrication

- (1) The C4 (Reload Core I instrumented triangle-shaped) fuel module was completed at TAN-615.
- (2) A branch representative presented a technical paper on LOFT Instrumented Fuel Design and Operating Experience in a special session on LOFT and participated in a related press conference at the 14th Intersociety Energy Conversion Engineering Conference in Boston, Massachusetts.
- (3) Exxon encountered unacceptable cracks in the Type 316 to 304 stainless steel laser weld (seals the centerline thermocouple sheath to the fuel rod) qualification samples. Exxon evaluated welding process changes such as increasing the ferrite or chromium in the melt zone, slowing the cooling process, using a weld filler material, and laser brazing with a suitable braze material. EG&G Materials Engineering Branch provided consultation including a visit to Exxon Nuclear Co. and a similar weld procedure for Exxon's use. Exxon selected chrome plating of the weld region surfaces as the best correction method and successfully completed the preproduction weld process qualification.
- (4) A Fuels Technology Branch representative attended the Fifth International Conference on Structural Mechanics in West Berlin, Germany and presented a technical paper on UO_2 pore migration and grain growth kinetics.
- (5) Exxon completed (a) fabrication of the A3 and F1 fuel bundle special assembly tooling, (b) the prototype fuel rod with centerline thermocouple, (c) the prototype inlet flowmeter (DTT)

instrumented guide tube assembly, and (d) a model of the A3 fuel bundle upper tie plate instrument cable routing.

- (6) LTRs 1111-58, "Evaluation of Reflood Code for LOFT Application;" 1111-61, "MOXY/SCORE Analysis of Nonuniform Upper Plenum Flow Conditions Effect on Peak Fuel Cladding Temperature During L2 LOCE Tests;" and 1111-62, "Stress Analysis of Instrumentation Support Structures and Center Fuel Module Upper Core Support Modifications," were issued.

5. 189a-A-6121 LOFT Experimental Program Planning

- (1) At a meeting with the NRC, ID, and pressurized water reactors vendors, it was agreed that the proposed LOFT small break experiments L3-1, L3-2, and L3-4 are satisfactory as planned. Experiment L3-3, in which the high pressure injection system (HPIS) flow is greater than the break flow, was not the experiment desired by NRC licensing since the primary system did not repressurize until the primary system went liquid full. One way that the primary system can be made to repressurize is to drain the secondary side of the steam generator. Work is currently under way to evaluate the consequences of draining the secondary side of the LOFT steam generator for this experiment.

The NRC has requested LOFT Program in conjunction with Semiscale to plan experiments to evaluate whether or not the primary coolant pumps should be run or shut down during a small break transient. Planning analyses are under way to evaluate this request.

- (2) The LOFT small break test plan was presented at the Advisory Committee on Reactor Safety (ACRS) ECCS subcommittee meeting.
- (3) The Experiment Operating Specification (EOS) has been reviewed by EG&G Idaho, Inc. and DOE-ID management and will be released next month.

- (4) A workshop was held to report results from LOFT Loss-of-Coolant Experiment (LOCE) L3-0. The half-day meeting was attended by personnel from several Idaho National Engineering Laboratory (INEL) programs, Intermountain Technology, Inc. (ITI), and DOE-ID.
- (5) A presentation was made to the ECCS subcommittee of the ACRS concerning the ability of computer codes to predict rewet behavior. We were asked to prepare a summary of the material presented for review by the entire ACRS.
- (6) A seminar by John Chen of Lehigh University was held to discuss effects of non-equilibrium on dispersed flow post-CHF heat transfer. Additional discussions were held with Dr. Chen concerning his techniques for measuring vapor superheat.
- (7) LTR 20-104, which describes comparisons between the L2-3 Experiment Predictions (EP) and L2-3 experimental data was issued.
- (8) Two papers on the LOFT facility and experiment results were presented at the 14th Intersociety Energy Conversion Engineering Conference at Boston, Massachusetts.
- (9) LOFT L2-2, L2-3 results were presented at the ACRS ECCS subcommittee meeting. The presentation is being written in summary for the ACRS.
- (10) Revisions of the research information letter (RIL) on L2-2 and L2-3 were completed. The revisions resulted from NRC/DOE/EG&G Idaho reviews and discussions.
- (11) The Experiment Analysis Section was formed which replaced Test Evaluation Section "A". The Experiment Evaluation Section was formed which replaced Test Evaluation Section "B". Both sections are in the LOFT Program Planning and Test Evaluation Branch. The reorganization permits a clearer definition and division of work relevant to the new accelerated LOFT test schedule.

- (12) Results of LOCE L3-0 and comparisons of the data with predictions were presented to the ACRS ECCS subcommittee.
- (13) A report entitled "Evaluation of the Ability of Electrical Rods to Simulate Nuclear Rod Behavior during a Loss-of-Coolant Accident (LOCA)," LTR-20-107, summarizing the capabilities and limitations was approved and distributed to ID and NRC.
- (14) Work continued in the evaluation of fuel rod behavior during L2-2 and L2-3. Significant accomplishments include:
- a. Initial conditions were completed using the FRAPCON response surface models to bound the uncertainty in the computed steady-state stored energy for both tests.
 - b. Sensitivity calculations were performed to evaluate the effects of stored energy, gap conductance, fuel conductivity, and surface heat transfer on the initial cladding temperature increase following CHF. These calculations will provide the basis for determining if the measured cladding temperature slope can be utilized to estimate fuel rod stored energy.
- (15) Dr. C. S. Olsen visited Kernforschungszentrum (KfK) and discussed and correlated recent work done at the INEL and KfK related to zircaloy oxidation and microstructures and heat treatment of zircaloy tubing.
- (16) The Transient Flow Calibration Facility (TFCF) at Wyle Laboratories, Norco, California, was operated for continued testing of LOFT Instruments under simulated LOFT reactor piping conditions. Testing was continued in the broken loop cold leg configuration, with and without the 45° elbow at the vessel outlet, and data acquired for six hot blowdowns. The DTT and water-cooled pitot tube rakes were the primary instruments tested in these configurations. One single phase blowdown was conducted with the water cooled pitot tube rake installed. The facility was reconfigured

for small break testing with nozzles sized for LOFT tests L3-1 and L3-2, and data were acquired for one hot blowdown. An intermittent pressure and thermal sensitivity was noted on the load cell system, and a program to identify and correct these problems was initiated. Upon resolution of these problems, the small break testing will continue, followed by resumption of the LOFT instrument test program. Data from all blowdowns are being processed and analyzed at INEL and data reports will follow as processing and DIRC activities are completed.

(17) LTSF Blowdown Facility Activities

- a. All tests on the single Semiscale rod with external thermocouples have been completed. The second half of the test series without external thermocouples on the rod will be conducted in September.
- b. On the performance evaluation of DTT and densitometer under transient blowdown conditions, the LTR report is complete and ready for approval.
- c. For the jet pump test, the LTR report is complete and ready for approval.
- d. Seven tests were completed at the LTSF which were used in determining the proper size for the L3-1 and L3-2 small break nozzles. Fabrication of the final size nozzles was completed in preparation for calibration testing at the Wyle Test Facility.
- e. Requirements for the Semiscale small break nozzle calibration were completed. The design was 50% complete and the long lead time item, the orifice meter, was ordered.

(18) Two-phase flow loop construction

- a. Construction continued on schedule for completion by December.
- b. A construction package for the installation of the boiler and connecting piping has been issued for review.
- c. An extended abstract on the "Centrifugal Pump Performance Under Simulated Two-Phase Flow Conditions" was written and submitted to review for possible presentation at ASME Poly-phase Flow and Transport Technology Meeting to be held at San Francisco August 12-15, 1980. The contents of the abstract were based on the testing results obtained from the Nitrogen Injection System Operation Test performed at the FAST Loop.

SUMMARY OF FRG-FUNDED TASKS

Task 5072, 5073 -- Core Instrumentation

Status: The task is complete except for performance of tests to size the removable orifices to be installed in the LOFT lower core support plate. Test documentation and hardware are complete. The tests are scheduled on a low priority basis at the LTSF.

Task 5074 -- FRG Management

Status: Routine technical and financial reviews of FRG-funded tasks continued. New proposals to (1) add a vertical test section to the two-phase loop and (2) perform additional analyses of the data from the Wyle Transient tests were distributed for consideration.

Task 50763 -- Steam Probe

Status: A test plan for laboratory tests to be performed at ARA-III was completed and approved. The test apparatus was assembled for tests to be performed in September.

SUMMARY OF JAPANESE (JAERI)-FUNDED TASKS

Task 5081 -- JAERI Management

Status: Routine technical and financial reviews continued.

Task 5082 -- Additional Instruments

Status: Inactive.

Task 5083 -- Pressure Balanced Drag Turbine

Status: The final prototype, Prototype III, of the pressure balanced drag turbine has been completed and tests have been run in a single-phase, cold water loop. A draft of a final report has been distributed for review.

Task 5084 -- ECC Rakes

Status: Four ECC rakes have been delivered to INEL. The four units have been released from receiving inspection. The installation documentation (FCFs) has been approved to install two of the rakes on the LOFT intact loop, cold leg. The fifth and final ECC rake has been fabricated and is undergoing source inspections at the vendors' facilities.

Task 5085 -- LOFT/PBF Lead Rod Tests

Status: The preparation of the Topical Report is in progress with scheduled completion by February, 1980.

Task 50872 -- Reevaluation of LOFT Experiments

Status: The computer runs have been completed. A draft summary report has been written and distributed for review.

Task 50873 -- Miscellaneous Code Studies

Status: No change.

SUMMARY OF AUSTRIAN (SGAE)-FUNDED TASKS

Task 5091 -- SGAE Funded Tasks

Status: RELAP4/MOD6 has been successfully implemented in the SGAE computer in Vienna, Austria to support additional scaling studies as "inkind" work. The input decks for LOFT Small Break and Semiscale MOD3 models have been sent to Austria to be incorporated in the computer. A detailed proposal to define scaling requirements will be provided upon completion of meetings between LOFT and Semiscale.

SUMMARY OF NETHERLANDS (ECN)-FUNDED TASKS

Task 509210 -- ECN Task Management

Status: No change.

Task 509220 -- Development of Two-phase Models for Orifice Flow

Status: Modifications to the air-water loop at RPI have been completed. The assembly includes a transparent orifice section. The experimental data will be taken beginning in September.

Task 509241 -- Transient Test Program -- Additional Scope

Status: The task of installing additional instrumentation as part of the Wyle Transient Tests has been completed.

SUMMARY OF FRG/JAERI-SHARED TASKS

Task 5093110 -- Two-phase Transient Test Program

Status: Reported in A-6121 Highlights.

Task 5093210 -- Two-phase, Steady-state Tests

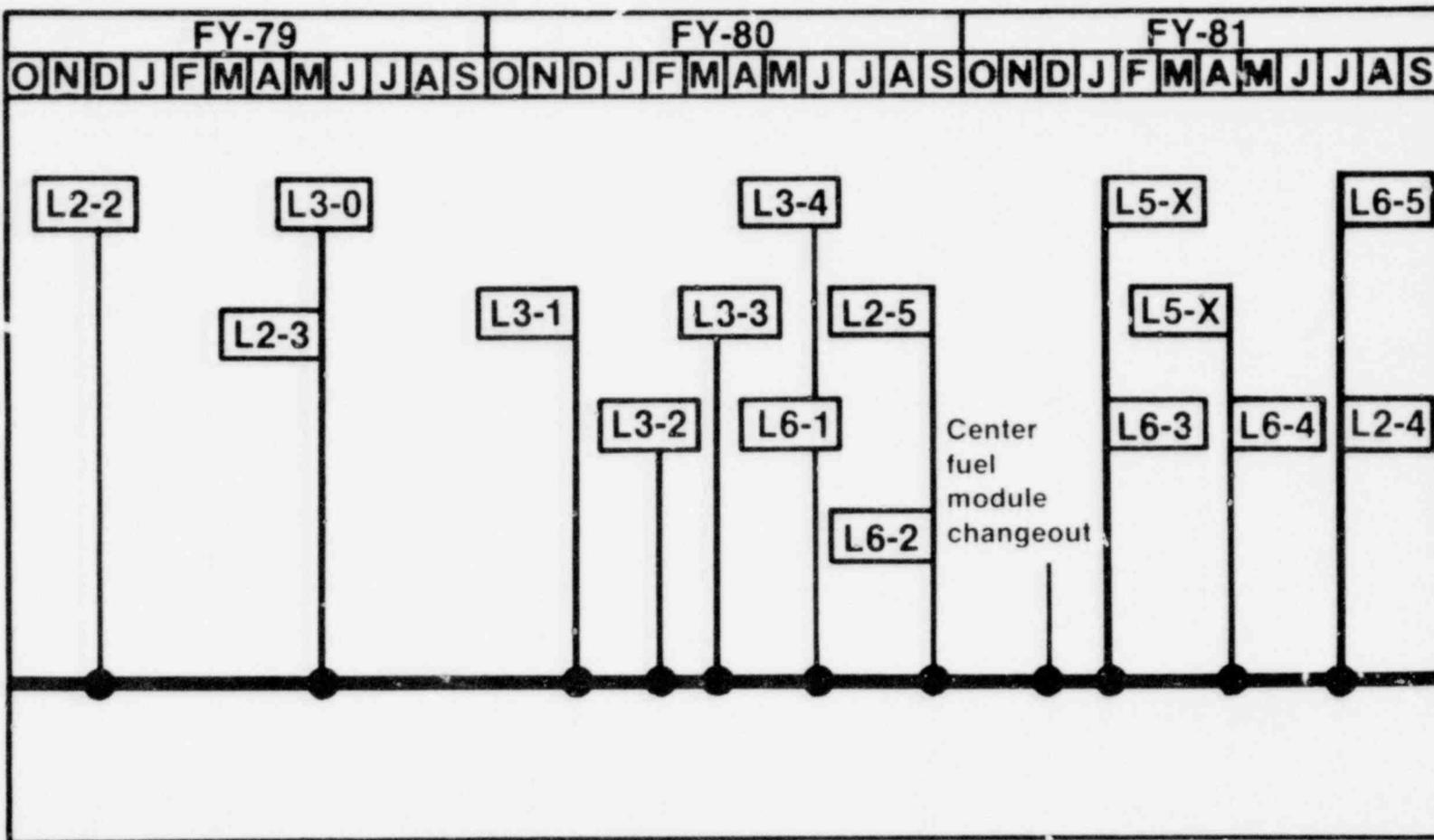
Status: Reported in 6121 Highlights.

