EG&G Idaho, Inc.

Report No. LO-MR-009

Date: September 1980

[redacted]

Title: LOFT MONTHLY PROGRESS REPORT FOR AUGUST 1980

[redacted]

Organization: LOFT PROGRAM

Author: N. C. Kaufman, Manager
LOFT

Checked By: D Mohr

Approved By: N C Kaufman

[redacted]

CONTENTS

FIGURE

TABLES

LOFT MONTHLY PROGRESS REPORT FOR AUGUST 1980

DIRECTOR'S MONTHLY SUMMARY

During August, plant modifications for small-break Test L3-5 continued. The intact-loop-break piping installation is well underway and will be completed soon. Installation of the instrument spool piece was completed and advanced testing disclosed problems which have been worked and are 90% resolved.

Installation of the new small-break piping path also made it necessary to fabricate and install hangers for support purposes. Work is progressing well on this effort; however, the additional time required to completion will move the L3-5 Test from a mid- to late-September test date.

Major management attention has been devoted to the successful fiscal year 1980 closeout. The actual spending rate to date is still in good agreement with the current approved budgets and authorized funding levels.

ACCOMPLISHMENTS

LOFT TECHNICAL SUPPORT DIVISION

1. System reviews were performed to verify plant readiness in support of the first intact-loop, small-break test (L3-5) and several operational transients (L6-1, -2, and -3).

2. The task of terminating the final instrumentation leads was completed as assembly activities continued on the A3 fuel module at Building Test Area North (TAN)-615. Functional testing of the instrumentation will be conducted in September, and work on the module will be completed.

3. The phase III examination (channel spacing probe measurements) of the fuel inspection activities was begun and was 80-percent completed in August. Examination is scheduled to be completed during the first week of September. No major anomalies have been noted during the examination. A report will be made after completion of the phase III examination.

4. Design of the Loss-of-Fluid-Test (LOFT) fuel-rod-transfer cask was completed, and the drawings are scheduled to be completed by September 30, 1980.

5. LOFT Technical Report (LTR) LO-12-80-003, "Stress Analysis of the Resin Flush Lines and Filter Modification for LOFT Primary Coolant Purification and Blowdown System Ion Exchanger," was approved and released. Now, transfer of spent resin in the ion exchangers can be handled by reusing the old cask stored in the Fuels and Materials facilities. The old cask contains the spent resin removed from the coolant purification system (CPS) ion exchanger, but plans and procedures have been completed to empty the old cask into a 55-gallon drum prior to the L3-5 experiment. This will permit the change-out of spent resin in the ion exchangers when the L3-5 test has been completed.

6. The implementation plan for the automatic data processing equipment (ADPE) for the isotope detection system was approved by Information Services Division and was transmitted to the Department of Energy - Idaho Operations Office (DOE-ID) for review and approval.

7. Installation of the LOFT snubber test stand equipment was completed. The LOFT snubber test stand is the only one of its kind and can be used to test both mechanical and hydraulic snubbers.

   Training of personnel to operate the test stand will begin September 9, 1980.

8. The Inservice Inspection (ISI) Manual was revised, and review copies have been distributed.

9. Power-operated relief valve (PORV) piping was modified. This modification was begun when plans were made for the next scheduled test (L3-4) to simulate a PORV leak. When the L3-4 test was cancelled, the PORV piping that had been modified for L3-4 instrumentation was installed using uninstrumented spool pieces instead of instrumented spool pieces. Associated pipe supports, heat tracing, and insulation are currently being installed.

10. Piping modifications required for the intact-loop small-break test (L3-5) were completed. These modifications include the fabrication of lead shielding for the gamma densitometer.

11. Final design was completed for the access platform of the polar crane in the test chamber. Installation will begin in fiscal year (FY) 1981.

12. The gamma spectroscopy analysis program was modified so that it would be capable of identifying additional radioisotopes if they appear in LOFT systems.

13. The new stack monitor (Eberline Model SPING-2) was installed in a temporary location where it will be used for testing and for personnel

training. After operational checkout and final design review, the monitor will be installed in the heating and ventilating (HV) system exhaust stack.

14. Modifications to HV System 9 inside the containment vessel were completed. These modifications were made to reduce the temperature stratification in the containment vessel.

15. Minor modifications were completed to the instrument air (IA) system to provide cooling air to the new color television camera in the containment vessel and to provide additional hose drops in the maintenance area of Building TAN-629.

16. The cold-leg-break isolation valves were modified to prevent overpressurization of their bonnet cavities and the piping between the valves. This potential overpressurization is due to thermal expansion of trapped fluid.

17. New American Society of Mechanical Engineers (ASME) Code, Section III, Class I, stainless steel studs were installed on the intact-loop vertical flow rake to correct the differential thermal expansion problem of the carbon steel bolting which became overstressed at plant operating temperatures.

18. A review for potential missile and pipe-whip problems and a failure mode and effects consequences analysis (FMECA) were performed for the modifications to the primary coolant system (PCS) piping associated with the cold-leg-blowdown line and to the power-operated relief valve discharge piping.

19. The safety analysis was completed for the L3-5 Experiment Safety Analysis (ESA) report. Documentation is in progress.

20. A Document Revision Request (DRR) for changing the LOFT Technical Specifications to conduct the L6-1, -2, and -3 experiments has been prepared and has been submitted to DOE-ID for review and approval.

21. Common-cause events were reviewed for the relocation of the cabling for the primary coolant pump. The results indicated a routing that would satisfy the common-cause requirements.

    Primary coolant pump cabling was relocated to provide clearance required for installation of the gamma densitometer and shielding for the L3-5 test.

22. The traversing in-core probes (TIPs) were modified to take continuous data from the top of the reactor vessel to detect the water level in the core during the L3-5 test. This modification expands use of the TIPs beyond their original capability of obtaining only in-core data.

23. Calculations were completed for core power distribution, expected flux ratios to be detected from the four TIP scan tubes, and initial critical boron concentrations for the L3-5 test.

24. The ESA for experiments L6-1, -2, and -3 was completed and approved by DOE-ID. The analysis in support of the L6-3 ESA was completed.

25. A deficiency monitor was installed on the three TOPAZ monitors to provide a pre-trouble warning when one of the tap-switching silicon-controlled rectifiers in the data acquisition and visual display system (DAVDS) power regulators fails so that maintenance can be performed before data to be transmitted to the DAVDS are lost.

26. The Technical Support Center (TSC) was remodeled, and the plant log and surveillance computer system (PLSCS) terminal is now operational in the TSC. The PLSCS interfaces with the DAVDS.

27. The flow computer was installed to monitor the secondary coolant inventory which is the water inventory that the auxiliary and makeup pumps add to the secondary coolant system.

28. For improved personnel safety, vital power was installed to ventilating fans in the waste gas processing system (WGPS) and to constant air monitors (CAMs) monitoring the WGPS.

29. An oxygen analyzer alarm was installed in the WGPS to alarm before the oxygen concentration is high enough for a hydrogen explosion to occur.

30. DOE-ID has approved eleven LOFT design descriptions (DDs) and is currently reviewing six DDs.

LOFT FACILITY DIVISION

1. Preparations for LOFT tests L3-5 and L6-1, -2, and -3 continued during the month of August. Most items were related to modification of the plant to perform small-break experiments in the intact loop.

2. In-plant testing continued during the month of August. Items included a hydrostatic test of the new intact-loop-break piping, check out of certain control valves, and various biennial ISI tests of system valves.

3. The plant was filled and vented in preparation for LOFT test L3-5.

LOFT MEASUREMENTS DIVISION

1. The qualification testing was completed for sample thermocouples fabricated by Idaho Labs Corporation and EG&G Instrument Assembly. Both sources proved to be technically qualified to fabricate zircaloy-sheathed thermocouples for LOFT. A report is being prepared.

2. An order for Inconel 600 sheath thermocouples and dummy thermocouples for the NEPTUN test pro[illegible] as placed at Idaho Labs. These thermocouples have been completed except for source inspection.

3. The installation design for the cladding-embedded thermocouple is in process at Exxon and is due in September. Preliminary work included the fabrication of several thermocouples for installation on REBEKA test heated rods, writing manufacturing procedures, and writing a draft specification (ES-60335).

4. An investigation into the reason for high noise levels on clad thermocouple data revealed problems in grounding at LOFT. Fuel Engineering Operations Branch was requested to revise the thermocouple grounding by adding grounding inside the termination chamber of the instrument penetration cable.

5. Failure examination of the L3-7 PC-2 rake was completed, and a preliminary report was issued (DRC-9-80). The final report is in preparation following receipt of photographs of the failed rake.

6. The acoustic emission system (AES) sensors were used at the LOFT Test Support Facility (LTSF) for flow calibration of the L3-5 gamma densitometer spool piece orifice. The sensors were positioned on the spool piece flange and orifice to sense the hydrodynamic noise generated during saturated and subcooled blowdowns. These data, together with data from other transducers (such as upstream and downstream temperature and pressure transducers) will be used to acoustically calibrate

the spool piece. Once the spool piece is in place at LOFT, the sensors will be reattached. The acoustic emission system will essentially function as a nonintrusive flow measurement device.

7. Failed gamma densitometer detectors at two locations were replaced, and the new detectors were calibrated. All installed channels are now functioning properly. Low-energy detectors were also installed and calibrated.

8. Three small-break transducer panels for pressure measurements were fabricated and installed.

9. The upstream (gamma densitometer) and downstream (turbine drag-plate) spool pieces were installed. The electronic air-cooling system and cables associated with these systems were also installed.

10. The downstream turbine drag-plate spool piece was tested at LTSF, and the turbine and drag-plate were recalibrated in the ARA III ballistic calibrator.

11. Volume I of the LOFT Experimental Measurements Cabling Systems was distributed by LOFT CDCS. A standard practice defining its update and maintenance is in preparation.

12. The mass-flow calculations from the Wyle test data are 95% complete.

13. The L3-7 Experiment Data Report was completed on schedule and delivered to the Department of Energy, NRC, and the nuclear community.

14. Fuel-rod-spacing measurements were made on one of the four A_1 center fuel bundle faces. Data reduction indicated all fuel-rod-to-fuel-rod and fuel-rod-to-guide-tube spacings were above the minimum specified for new fuel bundles.

15. Fuel Engineering and Operations Branch inspected, repaired, and improved the grounding of the installed peripheral fuel-module-instrument-cable connections. Deterioration was observed to be minimal inside the termination chamber of the instrument penetration cable. Significant reductions in the instrument-output-signal noise levels were achieved.

LOFT PROGRAM DIVISION

1. The calibration tests on the LOFT small-break mass-flow-measurement design were completed at LTSF. Analysis of the results confirmed the design calculations of the ranges of flow conditions obtained with the RELAP5 code. The measurement method was also shown to be a viable way to measure mass flow of the break.

2. A RELAP5 input deck is being developed for the ZION pressurized water reactor (PWR) as part of the analysis of transients and associated phenomena in scaled and full-sized PWRs. The nodalization scheme for small breaks was completed, and the total system checkout is currently being done.

3. A nominal ZION small-break model for use with RELAP4/MOD7 was developed. It is based upon the best estimate/evaluation model (BE/EM) large-break model and incorporates only those changes necessary to accommodate the latest ZION best estimate system operating conditions. A companion effort to develop a RELAP4/MOD7 model for the LOFT L3-7 test configuration is also underway. The two models will be used in a prototypicality study using RELAP4/MOD7 for a small-break condition.

4. Application of the RELAP5 code to large-break cases was begun. LOFT LOCE L2-3 is being used as the reference experiment. Initial calculations with the large-break LOFT model for RELAP5 show generally good agreement with the data except for the depressurization rate. The problem area has been traced to the pressurizer surge line which is not calculated in RELAP5 to choke although choking actually occurs in the line. Efforts are now underway to develop model improvements to simulate choking or cavitation in elbows which are present in the LOFT surge-line geometry.

5. The preliminary posttest analysis of L6-5 was completed using the RETRAN computer code.

FOREIGN-FUNDED TASK SUMMARIES

Foreign-funded and in-kind LOFT support projects are summarized in this section.

SUMMARY OF JAPANESE-FUNDED (JAERI) TASKS

1. Task 5F8C1 -- JAERI Management

   A new work breakdown structure (WBS) for all JAERI-funded tasks was developed and submitted for Change Control Board (CCB) approval. This WBS will become effective in October and will provide for a logical grouping of related tasks into a few summary cost accounts. Also, all JAERI tasks were rebudgeted to reflect planned work in FY-81. Work packages were developed for Related Programs Branch (RPB) management and JAERI delegate support in FY-81 and were submitted for approval.

2. Task 5F8C4 -- Advanced DTT

   Requirements for transient testing of the pressure-balanced drag turbine transducer (DTT) were developed from review of previous tests and discussions with the instrument designer. An EOS was written and transmitted for review. Hardware and instrumentation requirements were developed, and modifications were begun at the LTSF Blowdown Facility for testing in September.

3. Task 5F8C6 -- Reevaluation of LOFT Experiments

   Management is expected soon to approve the transmittal letter for the final report on this task, and release of the report is expected in September.

4. Task 5F8C7 -- Miscellaneous Code Studies

   This task was inactive during August.

6. The RETRAN calculation for the L6-1 Experimental Prediction was completed.

7. The RETRAN calculation for the L6-3 Experimental Prediction was completed. However, the experiment is expected to change.

8. Negotiations with Electrical Power Research Institute (EPRI) and Energy Incorporated (EI) were completed, and a prerelease version of RETRAN II was installed on the Cyber System at the Idaho National Engineering Laboratory (INEL).

9. RELAP4 was used to support the standard problem by quantifying the reflood-assist-bypass-valve (RABV) flow and warmup-line leakage in test L3-1.

10. The L3-5/L3-5(A) Experiment Operating Specification (EOS) has been reviewed by EG&G; DOE-ID approval is pending.

11. Fuel prepressurization levels for tests L2-5 and -6 have been set, and preliminary failure analyses have been completed. FRAP calculations to quantify the extent of core damage will begin shortly.

12. Instrumentation requirements for tests L6-1, -2, and -3 have been determined, and the EOS is currently being reviewed by EG&G management.

5. Task 5F8C8 -- LTSF Suppression Tank

Testing of the L3-4 and -5 break-mass-flow instruments was completed using the suppression catch tank for the reference mass-flow rate. Two assemblies of bolt bushings and bearing blocks were added to the tank to minimize tank swaying.

6. Task 5F8CA -- PC-3 and Small-Break Densitometers

A. PC-3 Gamma Densitometer

(1) Measurements Inc. successfully completed negotiations with Kennametals to deliver the tungsten order at a time compatible with the project schedule. The order was placed with a promised delivery date of September 26.

(2) Maintenance and Control Systems (M&CS) Division completed acceptance testing of the prototype pulse-height preamplifier and commenced fabrication of eight more preamplifiers.

(3) The eight photomultiplier tubes ordered from Bycron have been shipped.

(4) The final design review for the densitometer was held with approval pending submittal and approval of the stress analysis and incorporation of the design review committee's comments into the drawings.

B. Small-Break Instruments

(1) Three transducer panels for pressure transducers PE-CIS-1, -2, -3, -4, and -5 were fabricated.

(2) Drawing changes and a Facility Change Form (FCF) to install small-break pressure transducers PE-CIS-1, -2, -3, -4, and -5 in the system were completed.

(3) Installation of PE-CIS-1, -2, -3, -4, and -5 and differential pressure transducer PdE-CIS-1 began.

(4) Twelve GENISCO pressure transducers were acceptance tested.

(5) Drawings were changed, and a Site Work Release (SWR) was issued to install backup suppression tank level transducer PdE-SV-02.

(6) Cable installation for small-break pressure transducers and PdE-SV-02 was begun.

7. Task 5F8CB -- Post-CHF Heat Transfer

The subcontract with Lehigh University was mailed to Lehigh on August 14. Lehigh has provided preliminary drawings of the proposed vapor-superheat measuring probes for the LTSF test. A preliminary draft of the EOS is nearly complete. Work is in progress on the test section design. A preliminary design review is scheduled for late September. A new, low-voltage, high-current power supply will be required at LTSF for this test, and inquiries are being made to locate one.

SUMMARY OF GERMAN-FUNDED (FRG) TASKS

1. Task 5F7C1 -- FRG Management

A new WBS was developed for FRG-funded tasks to be conducted in FY-81. The entire program was reviewed, and tasks were rebudgeted to reflect planned work in FY-80 and FY-81. Dr. Manfred Firnhaber, the new FRG delegate to LOFT, arrived at INEL at the beginning of September.

2. Task 5F7C4 -- Miscellaneous Tasks

Dr. S. Bannerjee sent a letter to INEL summarizing activities associated with development of the LOFT emergency core cooling (ECC) pitot tube rake. This letter completed the contract requirement.

3. Task 5F7C5 -- Steam Probe

This task was inactive in August.

4. Task 5F7C8 -- LOFT State Vector Cost Estimate

The literature search effort continued. McDonell-Douglas Company was contacted, and their work with state vectors on drag lines was discussed. An investigation of the work of Science Applications Incorporated (SAI) continued. Course notes on a linear-power-system-model state vector have been requested.

SUMMARY OF JAERI/FRG-SHARED TASKS

1. Task 5FC92 -- Two-Phase, Steady-State Tests

All work on this task was completed prior to August. A cost correction has been initiated, and the task is expected to be completed within the budget.

2. Task 5FC93 -- TRAC Code Studies

The final report has been edited and is being approved by EG&G management. The expected issue date of the report is September 30.

3. Task 5FC94 -- Two-Phase Loop Boiler Building

Construction of the building was started on schedule and was approximately 90-percent complete at the end of August.

SUMMARY OF NETHERLANDS-FUNDED (ECN) TASKS

1. Task 5FNC2 -- Program Development and Analysis

A revised WBS for ECN-supported work was approved and is reflected in this month's report. A new task entitled, "Internal Cladding Thermocouple Design (in REBEKA Heater Rod)" was prepared and submitted for CCB approval.

Final revisions are being made in a report on mass-flow calculations using pitot-tube and densitometer data from the Wyle transient tests. The mass-flow calculations have been done for the drag-disk and turbine data, and a report on these results will be prepared in September.

For the Critical Flow Scaling Study, work was initiated with an in-depth review of the available data base, particularly D. G. Hall's "Inventory of the Two-Phase Critical Flow Experimental Data Base," EG AAP-5140. The initial phase of the task will be to verify methodology and accuracy of the data base. Data on subcooled and saturated calibration blowdowns that have been completed on Semiscale nozzles at LTSF are currently being examined.

Gamma transport calculations have been made to determine the detector efficiency for gamma emission from different inner and outer water regions across the pipe cross section and for 0.5-meter axial displacement from the detector. For a water-filled pipe, the detector efficiency was found to decrease by a factor of ten from the pipe segment nearest the detector to the segment on the opposite side. The detector efficiency axially was reduced by a factor of 5.4 within one pipe diameter.

Additional analyses using the dispersion theory of G. J. Taylor were performed relative to the effect of N-16 distribution in a water-filled pipe. For a mean-value fluid velocity of 30 cm/sec, the mass-weighted velocity was 1.6 percent greater due to axial dispersion at

the tagging location. When axial dispersion of the N-16 is considered, the center of mass of the N-16 pulse is found to be at an apparent pipe velocity of 31.25 cm/sec or 4.2 percent greater than the mean pipe velocity.

Assessment of the two-phase orifice model and code developed by Dr. R. Gay at Rensselaer Polytechnic Institute (RPI) using data from transient testing at Wyle was completed, and documentation was initiated for future transmittal to INEL. Results using Wyle data showed good agreement between predicted and measured mass-flow rate.

2. Task 5FNC3 -- Component Development

Work on the two-phase loop platform and stairs addition is on schedule. All material has been received, all subsystems have been prefabricated, and installation is approximately 40 percent complete.

A new task was formulated to develop a conceptual design and detailed cost estimate for installation of internal zircaloy-clad thermocouples in a REBEKA electric heater rod. Approval of this task is expected on September 5.

SUMMARY OF AUSTRIAN-FUNDED (SGAE) TASKS

1. Task 5FAC2 -- Program Development and Analysis

A new WBS was approved for SGAE-funded tasks and is reflected in this monthly report.

2. SGAE In-Kind Support to LOFT

The SGAE final task report on "Radiation Effects Study -- Optical Probe Material" was received, and this task is complete. The report stated that neutron radiation effects on optical glass have neither been determined nor reported in the European literature. Gamma-resistant optical glass is manufactured by the Schott Company in

Germany. Radiation-effects testing is recommended to resolve the questions related to possible use of optical probes in LOFT environments. One interesting item in the report was the comment that the International Atomic Energy Agency (IAFA) is now in the process of giving a one-year research contract to study fiber-optics behavior during neutron exposure.

Effort commenced on the LOFT Standard Problem Description Document task, with a review of reports describing the LOFT geometrical configuration. Preparations have also commenced on work packages for the autoclave testing of optical-window materials.

SUMMARY OF SWITZERLAND IN-KIND (EIR) SUPPORT

1. NEPTUN Reflood Test Program

No information was received from the EIR staff for August, as many of the staff were on vacation. Mr. Sam Naff, a USNRC-sponsored delegate in Europe, plans to visit EIR in early September and obtain a current status of the project.

A LOFT Program letter was written to the EIR staff addressing programatic questions identified by N. Aksan. The thermocouples have been fabricated by Idaho Labs and are expected to be shipped to Switzerland by mid-September.

FOREIGN COOPERATIVE SUPPORT TO LOFT

Participating foreign organizations are encouraged to provide cooperative support to the LOFT Program. Such tasks have mutual benefit to both LOFT and the foreign organization and enhance the exchange of technical information. This section summarizes those current efforts.

SUMMARY OF KERNFORSCHUNGSZENTRUM KARLSRUHE (KfK)

1. COSIMA TC Tests

The COSIMA staff has performed additional tests on a SIM-II heater rod which has LOFT-type thermocouples attached. Data are being evaluated by the KfK engineers.

2. LTSF 9-Rod Bundle TC Quench Test

Work within EG&G Idaho, Inc., and Exxon Nuclear Company is progressing toward installation of internal clad thermocouples (TCs) in a REBEKA heater rod. This and other REBEKA heater rods will be tested at the LTSF, and data will be shared with the KfK staff.

3. REBEKA Thermocouple Tests

Mr. F. J. Erbacher of KfK visited EG&G Idaho, Inc., on August 11 and discussed various programs, including the REBEKA 5 TC tests. Preliminary test results were presented, and future test plans were discussed. Close participation between KfK and LOFT is acceptable and should provide mutual benefits to both groups.

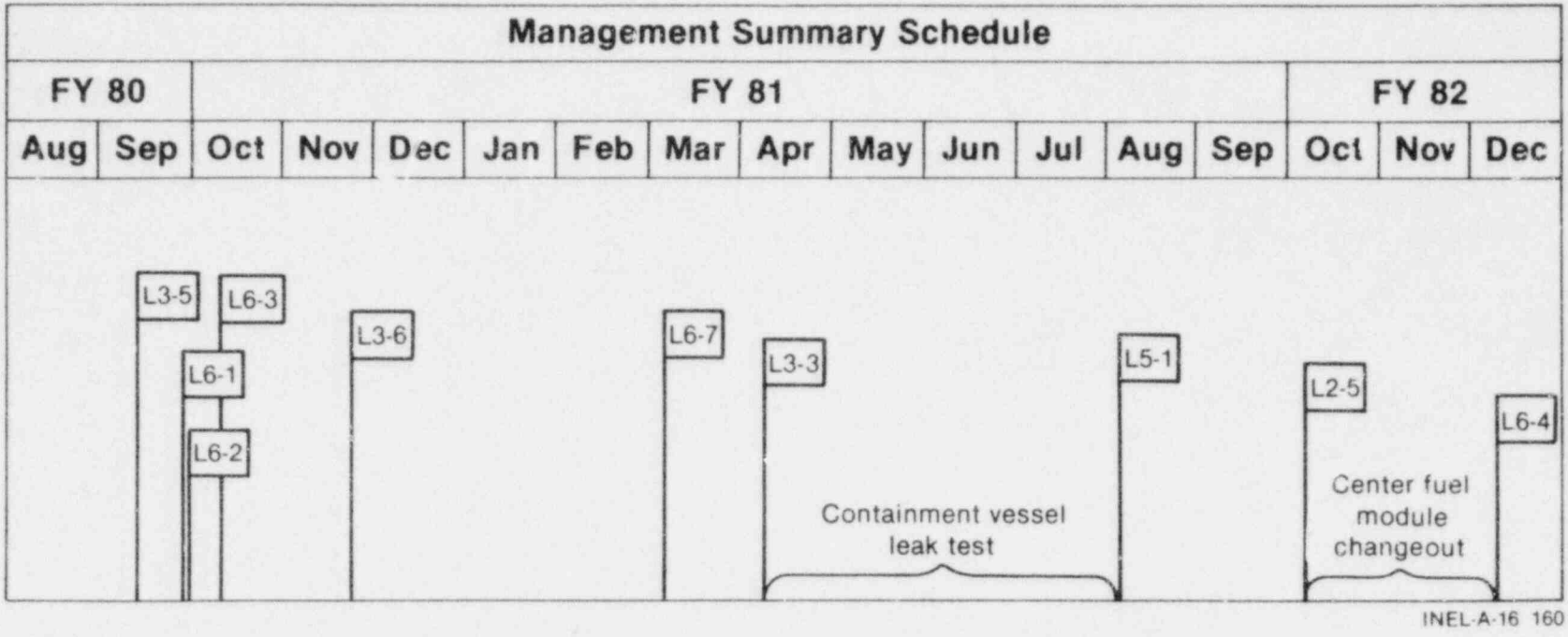
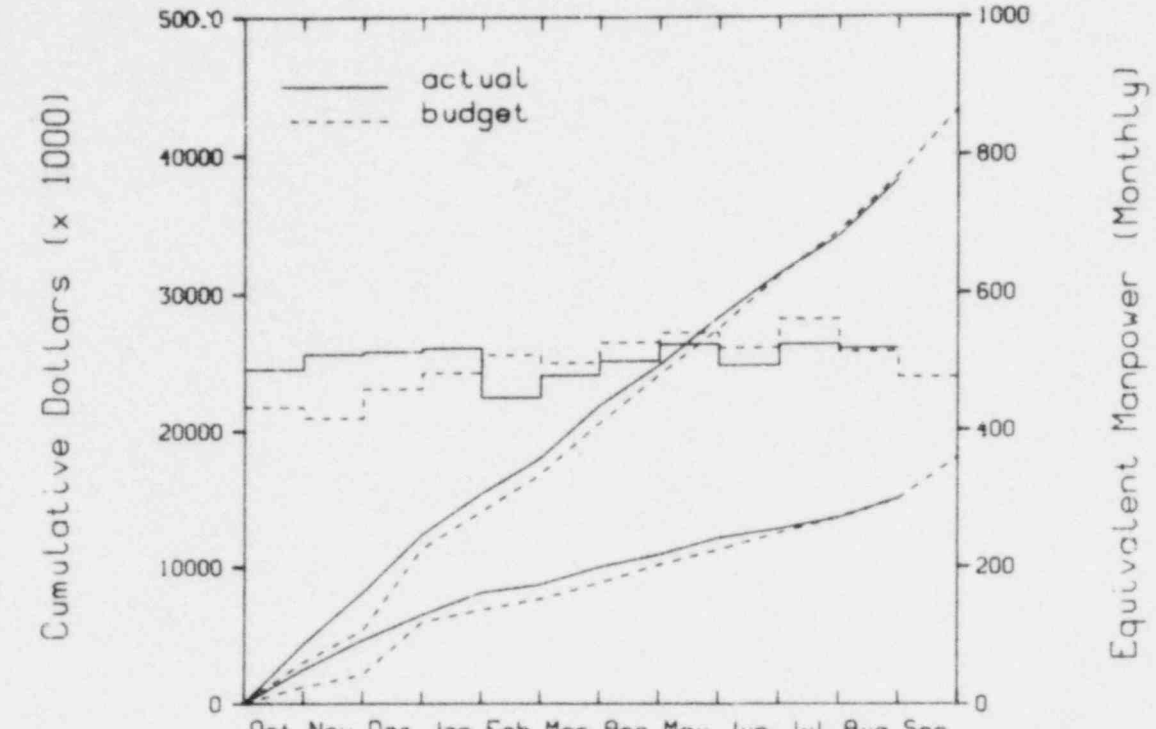


Figure 1. LOFT management summary schedule.

LOFT Overall Funding

$xxxxx

LOFT Program Cost/Budget Summary
LOFT OVERALL FUNDING



		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total	Bud	3022	5349	11354	14062	16807	20521	24053	27396	31296	34522	38506	43216
	Act	4365	8158	12405	15382	18017	21820	24756	28232	31410	34165	38191	
Material	Bud	1218	2116	5980	6862	7670	8816	10144	11227	12466	13611	14964	17968
	Act	2488	4643	6512	8132	8719	9982	10884	12106	12753	13601	14977	
Manpower	Bud	435	419	462	485	511	499	528	542	520	562	514	477
	Act	490	512	516	521	449	481	501	525	494	525	519	

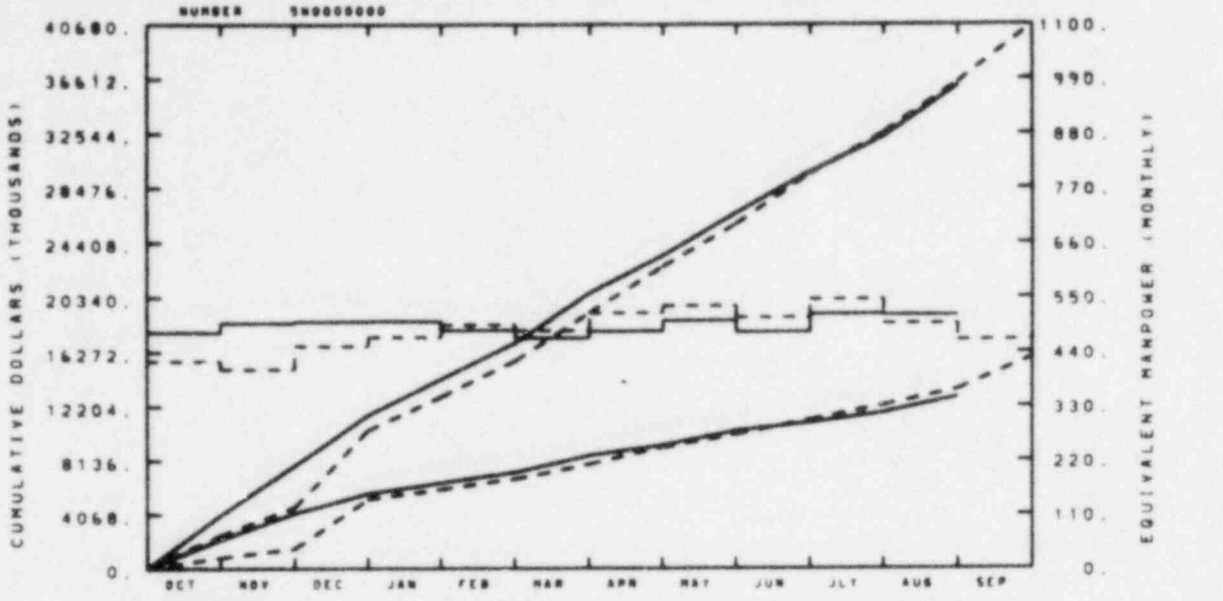
The Nuclear Regulatory Commission (NRC) and foreign-funded budgets reflect the LOFT Q80-5 Rev 0/3 baseline approved in August 1980. Refer to the Director's Monthly Summary for comments.

5N--NRC Operating Funding

5F--Foreign Funding

EG&G IDAHO INC.

LOFT - NRC OPERATING FUNDING



TOTAL PROGRAM

BUDGET	2495	4637	10461	12986	15635	19226	22649	25811	29530	32622	36370	40673
ACTUAL	4023	7798	11598	14302	16972	20697	23456	26629	29679	32320	36141	

MATERIAL

BUDGET	811	1511	5238	5993	6765	7866	9126	10067	11185	12254	13461	15844
ACTUAL	2189	4183	5673	6479	7243	8519	9277	10353	10949	11696	12895	

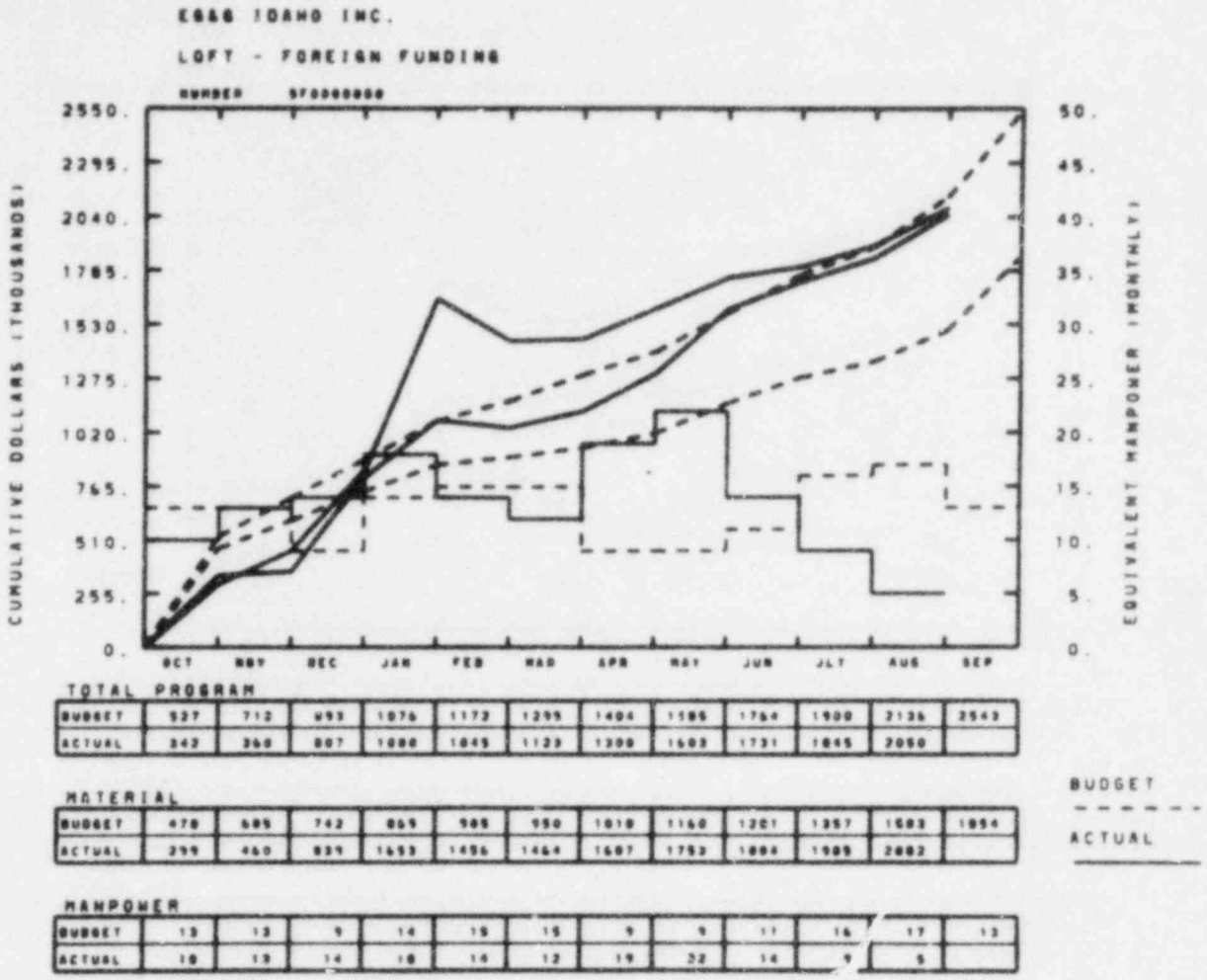
MANPOWER

BUDGET	422	406	453	471	496	484	515	533	504	546	497	464
ACTUAL	480	499	502	503	485	469	482	503	480	516	514	

BUDGET - - - - - -

ACTUAL ———

Refer to the summary cost accounts for comments.



