LOFT MONTHLY PROGRESS REPORT FOR APRIL 1979

EG&G Idaho, Inc.

IDAHO NATIONAL ENGINEERING LABORATORY

DEPARTMENT OF ENERGY

IDAHO OPERATIONS OFFICE UNDER CONTRACT DE-AC07-76IDO1570

LOFT
MONTHLY PROGRESS
REPORT FOR
APRIL 1979

MAY 1979

Approved: N C Kaufman

N.C. Kaufman, Director LOFT Project

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I. Director's Monthly Summary

I. DIRECTOR'S MONTHLY SUMMARY

During April, the LOFT Project entered the final preparations for the next test, L2-3. Specific preparatory efforts involved plant fill, heatup, and hydro-testing. Low-power reactor operation was conducted to obtain additional physics baseline data in anticipation of the post-L2-3 requalification test. Also, system operation testing continued for newly installed or modified systems, particularly for the Waste Gas Processing System. Finally, safety and experiment analyses and readiness reviews for L2-3 were conducted and the results evaluated.

Schedule progress during April was very good and was consistent with conducting L2-3 before May 15, 1979. Costs through April continue to be less than budgeted, principally due to material costs accrued but not costed, labor costs rescheduled, and cost savings not yet reflected in Change Control Board actions.

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II. Accomplishments

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

   (1) An effort was continued on reload core II upper structure procurement. Bids are due May 4, 1979 with vendor review scheduled during the week ending May 19, 1979.

   (2) Procurement activities for components required for assembly of the CRAs for reload core II were continued. A contract award was made to Superior Tube for S-5853 tubing.

   (3) Training on the FMIRC mockup in TAN-607 was completed. The final phase in the TAN-607 Hot Shop is pending readiness of Hot Shop equipment and procedures.

   (4) The adapter plate is complete and has been installed on the FMIRC/Hot Shop unloading stand.

   (5) Work was continued on the Hot Shop FMIRC offgas system and is scheduled for completion during the first week of May 1979.

   (6) A redesign effort of the fuel module transporter to strengthen the carriage and increase the ball screw size was completed. Fabrication is scheduled to be completed in May 1979.

   (7) Work continued on determining the software required for center fuel module changeout after L2-3. Weekly coordination meetings are being held to examine problem areas and to contact other organizations.

   (8) Detailed decay heat information, based on revised 1979 American Nuclear Society standard, was obtained from George

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Hanson (GHH-5-79). Using this information, a Detailed Operating Procedure (DOP) was prepared for LOFT to ensure compliance with the technical specifications for emergency core cooling (ECC).

(9) Preparation of acceptance criterion for L2-3 traversing in-core probe system (TIPS) measurements was begun. Verification of the TIPS performance was carried out with the vendor's representative. Some anomalies in the DAVDS signal were resolved.

(10) Best estimate power distribution for L2-5 (beginning of life, high flow, and pre-LOCE) was calculated (DRC-5-79).

(11) Supplemental power distributions, rod withdrawal, and shutdown margins for L2-3 safety analysis were calculated (Rush-7-79).

(12) The L2-3 pre-LOCE maneuver core safety analysis was completed and LTR 111-127 was issued.

(13) Transfer of physics programs from DDAPS to DDAS computer systems was completed.

(14) Zero power TIP scans that were not satisfactory during L2-2 requalification were rerun. This rerun data subsequently had to be processed to remove anomalies caused by a faulty TIP bottom position indication. The TIP problem has been fixed.

(15) An improved method of evaluating TIP outputs before blowdown was established.

(16) Work on reconsideration of the FSAR analysis after the Three Mile Island experience was started. This work includes hybrid analyses of multiple permutations of a loss-of-feed/stuck-relief-valve accident.

(17) Resistance temperature detector (RTD) signals were recorded for study of zero-crossing time constant testing. The measurements will have to be repeated.

(18) The waste gas processing system operation (SO) testing and documentation update was completed.

(19) A preliminary design has been developed for the waste gas processing system exhaust system. A procurement specification has been released. However, there is a hold on this specification because certain safety-related questions have been raised. A meeting is planned to try to resolve what types of analysis are required for completion of design.

(20) Installation was completed of several control and alarm modifications to the waste gas processing system, including radiation monitors to shut down the system if a leak should occur outside the containment, as well as interlock and temperature monitoring/control modifications.

(21) A decontamination system piping and instrument diagram (P&ID) is being developed. System number 06 has been assigned to this system. Design review has been scheduled for May 15, 1979.

(22) Installation of a new blowdown suppression tank vapor space sampling line was completed. The line will permit BST gas to be sampled for hydrogen and oxygen as required for L2-3.

(23) A manpower-cost-schedule estimate was generated to scope the primary pressure boundary modifications necessary to support future LOFT small-break tests. Three test options were estimated considering various system pipe configurations and instrumentation requirements.

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(24) A design effort to permit obtaining primary coolant pressurized (50 psig) samples was initiated. The modification will permit accurate measurement of noble gases in the primary system. The modification will be completed in time to support LOFT refueling.

(25) Approximately ten pipe supports were modified on the ECC low pressure injection system suction lines. The modification will allow the lines to safely withstand the 250°F temperature they will incur if the system is used for post-LOCE decay heat removal.

(26) Requirements were defined and initial conceptual designs were started for automated ultrasonic (AUT) nondestructive examination of the steam generator nozzle welds. This effort is in support of the LOFT inservice inspection (ISI) (AUT) inspection of all Class 1 welds.

(27) Requisitions for approximately 17 ASME Class 1 and 2 valves were written and released into the LOFT signature cycle. This valve procurement will replace valves that possess deficiencies that decrease plant operation efficiency.

(28) Installation of Phase 1 of the liquid waste storage tank level indication upgrade was completed.

(29) Spent resin handling task engineering layout is approximately 90 percent complete. Piping modifications are in drafting and some material has been ordered.

(30) HV-9 System isolation valves were modified so they can serve in the automatic containment isolation function.

(31) The in-containment smoke detectors were modified to improve their moisture resistance.

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(32) The accumulator propane burner alarm modifications were completed.

(33) Vital power was installed to HV-8 System fan motors.

(34) The primary coolant system motor generator (PSMG) stator winding thermocouples were removed and thermocouples were installed in the plant protection system (PPS) cabinets in the PSMG room.

(35) A survey was begun of PPS junction boxes to assist in development of a long-term program for improved environmental protection and sealing.

(36) The design of circuitry for CV-P138-181 (blowdown system) and circuitry for valve position on CV-P139-176 (primary coolant system) was completed.

(37) Engineering continued on the radiation monitoring system move from the main control room to the health physics office. (Indication for technical specification related parameters was retained in the control room.) Liaison with the construction contractor is helping to facilitate this job.

(38) Engineering was completed on the absolute pressure transducers for experimental measurements.

(39) Engineering continued on the replacement primary flow instrumentation for the PPS expansion.

(40) International Testing Methods ran their first preventive maintenance test series. Several deficiencies were found using infrared techniques and repairs were made.

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(41) Diesel generator B loop cooling controls were modified to permit in-facility operation and to provide improved running characteristics.

(42) As-built drawings of the vital power flood alarm system and the HV-10 system were completed.

(43) The liquid waste sparging system was completed.

(44) Diesel generator A drawings were field-verified and redrawn for clarity.

(45) Gamma densitometer heater indicating lights were installed.

(46) A loss of commercial power test was run successfully. A fast response, underfrequency relay was subsequently installed on Vital Bus B, and retesting is in progress.

(47) The removal of overhead obstacles on Snake Avenue was 75 percent completed. Telephone and alarm cables were rerouted and new power cables were installed. They are awaiting terminators, testing, and connection.

(48) Phase 1 to relocate a headset plug-in junction box for the communication system expansion to the DAVDS has been completed. Engineering work has been completed to install two phones (one on each end of the mobile test assembly) and connect them into the intercommunications systems (Phase 2). Phase 2 work will be installed after L2-3.

(49) The work packages have been closed out on the CV-P4-90 scram A and B interlock modifications and the hot waste sump modifications.

(50) Engineering support was provided for calibration of the steam generator level measurement.

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(51) OSAD-6, "Operational Safety Assessment Document for Center Fuel Module Handling," is being revised by Stafco, Inc. to include additional safety calculation results that were generated as a result of the first draft of the document.

(52) DOE approval was received either partially, or completely, for several DRRs, (2456, 2465, and 2462) to the LOFT technical specifications that are relevant to L2-3 pre-test operation.

(53) An updated DRR (2463) to the LOFT technical specifications was sent to DOE on the safety limits, limiting safety system setpoints and limiting conditions for operation in Mode 8 for test L2-3. This update reflects minor changes required by the final safety analysis for Mode 8 for test L2-3.

(54) A new section to the LOFT technical specifications on the waste gas processing system was sent to DOE (DRR-L-2464).

(55) An LTR was prepared on seismic risk of TAN Hot Shop vestibule flood failure.

(56) A seismic review of FMIRC ations was completed.

(57) Seismic bracing on the diesel generator A muffler was installed.

(58) Seismic bracing was installed on cable tray supports in Room B-100.

(59) A draft of OSAD-5, "Operational Safety Assessment Document for L2-3," has been prepared and is being reviewed in preparation for L2-3.

(60) Final fuel densification effects study on the L2-3 blowdown has been completed.

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(61) The L2-3 test engineering safety assessment (ESA) was issued to DOE-ID for approval on April 25, 1979.

(62) Instrument design engineers were assigned to appropriate tasks in support of post L2-3 center fuel assembly replacement. Areas to be covered include: (1) remove and replace the experimental measurement cables and pressure lines above the reactor vessel, (2) provide redundant FMIRC level detector channels with control room readout, (3) provide startup channel alarms in MCR and containment, and (4) provide means of communication between the reactor vessel head area and the control room.

(63) A design effort began for new instrumentation to be supplied with the A3 and F1 center fuel assemblies.

2. 189a-500004-LOFT Operations

(1) Operational testing of Waste Gas Processing System was completed.

(2) DOP 01-004, Pre L2-3 plant testing, was finished.

(3) Prerequisites were started for L2-3.

(4) Inservice Inspection DOPs were performed.

3. 189a-A-6053 LOFT Experimental Measurements

(1) The software that controls the visitors display board was modified to allow for easier editing of the display and to provide additional data for display. Hardware modifications were also completed to simplify operation of the board for those who conduct tours of the LOFT facility.

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(2) Installation was completed on the hardware to be used for a telecommunications link between the Data Processing System at LOFT and the TSA users' area. We are attempting to make the equipment operational for L2-3, so that it may be used to make quick-look plots available in TSA.

Video equipment has been rented for use during L2-3. This will again provide a remote visitors display area in the trailers at TAN-630.

(3) A communication link betwen the LOFT main control room and the DDAS computer has been installed. This computer terminal will be used at test time by the Joint Experiment Group.

(4) A loss-of-commercial power test on the DAVDS was performed in April. Results are being analyzed and action recommended.

(5) The grounding grooming of the LOFT data system was completed in April.

(6) The three-level bubble plot program for the liquid level transducer was completed. This plot uses three different void fraction ranges instead of two. The plots presented were made from normalized data (maximum voltage was assumed to be a 100 percent void). A method of normalizing on an absolute basis is being investigated.

(7) The following topical papers were written in April:

a. "INEL Conductivity Liquid Level Transducer," by L. D. Goodrich, C. M. Nightingale, and R. R. Good, to be presented at the INEL Two-Phase Flow Colloquium.

b. "Comparison of Two-Phase Flow Slip Models Using Karlsruhe Data," by R. R. Good, to be presented at the Karlsruhe meeting.

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c. "LOFT Drag Disc Turbine Transducer (DTT) Design, Fabrication, and Application," by R. H. Averill, R. E. Ford, and L. D. Goodrich, to be presented at the INEL Two-Phase Flow Colloquium.

d. "X and Gamma Ray Transmission Densitometry," by J. B. Colson, G. D. Lassahn, A. G. Stephens, J. N. Taylor, D. B. Wood, and L. O. Johnson to be presented at the INEL Two-Phase Flow Colloquium.

(8) The following data processing programs were developed in April:

a. Pitot Tube/ECC Rake Program

b. N-Beam Densitometer Program

c. A program to check clad thermocouples at power was developed.

(9) The following pre-L2-3 activities were performed:

a. Instrument walk-through check on the Test Assembly

b. Daily publishing of failed and anomalous instrument lists

c. Computerizing of critical measurements list

d. Analysis of in-place pressure calibrations.

(10) The quarterly LOFT Instrument Status Report was issued.

(11) The L2-3 LOFT Measurement Capabilities List was issued.

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(12) The drag disc turbine for the C4 upper structure was reworked to incorporate improvements that will increase its resistance to vibrations and thermal shock. The unit was delivered to Fuels Engineering on April 18 for installation on the C4 upper structure.

(13) Photomultiplier tube (PMT) housings for the gamma densitometer detectors, which were a problem in March, were ordered from two sources on an expedited basis. Both sources, the INEL Advanced Instrumentation Model Fabrication Shop and Pyromet Industries of San Carlos, California, delivered on time. Both sets of housings were of good quality. Bicron/EMR delivered PMT assemblies of a greatly improved design and reduced cost. These are being used for L2-3.

(14) The final venting and grooming procedures of differential and absolute pressure transducers for L2-3 were completed.

(15) The first procedures for shipping, handling, and decontaminating pressure transducers were completed. One contaminated transducer was shipped to ARA-III for failure analysis.

(16) Six differential pressure transducers were shipped by Bell & Howell, ending the delay in that contract. Qualification testing will begin on arrival.

(17) Four liquid level transducers were modified for the A3 and F1 bundles. These units are now boxed and waiting shipment to Exxon.

(18) The auxiliary closed-circuit television camera carrier passed the acceptance test at NUS Corporation, Clearwater, FL. There were a few minor problems involving the drive mechanism of the carrier. However, NUS was able to resolve them. The carrier was shipped to EG&G but two of the four shipping containers were lost in transit. Currently, the lost containers are being traced.

(19) Work on the fuel rod instrumentation continued, and passed some major problems.

Change #1 to Subcontract K-5797 with Kaman Sciences Corporation for procurement of LVDTs and plenum pressure transducers (including electronics) was firmed up with a letter of understanding. The negotiated price and schedule were reduced by $17,000 and delivery improved by one month respectively. The schedule is now compatible with Exxon requirements. Considering the position of weakness imposed upon us by the rigid QA requirements in the HEDL specifications and the qualification of only one vendor by HEDL (sole source), the negotiations can be considered a success.

The facility interface subtask moved into detailed design of containment cabling and finalized the cable requirements of the fuel rod plenum pressure transducers. Preparations for radiation testing of electronic components used in the FP^3T signal conditioning were completed and detectors and specimens installed. Preliminary design of signal conditioning and DAVDS system interfacing began with assignment of a data system engineer to aid the project and evaluation of patch panel, measurement channel, cabling, and signal conditioning space allocations.

(20) Zircaloy-sheathed cladding thermocouples are becoming a critical item. Quotes and qualification TCs from vendors were unacceptable. LEMB is planning for a parallel in-house production of the first lot and a vendor upgrade program.

(21) Blowdown system thermocouples were installed and will be operational for L2-3.

(22) Two qualification and three production ultrasonic density detectors (UDDs) have successfully passed acceptance testing. Consistency between all units was excellent. All

electronics for the UDDs have either been ordered or are in fabrication. These are the prototype electronics and will require engineering coverage during the testing. An engineer was assigned a UDD test-support function and was familiarized with ultrasonic densitometer and observed set up, testing, and troubleshooting of the prototype electronics system. Data produced in testing was discussed and transducer sensitivity and response was illustrated.

The Operation and Maintenance Manual for the UDD is currently being written. As a result of the elimination of funding in FY-80, all UDD instrumentation has been canceled for fuel bundles after A3. All ordering and fabrication activities have been canceled.

4. 189a-A-6053 LOFT Fuel Fabrication

(1) The auxiliary television camera carrier (part of fuel requalification equipment) was successfully tested by the supplier (NVC Corporation) and delivered to INEL.

(2) The order for the Reload Core II enriched uranium hexafluoride withdrawal was issued to the Oak Ridge National Laboratory.

(3) Additional fuel pellet resintering tests were conducted on 20 pellets from pellet lot 20-5 to complete the densification characterization of the center fuel bundle fuel pellets.

(4) Discussions with Thermal Fuels Behavior Program and LOFT staff personnel regarding LOFT power oscillations to characterize the existing effective fuel-pellet-to-cladding gap concluded that these type tests could not be conducted successfully in LOFT because the reactor power control system was incapable of providing the precise, short-duration sinusoidal power oscillations required. An alternate approach to evaluate gap closure during the power increase in being implemented.

(5) A formal letter was sent to DOE-ID that (1) suggested that changing the A3 and F1 center fuel bundle fuel rods to stable fuel and prepressurizing the A3 fuel rods were not needed to achieve LOFT mission objectives and (2) agreed that it would be reasonable to place two fuel rods in the A3 fuel bundle that were fabricated with stable fuel pellets.

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

(1) Considerable progress was made in performing analyses defined in the small break analysis matrix. The results of the small break analyses indicates that small break transients are very slow and the RELAP4/MOD6 code predicts little core uncovery during small break transients. The amount of leakage between the upper plenum and the upper annulus region affects the depth of core uncovery and the need for modification of the LOFT pump loop seal is being evaluated, based on the effects of this leak path.

