WRRD MONTHLY REPORT FOR

AUGUST 1980

September 1980

EG&G Idaho, Inc.

IDAHO NATIONAL ENGINEERING LABORATORY

DEPARTMENT OF ENERGY

IDAHO OPERATIONS OFFICE UNDER CONTRACT DE-AC07-76IDO1570

ACRONYMS

ACRS - Advisory Committee on Reactor Safety
ASME - American Society of Mechanical Engineers

BD/ECC - Blowdown/Emergency Core Coolant
BWR - Boiling Water Reactor

CCB - Change Control Board
CCTF - Cylindrical Core Test Facility
CLLMS - Conductivity Liquid Level Measurement System
CPM - Critical Path Method
CSNI - Committee on Safety For Nuclear Installations

DAS - Data Acquisition System

EI - Energy, Inc.

FCF - Facility Change Form
FDG - Federal Republic of Germany

GE - General Electric

HDR - Heiss Dampf Reaktor

IFA - Instrumented Fuel Assemblies
I.L. S.G. - Intact Loop Steam Generator
INEL - Idaho National Engineering Laboratory
IPT - In-Pile Tube
IREP - Interim Reliability Evaluation Program
ISDMS - INEL Scientific Data Management System
ISP - International Standard Problem

JAERI - Japan Atomic Energy Research Institute

KfK - Kernforschungszentrum Karlsruhe

LER - Licensing Event Report
LLD - Liquid Level Detector
LOC - Loss-of-Coolant
LOCA - Loss-of-Coolant Accident
LOFT - Loss-of-Fluid Test
LVDT - Linear Variable Differential Transformer

NPRDS - Nuclear Plant Reliability Data System

OPTRAN - Operational Transient
ORNL - Oakridge National Laboratory

ACRONYMS (Continued)

P&ID - Process and Instrument Diagram
PAS - Probabilistic Analysis Staff
PBF - Power Burst Facility
PCM - Power Cooling Mismatch
PIE - Postirradiation Examination
PMIS - Performance Management Information System
PKL - Primary Coolant Loop
PPS - Plant Protection System
PR - combination of PCM/RIA
PWR - Pressurized Water Reactor

QA - Quality Assurance
QDR - Quality Discrepancy Report
QPP - Quality Program Plan

RFQ - Request for Quotes
RIA - Reactivity Initiated Accident

SBE - Small Break Experiment
SCTF - Slab Core Test Facility
SPERT - Special Power Excursion Reactor Test
SWR - Site Work Release

TAN - Test Area North
TC - Thermocouple
TLTA - Two Loop Test Apparatus
TRR - Test Results Report

UIC - Unique Identification Code
USSP - United States Standard Problem
UPTF - Upper Plenum Test Facility

WBS - Work Breakdown Structure
WRRD - Water Reactor Research Directorate

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WRRD MONTHLY REPORT FOR

AUGUST 1980

W. E. Bos - ck
Plans & Budget Branch

L. J. Ybarrondo, Director

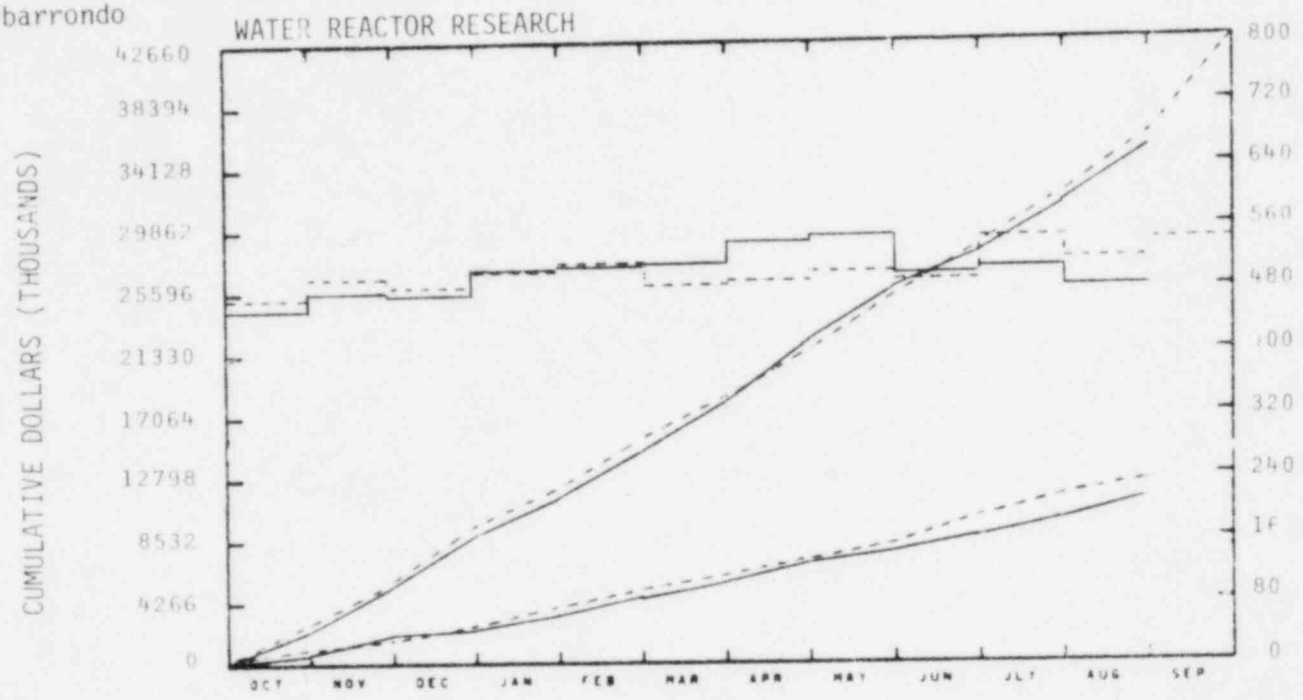
Responsible

Manager

L J Ybarrondo

EG&G IDAHO, INC.

WATER REACTOR RESEARCH



TOTAL PROGRAM

BUDGET	2661	5349	8954	11945	14962	18598	21773	25199	28984	32504	36733	42660
ACTUAL	2370	5262	8481	11197	14289	18333	21884	25250	28395	31258	35251	

MATERIAL

BUDGET	707	1546	2793	3800	4808	5945	6968	8136	9498	10920	12452	15848
ACTUAL	503	1659	2570	3341	4381	5634	6924	7965	8458	9354	10660	

MANPOWER

BUDGET	470	498	484	503	512	484	492	499	483	548	512	534
ACTUAL	455	478	472	504	506	509	535	544	497	507	480	

BUDGET

ACTUAL

YTD VARIANCE: 1482 (4%)

Individual cost graphs will provide variance explanations.

Explanations for major 189a's (>$500 K) will be made if the variance exceeds $25 K. Minor 189a graphs (<$500 K) will explain variance of over $10 K.

SEMISCALE

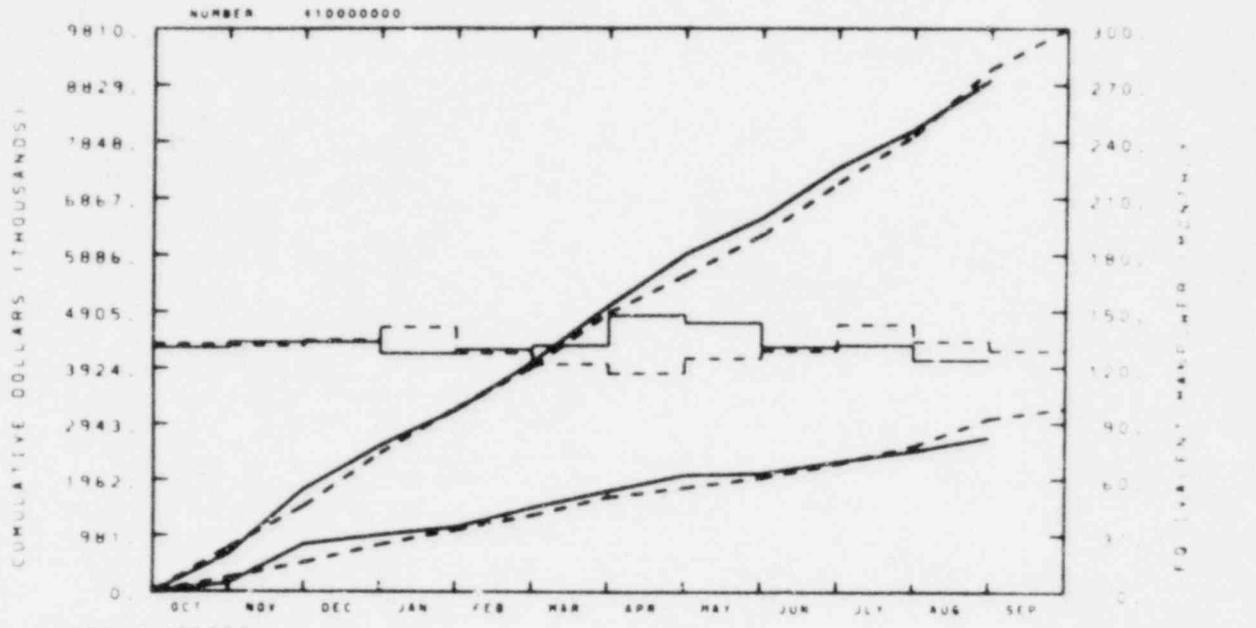
COST SUMMARY & COMMENTS

RESPONSIBL
MANAGER
EACH

EG&G IDAHO INC.

SEMISCALE PROGRAM

NUMBER 410000000



TOTAL PROGRAM

BUDGET	772	1495	2431	3213	3945	4879	5534	6232	7124	7969	9104	9809
ACTUAL	636	1799	2560	3190	4029	5009	5897	6524	7391	8053	8918	

MATERIAL

BUDGET	247	509	822	1079	1334	1650	1815	1991	2235	2542	3030	[illegible]
ACTUAL	150	430	990	1132	1471	1758	2040	2069	2212	2457	2700	

MANPOWER

BUDGET	33	32	35	42	28	32	31	25	29	43	34	[illegible]
ACTUAL	3	34	34	28	30	33	48	44	31	32	24	

YTD VARIANCE: 186 (2%)

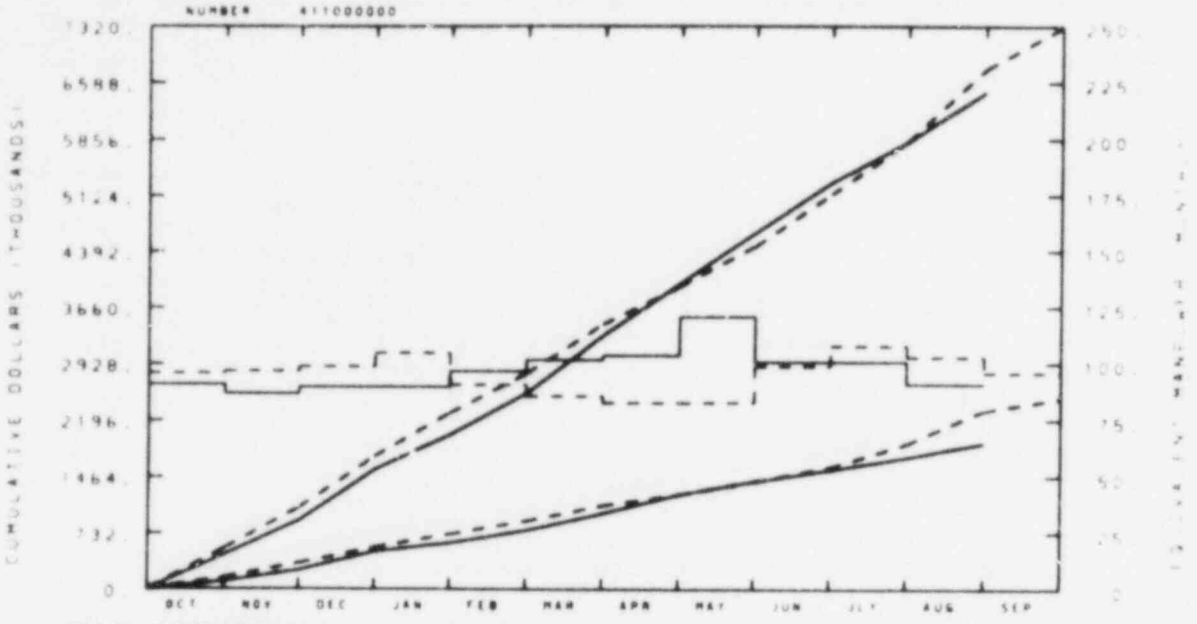
Individual cost graphs will give individual explanations.

Explanations for major 189a's will be made if the variance exceeds $25 K. Minor 189a graphs will explain variance of over $10 K.

RESPONSIBLE
MANAGER
L. P. LEACH

EG&G IDAHO INC.

SEMISCALE



TOTAL PROGRAM

BUDGET	540	1067	1736	2297	2809	3454	3942	4465	5148	5831	6769	7313
ACTUAL	454	898	1563	2014	2953	3303	3979	4642	5302	5827	6469	

MATERIAL

BUDGET	157	342	552	723	893	1096	1240	1410	1596	1893	2326	2411
ACTUAL	106	248	496	607	771	992	1243	1410	1560	1720	1903	

MANPOWER

BUDGET	96	97	99	105	91	86	83	83	99	108	105	96
ACTUAL	91	87	90	98	97	102	104	121	101	101	91	

A6038

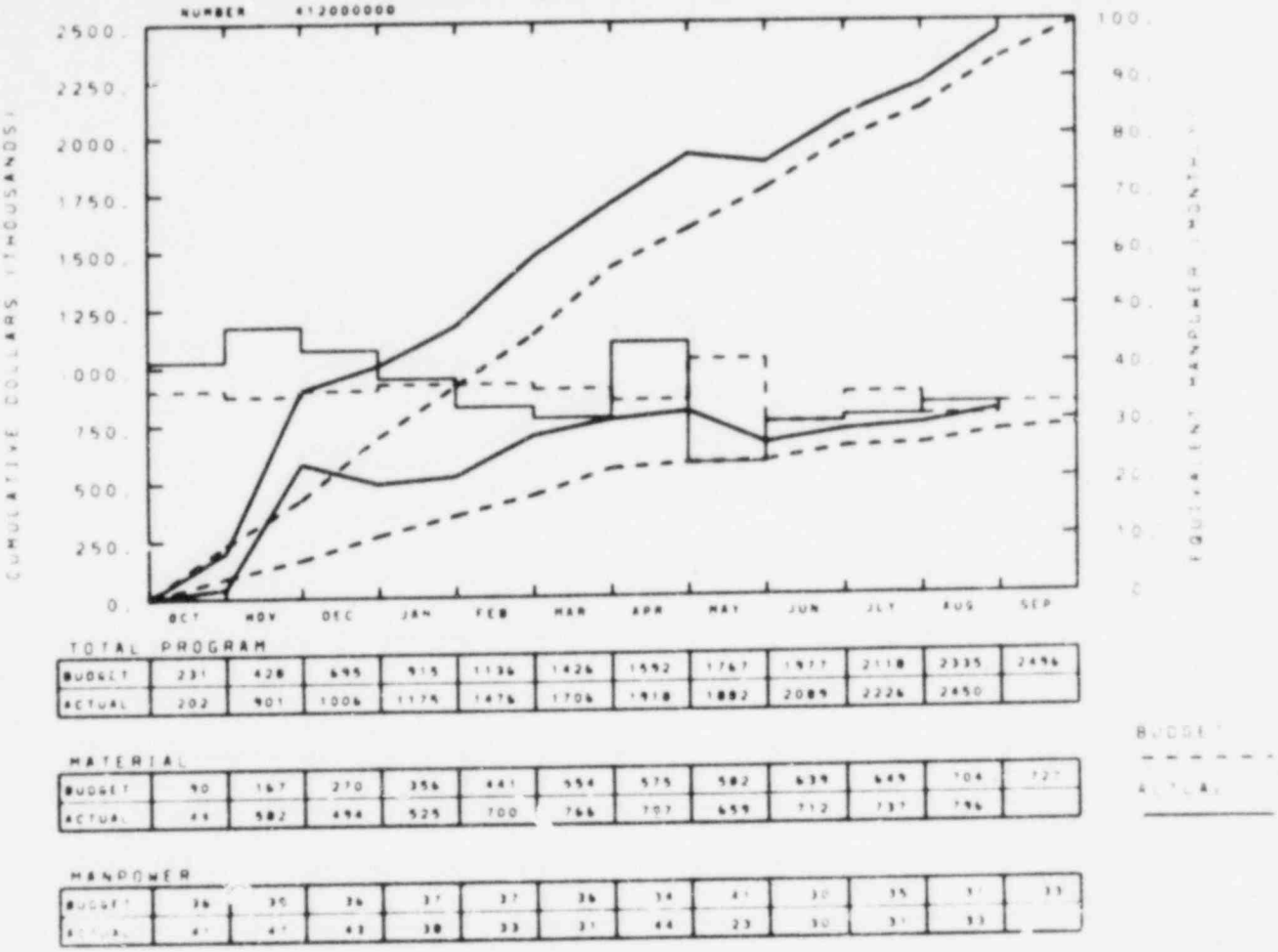
YTD VARIANCE: 300 (4%)

The $300 K variance is produced by a $123 K overrun on labor and a $423 K underrun on material. The labor is now stabilized, no additional overrun is anticipated. The material underrun is largely due to honeycomb insulator payments that have been delayed due to late delivery.