Task 5093310 -- TRAC Code Studies

Status: L2-2 transient calculations were completed up through 18.5 seconds of LOCE blowdown times. A portion of the L2-3 steady state calculations have been completed.

III. Summary Schedules

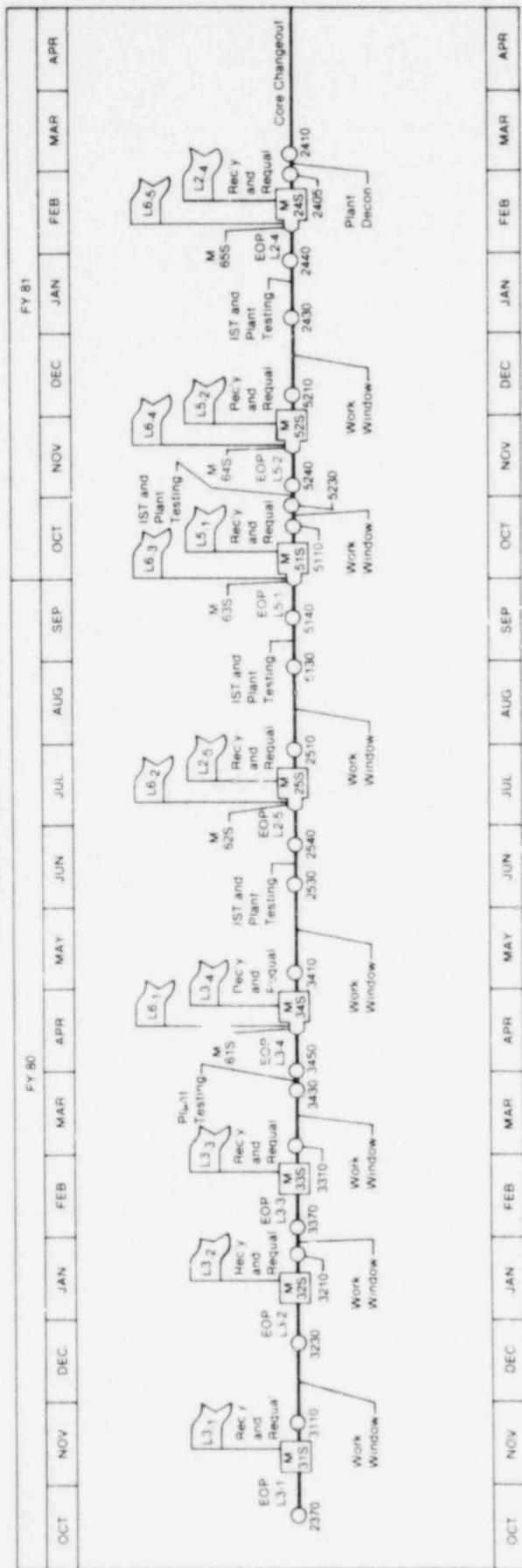
LOFT Three-Year Plan



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MANAGEMENT SUMMARY SCHEDULE



INEL-B-13 485

871 215

1216 179

FOREIGN-FUNDED COST AND SCHEDULE SUMMARY
(x 10³ \$)

● ACTUAL START ○ PLANNED START △ PLANNED COMPETITION ▲ ACTUAL COMPETITION (c)

Total Proposal Estimate (Incl. Contingency)	Total Spending Authorized by Job	Funds Spent to Date	Items	FY-79									FY-80				
				JAN	FEB	MAR	APR	MAY	JUNE	JUL	AUG	SEP	NOV	DEC			
436	436	436	Task 5051110 - Suppression Tank Instrumentation - (Completed 5-78) (c)														
19	19	19	Task 5051250 - Drag Screen (Cancelled 5-77) (c)														
895	895	895	Task 5071000 - DTT Rakes (Completed 5-78) (c)														
642	642	549	Task 5072000 - Core Void Fraction 5072100 - Core Inlet Instr. (c) 5072210 - Upper Structure (c)														
379	329	324	Task 5073000 - Core Inlet Flow 5073120 - Transducer Attachment (c) 5073130 - DTT Instruments (c) 5073140 - Core Instr. Tests														△
150	150	139	Task 5074 - FRG Task Mgmt.														△
143	133	132	Task 5075000 - Commercialization of Instruments (c)														

27

1215 180

JULY COSTS

FOREIGN-FUNDED COST AND SCHEDULE SUMMARY (continued)
(x 10³ \$)

Total Proposal Estimate (Incl. Contingency)	Total Spending Authorized by CCB	Funds Spent to Date	Items	FY-79									FY-80			
				JAN	FEB	MAR	APR	MAY	JUNE	JUL	AUG	SEP	OCT	NOV	DEC	
50	7	7	Task 5076110 - Misc. Short Term Tasks													
	9	10	Task A - Neutron Scatter Study (c)													
	9	0	Task B - Radiotracer Study (c)													
	10	10	Task C - Review LOFT Test Plans													
	10	10	Task D - Return Nucleate Boiling (c)													
100	90	8	Task 5076310 - Steam Temp. Probe													
			FRG Part of Shared Tasks													
138	132	130	5093110 - 2-Phase Transient Tests													
800	732	323	5093210 - 2-Phase SS Tests													
50	50	16	5093310 - TRAC Code Study													
3,802	3,643	2,998	Total FRG Funded Items													
202	202	143	Task 5081110 - JAERI Task Management													
150	150	70	Task 5082 - Additional Instr. (presently inactive)													
154	154	132	Task 5083110 - Advanced DTT													
550	550	530	Task 5084100 - ECC Rake													
1,891	1,839	1,607	Task 5085000 - LOFT/PBF Lead Rod Tests													
			50852 - Task Mgmt/Documentation													
			50853 - Facility Modification (c)													
			50854 - LLR Tests (c)													

28

1215 181

FOREIGN-FUNDED COST AND SCHEDULE SUMMARY (continued)
(x 10³ \$)

Total Proposal Estimate (incl. Contingency)	Total Spending Authorized by CCB	Funds Spent to Date	Items	FY-79									FY-80					
				JAN	FEB	MAR	APR	MAY	JUNE	JUL	AUG	SEP	OCT	NOV	DEC			
15	14	14	Task 5086110 - Fission Prod. Monitoring Conceptual Design (Complete 5-78) (c)															
55	55	17	Task 5087210 - Re-evaluation of LOFT Experiments															△
21	20	8	Task 5087310 - Misc. Code Studies RELAP/REFLA Posttest Analysis of L2-2					●										△
138	130	130	JAERI Part of Shared Tasks															△
800	712	323	5093110 - 2-Phase Transient Tests															△
50	50	16	5093210 - 2-Phase SS Tests															△
			5093310 - TRAC Code Studies															△
4,026	3,898	2,990	TOTAL JAERI FUNDED ITEMS															
12	12	7	Task 5091110 - SGAE Task Management															△
90	82	76	Task 509121 - S/Mod-1 - LOFT Scaling (c)															
45	41	46	Task 5091310 - S/S Mod-3 Scaling (c)															
147	136	129	TOTAL SGAE FUNDED TASKS															
			NETHERLANDS															
10	10	8	5092110 - Task Management															△
117	117	122	5092210 - RPI Subcontract															△
10	10	1	5092310 - INEL Support															△

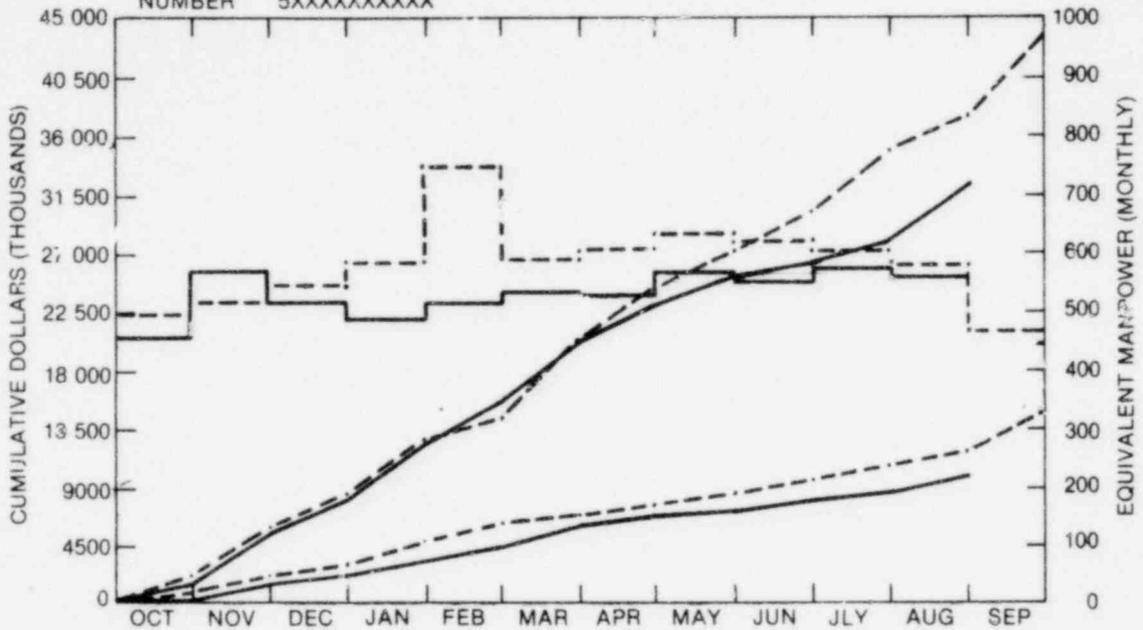
29

IV. Cost Charts & Variance Analysis

EG&G IDAHO INC.

TOTAL LOFT

NUMBER 5XXXXXXXXXX



TOTAL PROGRAM

BUDGET	2,60	5302	7982	11628	15368	19518	22849	26019	29149	32912	35992	43410
ACTUAL	2134	5262	8185	11673	14210	18299	21132	23882	26443	29527	32421	

MATERIAL

BUDGET	959	1830	2685	3962	5055	6490	7472	8328	9345	10489	11412	14942
ACTUAL	307	1408	2236	3596	4125	5430	6103	6619	7180	7848	9603	

BUDGET

ACTUAL

MANPOWER

BUDGET	490	509	500	587	734	576	592	618	599	600	607	481
ACTUAL	513	611	572	535	544	585	558	566	551	573	565	

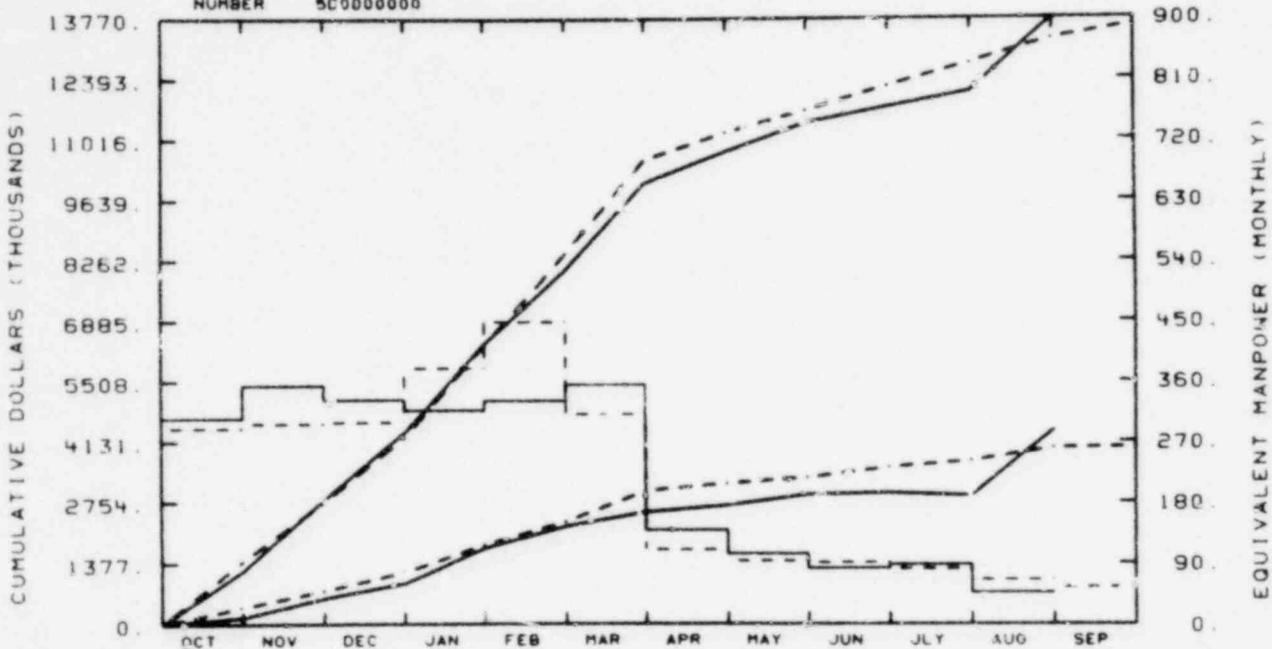
Manpower = Payroll Hours Less Holidays

Indicated material variance consists in part of uncosted obligations and in part savings achieved relative to budget.

EG&G IDAHO INC.