(2) Densification analyses for the L2-3 experiment were completed. FRAP-S3 calculations were performed with an approved creep model to determine the amount of clad creep down that occurred as a result of core operation to date. The pellet densified dimensions were obtained from pellet sintering data. These dimensions of the clad and pellet were used in the RELAP4/MOD6 hot pin code. In conjunction with this, a means was demonstrated of reducing the conservatism in the model by changing the coupling of the hot pin to system run. The resulting analyses showed a reduction in PCT when coupled to the fuel densification analyses.

(3) Staff members participated in the LOFT Readiness Review Meeting for L2-3. The committee performed a review of the administrative systems used by the LOFT Facility Division. Comments were sent to T. F. Pointer by letter.

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(4) DOE/NRC approval was obtained for the Change Notice for L2-3. The approved Change Notice was distributed for general use.

(5) A RELAP hot pin analysis for L2-2 was completed. This analysis continued the evaluation of the Groeneveld and Condie-Bengston film boiling heat transfer correlation. The gap width was changed by the manufacture tolerance on the pellet. When this change was made:

a. The Groeneveld heat transfer correlation did not rewet or cool down the nominal 50 percent smaller gap did rewet as shown in the data.

b. The Condie-Bengston with a 50 percent smaller gap did rewet as shown in the data.

We plan to document these analyses by letter.

(6) The German sample problem for the ALMOD code was completed with good correlation between our calculation and the German calculation. This verified the conversion of the ALMOD code from the IBM to the CDC. We are currently checking out the system model for use as an ATWS and operational transient analysis tool.

(7) The L2-3 new experiment prediction analysis was completed, and the report was sent on May 4, 1979. The maximum cladding temperature was calculated to be 1011 K occurring at 4.1 seconds after rupture. No core-wide rewet early in blowdown was predicted to occur.

(8) We continued to give technical assistance to the NRC in the L2-3 WREM analysis effort.

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(9) W. H. Grush left for Japan as part of a cooperative JAERI/INEL analytical task to perform RELAP4/MOD6 sensitivity studies and perform reflood calculations with RELAP-REFLA. He will be in Japan for one month.

(10) Drafts of the QLR and EDR for LOCE L2-3 were completed. The EDR standard practice was revised for application to L2-3. Also, preparations were made to incorporate the new standard practice on experimental uncertainty in the QLR and EDR.

(11) ECC bypass calculations for LOCEs L1-5 and L2-2 were completed. This information formed part of the basis for the proposed revision to part C-1.c of Appendix K licensing criteria.

(12) The Data Integrity Review Committee (DIRC) procedures and work plan were formalized for LOCE L2-3. The standard practice for this effort was revised.

(13) Assistance to L2-3 standard problem participants continued. The list of measurements for the code assessment comparisons was completed and included in the QLR draft in support of objective 5 of LOCE L2-3.

(14) The preparatory work on the Swiss Neptun experiments continued. The subcontract for the TC cable was let. Delivery is expected on June 7. The heater rod positions in the Neptun bundle for TC attachment were selected. Reflooding rates and initial cladding temperatures were selected as the two primary sensitivities to be studied.

(15) The isothermal cladding oxidation tests as outlined in LTR-1111-54 have been completed. This data will provide a data base for PIE evaluation of LOFT cladding temperatures in the range of 1000 to 1250 K.

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(16) Fuel densification experiments from LOFT fuel batch 20-5 were completed and compared to similar resintering tests on batch 20-3. The results indicate both batches have the same densification characteristics in regards to pellet diametral changes.

(17) A paper, "Fuel Rod Response During LOFT L2-2 Experiment," was presented at the Topical Meeting on Light Water Reactor Fuel Behavior at Portland. Interest in the LOFT results at the meeting was very high.

(18) A presentation was given at the NRC rewet meeting in Denver summarizing conclusions about cladding thermocouple effects during L2-2. It was generally agreed by those present that the thermocouples did not represent a large perturbation effect during L2-2. However, for reflood conditions, out-of-pile tests indicate the thermocouples may introduce nontypical response. A complete plan for finalizing our understanding of the effects of LOFT-type clad thermocouples is being prepared.

(19) Bids were received for the steam and moisture separators for the Two-Phase Flow Loop. Based on the bids and an evaluation of their qualifications, Peerless Manufacturing Company was selected. Delivery is expected October 5, 1979.

(20) Construction has started on the foundations for the steam supply vessels for the Two-Phase Flow Loop. Completion is expected in May 1979.

(21) The pressure vessel to be used for the transient two-phase testing program was delivered to Wyle. Kaiser Steel has reworked the downcomer flange and returned it to Wyle. Wyle personnel are cleaning the interior of the vessel.

(22) Hardware for the DTT Pipe Size tests in the FAST loop has been completed and is undergoing fit checkouts at this time. A design review was held April 25, 1979. Only minor comments were made and they are being incorporated.

(23) Comments from the final design review of the two-phase loop have been incorporated in the drawings and specifications for final release.

(24) TC Quench Test Progress - Test plan for first phase of the heater rod quench tests was completed. Phase 1 testing using a single Semiscale 1.68 m heater rod with and without external thermocouples will begin the first week in June. Checkout tests will be conducted during May. Heater rods and other hardware for the second phase of testing on a 4-rod 3.9 m length bundle are being procured at the present time. Phase 2 testing will be during August or September. Phase 3 testing on a nine-rod bundle is in the planning stage including identifying heater rods to be used in this test.

SUMMARY OF FRG-FUNDED TASKS

Task 5072, 5073 Core Instrumentation

Status: A final design review of the UDD probe was held on April 12, 1979 and the design was approved. A CCB was submitted and approved that deletes costs for installation of the instruments. The installation effort will be completed using NRC funds.

Task 5074 FRG Management

Status: A proposal that covers additional tests at Wyle Laboratories during FY-80 was completed and circulated for review.

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N. Dyer returned from a one-month visit to KfK at Karlsruhe, Germany, where he participated in tests at HDR that utilized the radiotracer method of slip measurement. The three tests were successfully completed. A trip report has been completed and distributed. A revised cost estimate and proposal will be prepared to use the radiotracer method with LOFT flow instruments during tests at the LOFT Blowdown Facility.

Task 5076110 Miscellaneous Short Term Tasks, Task B - Review of LOFT Two-Phase Test Planning

Status: Dr. S. Banerjee, a consultant for two-phase phenomena, has been scheduled for two days of consulting at INEL during June 1979.

Task 50763100 Steam Temperature Probe

Status: A CCB that revises scope and schedule has been submitted and approved.

SUMMARY OF JAPANESE (JAERI) - FUNDED TASKS

Task 50811 JAERI Management

Status: A CCB which allocates the JAERI 1979 payment of $1 million to specific tasks was submitted and approved.

Task 5082 Additional Instruments

A proposal, which requested funds to install additional thermocouples on the LOFT piping at the steam generator and pump simulators, is being reevaluated to verify the cost estimates.

Task 5083 DTT Advancement

Status: Engineering analyses are in progress to support the final design of the instrument.

Task 5084 ECC Rakes

A final design review for the pipe wall support for the ECC Rake was held on April 20, 1979 and final approval was given. Minutes of the design review have been published. Contract negotiations were completed with the subcontractor to incorporate the design modification and fabricate the rakes.

5085 - LOFT/PBF Lead Rod Tests

Test LLR-5 was conducted on March 24, 1979 and Test LLR-4 was conducted on March 30, 1979. Maximum fuel cladding temperatures during the LLR-5 test were: Rod 312-1, 995 K; Rod 312-2, 1015 K; and Rod 345-1, 1005 K. Maximum cladding temperatures during the LLR-4 test were: Rod 312-1, 1130 K; Rod 312-2, 1170 K; and Rod 345-1, 1060 K.

The fourth rod did not have cladding T/C's. Based on the temperatures achieved during the LLR-4 test, it is expected that Rods 312-1 and 312-2 reached the waisting regime of mechanical deformation while Rod 345-1 reached the buckling regime.

A CCB was submitted and approved to run another test, LLR-4-A. The test conditions and performance sequence will be identical to test LLR-4.

Task 5087210-Reevaluation of LOFT Experiment Predictions

Status: A final report is in preparation by L. Saukkoriipi, principal investigator.

Task 508731 Miscellaneous Codes Studies

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Task A. 50873 - Independent RELAP/REFLA Calculation of L2-2 Reflood

W. Grush, EG&G Idaho, left for Japan on April 16, 1979 for one month to participate in a JAERI analysis of L2-2 test using the RELAP/REFLA Code.

SUMMARY OF AUSTRIAN (SGAE)-FUNDED TASKS

Task 509110 SGAE Task Management

Status: Proposals for LOFT related work to be performed in Austria were prepared and sent to DOE and NRC for review. W. Binner, SGAE, Vienna, Austria visited EG&G on April 30 to discuss the proposals. W. Binner then traveled to Washington, D.C. for additional discussions at NRC.

Task 509121 Semiscale MOD-1/LOFT Scaling

Status: No change.

Task 509121 LOFT/PWR Scaling Study

Status: The final report is scheduled for publication in May 1979.

Task 509131 Semiscale MOD-3/LOFT Scaling

Status: Final letter report was published and distributed. The task is completed.

SUMMARY OF NETHERLANDS (ECN)- FUNDED TASKS

Task 509210 ECN Task Management

Status: No change.

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Task 509220-Development of Two-Phase Orifice Models - RPI Subcontract

Status: The task is on schedule within budget. Dr. R. Gay, principal investigator, has been invited to INEL on June 14 to give a progress review as part of a panel discussion on two-phase flow instrumentation.

Task 509241 - Transient Test Program Additional Scope

Status: The funds for this task were received at DOE and added to this task as approved in CCB 79-104.

SUMMARY OF FY JAERI/ECN SHARED TASKS

Task 5093110 Two-Phase Transient Test Program

Status: The pressure vessel was delivered to the Wyle test site and installed. The modifications to the Wyle data acquisition system have been completed and a test tape generated for check out at EG&G. The license to use gamma densitometers at the Wyle test site has been received from the state of California. The cleaning of rust from the pressure vessel has been completed.

Task 5093210 Two-Phase Steady State Tests

Status: Contracts for the steam separator and moisture separator were awarded. The design review comments were incorporated into the design package. The concrete and excavation work has started at the LTSF.

Task 5093310 TRAC Code Studies

Status: No change.

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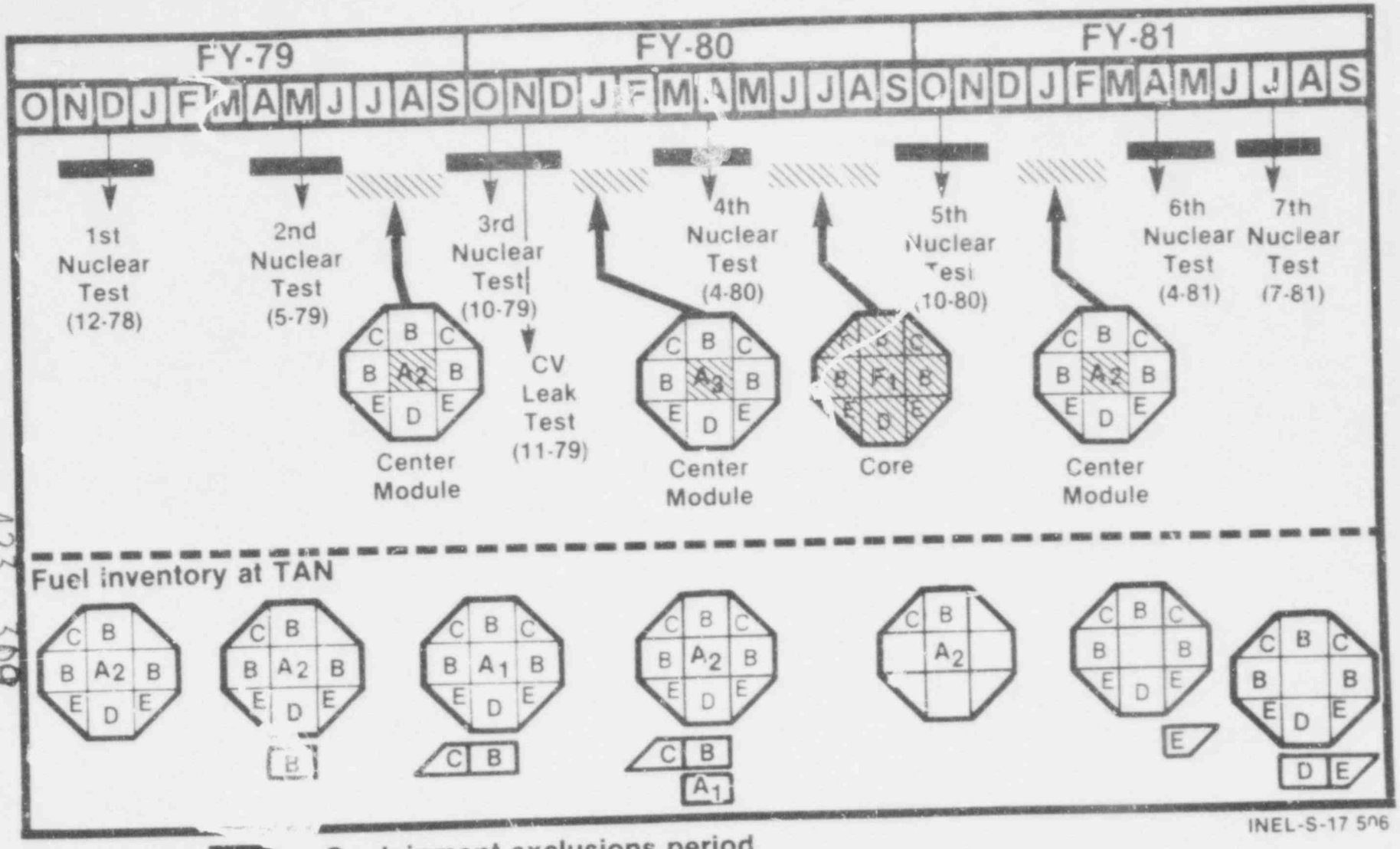
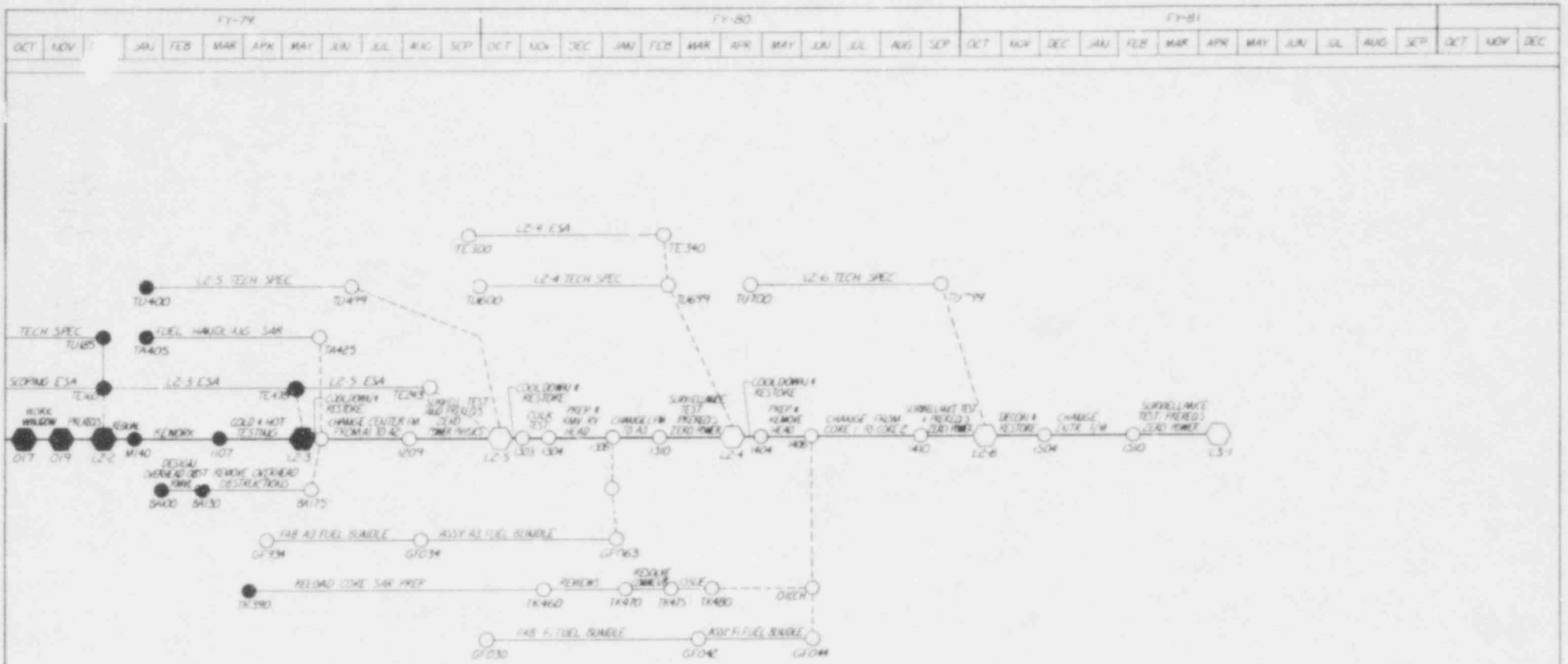
III. Summary Schedules