TOTAL PROGRAM

BUDGET	537	712	893	1076	1172	1295	1404	1585	1764	1900	2126	2543
ACTUAL	342	360	807	1080	1045	1123	1309	1603	1731	1845	2050	

MATERIAL

BUDGET	478	685	742	869	985	950	1010	1160	1201	1357	1503	1854
ACTUAL	299	460	839	1653	1456	1464	1607	1752	1884	1989	2082	

MANPOWER

BUDGET	13	13	9	14	15	15	9	9	11	16	17	13
ACTUAL	18	13	14	18	14	12	19	32	14	9	5	

Refer to the summary cost accounts for comments.

LOFT 189a Summary

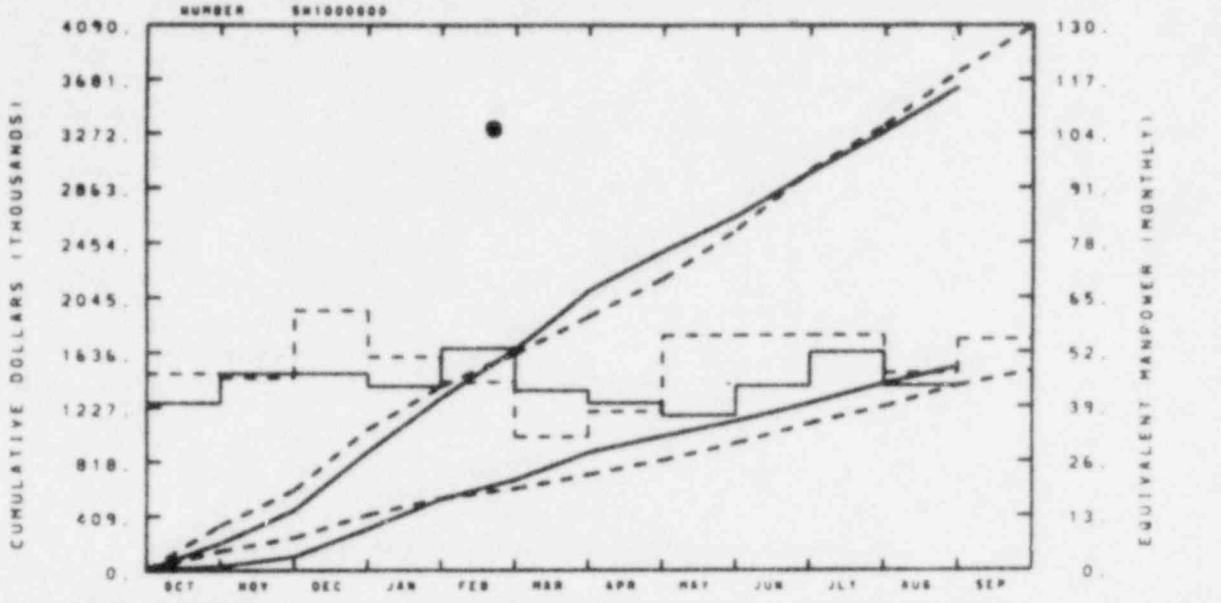
5NX--NRC 189a

5FXX--Foreign 189a

EG&G IDAHO INC.

NRC 189A A6048 - EXPER PROGRAM

NUMBER SN1000000



TOTAL PROGRAM

BUDGET	336	605	1063	1383	1637	1906	2184	2550	2995	3335	3739	4084
ACTUAL	202	453	894	1294	1656	2100	2389	2653	29 7	3288	3621	

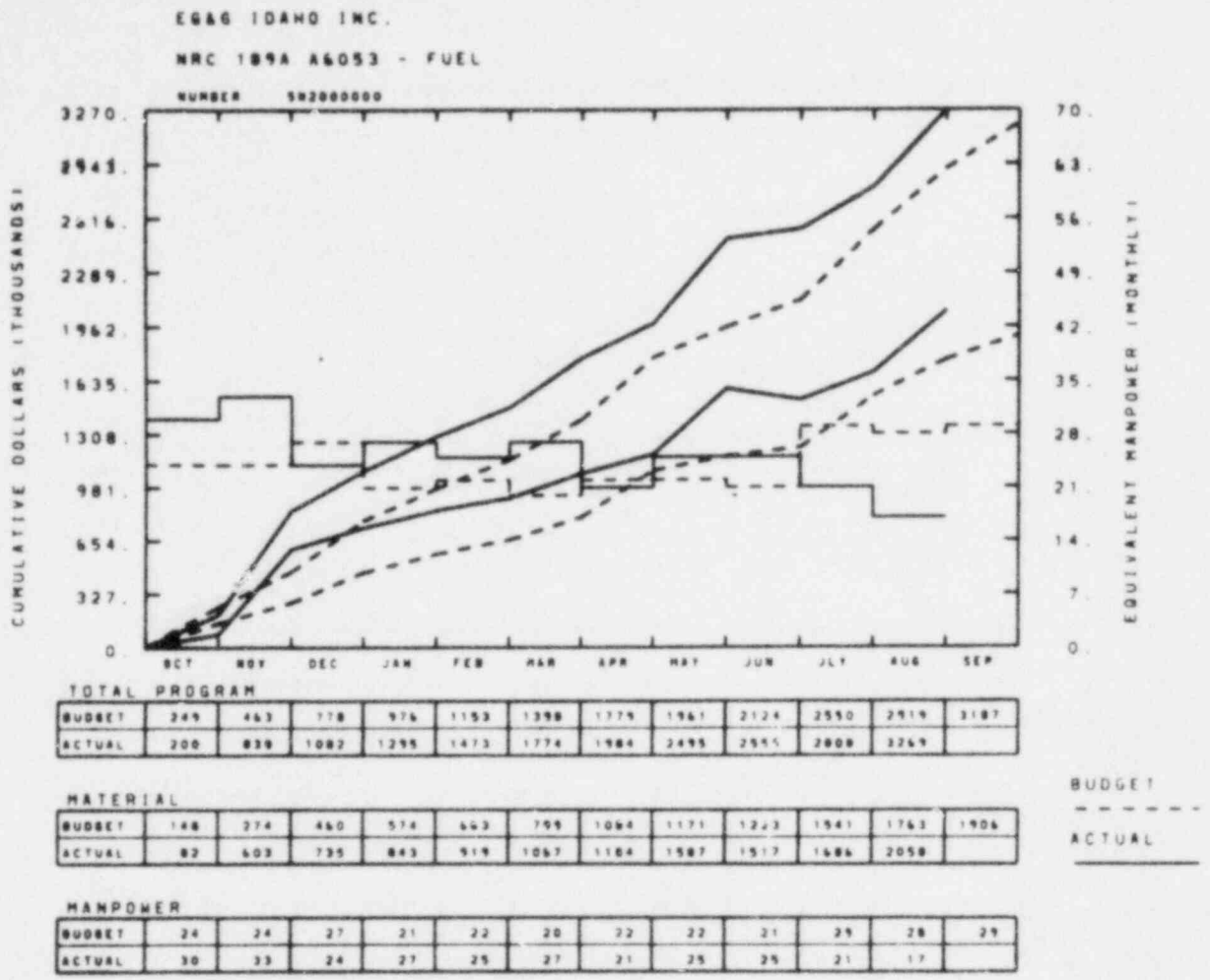
MATERIAL

BUDGET	145	246	419	544	616	720	828	953	1102	1227	1384	1495
ACTUAL	30	103	312	537	692	887	1008	1120	1252	1400	1524	

MANPOWER

BUDGET	47	46	42	51	45	32	38	54	56	56	47	55
ACTUAL	40	47	47	44	53	43	40	37	44	52	44	

No significant variance.



TOTAL PROGRAM

BUDGET	349	463	778	976	1153	1398	1779	1961	2124	2550	2919	3187
ACTUAL	200	839	1082	1295	1473	1774	1984	2495	2555	2809	3269	

MATERIAL

BUDGET	148	274	460	574	663	799	1064	1171	1223	1541	1743	1906
ACTUAL	82	603	735	843	919	1067	1164	1587	1517	1686	2058	

MANPOWER

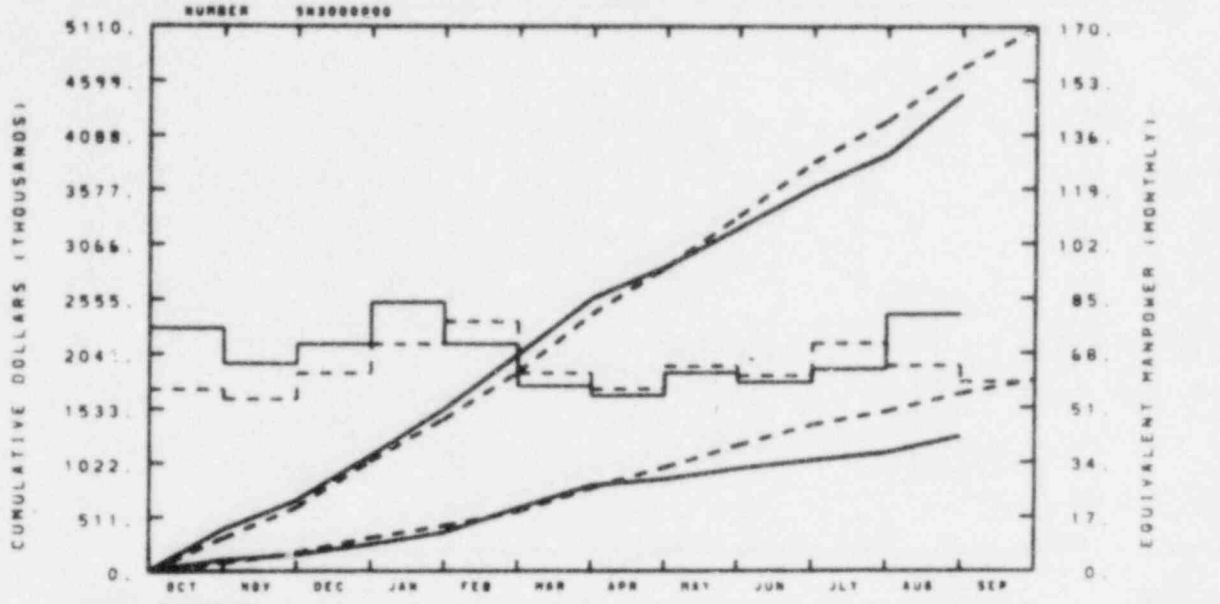
BUDGET	24	24	27	21	22	20	22	22	21	29	28	29
ACTUAL	30	33	24	27	25	27	21	25	25	21	17	

The overrun is caused by material costings which are explained in the summary cost account 5N200000. Cost graph plans call for the project to be finished this year at no significant variance.

EG&G IDAHO INC.

NRC 189A A6043 - EXPER INSTR

NUMBER SN3000000



TOTAL PROGRAM

BUDGET	312	602	1041	1432	1871	2414	2847	3323	3831	4222	4721	5103
ACTUAL	394	671	1091	1523	2037	2562	2852	3213	3591	3904	4466	

MATERIAL

BUDGET	77	174	315	427	564	785	978	1182	1374	1498	1663	1793
ACTUAL	106	154	253	363	594	811	867	965	1041	1111	1262	

MANPOWER

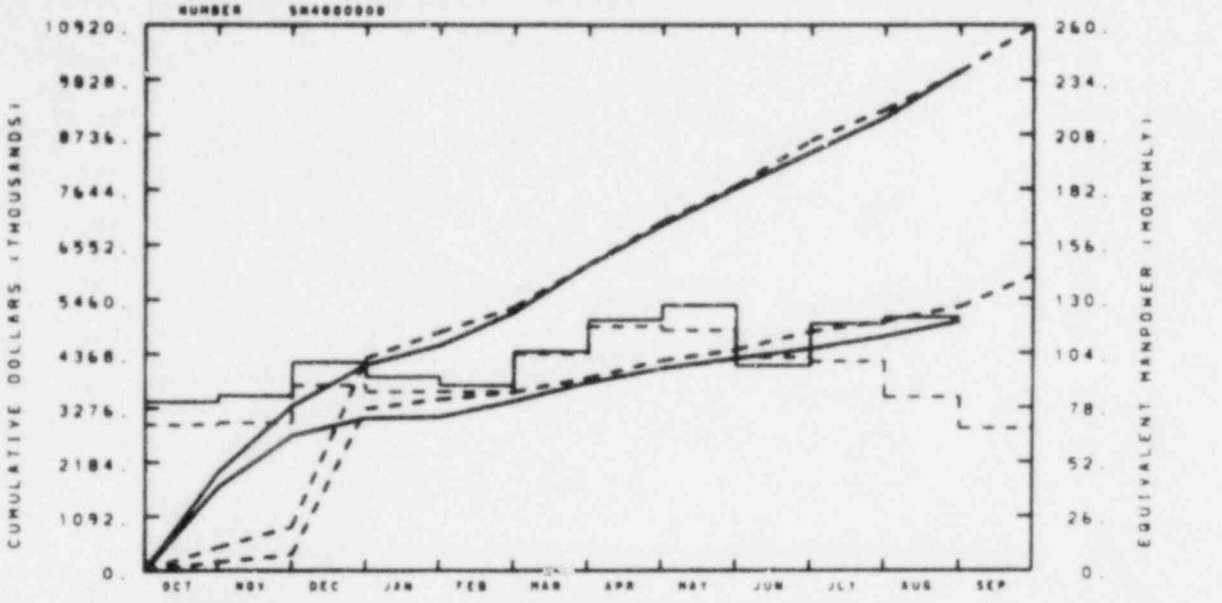
BUDGE.	57	54	62	71	78	62	57	64	61	71	64	59
ACTUAL	76	65	71	84	71	58	55	62	59	63	80	

No significant variance.

EG&G IDAHO INC.

NRC 189A A6107 - PLANT SUPPORT

NUMBER SN4000000



TOTAL PROGRAM

BUDGET	466	891	4281	4806	5303	6154	7001	7710	8623	9232	9985	10918
ACTUAL	1982	3325	4149	4534	5204	6144	6932	7676	8379	9072	10004	

MATERIAL

BUDGET	167	322	3275	3456	3604	3885	4225	4439	4795	5009	5296	5927
ACTUAL	1681	2725	3578	3105	3420	3789	4067	4264	4457	4700	5002	

BUDGET - - - - - -

ACTUAL ———

MANPOWER

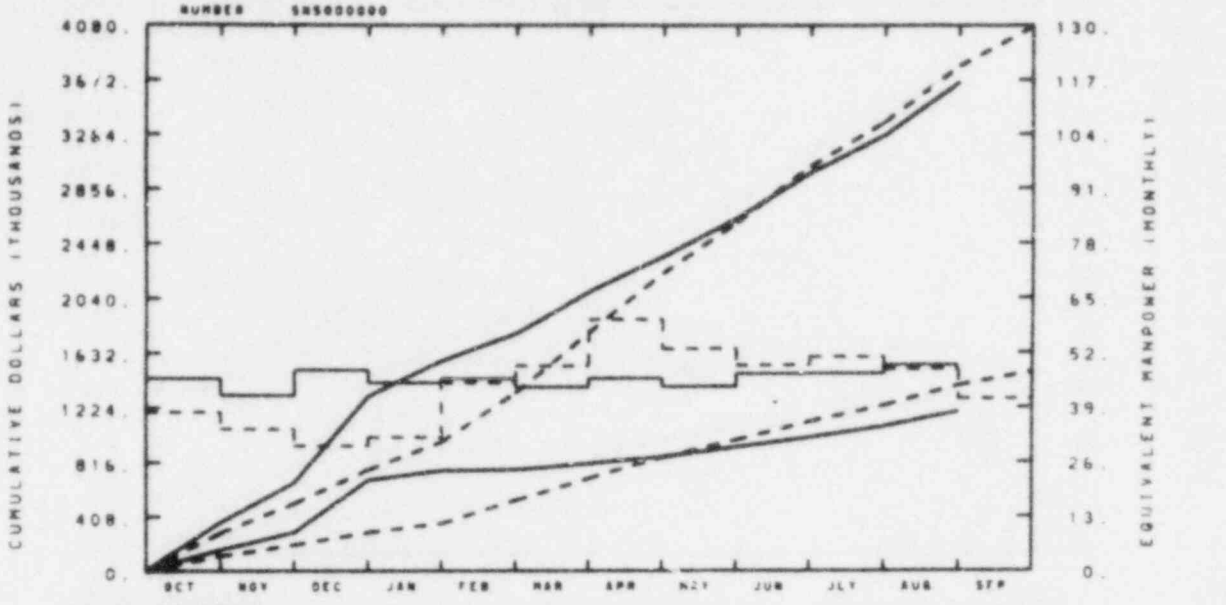
BUDGET	70	71	89	86	86	104	117	115	102	100	83	68
ACTUAL	81	84	100	93	89	105	120	127	98	118	121	

No significant variance.

EG&G IDAHO INC.

NRC 189A A6122 - CORE & SAFE SPT

NUMBER SN5000000



TOTAL PROGRAM

BUDGET	285	508	762	948	1337	1783	2224	2602	3023	3353	3777	4070
ACTUAL	366	664	1311	1575	1778	2088	2348	2632	2972	3254	3652	

MATERIAL

BUDGET	112	196	290	357	532	697	852	981	1118	1236	1386	1490
ACTUAL	160	289	484	755	762	808	855	928	998	1080	1190	

MANPOWER

BUDGET	38	34	30	32	45	41	40	53	49	51	48	41
ACTUAL	46	42	48	45	46	44	46	44	47	47	49	

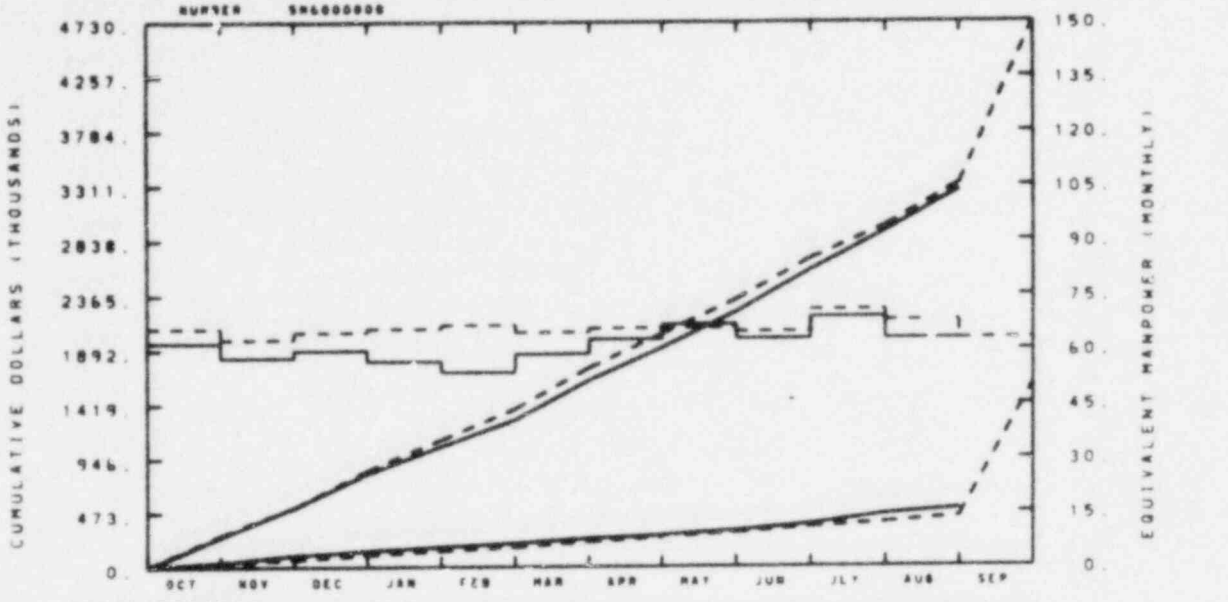
BUDGET

ACTUAL

No significant variance.

EG&G IDAHO INC.

NRC 189A A6110 - COMMON SUPPORT



TOTAL PROGRAM

BUDGET	282	523	848	1116	1385	1738	2032	2327	2681	2960	3329	4728
ACTUAL	267	531	820	1057	1290	1629	1910	2220	2582	2814	3273	

MATERIAL

BUDGET	34	66	107	141	175	219	258	298	345	383	432	1589
ACTUAL	43	103	142	174	207	248	275	315	368	455	502	

MANPOWER

BUDGET	44	43	41	44	47	45	44	44	45	71	48	43
ACTUAL	42	98	68	57	51	59	63	67	63	69	63	

BUDGET

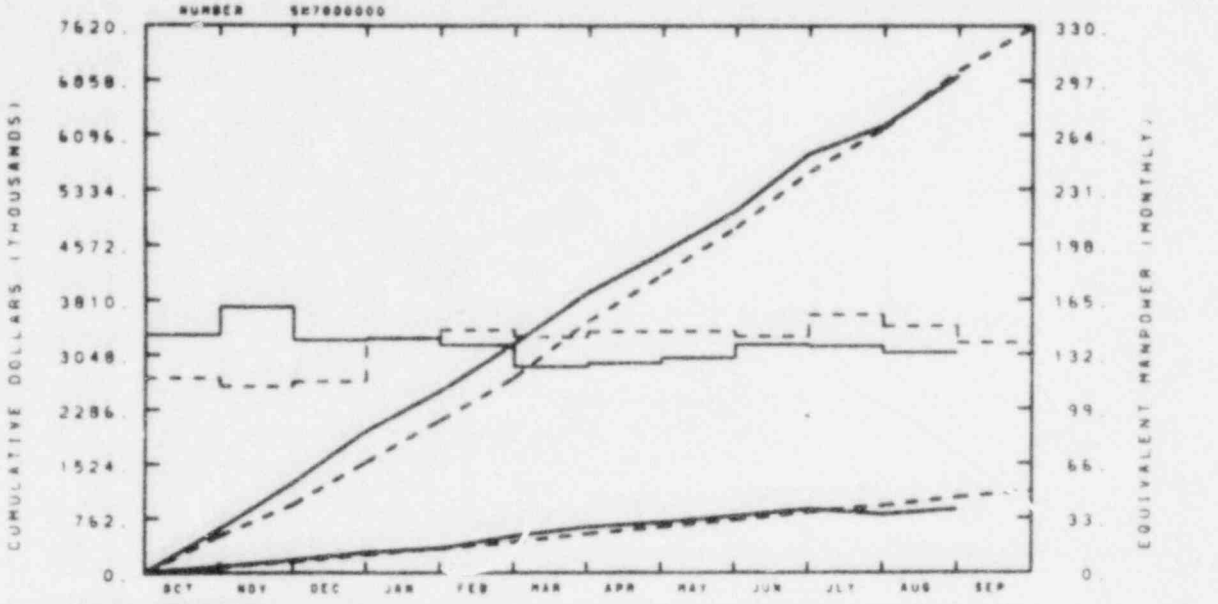
ACTUAL

No significant variance.

EG&G IDAHO INC.

NRC 189A A6054 - FACILITY OPER

NUMBER SX7000000



TOTAL PROGRAM

BUDGET	917	957	1551	2131	2728	3513	4158	4803	5578	6191	6997	7611
ACTUAL	612	1264	1985	2537	3203	3918	4460	5040	5834	6249	6927	

MATERIAL

BUDGET	85	157	255	343	431	548	641	735	847	935	1052	1141
ACTUAL	87	179	288	345	514	641	706	790	890	916	885	

MANPOWER

BUDGET	118	113	116	142	147	143	146	146	143	156	149	139
ACTUAL	144	161	141	142	138	125	127	130	138	137	133	

BUDGET

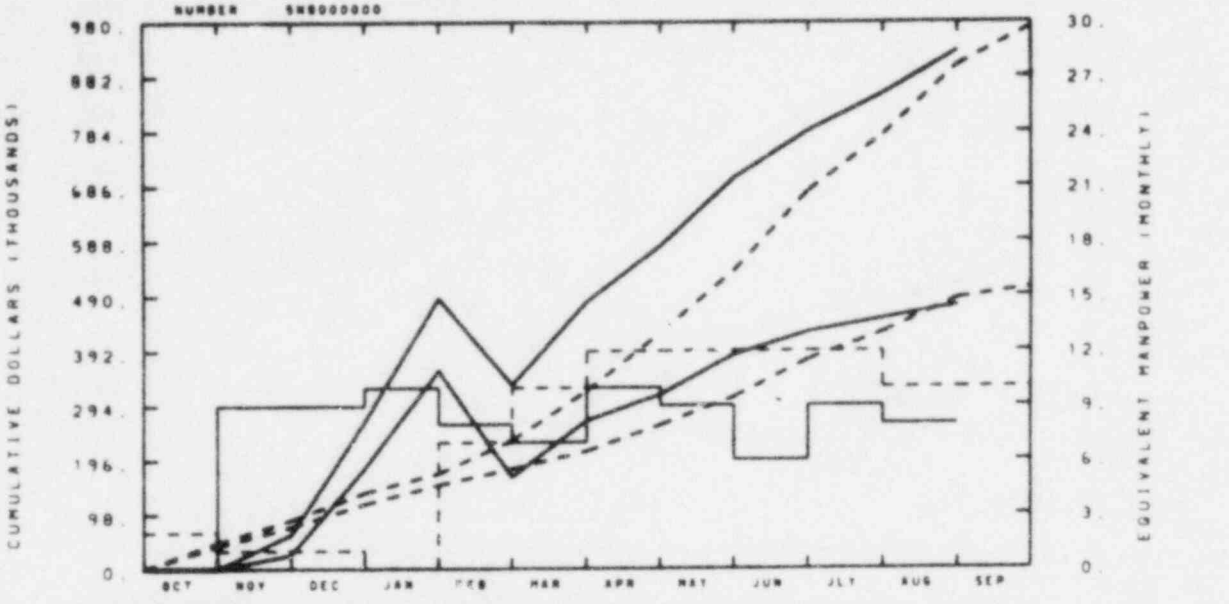
ACTUAL

No significant variance.

EG&G IDAHO INC.

A&10B - AUGER OPER CAPABILITY

NUMBER SN8000000



TOTAL PROGRAM

BUDGET	48	88	138	172	232	321	425	535	678	778	903	971
ACTUAL	0	62	266	487	332	480	580	731	786	852	929	

MATERIAL

BUDGET	41	74	117	152	181	212	259	309	374	425	485	503
ACTUAL	0	25	182	358	166	267	314	385	425	449	472	

MANPOWER

BUDGET	2	1	1	0	7	10	12	12	12	12	10	10
ACTUAL	0	9	9	10	8	7	10	9	6	9	8	

BUDGET - - - - - -

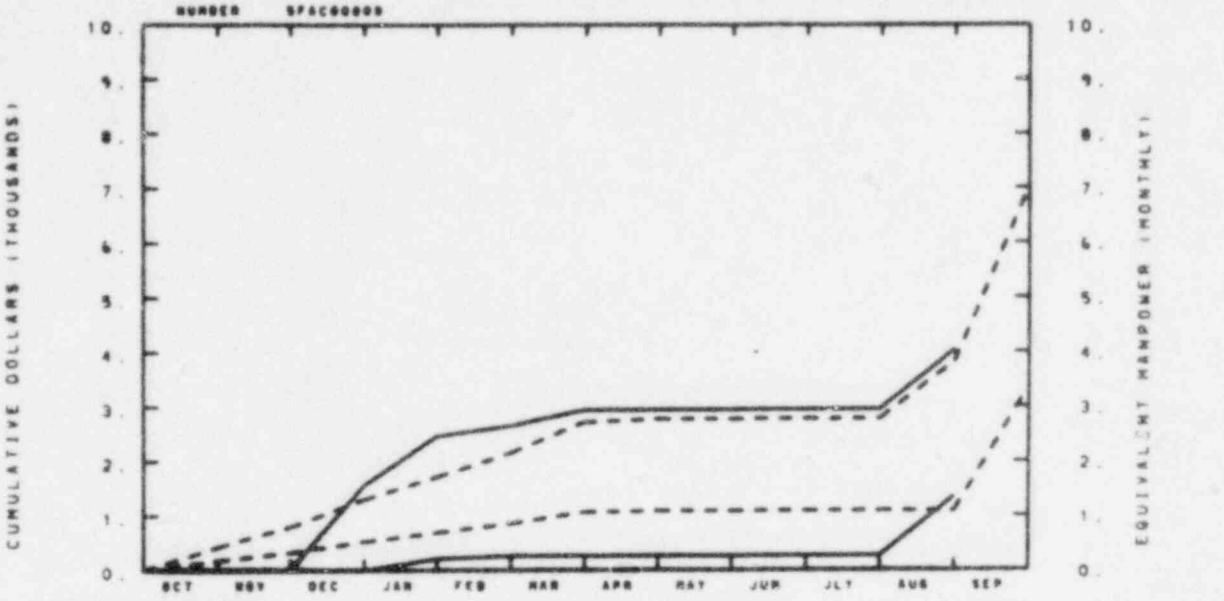
ACTUAL ———

Refer to the summary cost account for comments.

E&G IDAHO INC.

A&273-AUSTRIAN FUNDS

NUMBER SP&C00005



TOTAL PROGRAM

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

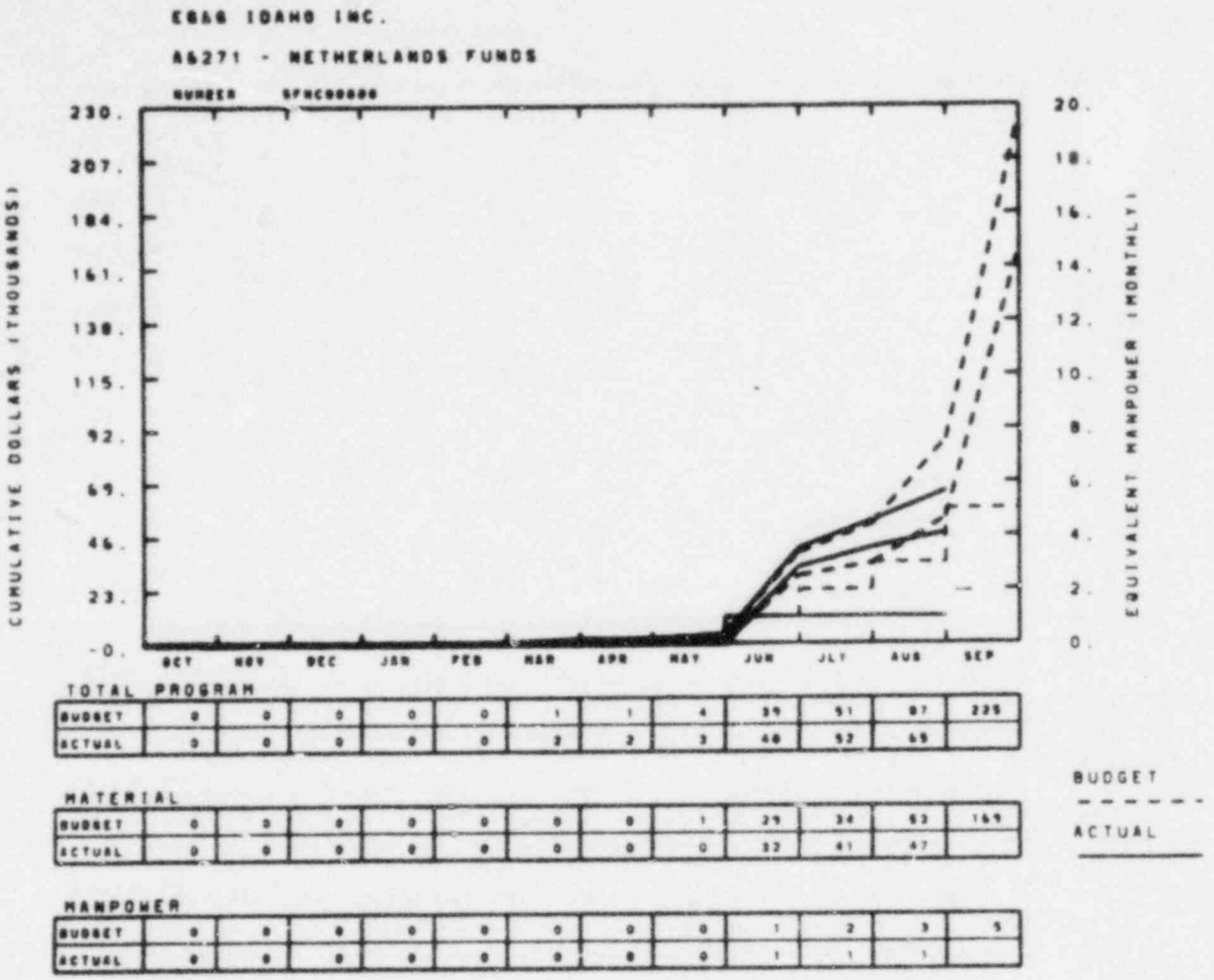
MATERIAL

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

MANPOWER

BUDGET	0	0	0	0	0	0	0	0	0	6	0	0
ACTUAL	0	0	0	0	0	0	0	0	0	0	0	

No significant variance.