RESPONSIBLE MANAGER

EG&G IDAHO INC.

LOFT TEST SUPPORT FACILITY



TOTAL PROGRAM

BUDGET	231	428	695	915	1136	1426	1592	1767	1977	2118	2335	2496
ACTUAL	202	901	1006	1179	1476	1706	1918	1882	2089	2226	2450	

MATERIAL

BUDGET	90	167	270	356	441	554	575	582	639	669	704	727
ACTUAL	44	582	494	525	700	766	707	659	712	737	796	

MANPOWER

BUDGET	36	35	34	37	37	36	34	41	30	35	31	33
ACTUAL	41	47	43	38	33	31	44	23	30	31	33	

A6043 (LOFT Test Support Branch Portion)

YTD VARIANCE: <115> (5%)

A CCB of $92 K has been approved and will increase the budget to cover overruns on the Two Phase Loop construction occurring earlier in the year. Balance-to-complete estimated in early August resulted in a total spending very near the authorized level (including the $92 K CCB). Technical difficulties in completion of the LOFT L3-5 Spool Piece calibration are projected to cause a year-total spending $40 K (1.6%) over the approved budget. A concentrated effort is being made to minimize the estimated overrun. Technicians, operators, and engineers will be employed to a maximum degree on the 2D/3D project, which is an alternate funding source and which requires a maximum effort.

SEMISCALE

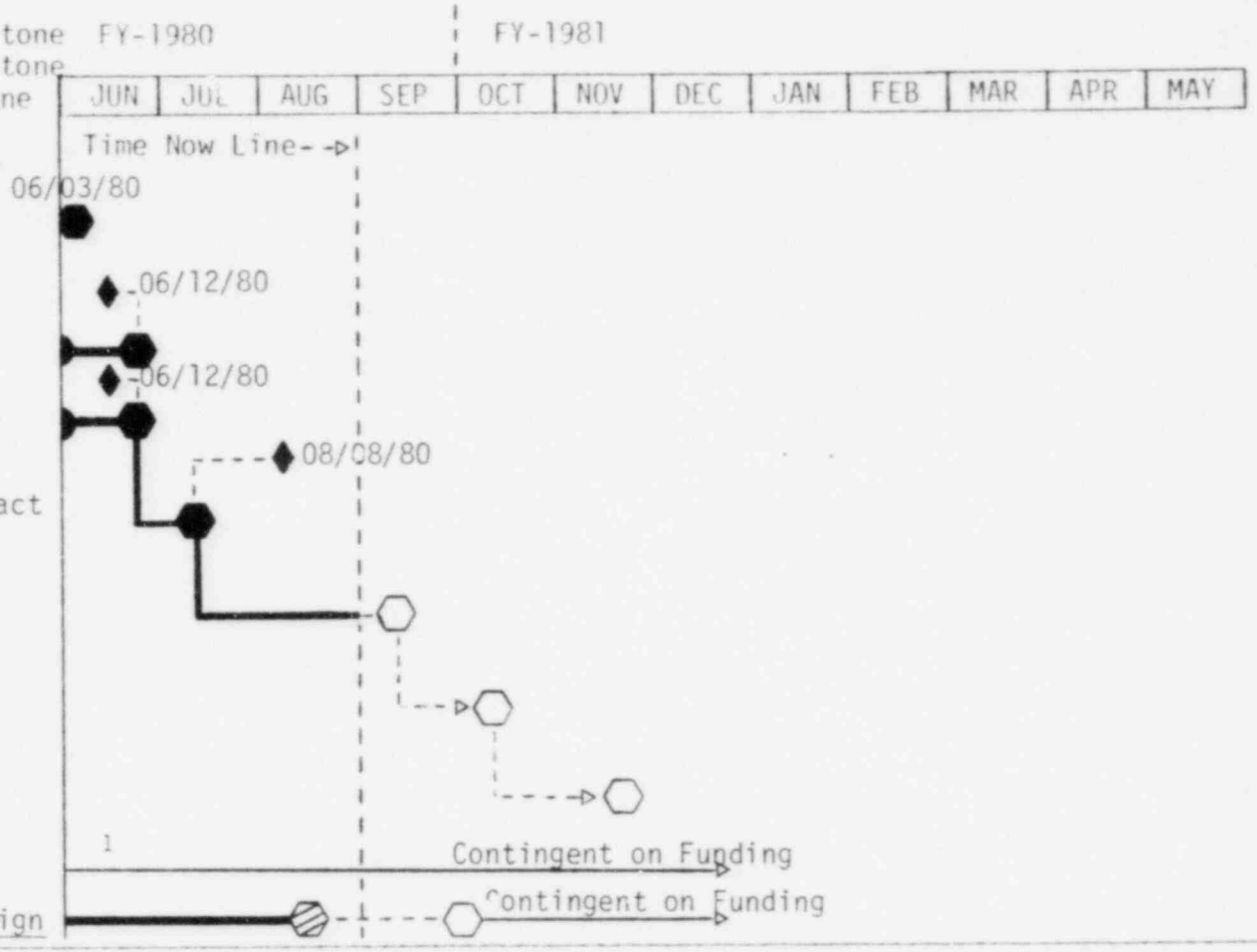
CURRENT WORKING SCHEDULE

LEGEND

- Completed Major Milestone
- Scheduled Major Milestone
- Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- Slipped Secondary Milestone
- Actual Completion Date
- Scheduled Completion Date

SEMISCALE PROGRAM

August 1980



NOTES:

1. Design has proceeded as far as possible without funding for hardware.
2. All work stopped on Mod-5 Conversion at the end of June per NRC direction. Therefore, Mod-5 has been deleted from this schedule.

SEMISCALE
CAPITAL EQUIPMENT

EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

CARRYOVER

Program Semiscale

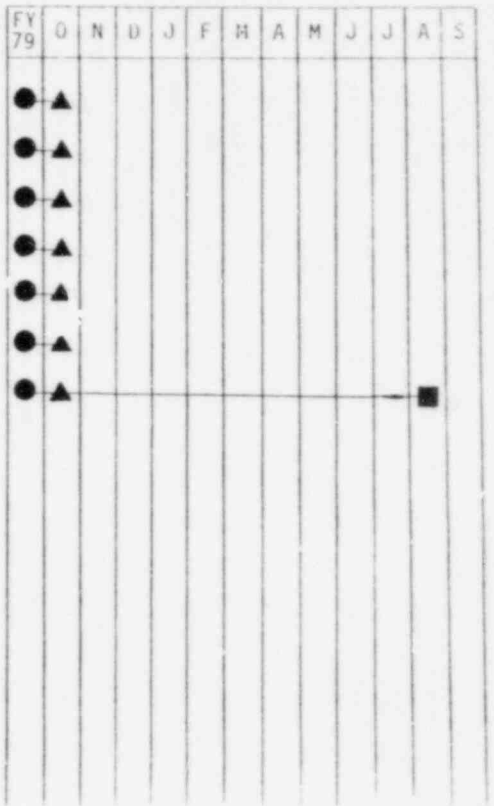
189 Number A6038 (A6059)

Date August 1980

Manager L. P. Leach

Planned { Account Opened o / Money Committed Δ / Account Closed □ } Actual { ● / ▲ / ■ }

Charge Number	Description	Authorized Amount	Current YTD Costs & Commitments	Total Costs, & Outstanding Commitments	Variance <Over>/Under
9D1987720	Data Acquisition Equipment	156,000	147,290	166,632	<10,632>
9D1989740	Intact Loop Pump	444,000	171,506	446,940	< 2,940>
9D1989780	Intact Loop Steam Generator	363,000	392,835	397,152	<34,152>
9D1989830	ADPE - Integrated Data System	148,000	6,177	7,988	140,012
9D1989840	Operation Monitor Display	30,000	5,726	29,923	77
9D1990230	Low Energy Support Electronics	100,000	100,931	103,883	< 3,883>
	Closed EA's and Miscellaneous from prior years	271,975	23,380	254,921	17,054
		1,512,975	847,845	1,383,823	105,536



Carryover Budget	753,381
From FY-1980	200,000
	953,381
YTD Costs & Commit.	<847,845>
Balance	105,536

EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

Program Semiscale

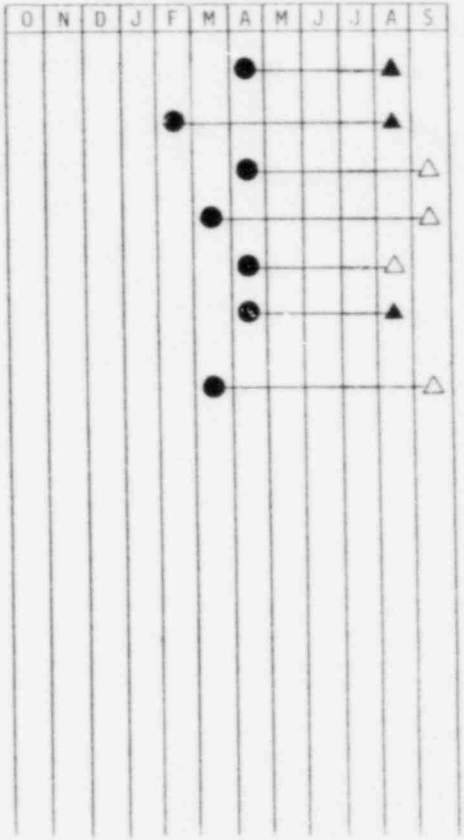
189 Number A6059 (A6038)

Date August 1980

Manager L. P. Leach

Priority Number	Charge Number	Description	Authorized Amount	Total Costs, & Outstanding Commitments	Variance <Over>/Under
1	9D1992240	Data Acquisition System Support	25,000	24,029	971
2	9D1991520	DDAPS Support and Replacement Equip.	95,000	49,570	45,430
3	9D1992210	Multibeam Gamma Densitometers	100,000	81,369	18,631
4	9D1991680	ADPE (WRR FY-1979 Procurement Plan)	75,000	10,204	64,796
5	9D1992260	Control System Support Equipment	15,000	5,543	9,457
6	9D1992220	Systems Maintenance/Modification Miscellaneous Tools, etc.	10,000	9,411	589
7	9D1991650	Air-Water Loop Upgrade Equipment	80,000	45,496	34,504
			400,000	225,622	174,378

Planned { Account Opened o, Money Committed Δ, Account Closed □ } Actual { ● ▲ ■ }



FY-1980 Budget	600,000
To FY-1979	<200,000>
	400,000
YTD Costs & Commit.	<225,622>
Balance	174,378

SEMISCALE

TECHNICAL REVIEW & SUMMARY

PROGRAM MANAGER'S SUMMARY AND HIGHLIGHTS

Progress continued toward the completion of the Semiscale Mod-2A upgrade. The intact loop steam generator tube bundle instrumentation was completed and assembly of the generator in the pit begun. A delay in the procurement of the honeycomb core insulators has caused a two-week slip in the overall Mod-2A schedule. A decision to leave them out of the vessel is under consideration.

The Mod-2A readiness review team was assembled and plans formulated for the review process. Draft experiment operating specifications were completed for the 10% upper head injection tests and the natural circulation test series. The Semiscale Steam-Air-Water Loop design was finalized.

The LOFT Test Support Facility completed calibration testing of the L3-5 spool piece and forwarded results to the LOFT Program.

1. 189a A6038 - Semiscale Program

2. Scheduled Milestones for August 1980

3. Summary of Work Performed in August 1980

   a. 411CL00 Closed Loop Secondary

      1. 411CL1100 Preliminary design of the closed loop controls is 95% complete.

      2. 411CL1200 The initial bid packages for major hardware in the closed loop secondary did not result in an adequate number of vendor responses. This lack of response is due mainly to the facility's small size and stringent requirements. The bid packages have been reissued to additional suppliers; however, two definite bids have already been received on the condenser, which is the most critical item. No impact is expected to the scheduled window installation date in the summer of 1981.

   b. 411DA00 Measurements Engineering

      1. 411DA1100 Minor routine digital data acquisition and processing system (DDAPS) maintenance was performed.

      2. 411DA1200 The annual cleaning, calibration, and linearity adjustments of the data acquisition system (DAS) instrumentation amplifiers is continuing. These adjustments are required annually to verify that the signal conditioning equipment is within operating specifications. This is approximately 50% complete.

      3. 411DA2100 Measurement identification nomenclature was reviewed and changes instituted for Mod-2A. The new identification numbers will incorporate up to ten characters and have been revised to better conform with established thermal-hydraulic nomenclature where possible.

         Program Minimum Bias (a curve fitting routine) was incorporated on the Standards and Calibrations Laboratory's data system. Use of this software at the laboratory will save Semiscale approximately 12 manweeks per year of reentering the calibration data for curve fitting of pressure and other transducer data.

Work was started in preparation of some (and review of all) component checkout (C.C.), system operation (S.O.), and system characterization (S.C.) tests to be performed in preparation for Mod-2A startup. Instrumentation lists for the first Mod-2A test were established with analysis personnel.

4. 411DA2200 Work on converting the remaining plotting routines to the F-machine was continued, but interrupted by repeated failures of the Versatec plotting equipment which was ultimately returned to the vendor (Versatec, Santa Clara, California) for repair and checkout. Inoperability of the Vector-to-Raster Converter (VRC) will not constitute a major impact, as the VRC only increases plotting speed. Only the overlay routine, particularly needed for the first eight tests, has yet to be converted to use on the F-computer. Thus the software graphics work is more than 95% complete. Work was started on getting the measured book data, with new identification nomenclature, entered into the F-computer. Additional work was accomplished in getting interim programs generated for transmission of other log sheet data from the F-machine to the System I and II computers.

5. 411DA2400 A final design review was held for the Steam-Air-Water (SAW) Loop and approval to proceed given, pending resolution of a few minor action items which will be completed in September 1980. Requisitions were prepared and processed for piping materials to construct the loop air piping needed for the FLECHT-SEASET test.

   A final design review was also held and approval given to proceed with work on the FLECHT-SEASET test. Fabrication of the vessel (pressure boundary) and some internals was redirected to EG&G Idaho and special purpose design drawings and requisitions for same and the test stand were prepared and processed using funds made available via a Code Assessment Division account.

   Work on installation of the fire protection system, and the regulated power for the loop data system, was initiated. The latter is about 50% complete. Installation of instrumentation cabinets in the data room was completed.

6. 411DA3300 Modification work of the reactor vessel lower head and six spool pieces for metal thermocouple installations was directed and accomplished.

c. 411LE00 Semiscale Operations

1. 411LE1100 Major efforts were directed toward the ongoing Mod-2A modifications. Six Mod-2A primary system spool pieces were taken to TAN-607 (Test Area North) to have thermocouple holes drilled. The spool piece drilling was completed on August 22, 1980 and the spool pieces were hydro-tested to 3750 psi. Installation of the external heaters on Mod-2A system piping was continued. An internal volume measurement was performed for the broken loop pump. The Mod-2A vessel lower plenum and head were also tested to 3750 psi for 5 minutes.

   On August 20, 1980, 12 filler pieces were received for the steam generator and the core heater rod moisture seals were baked out. Volumetric measurements for spool pieces in the intact and broken loop were performed.