TOTAL LOFT DOE BUDGET

NUMBER 50000000



TOTAL PROGRAM

BUDGET	1420	2751	4224	6327	8433	10562	11103	11679	12238	12756	13302	13672
ACTUAL	1201	2801	4340	6361	8059	10036	10752	11398	11759	12105	12592	

MATERIAL

BUDGET	376	750	1162	1776	2301	2997	3169	3305	3536	3662	3981	4004
ACTUAL	150	585	915	1707	2196	2517	2673	2918	2955	2892	4389	

MANPOWER

BUDGET	290	297	289	380	449	311	109	93	90	81	65	54
ACTUAL	305	354	333	317	331	355	138	103	82	87	46	

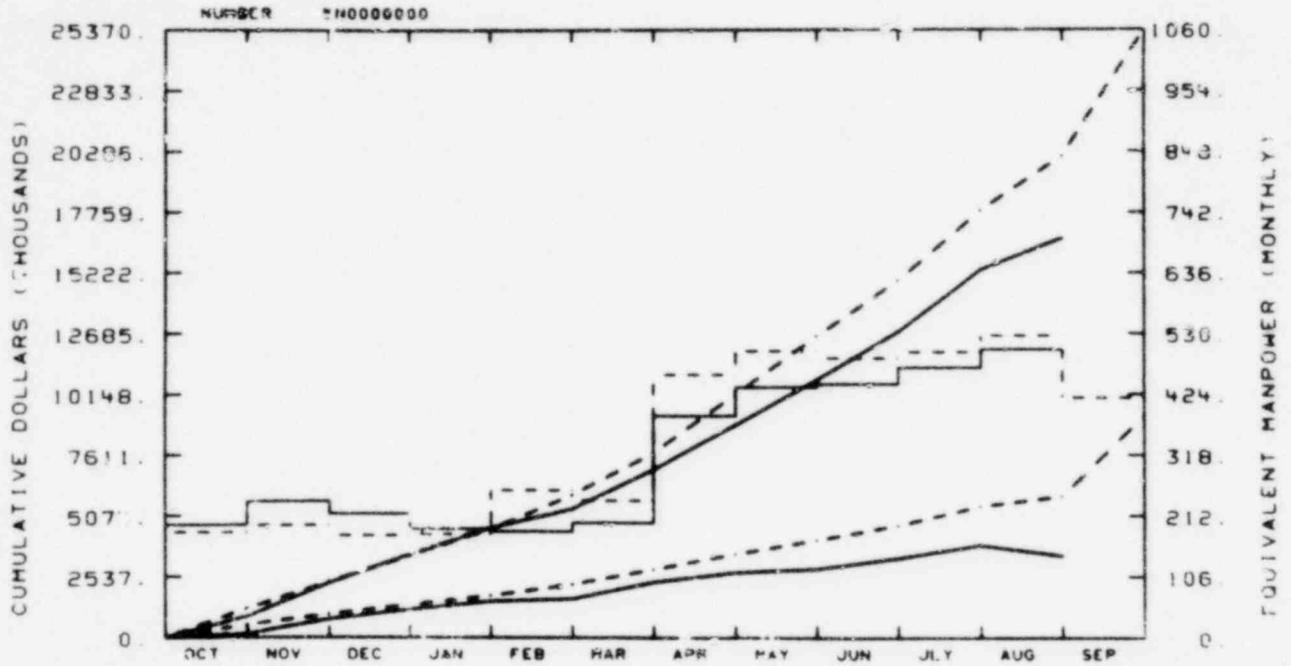
BUDGET

ACTUAL

The August costs reflect completion of the majority of outstanding material transactions and completion of almost all DOE-funded work. Closure of the fiscal year at or just slightly less than the budgeted level is forecast.

POOR ORIGINAL

EG&G IDAHO INC.
TOTAL LOFT NRC BUDGET



TOTAL PROGRAM

BUDGET	1213	2321	3376	4512	5934	7698	10145	12575	14893	17835	20104	25370
ACTUAL	883	2271	3454	4556	5352	6996	8783	10747	12756	15335	16844	

MATERIAL

BUDGET	523	974	1357	1735	2204	2820	3473	4046	4862	5452	5868	9232
ACTUAL	156	760	1180	1501	1603	2303	2699	2848	3293	3841	3411	

HANPOWER

BUDGET	183	195	177	179	256	238	458	499	486	497	526	418
ACTUAL	196	237	215	168	184	199	386	436	441	470	502	

BUDGET

ACTUAL

The underrun is a combination of accumulated cost savings, rescheduling and deferrals associated with program reorientation, and uncosted but incurred liabilities for material.

~~DO NOT DESTROY~~
~~EXEMPT FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION~~

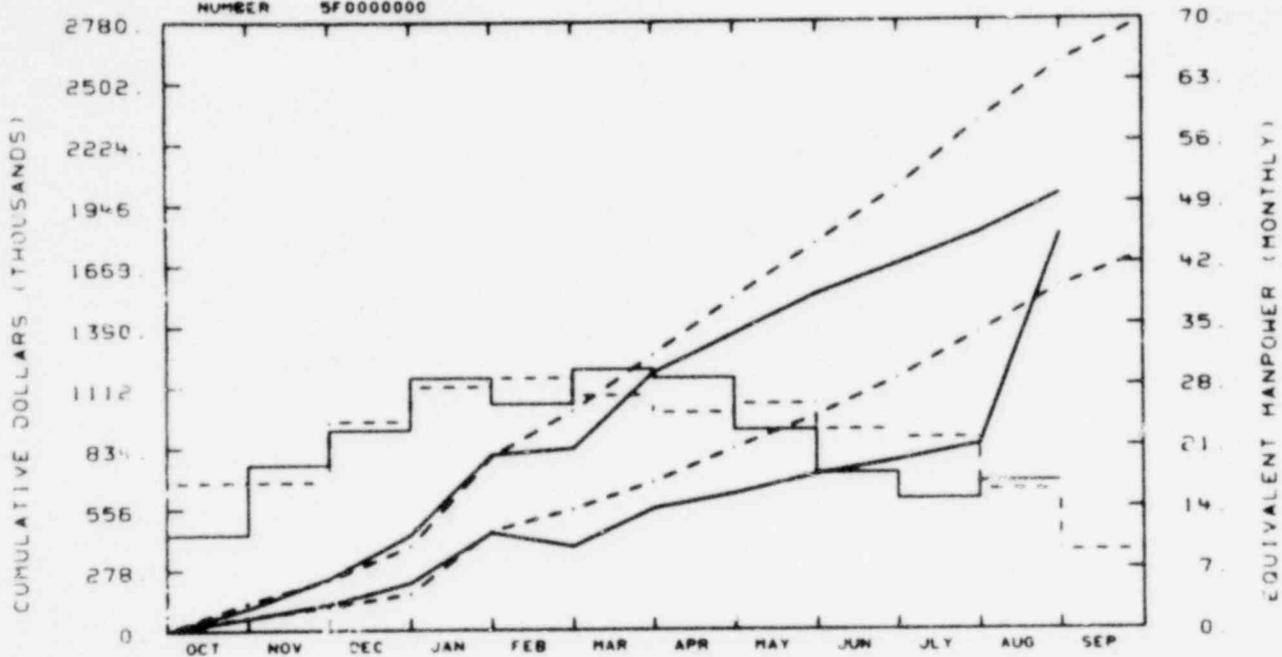
1216 187

POOR ORIGINAL

EG&G IDAHO INC.

TOTAL LOFT FOREIGN FUNDED

NUMBER 5F0000000



TOTAL PROGRAM												
BUDGET	127	230	382	789	1001	1256	1518	1765	2018	2321	2586	2774
ACTUAL	102	238	433	798	826	1175	1353	1533	1660	1809	1985	

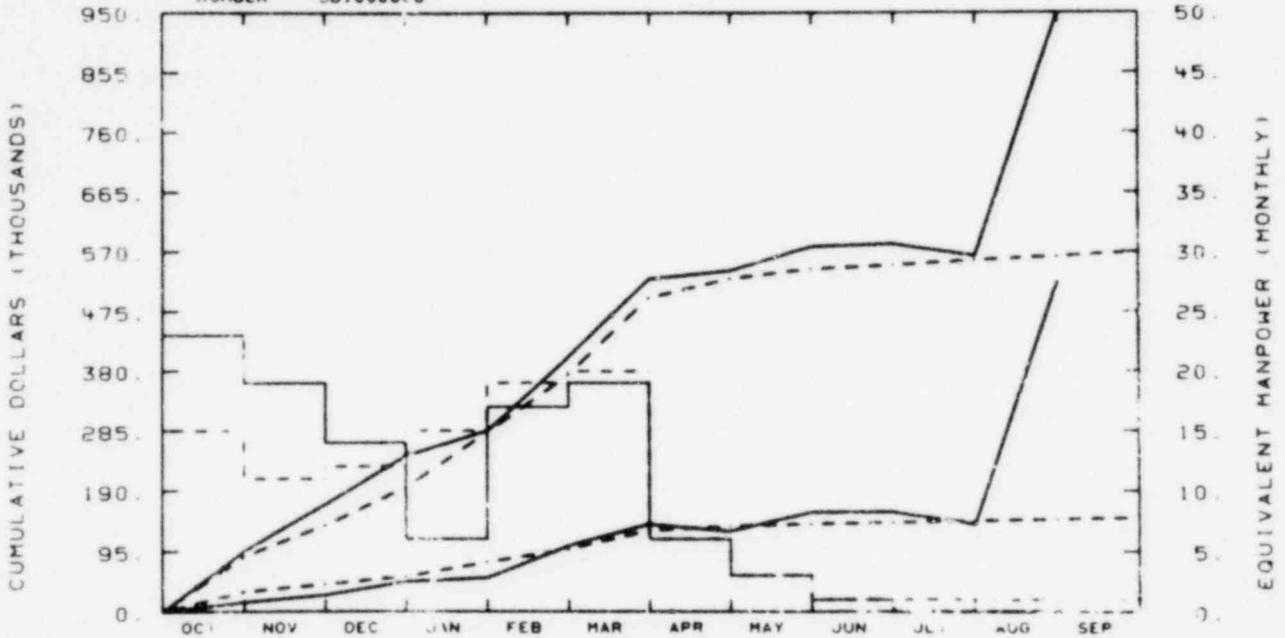
MATERIAL												
BUDGET	60	106	166	451	550	673	830	977	1147	1355	1562	1706
ACTUAL	56	118	218	443	381	553	620	707	772	843	1303	

MANPOWER												
BUDGET	17	17	24	28	29	27	25	26	23	22	16	9
ACTUAL	11	19	23	29	26	30	29	23	18	15	17	

The underrun is a combination of rescheduling and deferrals of low priority LOFT tasks.

POOR ORIGINAL

EG&G IDAHO INC.
 500002 - EXPERIMENTAL MEAS
 NUMBER 501000000



TOTAL PROGRAM												
BUDGET	87	136	192	283	375	497	527	542	548	556	563	570
ACTUAL	95	168	245	285	403	527	539	578	582	564	949	

MATERIAL												
BUDGET	31	43	50	77	98	127	134	138	140	143	145	146
ACTUAL	15	26	47	53	103	137	126	156	156	138	523	

MANPOWER												
BUDGET	15	11	12	15	19	20	6	3	1	1	1	1
ACTUAL	23	19	14	6	17	19	6	3	1	0	0	

BUDGET

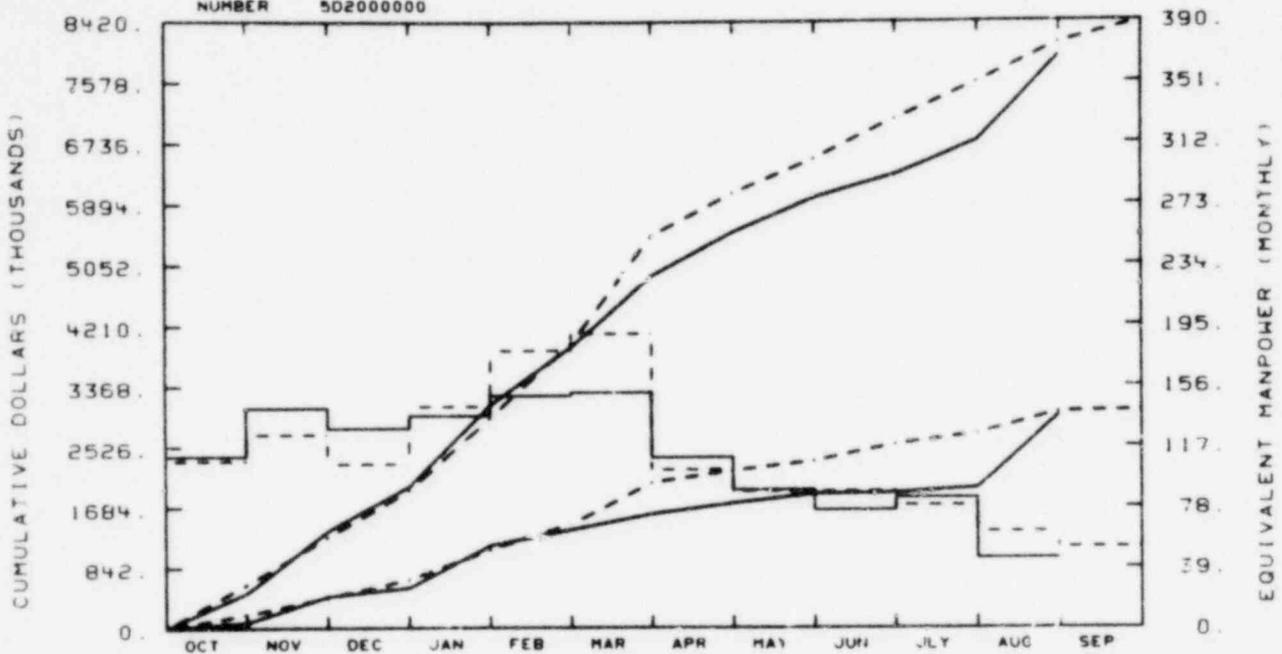
 ACTUAL

DOE cost transfers of \$324,000 and a spares buyout of \$61,000 are not reflected in the budget numbers.