TOTAL PROGRAM

BUDGET	0	0	0	0	0	1	1	4	39	51	87	225
ACTUAL	0	0	0	0	0	2	2	3	48	52	69	

MATERIAL

BUDGET	0	0	0	0	0	0	0	1	29	34	53	169
ACTUAL	0	0	0	0	0	0	0	0	32	41	47	

MANPOWER

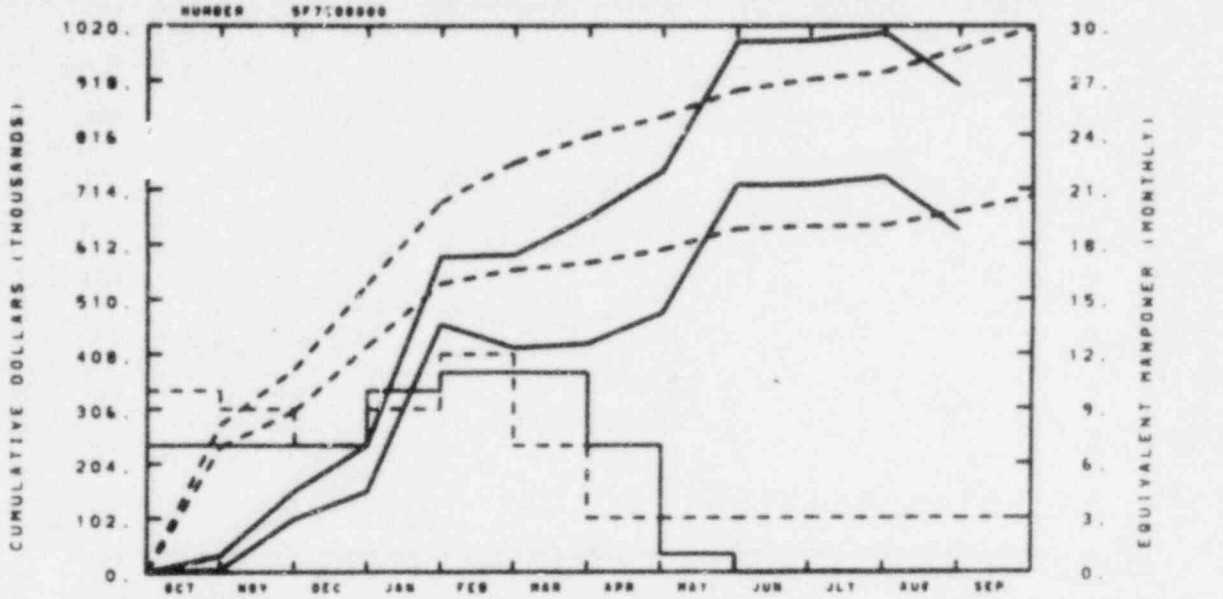
BUDGET	0	0	0	0	0	0	0	0	1	2	3	5
ACTUAL	0	0	0	0	0	0	0	0	1	1	1	

Variance due to manpower unavailability and delayed contractor billing.

EG&G IDAHO INC.

A&104 - GERMAN FUNDS

NUMBER SF7C00000



TOTAL PROGRAM

BUDGET	276	380	536	691	764	815	850	900	920	935	976	1016
ACTUAL	31	152	236	585	593	664	748	991	992	1007	909	

MATERIAL

BUDGET	235	302	423	540	566	579	602	640	645	647	672	700
ACTUAL	4	100	151	464	420	428	485	722	722	737	638	

MANPOWER

BUDGET	10	9	7	9	12	7	3	3	3	3	3	3
ACTUAL	7	7	7	10	11	11	7	1	0	0	0	

BUDGET - - - - -

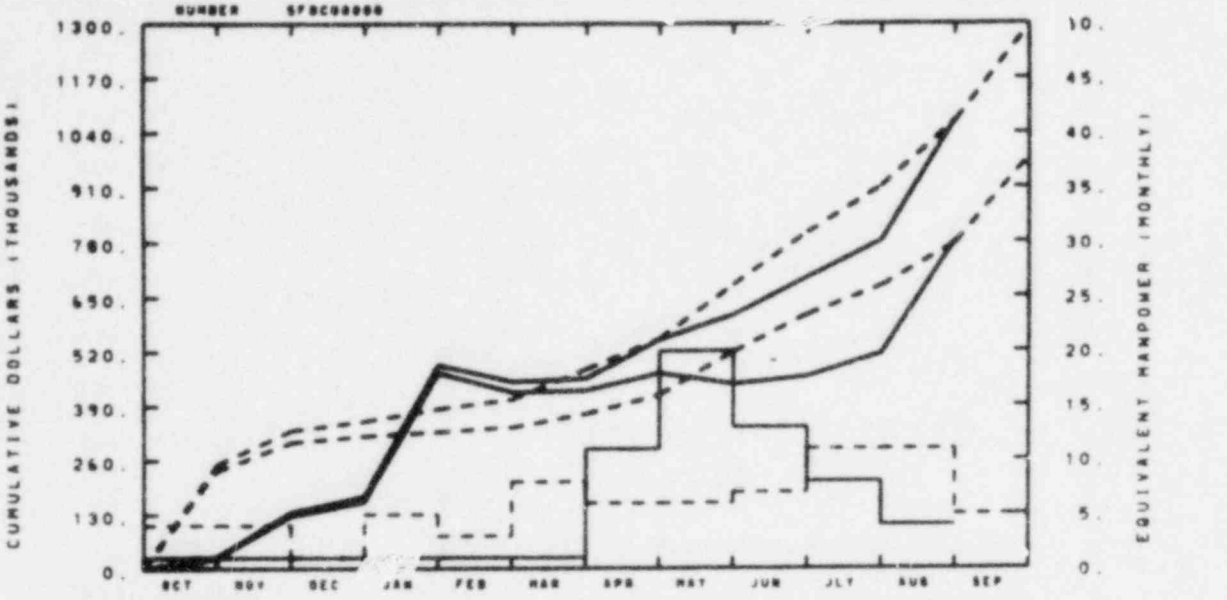
ACTUAL ———

No significant variance.

EG&G IDAHO, INC.

A6111 - JAPANESE FUNDS

NUMBER SP8C00000



TOTAL PROGRAM

BUDGET	250	332	354	384	406	477	549	679	802	912	1069	1294
ACTUAL	29	135	174	468	449	455	547	606	696	783	1072	

MATERIAL

BUDGET	225	303	318	328	339	370	415	518	607	675	776	981
ACTUAL	29	134	161	470	423	426	467	440	459	514	783	

MANPOWER

BUDGET	4	4	1	5	3	8	6	6	7	11	11	5
ACTUAL	1	1	1	1	1	1	11	20	13	8	4	

BUDGET - - - - - -

ACTUAL ———

No significant variance.

Summary Cost Accounts

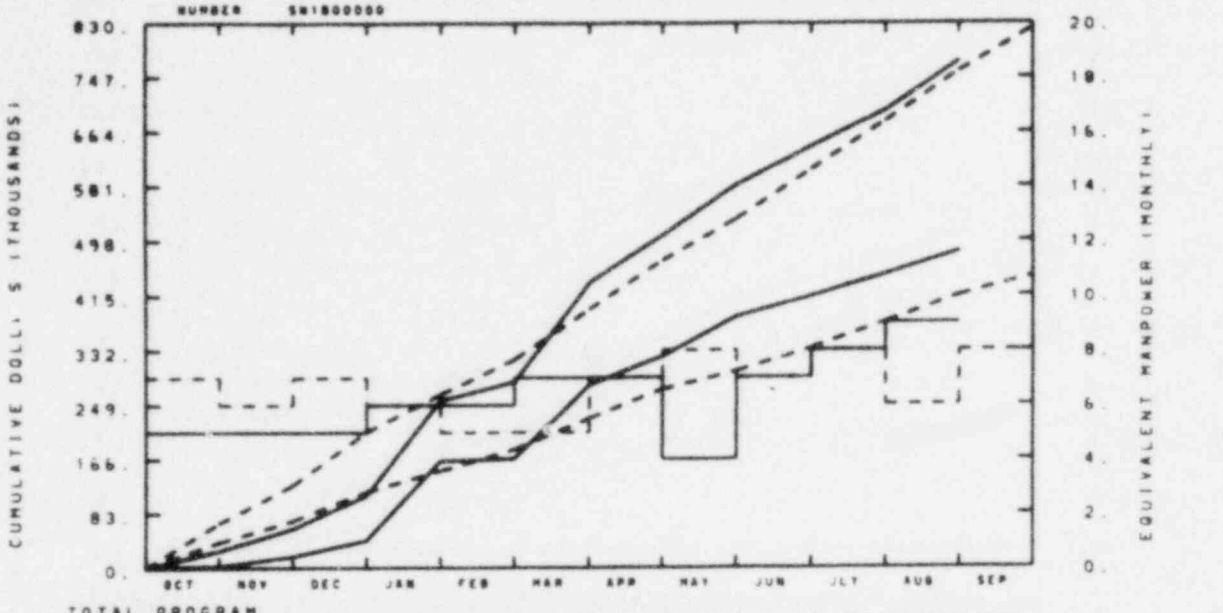
5Nxx--NRC Summary Cost Accounts

5Fxxx--Foreign Summary Cost Accounts

EG&G IDAHO INC.

EXPR PROG - PROGRAM PLAN & EVAL

NUMBER SN1800000



TOTAL PROGRAM

BUDGET	69	127	208	265	319	395	468	531	606	680	756	822
ACTUAL	76	40	111	255	284	435	506	583	641	697	772	

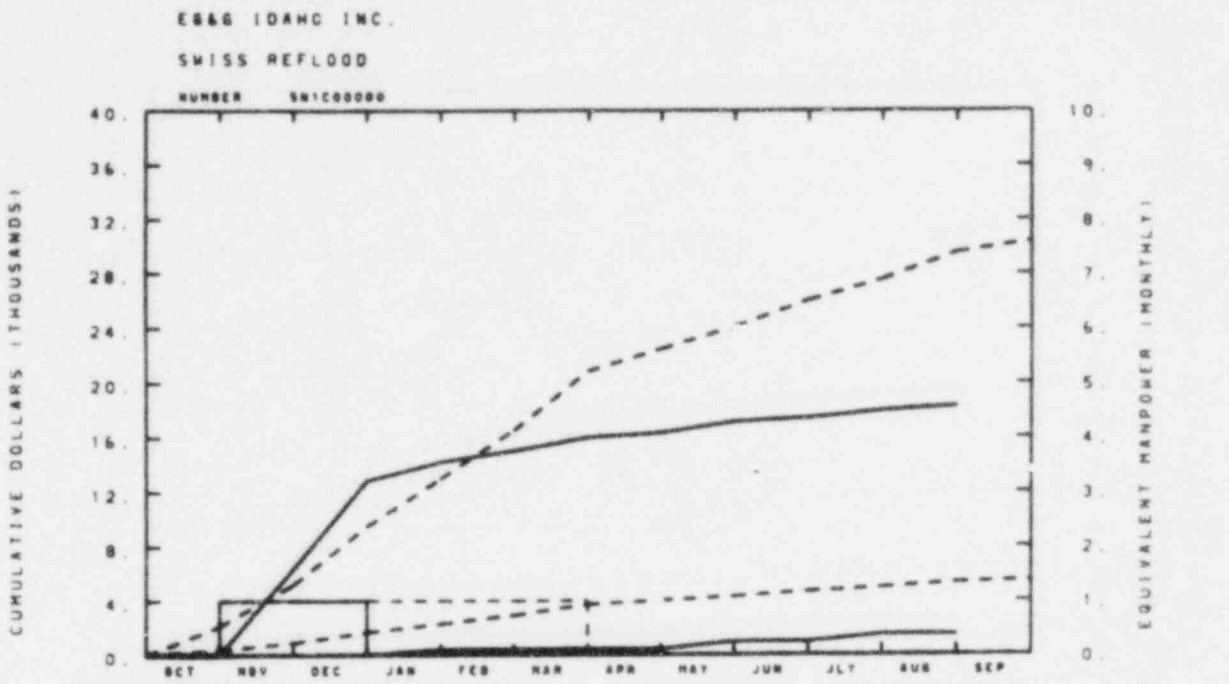
MATERIAL

BUDGET	39	72	117	149	181	229	272	300	335	374	414	444
ACTUAL	3	18	42	164	167	279	323	383	413	447	481	

MANPOWER

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

No significant variance.



TOTAL PROGRAM

BUDGET	2	5	10	13	17	21	23	24	26	28	30	30
ACTUAL	0	4	13	14	15	16	16	17	17	18	18	

MATERIAL

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

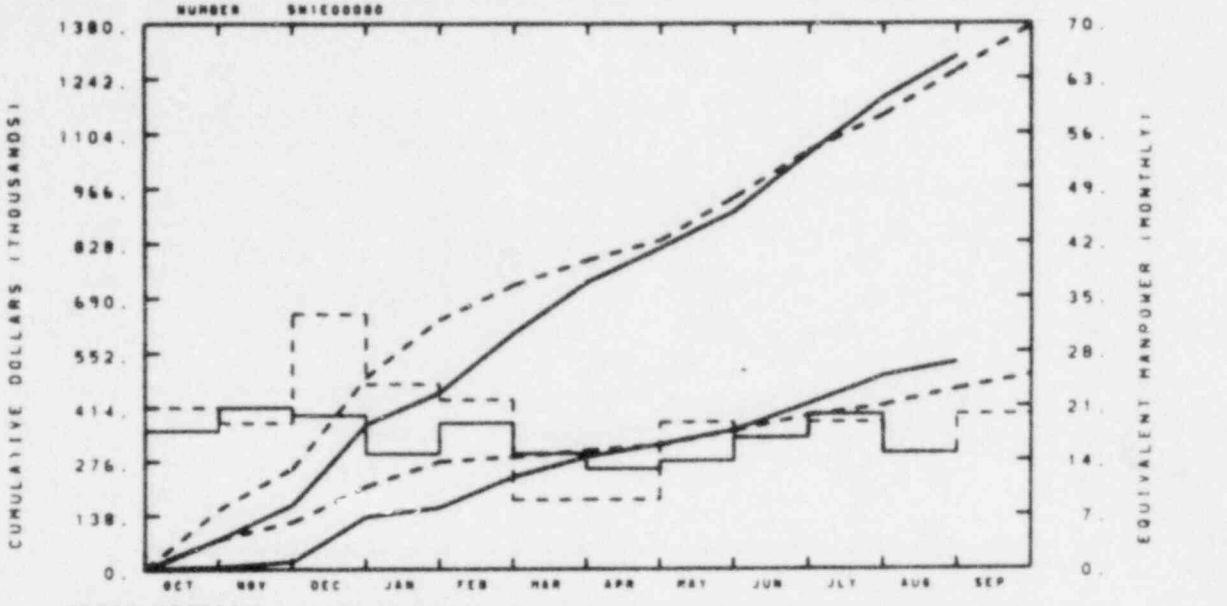
MANPOWER

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

Payment for Swiss thermocouples will bring the total up to approximately $5,000.00 and we will charge another $9,000.00 against this number in September 1980.

EG&G IDAHO INC.

EXPR PROG - LOFT DATA SYSTEMS



TOTAL PROGRAM

BUDGET	153	258	489	635	723	785	834	941	1060	1150	1262	1374
ACTUAL	77	164	370	451	601	729	815	906	1054	1194	1298	

MATERIAL

BUDGET	77	120	212	276	288	303	317	353	391	417	458	493
ACTUAL	6	19	134	158	236	287	319	354	420	491	526	

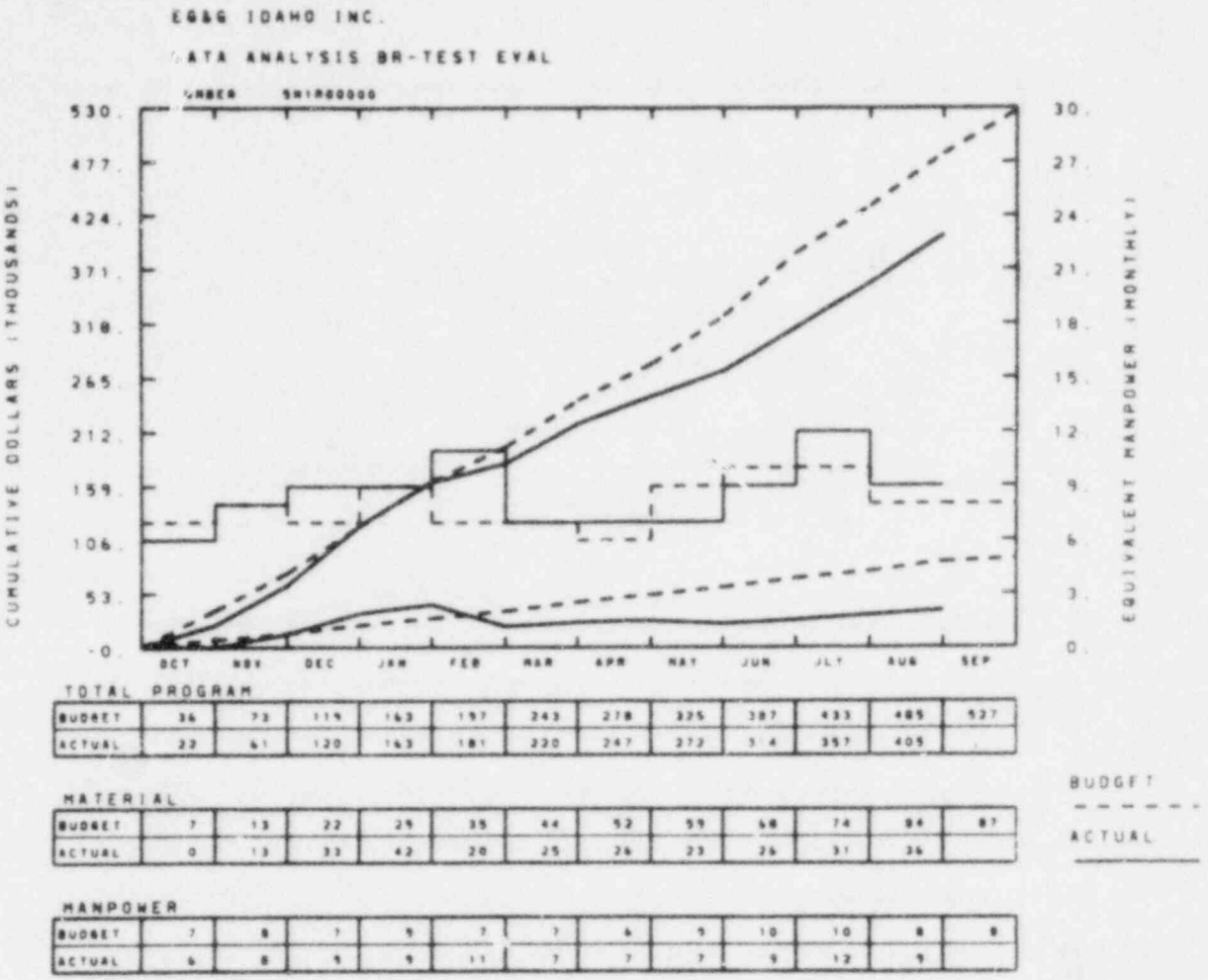
MANPOWER

BUDGET	21	19	33	24	22	9	9	19	17	19	15	20
ACTUAL	18	21	20	15	19	15	13	14	17	20	15	

BUDGET - - - - - -

ACTUAL ———

No significant variance.



TOTAL PROGRAM

BUDGET	36	73	119	163	197	243	278	325	387	433	485	527
ACTUAL	22	41	120	163	181	220	247	272	3 4	357	405	

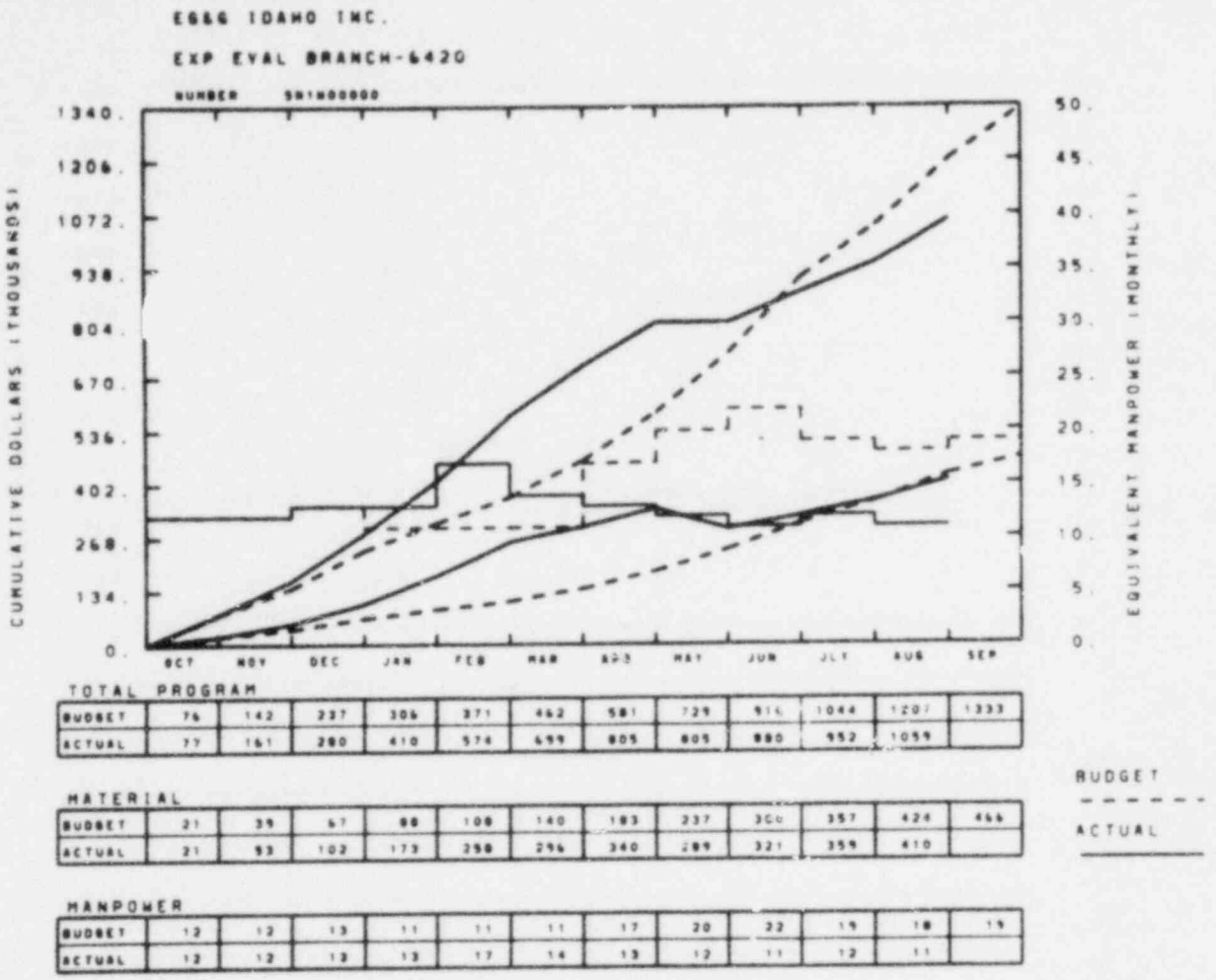
MATERIAL

BUDGET	7	13	22	29	35	44	52	59	68	74	84	87
ACTUAL	0	13	33	42	20	25	26	23	26	31	36	

MANPOWER

BUDGET	7	8	7	9	7	7	6	9	10	10	8	8
ACTUAL	6	8	9	9	11	7	7	7	9	12	9	

Variance due to underutilization of computer dollars. New summary cost account established to reflect reorganization within the LOFT program.



TOTAL PROGRAM

BUDGET	76	142	237	306	371	462	581	729	916	1044	1207	1333
ACTUAL	77	161	280	410	574	699	805	805	880	952	1059	

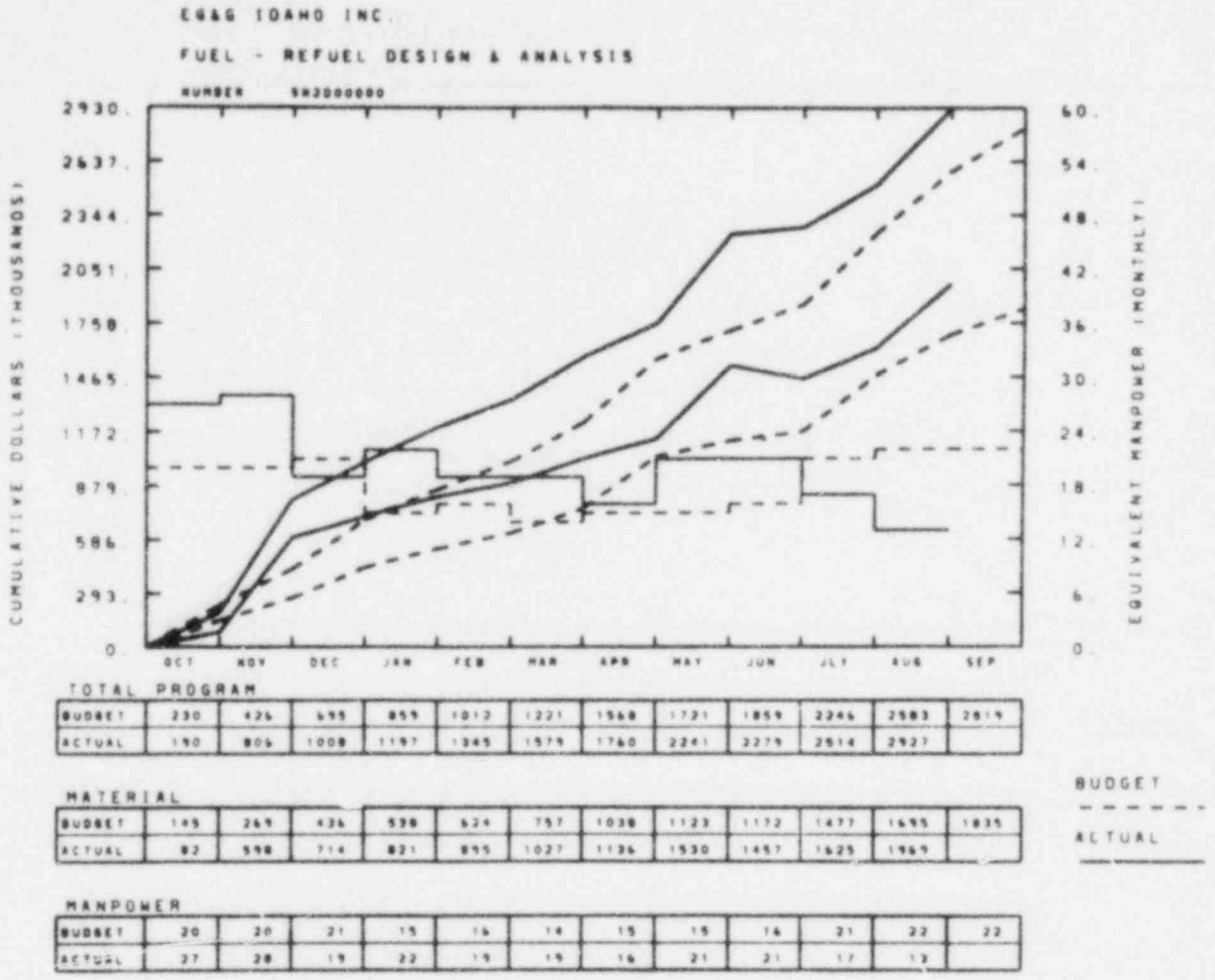
MATERIAL

BUDGET	21	39	67	88	108	140	183	237	300	357	424	466
ACTUAL	21	93	102	173	258	296	340	289	321	359	410	

MANPOWER

BUDGET	12	12	13	11	11	11	17	20	22	19	18	19
ACTUAL	12	12	13	13	17	14	13	12	11	12	11	

One man added in September. Another man to arrive at end of September. New summary cost account established to reflect reorganization within the LOFT program.

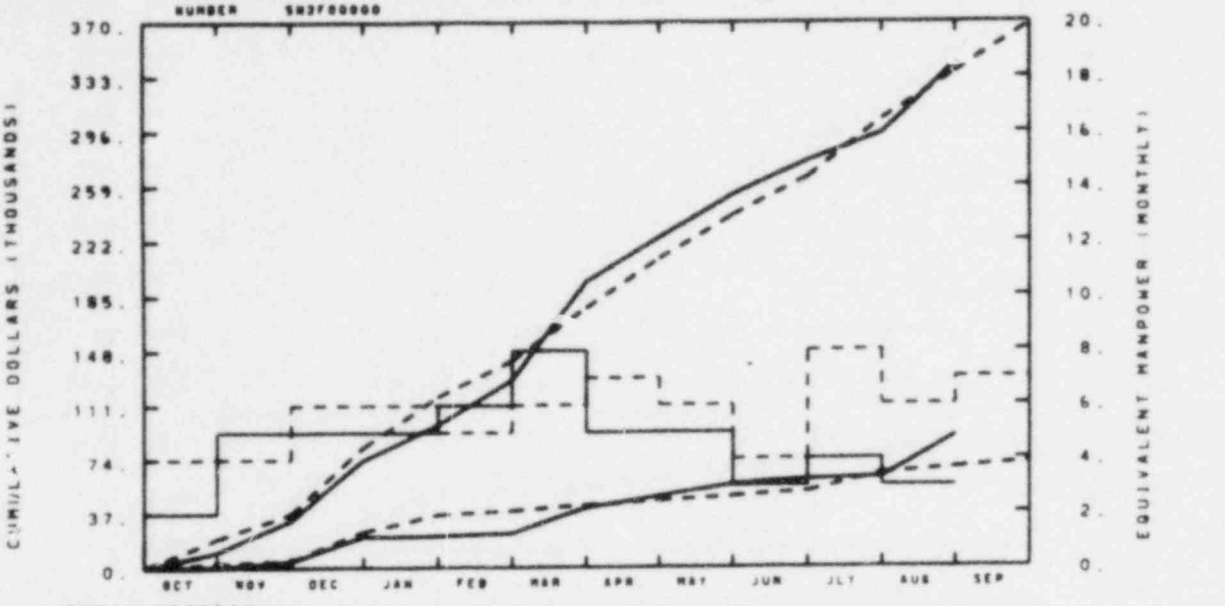


The overrun is caused by (1) transferring $478,000 to FY-81 as rollover (CCB 80-207) including the costs of the flow tests at Exxon, (2) incurring costs of flow tests ($145,000) and upper support structure fabrication ($51,000) in August instead of October, and (3) not withdrawing the costs of flow testing from the $58,000 accrual account balance. A CCF was submitted to return $218,000 of the rollover to FY-80 and an action to transfer a material change to the accrual account is planned. Plans call for the project to finish the year at no significant variance.

EG&G IDAHO INC.

POST TEST EXAM

NUMBER SN3780000



TOTAL PROGRAM

BUDGET	20	37	83	117	141	177	210	239	261	304	336	368
ACTUAL	11	33	74	98	128	195	224	253	276	295	342	

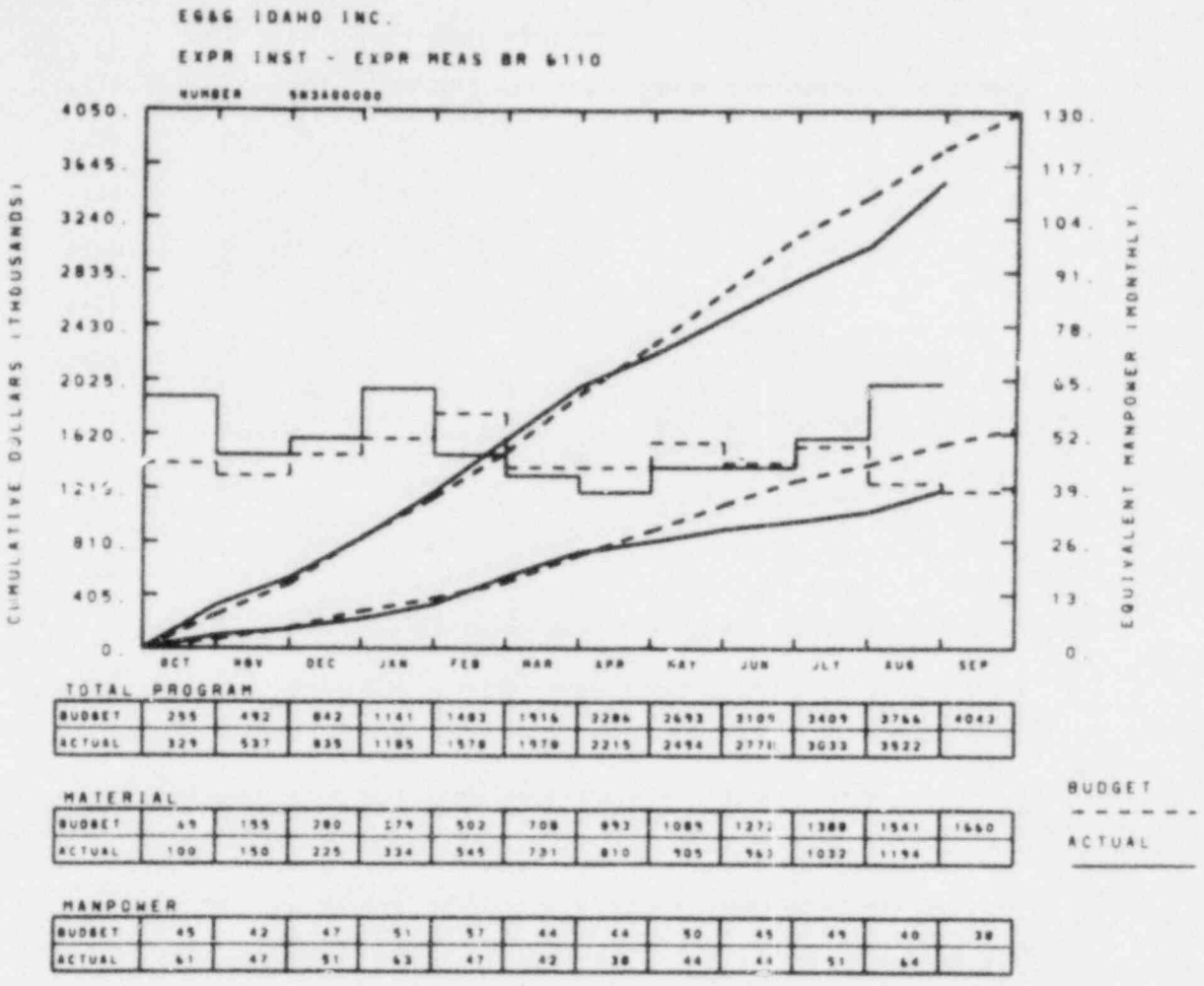
MATERIAL

BUDGET	3	5	35	36	39	42	46	48	52	64	67	71
ACTUAL	0	4	21	22	23	41	49	56	60	61	89	

MANPOWER

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

No significant variance.