   On August 21, 1980, the intact loop steam generator was received from TAN-615 and the steam generator was placed in the TAN-646 pit area for filler installation on August 22, 1980. On August 27, 1980, installation of filler pieces around the tube bundle of the intact loop steam generator was completed.

   Work also continued on general system maintenance and repair. During the period August 25 and 26, 1980, the Number 2 intact loop pump overhaul was completed and on August 27, 1980 the Number 1 broken loop pump was removed from the system and the Number 2 pump was installed.

   System operation (S.O.), component checkout (C.C.), and system characterization (S.C.) test procedures were scheduled and coordinated. Test procedures SC-2A-03, SC-2A-04, SC-2A-05, and SC-2A-07 were written and reviewed.

   The experiment data report for Tests S-SB-P1, S-SB-P2 and S-SB-P7 was submitted to the Documentation Office on August 5, 1980. The work on the experiment data reports for Tests S-SB-P3 and S-SB-P4, and for Test S-07-10D, is in progress and on schedule.

2. 411LE1200 Work continued on the experiment operating specification (EOS) for the 10% break upper head injection tests. The draft EOS was completed and presented to management for review. Transmittal is scheduled for September 19, 1980.

An article summarizing Mod-3 results was completed and is being reviewed by management.

Drafts of three papers to be presented at the Fuel Rod Simulator Symposium, to be held in Gatlinburg, Tennessee in October 1980, were completed.

Assistance was provided, as required, on the Taiwan Power Startup Test Proposal. Comments were incorporated into the draft and a final manuscript was prepared to be transmitted the first week in September 1980.

The hydraulic resistance of the new ground hub configuration was investigated. Exact loss coefficient data for the unique design are not available. The conclusion reached was that a plexiglass prototype should be constructed and tested.

Discussions were conducted concerning proposed nine-rod bundle uncovered core heat transfer tests. Several different measurement schemes were discussed to provide vessel exit mass flow and vapor superheat temperatures. It was decided that the tests must have an aspirating steam probe to provide vapor superheat temperature and a reliable core outlet flow rate.

The new intact loop pump air-water test plan was completed, and work was initiated on a two-phase steam-water test plan for the pump.

In response to a recommendation of the Advisory Committee on Reactor Safeguards (ACRS), to develop an instrument that will provide an unambiguous indication of reactor vessel liquid level, a proposal for a float type system was prepared. An in-house review of the system will be conducted on September 29, 1980 and, if found worthy of development, the device will be proposed to the Nuclear Regulatory Commission for evaluation in Semiscale.

Semiscale Mod-3 10% small break RELAP4 analyses continued during the month. These analyses are investigating the relative sensitivity of environmental heat losses, upper head injection without loop accumulators, with loop accumulations with upper head injection, and various primary coolant pump operation strategies.

3. 411LE1400 Fabrication, installation, and dimensional operational verification of the temperature and pressure instrumentation on the intact loop steam generator was completed and the unit released for further assembly work. Work was begun on the similar operations on the broken loop steam generator and is about 80% complete. Core grid spacer thermocouples were fabricated and installed on the spacers. Core heater rods were baked out and moisture seals were reinsulated resulting in only a 10 μa leakage at 2200 volts. Work was begun on calibrating several turbines to be used in the upper head, downcomer, and in the upper head flow calibration work. Refurbishment and calibration of drag force transducers was continued and is now 75% complete.

   Several raw test data tapes in records storage had exceeded the five year retention period. These have been reprocessed to upgrade them to current software formats and restored. Eleven (11) tests have been reprocessed with 16 remaining to be upgraded.

4. 411LE1500 The new seal (EG&G Sealol) was installed in the Lawrence pump and the pump successfully hydrotested.

d. 411M200 Mod-2A Conversion

1. 411M23100 Procedures for system operation (S.O.) and system characterization (S.C.) tests were written. Interfaces between site and analysis personnel concerning the tests continued. It was decided that the following S.O and C.C. tests could be performed after the 10% upper head injection series:

   - Rand heater calibration
   - Heat loss determination
   - Honeycomb heat transfer
   - Core rod power factors
   - Downcomer-core oscillation determination.

   A comparison study was made of the rates of uncovery of the steam generator heat transfer surface areas in the Semiscale Mod-2A system and in the ZION pressurized water reactor (PWR). Comparisons were made of the percentage of the total

heat transfer area covered by primary fluid, a function of the primary liquid volume as a percentage of the total primary coolant system volume. When the primary coolant system liquid volume drops to 80%, only 4% of the Semiscale heat transfer surface remains covered, whereas 52% of the ZION heat transfer surface remains covered. The comparisons can be improved considerably by elevating the Semiscale pressurizer to the top of the steam generator U-tubes. A request was made to the Design Branch for cost and schedule impact to implement this change. This information will be prepared by the second week in October 1980.

A study was performed to determine the feasibility of measuring external heat loss through the shell and insulation of the Type II steam generators. It was determined that heat flux thermocouples mounted in the steam generator outer shell would be impractical since a ΔT of approximately 1/8°F would occur through the shell in insulated areas. Heat flux thermocouples mounted in the insulation would be more practical since a ΔT of about 350°F would occur.

The Semiscale Mod-2A RELAP5 model was updated to include the as-built locations of the piping heater bands. This model was also exercised on various transients during the month as part of the developmental verification of the model.

Sensitivity studies were initiated to investigate various piping heater band operating schemes for the Mod-2A system. Another study in progress will determine the times required to heat up the system until it is thermally saturated at test steady state conditions.

2. 411M25100 The steam generator filler pieces were delivered on August 20, 1980, and subsequently installed in the intact loop steam generator. Assembly is 90% complete.

Instrumentation of the broken loop steam generator U-tubes was completed. Shop modifications to the pressure vessel were also completed.

New trim for seven secondary system valves was ordered from Valtek to replace unsuitable trim used in previous sytem configurations. This trim will be installed in preparation for Mod-2A component checkout (C.C.) and system operation (S.O.) testing.

Approximately 80% of the C.C. and S.O. test procedures have been issued for review and comment.

3. 411M25200 Rocky Mountain Nuclear, Salt Lake City, Utah, was awarded the subcontract to fabricate the intact loop steam generator "pant leg" spools, including machining of the plenum forging. Delivery date is December 10, 1980.

   The subcontract for densitometer washers was award to American Beryllium Corporation, Tallevast, Florida. Delivery date is December 17, 1980 and attempts are being made to expedite delivery of three broken loop piping washers.

   Design of the broken loop steam generator "pant legs" was completed and the bid package issued; design of the 3-in., drag screen spool was also completed. Natural circulation reflux spool piece design was completed and will be added to the existing contract with Rocky Mountain Nuclear.

e. 411M300 Mod-3 Upgrade

411M31200 Pyromet Industries, San Carlos, California, continues to have problems which are delaying delivery of the honeycomb insulators. To date, 4 of 24 insulators being fabricated at Pyromet have failed hydro-test (3000 psi). The time required to replace these units, and repair leaks, may impact the Mod-2A conversion schedule. Another, possibly more serious problem, involves the question of structural adequacy of these items. The following items are being concentrated on in an effort to resolve the problem:

1. Determine the failure mechanism and "fix" to the problem. This involves review of stress calculations, review of the manufacturing process to identify anything distinctive about the failed units, metallurgical evaluation of failed units, and additional strength testing of the honeycomb.

2. Perform additional autoc[illegible]e testing on a sample of accepted units.

3. Develop alternate plan, e.g., determine acceptability of performing some experiments without the insulators in the vessel.

To date, 20 of the 36 core insulators, and the lower plenum insulator, have passed final hydro-test; the cognizant engineer is at Pyromet assisting as necessary.

f. 411M500 Mod-5 Conversion

411M51300 A RELAP4/MOD7 Babcock and Wilcox (B&W) model is being used to analyze a 2.5% break in the cold leg. Two calculations are in progress: (1) primary coolant pumps running out to 1000 s, and (2) primary coolant pumps tripped off on a low primary coolant system pressure signal.

g. 411NC00 Natural Circulation Series

411NC1100 The system description for Mod-2A was incorporated into the draft experiment operating specification (EOS). Management comments were incorporated into the preliminary draft. Effort continued to secure an instrument table for the draft. Meetings were held with Measurements Engineering to reach an agreement regarding the table. It was decided that the draft EOS would be issued to the review committee with an instrument table defining only the type of measurements required at specific locations and appropriate ranges. Particular instruments to be used would not be delineated in the table and will be selected prior to the test series scheduled for June 1981.

A meeting at the Electric Power Research Institute (EPRI), concerning natural circulation, was attended. Results obtained from tests conducted at the Stanford Research Institute were reviewed and a presentation describing tests planned in Semiscale was given. Results were usefull for planning of the Semiscale natural circulation test series.

h. 411PC00 Program Management and Control

411PC1100 FY-1980 and FY-1981 budget related tasks were continued.

i. 411SB00 Small Break Test Series

411SBX300 Analysis of small break test results was continued in support of the two topical reports scheduled for the small break test series. Experimental values for the two-phase multiplier for pump head degradation were obtained from Tests S-SB-P2, S-SB-P7, and S-SB-P4 data. Comparisons were made of the break flow rate measured in Test S-SB-P2 to values calculated using the homogeneous equilibrium model (HEM), Henry-Fauske, and Burnell models. These comparisons were made to determine whether the models could be used to calcuate break flow rates for Tests S-SB-P3 and S-SB-P4, for which no break flow

measurements were available. Results of the comparisons indicate that the models provide a reasonably good representation of the break flow response for the two tests. Except for further comparisons with code calculations, the analysis for both topical reports is nearly complete.

The amount of fluid heating due to pump operation was calculated and found to be negligible.

The following posttest RELAP4/MOD7 analyses of Test S-SB-P1, with horizontal slip in the hot leg, are in process: (1) with and without vertical slip in the steam generator inlet junctions, (2) phase separatiion in the broken loop cold leg, and (3) phase separation in the broken loop cold leg with vertical slip in the steam generator inlet junctions. Improvements in the model, as a result of performing these sensitivity studies, will be included in the model used to perform analyses in support of the small break topical reports.

An error was discovered and corrected in the RELAP5 choking model. The Test S-SB-P1 analysis was redone with the corrected version of the code and even better agreement with data was obtained. A RELAP5 analysis of Test S-SB-2 was initiated; the results will be presented in the small break test results reports (topicals).

j. 411SS00 Special Studies

411SS1W00 Anticipated transient computer code investigations. The RETRAN I computer code is being used to analyze Test S-TR-1. The calculation is out to 3000 s and is currently being analyzed.

k. 411TR00 Blackout Simulations

411TR1100 The analysis report for station blackout Tests S-TR-1 and S-ST-2 was revised and issued (LPL-128-80, August 19, 1980).

Comparison of results from a RELAP4 calculation, in which system heat losses were modeled to Test S-TR-1 data, showed differences that were suspected to be due to calculated and actual heat losses. To investigate the sensitivity of calculated results to heat loss modeling, a RELAP4 posttest calculation of Test S-TR-1 was conducted in which the system was assumed to be perfectly insulated (no heat losses). Results from the calculation revealed that neglecting heat losses lead to premature emptying of the steam generator secondaries and hence system repressurization that was too rapid relative to the measured data.

A RELAP5 calculation of Test S-TR-1 is in progress, with an update to the code to correct an error in the choking model, and to limit mass errors.

l. 411T100 Test Series 11 - Loss-of-Feedwater

411T1X200 Design of the external heater power supply platform was completed. Installation of band heaters and terminal boxes continued and is 80% complete. Close monitoring of the critical path procurement (power supplies) and fabrication of the control chassis continued. A work package to install direct current (dc) distributor cable and conduit was issued.

m. 411T700 Test Series 7 - Baseline Tests

411T7X500 COBRA simulations of Tests S-07-10B and S-07-10D calculations have been performed with a COBRA model of the Mod-3 core to try to simulate the boiloff/heatup portion of the tests. Due to the improper distribution of fluid mass calculated by COBRA the transient cannot be duplicated satisfactorily. A letter is being written to detail the calculational results.

Hand calculations of the transient, using simple energy balances (including vapor-to-wall transfer) give much higher superheats at the core outlet than were seen during the test. (A maximum vapor superheat of about 100 K was measured during the tests whereas, 300 K vapor superheat was calculated.) Calculations using drift-flux techniques to refine the fluid conditions are in progress. If the drift flux results are reasonable, the refined fluid conditions will be used to calculate local heat transfer coefficients.

n. 9D19900 FY-1980 Capital Equipment

1. 9D1991520 (Digital data acquisition and processing system (DDAPS) upgrade). The new major patch panel in the room below the data room was installed. Cabling from the data room to it was pulled, cut, and connector installation begun. Additional cabling from the pit to the patch panel was also pulled. Requirements and cost estimate for modification of the cooling air supply and fire protection system in the data room was defined.

2. 9D1991650 (Steam-Air-Water Loop (SAW) Loop Upgrade). Requisitions for loop equipment and site work releases (SWR) for installation were issued following the final design review (see Section 3.b.5 (411DA2400), Measurements Engineering).

3. 9D1992210 (Multi-beam gamma densitometers). Signal conditioning module modification work continued and is approximately 90% complete. Cable installation from the pit to the data room was started and completed, and connector installation was begun. About 90% of the signal conditioning modules have been received and installed in the data room. Detector cask connector modifications were completed, along with test pulse feed-through module fabrication. Control panel fabrication was 90% completed.

4. 9D1992240 (Data acquisition system (DAS) support and calibration equipment). Test and diagnostic equipment was received and checkout begun.

5. 9D1992260 (Control systems support equipment). Hardware for the peak reading circuit was received and checked out. Work on installation and cabling was begun.

4. Scheduled Milestones for September 1980

None.

5. Summary of Work to be Performed in September 1980

a. 411CL00 Closed Loop Secondary

1. 411CL1100 Preliminary design of the closed loop secondary controls will be completed and a package will be issued for review.

2. 411CL1200 Bids will be evaluated and orders placed for the major hardware items in the closed loop secondary.

b. 411DA00 Measurements Engineering

No work is anticipated under the following charge numbers during September 1980. Several numbers will be continued in FY-1981 and FY-1980 work is completed.

411DA2100 - Data Acquisition System (DAS) Engineering
411DA1200 - Data Acquisition System (DAS) Maintenance
411DA2100 - Data Acquisition System (DAS) Engineering
411DA2200 - Software Engineering
411DA2300 - Turbine Development
411DA3200 - Electronic and Digital Circuit Design
411DA3300 - Transducer Engineering and Fabrication.

411DA2400 Regulated power installation and fire protection installation in the Steam-Air-Water (SAW) Loop will be completed, as well as repair of the data room air-conditioner. Data system equipment installation will be started. FLECHT-SEASET vessel fabrication contracts will be placed.

c. 411LE00 Semiscale Operations

1. 411LE1100 Mod-2A modifications will be continued. Scheduling, writing, and performing system operation (S.O.) and component checkout (C.C.) tests for the Mod-2A system will also continue. C.C. and S.O. tests are required for verification of Mod-2A readiness. These tests will be performed as each subsystem of Mod-2A is readied. Testing will continue into November 1980.

   Experiment data report (EDR) preparation for Tests S-SB-P3 and S-SB-P4, and Test S-07-10D will continue. The EDR for the pump tests is scheduled to be sent to the Documentation Office in September 1980, with transmittal scheduled for November 7, 1980. The Test S-07-10D EDR will be sent to Documentation in October 1980, with transmittal scheduled for November 21, 1980.

2. 411LE1200 Draft letter experiment operating specifications (EOS) for the 10% break upper head injection tests, and for the 2.5% break tests, will be issued.

   A draft manuscript dicussing Semiscale Mod-3 results will be transmitted to the Nuclear Safety Magazine.

   Preparation for presentations to be given at the 1980 American Society of Mechanical engineers (ASME) meeting and the Fuel Rod Simulator Symposium will be initiated.

   Work on a plan for a two-phase steam-water tests of the new intact loop pump will continue.

   The Semiscale Mod-3 10% small break RELAP4 analyses will be cc[illegible]and documented.

3. 411LE1400 Installation and verification of broken loop steam generator temperature and pressure instrumentation will be completed. The upper head assembly flow instrumentation calibration will be checked. Reactor vessel instrumentation installation and vessel assembly will begin. Work will continue on reprocessing the 16 remaining raw data tapes from previous tests. This is fill-in work

and will be completed on a time available basis. Cabling work will be continued with channels being set up for system characterization (S.C.) and system operation (S.O.) testing requirements.

d. 411M200 Mod-2A Conversion

1. 411M23100 Tests associated with system characterization (S.C.) and system operation (S.O.) tests will continue.