POOR ORIGINAL

1216 189

EG&G IDAHO INC.
 500001 - INTERNAL SYS DESIGN
 NUMBER 502000000



TOTAL PROGRAM

BUDGET	806	1268	1920	2930	3966	5457	6046	6523	7073	7580	8116	8420
ACTUAL	487	1352	1974	3105	3917	4900	5503	5984	6300	6767	7711	

MATERIAL

BUDGET	189	418	669	1026	1440	2021	2189	2322	2553	2698	2996	3019
ACTUAL	79	438	555	1141	1363	1582	1734	1864	1878	1946	2953	

HANPOWER

BUDGET	108	125	106	143	179	190	102	88	88	79	62	52
ACTUAL	111	142	128	137	150	152	110	89	76	84	43	

BUDGET

 ACTUAL

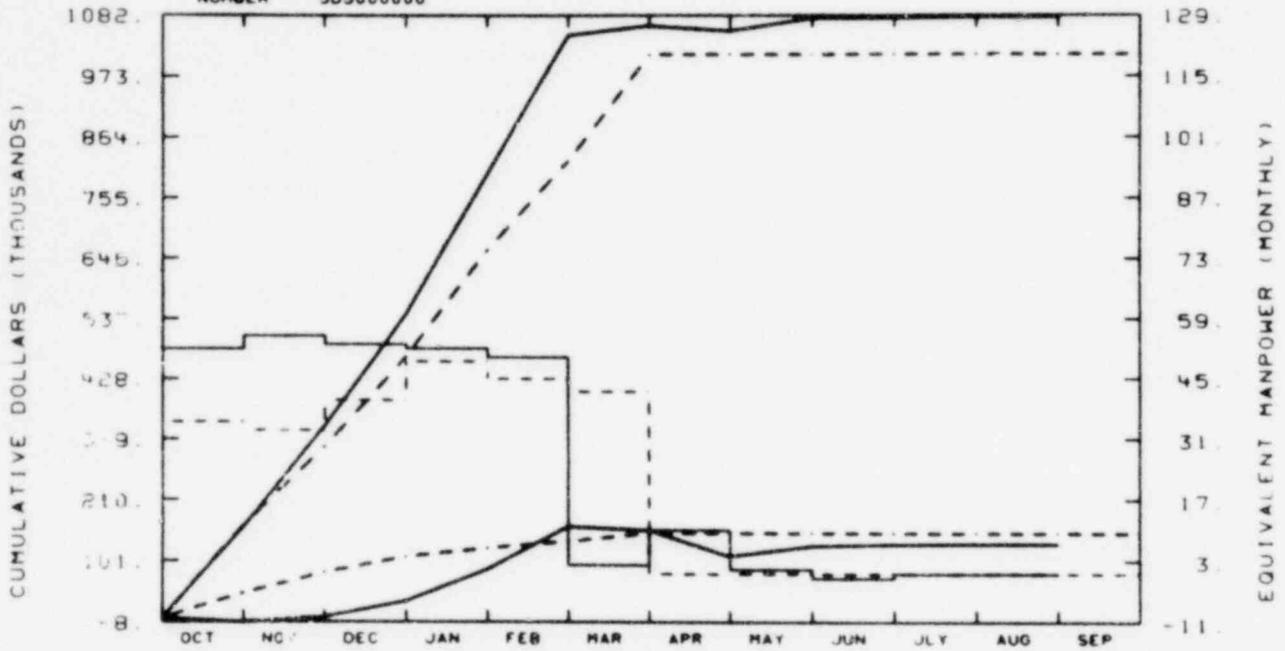
The numbers are a result of realignment between DOE and NRC funding.

POOR ORIGINAL

EG&G IDAHO INC.

500006 - PLANS/BUDG/QA/SAFETY

NUMBER 505000000



TOTAL PROGRAM

BUDGET	165	206	469	662	822	1012	1012	1012	1012	1012	1012	1012
ACTUAL	163	204	547	801	1047	1064	1055	1078	1077	1079	1079	

MATERIAL

BUDGET	43	90	108	123	136	151	151	151	151	151	151	151
ACTUAL	-7		30	85	162	156	110	128	131	132	132	

MANPOWER

BUDGET	35	1	40	49	45	42	0	0	0	0	0	0
ACTUAL	52	15	53	52	50	2	10	1	-1	0	0	0

BUDGET

ACTUAL

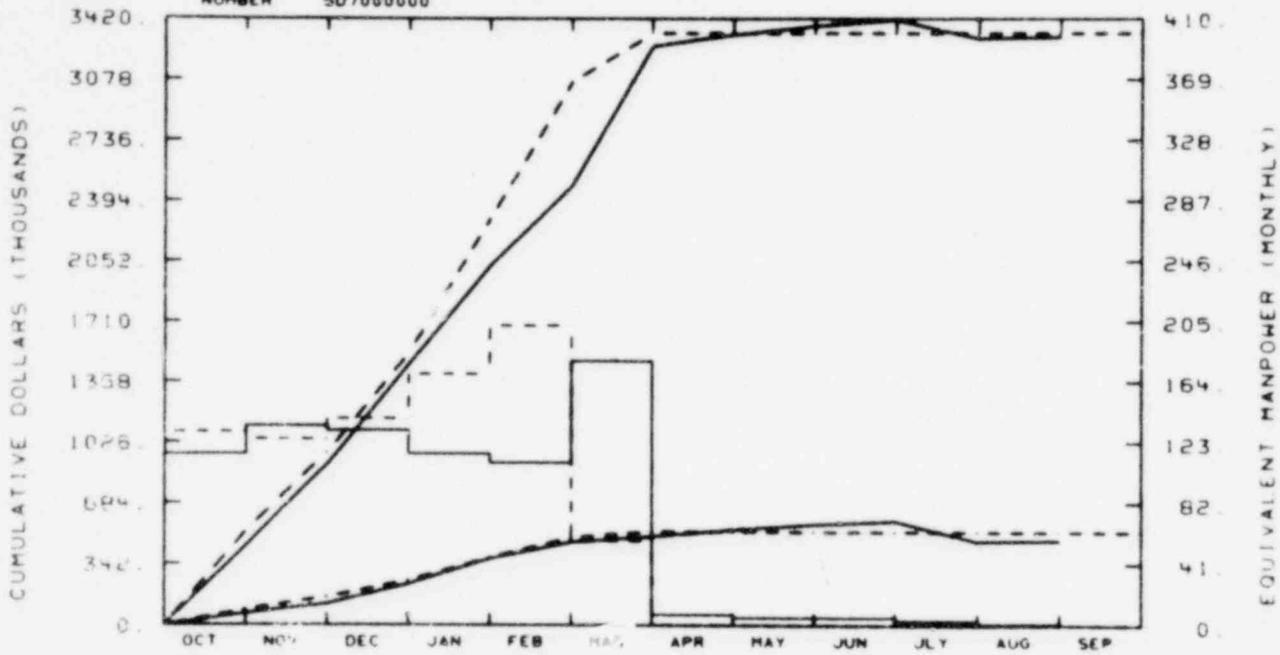
No significant variance.

POOR ORIGINAL

1216 191

EG&G IDAHO INC.
500004 - OPERATIONS

NUMBER 507000000



TOTAL PROGRAM

BUDGET	523	587	1527	2290	3067	3330	3330	3330	3330	3330	3330	3330
ACTUAL	440	502	1483	2024	2478	3266	3331	3378	3414	3309	3317	

MATERIAL

BUDGET	84	115	247	374	486	521	521	521	521	521	521	521
ACTUAL	63	115	227	368	462	493	533	563	583	470	474	

MANPOWER

BUDGET	130	125	139	169	202	56	0	0	0	0	0	0
ACTUAL	115	115	131	115	109	178	7	5	5	3	1	

BUDGET

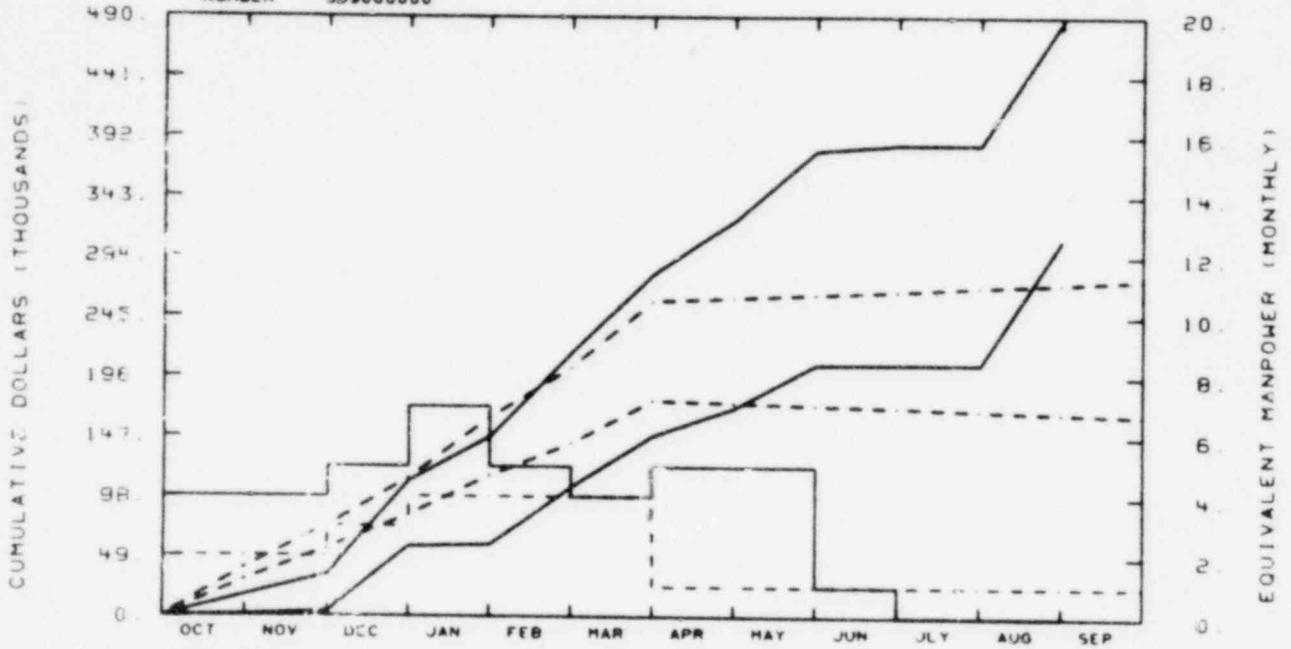
ACTUAL

No significant variance.

POOR ORIGINAL

EG&G IDAHO INC.
500005 - PLANT REQUALIFICATION

NUMBER 509000000



TOTAL PROGRAM												
BUDGET	40	74	113	163	203	257	280	263	266	269	272	276
ACTUAL	17	34	111	147	215	279	313	380	386	386	487	490

MATERIAL												
BUDGET	30	55	83	115	142	177	175	173	171	169	167	165
ACTUAL	1	3	57	58	106	149	171	208	206	206	308	308

MANPOWER												
BUDGET	2	2	3	4	4	4	1	1	1	1	1	1
ACTUAL	4	4	3	7	5	4	5	5	1	0	0	0

BUDGET

ACTUAL

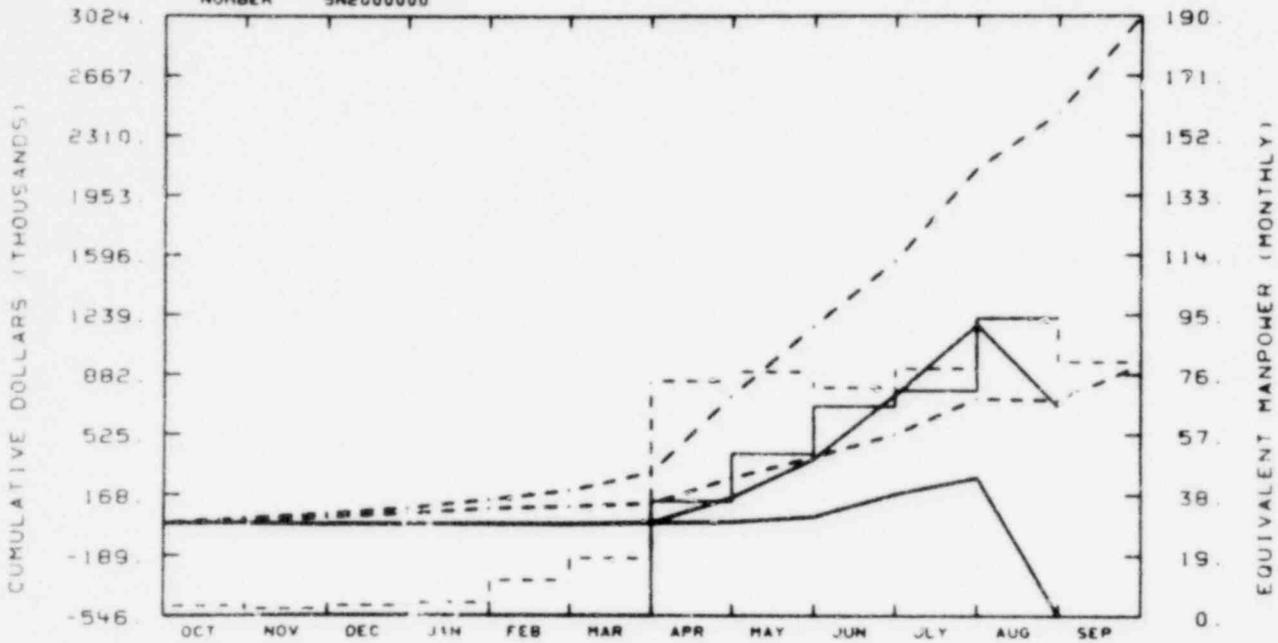
The variance results from correcting charges between DOE & NRC accounts.

POOR ORIGINAL
1216 193

EG&G IDAHO INC.