LOFT Three - Year Plan



MANAGEMENT SUMMARY SCHEDULE
CH1A BASELINE



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FOREIGN-FI ED COST AND SCHEDULE SUMMARY
($\times 10^3$ $)

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

Total Proposal Estimate (Incl. Contingency)	Total Spending Authorized by CCB	Funds Spent to Date	Items	FY-79 JAN	FEB	MAR	APR	MAY	JUNE	JUL	AUG	SEP	FY-80 OCT	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	491	Task 5072000 - Core Void Fraction 5072100 - Core Inlet Instr. 5072210 - Upper Structure Den.						△						
379	329	276	Task 5073000 - Core Inlet Flow 5073120 - Transducer Attachment (c) 5073130 - DTT Instruments 5073140 - Core Instr. Tests						△						
150	150	126	Task 5074 - FRG Task Mgmt.												△
143	133	132	Task 5075000 - Commercialization of Instruments (c)												

29

423 314

FOREIGN-FUNDED COST AND SCHEDULE SUMMARY (continued)
($\times 10^3$ $)

Total Proposal Estimate (Incl. Contingency)	Total Spending Authorized by CCB	Funds Spent to Date	Items	FY-79 JAN FEB MAR APR MAY JUNE JUL AUG SEP	FY-80 OCT NOV DEC
50			Task 5076110 - Misc. Short Term Tasks		
	7	2	Task A - Neutron Scatter Study (c)		
	9	10	Task B - Radiotracer Study (c)		
	9	0	Task C - Review LOFT Test Plans	----------△	
	10	10	Task D - Return Nucleate Boiling (c)		
100	90	2	Task 507631C - Steam Temp. Probe	----------△	
			FRG Part of Shared Tasks		
138	132	118	5093110 - 2-Phase Transient Tests	----------△	
800	732	244	5093210 - 2-Phase SS Tests	----------△	
50	50	5	5093310 - TRAC Code Study	----------△	
3,802	3,643	2,771	Total FRG Funded Items		
202	202	124	Task 5081110 - JAERI Task Management	----------△	
150	150	70	Task 5082 - Additional Instr. (presently inactive)		
154	154	105	Task 5083110 - Advanced DTT	----------△	
518	503	493	Task 5084100 - ECC Rake	----------△	
1,891	1,839	1,382	Task 5085000 - LOFT/PBF Lead Rod Tests		
			50852 - Task Mgmt/Documentation	----------△	
			50853 - Facility Modification (c)		
			50854 - LLR Tests	●----------△	

423 312

FOREIGN-FUNDED COST AND SCHEDULE SUMMARY (continued)
($\times 10^3$ $)

Total Proposal Estimate (incl. Contingency)	Total Spending Authorized by CCB	Funds Spent to Date	Items	FY-79 JAN FEB MAR APR MAY JUNE JUL AUG SEP	FY-80 OCT NOV DEC
15	14	14	Task 5086110 - Fission Prod. Monitoring Conceptual Design (Complete 5-78) (c)		
55	55	13	Task 5087210 - Re-evaluation of LOFT Experiments	----------Δ	
21	20	3	Task 5087310 - Misc. Code Studies RELAP/REFLA Posttest Analysis of L2-2	O---------Δ	
			JAERI Part of Shared Tasks		
138	132	118	5093110 - 2-Phase Transient Tests	----------Δ	----------Δ
800	722	244	5093210 - 2-Phase SS Tests	----------Δ	
50	50	5	5093310 - TRAC Code Studies	----------Δ	
3,994	3,851	2,571	TOTAL JAERI FUNDED ITEMS		
12	12	7	Task 5091110 - SGAE Task Management	---------- ----------Δ	
90	82	75	Task 5091210 - S/Mod-1 - LOFT Scaling	----------Δ	
45	41	46	Task 5091310 - S/S Mod-3 Scaling (C)	----------Δ	
147	136	128	TOTAL SGAE FUNDED TASKS		
			NETHERLANDS		
10	10	8	5092110 - Task Management	----------Δ	
117	117	122	5092210 - RPI Subcontract	----------Δ	
10	10	0	5092310 - INEL Support	----------Δ	

423 313

FOREIGN-FUNDED COST AND SCHEDULE SUMMARY (continued)
($\times 10^3$ $)

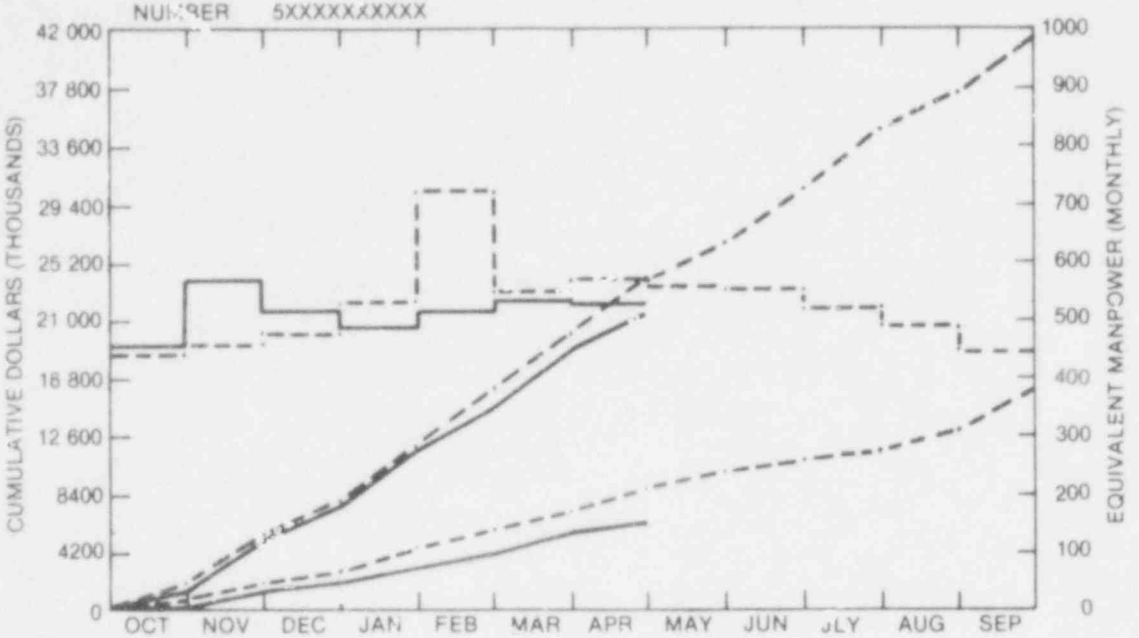
Total Proposal Estimate (Incl. Contingency)	Total Spending Authorized by CCB	Funds Spent to Date		FY-73 JAN	FEB	MAR	APR	MAY	JUNE	JUL	AUG	SEP	FY-80 OCT	NOV	DEC
100	89	0	Task 5092410 - Added Scope Transient Testing		●							△			
237	226	150	Total ECN Funded Tasks												

IV. Cost Charts & Variance Analysis

EG&G IDAHO INC.

TOTAL LOFT

NUMBER 5XXXXXXXXXX



TOTAL PROGRAM

BUDGET	2824	5403	8275	12 050	16 100	20 672	24 054	27409	30710	34[illegible]	37639	41 940
ACTUAL	2135	5262	8185	11 678	14 210	18 299	21132					

MATERIAL

BUDGET	1052	1998	2899	4296	5799	7354	8497	9399	10587	11873	12885	15006
ACTUAL	307	1409	2235	3595	4126	5430	6103					

BUDGET — — —

ACTUAL ———

MANPOWER

BUDGET	431	465	478	532	723	548	576	556	540	513	489	441
ACTUAL	462	575	515	487	512	539	529					

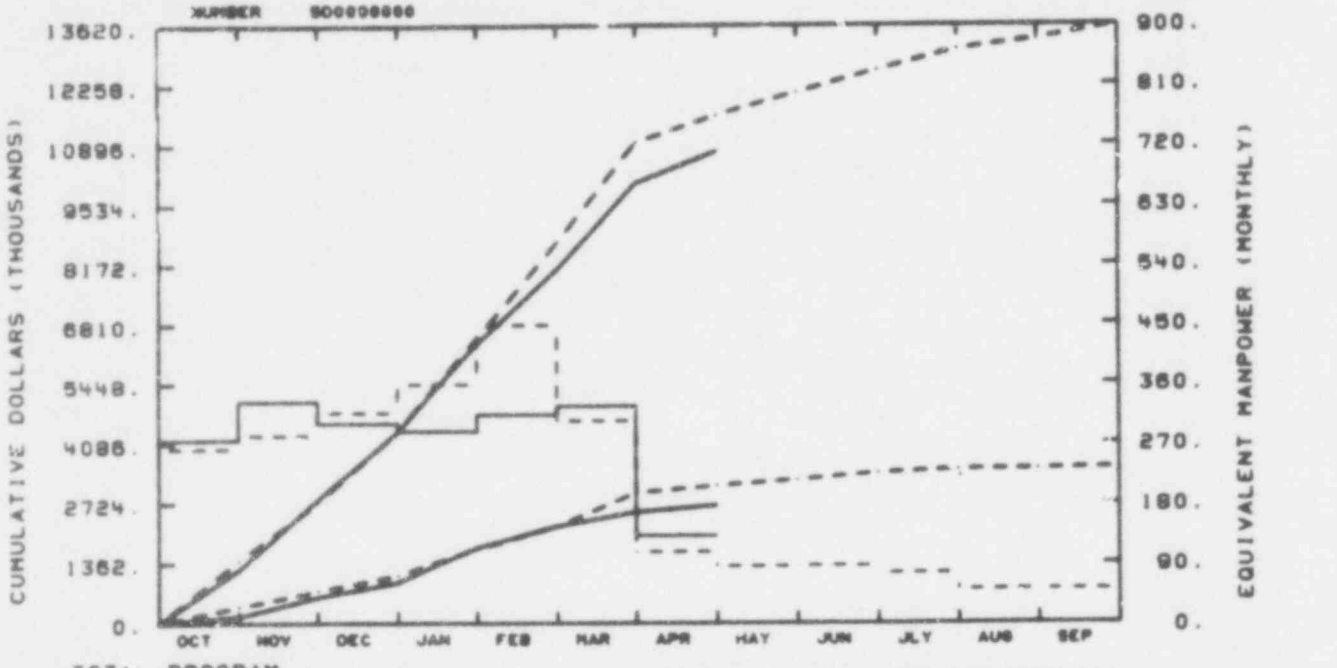
Manpower = Payroll Hours Less Holidays

The indicated material variance includes uncosted obligations and savings achieved in relation to the budget.

423 316

EG&G IDAHO INC.

TOTAL LOFT DOE BUDGET



TOTAL PROGRAM

BUDGET	1497	2727	4349	6479	8677	10906	11574	12082	12990	13058	13293	13611
ACTUAL	1201	2901	4349	6381	8099	10018	10752					

MATERIAL

BUDGET	383	724	1072	1668	2196	2956	3113	3250	3430	3449	3494	3675
ACTUAL	150	505	915	1707	2196	2917	3273					

MANPOWER

BUDGET	262	292	316	350	449	304	107	95	96	75	50	50
ACTUAL	275	333	300	288	313	326	131					

BUDGET

ACTUAL

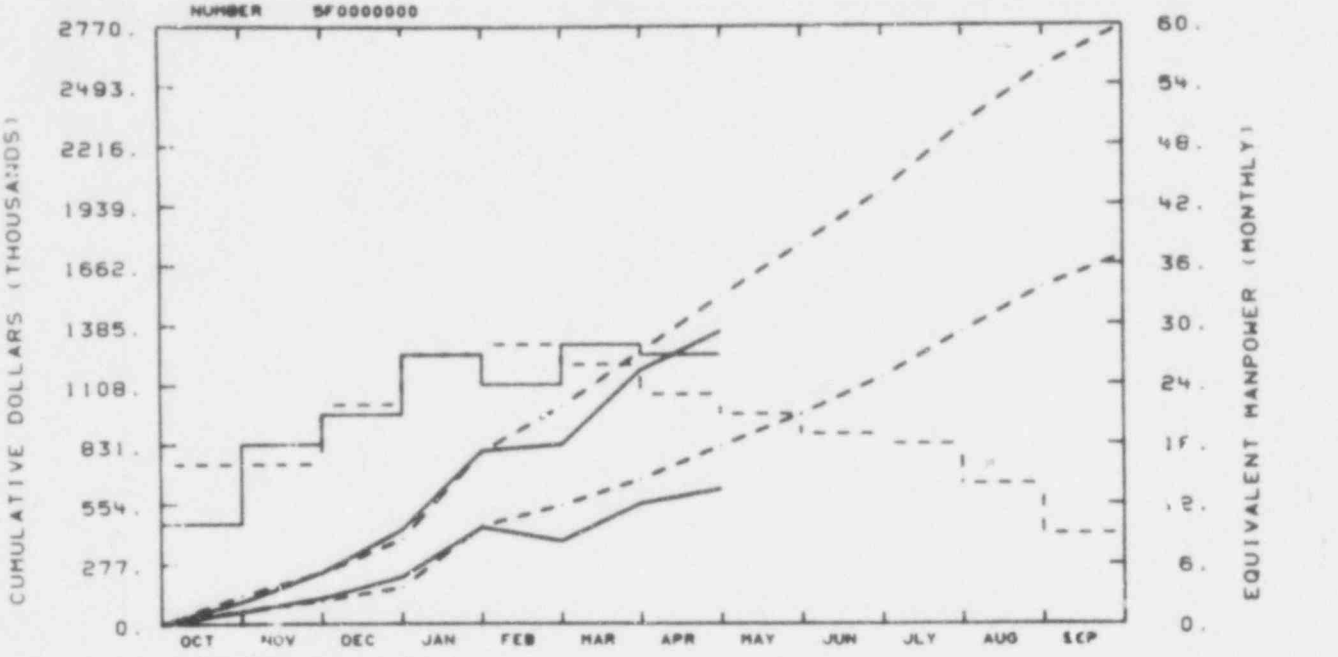
The overall variance is not considered significant. The variance is due to uncosted but committed material orders and manpower reallocation.

423 318

EG&G IDAHO INC.

TOTAL LOFT FOREIGN FUNDED

NUMBER SF0000000



TOTAL PROGRAM

BUDGET	130	235	389	794	1004	1261	1515	1755	2002	2304	2572	2768
ACTUAL	102	238	433	798	828	1170	1353					

MATERIAL

BUDGET	61	107	166	448	545	655	821	959	1140	1348	1555	1700
ACTUAL	56	118	218	443	381	563	820					

MANPOWER

BUDGET	18	16	22	27	28	26	23	21	19	18	14	9
ACTUAL	10	18	21	27	29	28	27					

BUDGET - - - - - -

ACTUAL ———

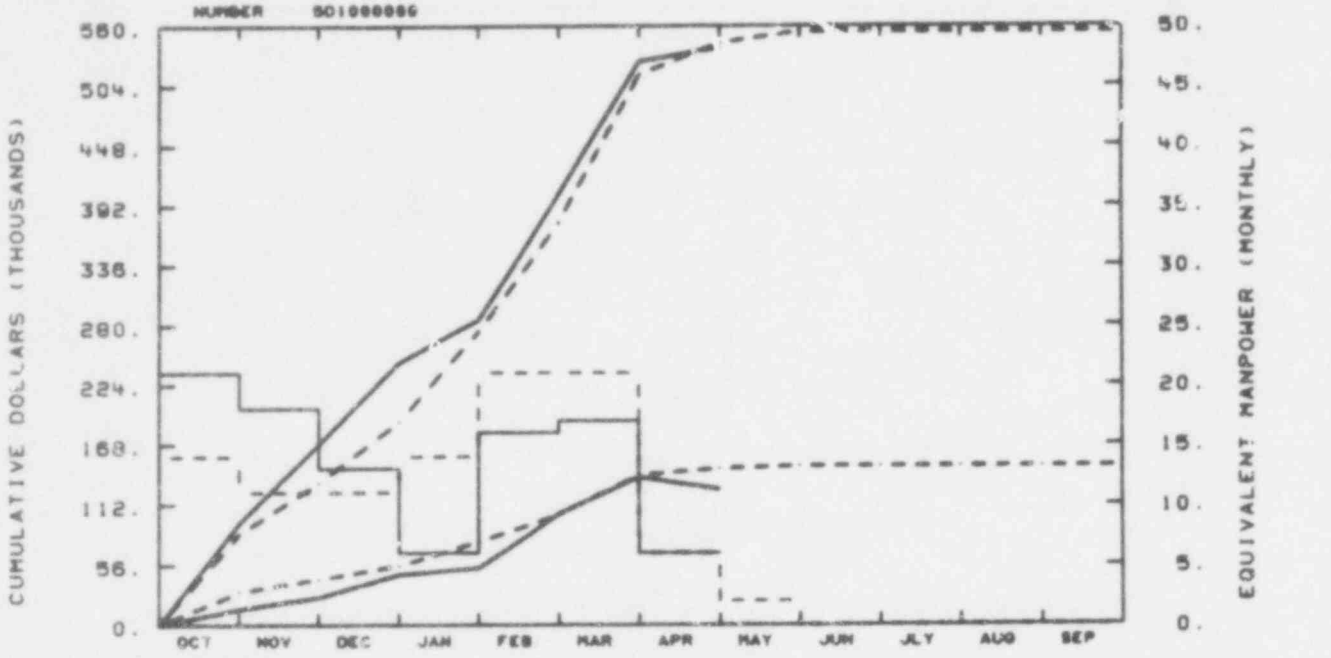
No significant variance.