TOTAL PROGRAM

BUDGET	255	492	842	1141	1483	1916	2286	2693	3109	3409	3766	4043
ACTUAL	329	537	835	1185	1578	1978	2215	2494	2770	3033	3522	

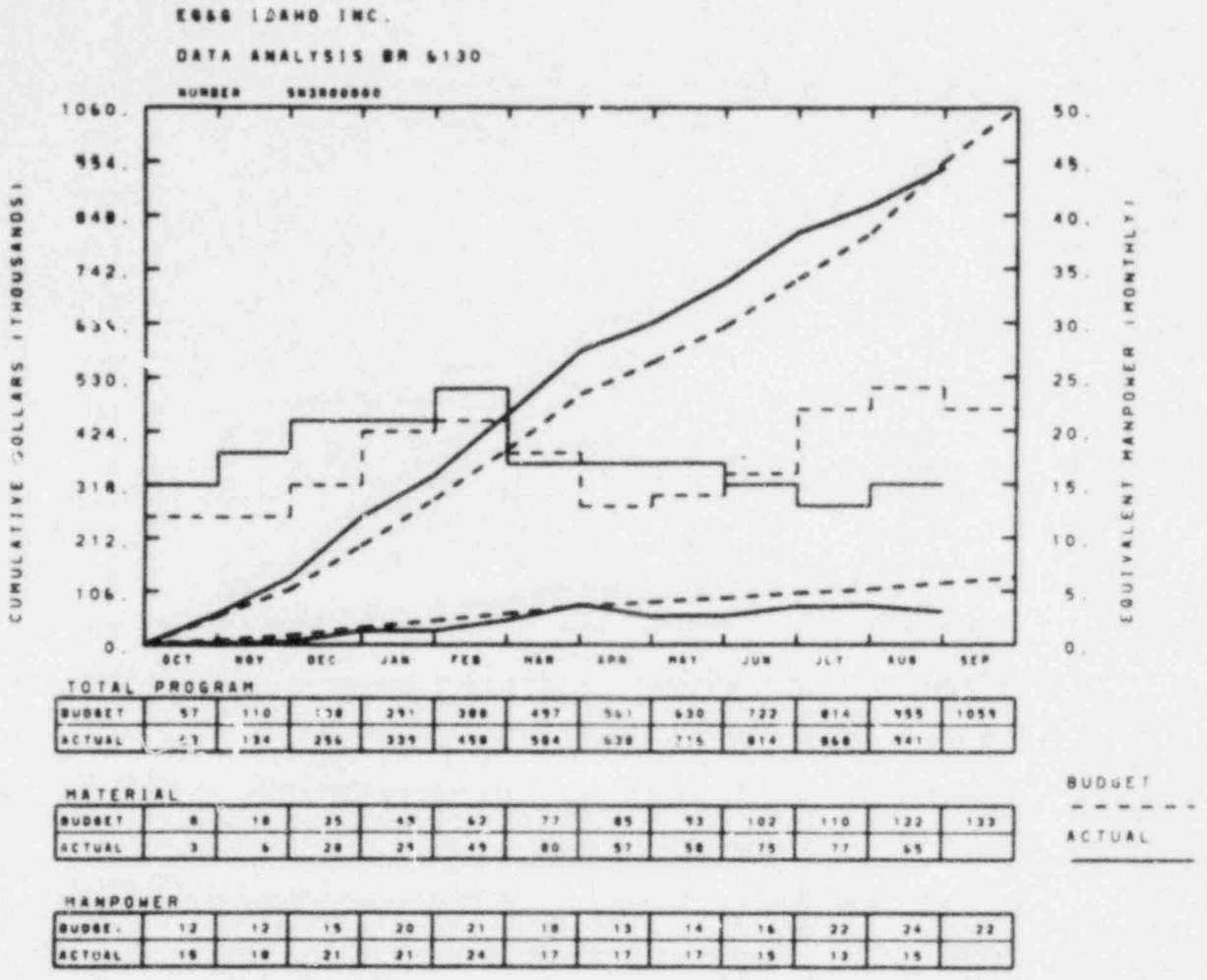
MATERIAL

BUDGET	69	155	280	379	502	708	893	1089	1272	1389	1541	1660
ACTUAL	100	150	225	334	545	731	810	905	963	1032	1194	

MANPOWER

BUDGET	45	42	47	51	57	44	44	50	45	49	40	38
ACTUAL	61	47	51	63	47	42	38	44	44	51	64	

No significant variance. Year-to-date cost under investigation for roll-up changes.



TOTAL PROGRAM

BUDGET	57	110	178	291	388	497	561	630	722	814	955	1059
ACTUAL	43	134	256	339	458	584	638	716	814	868	941	

MATERIAL

BUDGET	8	18	35	45	62	77	85	93	102	110	122	133
ACTUAL	3	6	28	29	49	80	57	58	75	77	65	

MANPOWER

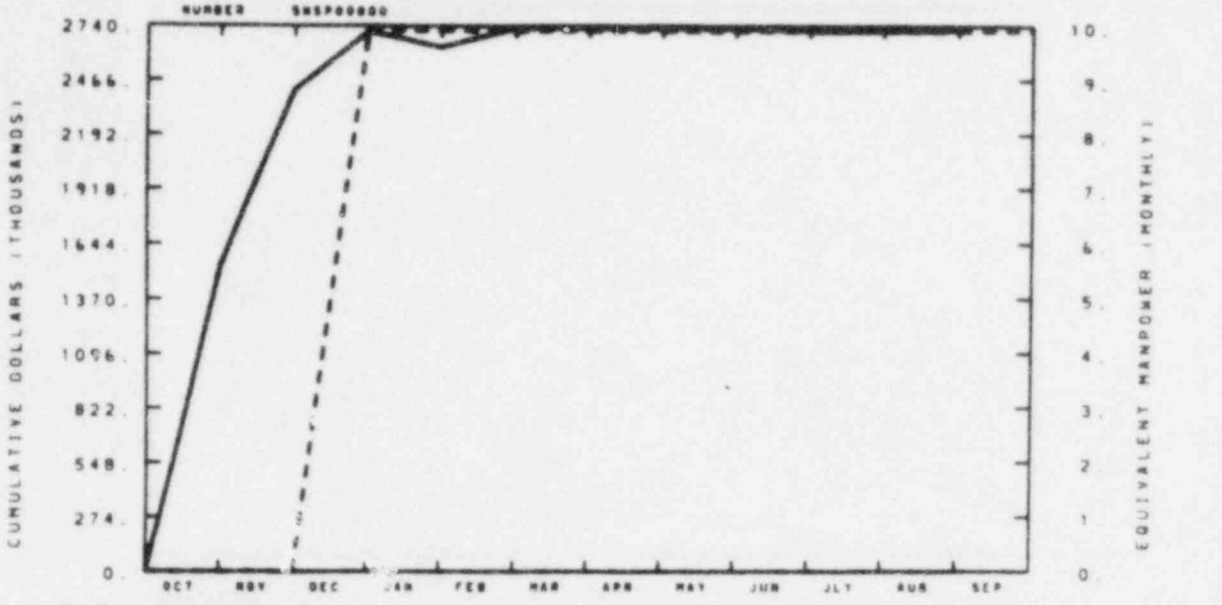
BUDGET	12	12	15	20	21	18	13	14	16	22	24	22
ACTUAL	15	18	21	21	24	17	17	17	15	13	15	

No significant variance. New summary cost account established to reflect reorganization within the LOFT program.

EG&G IDAHO INC.

SPECIAL PROCESS SPARES

NUMBER SNSP00000



TOTAL PROGRAM

BUDGET	0	0	2717	2717	2717	2717	2717	2717	2717	2717	2717	2717
ACTUAL	1535	2418	2713	2634	2730	2731	2731	2731	2717	2717	2722	

MATERIAL

BUDGET	0	0	2717	2717	2717	2717	2717	2717	2717	2717	2717	2717
ACTUAL	1535	2418	2713	2634	2730	2731	2731	2731	2717	2717	2722	

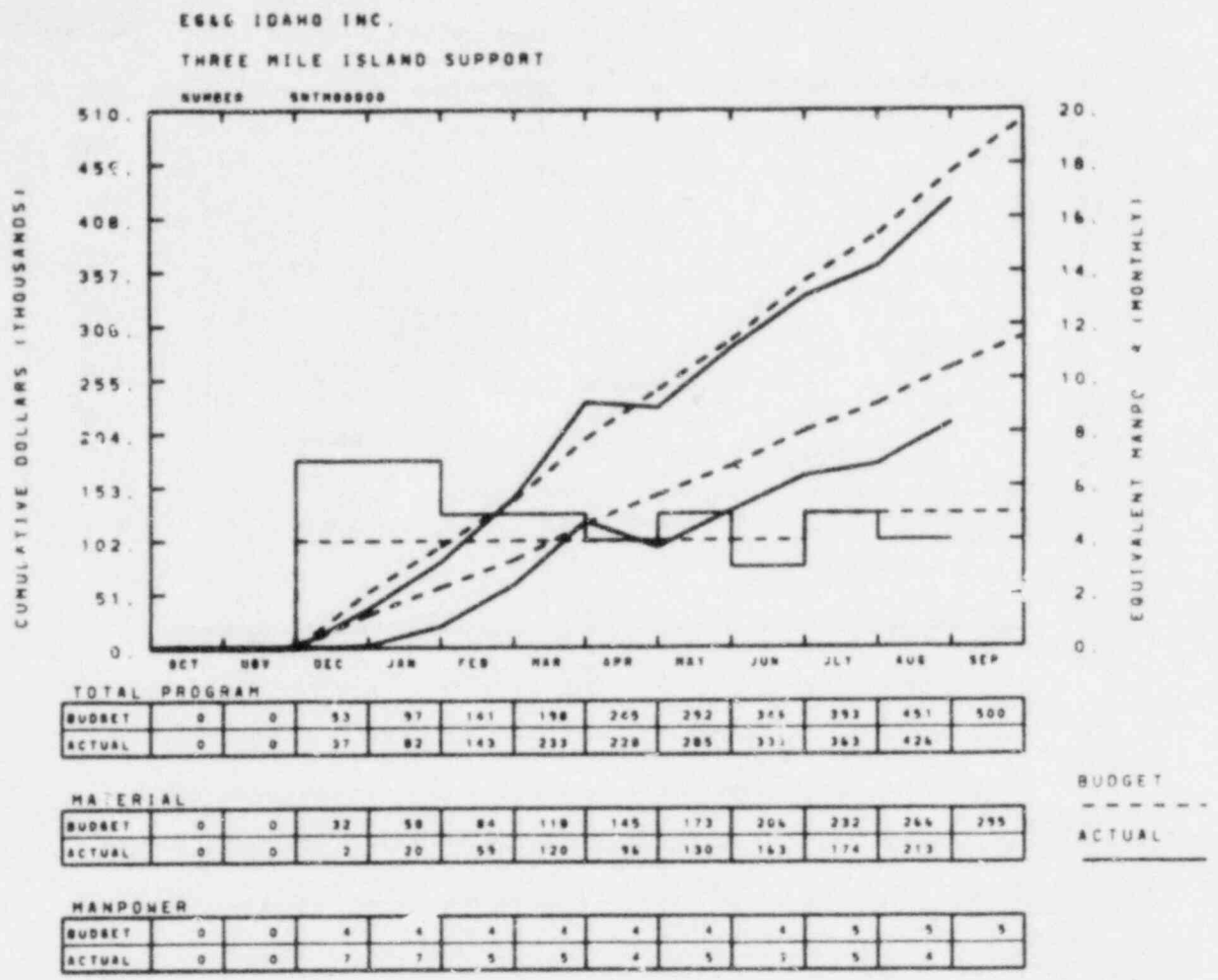
BUDGET - - - - - -

ACTUAL ———

MANPOWER

BUDGET	0	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	0	0	0	0	0	0	

No significant variance.



TOTAL PROGRAM

BUDGET	0	0	53	97	141	198	245	292	345	393	451	500
ACTUAL	0	0	37	82	143	233	228	285	331	363	426	

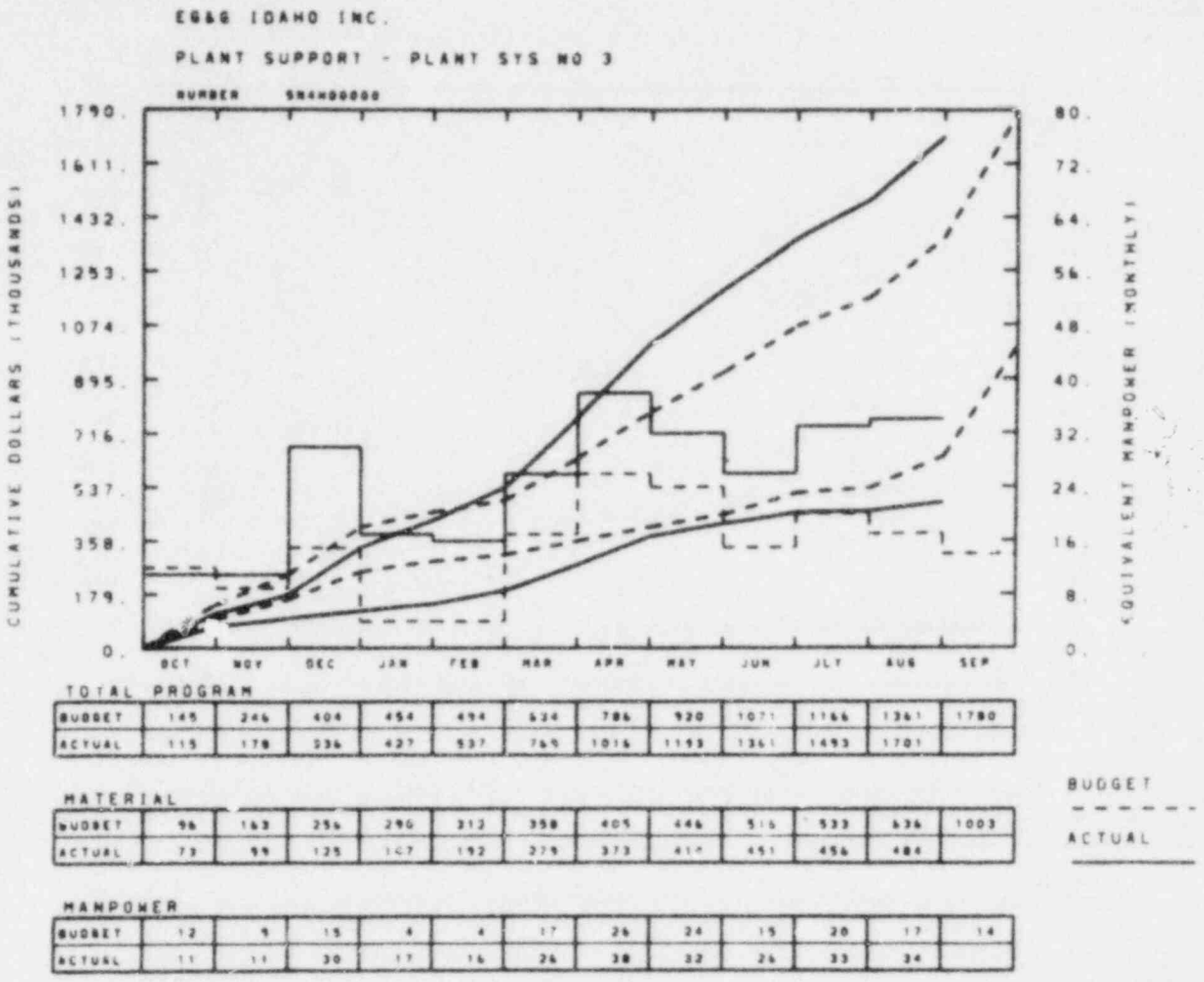
MATERIAL

BUDGET	0	0	32	58	84	118	145	173	204	232	266	295
ACTUAL	0	0	2	20	59	120	96	130	163	174	213	

MANPOWER

BUDGET	0	0	4	4	4	4	4	4	4	5	5	5
ACTUAL	0	0	7	7	5	5	4	5	3	5	4	

Accounting has under-accrued costs to 5TMI00100 by $21,000. ENICO shows $141,000 charged to this program through August; EG&G shows $120,000 charged.

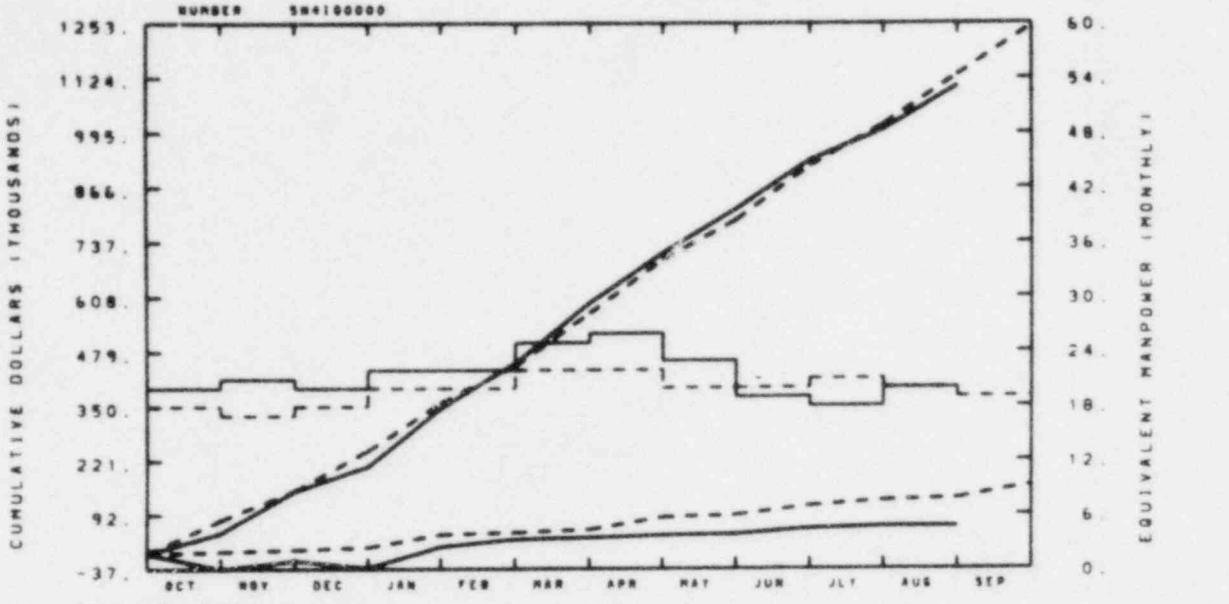


Accelerated test schedule required increased manpower allocation to accomplish planned modifications. All other nonessential work has been stopped. It is expected that this summary cost account will be approximately 6% overspent for fiscal year 1980.

EG&G IDAHO INC.

PLANT SUPPORT - PLANT SYS NO 1

NUMBER SN4100000



TOTAL PROGRAM

BUDGET	80	150	246	359	446	570	696	789	918	1015	1131	1247
ACTUAL	49	149	208	346	453	594	712	815	931	1003	1105	

MATERIAL

BUDGET	5	9	15	45	50	57	86	90	112	125	130	161
ACTUAL	-36	-16	-33	16	34	38	43	45	59	63	64	

MANPOWER

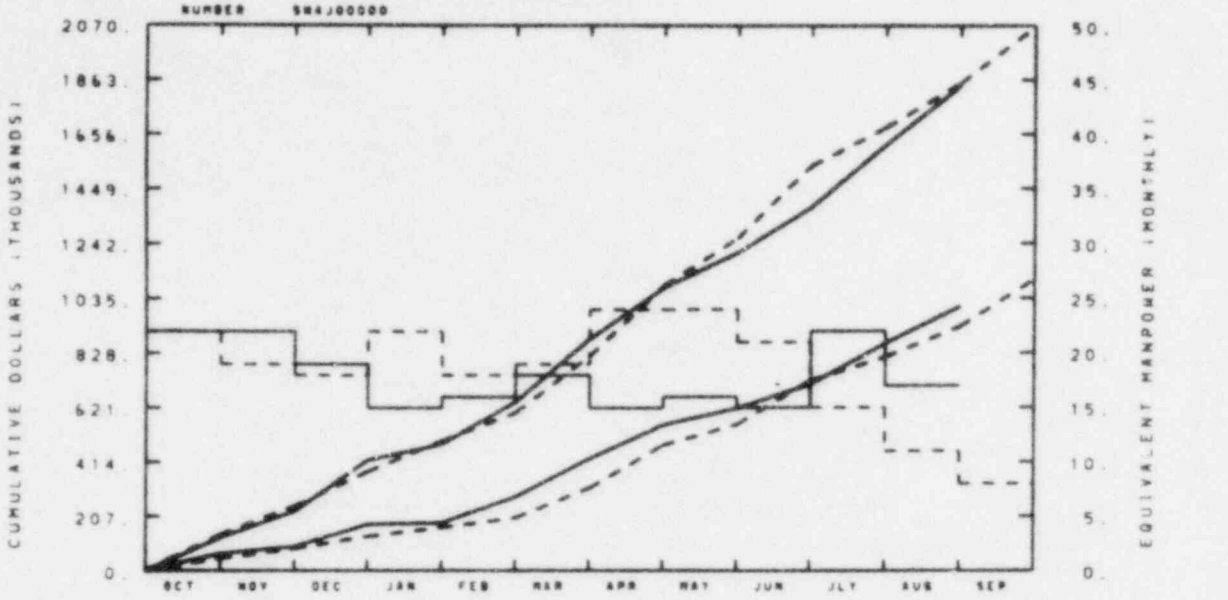
BUDGET	18	17	18	20	20	22	22	20	20	21	20	19
ACTUAL	20	21	30	22	23	25	26	23	19	18	20	

No significant variance.

EG&G IDAHO INC.

PLANT SUPPORT - PLANT SYS NO 2

NUMBER SW4J00000



TOTAL PROGRAM

BUDGET	138	246	378	495	603	818	1084	1263	1536	1682	1852	2066
ACTUAL	136	226	422	483	644	882	1076	1208	1378	1616	1843	

MATERIAL

BUDGET	47	84	131	164	202	315	479	558	723	813	928	1107
ACTUAL	65	92	177	182	282	428	556	619	709	865	1004	

MANPOWER

BUDGET	22	19	18	22	18	19	24	24	21	15	11	8
ACTUAL	22	22	19	15	16	18	15	16	15	22	17	

BUDGET - - - - - -

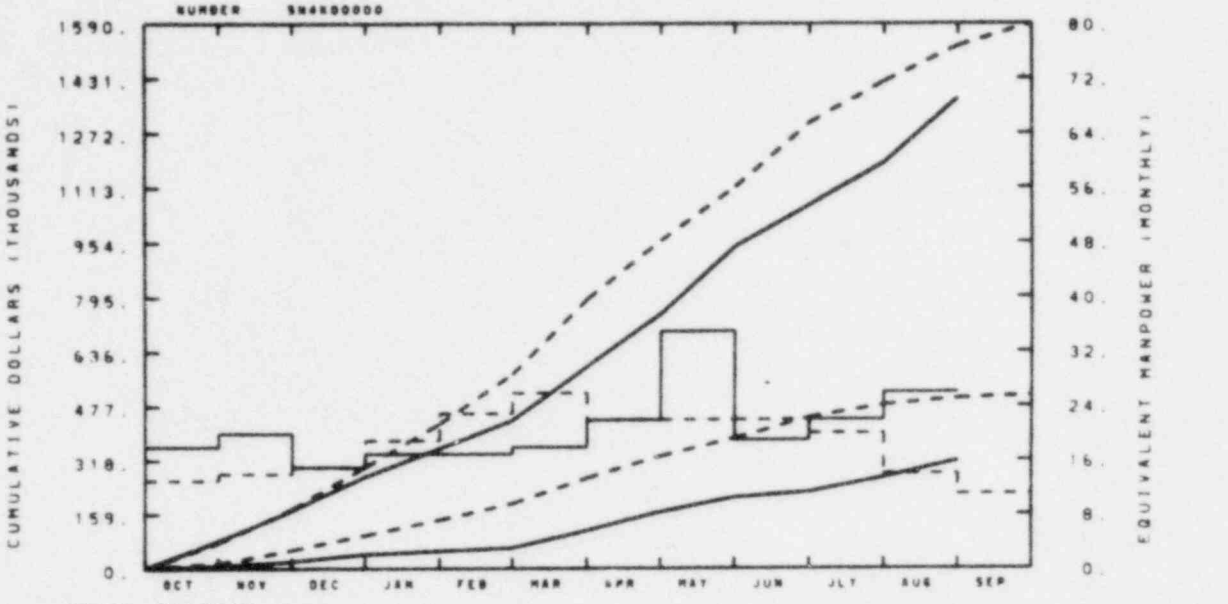
ACTUAL ———

No significant variance.

EG&G IDAHO INC.

PLANT SUPPORT - P&C REACTOR CONT

NUMBER SW4K00000



TOTAL PROGRAM

BUDGET	75	174	299	427	572	791	960	1115	1303	1423	1526	1590
ACTUAL	81	171	271	354	437	594	741	942	1063	1187	1374	

MATERIAL

BUDGET	14	54	98	143	191	266	330	382	443	480	498	507
ACTUAL	7	21	42	51	61	112	166	209	224	267	316	

MANPOWER

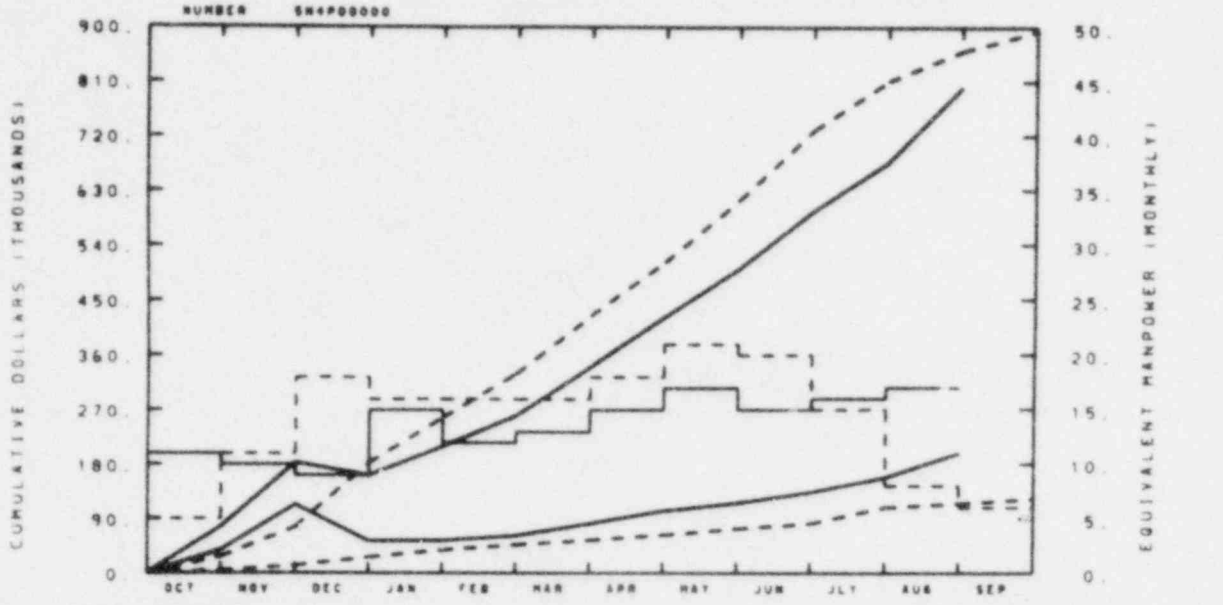
BUDGET	13	14	15	19	23	24	22	22	22	20	14	11
ACTUAL	18	20	15	17	17	18	22	35	19	22	24	

Corrective CCB action is in process to resolve variance.

EG&G IDAHO INC.

PLANT SUPPORT - P&C I&E SUPPORT

NUMBER SN4P00000



TOTAL PROGRAM

BUDGET	27	76	183	257	330	425	513	614	730	812	861	894
ACTUAL	77	183	162	210	261	341	423	502	595	67	801	

MATERIAL

BUDGET	5	12	26	38	47	55	63	74	82	108	115	122
ACTUAL	38	114	53	54	62	82	103	116	134	158	198	

MANPOWER

BUDGET	5	11	18	14	14	14	18	21	20	15	8	4
ACTUAL	11	10	9	15	12	13	15	17	15	14	11	

BUDGET

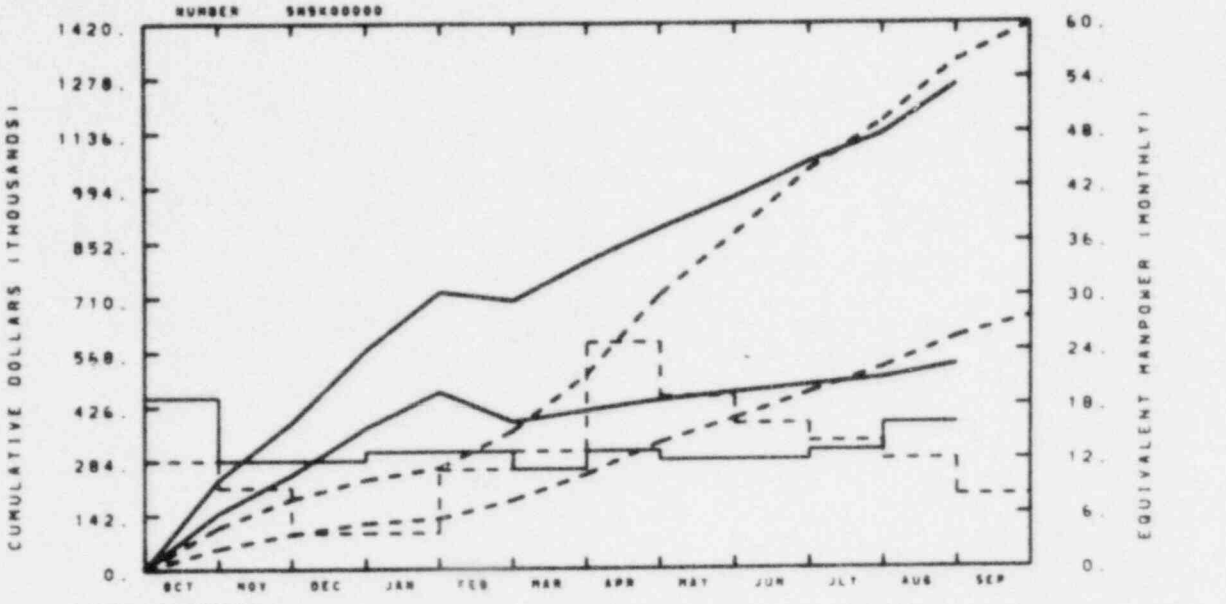
ACTUAL

Budget has been realigned to reflect current performance. No significant variance.

EG&G IDAHO INC.

CORE & SAFETY SUPT - PROT & CONT

NUMBER SN5K00000



TOTAL PROGRAM

BUDGET	110	184	234	264	362	508	715	873	1039	1166	1322	1415
ACTUAL	234	285	514	724	701	801	888	968	1060	1133	1260	

MATERIAL

BUDGET	55	91	120	192	179	246	329	392	455	523	607	653
ACTUAL	147	247	370	464	385	414	441	460	478	496	530	

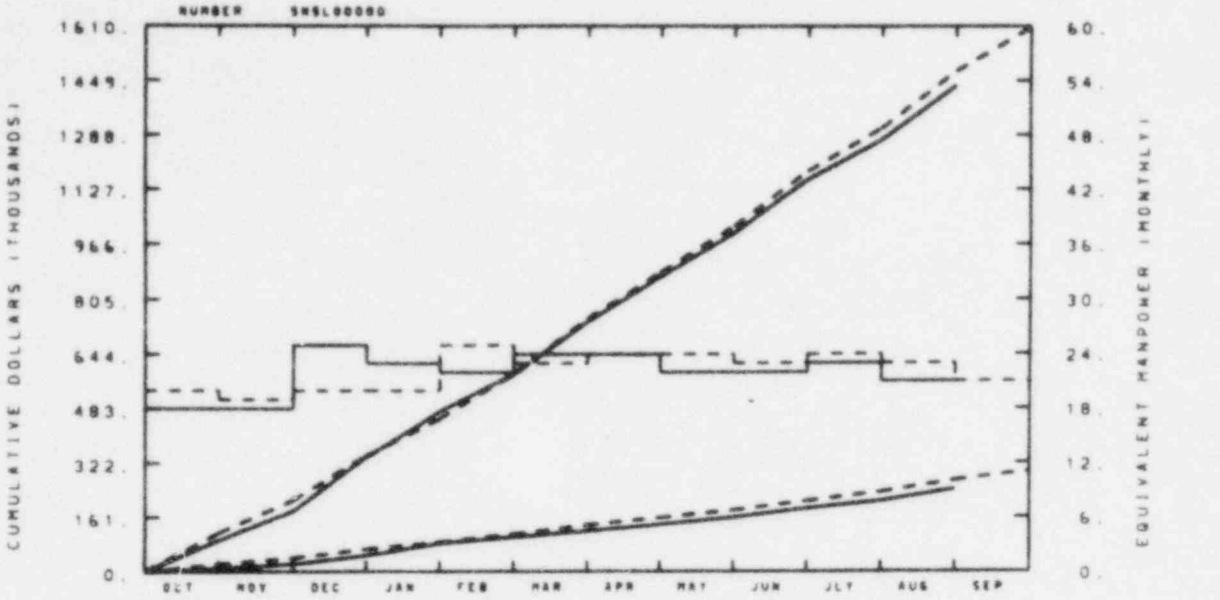
MANPOWER

BUDGET	12	9	4	4	11	13	25	19	16	14	12	8
ACTUAL	19	12	12	13	13	11	13	12	12	13	16	

No significant variance.