   RELAP5 sensitivity studies, conducted to help determine the effect of the honeycomb insulation on Semiscale vessel heat losses, will be completed. Studies conducted to help determine appropriate band heater operating schemes during small break transients will also be completed.

2. 411M25100 The intact loop steam generator will be installed. Assembly of the broken loop steam generator will be completed. New and refurbished trim will be installed in the secondary system valves and secondary piping will be completed on the intact loop steam generator.

3. 411M25200 Orders will be placed for the broken loop steam generator "pant legs" and 3-in. drag screen spool. Bid packages will be issued for the 3-in. drag screen spool. Design of the reflux spool pieces will be completed and a bid package issued.

e. 411M300 Mod-3 Upgrade

411M31200 Honeycomb insulators will continue to be monitored closely until shipment date which is presently scheduled for September 24, 1980. Autoclave testing of a sample core insulator (one set) will be completed. A set is considered four panels with one grid spacer captured and placed in a test fixture simulating a section of the vessel.

f. 411M500 Mod-5 Conversion

411M51300 RELAP4 Babcock and Wilcox (B&W) 2.5% cold leg break analyses, with the primary coolant pump running and with them tripped early in the transient, will be completed.

g. 411NC00 Natural Circulation Series

411NC1100 Instrumentation tables will be assembled and incorporated into the draft document which will then be issued for Semiscale Review Group review.

h. 411SB00 Small Break Test Series

411SBX300 RELAP4 senstivity studies of Test S-SB-P1 will be completed and the information gained in performing these studies will be incorporated into the RELAP4 model used to perform analyses in support of the small break topical reports.

The RELAP5 analysis of Test S-SB-2 will be completed and documented as a part of the small break test results reports (topical).

RELAP4 analyses of Tests S-SB-P1, S-SB-P2, S-SB-P3, S-SB-P6, S-SB-2, S-SB-2A, S-SB-4, and S-SB-4A are planned for inclusion in the small break test results reports. Topical report preparation will begin for the small break test series.

i. 411SS00 Special Studies

411SS1W00 The RETRAN I analysis of Test S-TR-1 will be completed.

j. 411T100 Test Series 11 - Loss-of-Feedwater

411T1X200 The power supply platform will be fabricated and the remainder of the site work releases (SWR), to complete wiring and conduit runs, will be issued.

Monitoring of the critical path procurement (power supplies) will continue. Fabrication of the control chassis will be completed. Installation of the band heaters will be completed and wiring and conduit runs, including core drilling holes in concrete, will continue.

k. 411T700 Test Series 7 - Baseline Tests

411T7X500 A letter documenting conclusions reached during the analysis of available Semiscale uncovered core heat transfer data will be issued. Work on papers to document the important and significant findings from Test Series 7 will be initiated and work on the core length effects topical will be reinitiated.

l. 411TR00 Blackout Simulations

411TR1100 The RELAP5 analysis of Test S-TR-1, with code corrections to limit mass error and to correct the choking model, will be completed.

m. 9D19900 FY-1980 Capital Equipment

1. 9D1991520 (Digital data acquisition and processing system (DDAPS) upgrade). Work will be 90% complete on cable installation and checkout.

2. 9D1991650 (Steam-Air-Water (SAW) Loop upgrade). Equipment will be received and work started in preparation for air piping installation.

3. 9D1992210 (Multi-beam gamma densitometer). Remaining module modifications and module deliveries will be completed and system checkout will begin. The cabling to the pit will be completed.

4. 9D1992200 (Data maintenance/modification equipment). Equipment checkout will be completed.

5. 9D1992240 (Data acquisition system (DAS) and calibration equipment). Test and diagnostic equipment checkout will be completed.

6. 9D1992260 (Control systems support equipment). Work on installation and cabling of peak reading circuit will be continued.

6. Problems and Potential Probems

Problems exist with the core insulators being fabricated at Pyromet Industries, San Carlos, California. The time required to replace these units, and repair leaks, may impact the Mod-2A conversion schedule. See Section 3.e (411M300), Mod-3 Upgrade, for details and planned resolutions.

1. 189a A6043 - LOFT Test Support Facility

2. Scheduled Milestones for August 1980

None.

3. Summary of Work Performed in August 1980

a. 412A000 Test Projects

1. LOFT L3-5 Spool Piece Calibration. Calibration tests on the LOFT L3-5 break flow measurement spool piece were completed. Data integrity review and analysis was initiated. A letter summarizing test activities, including preliminary data from successful tests, was drafted and submitted for processing and review.

2. Project Management. Budget and schedule for FY-1980 tasks were reviewed and updated. Work packages for FY-1981 tasks were completed and submitted for loading into Project Management System and Cost and Planning System.

b. 412F000 Operations and Maintenance

1. Two-Phase Flow Loop

a. All drawings have been red-lined to incorporate all field changes made during construction. The red-lined drawings will be used as master facility drawings until the originals are updated after October 1, 1980.

b. All defective transducers for the loop, that were supplied by Viatran, have been repaired and returned for evaluation and reinstallation.

c. Peerless manufacturing has agreed to supply modified manholes for the steam separator and the moisture separator. Design work has been completed and a drawing issued for review by EG&G Idaho.

d. Two-phase loop cable termination sketch has been completed and submitted to drafting.

e. Planning and scheduling has been completed for 3D testing to be accomplished in November and December 1980.

2. Blowdown Loop

   a. LOFT L3-5 drag screen turbine performance testing has been completed on schedule. The tests uncovered bearing and turbine range problems and still provided performance data on the instrument under transient two-phase flow conditions and steady-state subcooled conditions.

   b. Loop modifications have been started for installation and testing of a pressure balanced turbine.

   c. The catch tank has been recalibrated following the L3-5 test.

3. General

   a. Work was continued on the centralized drawing file for the data and control systems.

   b. Extensive maintenance was performed on the data acquisition system.

   c. Fabrication of the Neff amplifier checkout box has been completed.

   d. Fabrication of cables continued in preparation of installing new Neff equipment.

4. Two-Phase Loop Heat Exchanger

   An order has been placed for the heat exchanger. Delivery is scheduled for late September 1980.

5. Utility Improvements

   Design work for the utilities as been completed and material ordered.

6. Installation of Tomographic Densitometer

   The spool piece has been machined and is ready to be installed. An order has been placed for the false floor in the computer room and electrical upgrade of the computer room started.

7. Drain System Modification

Design work has been completed and construction started.

c. 4129000 Additional Work

1. Bingham-Willamette Pump Test Program. Analysis of the Bingham-Willamette Company Facility, for determining two-phase operating capability and characteristics, was completed to 40% void fraction. Work was initiated to document results of the analysis and modeling effort for transmittal to the Nuclear Regulatory Commission.

2. 3D Spool Piece Calibration. The Two-Phase Loop operating and measurement capabilities were defined for use in assessing the 3D test matrix requirements. Instrument requirements were completed. A schedule was developed, reviewed, and revised, which summarized all planning, construction, instrumentation, and testing activities to be accomplished in early FY-1981.

3. Nuclear Regulatory Commission Relief Valve/Discharge Line Response Test Cost Estimate. Information relating to instrumentation, hardware, and operation for the subject tests was developed in support of the program cost estimate.

d. Foreign Funded Activities

1. 5FNC301 Orifice Modeling. Assessment of the two-phase orifice model and code, developed by Dr. R. Gay at Rensselaer Polytechnic Institute, using data from transient testing at Wyle, was completed and documentation was initiated for future transmittal to the Idaho National Engineering Laboratory. Results using Wyle data showed good agreement between predicted and measured mass flow rate.

2. 5FNC801 Two-Phase Loop Floor Modification. All material has been received. All subsystems have been fabricated, and installation is 40% complete.

3. 5F7C401 Emergency Core Coolant Rake Development. A letter summarizing activities associated with development of the LOFT emergency core coolant pitot tube rake was transmitted from Dr. S. Bannerjee to Idaho National Engineering Laboratory. This activity completed the contract requirement.

4. 5F7C402 Pressure Vessel Upgrade. Discussions with Applied Mechanics Branch personnel indicated work will not begin until FY-1981 on this task. This will not impact any future commitments.

5. 5F8C401 Pressure Balanced Drag Turbine. Requirements for transient testing of the pressure balanced drag turbine were developed from review of previous tests and discussions with the instrument designer. An experiment operating specification was written and transmitted for review. Hardware and instrumentation requirements were developed, and the Blowdown Facility modifications were initiated to allow testing in September 1980.

6. 5F9C400 Two-Phase Loop Boiler Building. Construction of the building was started on time, and is approximately 90% complete.

4. Scheduled Milestones for September 1980

None.

5. Summary of Work to be Perfcrmed in September 1980

a. 412A000 Test Projects

1. LOFT L3-5 Spool Piece Calibration. Analysis of the data acquired from the subject tests will continue. A letter transmitting preliminary data and a summary of testing activities will be completed.

2. Wyle Test Reports. Final review of the remaining four Wyle experiment data reports will be completed as time permits.

3. Project Management. Budget and schedule for remaining FY-1980 tasks will be reviewed. Work packages for FY-1981 tasks and associated schedule will be completed.

b. 412F000 Operations and Maintenance

1. Two-Phase Flow Loop

a. The drawing of the modified manholes for the steam and moisture separator will be approved by EG&G Idaho.

b. The Viatran process instruments will be reinstalled.

c. Installation of the 3D test hardware will start as soon as hardware is delivered. Delivery is scheduled to begin on September 12, 1980 and will continue through October 12, 1980. Schedule impact is being monitored closely, as testing is scheduled to begin November 7, 1980.

2. Blowdown Loop

Testing of the pressure balanced drag screen turbine will proceed, as fill-in work on a time available basis, during 3D test preparation.

3. Two Phase Flow Loop Heat Exchanger

Installation of the heat exchanger will begin as soon as the heat exchanger is delivered.

4. Utility Improvements

Installation of utility improvements will be completed.

5. Installation of Tomographic Densitometer

Installation of the false floor and electronics will be completed.

6. Drain System Modification

Construction will be completed.

c. 4129000 Additional Work

1. Bingham-Willamette Pump Test Program. Results of an analysis of the Bingham-Willamette Company Facility will be documented and transmitted to the Nuclear Regulatory Commission. This activity will complete the scope of work for this program.

2. 3D Spool Piece Calibration. The experiment operating specification for the subject tests will be transmitted for review. Hardware installation, instrumentation and software support will be initiated. Detailed schedules for component checkout, system operation testing, and experiment operating specification tests will be developed. Status of activities will be assessed in weekly schedule meetings to include 3D, LOFT Test Support Branch, Morrison-Knudsen, and TAN Craft personnel.

3. NRC Relief Valve/Discharge Line Response Test Cost Response Test Cost Estimate. The subject cost estimate will be completed and transmitted to the systems integrator for review.

d. Foreign Funded Activities

1. Orifice Modeling. Results of assessment of two-phase orifice model and code developed at Rensselaer Polytechnic Institute will be reviewed as available.

2. Idaho National Engineering Laboratory Support. Results of assessment of the modular drag disc turbine transducer rake modeling effort, at Rensselaer Polytechnic Institute, will be reviewed as available.

3. Pressure Balanced Drag Turbine. Transient tests for assessment of the pressure balanced drag turbine performance will be conducted in the Blowdown Facility. A letter documenting preliminary data and testing will be prepared and transmitted.

6. Problems and Potential Problems

None.

WRRD MONTHLY REPORT FOR

AUGUST 1980

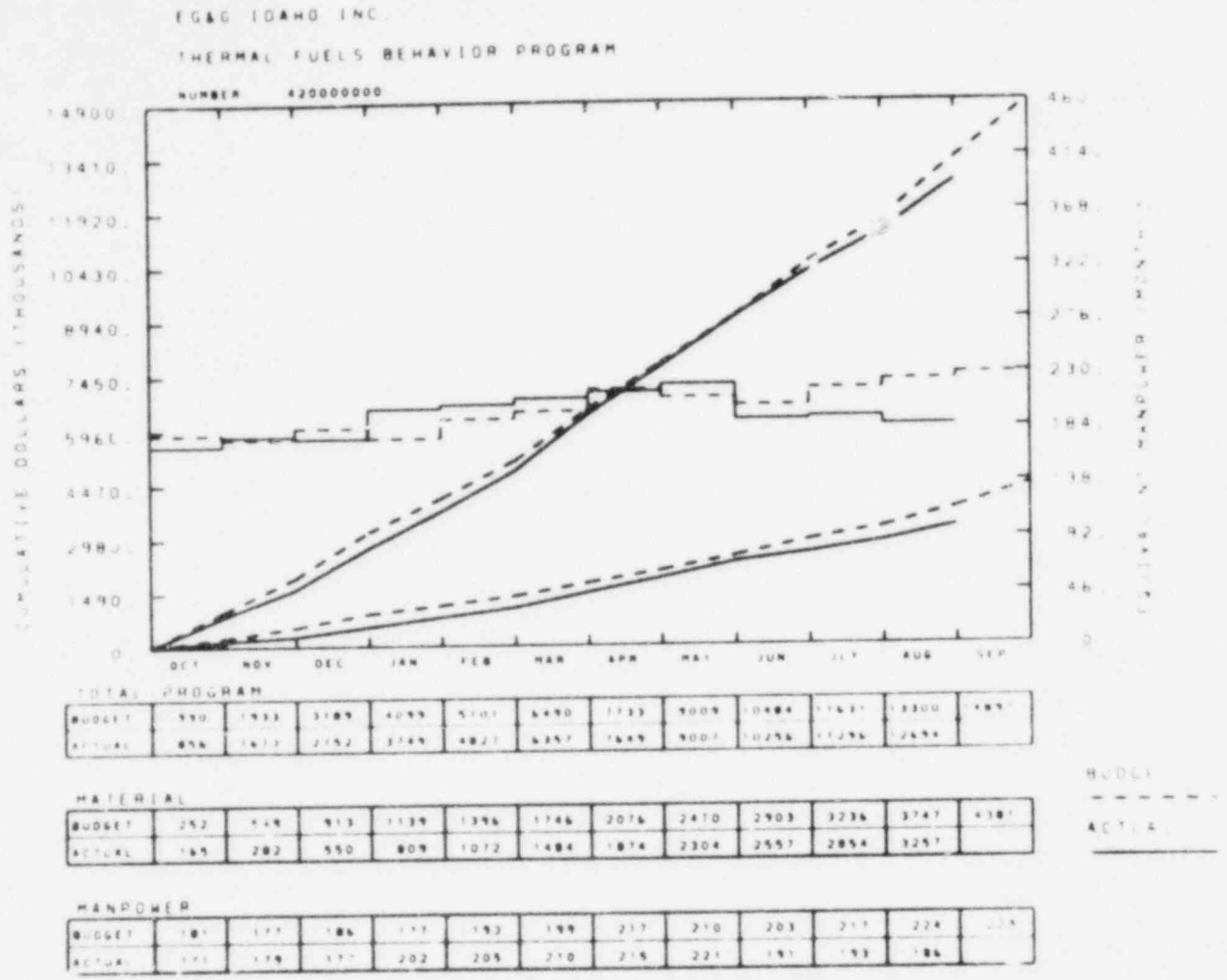
THERMAL FUELS BEHAVIOR PROGRAM

N. H. Drysdale
Plans & Budget Representative

for H. D. Zeile, Manager

THERMAL FUELS BEHAVIOR PROGRAM

COST SUMMARY & COMMENTS



YTD VARIANCE: 606 (5%)

Individual cost graphs will give individual explanations.