423 318

EG&G IDAHO INC.

500002 - EXPERIMENTAL MEAS

NUMBER 501000006



TOTAL PROGRAM

BUDGET	99	132	189	274	376	514	544	554	554	554	554	554
ACTUAL	96	166	245	285	403	527	539					

MATERIAL

BUDGET	31	43	55	77	102	139	146	148	148	148	148	148
ACTUAL	15	26	47	53	103	137	126					

MANPOWER

BUDGET	14	11	11	14	21	21	8	2	0	0	0	0
ACTUAL	21	18	13	6	18	17	8					

BUDGET

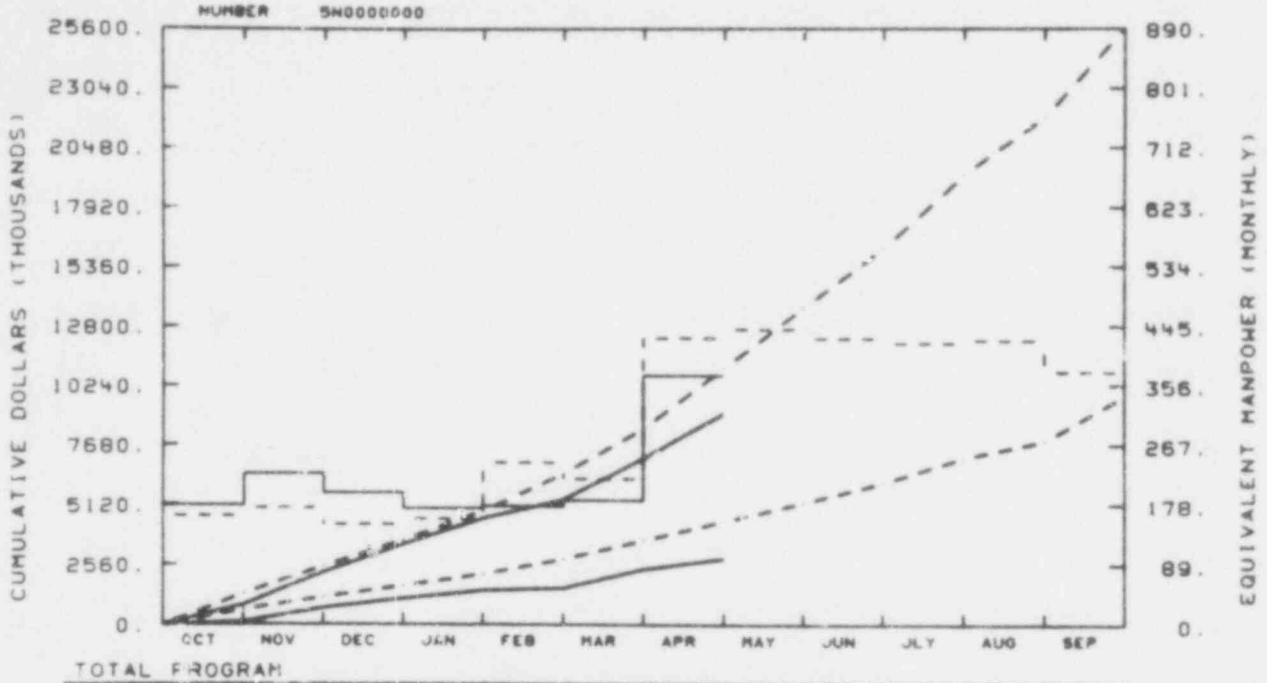
ACTUAL

No significant variance.

423 3~~1~~0

EG&G IDAHO INC.

TOTAL LOFT NRC BUDGET



TOTAL PROGRAM

BUDGET	1307	2473	2586	4820	6422	8366	10962	13572	16118	19295	21774	25598
ACTUAL	831	2223	3412	4518	5323	7088	9027					

MATERIAL

BUDGET	624	1180	1841	2135	2777	3577	4401	5180	6041	7121	7835	9781
ACTUAL	101	765	1105	1448	1548	2360	2810					

MANPOWER

BUDGET	181	173	148	156	240	216	427	440	426	419	423	376
ACTUAL	177	224	195	172	175	184	371					

BUDGET

ACTUAL

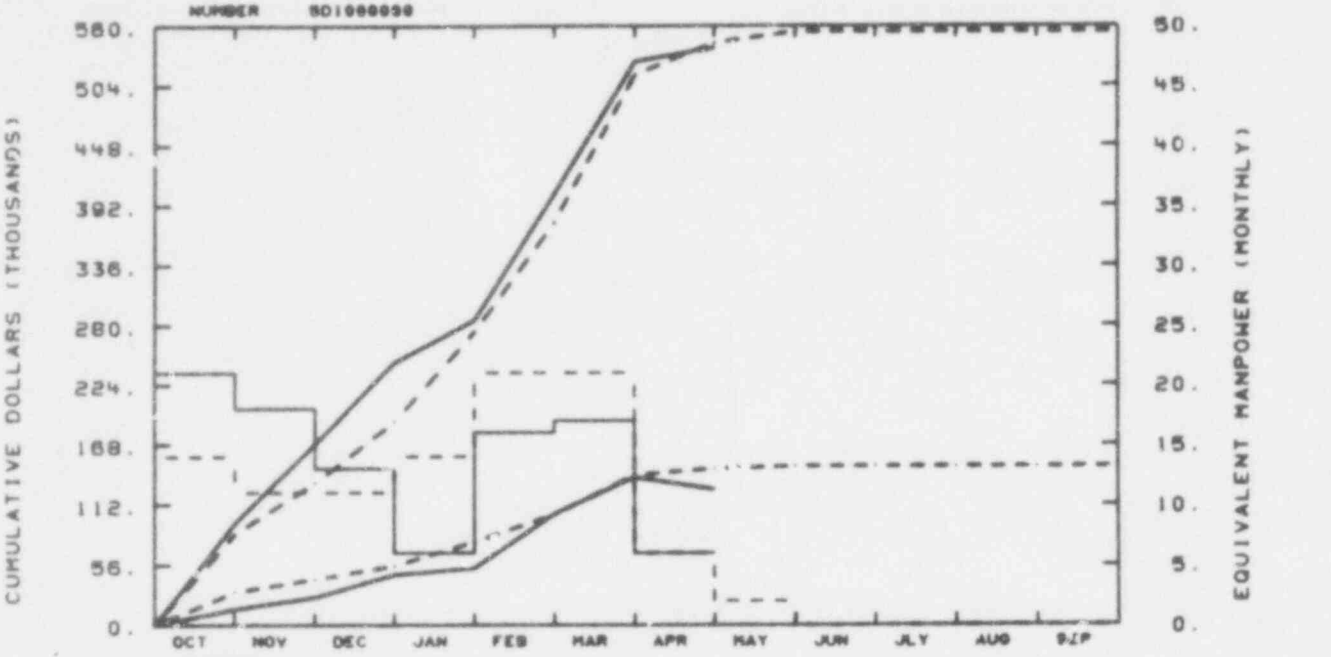
Although the manpower average for the year is not significantly at variance with the budget, material costs continue to be significantly less than budget. This variance is principally due to uncosted committments reflected in the budget.

423 320

EG&G IDAHO INC.

500002 - EXPERIMENTAL AREAS

NUMBER SD1000030



TOTAL PROGRAM

BUDGET	98	132	189	274	376	514	544	554	554	554	554	554
ACTUAL	98	168	245	295	403	527	539					

MATERIAL

BUDGET	31	43	56	77	102	138	146	148	148	148	148	148
ACTUAL	15	26	47	53	103	127	125					

MANPOWER

BUDGET	14	11	11	14	21	21	8	2	0	0	0	0
ACTUAL	21	18	13	8	16	17	8					

BUDGET - - - - - -

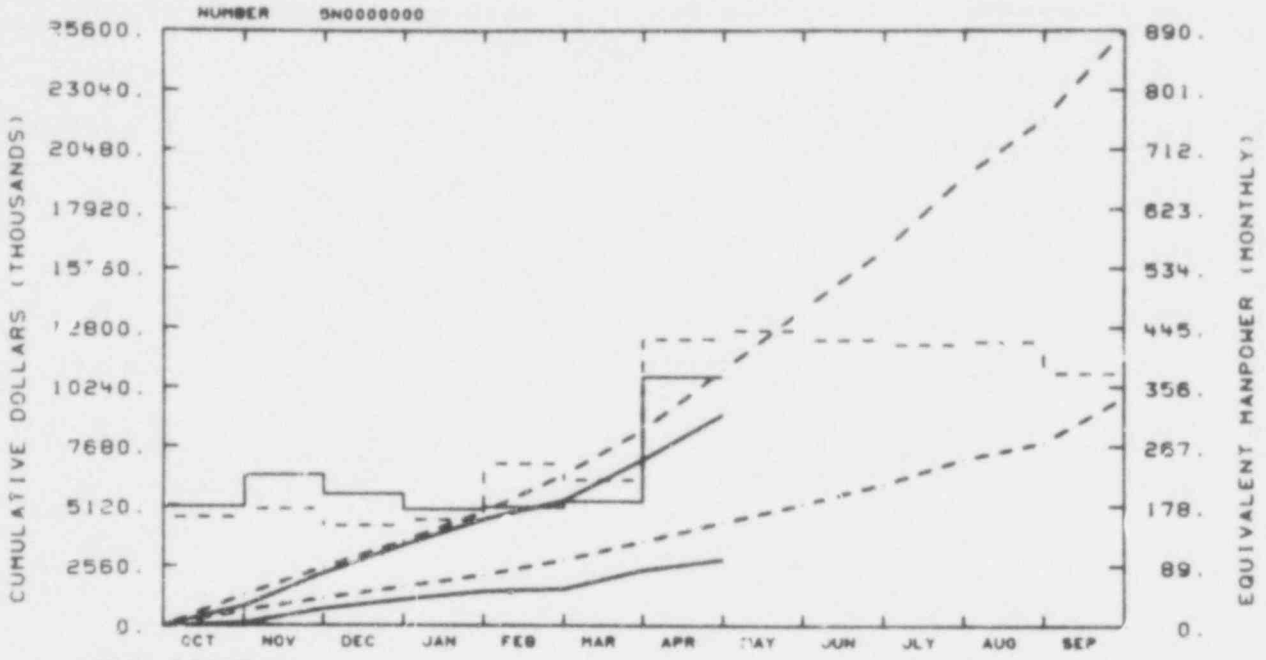
ACTUAL ———

No significant variance.

423 321

EG&G IDAHO INC.

TOTAL LOFT NRC BUDGET



TOTAL PROGRAM

BUDGET	1307	2473	3586	4820	6422	8366	10962	13572	16118	19295	21774	25598
ACTUAL	831	2223	3412	4518	5323	7088	9027					

MATERIAL

BUDGET	624	1160	1641	2135	2777	3577	4401	5180	6041	7121	7835	9781
ACTUAL	101	705	1105	1448	1548	2360	2810					

MANPOWER

BUDGET	181	173	148	156	240	216	427	440	426	419	423	378
ACTUAL	177	224	195	172	175	184	371					

BUDGET - - - - - -

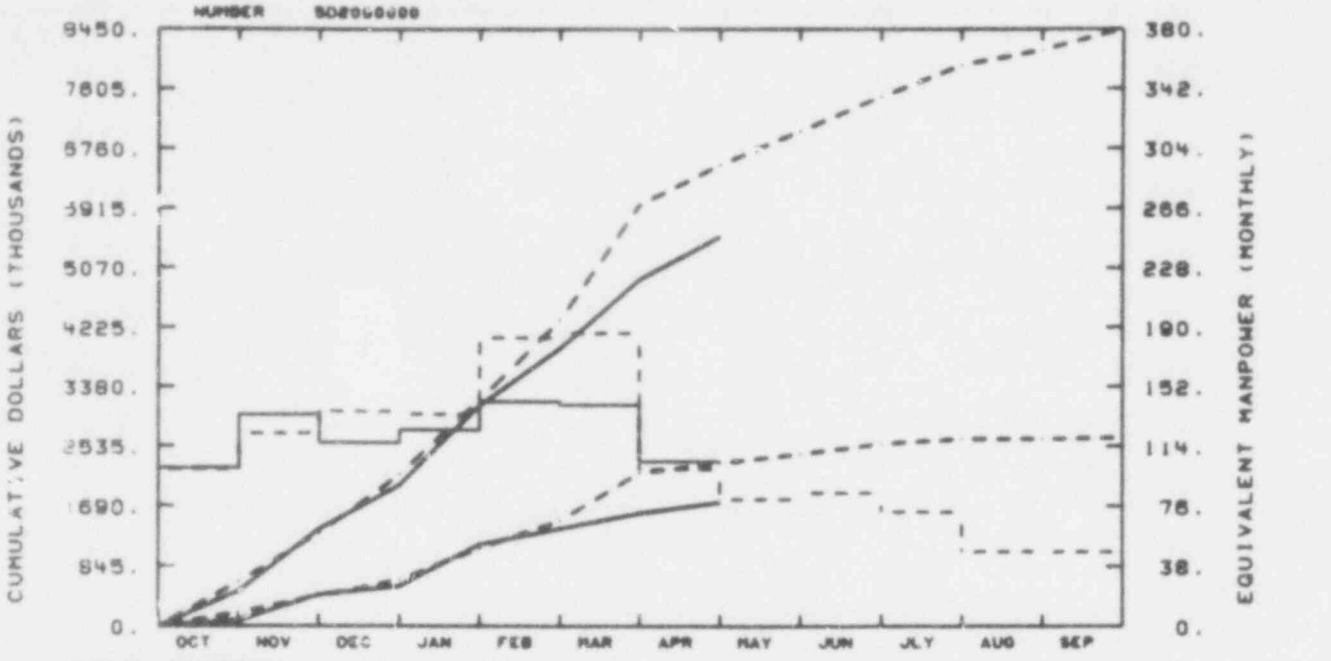
ACTUAL ———

Although the manpower average for the year is not significantly at variance with the budget, material costs continue to be significantly less than budget. This variance is principally due to uncosted committments reflected in the budget.

423 328

EG&G IDAHO INC.

500001 - INTERNAL SYS DESIGN



TOTAL PROGRAM

BUDGET	814	1357	2120	3186	4317	5959	6525	7003	7493	7937	8152	8447
ACTUAL	487	1352	1974	3105	3917	4900	5503					

MATERIAL

BUDGET	184	419	642	1086	1478	2149	2208	2415	2563	2633	2633	2654
ACTUAL	79	438	555	1141	1383	1682	1734					

MANPOWER

BUDGET	99	122	136	134	183	186	99	80	84	72	47	47
ACTUAL	100	134	116	124	142	149	104					

BUDGET

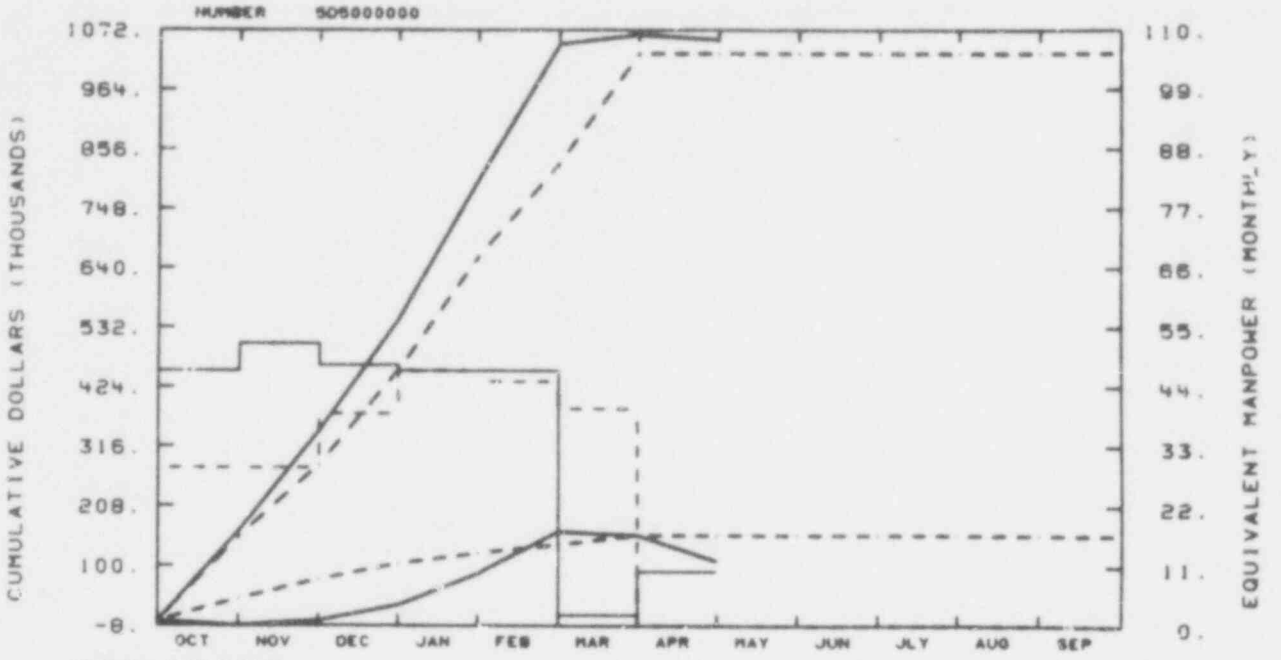
ACTUAL

The spending rate is very near the desired rate. The underrun reflects more than $330,000 of outstanding obligations along with some cost savings. Some activity is being restrained pending added evaluation.