EG&G IDAHO INC.

CORE & SAFETY SUPT - REACTOR SYS



TOTAL PROGRAM

BUDGET	115	212	344	457	585	750	885	1019	1181	1309	1478	1606
ACTUAL	93	180	339	475	585	741	872	999	1156	1274	1435	

MATERIAL

BUDGET	22	41	66	87	111	138	160	182	209	235	270	296
ACTUAL	9	22	47	84	102	120	140	160	187	209	244	

MANPOWER

BUDGET	20	19	20	20	25	23	24	24	23	24	23	21
ACTUAL	18	18	25	23	22	24	24	22	22	23	21	

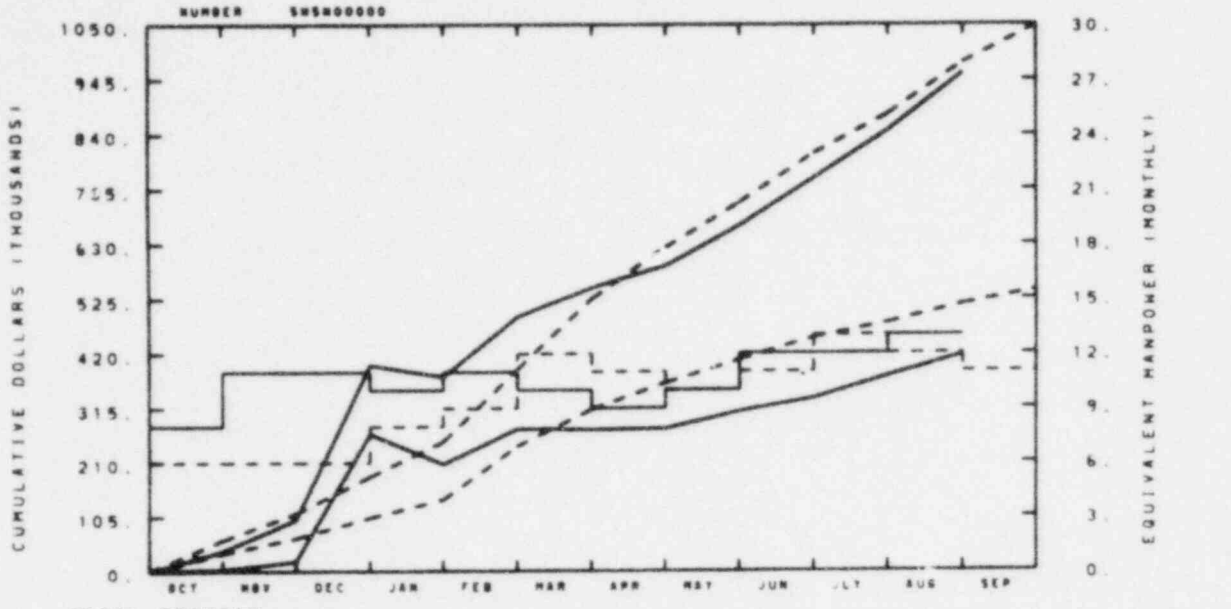
BUDGET

ACTUAL

No significant variance.

EG&G IDAHO INC.

CORE & SAFE SUPT - FUEL ENG & OP



TOTAL PROGRAM

BUDGET	60	112	183	251	390	526	624	709	804	879	977	1048
ACTUAL	39	100	398	376	491	546	588	665	756	147	957	

MATERIAL

BUDGET	35	64	104	138	242	313	363	407	450	478	513	540
ACTUAL	3	19	266	208	275	274	275	308	333	375	416	

MANPOWER

BUDGET	6	6	6	8	9	12	11	10	11	13	12	11
ACTUAL	8	11	11	10	11	10	9	10	12	12	13	

BUDGET

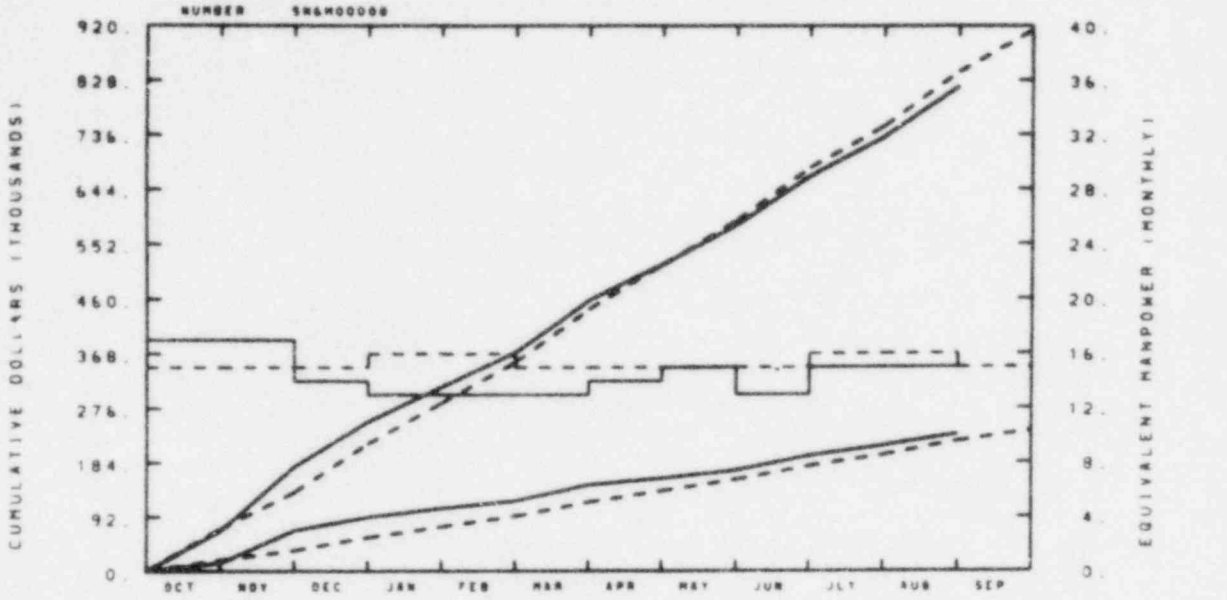
ACTUAL

No major variance indicated. Year-end closing should be as budgeted.

EG&G IDAHO INC.

COMMON SUPT - CDCS/TECH SUPPORT

NUMBER SN&M00000



TOTAL PROGRAM

BUDGET	72	133	216	285	353	444	517	591	680	750	842	913
ACTUAL	68	177	254	312	370	458	518	584	666	732	817	

MATERIAL

BUDGET	19	35	57	75	93	117	136	155	178	196	219	238
ACTUAL	14	69	92	106	119	146	157	170	195	212	231	

MANPOWER

BUDGET	15	15	15	14	14	15	15	15	15	14	14	15
ACTUAL	17	17	14	13	13	13	14	15	13	15	15	

BUDGET - - - - - -

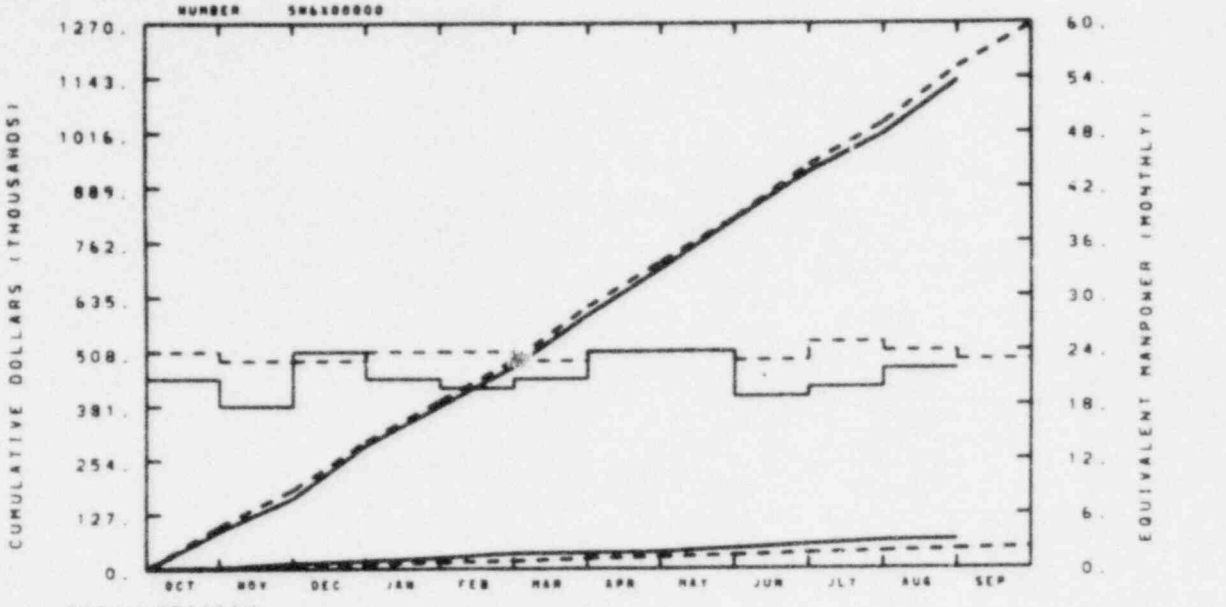
ACTUAL ———

No significant variance.

EG&G IDAHO INC.

COMMON SUPT - QUALITY

NUMBER SW&X00000



TOTAL PROGRAM

BUDGET	100	184	299	394	488	613	716	818	942	1039	1168	1266
ACTUAL	88	164	289	381	473	593	700	815	926	1014	1137	

MATERIAL

BUDGET	4	7	12	15	19	24	27	31	36	40	44	48
ACTUAL	3	13	18	26	36	37	39	47	55	64	67	

MANPOWER

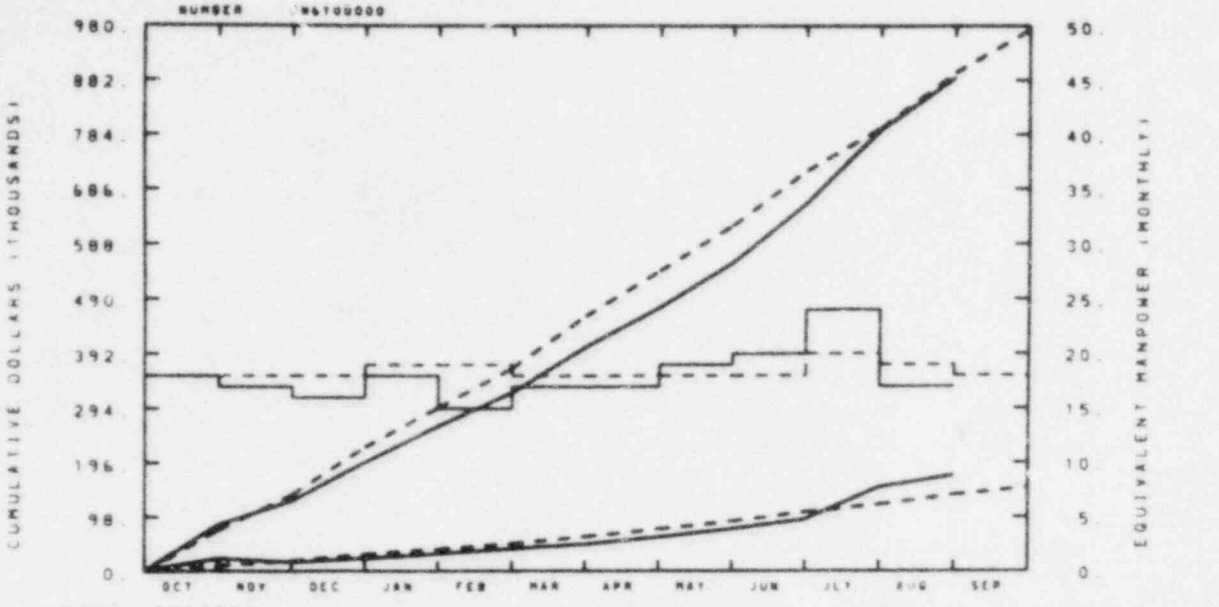
BUDGET	24	23	23	24	24	23	24	24	23	25	24	23
ACTUAL	21	18	24	21	20	21	24	24	19	20	22	

No significant variance.

EG&G IDAHO INC.

COMMON SUPT - PLANS & BUDGETS

NUMBER N6100000



TOTAL PROGRAM

BUDGET	75	138	224	295	366	460	540	621	718	795	896	973
ACTUAL	84	126	197	262	323	404	475	555	660	792	887	

MATERIAL

BUDGET	10	19	30	40	50	62	76	90	107	120	138	151
ACTUAL	23	6	23	32	40	49	61	77	93	151	173	

MANPOWER

BUDGET	18	18	18	19	19	18	18	18	18	20	19	18
ACTUAL	18	17	16	18	15	17	17	19	20	24	17	

BUDGET

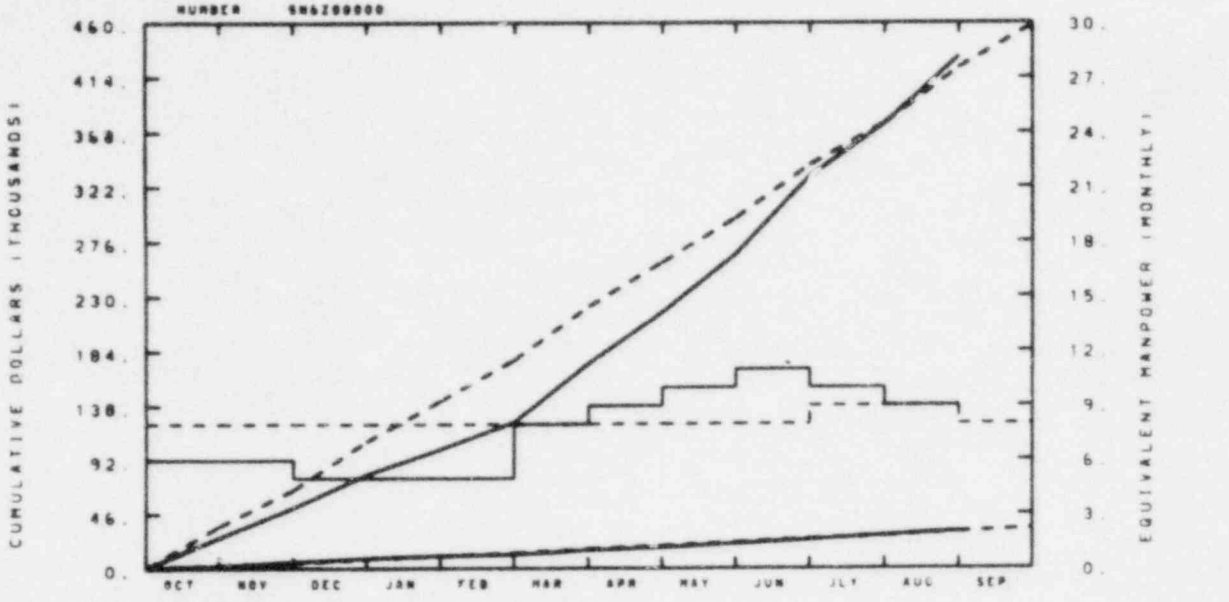
ACTUAL

No significant variance. Overutilization of computer dollars due to accelerated planning schedule in order to accomplish FY-1980 and FY-1981 baseline budgets.

EG&G IDAHO INC.

COMMON SUPT - SAFETY

NUMBER SN6Z00000



TOTAL PROGRAM

BUDGET	36	67	109	142	177	222	259	296	341	376	422	458
ACTUAL	26	51	80	102	124	174	217	266	331	376	432	

MATERIAL

BUDGET	3	5	8	11	13	16	19	22	25	28	31	33
ACTUAL	2	5	9	11	12	16	18	21	24	28	31	

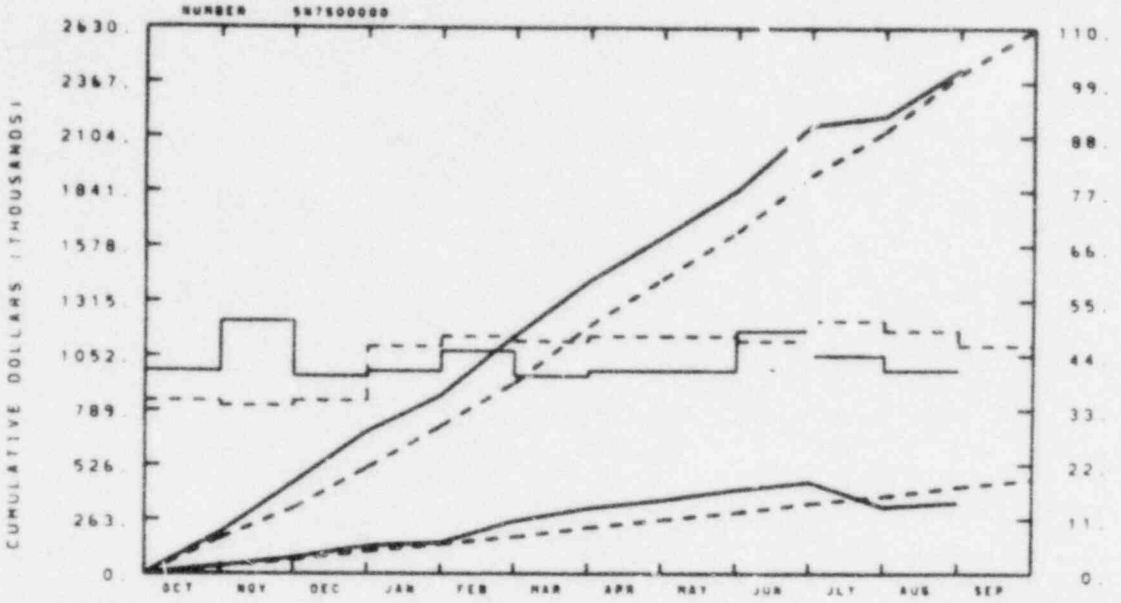
MANPOWER

BUDGET	8	8	8	8	8	8	8	9	8	9	9	8
ACTUAL	6	6	5	5	5	8	9	10	11	10	9	

No significant variance.

EG&G IDAHO INC.

LOFT OPERATIONS BRANCH



TOTAL PROGRAM

BUDGET	171	317	513	714	923	1196	1422	1617	1917	2131	2412	2626
ACTUAL	199	441	689	862	1149	1413	1624	1847	2159	2205	2432	

MATERIAL

BUDGET	36	67	109	143	170	223	260	296	340	374	420	454
ACTUAL	38	78	134	150	254	317	356	406	443	323	343	

MANPOWER

BUDGET	35	34	33	46	48	47	48	48	47	51	49	46
ACTUAL	41	51	40	41	45	40	41	41	49	44	41	

BUDGET

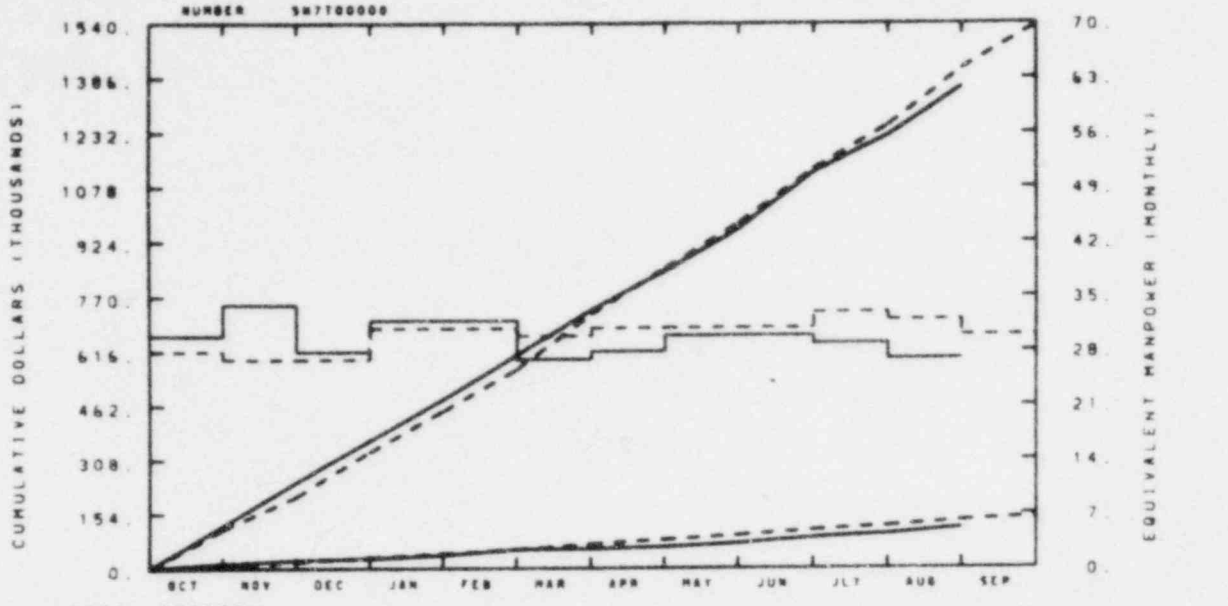
ACTUAL

No significant variance.

EG&G IDAHO INC.

LOFT TEST & DATA

NUMBER SW7700000



TOTAL PROGRAM

BUDGET	111	205	332	448	566	722	849	977	1131	1252	1412	1534
ACTUAL	121	246	364	481	607	734	842	962	1122	1224	1362	

MATERIAL

BUDGET	10	19	31	42	54	69	81	93	107	119	134	145
ACTUAL	14	24	28	37	54	55	60	70	87	96	113	

MANPOWER

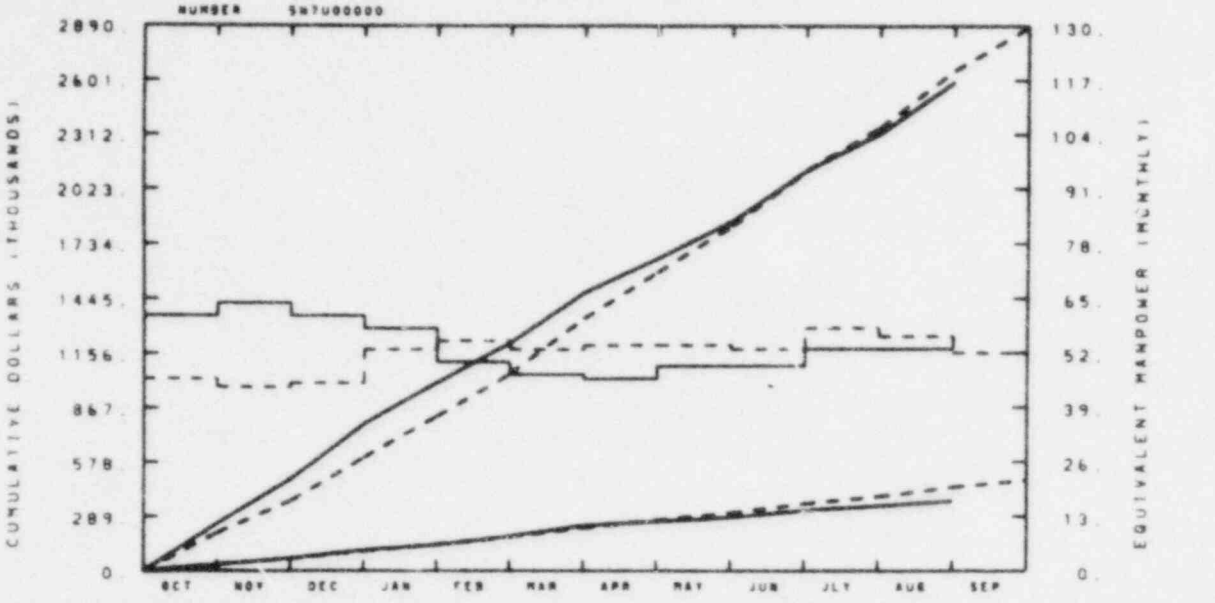
BUDGET	28	27	27	31	31	30	31	31	31	33	32	30
ACTUAL	30	34	28	32	32	27	28	30	30	29	27	

No significant variance.

EG&G IDAHO INC.

LOFT FACILITY SUPPORT

NUMBER SN7U00000



TOTAL PROGRAM

BUDGET	201	372	604	833	1048	1343	1586	1828	2120	2350	2654	2884
ACTUAL	291	489	783	1002	1211	1479	1650	1854	2120	2319	2591	

MATERIAL

BUDGET	35	65	105	142	180	229	269	309	356	394	444	481
ACTUAL	33	67	111	138	184	242	263	284	321	345	371	

BUDGET - - - - - -

ACTUAL ———

MANPOWER

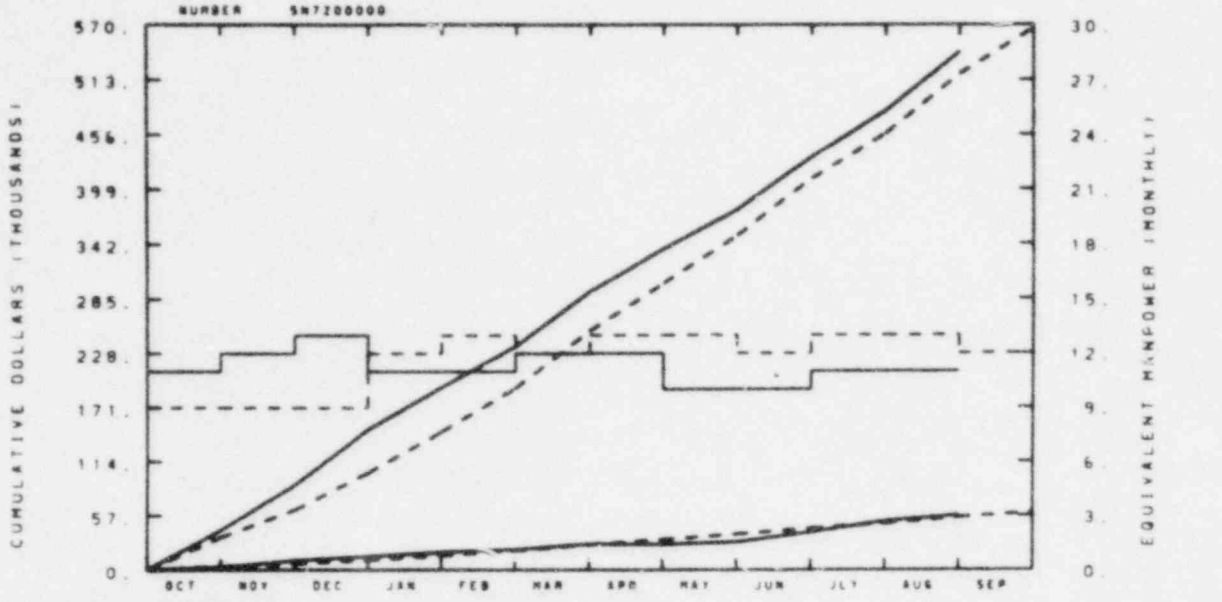
BUDGET	46	44	45	53	55	53	54	54	53	58	56	52
ACTUAL	61	64	61	58	50	47	46	49	49	53	53	

No significant variance.

EG&G IDAHO INC.

OUTSIDE SERVICE SUPPORT

NUMBER SN7200000



TOTAL PROGRAM

BUDGET	34	63	102	146	192	252	301	351	410	457	519	566
ACTUAL	42	89	143	193	235	293	337	378	433	481	542	

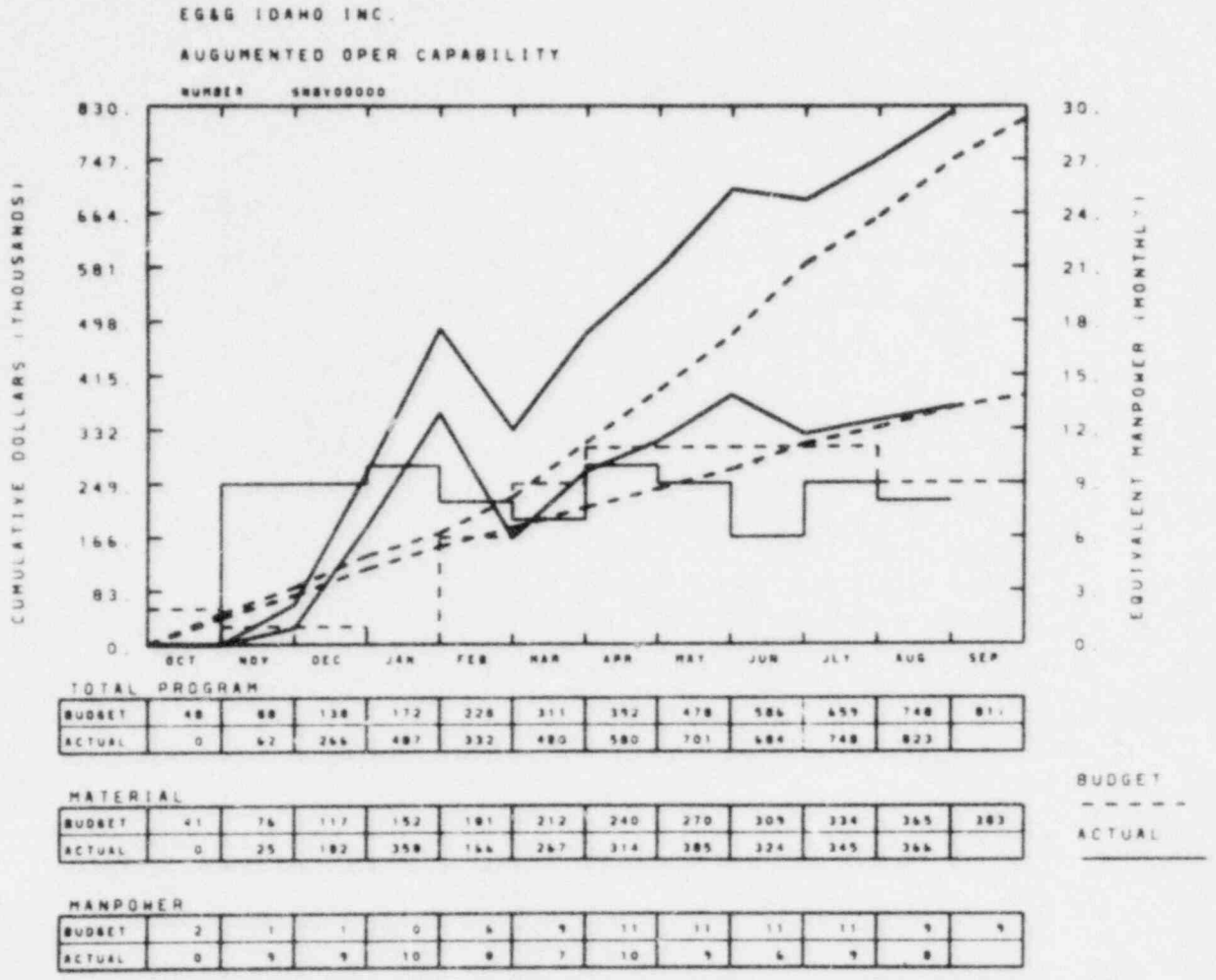
MATERIAL

BUDGET	3	6	10	15	20	27	32	37	44	49	55	60
ACTUAL	3	10	14	19	22	27	27	29	39	51	57	

MANPOWER

BUDGET	9	9	9	12	13	12	13	13	12	13	13	12
ACTUAL	11	12	13	11	11	12	12	10	10	11	11	

No significant variance.



TOTAL PROGRAM

BUDGET	48	88	138	172	228	311	392	478	586	659	748	81.
ACTUAL	0	62	266	407	332	480	580	701	684	748	823	

MATERIAL

BUDGET	41	76	117	152	181	212	240	270	309	334	365	383
ACTUAL	0	25	182	358	144	267	314	385	324	345	366	

MANPOWER

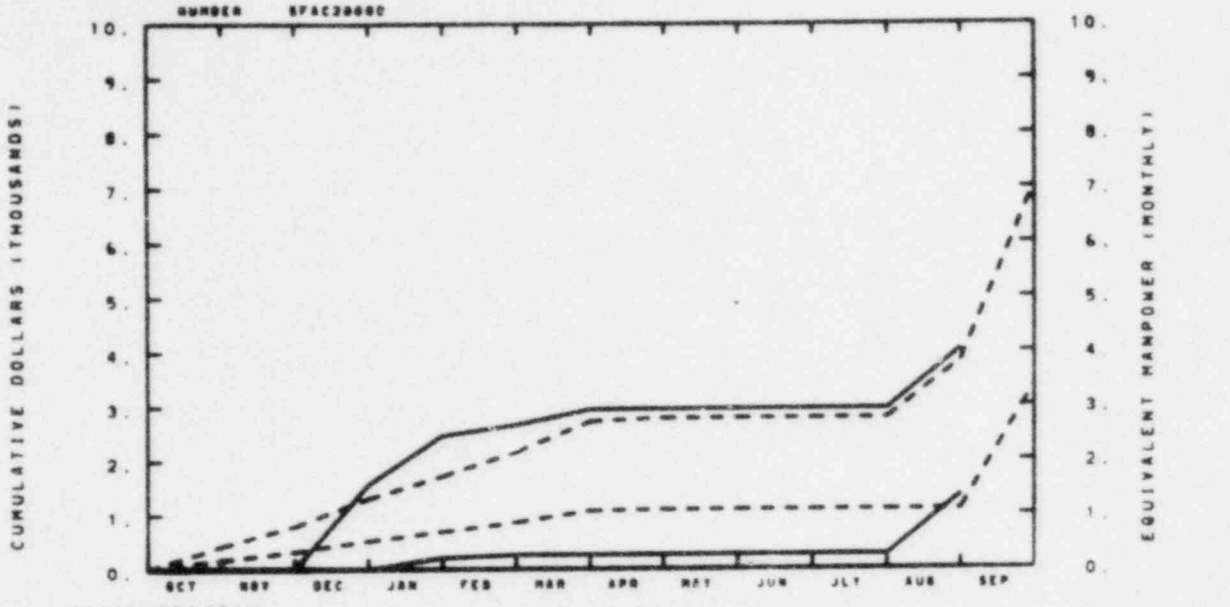
BUDGET	2	1	1	0	6	9	11	11	11	11	9	9
ACTUAL	0	9	9	10	0	7	10	9	6	9	8	

Management recovery plan in process to limit the potential overrun of approximately $65,000 (A6108). CTR display design and evaluation (A6308) task reflects an underrun of $40,000.