A6107 - TECH-SUPPORT REQUAL

NUMBER 5N2000000



TOTAL PROGRAM

BUDGET	27	54	87	126	191	300	753	1173	1563	2118	2443	3180
ACTUAL	0	-5	-5	-5	-5	3	132	380	780	1180	65	

MATERIAL

BUDGET	15	33	54	85	97	115	268	393	527	740	730	939
ACTUAL	0	-5	-5	-5	-5	1	8	40	174	270	-545	

MANPOWER

BUDGET	3	2	3	4	11	18	74	77	72	78	94	80
ACTUAL	0	0	0	0	0	0	36	51	66	71	94	

BUDGET

ACTUAL

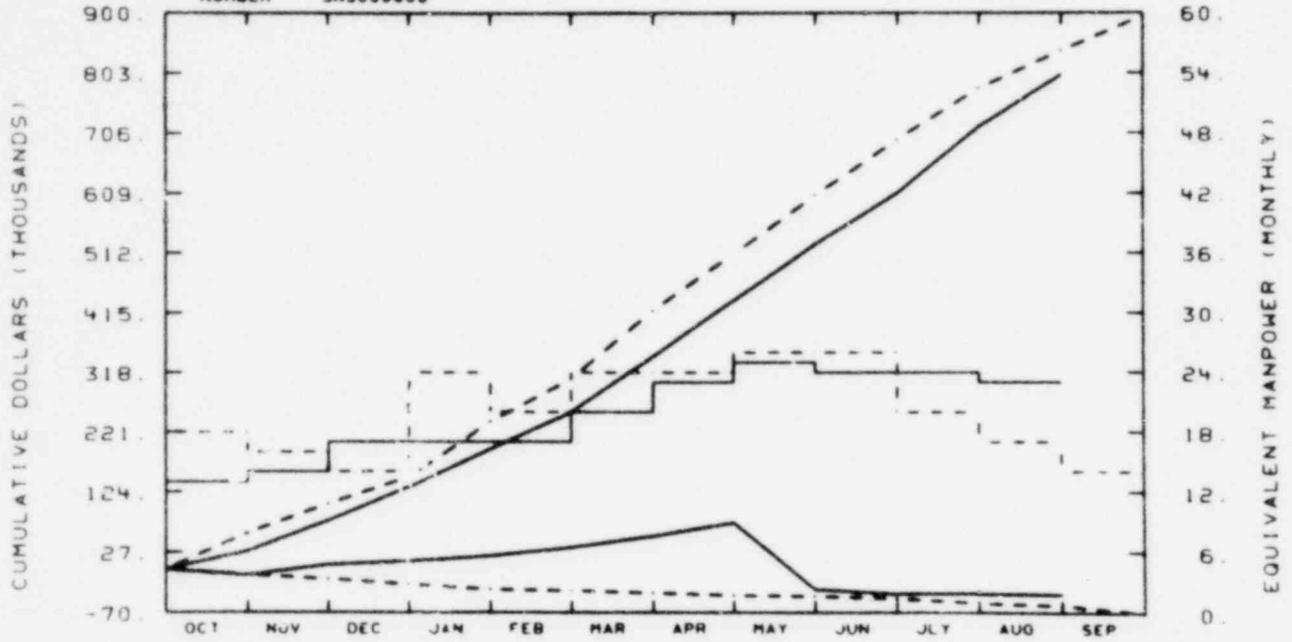
The perturbations result from adjustments between DOE and NRC funding.
The underrun is being realigned by CCB action.

POOR ORIGINAL

EG&G IDAHO INC.

A6074 - ADVANCED INSTRUMENTATION

NUMBER 5N3000000



TOTAL PROGRAM												
BUDGET	58	105	148	238	308	419	511	607	696	779	839	895
ACTUAL	29	78	132	194	254	344	436	527	610	717	800	

MATERIAL												
BUDGET	-7	-14	-23	-31	-33	-37	-40	-42	-46	-53	-57	-69
ACTUAL	-9	7	12	21	34	53	75	-31	-39	-36	-39	

MANPOWER												
BUDGET	18	18	14	24	20	24	24	26	26	20	17	14
ACTUAL	15	14	17	17	17	20	23	25	24	24	23	

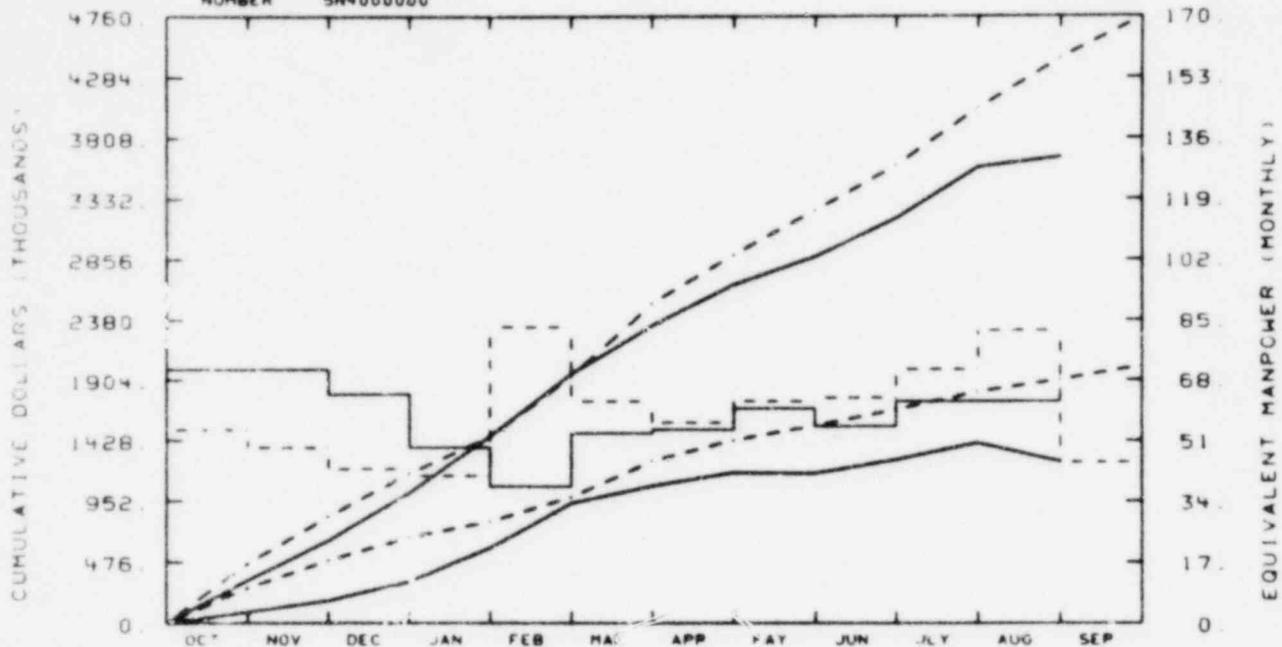
No significant variance.

POOR ORIGINAL

EG&G IDAHO INC.

A6043 - EXPERIMENTAL INSTR

NUMBER 5N4000000



TOTAL PROGRAM												
BUDGET	464	831	1185	1455	1936	2510	2895	3245	3595	4045	4436	4754
ACTUAL	333	541	1015	1460	1955	2357	2859	2879	3183	3582	3660	

MATERIAL												
BUDGET	215	487	665	789	981	1266	1429	1546	1672	1810	1905	2014
ACTUAL	86	174	321	582	935	1088	1175	1169	1278	1410	1288	

MANPOWER												
BUDGET	54	49	43	41	83	62	56	62	63	71	62	45
ACTUAL	71	71	64	49	38	53	54	60	55	62	62	

BUDGET

ACTUAL

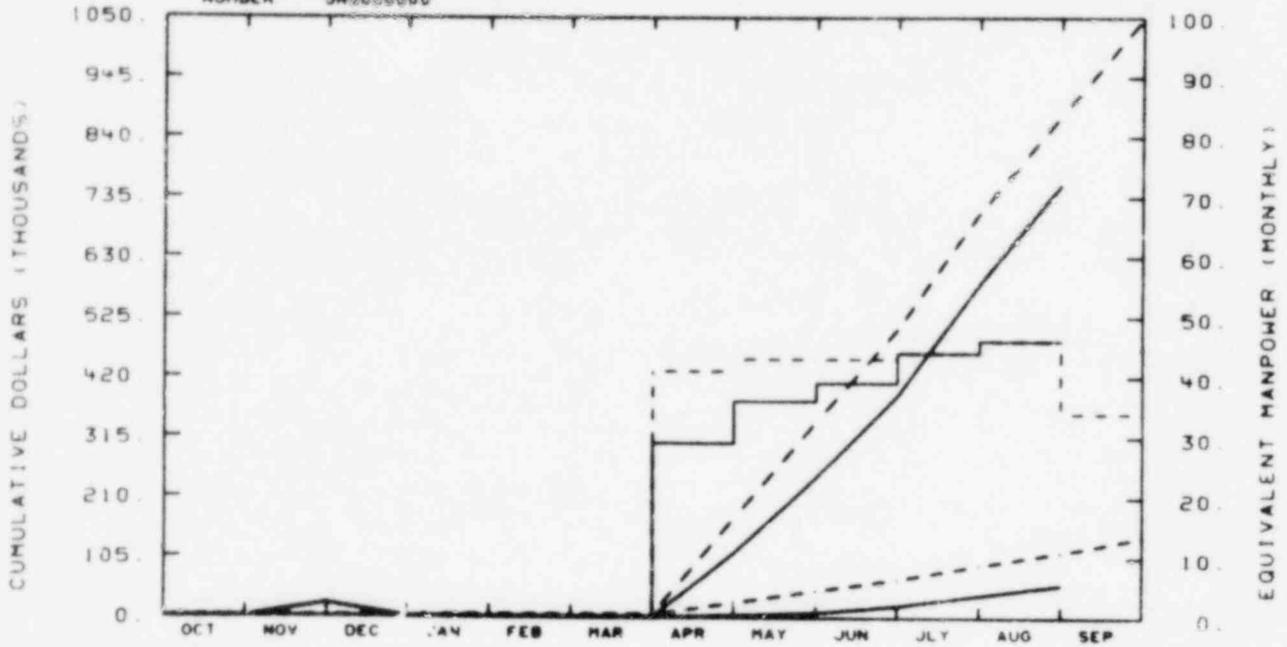
Pending CCB actions will resolve budget variances.

POOR ORIGINAL

EG&G IDAHO INC.

A6110 - PLANS/BUDG/QA/SAFETY

NUMBER 5H5058000



TOTAL PROGRAM

BUDGET	1	1	2	3	4	5	173	343	504	707	878	1049
ACTUAL	0	23	0	0	0	1	112	248	388	583	757	

MATERIAL

BUDGET	1	1	2	3	4	5	25	47	67	92	114	142
ACTUAL	0	23	0	0	0	0	4	9	21	39	57	

MANPOWER

BUDGET	0	0	0	0	0	0	41	43	43	44	46	34
ACTUAL	0	0	0	0	0	0	29	36	39	44	46	

BUDGET

ACTUAL

No significant variance.

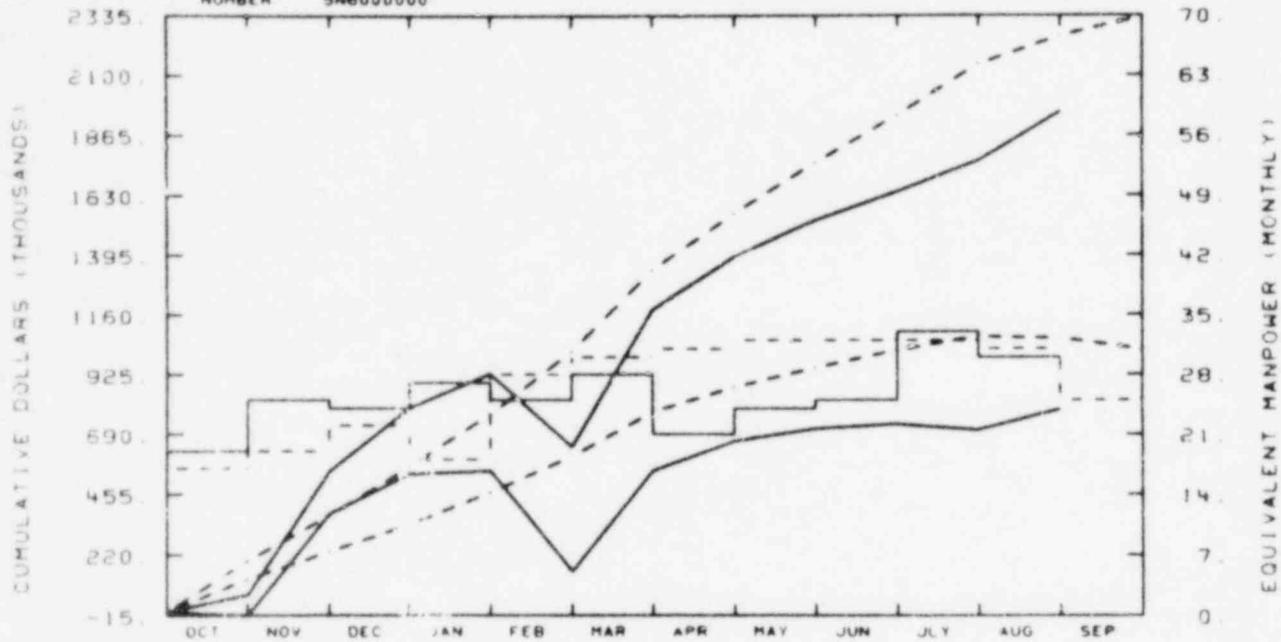
POOR ORIGINAL

1216 197

EG&G IDAHO INC.