423 323

EG&G IDAHO INC.

500006 - PLANS/BUDG/QA/SAFETY



TOTAL PROGRAM

BUDGET	153	282	455	660	830	1030	1030	1030	1030	1030	1030	1030
ACTUAL	183	344	547	801	1047	1084	1095					

MATERIAL

BUDGET	41	76	104	123	138	156	156	156	156	156	156	156
ACTUAL	-7	1	30	86	162	156	110					

MANPOWER

BUDGET	29	29	39	47	45	40	0	0	0	0	0	0
ACTUAL	47	62	48	47	47	2	10					

BUDGET

ACTUAL

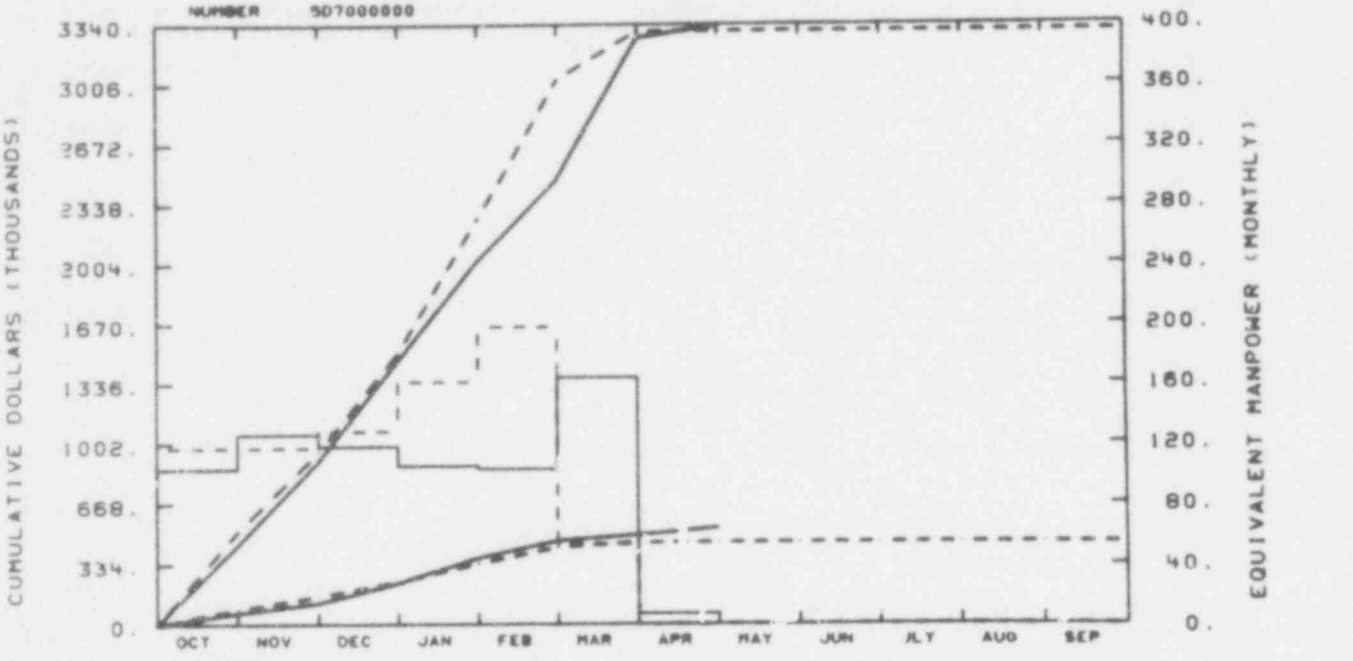
No significant variance; April costs are being transferred to A6110.

423 329

EG&G IDAHO INC.

500004 - OPERATIONS

NUMBER 507000000



TOTAL PROGRAM

BUDGET	515	953	1504	2255	3031	3301	3301	3301	3301	3301	3301	3301
ACTUAL	440	902	1463	2024	2478	3266	3331					

MATERIAL

BUDGET	84	155	238	338	424	452	452	452	452	452	452	452
ACTUAL	63	117	227	368	462	493	533					

MANPOWER

BUDGET	117	117	128	161	198	53	0	0	0	0	0	0
ACTUAL	103	126	118	105	103	164	7					

BUDGET

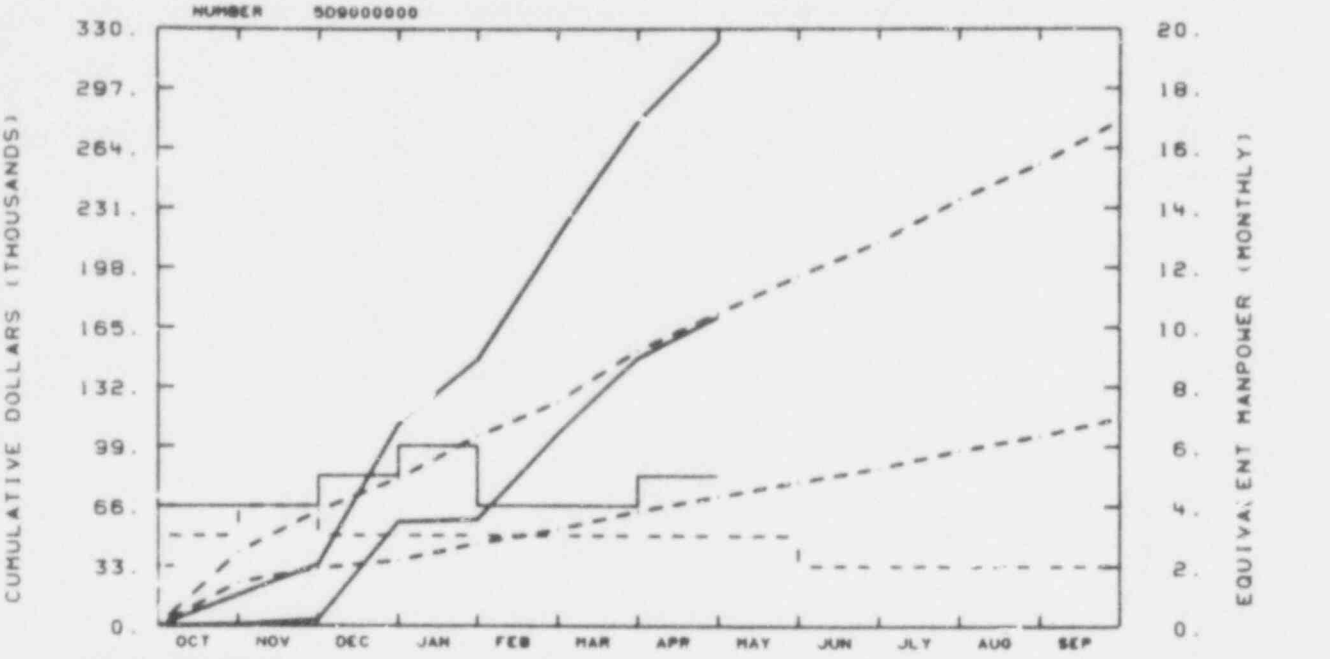
ACTUAL

No Significant Variance

423 326

EG&G IDAHO INC.

500005 - PLANT REQUALIFICATION



TOTAL PROGRAM

BUDGET	40	63	81	104	124	152	173	193	212	236	258	278
ACTUAL	17	34	111	147	215	271	323					

MATERIAL

BUDGET	24	32	38	45	53	63	71	79	87	97	105	115
ACTUAL	1	3	57	58	106	148	171					

BUDGET - - - - - -

ACTUAL ———

MANPOWER

BUDGET	3	4	3	3	3	3	3	3	2	2	2	3
ACTUAL	4	4	5	6	4	4	5					

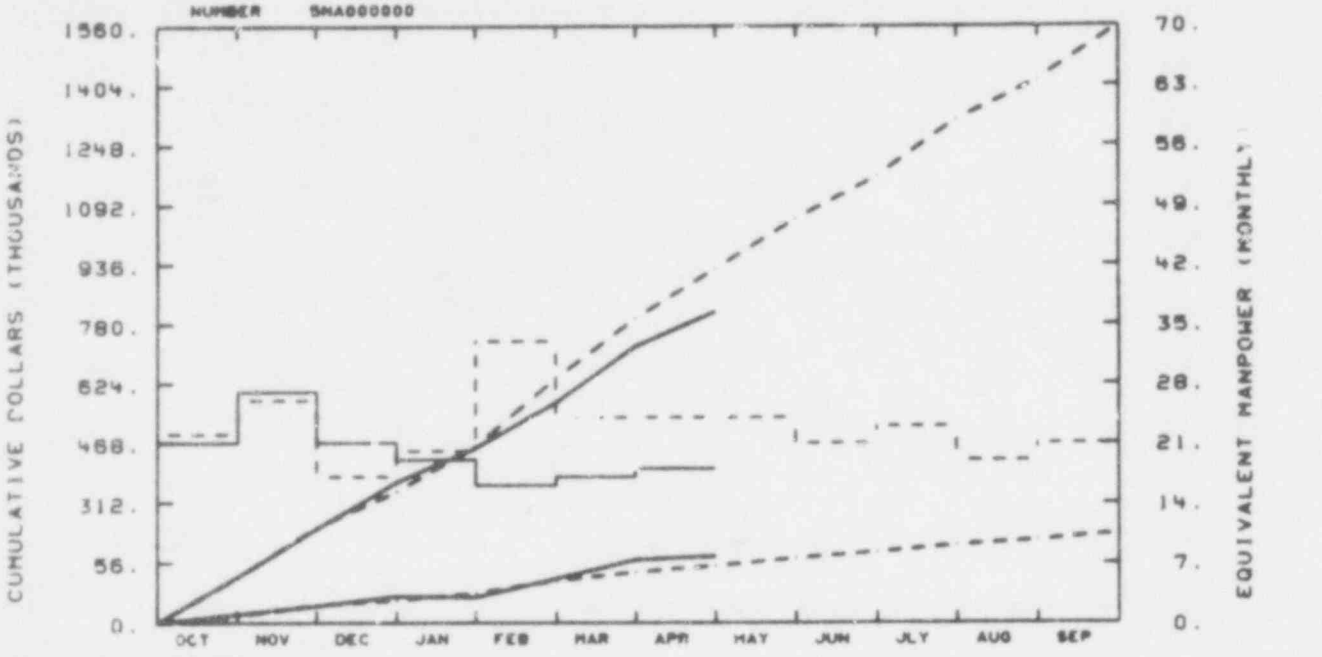
The overrun indication results from delay in shifting to NRC funding. Resolution is underway.

423 326

EG&G IDAHO INC.

AG122 - PHYSICS & THERMAL HYDRO

NUMBER SNA000000



TOTAL PROGRAM

BUDGET	117	247	340	458	637	795	925	1056	1187	1316	1418	1560
ACTUAL	119	243	324	454	574	722	813					

MATERIAL

BUDGET	18	46	59	76	110	131	148	167	183	201	215	233
ACTUAL	22	44	69	66	114	153	173					

MANPOWER

BUDGET	22	26	17	20	33	24	24	24	21	23	17	21
ACTUAL	21	27	21	19	16	17	18					

BUDGET - - - - -

ACTUAL ———

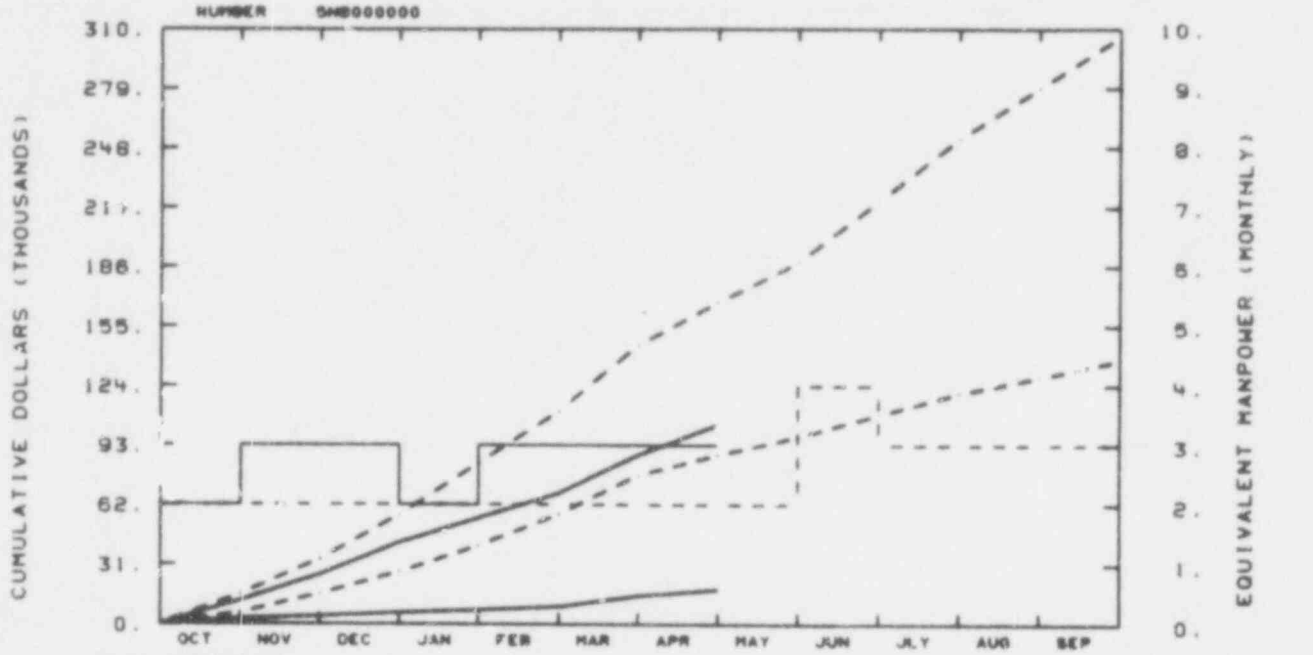
Action has been taken to alleviate the manpower underrun. The material overrun represents continued high computer usage.

423 328

EG&G IDAHO IN[illegible].

A6275 - ELEC HEAT ROC EV ST

NUMBER SMB000000



TOTAL PROGRAM

BUDGET	15	34	57	84	111	145	188	196	220	253	279	306
ACTUAL	12	26	42	55	66	86	104					

MATERIAL

BUDGET	6	16	27	41	57	77	88	97	109	120	128	137
ACTUAL	3	4	6	7	9	15	18					

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

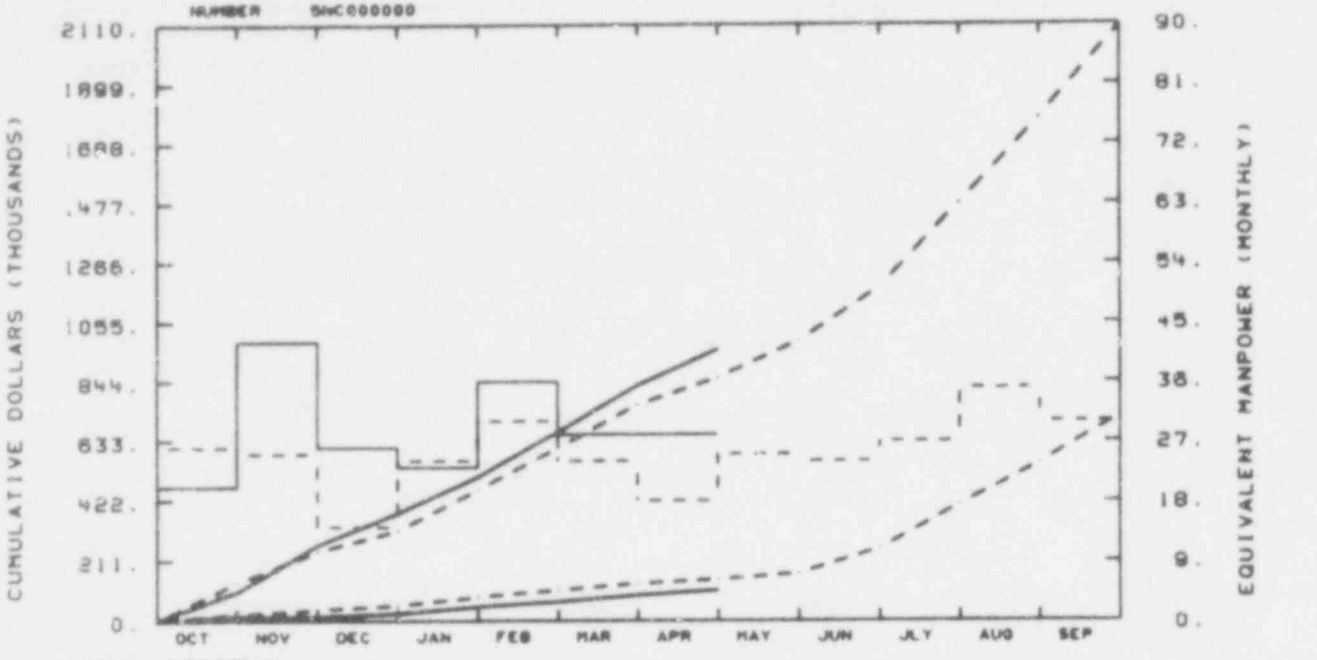
The variance is caused by delays in procurement of hardware for the NEPTUN program. Also, the final payment for the IFA 511-3 heater rods has not yet been made.