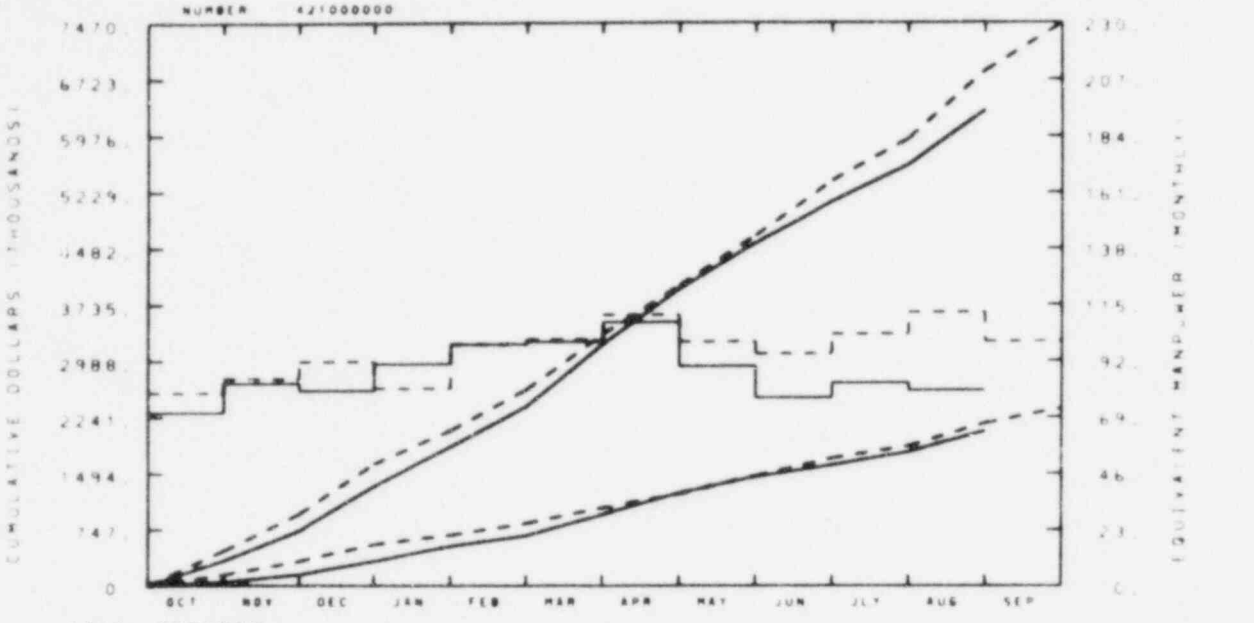
Explanations for major 189a's will be made if the variance exceeds $25 K. Minor 189a graphs will explain variance of over $10 K.

RESPONSIBLE MANAGER
R. MACDONALD

EG&G IDAHO INC.

TFBP EXPERIMENT DESIGN & ANAL

NUMBER 421000000



TOTAL PROGRAM

BUDGET	467	962	1431	2074	2612	3345	3996	4658	5308	5943	6835	7467
ACTUAL	335	737	1335	1860	2388	3214	3953	4558	5108	5599	6316	

MATERIAL

BUDGET	147	329	555	682	836	1044	1226	1464	1699	1860	2160	2360
ACTUAL	50	181	330	531	671	953	1237	1453	1608	1780	2051	

MANPOWER

BUDGET	79	85	92	81	99	101	111	100	95	103	112	104
ACTUAL	71	83	80	91	99	100	108	90	77	93	80	

BUDGET
ACTUAL

A6041

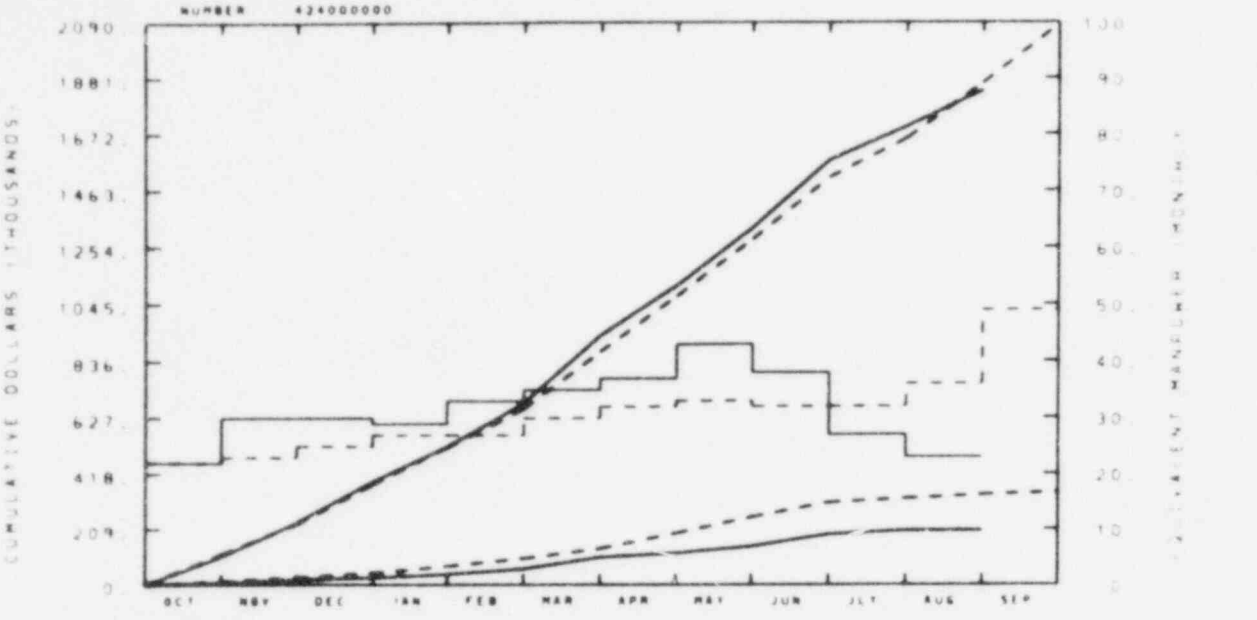
YTD VARIANCE: 519 (8%)

Analysis of the budget indicates that the 8% underrun is caused primarily by the fact that work packages and the work to support the testing schedule are in a transition mode for making adjustments between TFBP Baseline-2 and Baseline-3.

EG&G IDAHO INC

PBF ENGINEERING

NUMBER 424000000



TOTAL PROGRAM

BUDGET	116	220	379	519	661	872	1075	1284	1513	1656	1863	2084
ACTUAL	107	234	390	520	683	932	1114	1325	1576	1700	1836	

MATERIAL

BUDGET	15	29	45	70	100	137	195	254	309	324	338	348
ACTUAL	9	21	27	40	60	104	120	144	190	204	205	

MANPOWER

BUDGET	22	23	25	27	27	30	32	33	32	32	34	49
ACTUAL	22	30	30	29	33	35	37	43	38	27	23	

A6044

YTD VARIANCE: 27 (1%)

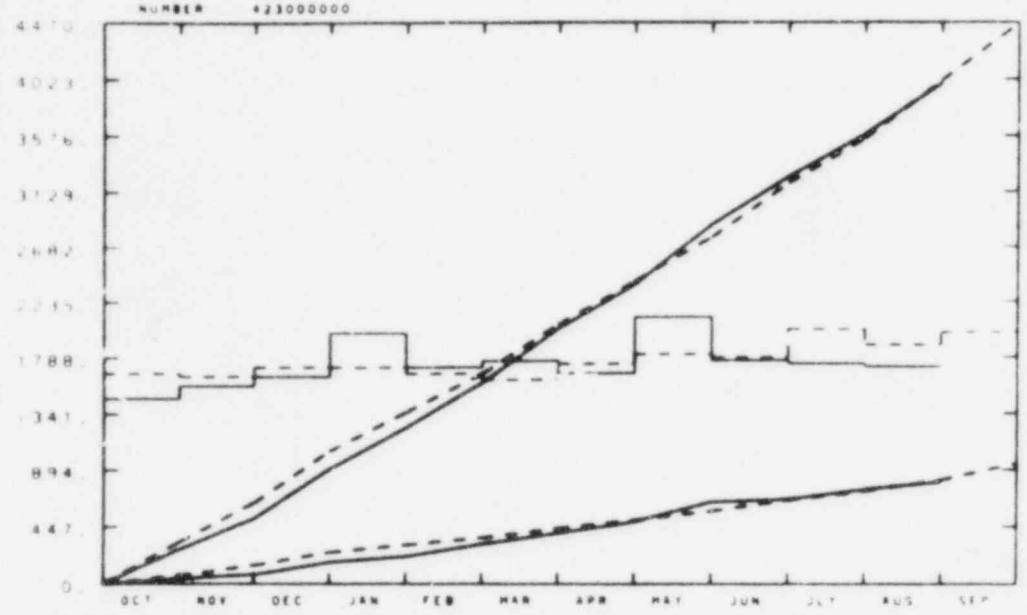
The budget changes are due to the following actions:

CCB #80-139 for Power Measurement, CCF #80-204 transferring funding for cognizant engineer, and CCF #80-217 transferring funding for cognizant engineer.

EG&G IDAHO INC

PBF OPERATIONS

NUMBER 423000000



TOTAL PROGRAM

BUDGET	329	635	1047	1357	1661	2057	2401	2762	3199	3556	4015	44
ACTUAL	273	513	905	1233	1591	2022	2377	2866	3252	3590	3993	

MATERIAL

BUDGET	68	147	248	306	362	437	501	570	655	725	813	9
ACTUAL	44	74	171	216	313	399	487	642	662	738	99	

MANPOWER

BUDGET	67	66	69	69	67	65	70	73	72	81	76	8
ACTUAL	59	63	65	80	69	71	67	85	71	70	69	

A6057

YTD VARIANCE: 22 (1%)

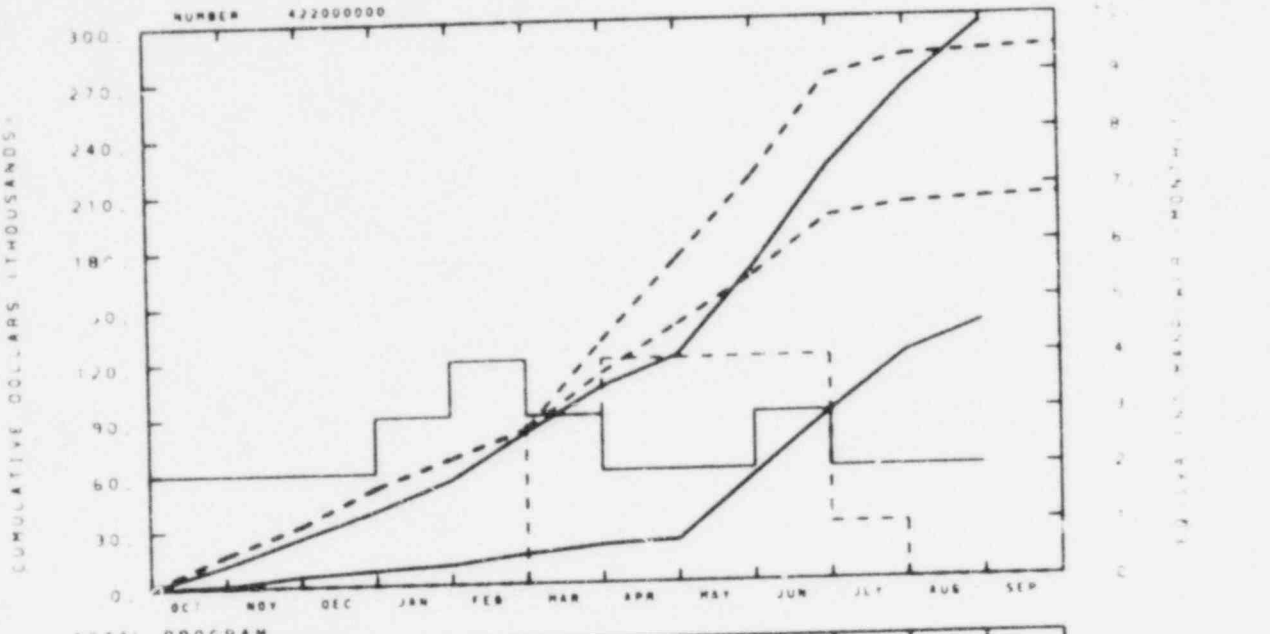
The underrun of $22 K at the end of this month, as compared to the overrun of $39 K at the end of last month, is a result of the continued close monitoring of all expenditures. There is $55 K of work scope that has been identified for carryover to FY-1981. This work could not be completed due to the plant operating schedule. The net effect of the remaining work packages is expected to have costs within budget. This expectation is based on a cost reduction trend experienced since July.

RESPONSIBLE MANAGER
P. KESTER

EG&G IDAHO INC.

PBF MODIFICATIONS

NUMBER 422000000



TOTAL PROGRAM

BUDGET	17	32	52	67	82	129	173	217	269	279	282	284
ACTUAL	12	26	40	54	81	105	121	168	222	263	296	

MATERIAL

BUDGET	17	32	52	67	82	112	138	164	195	201	203	205
ACTUAL	1	6	8	11	16	20	22	56	90	121	137	

MANPOWER

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

A6095

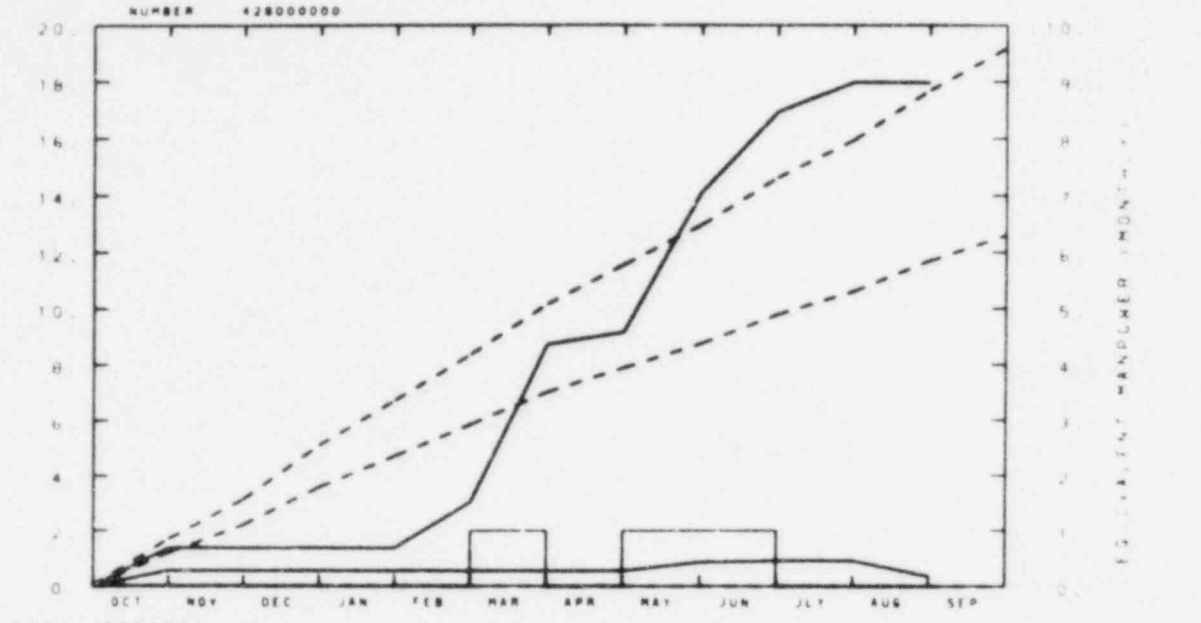
YTD VARIANCE: <14> (5%)

Costs are being reviewed to distinguish project engineering support and actual IPT charges. Year-end costs and budget will be resolved. The budget change is due to CCB #80-137, which added an additional $30 K to this 189a.

EG&G IDAHO INC.