EG&G IDAHO INC.

PROGRAM DEVELOPMENT & ANALYSIS

NUMBER SFAC20000



TOTAL PROGRAM

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

MATERIAL

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

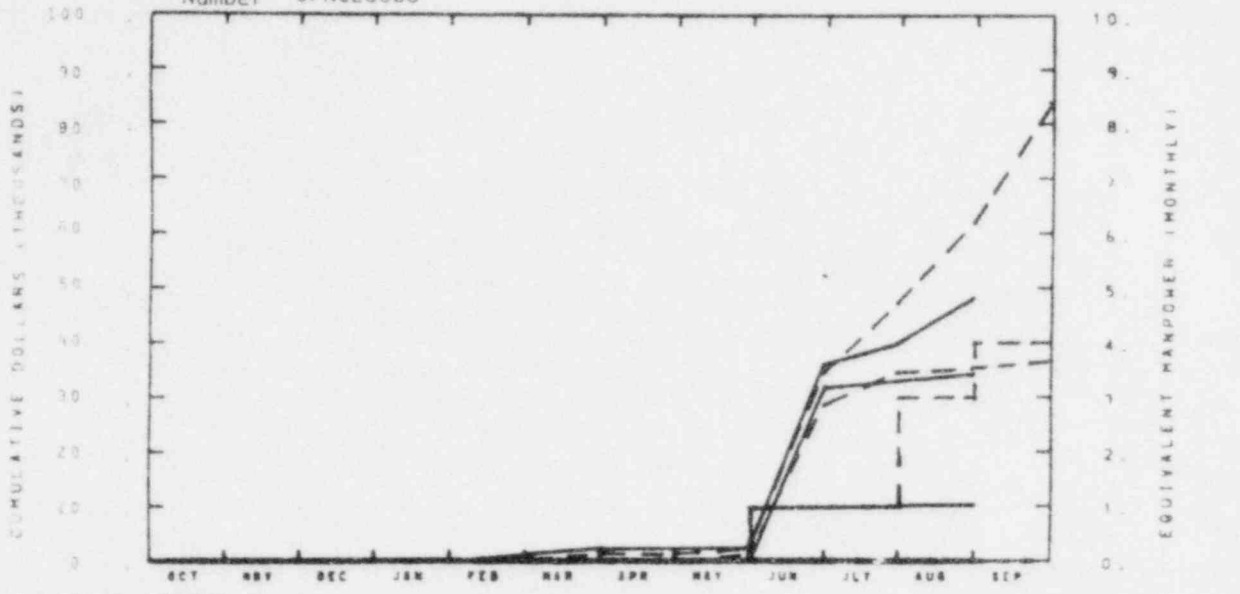
MANPOWER

BUDGET	0	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	0	0	0	0	0	0	

N gnificant variance.

EG&G Idaho, Inc.
Program Development and Analysis

Number 5FNC20000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	1	1	2	35	47	62	84	
ACTUAL	0	0	0	0	1	2	2	2	16	40	48		

MATERIAL

BUDGET	0	0	0	0	0	0	0	1	29	34	35	37	
ACTUAL	0	0	0	0	0	0	0	0	32	33	34		

MANPOWER

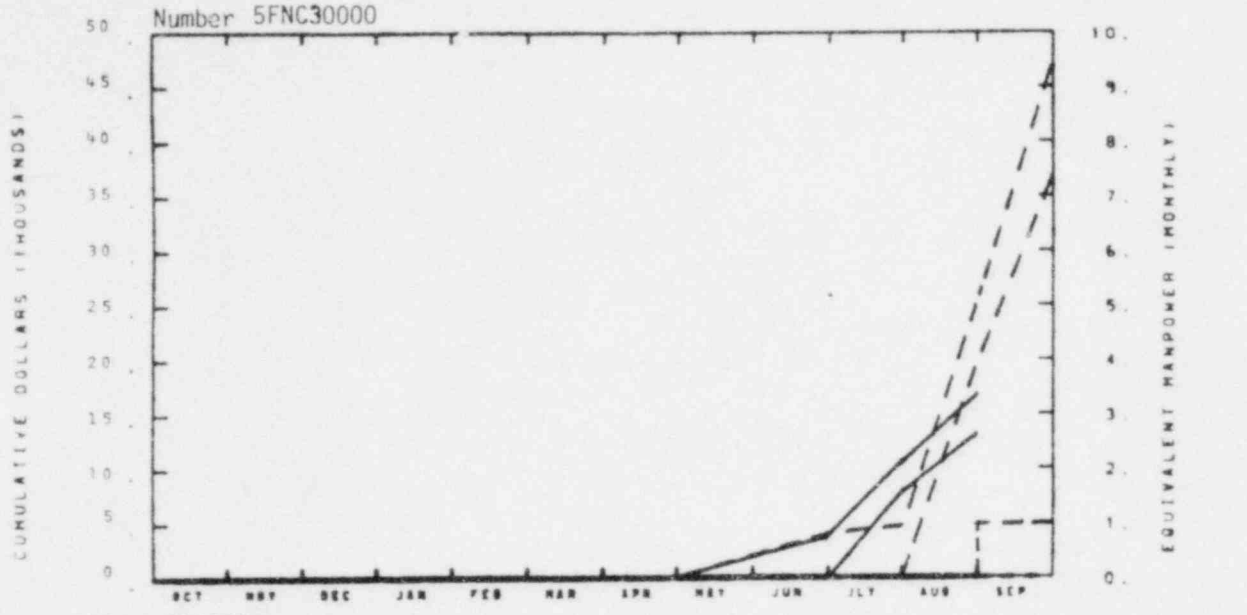
BUDGET	0	0	0	0	0	0	0	0	1	1	1	4	
ACTUAL	0	0	0	0	0	0	0	0	1	1	1		

BUDGET
ACTUAL

Variance is due to manpower unavailability.

EG&G Idaho, Inc.
Component Development

Number 5FNC30000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	0	2	4	5	25	47
ACTUAL	0	0	0	0	0	0	0	2	4	11	17	

MATERIAL

BUDGET	0	0	0	0	0	0	0	0	0	0	19	37
ACTUAL	0	0	0	0	0	0	0	0	0	8	13	

MANPOWER

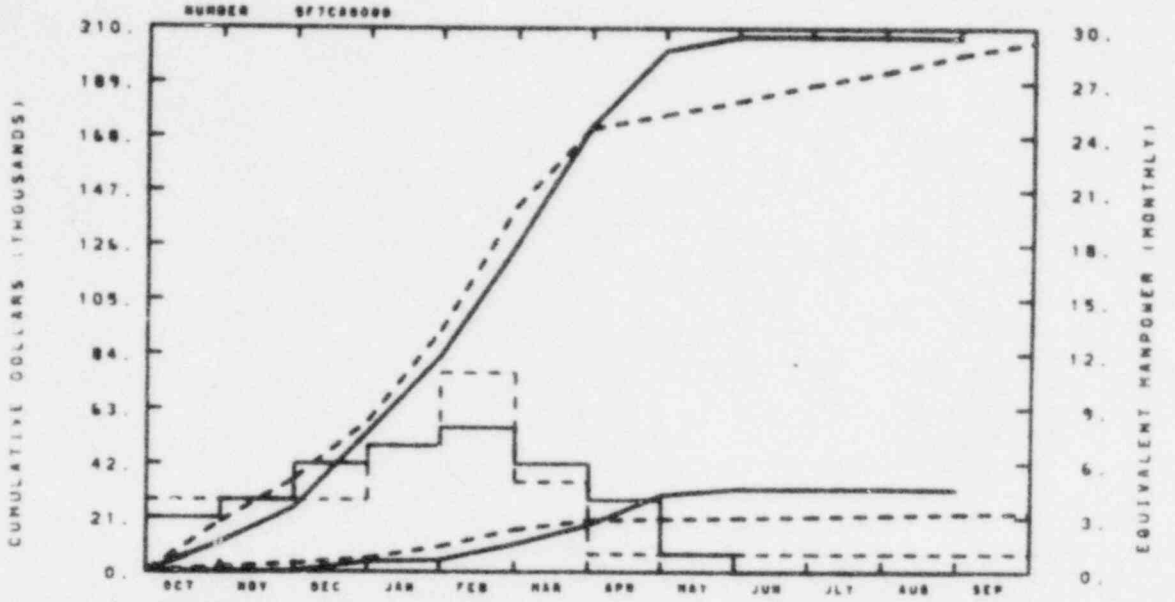
BUDGET	0	0	0	0	0	0	0	0	0	0	0	1
ACTUAL	0	0	0	0	0	0	0	0	0	0	0	

Variance is due to subcontractor billing delays.

EG&G IDAHO INC.

SMALL BREAK INSTRUMENTS

NUMBER SF7C06000



TOTAL PROGRAM

BUDGET	19	35	59	93	141	171	177	182	186	193	200	205
ACTUAL	11	25	54	83	126	172	201	207	207	207	206	

MATERIAL

BUDGET	2	3	5	10	16	20	21	21	22	22	22	23
ACTUAL	0	0	4	5	11	18	30	32	32	32	32	

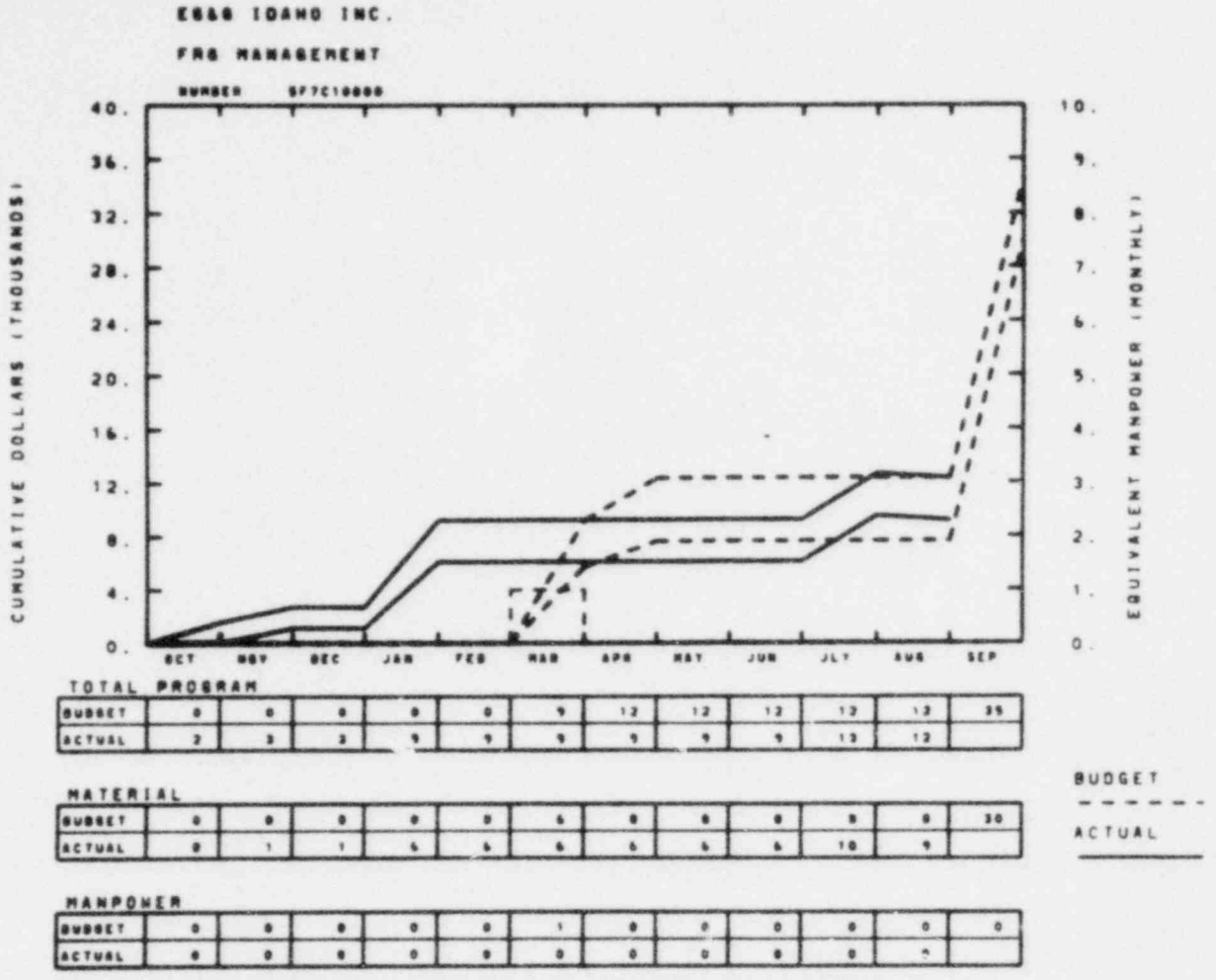
MANPOWER

BUDGET	4	4	4	7	11	6	1	1	1	1	1	1
ACTUAL	3	4	6	7	8	6	4	1	0	0	0	

BUDGET - - - - - -

ACTUAL ———

No significant variance.



TOTAL PROGRAM

BUDGET	0	0	0	0	0	9	12	12	12	13	13	35
ACTUAL	2	3	3	9	9	9	9	9	9	13	12	

MATERIAL

BUDGET	0	0	0	0	0	6	0	0	0	0	0	30
ACTUAL	0	1	1	6	6	6	6	6	6	10	9	

MANPOWER

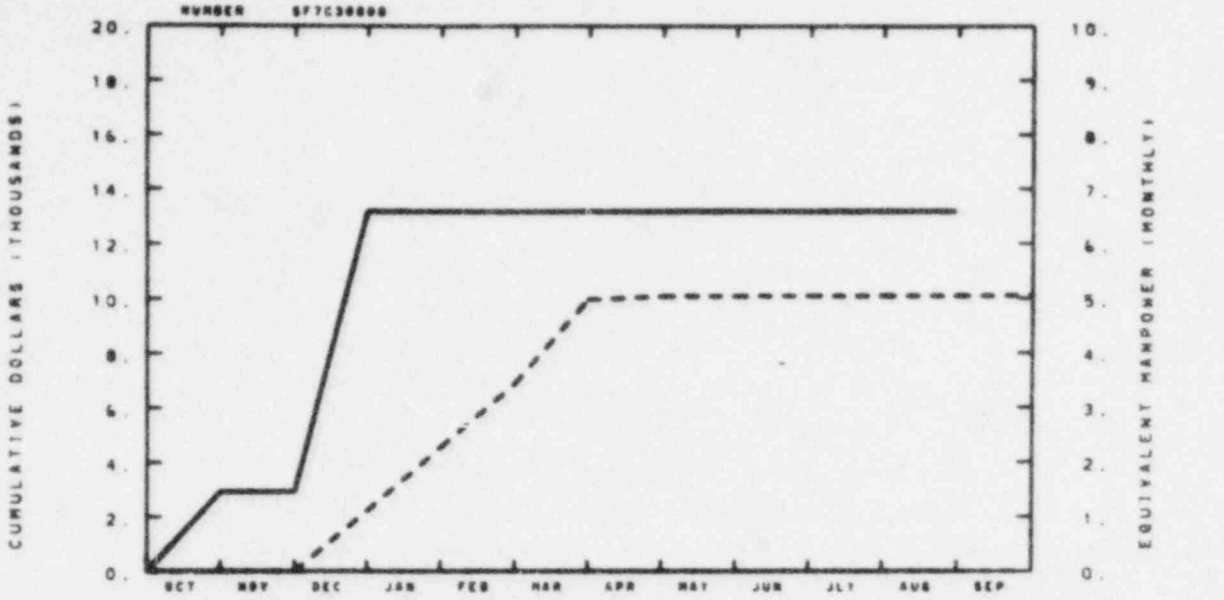
BUDGET	0	0	0	0	0	1	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	0	0	0	0	0	1	

No significant variance.

EG&G IDAHO INC.

FUEL INSTRUMENTS

NUMBER SF7C30000



TOTAL PROGRAM

BUDGET	0	0	2	5	7	10	10	10	10	10	10	10
ACTUAL	3	3	13	13	13	13	13	13	13	13	13	

MATERIAL

BUDGET	0	0	2	5	7	10	10	10	10	10	10	10
ACTUAL	3	3	13	13	13	13	13	13	13	13	13	

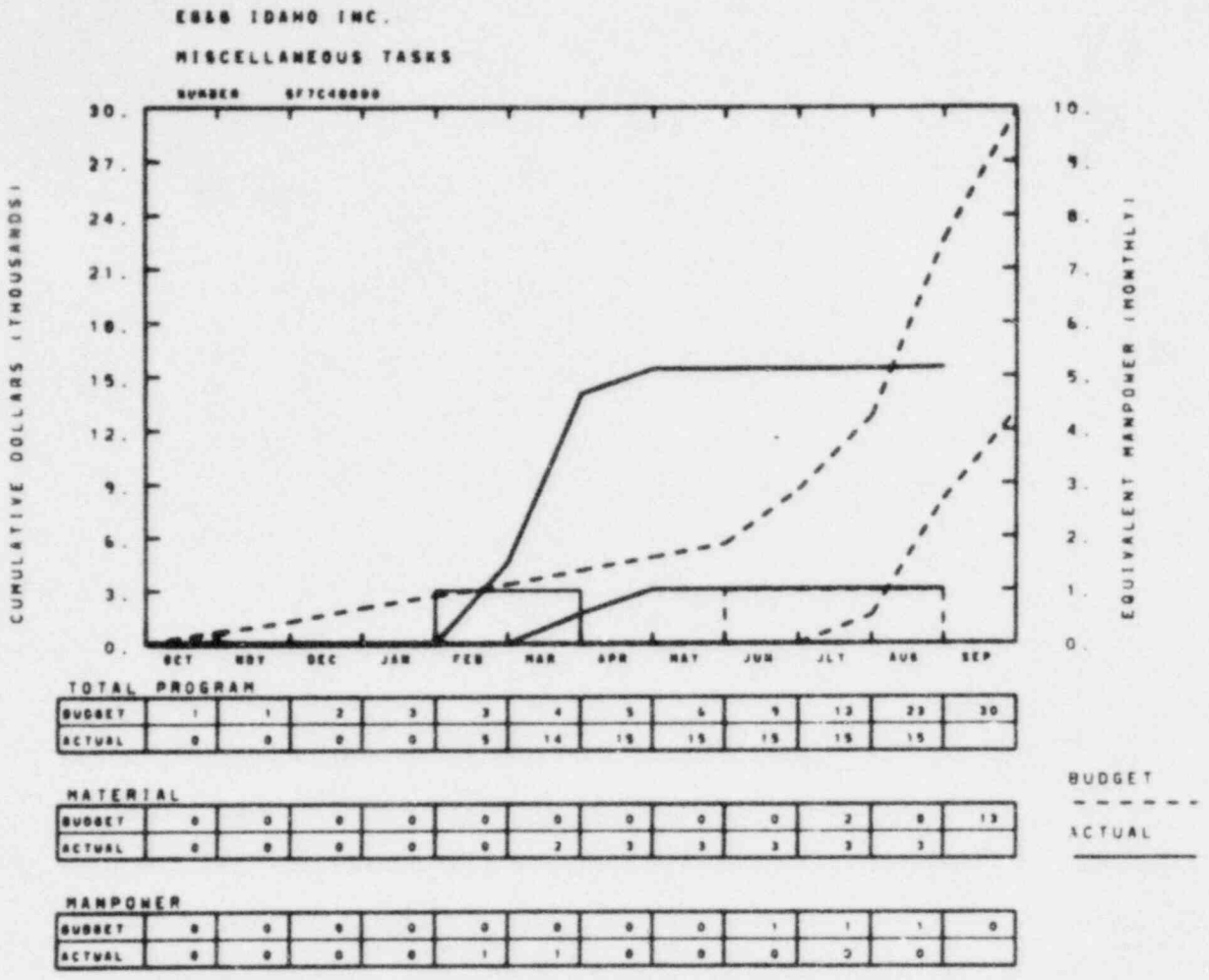
MANPOWER

BUDGET	0	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	0	0	0	0	0	0	

BUDGET - - - - - -

ACTUAL ———

No significant variance.



TOTAL PROGRAM

BUDGET	1	1	2	3	3	4	5	6	9	13	23	30
ACTUAL	0	0	0	0	5	14	15	15	15	15	15	

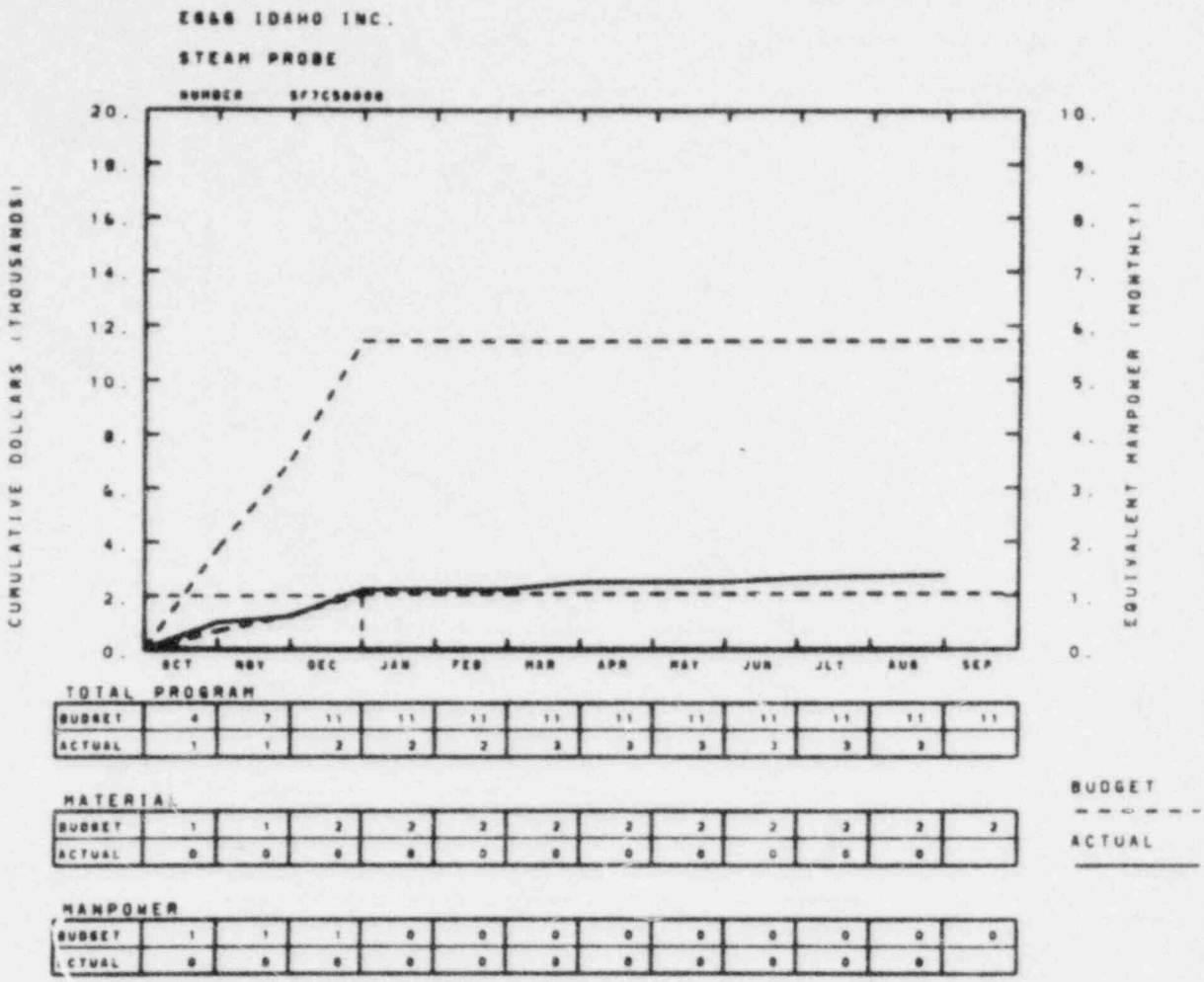
MATERIAL

BUDGET	0	0	0	0	0	0	0	0	0	2	8	13
ACTUAL	0	0	0	0	0	2	3	3	3	3	3	

MANPOWER

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

Work on vessel requalification will be scheduled in FY-81.

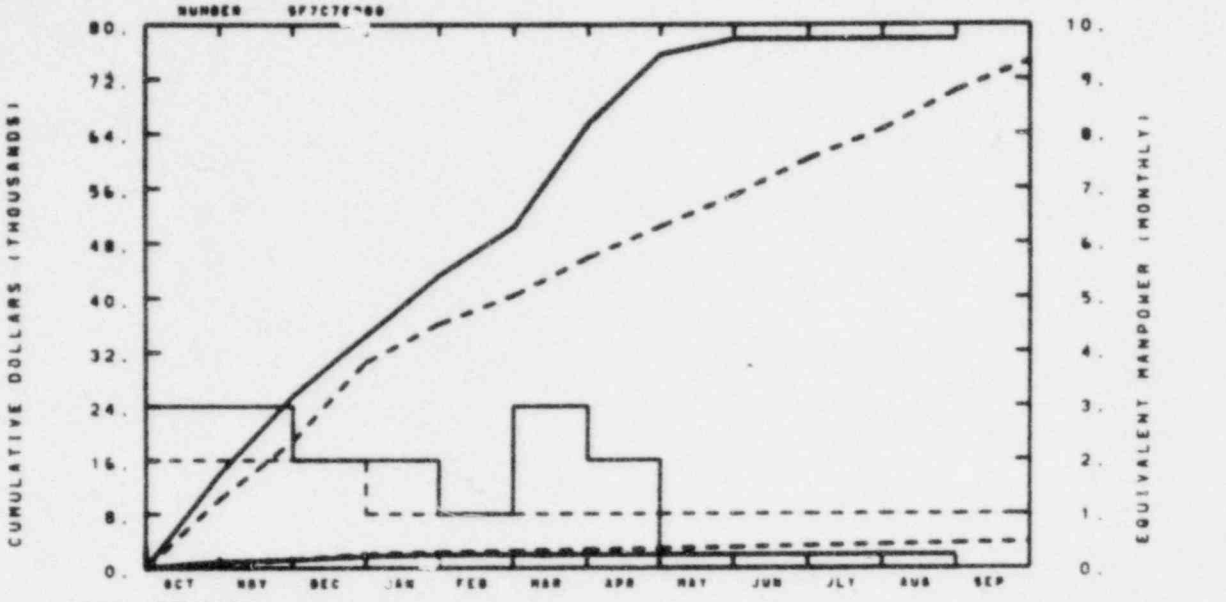


Inactive task.

EG&G IDAHO INC.

ULTRASONIC DENSITY DETECTOR

NUMBER [illegible]



TOTAL PROGRAM

BUDGET	10	19	31	35	40	45	50	55	60	65	70	75
ACTUAL	14	26	34	43	50	66	75	78	78	78	78	

MATERIAL

BUDGET	1	1	2	2	2	3	3	3	3	3	4	4
ACTUAL	1	1	2	2	2	2	2	2	2	2	2	

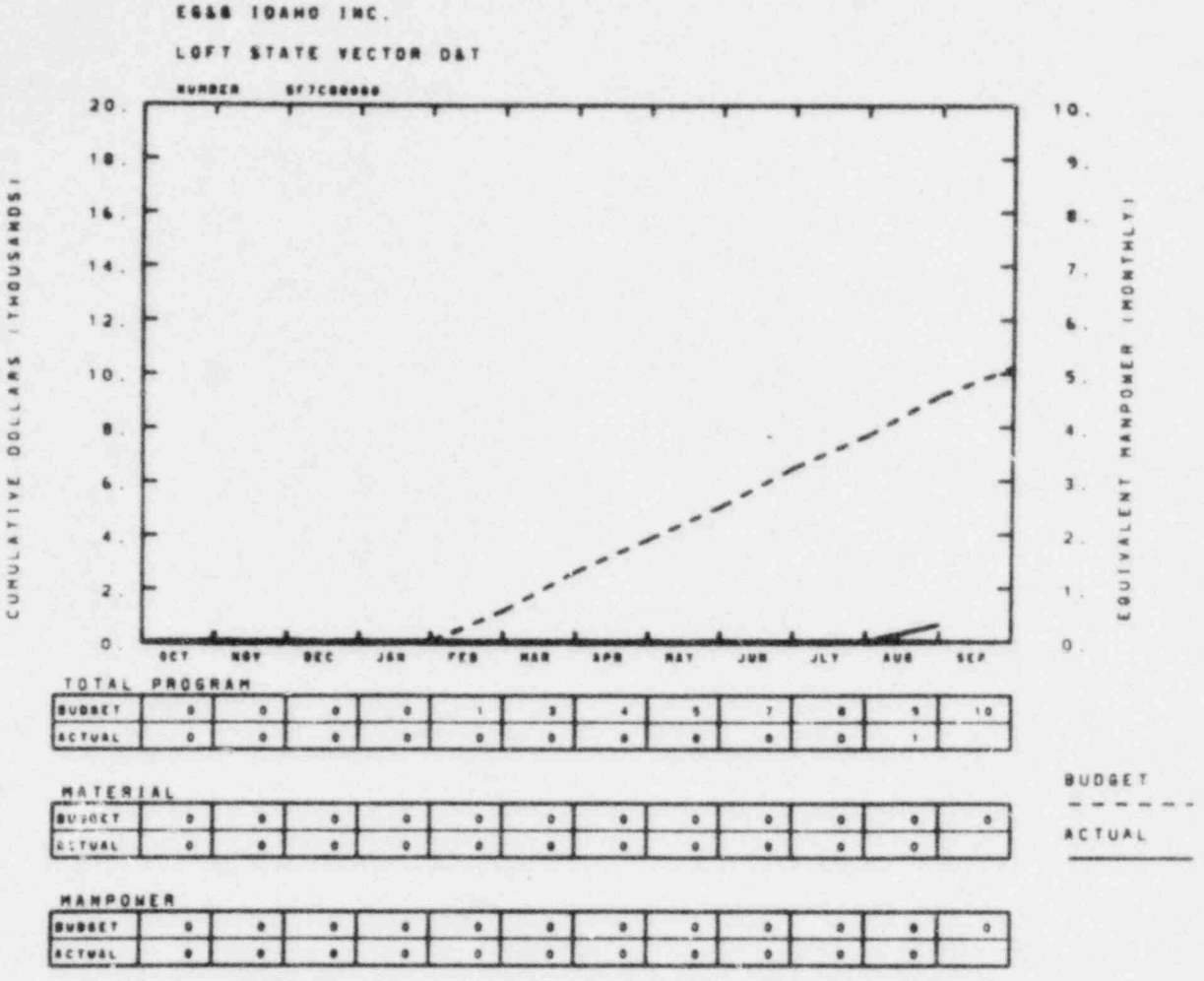
MANPOWER

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

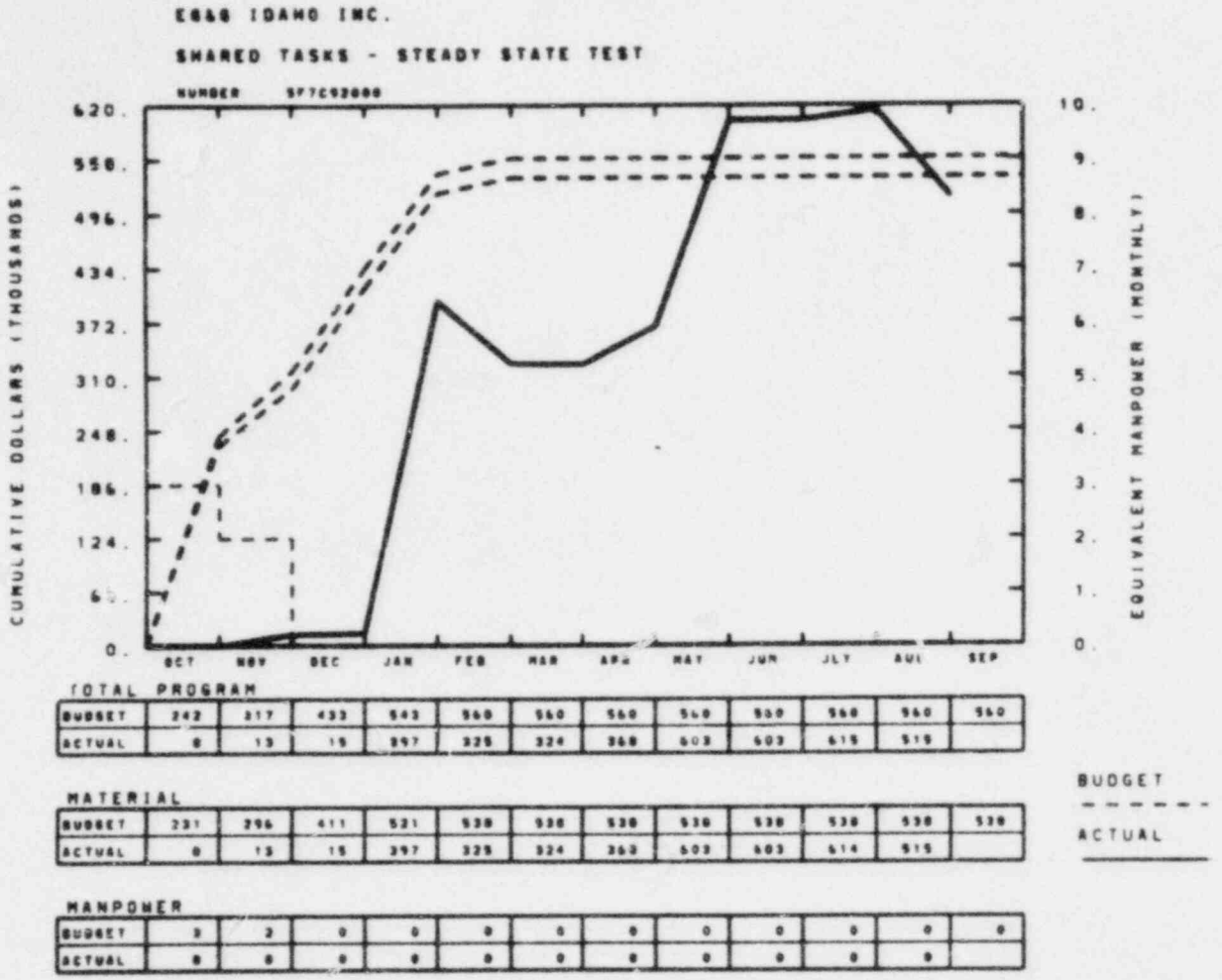
BUDGET - - - - - -

ACTUAL ———

No significant variance.