423 328

EG&G IDAHO INC.

A6121 - EXP SUPT TESTING

NUMBER SWC000000



TOTAL PROGRAM

BUDGET	133	241	315	480	608	781	957	988	1179	1478	1778	2103
ACTUAL	101	284	377	505	665	829	959					

MATERIAL

BUDGET	21	38	53	82	107	130	144	186	252	408	555	721
ACTUAL	15	15	26	49	68	89	107					

MANPOWER

BUDGET	28	25	14	24	30	24	18	25	24	27	35	30
ACTUAL	20	42	26	23	36	28	28					

The overrun is due to an error in PMIS loading. CCF 1923 has been approved and will correct the problem. The change will be reflected on the next report.

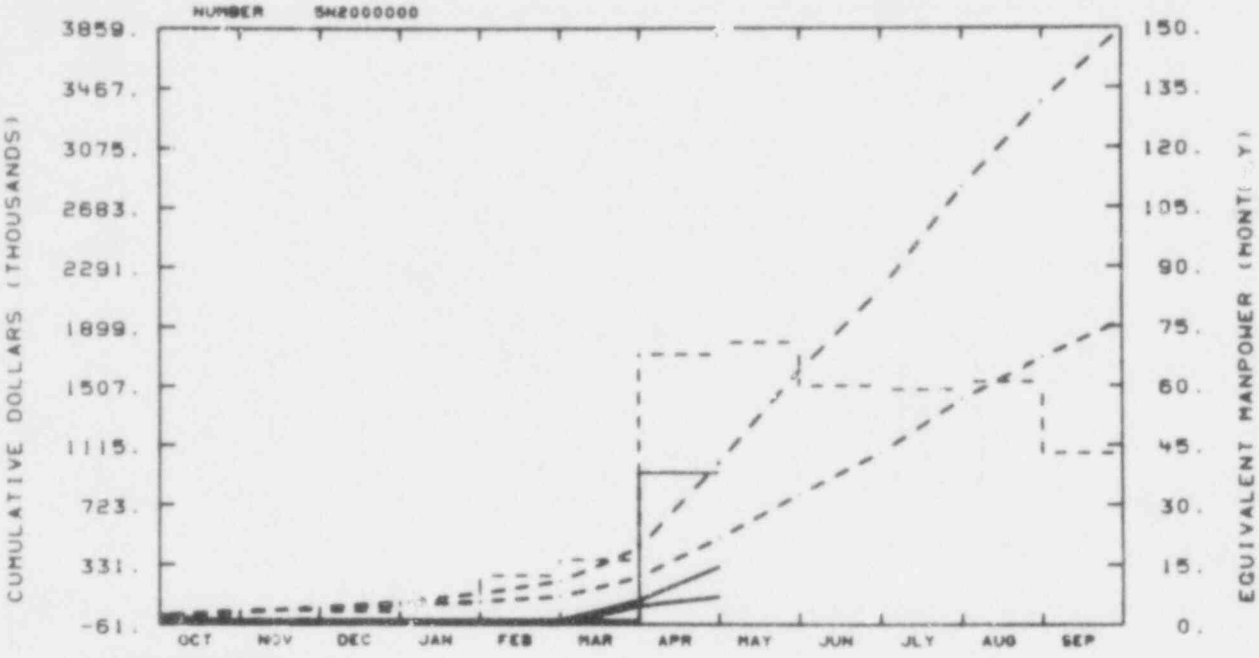
329

423 ~~330~~

EG&G IDAHO INC.

A6107 - TECH-SUPPORT REQUAL

NUMBER SN2000000



TOTAL PROGRAM

BUDGET	22	44	78	135	217	435	999	1807	2137	2815	3375	3852
ACTUAL	-50	-53	-47	-43	-35	95	316					

MATERIAL

BUDGET	15	32	54	84	117	245	501	789	1062	1415	1804	1932
ACTUAL	-54	-60	-60	-60	-59	58	120					

BUDGET - - - - - -

ACTUAL ———

MANPOWER

BUDGET	2	1	3	5	12	18	88	71	80	59	61	43
ACTUAL	1	1	1	1	1	1	39					

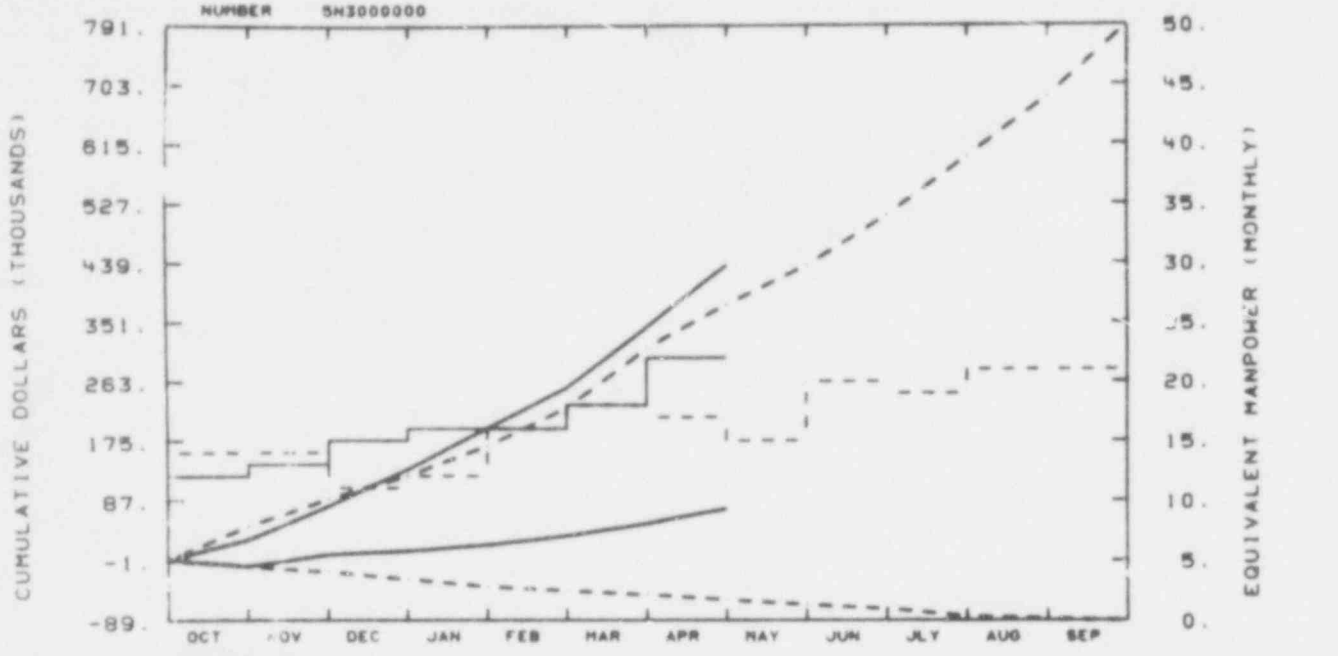
The underrun reflects the start of major shift in funding from DOE to NRC and the pertubations associated with this effort. For additicnal considerations see 50200.

423 330

EG&G IDAHO INC.

A6074 - ADVANCED INSTRUMENTATION

NUMBER 5N3000000



TOTAL PROGRAM

BUDGET	49	88	123	167	224	313	377	435	510	597	685	791
ACTUAL	29	78	132	194	254	344	438					

MATERIAL

BUDGET	-9	-17	-28	-39	-45	-50	-57	-65	-71	-82	-85	-88
ACTUAL	-9	7	12	21	34	53	75					

MANPOWER

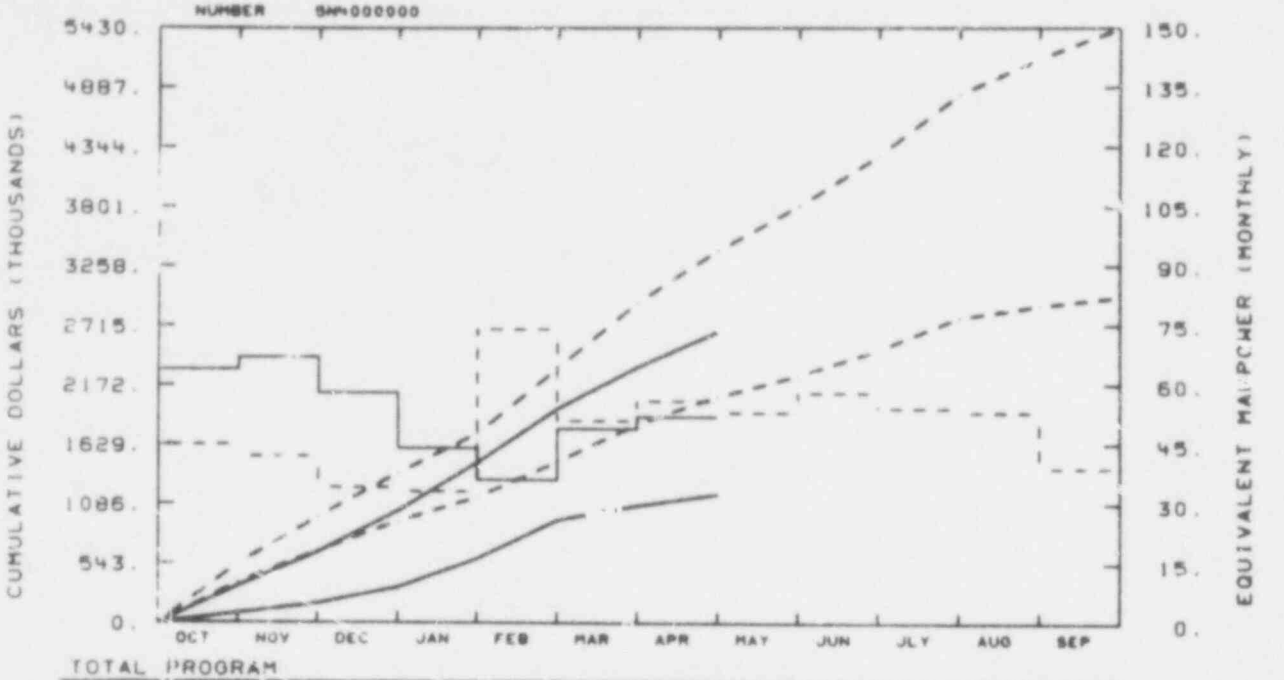
BUDGET	14	14	11	12	16	18	17	15	20	19	21	21
ACTUAL	12	13	15	16	16	18	22					

The early start of the code measurement verification task has put the task over budget. The work level on this task will drop off and work will come into budget within next two months.

423 331

EG&G IDAHO INC.

A6043 - EXPERIMENTAL INSTR



TOTAL PROGRAM

BUDGET	536	982	1362	1726	2325	2934	3400	3805	4286	4821	5149	5420
ACTUAL	333	641	1015	1460	1935	2337	2559					

MATERIAL

BUDGET	366	854	922	1142	1470	1816	2057	2255	2491	2783	2892	2974
ACTUAL	88	174	322	582	935	1058	1175					

BUDGET

ACTUAL

MANPOWER

BUDGET	45	42	34	53	74	51	56	53	58	54	53	39
ACTUAL	84	87	58	44	36	49	52					

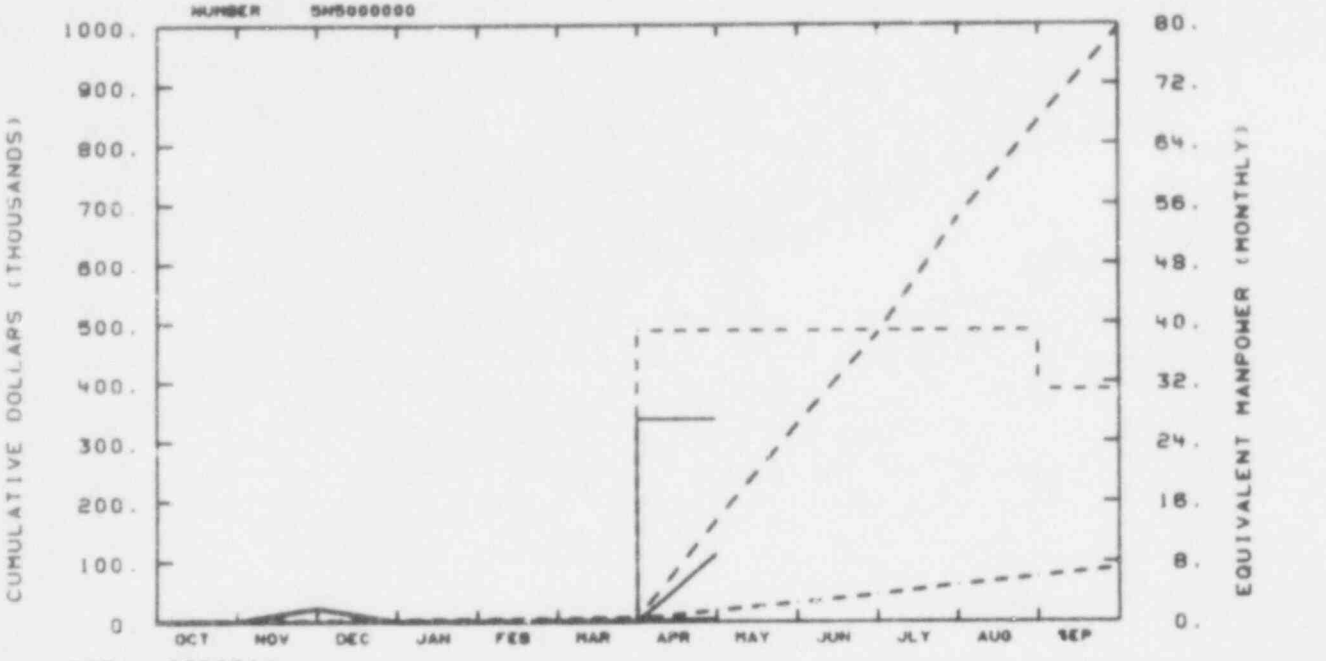
The variance is caused by: (1) The fuel requalification equipment (CCTV camera carrier, etc.) is onsite but the billing for about $100,000 has not been paid due to some minor problems that are being resolved. (2) A CCB returning $415,000 from fuel instruments is ready for signature. This money will be needed in FY-80.

423 338

EG&G IDAHO INC.

A6110 - PLANS/BUDG/QA/SAFETY

NUMBER SW5000000



TOTAL PROGRAM

BUDGET	1	1	2	3	4	7	167	329	482	678	837	993
ACTUAL	0	23	0	0	0	1	112					

MATERIAL

BUDGET	1	1	2	3	4	5	18	32	45	61	74	89
ACTUAL	0	23	0	0	0	0	4					

MANPOWER

BUDGET	0	0	0	0	0	0	39	39	39	39	39	31
ACTUAL	0	0	0	0	0	0	27					

BUDGET - - - - -

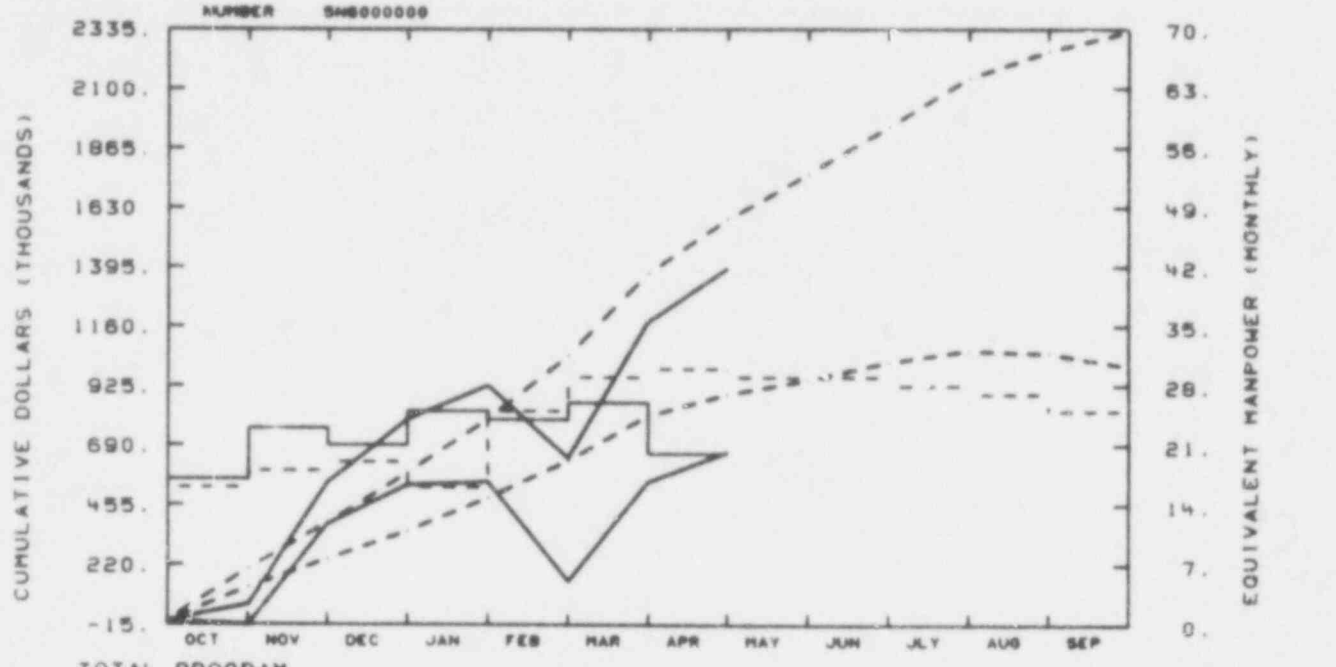
ACTUAL ———

No significant variance. April costs incurred under 50006 are being transferred to this schedule 189a.