PBF COOPERATIVE RESEARCH AUSTRIA

NUMBER 428000000



TOTAL PROGRAM

BUDGET	2	3	5	7	8	10	12	13	15	16	18	19
ACTUAL	1	1	1	1	3	5	5	14	17	18	18	

MATERIAL

BUDGET	1	2	4	5	6	7	8	9	10	11	12	13
ACTUAL	1	1	1	1	1	1	1	1	1	1	0	

MANPOWER

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

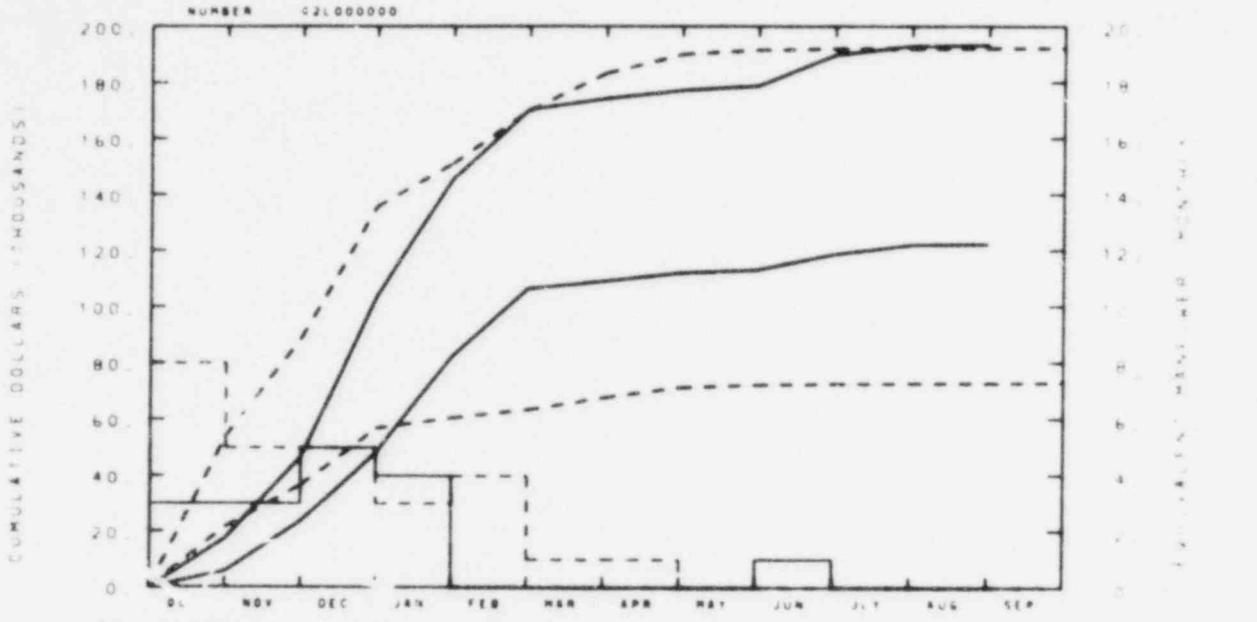
A6274

YTD VARIANCE: 0

RESPONSIBLE
MANAGER
R. W. BARKER

EG&G IDAHO INC.

PBF/LOFT LRT PROGRAM



TOTAL PROGRAM

BUDGET	54	89	136	151	170	183	190	192	192	192	192	192	
ACTUAL	17	47	103	146	170	176	177	179	190	193	193		

MATERIAL

BUDGET	22	37	57	61	64	68	72	72	73	73	73	73	
ACTUAL	6	24	48	82	107	109	112	113	119	122	122		

MANPOWER

BUDGET	0	1	1	3	4	1	1	0	0	0	0	0	
ACTUAL	1	1	1	4	8	0	0	0	1	0	1		

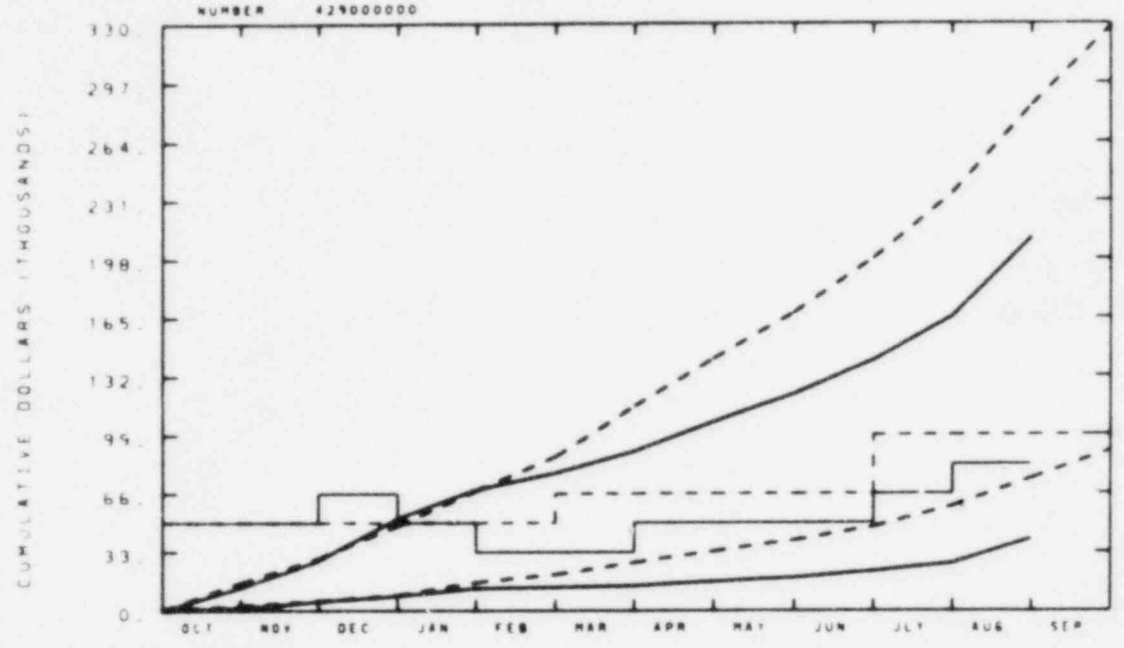
(This is LOFT funding and is not reflected in the overall total)

YTD VARIANCE: <1> (1%)

EG&G IDAHO INC.

ELECTRIC HEATER ROD EVALUATION

NUMBER 429000000



TOTAL PROGRAM

BUDGET	16	29	48	68	87	115	142	168	198	235	284	328
ACTUAL	13	28	52	68	78	90	106	122	141	166	210	

MATERIAL

BUDGET	3	5	9	16	20	27	33	40	47	59	74	90
ACTUAL	2	5	8	13	13	14	16	17	22	27	40	

MANPOWER

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

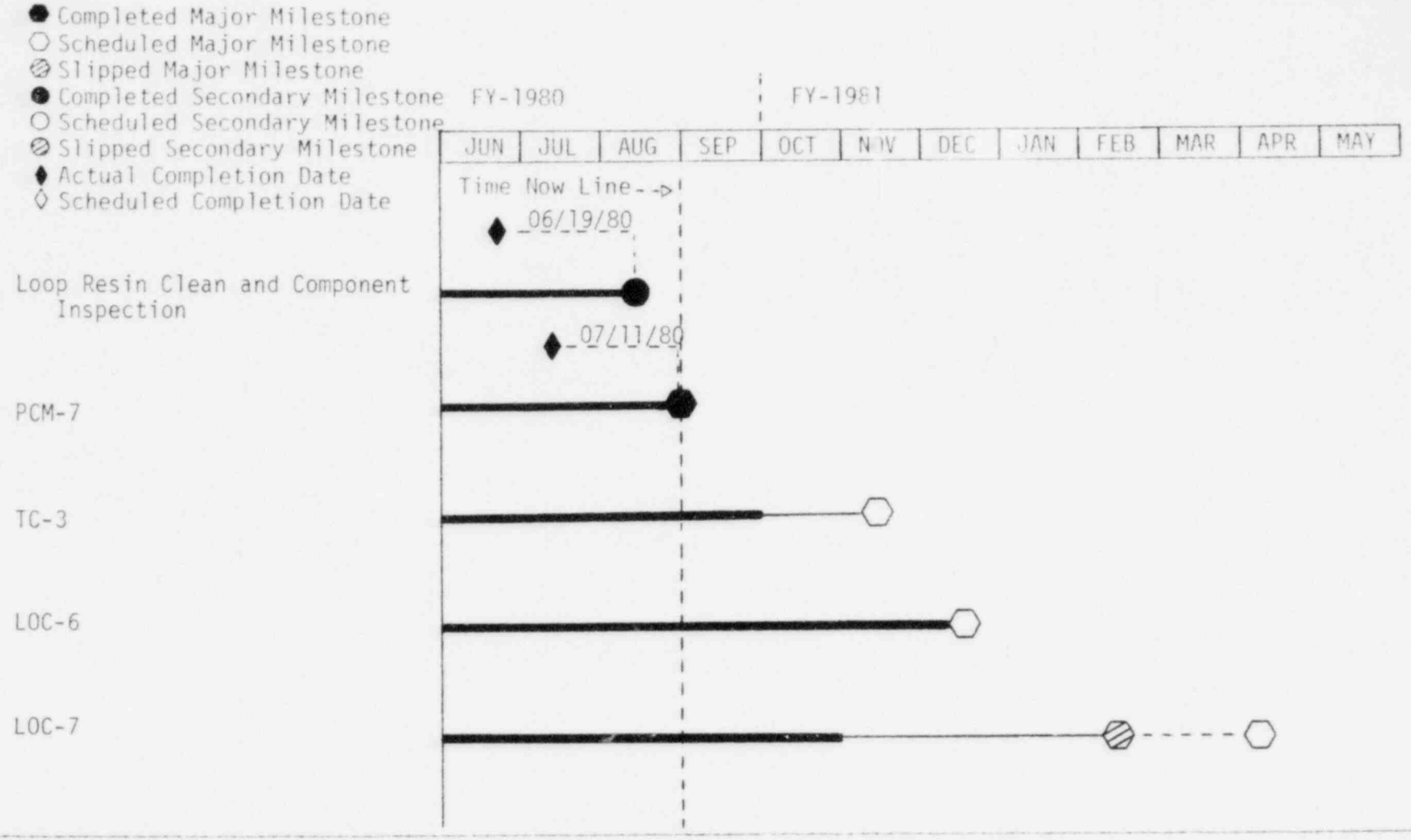
(This is LOFT funding and is not reflected in the overall total)

YTD VARIANCE: 74 (26%)

Some of the analyses planned for this task will be carried over to the next fiscal year, as the IFA-511 Test Program at Halden is behind schedule. Expanded calculational effort with RELAP5 and BWR TRAC codes should occur in September, 1980.

THERMAL FUELS BEHAVIOR PROGRAM

CURRENT WORKING SCHEDULE



NOTES: LOC-7 commitment date has been slipped to April 3, 1981.

THERMAL FUELS BEHAVIOR PROGRAM

CAPITAL EQUIPMENT

EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

CARRYOVER

Program Thermal Fuels Behavior

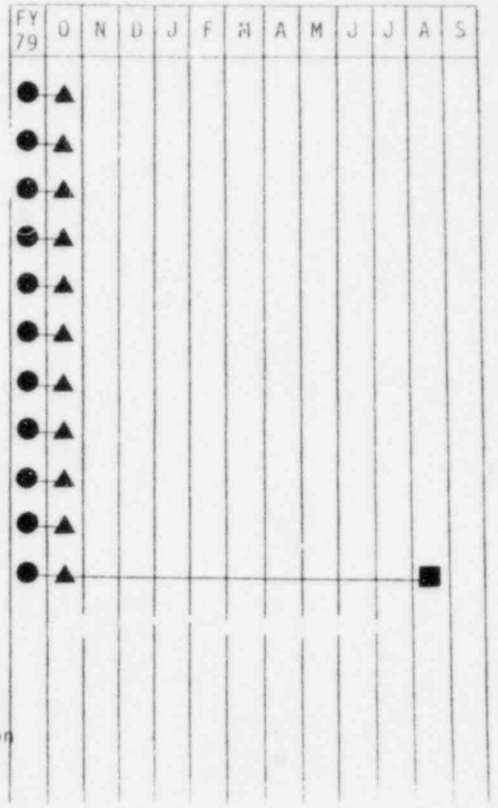
189 Number A6041 (A6087)

Date August 1980

Manager H. J. Zeile

Planned { Account Opened o / Money Committed Δ / Account Closed □ } Actual { ● / ▲ / ■ }

Charge Number	Description	Authorized Amount	Current YTD Costs & Commitments	Total Costs, & Outstanding Commitments	Variance <Over>/Under
9E1986490	Fission Gas Collection System	10,000	6,922	10,129	<129>
9E1987050	Diam Gauge System	20,000	5,835	20,000	-0-
* 9E1989080	ADPE Funding	69,300	68,722	68,722	578
* 9E1989190	TRA Fuel Scanner	145,000	115,873	150,558	< 5,558>
* 9E1989430	Remote Manipulation	58,000	57,978	58,000	-0-
* 9E1989680	Remote SEM w/x-ray	109,200	127,785	127,785	<18,585>
9E1991080	ADPE Funding	10,500	11,130	11,130	< 630>
9E1991090	ADPE Funding	10,500	8,571	8,571	1,929
9E1991100	ADPE Funding	6,300	6,462	6,462	< 162>
9E1991110	ADPE Funding	4,200	4,452	4,452	< 252>
	Closed EA's and Miscellaneous from prior years	378,252	51,261	375,651	2,601
		821,252	466,459	841,460	** <20,208>



Carryover Budget	468,251
To FY-1980	<22,000>
	446,251
YTD Costs & Commit.	<466,459>
Balance	

* Engineered equipment package

** Work has been temporarily suspended for this fiscal year on the SEM. Inflationary costs will be absorbed during the installation phase. Also, some other committed funds will probably become available during this year.

EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

CARRYOVER

Program Thermal Fuels Behavior

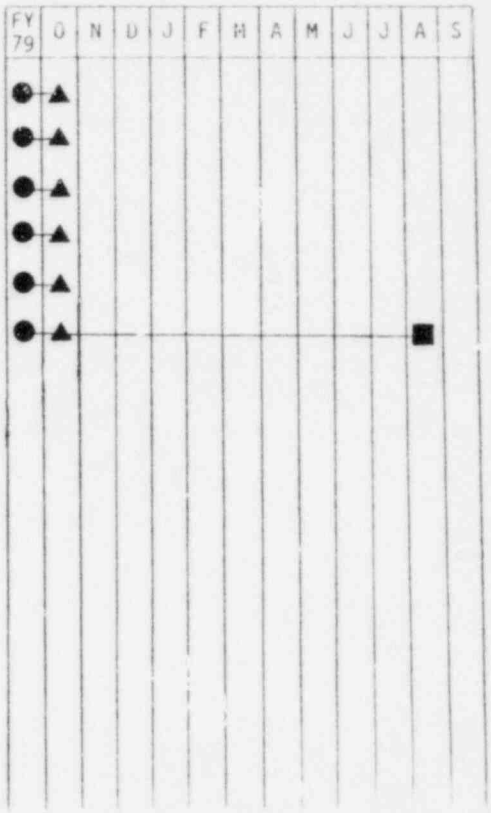
189 Number A6044 (A609)

Date August 1980

Manager H. J. Zeile

Planned { Account Opened o / Money Committed △ / Account Closed □ } Actual { ● / ▲ / ■ }

Charge Number	Description	Authorized Amount	Current YTD Costs & Commitments	Total Costs & Outstanding Commitments	Variance <Over>/Under
9E2988890	DARS Data Processing Software	30,000	27,628	29,988	12
*9E2988960	DARS System Input/Interfaces	39,770	18,964	39,823	<53>
*9E2989150	DARS Test Maint & Comb Equipment	72,000	55,161	72,043	<43>
9E2989670	ADPE Funding	30,000	---	---	30,000
*9E2990460	PBF Monitor and Timer System	132,000	132,000	132,000	-0-
	Closed EA's and Miscellaneous from prior years	447,022	56,135	444,050	2,972
		750,792	290,888	717,904	32,888



Carryover Budget 334,006

< 10,230> Moved to 9E4991940

323,776 from 9E2988960

YTD Costs & Commit. <290,888>

Balance 32,888

* Engineered equipment package

EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

CARRYOVER

Program Thermal Fuels Behavior

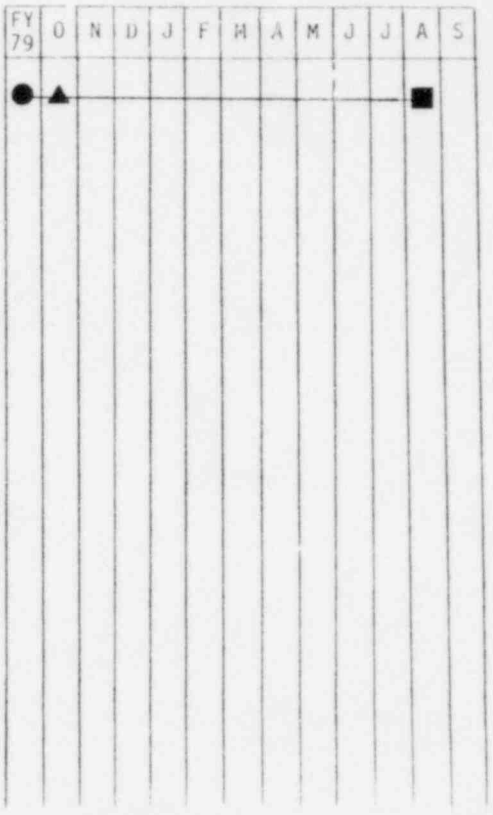
189 Number A6046 (A6093)