A6053 - LOFT FUEL DES/FAB/REQUAL

NUMBER 5N6000000



TOTAL PROGRAM

BUDGET	197	370	560	767	1016	1335	1560	1759	1945	2144	2255	2330
ACTUAL	63	544	790	926	641	1180	1388	1533	1845	1766	1957	

MATERIAL

BUDGET	125	231	334	460	601	777	975	951	1021	1074	1068	1024
ACTUAL	124	378	532	543	155	545	663	712	730	708	789	

MANPOWER

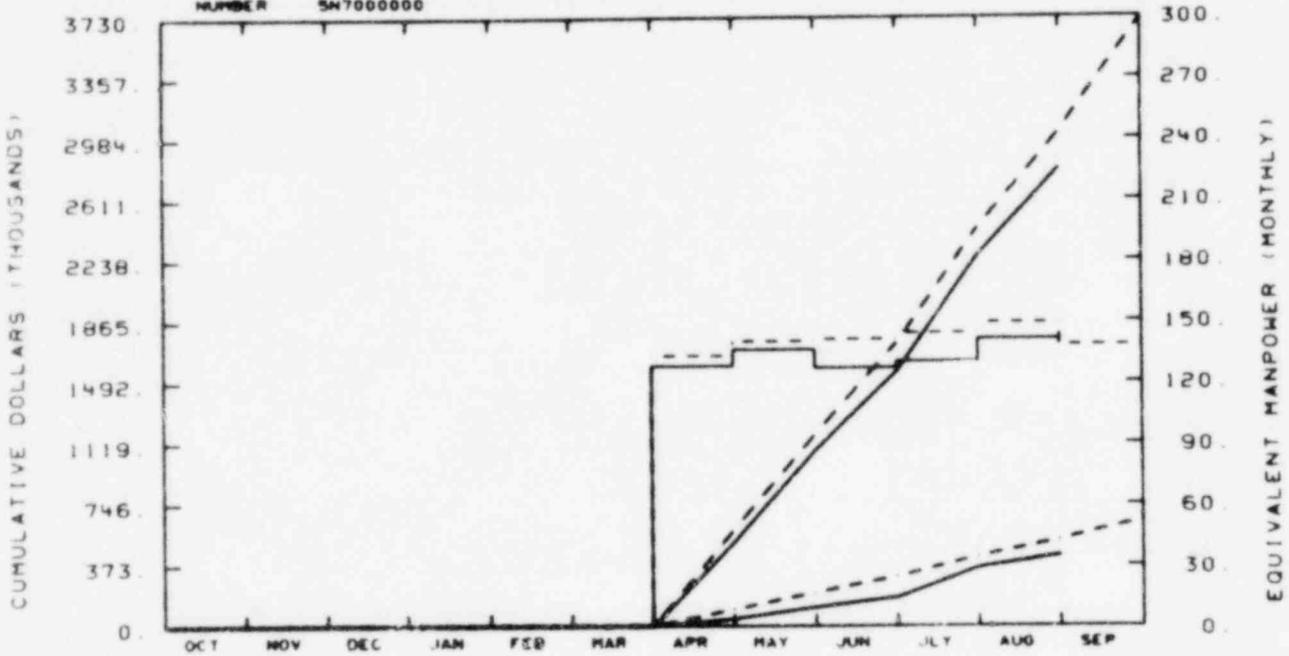
BUDGET	17	19	22	18	26	30	31	32	32	42	31	25
ACTUAL	19	25	24	27	25	28	21	24	25	33	30	

Nonpayment of work accomplished by the suppliers of Reload Core II test instrumentation and control rod materials is contributing to the underrun. The year-end projection for all cost accounts indicates an underrun of \$130,000 or 7%. A request will be made for accruals to pay for work satisfactorily completed by suppliers, which will make the actual costs at year-end equal the budget.

POOR ORIGINAL

EG&G IDAHO INC.
A6054 - LOFT OPERATIONS

NUMBER 5N7000000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	585	1171	1728	2432	3018	3722
ACTUAL	0	0	0	0	0	0	508	1071	1553	2263	2797	

MATERIAL

BUDGET	0	0	0	0	0	0	122	204	300	422	524	846
ACTUAL	0	0	0	0	0	0	44	114	174	355	430	

MANPOWER

BUDGET	0	0	0	0	0	0	133	140	141	144	149	156
ACTUAL	0	0	0	0	0	0	128	136	127	130	141	

BUDGET

ACTUAL

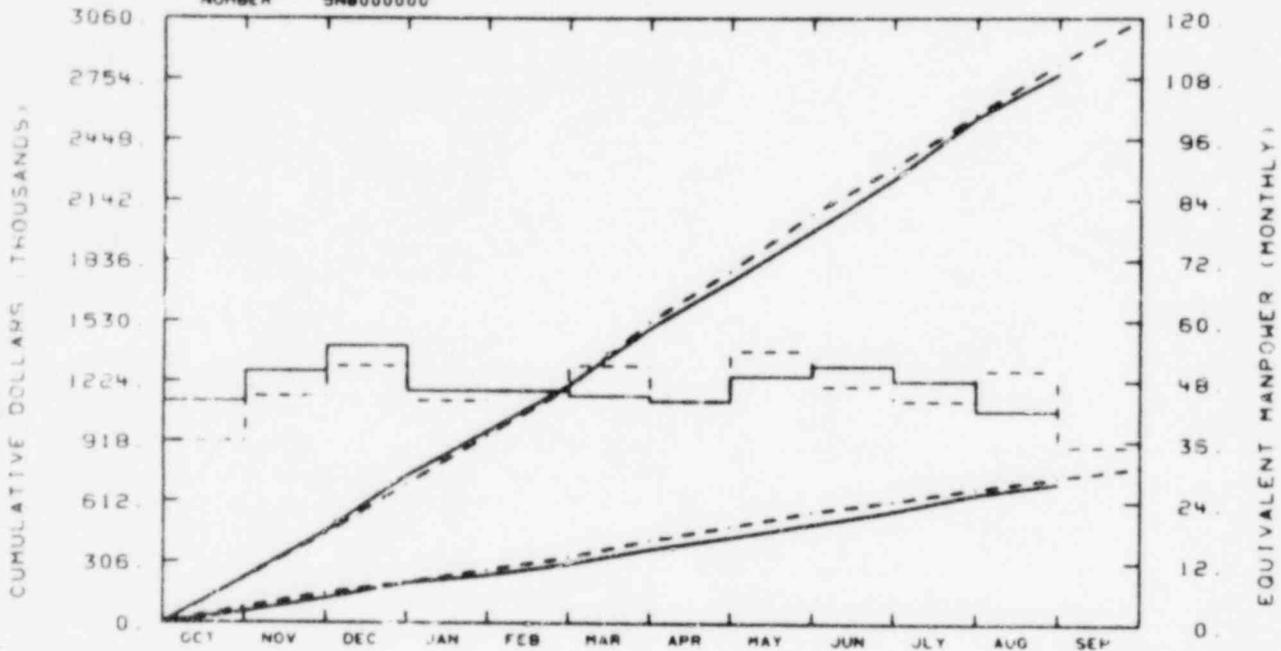
CCB 79-263 returned \$100,000 to the management reserve.

POOR ORIGINAL

EG&G IDAHO INC.

A6048 - EXPERIMENTAL PROGRAM PL

NUMBER 5N0000000



TOTAL PROGRAM

BUDGET	226	446	697	947	1191	1527	1884	2075	2307	2575	2928	3054
ACTUAL	225	459	740	969	1202	1493	1732	1987	2249	2557	2778	

MATERIAL

BUDGET	77	148	204	265	328	414	485	562	615	678	736	784
ACTUAL	55	122	192	248	295	370	471	498	566	651	706	

MANPOWER

BUDGET	36	45	51	44	46	51	44	54	47	44	50	35
ACTUAL	40	50	55	46	46	45	44	49	51	48	42	

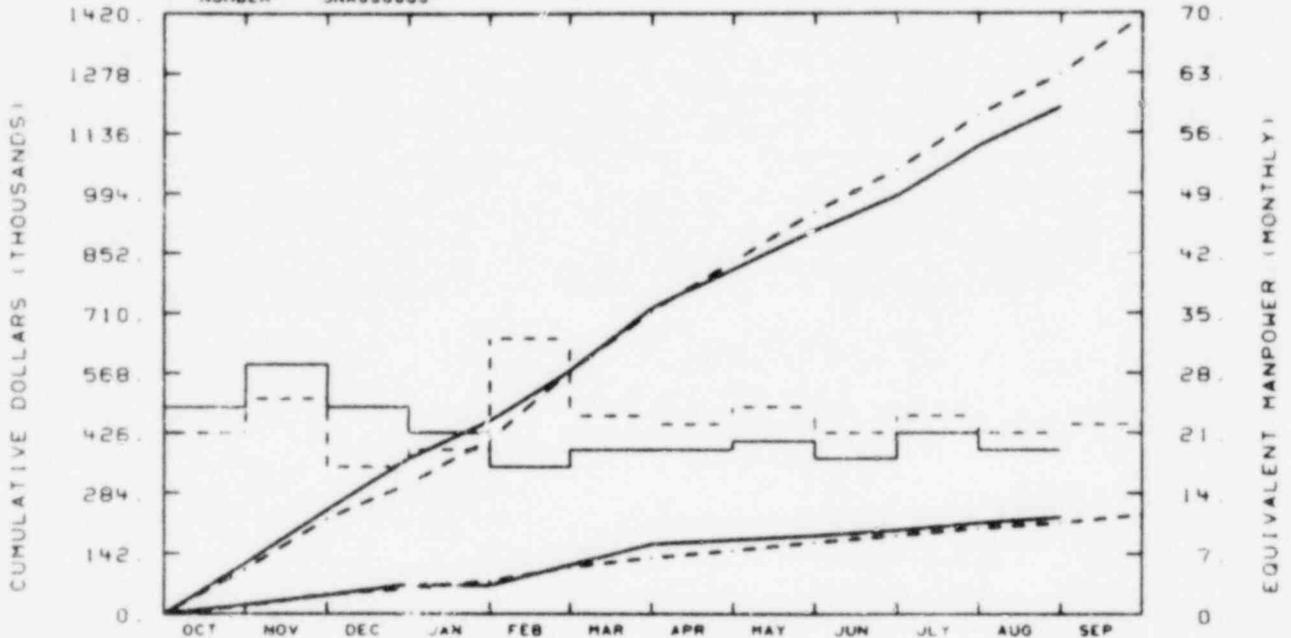
BUDGET

ACTUAL

Large computer expenditures required during September for the small break test series will bring the budget and actuals into agreement.

POOR ORIGINAL

EG&G IDAHO INC.
 A6122 - PHYSICS & THERMAL HYDRO
 NUMBER 5NA000000



TOTAL PROGRAM

BUDGET	105	223	304	410	573	715	831	950	1049	1180	1276	1411
ACTUAL	119	243	354	454	574	722	813	905	988	1105	1198	

MATERIAL

BUDGET	19	46	59	77	110	131	148	167	183	201	214	233
ACTUAL	22	44	59	66	114	163	173	183	196	213	227	

MANPOWER

BUDGET	21	25	17	19	32	23	22	24	21	23	21	22
ACTUAL	24	29	24	21	17	19	19	20	18	21	19	

Work is progressing with slight cost savings. CCB actions are in progress.

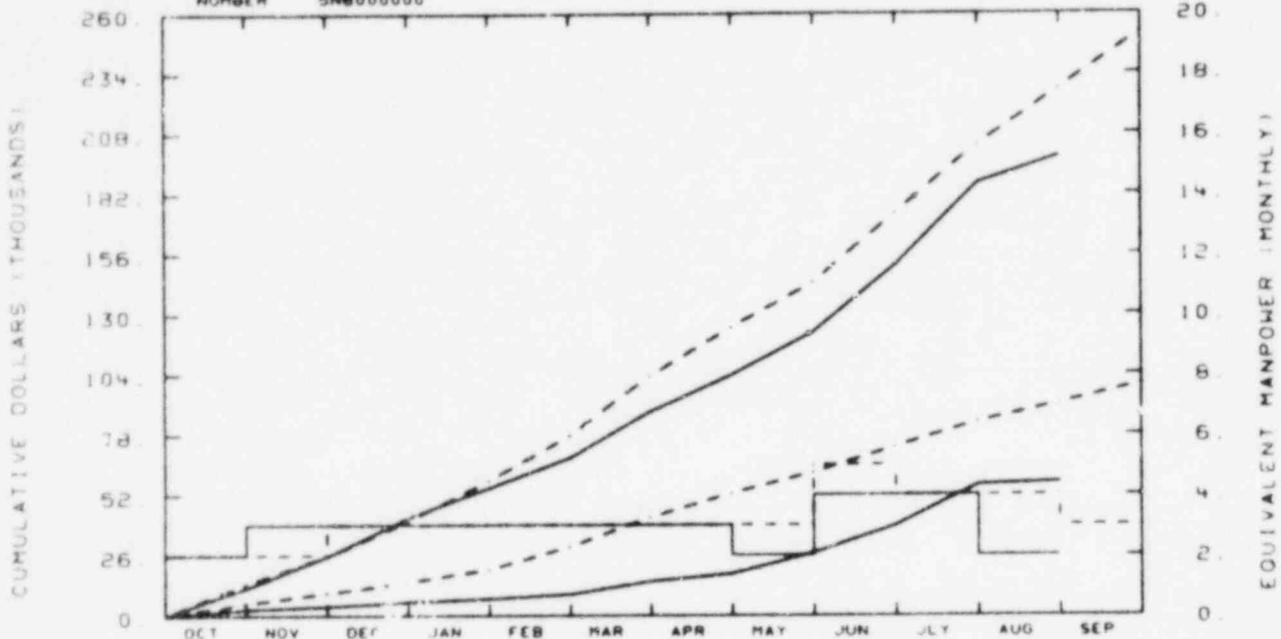
POOR ORIGINAL

1216 201

EG&G IDAHO INC.