Work has been delayed. A budget realignment has been submitted.



TOTAL PROGRAM

BUDGET	242	317	433	543	560	560	560	560	560	560	560	560
ACTUAL	0	13	15	397	325	324	368	603	603	615	515	

MATERIAL

BUDGET	231	296	411	521	538	538	538	538	538	538	538	538
ACTUAL	0	13	15	397	325	324	368	603	603	614	515	

MANPOWER

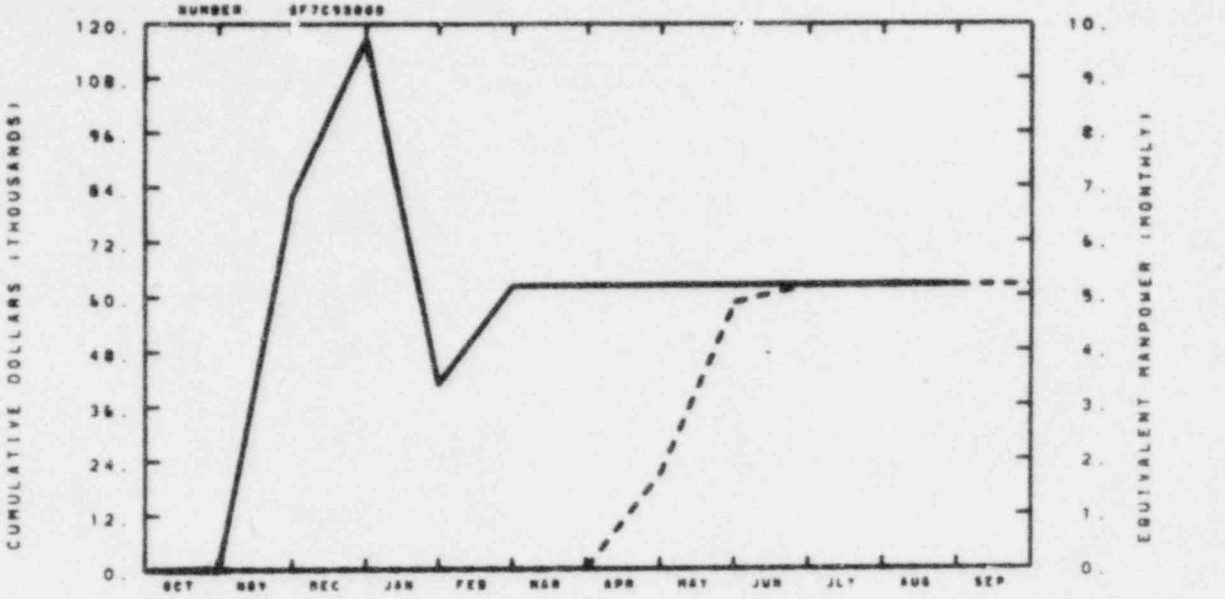
BUDGET	2	2	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	0	0	0	0	0	0	

No significant variance; however, a $57,000 Cost Transfer from this account is in progress. A $99,000 decrease resulted from a cost transfer made to properly align FIS costs. FY-79 allocation error left $99,000 in costs against A6104 instead of transferring them to A6111.

EG&G IDAHO INC.

SPONSORED TASK - TRAC CODE STUDIES

NUMBER SF7C93000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	21	59	62	62	62	62
ACTUAL	0	82	117	41	62	62	62	62	62	62	62	

MATERIAL

BUDGET	0	0	0	0	0	0	21	59	62	62	62	62
ACTUAL	0	82	117	41	62	62	62	62	62	62	62	

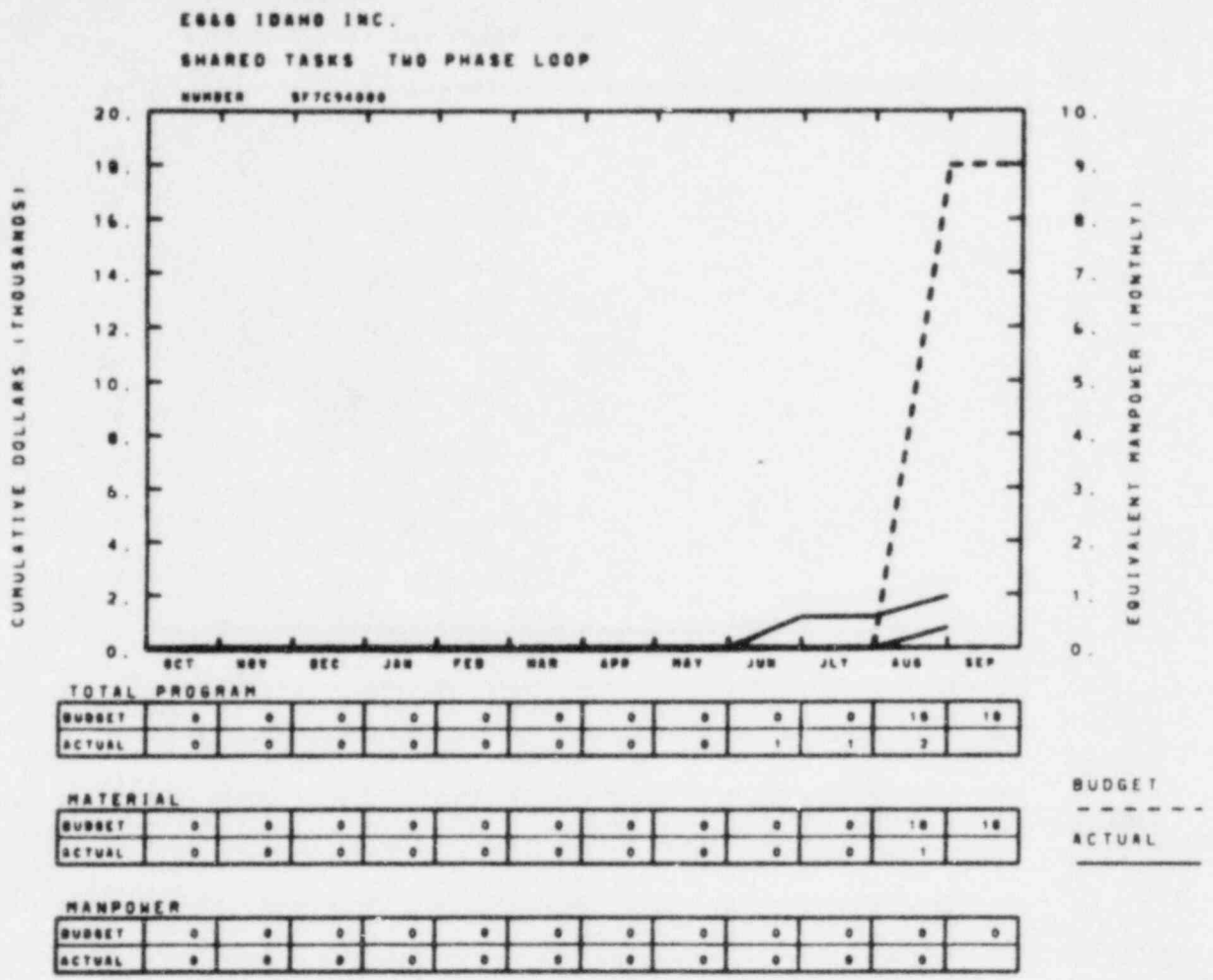
MANPOWER

BUDGET	0	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	0	0	0	0	0	0	

BUDGET

ACTUAL

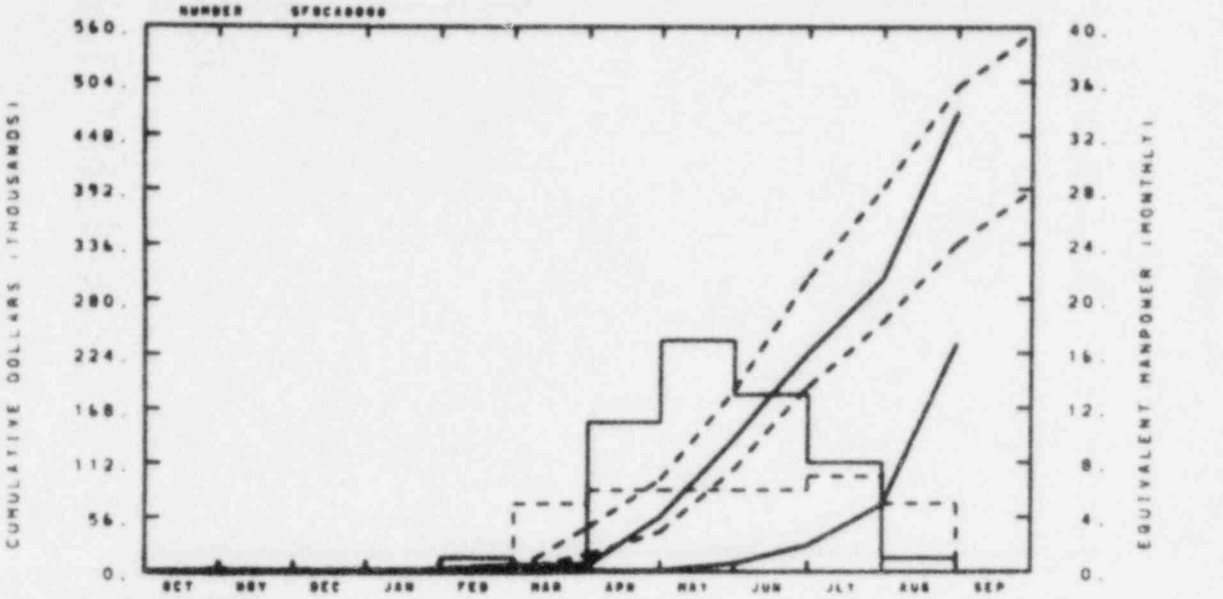
No significant variance.



Work is near completion. Variance is due to delayed subcontractor billing.

EG&G IDAHO INC.

SMALL BREAK DENSITOMETERS



TOTAL PROGRAM

BUDGET	0	0	0	0	0	45	95	186	282	394	499	554
ACTUAL	0	0	0	2	6	7	57	137	225	381	472	

MATERIAL

BUDGET	0	0	0	0	0	18	41	106	190	256	337	391
ACTUAL	0	0	0	0	0	1	1	9	27	69	234	

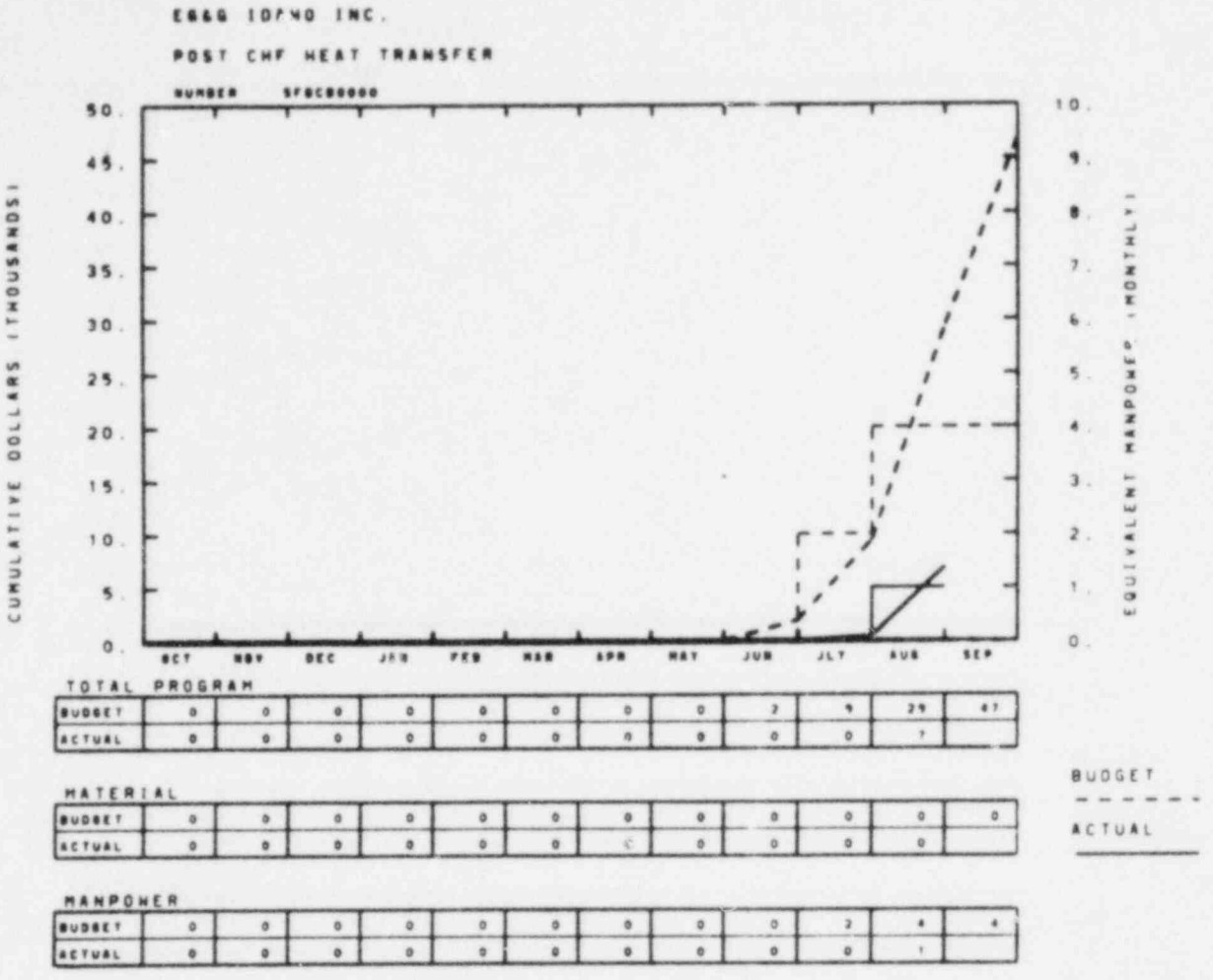
MANPOWER

BUDGET	0	0	0	0	0	5	6	6	6	7	5	0
ACTUAL	0	0	0	0	1	0	11	17	13	8	1	

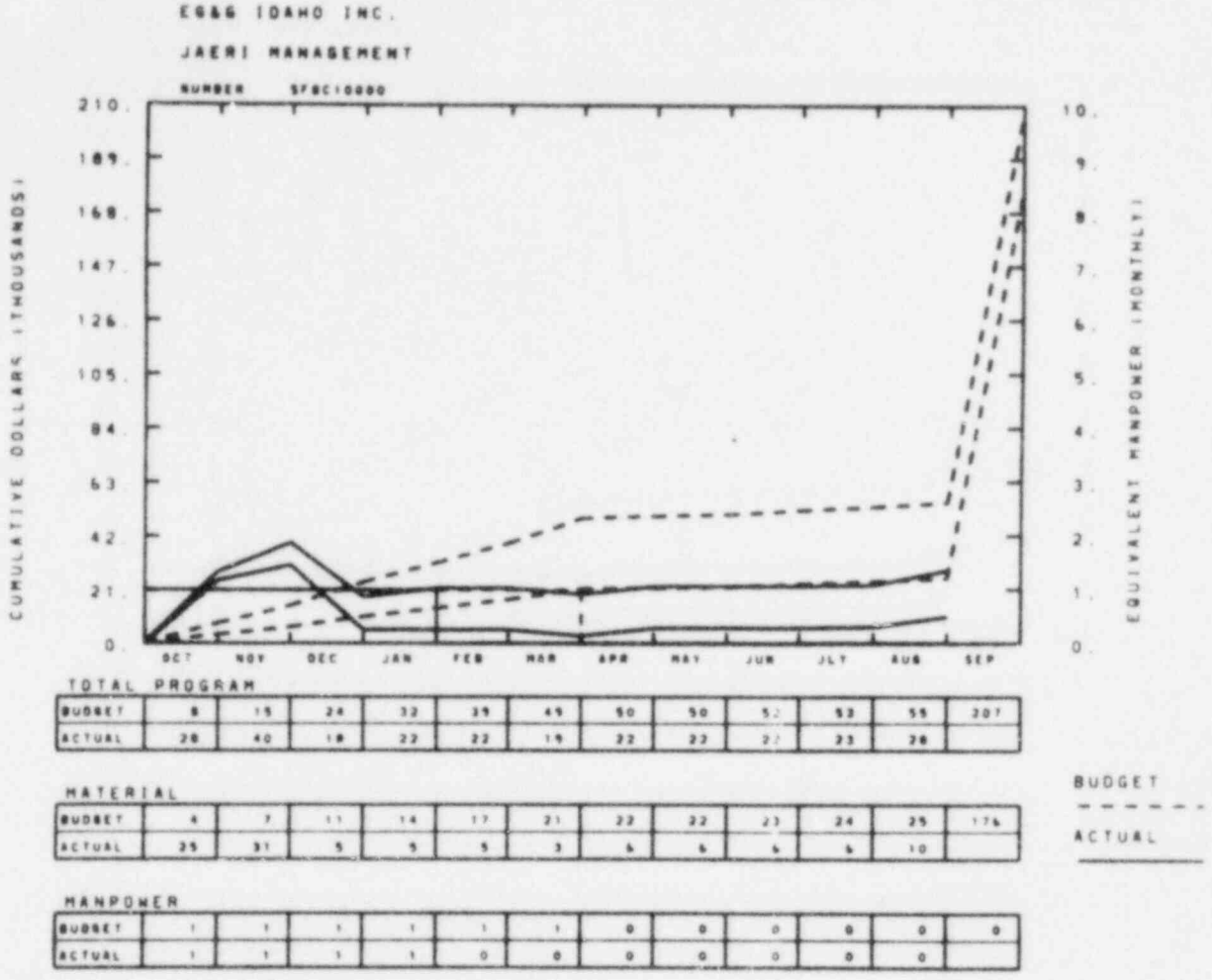
BUDGET - - - - - -

ACTUAL ———

No significant variance.



Work is progressing behind schedule.



TOTAL PROGRAM

BUDGET	8	15	24	32	39	49	50	50	52	53	55	207
ACTUAL	20	40	18	22	22	19	22	22	22	23	28	

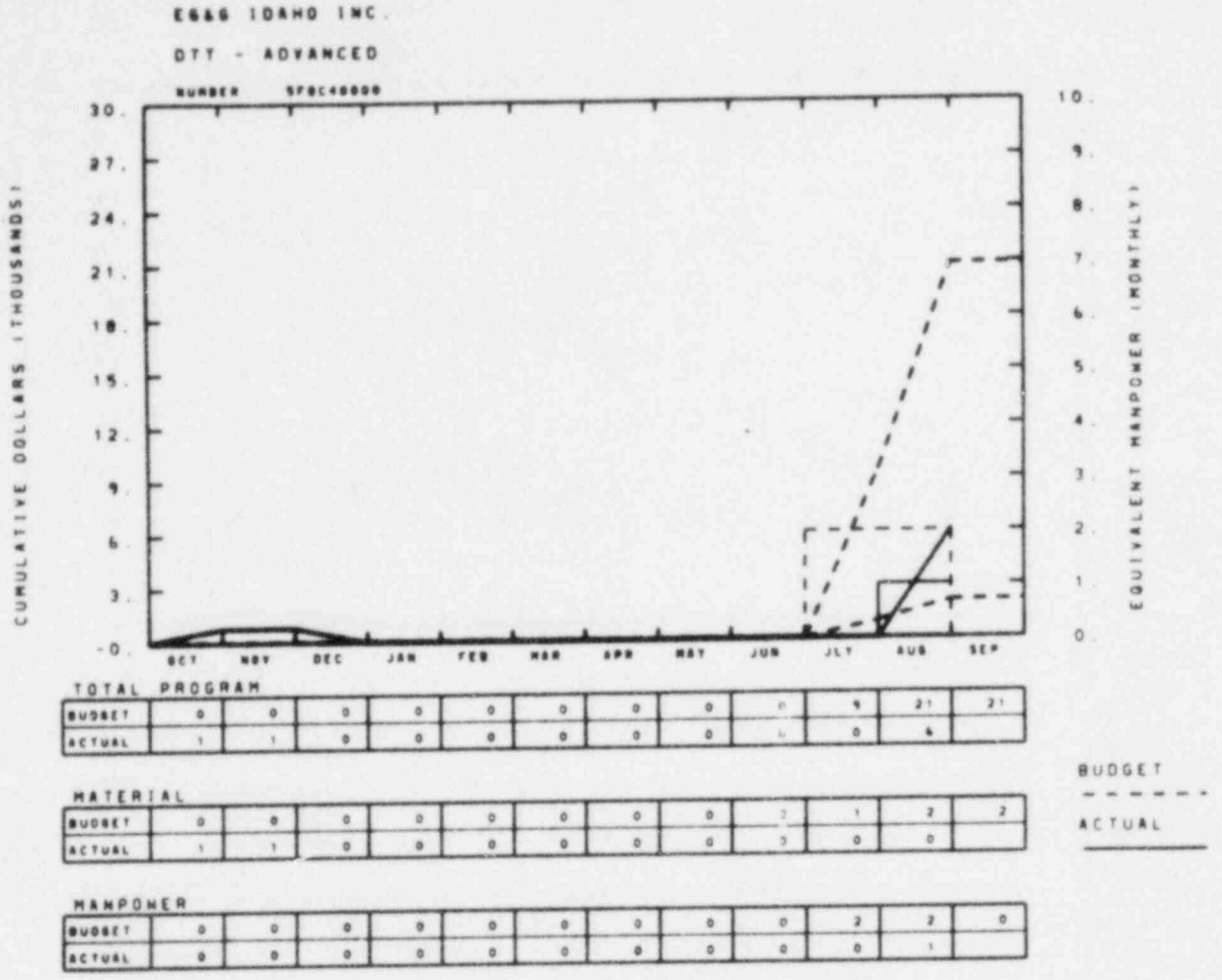
MATERIAL

BUDGET	4	7	11	14	17	21	22	22	23	24	25	176
ACTUAL	25	31	5	5	5	3	4	4	4	4	10	

MANPOWER

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

A budget adjustment and respread was approved in early September. Actual costs are consistent with planned expenditures. Reserve and contingency funds are reflected in September budget increase.



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	0	0	0	9	21	21
ACTUAL	1	1	0	0	0	0	0	0	6	0	4	

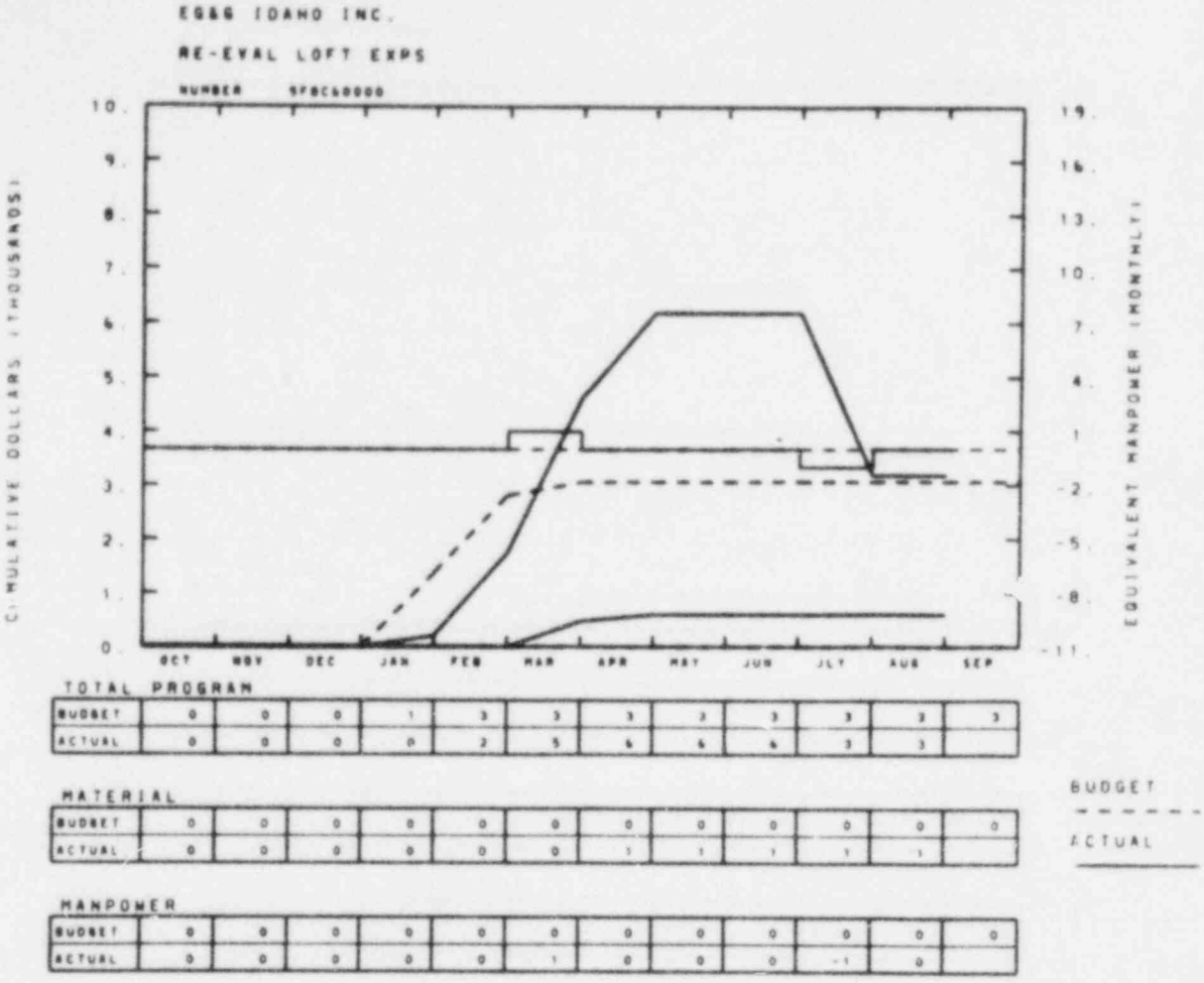
MATERIAL

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

MANPOWER

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

Work delayed. Budget realignment submitted.



TOTAL PROGRAM

BUDGET	0	0	0	1	3	3	3	3	3	3	3	3
ACTUAL	0	0	0	0	2	5	6	6	6	3	3	

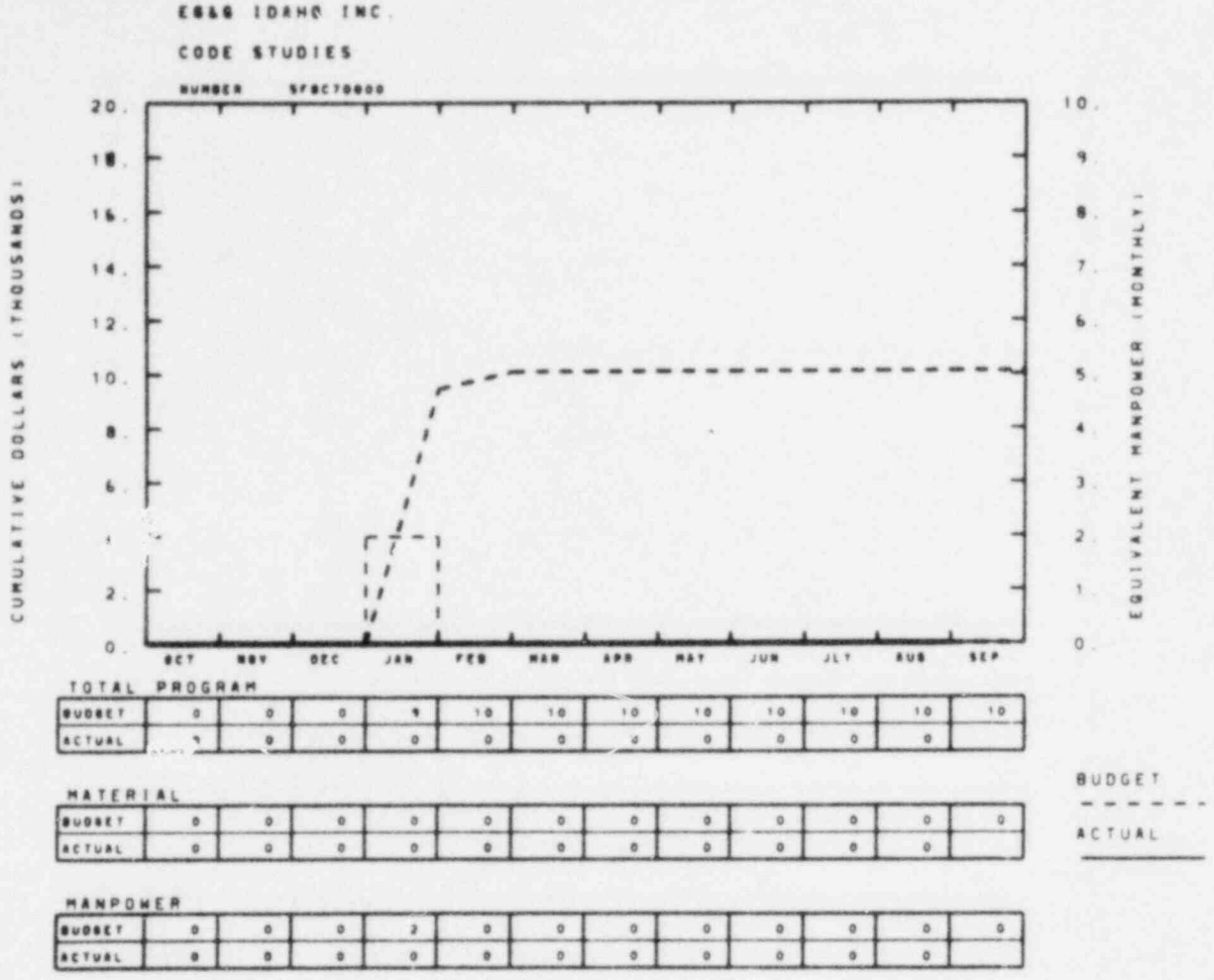
MATERIAL

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

MANPOWER

BUDGET	0	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	1	0	0	0	-1	0	

No significant variance.

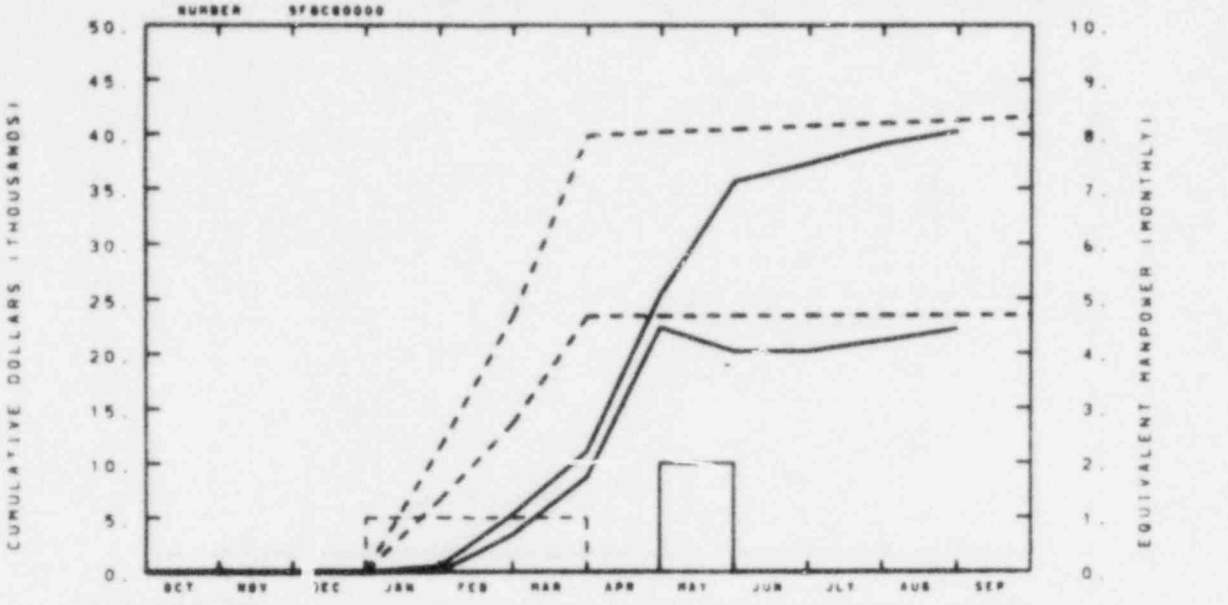


Work has been delayed. A budget realignment has been submitted.

E&G IDAHO INC.