Date August 1980

Manager H. J. Zeile

Planned { Account Opened o / Money Committed Δ / Account Closed □ } Actual { ● / ▲ / ■ }

Charge Number	Description	Authorized Amount	Current YTD Costs & Commitments	Total Costs, & Outstanding Commitments	Variance <Over>/Under
	Closed EA's & Miscellaneous from prior years	57,500	8,888	52,951	4,549
		57,500	8,888	52,951	4,549



Carryover Budget	13,437
YTD Costs & Commit.	<8,888>
Balance	4,549

EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

Program TFBP Combined List

189 Number A6091 (A6041/A6044)

Date August 1980

Manager H. J.Zeile

Priority Number		Charge Number	Description	Authorized Amount	Total Costs, & Outstanding Commitments	Variance <Over>/Under
*	1	9E4993060	PBF P&M System Replacement Phase II	168,000	---	168,000
	2	9E4991500	MTR Canal Air Clean System	45,000	37,455	7,545
*	3	9E4991400	PBF Exp. Output and Data Syst Inter.	40,000	40,000	-0-
	4	** 9E4991780	0.028-inch TC Production Equipment	3,375	3,375	-0-
*	5	9E4991940	Data System Module Check-out & Maint.	70,230	63,015	7,215
	6	9E4991790	MTR Canal Miscellaneous Tools	25,000	21,399	3,601
*	7	9E4991970	Signal Preconditioning Equipment	21,000	7,420	13,580
*	8	9E4991800	Replace Laser Welder	87,625	71,306	16,319
	9	9E4991860	PBF Data Syst Test & Maint. Equip.	30,000	29,396	604
*	10	9E4991810	Upgrade Gas Collection System	22,500	22,500	-0-
*	11	9E4991900	Process Instruments and Equipment	39,000	36,524	2,746
*	12	9E4991820	Fuel Rod Length Meas Device	5,000	5,000	-0-
*	13	9E4991950	Flow Rate Integrator	5,000	5,149	<149>
	14	9E4991910	Chamber Electronics	13,000	13,888	<888>
*	15	9E4991830	Leak Detection and Support Fixturing	10,300	10,300	-0-
*	16	9E4991960	FPDS Upgrade	60,000	38,551	21,449
*	17	9E4991840	Upgrade Photographic Capability	4,000	550	3,450
	18	9E4991850	Questar Telescope	200	---	200
	19		Data Conditioning Equipment (ADPE)	11,000		11,000
	20	9E4992600	Zeolite Filter Installation	75,000	75,000	-0-
	21	9E4992990	Radiation Instrumentation	97,000	97,000	-0-
				832,230	577,828	254,402

FY-1980 Budget	800,000
From A6087 Carryover	22,000
From 9E2988960 for 9E4991940	10,230
	832,230
YTD Costs & Commit.	577,828
Balance	254,402

* Engineered equipment package

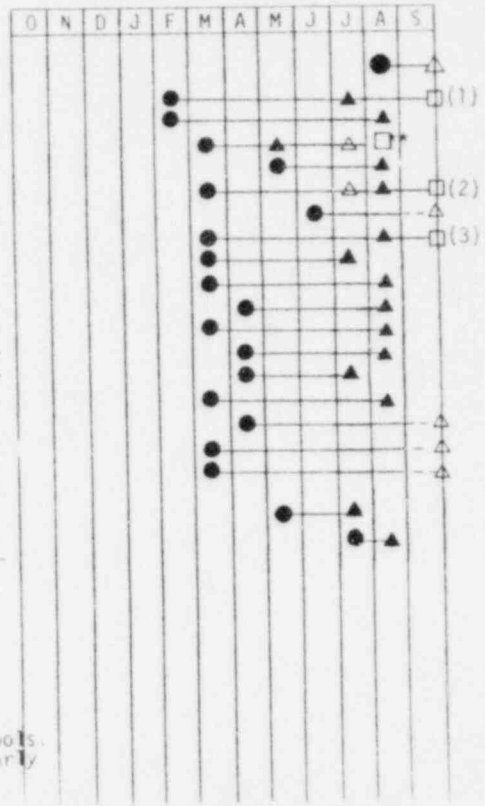
** Requested closure 08/13/80, still on C-11 report

(1) Planned use of residual in September or early FY-1981 for canal lifting device.

(2) Planned use of residual in early FY-1981 for additional tools.

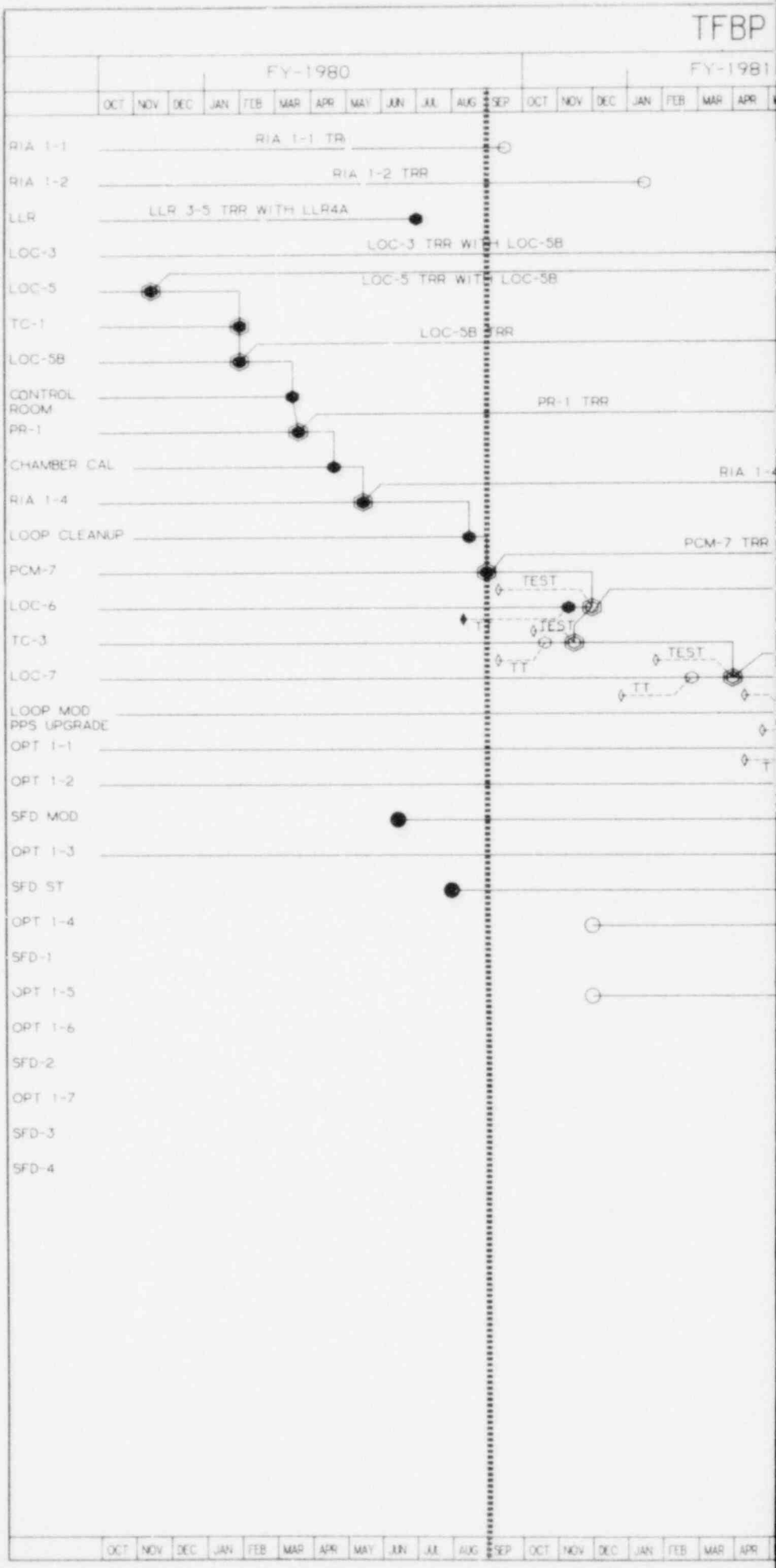
(3) Planned acceptance test of welder (to close account) in early FY-1981. Residual will be used for welder peripherals.

Planned { Account Opened o, Money Committed Δ, Account Closed □ } Actual { ●, ▲, ■ }

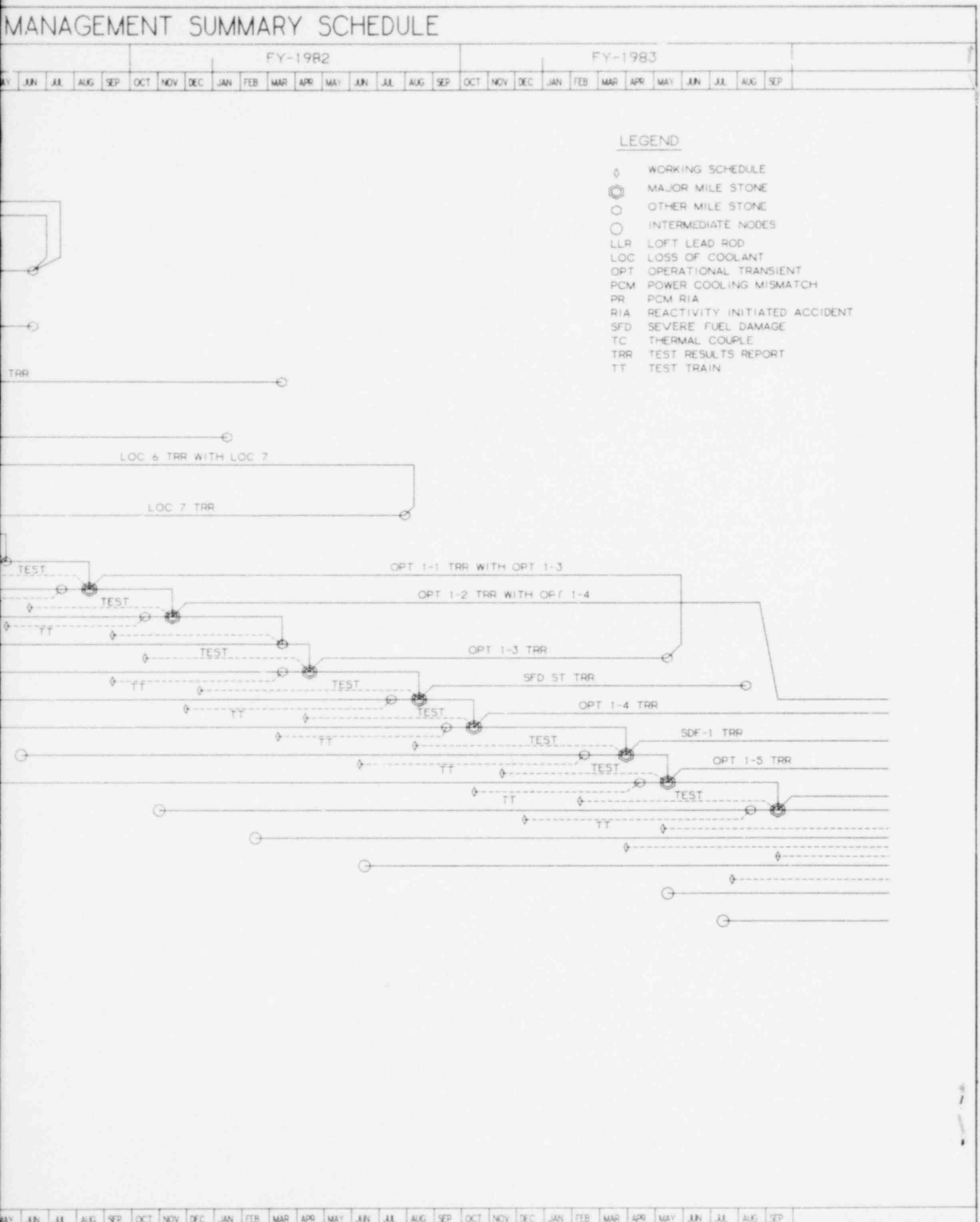


THERMAL FUELS BEHAVIOR PROGRAM

TEST SUMMARY SCHEDULE


TFBP
FY-1980
FY-1981
OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR
RIA 1-1
RIA 1-1 TR
RIA 1-2
RIA 1-2 TRR
LLR
LLR 3-5 TRR WITH LLR4A
LOC-3
LOC-3 TRR WITH LOC-5B
LOC-5
LOC-5 TRR WITH LOC-5B
TC-1
LOC-5B TRR
LOC-5B
CONTROL ROOM
PR-1 TRR
PR-1
CHAMBER CAL
RIA 1-4
RIA 1-4
LOOP CLEANUP
PCM-7 TRR
PCM-7
TEST
LOC-6
TT
TEST
TC-3
TT
TEST
LOC-7
TT
LOOP MOD PPS UPGRADE
OPT 1-1
OPT 1-2
SFD MOD
OPT 1-3
SFD ST
OPT 1-4
SFD-1
OPT 1-5
OPT 1-6
SFD-2
OPT 1-7
SFD-3
SFD-4
OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR

MANAGEMENT SUMMARY SCHEDULE



THERMAL FUELS BEHAVIOR PROGRAM

TECHNICAL REVIEW & SUMMARY

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

The test train for Loss-of-Coolant (LOC) Test 6 was installed in the Power Burst Facility (PBF) reactor in-pile tube and plant hydrostatic testing was completed, as was performance of the LOC-6 isothermal test.

The objective of Test LOC-6 is to determine the magnitude and axial extent of cladding ballooning at high alpha-phase (1050 to 1105 K) temperatures duing a simulated double-ended cold leg break loss-of-coolant accident. The cladding ballooning data from the test will be used to assess the out-of-pile, multi-rod data currently used for licensing light water reactors. The focus of the program is on previously irradiated rods.

Documentation issued during the reporting period includes the Test PCM-7 Quick Look Report, the revised Operational Transient (OPTRAN) 1-1 Experiment Specification Document, the Test TC-3 Experiment Operating Specification report, the Test LOC-6 Experiment Operating Procedure, and a report entitled "Measured Effects of Fuel Rod Internal Gas Pressure and Xenon Concentration in Operating Fuel Rods and a Comparison with Basic Theory and FRAP Calculations."

Installation and checkout of the Red Mike System for the PBF Support Building was completed, as was the design to add remote indication and control for the cooling tower basin water level.

1. 189a A6401 - TFBP Experiment Design and Analysis

2. Scheduled Milestones for August 1980

Node	Description	Due Date	Actual Date
#4, Line 3	IFA-430 Xe/He Fill Gas Report	03-31-80T	08-31-80C
#7, Line 2	Test LOC-6	08-29-80T	12-05-80E
#5, Line 3	PCM-7 Test Quick Look Report	07-22-80E	08-04-80C

3. Summary of Work Performed in August 1980

a. Power-Cooling-Mismatch Test Series

The Test PCM-7 Quick Look Report was issued, draft preparation of the Test PR-1 Fuel Rod Behavior Report continued, and final draft preparation of the PCM 8-1RS, PCM 8-1RF, and Critical Heat Flux Scoping Test Fuel Rod Behavior Reports was initiated. Preparations for posttest examination of the Test PCM-7 cluster were made, but the examination will have to be postponed until after Test TC-3 due to lack of personnel to remove the test train from the storage canal because of the full reactor operation schedule.

b. Operational Transient Test Series

The revised OPTRAN 1-1 Experiment Specification Document was issued. Revised drafts of the OPTRAN 1-1, 1-3 Experiment Prediction document and the OPTRAN 1-1 Experiment Operating Specification were completed. Preparation of the OPTRAN 1-2 Experiment Prediction report continued. Reactor physics calculations for OPTRAN 1-2 and OPTRAN 1-3 continued. The work package was prepared for the characterization of the second batch of General Electric Company rods to be used for the OPTRAN Test Series. The design of the OPTRAN 1-1 and 1-2 test train continued.

c. Loss-of-Coolant Accident Test Series

Assembly of the LOC-6 test train was completed and assembly of the TC-3 and LOC-7 test trains continued. The Test TC-3 Experiment Operating Specification was issued, and the first drafts of the LOC-3 and LOC-5 Fuel Behavior and Fuel Rod Materials Behavior Reports were completed.

d. Reactivity Initiated Accident Test Series

The final preparations of the Test RIA 1-1 Fuel Behavior Report continued. Reactor physics and thermal-hydraulic

calculations for the Capsule Driver Core continued. The destructive examination of the Test RIA 1-4 fuel rods was initiated.

e. Reactivity Initiated Accident - Scoping Test Topical Report (Molten Fuel-Coolant Interaction)

Analysis and interpretation of the data with respect to molten fuel-coolant interaction continued. The draft report preparation continued.

f. Power-Cooling-Mismatch Topical Report

Technical editing and composition of the draft was completed. Printing has been halted pending resolution of some questions regarding the critical heat flux data.

g. FRAP-T Performance Review

The fuel temperature and cladding deformation and failure models were evaluated. Draft report preparation has begun.

h. Fission Product Detection System Results Report

The draft report was reviewed and submitted for technical editing and composition.

i. Halden Program

The report "Measured Effects of Fuel Rod Internal Gas Pressure and Xenon Concentration in Operating Fuel Rods and a Comparison With Basic Theory and FRAP Calculations" was issued, and the final draft of the IFA-430 fission gas release report was completed.