A6275 - ELEC HEAT ROD EV ST

NUMBER 5N8000000



TOTAL PROGRAM

BUDGET	14	26	41	58	76	103	124	144	174	203	227	252
ACTUAL	12	26	42	55	66	88	104	122	151	187	198	

MATERIAL

BUDGET	5	10	15	20	30	42	53	62	73	83	91	100
ACTUAL	3	4	6	7	9	15	18	27	39	56	57	

MANPOWER

BUDGET	2	2	3	3	3	3	3	3	5	4	4	3
ACTUAL	2	3	3	3	3	3	3	2	4	4	2	

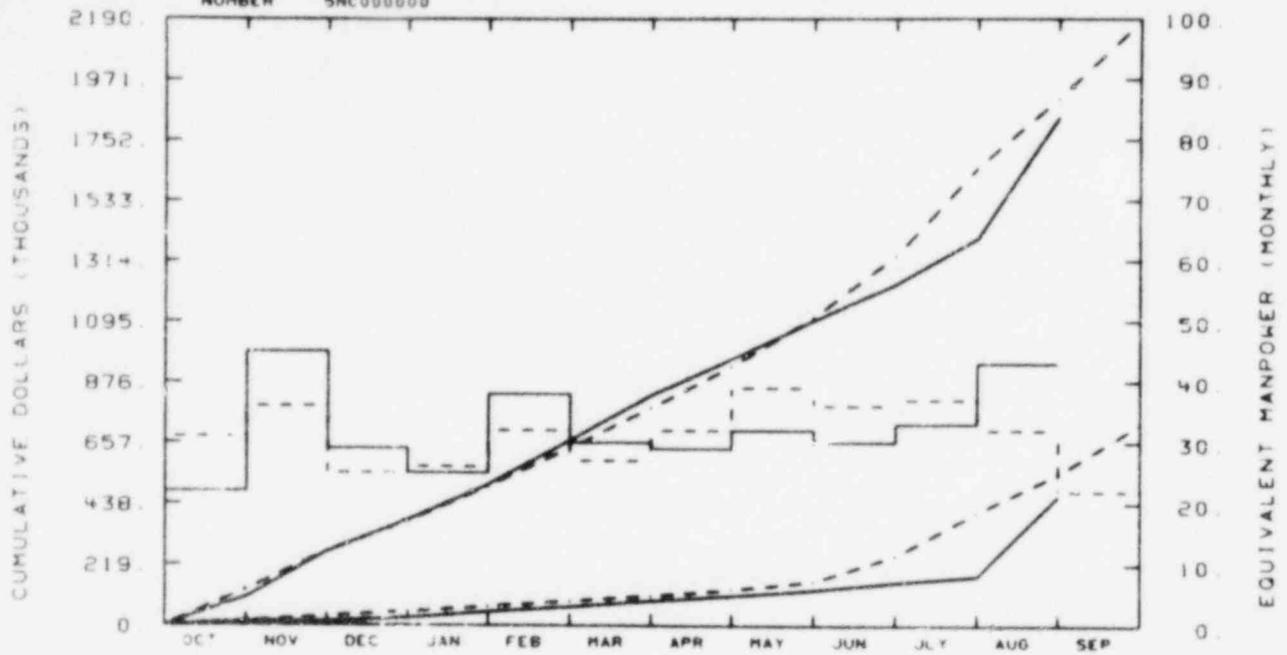
BUDGET

ACTUAL

This program is underspent because material charges for the manufacturing heater rods haven't arrived. The charges are expected to be collected in September.

POOR ORIGINAL

EG&G IDAHO INC.
 A6121 - EXP SUPT TESTING
 NUMBER 5NC000000



TOTAL PROGRAM												
BUDGET	128	266	377	499	637	784	932	1110	1331	1651	1903	2182
ACTUAL	101	264	377	505	665	829	959	1098	1228	1395	1834	

MATERIAL												
BUDGET	15	34	50	69	88	107	129	158	251	406	544	721
ACTUAL	15	15	25	49	66	89	107	128	156	178	465	

MANPOWER												
BUDGET	31	36	25	26	32	27	32	39	36	37	32	22
ACTUAL	22	45	25	25	38	30	29	32	30	33	43	

BUDGET

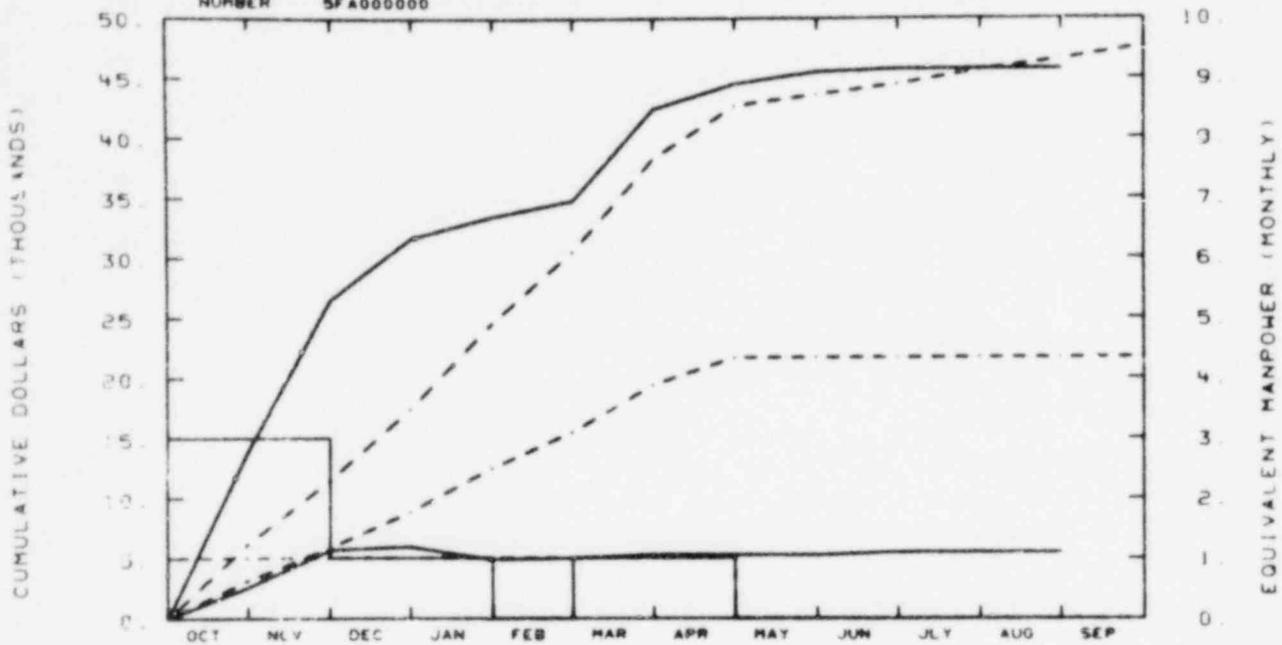
 ACTUAL

The budget underrun is expected to be spent during September.

POOR ORIGINAL

1216 203

EG&G IDAHO INC.
 A6273 - AUSTRIAN FUNDS
 NUMBER 5FA000000



TOTAL PROGRAM

BUDGET	6	11	17	25	30	38	43	44	44	46	47	48
ACTUAL	14	26	32	33	35	42	44	46	46	46	46	

MATERIAL

BUDGET	3	6	9	12	15	19	22	22	22	22	22	22
ACTUAL	3	5	6	5	5	5	5	5	5	5	5	

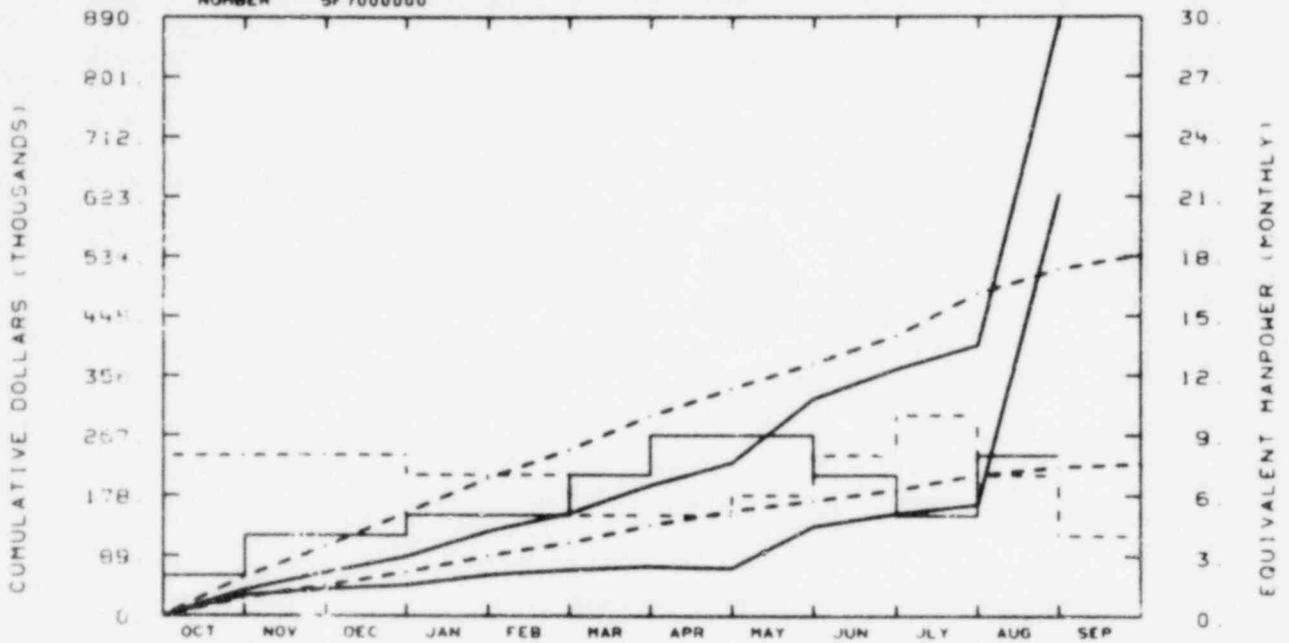
MANPOWER

BUDGET	1	1	1	1	1		1	0	0	0	0	0
ACTUAL	3	5	1	1	0	1	1	0	0	0	0	

The tasks were completed ahead of schedule and within the budgets.

POOR ORIGINAL
 1216 204

EG&G IDAHO INC.
 A6104 - GERMAN FUNDS
 NUMBER SF7000000



TOTAL PROGRAM

BUDGET	58	102	152	203	245	296	336	374	416	478	515	536
ACTUAL	38	61	87	125	151	193	226	321	365	401	487	

MATERIAL

BUDGET	27	45	55	88	108	134	155	170	186	208	220	225
ACTUAL	30	39	45	60	68	73	71	132	151	164	627	

MANPOWER

BUDGET	8	8	8	7	7	5	5	6	8	10		4
ACTUAL	2	4	4	5	5	7	9	9	7	5	8	

BUDGET
 - - - -
 ACTUAL

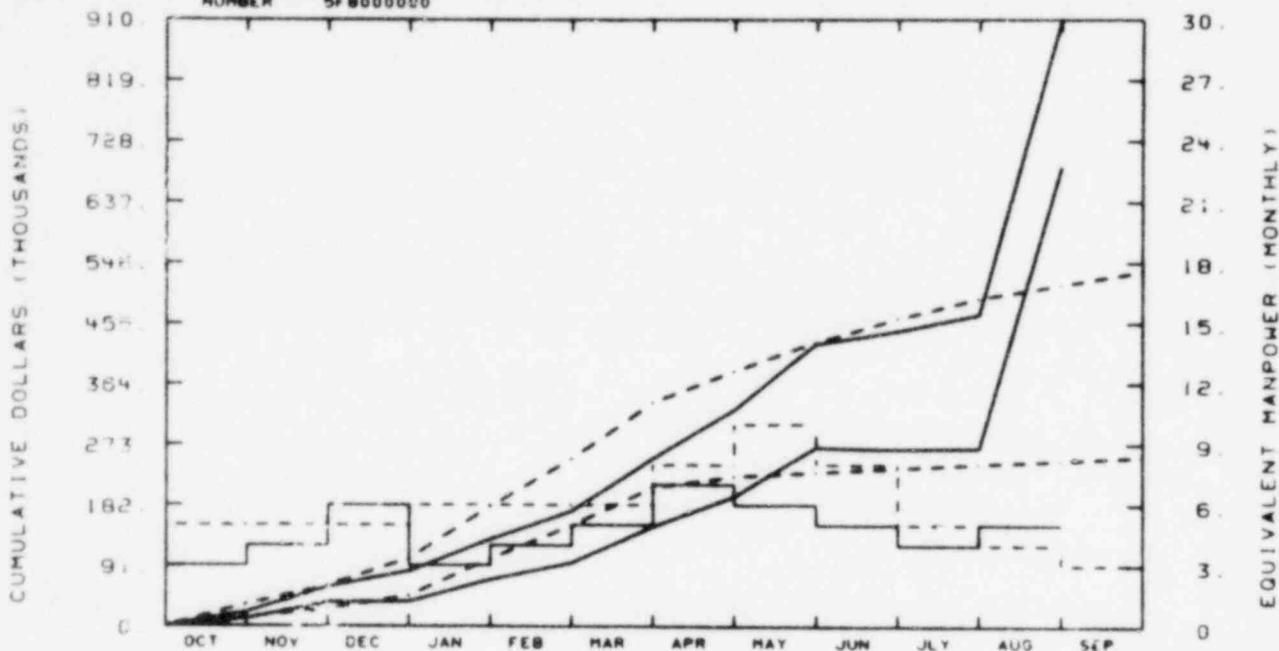
Increases are the result of transfers of charges from the shared projects account. The use of German funds is within approved budgets and schedules.