SUPPRESSION CATCH TANK

NUMBER SF8C80000



TOTAL PROGRAM

BUDGET	0	0	0	11	23	40	40	40	41	41	41	42
ACTUAL	0	0	0	1	5	11	25	36	37	39	40	

MATERIAL

BUDGET	0	0	0	7	14	23	23	23	23	23	23	23
ACTUAL	0	0	0	0	3	9	22	20	20	21	22	

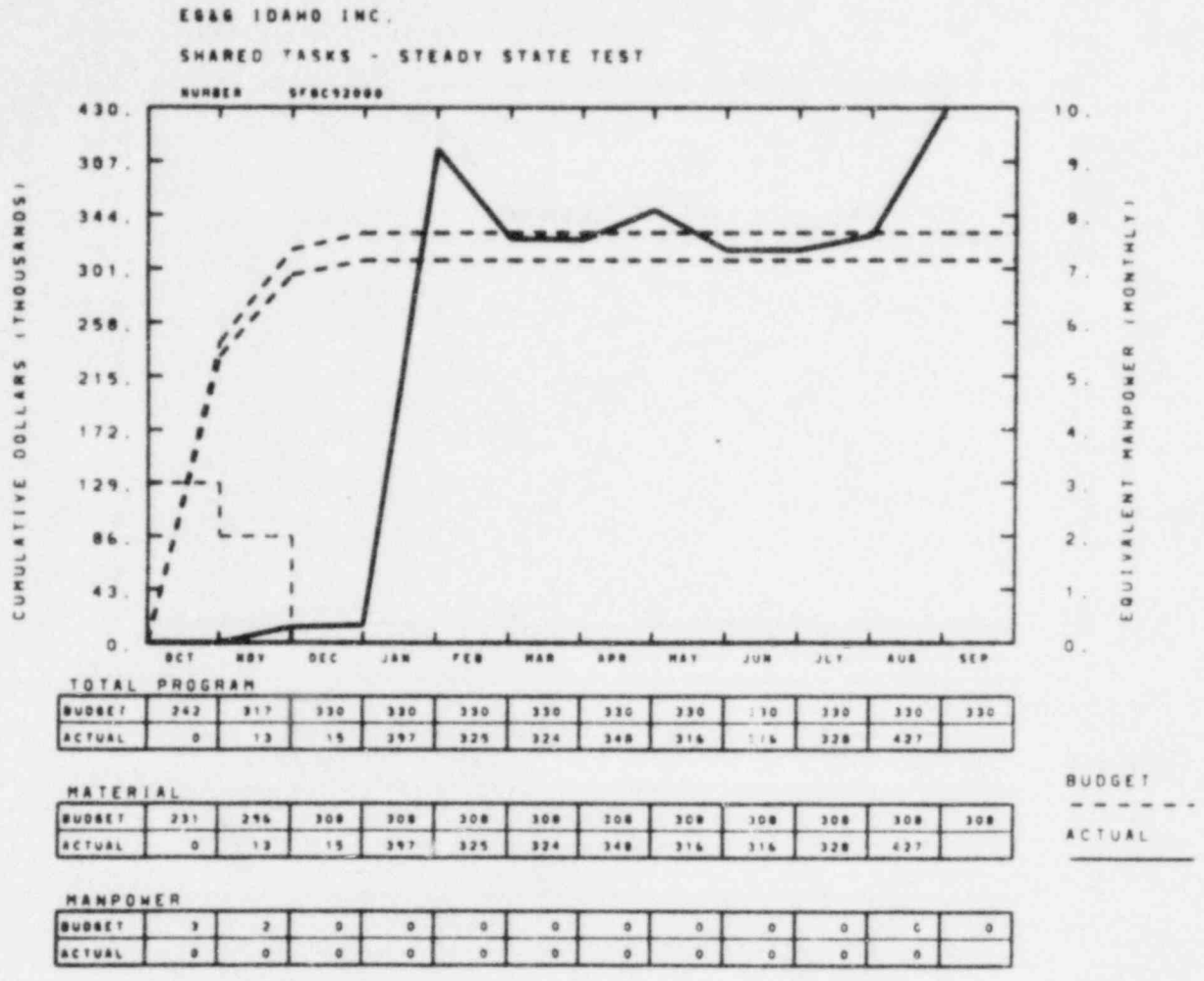
MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

No significant variance.



TOTAL PROGRAM

BUDGET	242	317	330	330	330	330	330	330	330	330	330	330
ACTUAL	0	13	15	397	325	324	348	316	316	328	427	

MATERIAL

BUDGET	231	296	308	308	308	308	308	308	308	308	308	308
ACTUAL	0	13	15	397	325	324	348	316	316	328	427	

MANPOWER

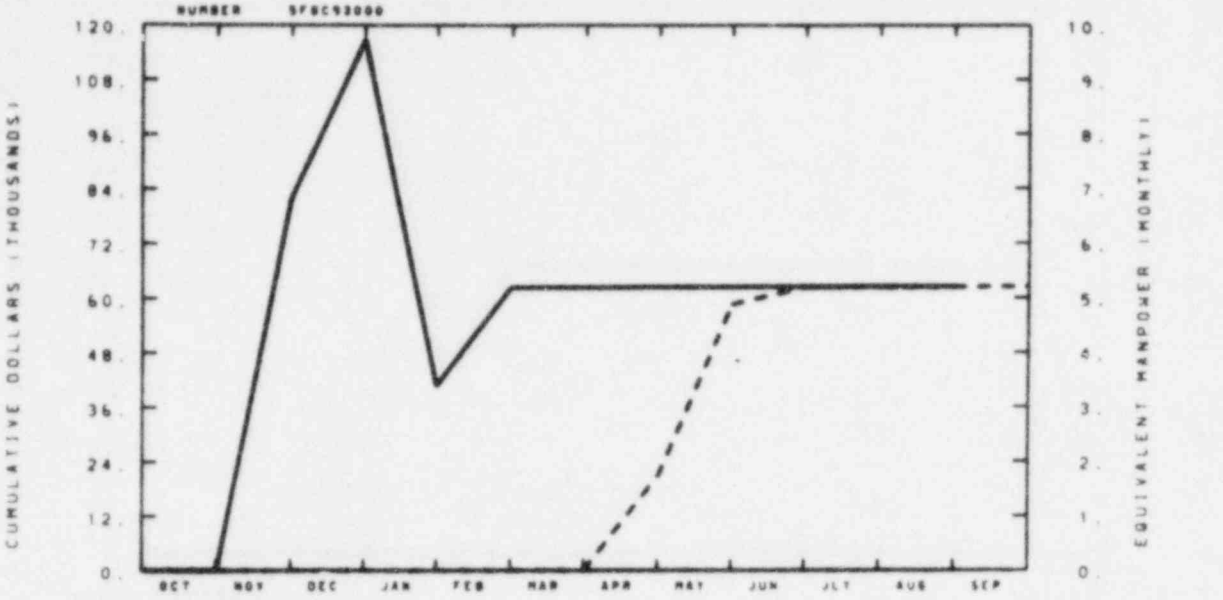
BUDGET	3	2	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	0	0	0	0	0	0	

The variance was caused by correcting a prior year allocation error. $99,000 was not transferred at FY-79 year-end from the Shared Tasks holding account to this account. This cost transfer will properly align FIS costs.

EG&G IDAHO INC.

SHARED TASKS - TRAC CODE STUDIES

NUMBER SFBC93000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	21	59	62	62	62	62
ACTUAL	0	82	117	41	62	62	62	62	62	62	62	

MATERIAL

BUDGET	0	0	0	0	0	0	21	59	62	62	62	62
ACTUAL	0	82	117	41	62	62	62	62	62	62	62	

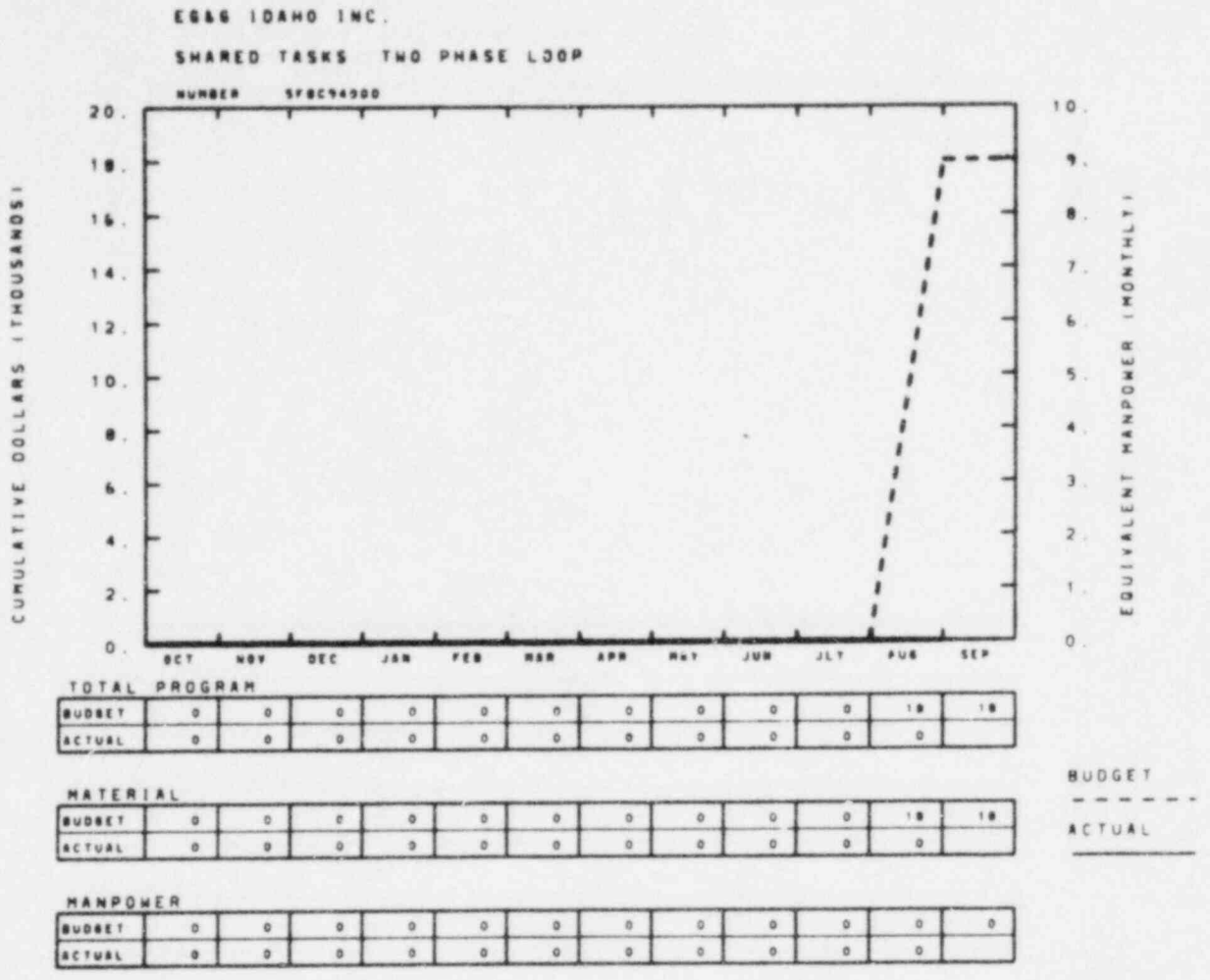
MANPOWER

BUDGET	0	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	0	0	0	0	0	0	

BUDGET - - - - - -

ACTUAL ———

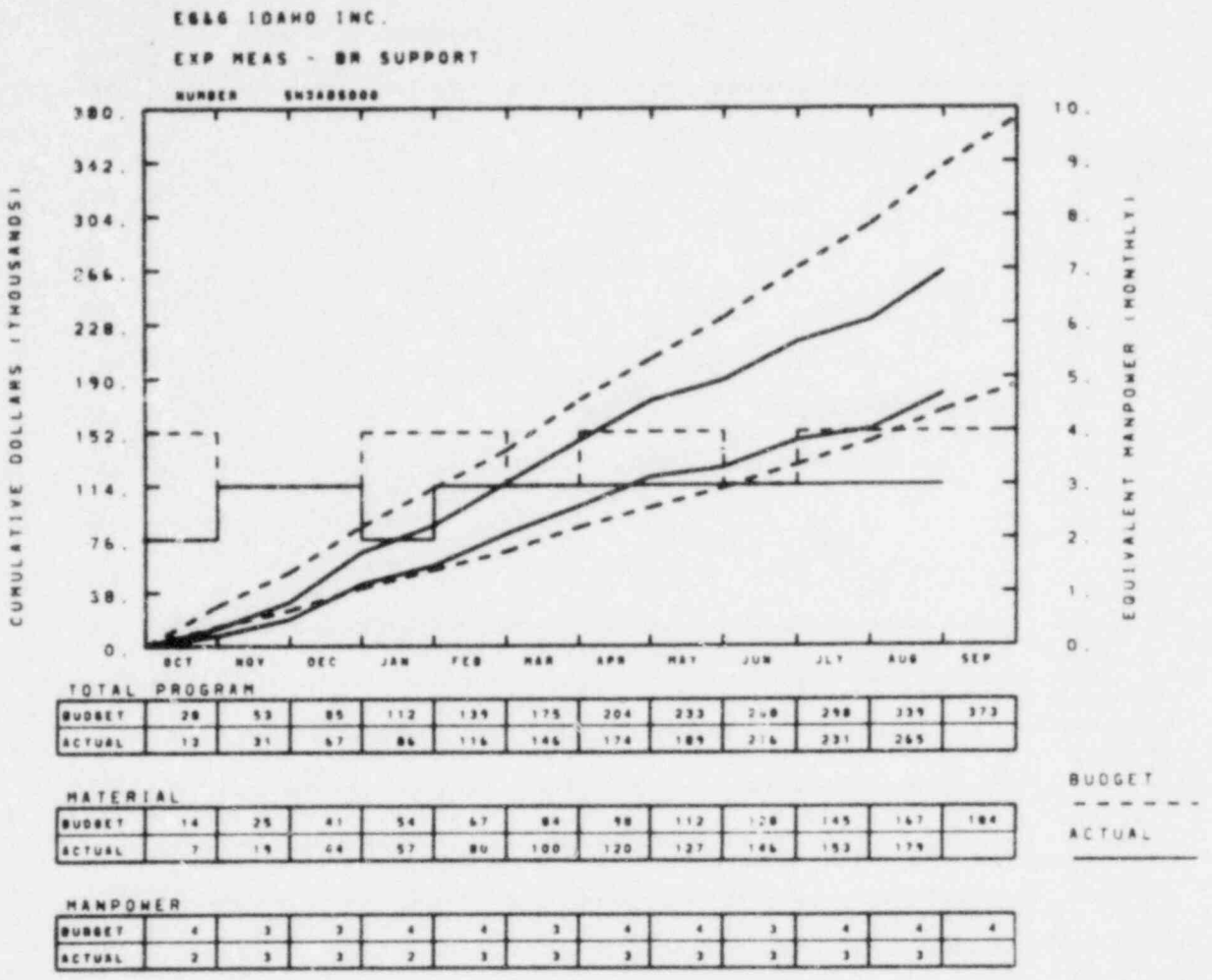
No significant variance.



Work is near completion. Variance is due to delayed subcontractor billing.

LOFT Cost Accounts

5N3Axx--NRC Cost Accounts



TOTAL PROGRAM

BUDGET	28	53	85	112	139	175	204	233	268	298	339	373
ACTUAL	13	31	67	86	116	146	174	189	216	231	265	

MATERIAL

BUDGET	14	25	41	54	67	84	98	112	128	145	167	184
ACTUAL	7	19	44	57	80	100	120	127	146	153	179	

MANPOWER

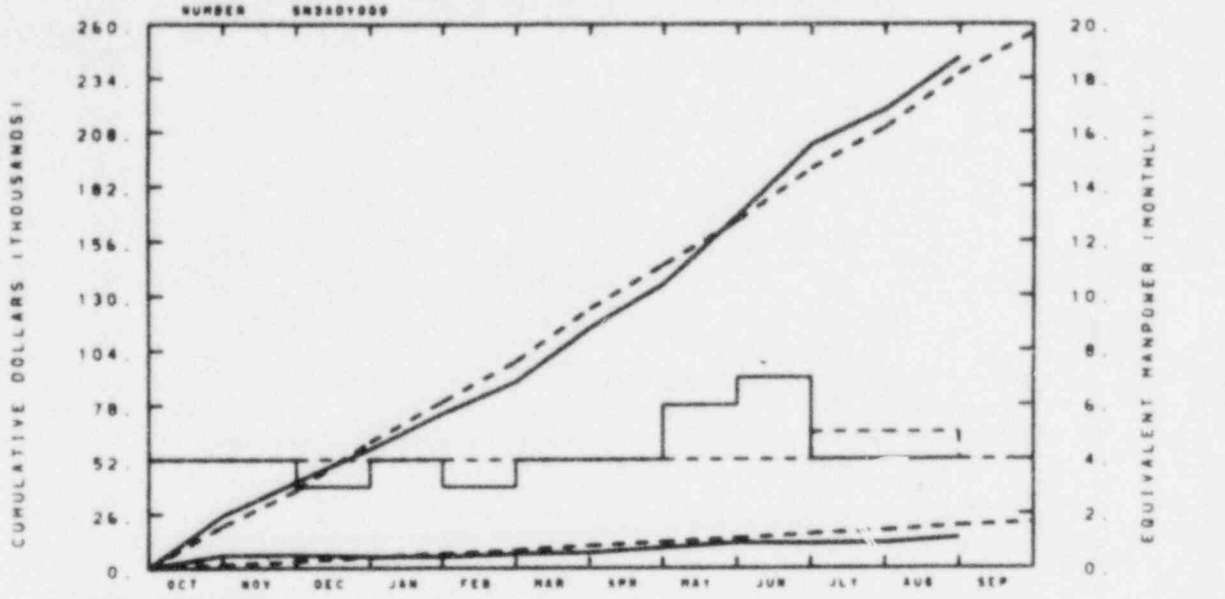
BUDGET	4	3	3	4	4	3	4	4	3	4	4	4
ACTUAL	2	3	3	2	3	3	3	3	3	3	3	

A CCB returning $40,000 to management reserve and transferring $10,000 to the pressure transducer task 53AMA03 has been approved but not reflected in the baseline or above cost graph. Computer charges will be greater than normal until FY-80 year-end.

EG&G IDAHO INC.

EXP MEAS - DAYUS SUPPORT

NUMBER SN3A01000



TOTAL PROGRAM

BUDGET	20	37	61	80	99	124	145	166	191	210	236	256
ACTUAL	25	41	57	74	89	115	136	160	182	219	244	

MATERIAL

BUDGET	2	3	5	7	9	11	12	14	16	18	20	22
ACTUAL	6	6	6	5	7	7	10	12	12	12	14	

MANPOW 1

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

BUDGET

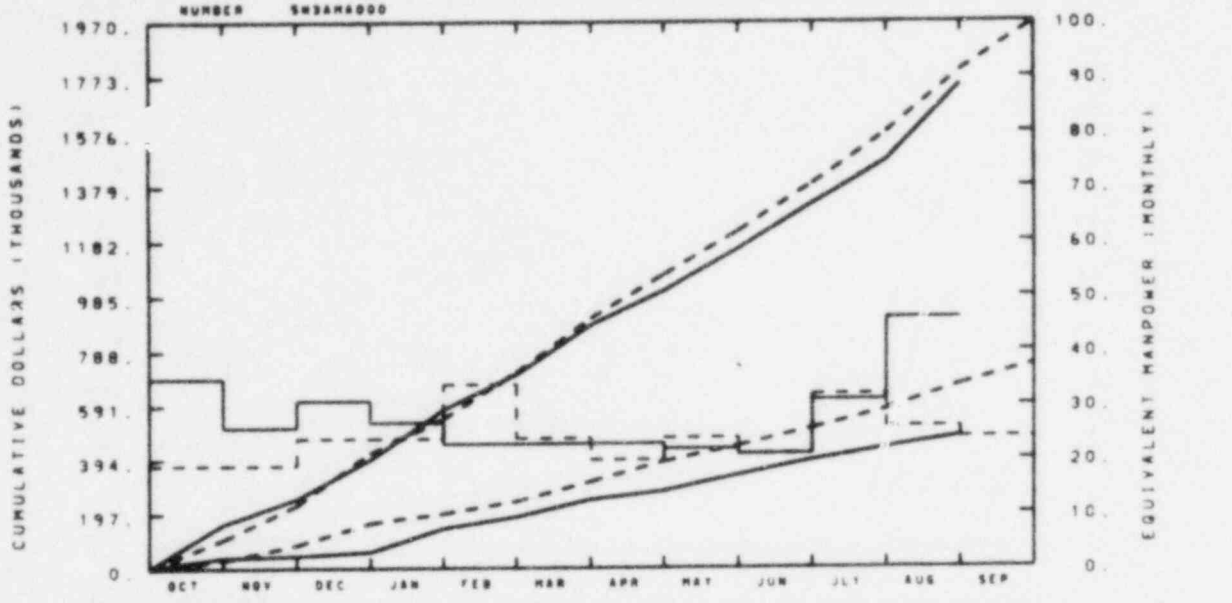
ACTUAL

No significant variance.

EG&G IDAHO INC.

EXP MEAS - MEAS SYSTEM A

NUMBER $WBAM4000



TOTAL PROGRAM

BUDGET	106	229	422	545	713	908	1064	1219	1368	1575	1795	1968
ACTUAL	161	253	397	579	705	883	1006	1156	13 6	1473	1746	

MATERIAL

BUDGET	31	85	145	199	243	314	387	443	535	574	664	736
ACTUAL	40	45	60	145	186	249	279	337	390	435	477	

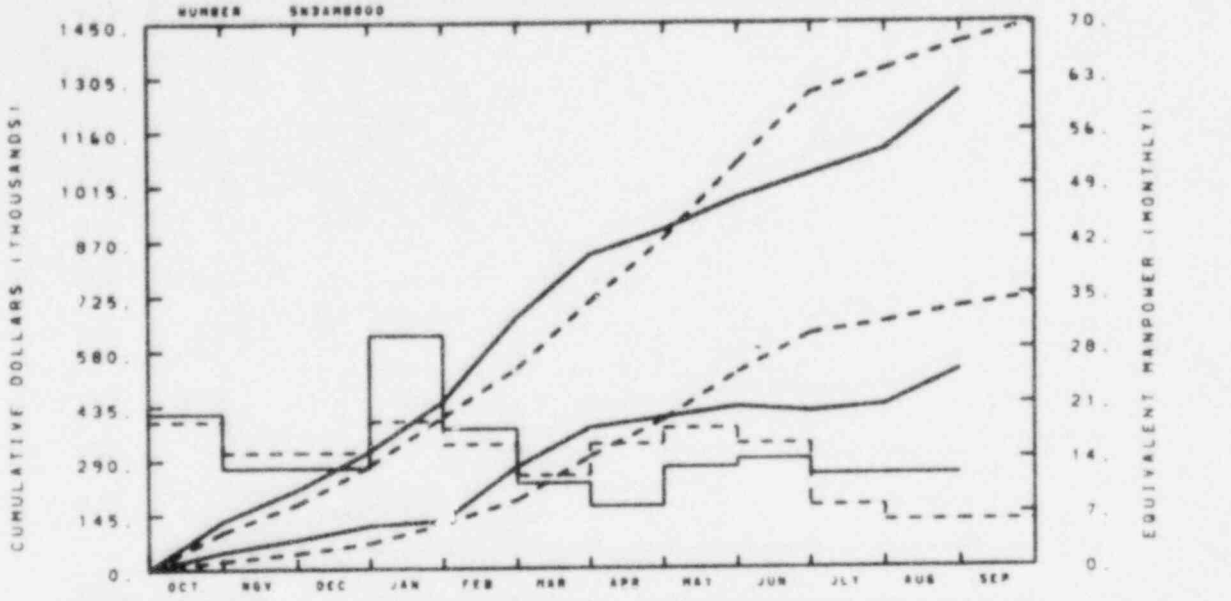
MANPOWER

BUDGET	19	19	24	24	34	24	20	24	21	32	24	24
ACTUAL	35	26	31	27	23	23	23	22	21	31	46	

No significant variance.

EG&G IDAHO INC.

EXP MEAS - MEAS SYSTEM 8



TOTAL PROGRAM

BUDGET	100	173	275	404	532	710	874	1076	1262	1325	1396	1447
ACTUAL	130	212	314	446	668	834	898	982	1044	1110	1267	

MATERIAL

BUDGET	23	42	69	119	183	298	395	520	622	651	690	718
ACTUAL	47	79	115	127	272	375	402	429	416	431	524	

MANPOWER

BUDGET	19	15	15	19	16	12	14	18	16	8	6	6
ACTUAL	20	13	13	30	18	11	8	13	14	12	12	

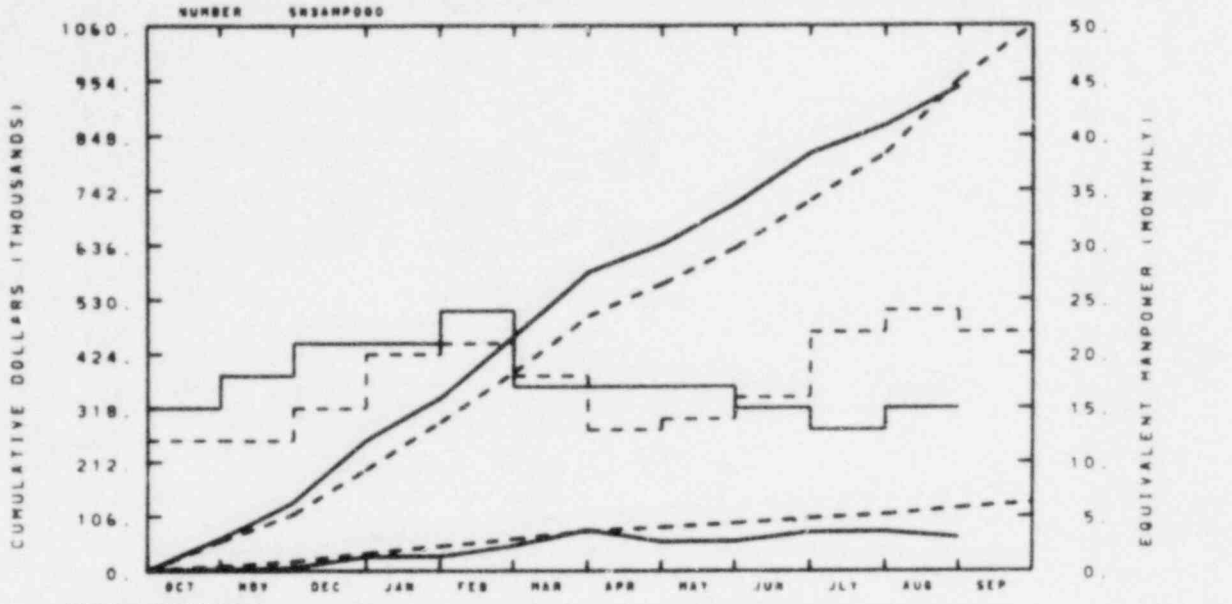
BUDGET - - - - - -

ACTUAL ———

CCB #2768 (LOFT Test Sequence and Target Dates) has been approved but not reflected. Actuals are within acceptable variance of baseline.

EG&G IDAHO INC.

EXP MEAS - MEAS PERFORMANCE-1



TOTAL PROGRAM

BUDGET	57	110	198	291	388	497	561	630	722	814	955	1059
ACTUAL	62	134	256	339	458	584	638	716	814	868	941	

MATERIAL

BUDGET	8	18	35	48	62	77	85	93	102	110	122	133
ACTUAL	3	6	28	29	49	80	57	58	75	77	65	

MANPOWER

BUDGET	12	12	15	20	21	18	13	14	16	22	24	22
ACTUAL	15	18	21	21	24	17	17	17	15	13	15	

BUDGET

ACTUAL

No significant variance. Rolls to summary costs account 5N3R.

PERFORMANCE ANALYSIS

The LOFT Performance Measurement System provides timely, valid project status information that combines cost and schedule performance data for trend analysis. The Budgeted Cost of Work Scheduled (BCWS) forms a Performance Measurement Baseline for subsequent comparisons with the Budgeted Cost of Work Performed (BCWP). The BCWP also is compared with the Actual Cost of Work Performed (ACWP).

	BCWS		BCWP[a]		ACWP	
	Month	Year-To-Date	Month	Year-To-Date	Month	Year-To-Date
5N?D000	337	2583			413	2927
5N4K000	103	1526			187	1374
5N4P000	49	861			124	801

For 5N2D000, refer to the comment on the summary cost account chart.

For 5N4K000, refer to the comment on the summary cost account chart.

For 5N4P000, refer to the comment on the summary cost account chart.

---

a. Figures are not yet available.

TABLE 1. FOREIGN FUNDS AVAILABILITY AT END OF AUGUST 1980
(In Thousands of Dollars)

Participant	Actual Reserve	Contingency
JAERI	72	77
FRG	15	7
ECN	68	27
SGAE	0	0
Total	155	111

TABLE 2. FOREIGN FUNDED TASK SUMMARY AT END OF AUGUST 1980

	Project Description	Total Proposal Est. Inc. Contingency ($K)	Total Spending Auth. by CCB ($K)	Funds Spent to Date ($K)	Expected Task Completion Date
JAERI TASKS					
5F8C1	JAERI Management	210	210	180	Sept. 80
5F8C2	Completed Tasks	846	846	846	Done
5F8C4	Advanced DTT	154	154	141	Sept. 80
5F8C5	PBF/LOFT Lead Rod	1881	1881	1882	July 80
5F8C6	Reevaluation of LOFT L1 Exper.	25	25	25	June 80
5F8C7	Misc. Code Studies	20	20	10	Sept. 80
5F8C8	LTSF Suppression Catch Tank	43	41	40	July 80
5F8CA	Small Break Densitometers	692	640	472	Sept. 80
5F8CB	Post CHF Heat Transfer	200	177	7	Jan. 82
5F8C92	Shared Two-Phase Steady-State Loop	782	782	878[a]	May 80
5F8C93	Shared-TRAC Code Studies	83	83	83	June 80
5F8C94	Two-Phase Loop Boiler Building	18	18	0	Sept. 80
FRG TASKS					
5F7C1	FRG Management	156	156	156	Sept. 8C
5F7C2	Completed Tasks	2570	2570	2570	Done
5F7C4	Miscellaneous Tasks	58	58	43	Sept. 80
5F7C5	Steam Probe	30	30	22	July 80
5F7C7	Ultrasonic Density Detectors	81	74	78	May 80
5F7C8	LOFT State Vector	10	10	1	Sept. 80
5F7C9	Small Break Inst.	206	206	207	May 80
5F7C92	Shared Two-Phase Steady-State Loop	1012	1012	967[a,b]	May 80
5F7C93	TRAC Code Studies	83	83	83	June 80
5F7C94	Two-Phase Loop Boiler Building	18	18	2	Sept. 80

TABLE 2. (continued)

	Project Description	Total Proposal Est. Inc. Contingency ($K)	Total Spending Auth. by CCB ($K)	Funds Spent to Date ($K)	Expected Task Completion Date
ECN TASKS					
5FNC11	Completed Tasks	92	92	92	Done
5FNC21	Management and Delegate Support	27	27	8	Sept. 80
5FNC221	Wyle Data Analysis	22	20	8	Sept. 80
5FNC222	Critical Flow Studies	53	48	4	Sept. 80
5FNC223	PNA Techniques	38	33	32	Sept. 80
5FNC224	RPI Subcontract	117	114	112	Sept. 80
5FNC225	INEL Support	4	4	5	Sept. 80
5FNC321	Two-Phase Loop Platform	59	47	17	June 80
SGAE TASKS					
5FAC11	Completed Tasks	123	123	123	Done
5FAC2	Program Development	24	24	12	Sept. 80

a. $99,000 prior year cost transfer to correct error between FRG and JAERI accounts.

b. $57,000 cost transfer reduction in process.

BUDGET STATUS REPORT

TABLE 3. LOFT FY-80 SUMMARY STATUS REPORT
NUCLEAR REGULATORY COMMISSION
(In Thousands of Dollars)

WBS#	189 #	Q80-5-0	Approved CCBs	Current PMB # Q80-5-0/3	Current BAC
5N1XX	A6048	4,030	57	4,087	3,971
5N2XX	A6053	3,648	<461>	3,187	3,745
5N3XX	A6043	5,060	43	5,103	4,833
5N4XX	A6107	11,350	<435>	10,915	10,971
5N5XX	A6122	4,046	24	4,070	3,939
5N6XX	A6110	3,786	947	4,733	3,549
5N7XY	A6054	7,595	16	7,611	7,539
5N8XX	A6108	971	0	971	999
	A6308				
5NXXX		40,486	191	40,677	39,546
	Supplementary programs				5,280
	NRC discretionary reserves				50
	NRC management reserves				1114
	Total NRC funding (FY-80)				45,990

TABLE 4. LOFT FUNDING SUMMARY FOR FY-80
(In Thousands of Dollars)

Funds	Current FIN Plan No. 10	Current Budget File (Q80-5-0/3)
LOFT Foreign Funds	2,845	2,576
LOFT Lead Rod Tests	192	192
Total	3,037	2,768
NRC Operating Funds	45,990	40,676
Electric Heat Rod Evaluation		328
Computer Code Support		233
TC-2 Tests		234
LTSF		2,496
PWR/BWR Task Group		700
Standard Problem Analysis		150
Advanced Instrumentation		973
TC-3 Tests		200
Total	45,990	45,990
Total LOFT Funding[a]	49,027	48,758

a. Excludes C.E., GSO, and overhead.

TABLE 5. LOFT FY-80 SUMMARY BUDGET STATUS REPORT OF LOFT FOREIGN FUNDS
(In Thousands of Dollars)

LOFT WBS	189 #	Q80-5-0	Approved CL.I CCBs	Current PBM # Q80-5-0/3	Current FY-80 Budget	Total Authorized Spending Limit
5FAXX	A6273	15	<8>	7	17	145
5FNXX	A6271	150	75	225	157	381
5F7XX	A6104	993	23	1,016	902	4220
5F8XX	A6111	1145	148	1,293	1,678	4,856[a]
5F9XX	A6104S	0	0	0	0	0
5FXXX		2,303	238	2,541	2,865	9,602
	Foreign contingency reserves				111	111
	Foreign management reserves				172	156
	Total FY-80 LOFT foreign funds				2,345	9,869
	Foreign funds spent through FY-79				6,832	
	Foreign funds budgeted in FY-81				692	0
	Total foreign funds received to date				9,869	9,869

a. Includes LOFT Lead Rod.

TABLE 6. LOFT CAPITAL EQUIPMENT STATUS REPORT THROUGH JULY

Schedule 189a	Title	Prior Year Uncosted	Current Year Funds	Total Available to Cost	Current Year Costs	Outstanding Commitments	Balance Less Costs and Commitments	Estimate to Complete	Balance
4CA101	Integral System Design & Fab.	111,731	(10,000)	101,731	34,335	-0-	67,396	63,823	3,573
4CA102	LOFT Operations	194,419	(68,000)	126,419	118,785	1,749	5,885	1,890	3,995
4CA103	UT & Requalification Program	140,034	78,000	218,034	165,587	-0-	52,447	54,013	(1,566)
	Total DOE	446,184	-0-	446,184	318,707	1,749	125,728	118,026	6,002
A-6061	Experimental Measurements*	788,769	789,000	1,577,769	1,017,660	203,896	356,213	353,395	2,818
A-6048	Integral System Design & Fab.	689,139	1,422,000	2,111,139	772,409	364,050	974,680	975,270	(590)
A-6088	LOFT Operations	18,091	89,000	107,091	52,919	25,097	29,075	28,356	719
	Total NRC	1,495,999	2,300,000	3,795,999	1,842,988	593,043	1,359,968	1,357,021	2,947
	Total LOFT	1,942,183	2,300,000	4,242,183	1,161,695	594,792	1,485,696	1,475,047	8,949

* Includes A-6085, A-6086, and A-6089.