423 333

EG&G IDAHO INC.

A6053 - LOFT FUEL DES/FAB/REQUAL



TOTAL PROGRAM

BUDGET	204	383	569	793	1044	1372	1584	1764	195	2142	2247	2325
ACTUAL	83	544	790	926	641	1180	1388					

MATERIAL

BUDGET	130	241	349	481	629	807	891	949	1 19	1065	1083	1002
ACTUAL	-14	378	532	543	155	545	663					

MANPOWER

BUDGET	16	18	19	16	25	29	30	29	29	28	27	25
ACTUAL	17	23	21	25	24	26	20					

BUDGET - - - - - -

ACTUAL ———

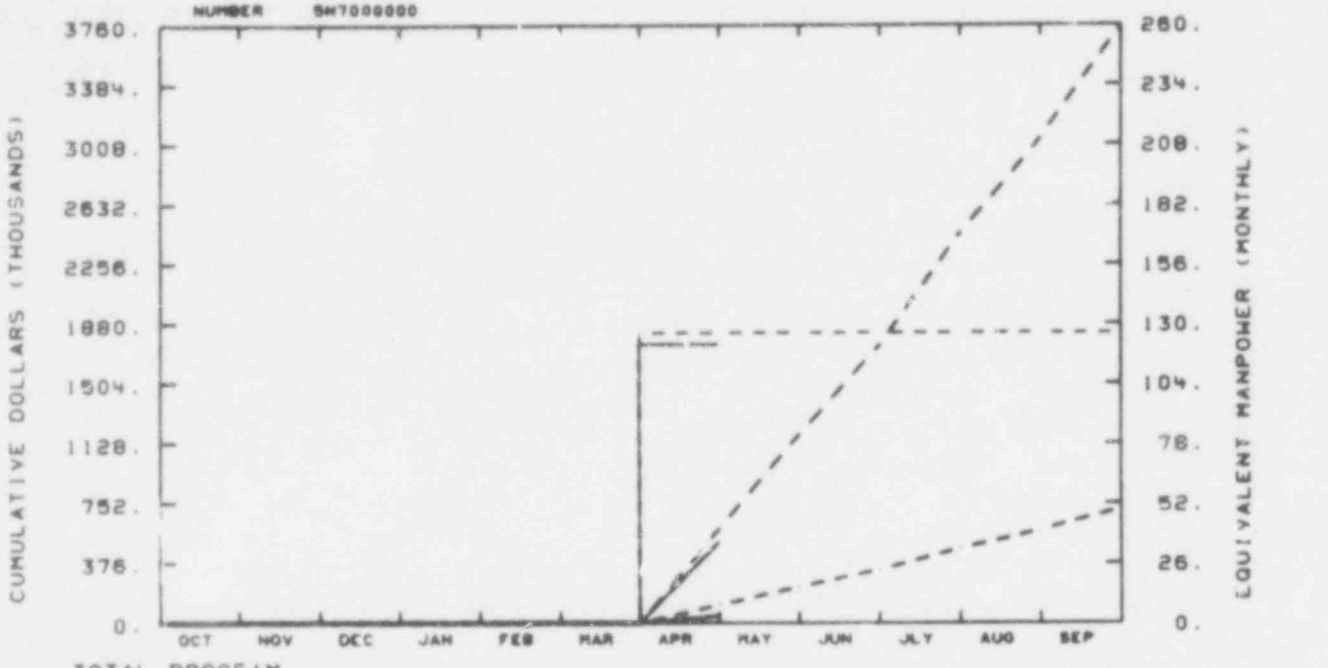
The underrun is caused by the nonpayment of work accomplished by the suppliers of Reload Core II test instrumentation materials. Recovery is expected by year end.

423 335

EG&G IDAHO INC.

A6054 - LOFT OPERATIONS

NUMBER SH7000000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	590	1181	1742	2452	30 3	3752
ACTUAL	0	0	0	0	0	0	508					

MATERIAL

BUDGET	0	0	0	0	0	0	113	225	332	460	580	715
ACTUAL	0	0	0	0	0	0	44					

MANPOWER

BUDGET	0	0	0	0	0	0	126	126	126	126	126	126
ACTUAL	0	0	0	0	0	0						

BUDGET - - - - -

ACTUAL ———

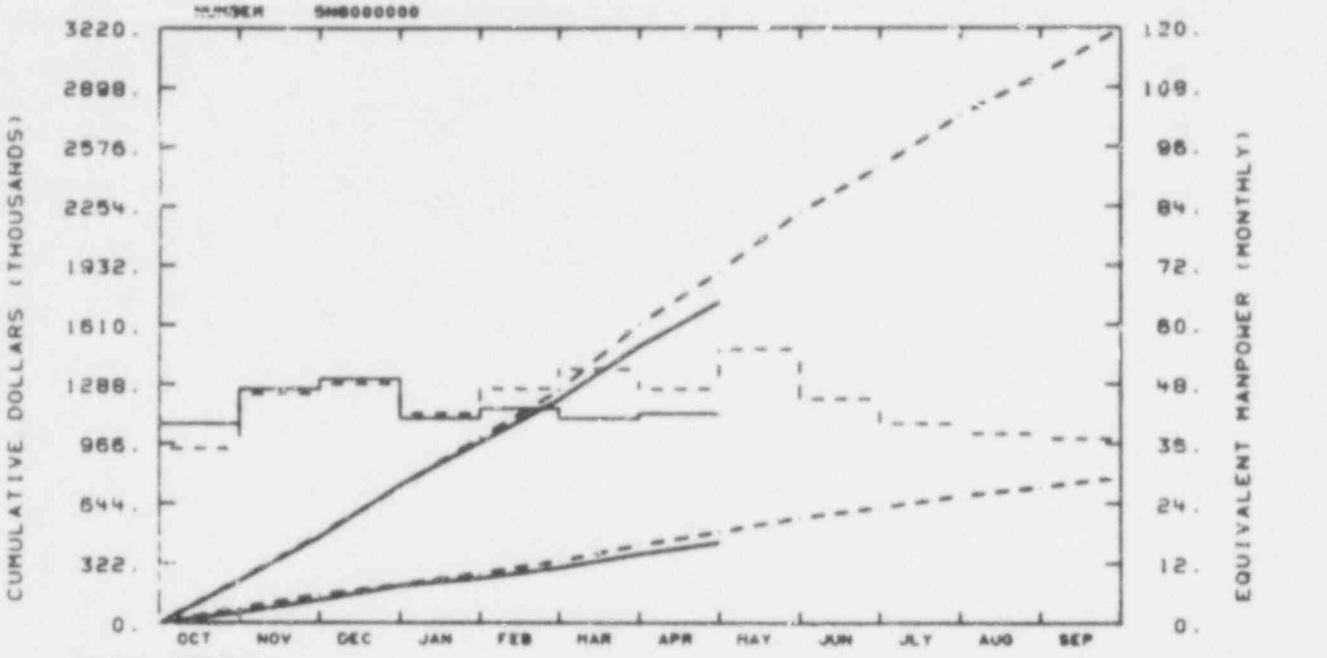
No Significant Variance

423 335

EG&G IDAHO INC.

A6048 - EXPERIMENTAL PROGRAM PL

NUMBER SMB000000



TOTAL PROGRAM

BUDGET	230	472	730	995	1252	1613	1996	8219	2468	747	2963	3219
ACTUAL	225	458	740	969	1202	1483	1732					

MATERIAL

BUDGET	78	149	203	266	331	417	489	566	620	683	730	784
ACTUAL	55	122	198	239	295	370	431					

BUDGET - - - - - -

ACTUAL ———

MANPOWER

BUDGET	35	46	48	42	47	51	47	55	45	40	38	37
ACTUAL	40	47	48	41	43	41	42					

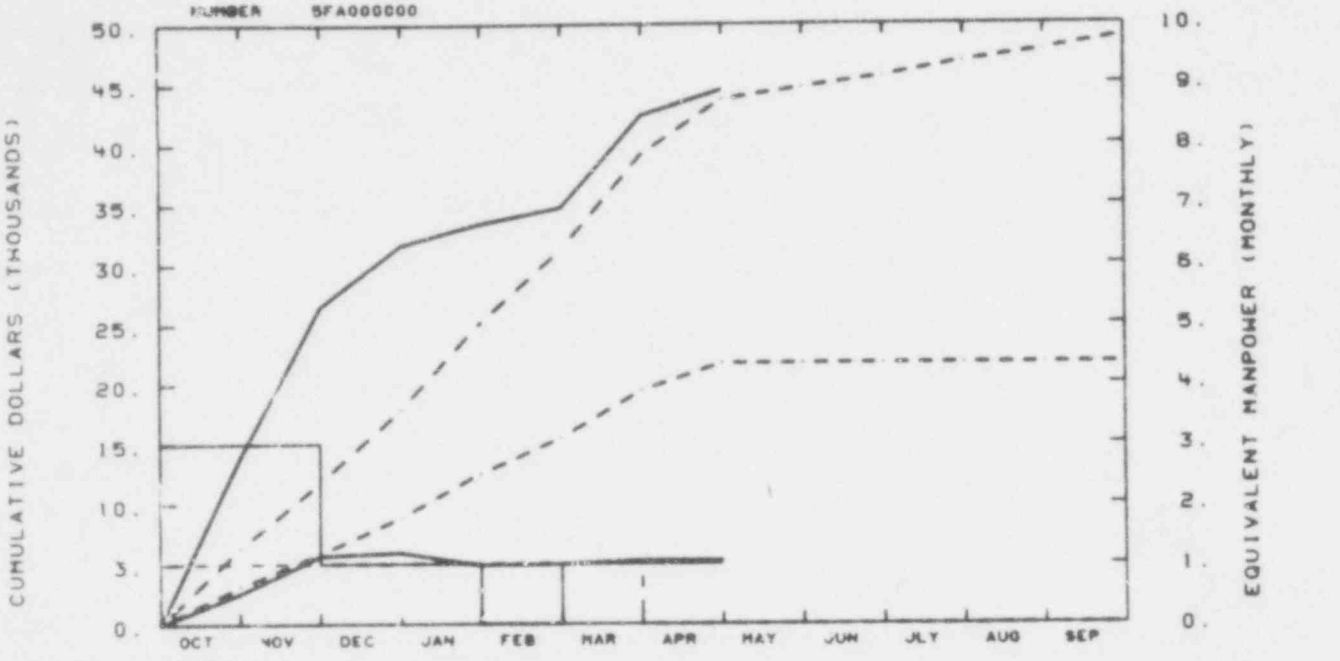
Staffing activities have progressed as planned and expenditures should agree with budget at year end.

423 336

EG&G IDAHO INC.

A6273 - AUSTRIAN FUNDS

NUMBER SFA000000



TOTAL PROGRAM

BUDGET	6	12	18	25	31	39	44	45	46	47	48	49
ACTUAL	14	26	32	33	35	42	44					

MATERIAL

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

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

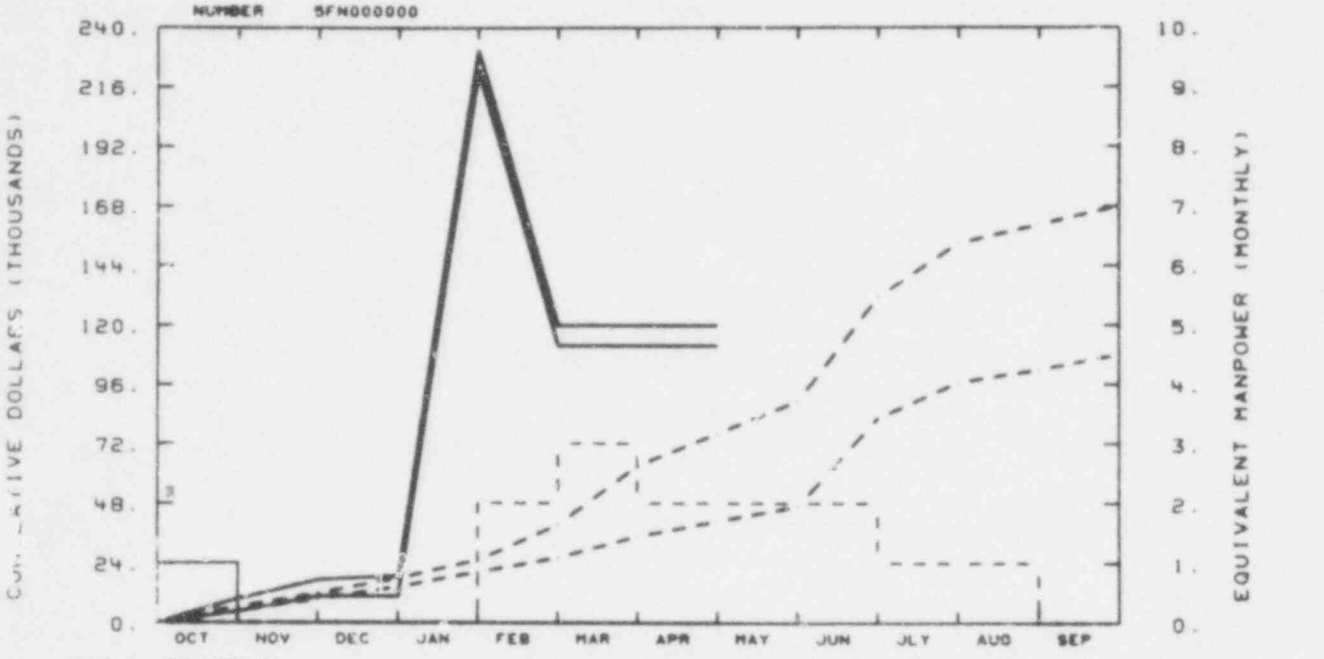
Tasks have been completed within budget and ahead of schedule.

423 337

EG&G IDAHO INC.

A6271 - NETHERLAND FUNDS

NUMBER SFN000000



TOTAL PROGRAM

BUDGET	8	12	18	25	39	63	76	89	131	153	160	168
ACTUAL	10	17	19	231	120	120	120					

MATERIAL

BUDGET	5	8	14	20	26	35	41	47	82	97	102	108
ACTUAL	5	11	11	223	112	112	112					

BUDGET - - - - - -

ACTUAL ———

MANPOWER

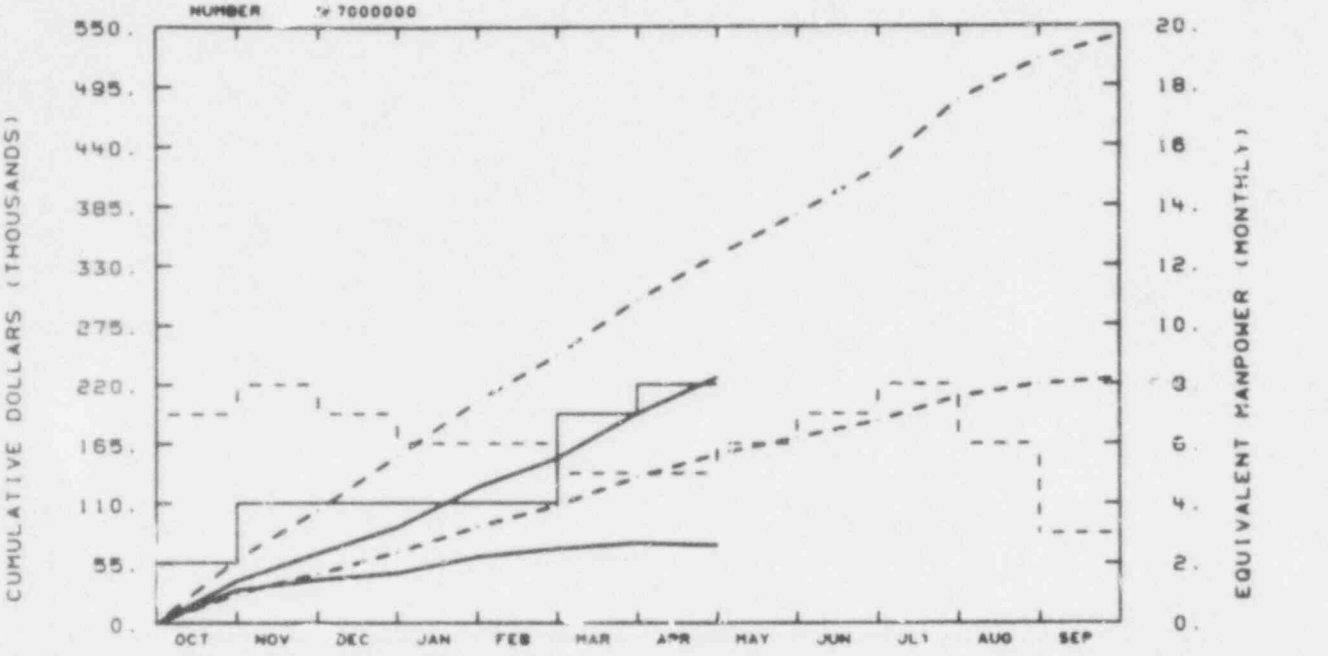
BUDGET	0	0	0	0	2	3	2	2	2	1	1	0
ACTUAL	1	0	0	0	0	0	0					

Funds have been accrued for the entire subcontract including the FY-80 portion of $41,000.