POOR ORIGINAL

1216 205

EG&G IDAHO INC.
A6111 - JAPANESE FUNDS

NUMBER 5F8000020



TOTAL PROGRAM

BUDGET	33	60	101	180	252	331	384	427	462	492	511	533
ACTUAL	21	51	83	130	173	252	325	424	444	468	910	

MATERIAL

BUDGET	14	25	46	101	151	208	225	231	237	244	249	254
ACTUAL	11	35	37	69	95	150	195	269	268	267	686	

MANPOWER

BUDGET	5	5	5	6	6	6	6	10	8	5	4	3
ACTUAL	3	4	6	3	4	5	7	6	5	4	5	

BUDGET

ACTUAL

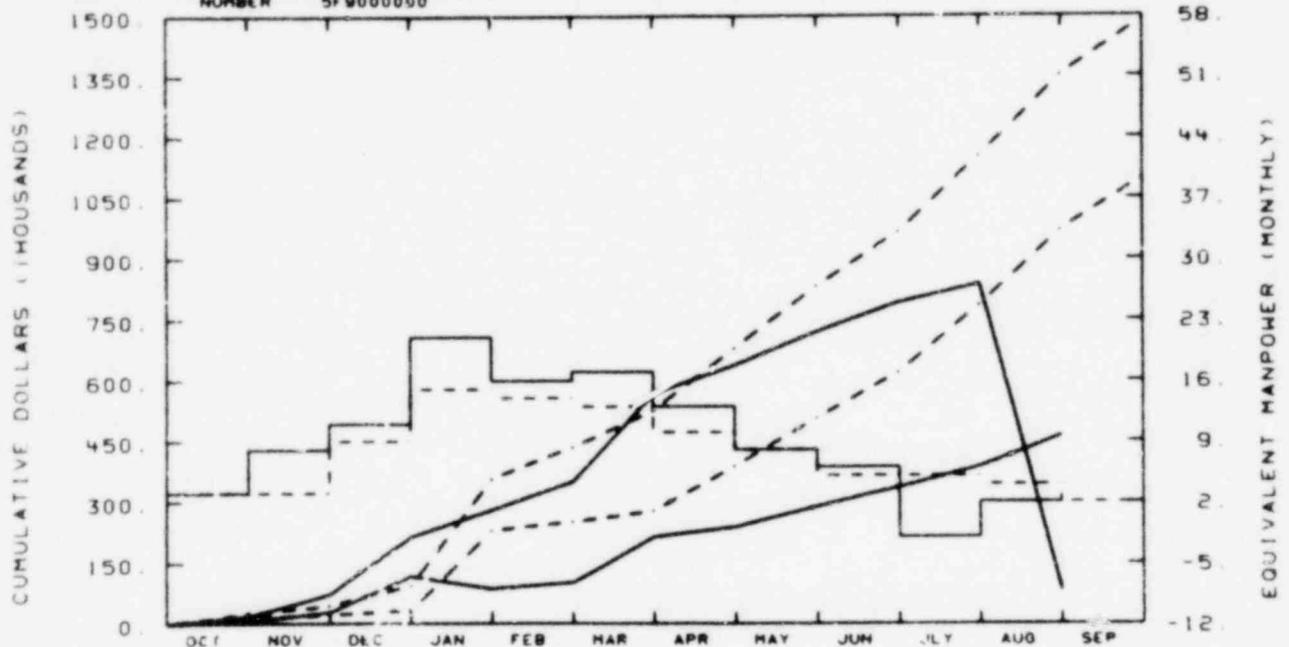
Increases are the result of transfers of charges from the shared projects account. The use of Japanese funds is within approved budgets and schedules.

POOR ORIGINAL

EG&G IDAHO INC.

A61045 - SHARED PROJ FORE FUNDS

NUMBER 5F9000000



TOTAL PROGRAM

BUDGET	24	44	91	357	434	526	680	832	966	1154	1353	1491
ACTUAL	18	72	213	279	349	567	637	720	791	837	82	

MATERIAL

BUDGET	11	21	32	229	250	277	388	507	620	765	970	1097
ACTUAL	8	27	117	86	101	213	237	298	336	386	463	

MANPOWER

BUDGET	3	3	4	15	14	13	10	8	5	5	4	2
ACTUAL	3	8	11	21	16	17	13	8	6	-2	2	

BUDGET

ACTUAL

This is a holding account for projects with shared funding. Charges incurred have been transferred to Japanese and German accounts.

POOR ORIGINAL

1216 207

PERFORMANCE ANALYSIS REPORT

Q 11-E

Account 5N6000000

	<u>Month</u>	<u>Cumulative</u>
BCWS	110	2,255
BCWP	*	*
ACWP	190	1,953

Reason for schedule and cost variances: The actual costs for August exceed the budget value because of accrual adjustments associated with the end of the fiscal year.

Account 5D2280000

	<u>Month</u>	<u>Cumulative</u>
BCWS	158	1,311
BCWP	*	*
ACWP	107	946

Reason for schedule and cost variances: An engineering manpower shortage continues to hold both schedule and cost performance below the baseline.

* Activity schedule not accomplished in August.

POOR ORIGINAL

V. Budget Status Report

V. BUDGET STATUS REPORT

FY-1979 SUMMARY DOE
(In thousands of dollars)

LOFT WBS #	189 #	Q11-A	Approved CLI CCB's	Current PMB # Q11-F	Approved CLII CCB's	Current Co. Budget
5D1XX	500002	551	3	554	--	554
5D2XX	500001	8,652	(220)	8,432	--	8,432
5D5X	06	749	286	1,035	--	1,035
5D7	500004	3,370	(70)	3,300	--	3,300
D. A	500005	<u>278</u>	<u>1</u>	<u>279</u>	<u>--</u>	<u>279</u>
5DXXX	--	13,600	0	13,600	0	13,600
			DOE DISCRETIONARY RESERVES		0	
			DOE MANAGEMENT RESERVES		<u>0</u>	
			TOTAL DOE FUNDING (FY-1979)		13,600	

1215 210

FY-1979 SUMMARY NRC
(In thousands of dollars)

LOFT WBS #	189 #	Q11-A	Approved CLI CCB's	Current PMB # Q11-F	Approved CLII CCB's	Current Co. Budget
5NAXX	A6122	1,569	(80)	1,489	(74)	1,415
5NBXX	A6275	338	(69)	269	--	269
5NCXX	A6121	2,104	150	2,254	--	2,254
5N2XX	A6107	4,078	(219)	3,859	(833)	3,026
5N3XX	A6074	791	(104)	695	--	895
5N4XX	A6043	5,439	(737)	4,702	(9)	4,693
5N5XX	A6110	1,093	(20)	1,073	6	1,079
5N6XX	A6053	2,312	--	2,312	10	2,322
5N7XX	A6054	3,683	(1)	3,682	--	3,682
5N8XX	A6048	<u>3,180</u>	<u>2</u>	<u>3,182</u>	<u>(110)</u>	<u>3,071</u>
5NXXX	--	24,587	(870)	23,717	(1010)	22,707
			NRC DISCRETIONARY RESERVES		44	
			NRC MANAGEMENT RESERVES		<u>2,927</u>	
			TOTAL NRC FUNDING (FY-1979)			25,678

FY-1979 SUMMARY TOTAL PROJECT FOREIGN FUNDS
(In thousands of dollars)

LOFT WBS #	189 #	Q11-A	Approved CLI CCB's	Current PMB # Q11-F	Approved CLII CCB's	Current Co. Budget	Authorized Spending Limit	Current FY-1979 Budget
5FAXX	A6273	135	--	135	--	135	135	49
5FNXX	A6271	223	--	223	--	223	223	168
5F7XX	A6104	2,884	(155)	2,729	--	2,729	2,729	541
5F8XX	A6111	1,701	40	1,741	--	1,741	1,741	529
5F9XX	A6104S	<u>1,828</u>	<u>--</u>	<u>1,828</u>	<u>--</u>	<u>1,828</u>	<u>1,828</u>	<u>1,478</u>
5FXXX	--	6,771	(115)	6,656	0	6,656	6,656	2,765
						312	312	
						578	578	
						1,161	1,161	
						<u>8,707</u>	<u>8,707</u>	
						343	343	
						9,050	9,050	

*PBF has been authorized to budget and use \$1,161,000 of LOFT JAERI funds for LOFT lead rod testing.

VI. Change Control Board Actions

VI. AUGUST CHANGE CONTROL BOARD ACTIONS

CCB#	Title	WBS#	Allocation			Action
			FY-79	FY-80	Total	
79-112	Cancel Gamma Scattering Task	53215X	(4,040)	--	(4,040)	approved
79-159	Hot Cell Storage	521168	100,000	--	100,000	approved
79-164	M/K Carryover	5214C0	53,000	--	53,000	approved
79-175	Advanced Instrumentation	5321XX	--	(650,000)	(650,000)	approved
79-182	DDT/LLT	54XXXX	-0-	-0-	-0-	approved
79-187	Flow Vibration Probe	543358	(4,000)	7,820	3,820	approved
79-188	Advanced Instrumentation	5321XX	111,000	--	111,000	approved
79-189	Experimental Physics	561651	(39,000)	--	(39,000)	approved
79-190	LOFT Test Sequence	5XXXXX	--	--	--	approved
79-191	Fuel Rod Instrumentation	543451	(301,000)	302,000	1,000	approved
79-193	Off-Gas System	521128	(57,600)	57,600	-0-	approved
79-194	Fuel Post-L2-3	521158	(50,912)	--	(50,912)	approved
79-195	Data Systems	581XXX	(110,000)	--	(110,000)	approved
79-196	Data System Engineering	542252	(34,300)	--	(34,300)	approved
79-197	Additional Funding	5NMXXX	(160,000)	--	(160,000)	approved
79-198	Downcomer - Cask Fabrication	9RS8034	--	--	-0-	approved
79-199	PNA	543654	43,000	--	43,000	approved
79-200	Drag Screen	543352	6,000	--	6,000	approved
79-202	Safety Analysis	5219XX	(314,000)	--	(314,000)	approved
79-203	Core Thermal Hydraulic Analysis	561551	(73,800)	--	(73,800)	approved
79-204	Nuclear Instrumentation System	522844	(10,600)	--	(10,600)	approved

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VI. AUGUST CHANGE CONTROL BOARD ACTIONS (continued)

CCB#	Title	WBS#	\$ Allocation			Action
			FY-79	FY-80	Total	
79-205	Assoc. Instr. & Elect.	521857	(55,000)	(7,000)	(62,000)	approved
79-206	Rod Control System	5228XX	(61,000)	--	(61,000)	approved
79-207	Comm. Power & TV	521848	(12,000)	--	(12,000)	approved
79-208	FTM System	521861	(14,000)	--	(14,000)	approved
79-209	Engr. Mgt. Support	522894	(20,000)	--	(20,000)	approved
79-213	Control Systems Analysis	522871	(7,000)	10,000	(3,000)	approved
79-214	TIP/Pump Speed	54XX	-0-	-0-	-0-	approved
79-215	Primary System Support	521503	(72,300)	(39,100)	(33,200)	approved
79-216	CIS	521647	(35,000)	--	(35,000)	approved
79-217	Budget Adjustment	521576	(214,000)	--	(214,000)	approved
79-218	ION Exchange Flow Control	521647	2,500	--	2,500	approved
79-219	Tech. Admin. & Support	521568	(38,000)	--	(38,000)	approved
79-220	Y Strainers - Back Flush	521655	8,000	--	8,000	approved
79-221	Nitrogen Purge	521647	15,000	--	15,000	approved
79-222	Swiss Reflood Program	583451	(41,000)	9,000	(32,000)	approved
79-223	GPP/Line Item WBS	9G/9L	-0-	-0-	-0-	approved
79-225	SCS	521549	30,000	--	30,000	approved
79-226	SCS Support	521565	25,000	--	25,000	approved
79-227	Decon/Reentry Admin.	522252	(26,000)	--	(26,000)	approved
79-228	Decon/Shield Anal.	522251	(40,000)	--	(40,000)	approved
79-229	SCS	521545	60,000	--	60,000	approved

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VI. AUGUST CHANGE CONTROL BOARD ACTIONS (continued)

CCB#	Title	WBS#	\$ Allocation			Action
			FY-79	FY-80	Total	
79-230	Blowdown - L3 Mods	521576	-0-	-0-	-0-	approved
79-231	GPP/RCE Project Engr.	5217XX	(25,000)	--	(25,000)	approved
79-232	Project Engineering	5217XX	(38,000)	--	(38,000)	approved
79-233	Fire Protection Upgrade	521745	10,000	--	10,000	approved
79-234	HV Support	5217XX	(280,000)	280,000	-0-	approved
79-235	Plant Syst./Defic. Correct	5217XX	(65,000)	--	(65,000)	approved
79-236	L3 Support Mods	521576	64,000	29,000	93,000	approved
79-237	Valve Support	521553	17,000	--	17,000	approved
79-238	Relocate PSWET	521576	66,000	--	66,000	approved
79-239	Cool. Syst. Support Mods	521504	(20,200)	20,200	-0-	approved
79-240	PCP Platform/PCS Support	521553	(5,900)	5,400	500	approved
79-244	Valve Support & Replacement	521583	(56,000)	--	(56,000)	approved
79-245	Valve Support & Replacement	521563	(63,000)	--	(63,000)	approved
79-246	Equip. in Rm B205	521577	-0-	-0-	-0-	approved
79-247	Desk Top Computer	9RG976	-0-	-0-	-0-	approved
79-248	Containment Deficiency Clearing	521646	(20,000)	--	(20,000)	approved
79-249	Experimental Predictions	582651	50,000	--	50,000	approved
79-251	Containment Deficiency Clearing	521666	(15,000)	--	(15,000)	approved
79-252	Transit Time Flowmeter	543652	10,471	--	10,471	approved
79-257	LOFT Man-Machine Program	551162	50,000	--	50,000	approved

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VII. Capital Equipment Summary

LOFT CAPITAL EQUIPMENT STATUS

REPORT THROUGH AUGUST 1979

Schedule 189a	TITLE	Prior Year Uncosted	Current Year Funds	Total Available To Cost	Current Year Costs	Outstanding Commitments	Balance less Costs and Comm.	Estimate To Complete	Balance
500001	Integral System Design & Fabrication	38,068	137,000	175,068	76,201	7,980	90,887	98,175	692
500004	LOFT Operations	41,914	223,000	264,914	50,631	7,775	206,508	135,516	78,767
500005	VT & Requalification Program	34,316	140,000	174,316	34,316	122,630	17,370	138,000	2,000
TOTAL DOE		114,298	500,000	614,298	161,148	138,385	314,765	371,691	81,459
A-6061	Experimental Measurements	488,043	415,000	903,043	525,425	74,655	302,963	289,018	88,600
A-6084	Integral System Design & Fabrication	127,390	690,000	817,390	118,170	118,145	581,075	539,738	159,482
A-6085	Experimental Program Planning	103,475	-0-	103,475	102,077	3,885	[2,487]	8,287	[6,889]
A-6086	LOFT Advanced LOCE Instru- ments	32,812	588,000	620,812	212,818	208,411	199,583	400,998	6,996
A-6088	LOFT Operations	20	150,000	150,020	131,929	2,310	15,781	17,360	731
A-6089	Fuel Design Fabrication And Requalification	169,533	157,000	326,533	133,758	3,885	188,890	3,885	188,890
TOTAL NRC		921,273	2,000,000	2,921,273	1,224,177	411,291	1,285,805	1,259,286	437,810
TOTAL LOFT		1,035,571	2,500,000	3,535,571	1,385,325	549,676	1,600,570	1,630,977	519,269

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