423 338

EG&G IDAHO INC.

A6104 - GERMAN FUNDS



TOTAL PROGRAM

BUDGET	58	103	153	204	[illegible]	298	339	377	419	482	519	541
ACTUAL	38	64	87	125	151	193	226					

MATERIAL

BUDGET	27	43	65	88	108	134	155	170	186	208	220	225
ACTUAL	30	39	45	60	68	73	71					

BUDGET - - - - - -

ACTUAL ———

MANPOWER

BUDGET	7	8	7	6	6	5	5	6	7	6	6	3
ACTUAL	2	4	4	4	4	7	8					

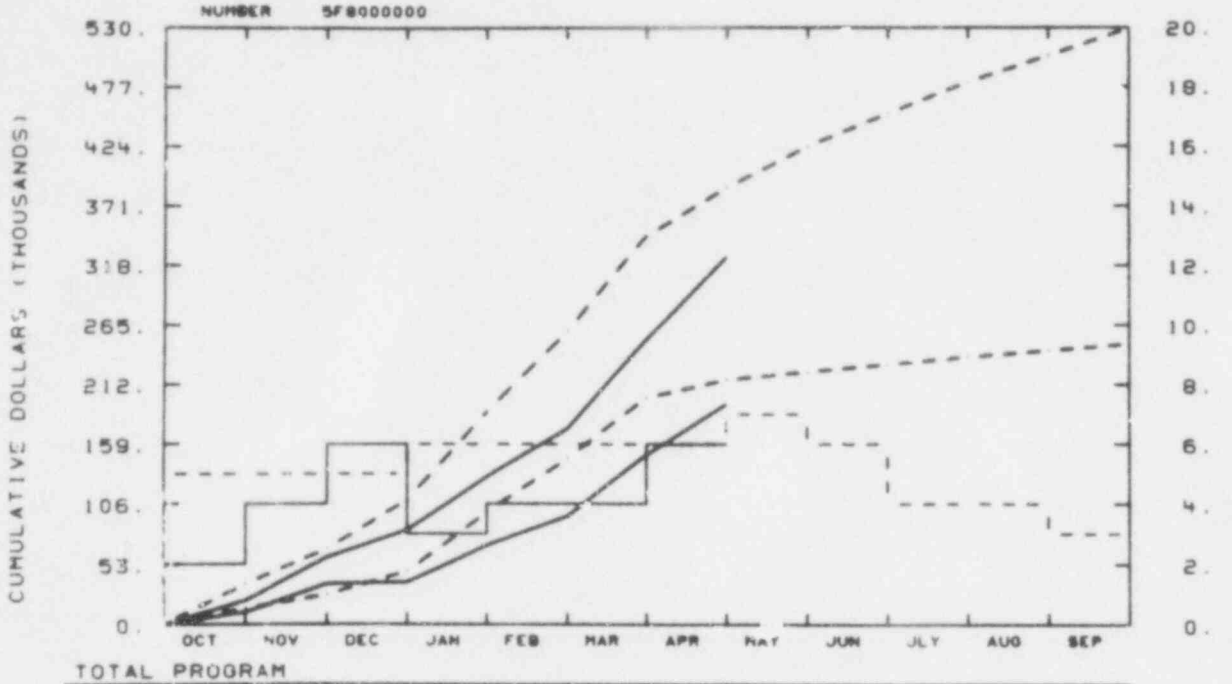
The total program underrun is principally due to unpaid purchases of materials, particularly for core instrumentation and transient testing tasks.

423 330

EG&G IDAHO INC.

A6111 - JAPANESE FUNDS

NUMBER SF8000000



TOTAL PROGRAM

BUDGET	38	66	109	188	260	344	387	424	453	481	505	529
ACTUAL	21	59	83	130	173	252	325					

MATERIAL

BUDGET	14	28	47	98	1	201	218	223	230	236	242	248
ACTUAL	11	35	37	69	95	150	195					

MANPOWER

BUDGET	5	5	5	6	6	6	6	7	6	4	4	3
ACTUAL	2	4	6	3	4	4	6					

BUDGET

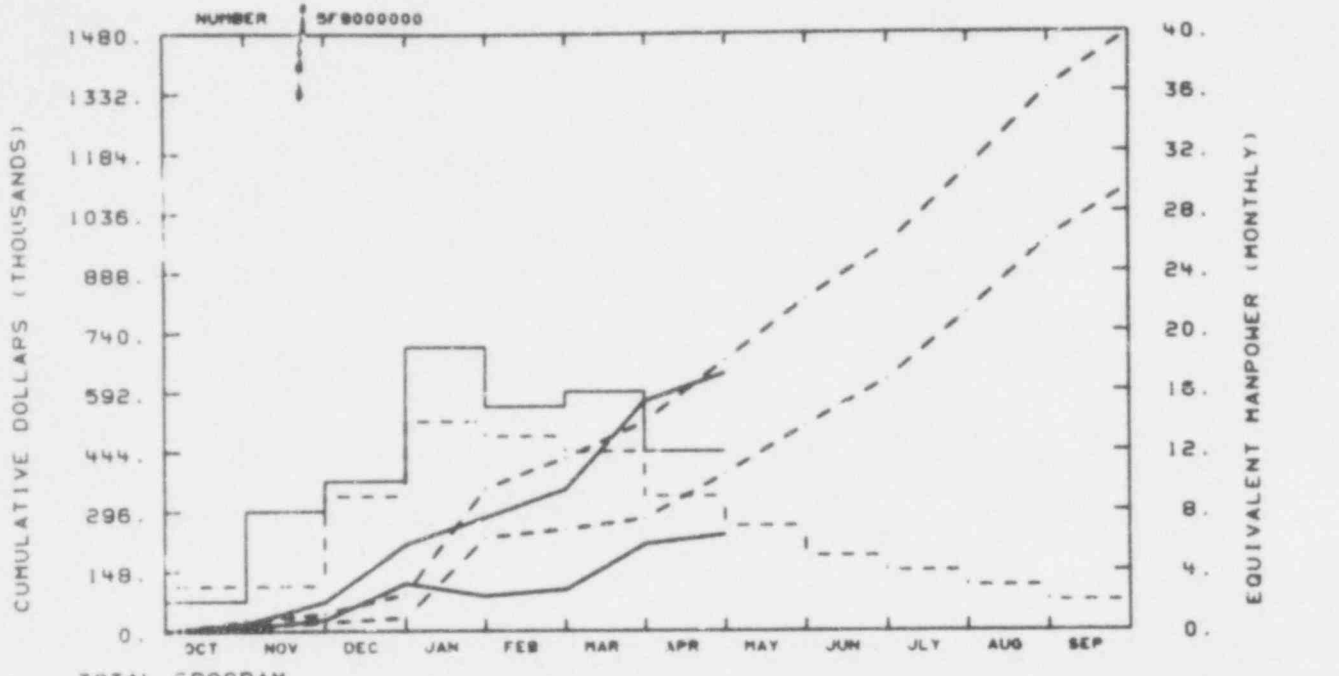
ACTUAL

Total program underrun is principally due to unpaid purchases of materials.

423 340

EG&G IDAHO INC.

A61045 - SHARED PROJ FORE FUNDS



TOTAL PROGRAM

BUDGET	23	43	90	352	427	518	869	820	953	1141	1340	1478
ACTUAL	18	72	213	279	349	587	637					

MATERIAL

BUDGET	11	21	32	229	250	277	388	507	620	785	970	1097
ACTUAL	8	27	117	86	101	213	237					

MANPOWER

BUDGET	3	3	9	14	13	12	9	7	5	4	3	2
ACTUAL	2	8	10	19	15	16	12					

No significant variance. The material underrun is due to outstanding purchase orders.

423 341

PERFORMANCE ANALYSIS REPORT

O 11-B

Account 5N6000000

	Month	Cumulative
BCWS	212	1,584
BCWP	188	1,482
ACWP	209	1,388

Reason for schedule and cost variances: The cumulative underrun is caused by the nonpayment of work accomplished by the suppliers of Reload Core II test instrumentation materials. The April overrun (ACWP-BCWP) is caused principally by CA561353000 where an unexpected analysis effort was accomplished to help resolve the controversy about (1) too high predictions of fuel cladding temperatures during LOCE L2-3 caused by the densifying LOFT fuel, and (2) the possible LOFT core return to nucleate boiling acceleration by fuel rod surface thermocouples.

Account 5D?280000 and 5N?280000

	Month	Cumulative
BCWS	244	965
BCWP	195	823
ACWP	103	730

Reason for schedule and cost variances: For the schedule variance, manpower loading was not leveled at a detailed level, hence PHO shows significant peaks in the previous quarter (due to starting scheduled new work) that could not be accommodated with availat manpower. For the cost variance, BCWP is not accurate on monthly basis because it is impractical to break down estimated costs at a fine level of detail for each activity. Actual costs are being under-reported in some non-labor areas.

423 342

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-B	Approved CLII CCB's	Current Co. Budget
5D1XX	500002	551	-	551	-	551*
5D2XX	500001	8,652	(44)	8,608	-	8,608*
5D5XX	500006	749	44	793	-	793*
5D7XX	500004	3,370	-	3,370	-	3,370*
5D9XX	500005	278	-	278	-	278
5DXXX	-	13,600		13,600	0	13,600

DOE DISCRETIONARY RESERVES	0
DOE MANAGEMENT RESERVES	0
TOTAL DOE FUNDING (FY-1979)	13,600

* Budget variances with cost charts arise from realignments between accounts and specific changes and corrections addressed in CCB 79-157.

423 344

FY-1979 SUMMARY NRC
(in thousands of dollars)

LOFT WBS #	189 #	Q11-A	Approved CLI CCB's	Current PMB # Q11-B	Approved CLII CCB's	Current Co. Budget
5NAXX	A6122	1,569	-	1,569	-	1,569*
5NBXX	A6275	338	(28)	310	-	310
5NCXX	A6121	2,104	-	2,104	-	2,104
5N2XX	A6107	4,088	(538)	4,550	-	3,550*
5N3XX	A6074	791	-	791	-	791
5N4XX	A6043	5,439	-	5,439	-	5,439*
5N5XX	A6110	1,093	190	1,283	-	1,283*
5N6XX	A6053	2,312	-	2,312	-	2,312*
5N7XX	A6054	3,683	-	3,683	-	3,683*
5N8XX	A6048	3,180	-	3,180	-	3,180*
5NXXX	-	24,587	(366)	24,221	0	24,221

NRC DISCRETIONARY RESERVES	50
NRC MANAGEMENT RESERVES	1,247
TOTAL NRC FUNDING (FY-1979)	25,518

* Budget variances with cost charts arise from realignments between accounts and specific changes and corrections addressed in CCB 79-157.

423 345

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

LOFT WBS #	189 #	Q11-A	Approved CLI CCB's	Current PMB # Q11-B	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	-	2,884	-	2,884	2,884	541
5F8XX	A6111	1,701	(7)	1,694	-	1,694	1,694	529
5F9XX	A6104S	1,828	-	1,828	-	1,828	1,828	1,478
5FXXXX	-	6,771	(7)	6,764	0	6,764	6,764	2,765
		FOREIGN CONTINGENCY RESERVES				308	308	
		MANAGEMENT RESERVES				474	474	
		FUNDS BUDGETED TO OTHER PROJECTS*				1,161	1,161	
		TOTAL FOREIGN FUNDS RECEIVED TO DATE				8,707	8,707	
		PROJECTED ADDITIONAL FOREIGN FUNDS				343	343	
		TOTAL FOREIGN FUNDING				9,050	9,050	

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

62

423 346

VI. Change Control Board Actions

VI. APRIL CHANGE CONTROL BOARD ACTIONS

CCB#	Title	WBS#	$ Allocation FY-79	FY-80	Total	Action
79-121	Waste gas -- field problems	522631	85,312	-	35,312	approved
79-122	Cap. equip. -- line item transfer	9R49871	-	-	-0-	approved
79-123	Cap. equip. -- baseline correction	9K89727	-	-	-0-	approved
79-124	Budget adjustment	543551	192,000	(192,000)	-0-	approved
79-125	Budget adjustment	5435/36	(52,000)	52,000	-0-	approved
79-126	ECC rakes	508415	(7,000)	-	(7,000)	approved
79-128	Core instrumentation	5072/73	(155,000)	-	(155,000)	deferred
79-129	Cap. equip. transfer	9RG9703	-	-	-0-	approved
79-130	Discretionary allocation	N/A	50,000	-	50,000	approved
79-131	Q11 to Q11-A transition	5XXXXX	-	-	-	approved
79-132	PCS press. gas sample	521552	11,000	-	11,000	approved
79-133	Line item transfer	9RG9718	-	-	-0-	approved
79-135	Elect. heater rod eval. studies	58525X	(28,000)	-	(28,000)	approved
79-136	Irrad. fuel storage	521131	(259,000)	-	(259,000)	approved
79-137	ESA	521961	(153,000)	-	(153,000)	approved

APRIL CHANGE CONTROL BOARD ACTIONS (continued)

CCB#	Title	WBS#	$ Allocation FY-79	FY-80	Total	Action
79-138	Plant protection system mods.	522865	17,600	-	17,600	approved
79-139	Revised O.A. est.	5513XX	179,000	-	179,000	approved
79-140	O.A. support	551381	8,500	-	8,500	approved
79-141	ESA & core support	521961	(132,000)	-	(132,000)	approved
79-142	Safety support transfer	5513XX	-0-	-	-0-	approved
79-143	Additional safety support	5513XX	35,000	-	35,000	deferred
79-144	Steam temperature probe	507631	-0-	-	-0-	approved
79-145	Additional JAERI funds	508XXX	-	-	-0-	approved
79-146	Funds to PRF	42LRO	-	-	-0-	approved
79-147	Weather protection -- ACC building	521545	124,992	-	124,992	approved

( ) indicates return to management reserves.

VII. Capital Equipment Summary

423 350

LOFT CAPITAL EQUIPMENT SUMMARY THROUGH APRIL 1979

Schedule 189a	Title	Prior Year Uncosted	Current Year Funds	Total Available To Cost	Current Year Costs	Outstanding Commitments	Estimate To Complete	Balance	Need For FY 1980 Commit.
500001 (1)	Integral System Design and Fabrication	$ 35,129	$ 137,000	$ 172,129	$ 41,059	$ 58,153	$ 129,700	$ 1,370	
500004	LOFT Operations	22,790	223,000	245,790	20,169	5,600	216,815	8,806	
500005 (1)	UT & Requal. Program	37,379	140,000	177,379	34,316	122,630	140,000	3,063	
	TOTAL DOE	$ 95,298	$ 500,000	$ 595,298	$ 95,544	$196,383	$ 486,515	$ 13,239	-0-
A6089 (2)	Fuel Design, Fabrication and Requalification	$ 169,533	$ 340,000	$ 509,533	$ 114,918	$133,300	$ 353,887	$ 40,728	$380,728
A6088	LOFT Operations	21	150,000	150,021	123,288	-0-	-0-	26,733	26,733
A6086	Advanced Instrumentation	32,812	588,000	610,812	71,880	50,129	550,862	[1,930]	[1,930]
A6085	Experimental Program Planning	103,475	-0-	103,475	97,676	3,748	11,962	[6,163]	[6,163]
A6084	Integral System Design and Fabrication	146,390	507,000	653,390	79,947	51,210	532,921	40,522	40,522
A6061	Experimental Measurements	488,043	415,000	903,043	459,501	79,400	434,084	9,458	9,458
	TOTAL NRC	$ 940,274	$2,000,000	$2,940,274	$ 947,210	$317,787	$1,883,716	$109,348	$449,348
	TOTAL LOFT	$1,035,543	$2,500,000	$3,535,572	$1,042,754	$514,170	$2,370,231	$122,587	$449,348

(1) Hybrid Computer Magnetic Tape Drive & Interface in 500001 was moved to A6084 which freed 20K to move to 500005 to complete the Snubber Test Stand bringing current year funds in 500001 to 137K and in 500005, 140K per approved CCB-79-129

(2) Approved CCB-79-133 will transfer Fuel Rod Scanner Data System and Fuel-Rod Fission Gas Collection System to Construction Line Item, TAN Reactivation of RML and HCA. These two Capital Equip. items will not appear in the Capital Equip. Status report after this month.

423 352