4. Schedule Milestones for September 1980

Node	Description	Due Date	Actual Date
#4, Line 1	Power-Cooling-Mismatch Thermal-Hydraulics (Formal)	09-01-80T*	
#5, Line 1	FRAP-T Performance Review	09-15-80T	
#6, Line 1	Fission Product Detection System Results Report	09-15-80T	
#5, Line 3	IFA-430 Fission Gas Report	09-30-80T	
#7, Line 1	TC-3 Test Train	09-25-80T	

*Due date, as a result of issuance of NCR (TFBP-26-80), will be 11-21-80.

5. Summary of Work to be Performed in September 1980

a. Power-Cooling-Mismatch Test Series

A first draft of the Test PR-1 Fuel Rod Behavior Report will be completed. Technical editing of the report for PCM 8-1RS, PCM 8-1RF, and Critical Heat Flux Scoping Tests will be initiated.

b. Operational Transient Test Series

The OPTRAN 1-1, 1-3 Experiment Predictions Report will be issued. The OPTRAN 1-1 Experiment Operating Specification document will be reviewed by Thermal Fuels Behavior Program personnel. Scoping calculations and design efforts for the OPTRAN 1-2 test will continue, and the reactor physics calculations will be completed. The design of the OPTRAN 1-1 test train will be completed, and design of the OPTRAN 1-2 test train will continue.

c. Loss-of-Coolant Accident Test Series

Test LOC-6 will be conducted and the Quick Look Report issued. The Tests LOC-3 and LOC-5 Fuel Behavior and Fuel Rod Materials Reports will be reviewed and comments incorporated. The assembly of the LOC-7 test train will continue, and the TC-3 test train will be completed.

d. Reactivity Initiated Accident Test Series

The RIA 1-1 Fuel Behavior Report will be issued, and preparation of the RIA 1-2 Fuel Behavior Report will continue. Reactor physics and thermal-hydraulic calculations for the Capsule Driver Core will be completed. The destructive examination of the RIA 1-4 rods will continue.

e. Reactivity Initiated Accident - Scoping Test Topical Report (Molten Fuel-Coolant Interaction)

The draft report will be completed.

f. Power-Cooling-Mismatch Topical Report

The questions regarding the Critical Heat Flux data will be resolved, the report will be revised to incorporate necessary changes, and the revised report will be resubmitted for editing and composition.

g. FRAP-T Performance Review

The results of the model evaluations will be incorporated into the draft report.

h. Fission Product Detection System Results Report

The report will be issued.

i. Halden Program

The IFA-430 Fission Gas Release Report will be issued. Preparation of the Xe/He-pressure effects report for publication will begin.

6. Problems and Potential Problems

Resolution of the Critical Heat Flux data questions will cause a delay in publishing the Power-Cooling-Mismatch Thermal-Hydraulics Topical Report. An NCR (TFBP-26-80) has been submitted.

1. 189a A6044 - PBF Design Engineering

2. Scheduled Milestones for August 1980

   None.

3. Summary of Work Performed in August 1980

   a. Loss-of-Coolant Accident (LOCA) Utilities Rubber Hose Replacement

      Replacement of the rubber hoses used in cooling LOCA instrumentation was completed. The new hoses are flexible stainless steel.

   b. Control Room Emergency Lights

      Final checkout was completed on the emergency lights recently installed in the control room.

   c. Utility Cooling Water (UCW) System Upgrade

      Installation and checkout were completed for the new pump and flow instrumentation installed in the UCW system.

   d. Addition of Emergency Backup for Reactor Vessel Fill Valve and Canal Gate Seal

      Installation and checkout were completed for the canal gate seal backup. The backup to the reactor vessel raw water fill valve was completed up to the point of the final tie-in.

   e. PBF Support Building Red Mike System

      Installation and checkout of the Red Mike System for the PBF Support Building was completed.

   f. Cooling Tower Basin Level Remote Indication and Control

      The design was completed to add remote indication and control for the cooling tower basin water level.

   g. Test Train Instrument Lead Cable Trays

      Design has been started on removable cable trays to support test train instrument leads between the in-pile tube and instrument cabinets. The new trays will improve appearance and provide better protection of the leads.

4. Scheduled Milestones for September 1980

None.

5. Summary of Work to be Performed in September 1980

a. Addition of Emergency Backup for the Reactor Vessel Fill Valve

Final tie-in and checkout will be performed on the new nitrogen backup to the reactor vessel emergency fill valve.

b. Reactor Vessel Drain Bypass

All required approvals will be obtained for the installation of a modification to allow draining the reactor without passing through the warm waste sump. All materials will be procured.

c. Primary System Relief Valve Discharge Control

The design of a modification to prevent excess primary coolant loss during actuation of the pressure relief valve will be completed, as will the installation procedures and the hardware procurement.

d. Severe Fuel Damage Experiment Cooling Modification

A conceptual or scoping design review will be conducted on the system that will provide an independently controlled coolant flow to the Severe Fuel Damage experiment fuel bundle.

e. Test Train Instrument Lead Cable Trays

The design of cable trays to support test train instrument leads will be completed. Fabrication is expected to be started.

f. Plant Protective System (PPS) Modifications for OPTRAN Tests

The design of the PPS modifications required for performance of the OPTRAN tests will be given a preliminary review.

6. Problems and Potential Problems

None.

1. 189a A6057 - PBF Operations

2. Scheduled Milestones for August 1980

Node	Description	Due Date	Actual Date
	Loop Inspection & Resin Changeout	08-15-80	06-19-80C
Line 2 Node 6	Test PCM-7	08-29-80	07-11-80C

3. Summary of Work Performed in August 1980

a. PBF Plant Operations

The work performed during this reporting period was primarily directed toward plant preparations and isothermal testing in support of the upcoming Loss-of-Coolant (LOC) Test 6.

Assembly and installation of the LOC flow tube and gamma densitometer spool piece instrumentation was completed. Installation of the LOC-6 test train and plant hydrostatic testing in preparation for performance of the isothermal test was completed. Trouble was experienced during the initial heatup phase of the isothermal test due to leakage through a loss-of-coolant accident (LOCA) system relief valve. Cooldown of the loop and repair of the relief valve were completed. Heatup to isothermal conditions and performance of the LOC-6 isothermal test were then completed.

The Instrument and Data Section of PBF Operations completed the second phase of the Tests PR-1 and RIA 1-4 data reduction, calibration and checkout of the plant process and nuclear instrumentation and setup and checkout of the Data Acquisition and Reduction System (DARS) in preparation for the LOC-6 isothermal and nuclear tests.

b. PBF Operations Support

Preventive Maintenance (PM) examinations for July are complete and the August examinations are 85% complete. The remaining PM inspections are scheduled to be performed along with the September PMs during the September shutdown schedule opening.

Corrective Maintenance (CM) efforts for this reporting period include the completion of the hot waste sample line reroute, the canal barrier electrical outlet installation, and the canal tie rails fabrication. Other CM efforts include plant decontamination and cleanup in addition to the correction of various plant deficiencies and plant support work in preparation for Test LOC-6.

Data qualification pretest preparation for LOC-6, corrections for Tests PR-1 and RIA 1-4, and first-pass data reduction for Test PCM-7 were accomplished. Data qualification efforts will continue on these four tests, with corrections for Test PCM-7 scheduled after Test TC-3.

Plant Operating Manual Chapter 31, N_2 System, was issued, as were the Test LOC-6 Experiment Operating Procedure (EOP), and a Thermocouple (TC) Test 3/LOC-6 Isothermal Blowdown Detailed Operating Procedure.

4. Scheduled Milestones for September 1980

None.

5. Summary of Work to be Performed in September 1980

a. Perform Test LOC-6.

b. Start preparations for Test TC-3.

6. Problems and Potential Problems

None.

1. 189a A6095 - Major Modifications

2. Scheduled Milestones for August 1980

None.

3. Summary of Work Performed in August 1980

The following operations were completed on the PBF spare in-pile tube: final weld buildup, required nondestructive examinations, local annealing, nozzle "hot" straightening, and a dimensional inspection.

4. Scheduled Milestones for September

None.

5. Summary of Work to be Performed in September

Final straightening of the nozzles will be performed, thus completing the weld repair.

A schedule will be established to heat treat the in-pile tube.

6. Problems and Potential Problems

None.

1. 189a A6274 - PBF Cooperative Research - Austria

2. Scheduled Milestones for August 1980

   None.

3. Summary of Work Performed in August 1980

   None.

4. Scheduled Milestones for September 1980

   None.

5. Summary of Work to be Performed in September 1980

   The tasks under this work package have been completed except for reporting results of the 28-mil-thermocouple pilot run, which will be completed this month.

6. Problems and Potential Problems

   None.

1. 189a A6275 - Electrical Heater Rod Evaluation Studies

2. Scheduled Milestones for August 1980

None.

3. Summary of Work Performed in August 1980

a. Electrical Heater Rod Performance Review

RELAP4/MOD6 and RELAP5 calculations were obtained to predict the single-rod Loss-of-Fluid Test (LOFT) Test Support Facility (LTSF) quench tests. The calculations showed cladding cooldown occurred almost a factor of two times faster for both codes than the experimental data indicated. The calculations are being analyzed to verify that the boundary conditions are being modeled properly.

A letter report summarizing initial comparison between REBEKA and FLECHT heater rod response during reflood is being drafted.

b. Instrumented Fuel Assembly-511 (IFA-511) Nuclear and Electrical Heater Rod Experiments

Modeling of the IFA-511-II test rig for the BWR-TRAC and the RELAP5 one-dimensional codes was completed. Checking out of both models under steady state operating conditions was begun to determine whether the models correctly duplicated the real system.

The initial model for the radiation heat transfer analysis of the five-rod test assembly proposed to be used in the Phase 2 IFA-511 ballooning experiments was completed. Checkout of this model was begun.

The conversion constants, formats, and array index numbers for use in processing the FASTSCAN data tape for the IFA-511-III tests were received from the Halden Project staff.

c. Swiss Reflood Tests

A letter was written to Dr. G. Markoczy, Division Head for Swiss Federal Institute for Federal Research, Switzerland, 9/11/80, addressing the programmatic questions identified by N. Aksan. The Swiss thermocouples were fabricated by Idaho Labs, but are awaiting source inspection. They will be shipped to Switzerland 9/10/80.

4. Scheduled Milestones for September 1980

None.

5. Summary of Work to be Performed in September 1980

   a. Electrical Heater Rod Performance Review

      Analysies of FLECHT and REBEKA tests will be continued and a letter report will be completed. Evaluation of code capability to evaluate differences in nuclear and electric rods also will continue.

   b. Instrumented Fuel Assembly-511 (IFA-511) Nuclear and Electrical Heater Rod Experiments

      Checkout of the BWR-TRAC and RELAP5 codes will be completed, and they will be used to calculate the IFA-511-II experiments. The radiation heat transfer analysis of the test sections proposed for ballooning tests in the IFA-511 rig will be completed.

      Processing of the IFA-511-III FASTSCAN tape will be completed, and analysis to determine the value of the IFA-511-III tests, in which three of seven electrically-heated rods did not function, will begin.

6. Problems and Potential Problems

   None.

THERMAL FUELS BEHAVIOR PROGRAM
CHANGE CONTROL BOARD ACTIONS

CHANGE CONTROL BOARD STATUS

Cost Account	CCB #	Description	Status	Date
421AB64	80-128	PR-1 TRR	Approved	08/30/80
4219C13	80-129	OPTRAN 1-2 EPR	Approved	08/30/80
421BB34	80-134	IFA-430 Gas Mixture	Approved	08/30/80
4233B11	80-135	Spare Parts	Approved	08/30/80
4213H26	80-136	PCM-7 Test Train	Approved	08/30/80
4221C11	80-137	In-Pile Tube	Approved	08/30/80
4232A71	80-138	Hot Waste Loading Review Team	Approved	08/30/80
4245D57	80-139	Power Measurement Support	Approved	08/30/80
4219A11	80-140	OPTRAN Planning & Coordination	Approved	08/30/80
4219BXX	80-141	OPTRAN 1-1 Test Train/ESA	Approved	08/30/80
4219C2X	80-142	OPTRAN 1-2 Test Train	Approved	08/30/80
426XXXX	80-143	Severe Fuel Damage	Approved	08/30/80
4212E10	80-145	Fission Product Detection System	Approved	08/30/80
4212C41	80-147	T.T.A.F. Pressurization System Upgrade	Pending	08/30/80
4216E7X	80-151	LOC-5 Test Train Closure	Pending	08/30/80
426XXXX	80-154	Severe Fuel Damage	Pending	08/30/80
4216F26	80-156	LOC-6 Assembly	Pending	08/30/80
4216F61	80-157	LOC-6 QLR	Pending	08/30/80
4216G61	80-158	LOC-7 QLR	Pending	08/30/80
4216F45	80-160	LOC-6 Data Qualification	Pending	08/30/80
421BA01	80-161	Program Development and Data Analysis	Pending	08/30/80

CHANGE CONTROL BOARD ACTIONS

($000)

CCB Number	Description	FY-1980	FY-1981	FY-1982/Beyond	Total Approved Action
80-01	FY-1980 Baseline	234			234
80-03	PR-1 Test Train	6			6
80-02	RELAP5/MOD1 Development Plan	90			40
80-05	PCM-7 Test Train	6			6
80-06	LOC-5B Test Train Failure Investigation	9			9
80-08	RIA 1-4 EPR	9			9
80-09	Discretionary Reserve	37			37
80-10	Transport Cask Support	14			14
80-11	Uncertainty Analysis	11			11
80-12	RIA Energy Measurement	10	<11>		1
80-14	LOC-5A, B and C	<4>	5		1
80-15	Small Break LOCA Test Program	77			77
80-18	Loop Pump Bypass		61		61
80-20	PBF Facility Improvements	112			112
80-21	In Pile Tube	77	3		80
80-25	Data Qualification	5/<5>			0
80-26	PBF Diesel Overhaul	61			61
80-28	Feasibility Study	75			75
80-29	MTR Upgrade	42			42
80-32	PR-1 Data Qualification	20			20
80-35	RIA 1-4 Data Qualification	14			14
80-38	Baseline #80-2, Revision #1	<740>			<740>
80-39	Spare PBF Silver Zeolite	0			0
80-41	MTR Modification	<2>			<2>
80-42	Instrument Pump Inlet	<1>			<1>
80-43	Discretionary Reserve	<37>			<37>
80-44	LOC-6 Test Train	<4>	4		0
80-48	In Pile Tube	12			12
80-47	Spare Parts	23			23

CHANGE CONTROL BOARD ACTIONS (Continued)

($000)

CCB Number	Description	FY-1980	FY-1981	FY-1982/Beyond	Total Apprcved Action
80-58	Loop Performance Mods	<14>	14		0
80-59	LOC-3 Fuel Instrument Evaluation	<36>	36		0
80-60	PCM-5 PIER	13/<13>	13/<13>		0
80-61	PR-1 PIE	15	<15>		0
80-62	RIA 1-1 Fuel Behavior Report	21	<21>		0
80-63	GAPCON PIE	9/<9>			0
80-65	Out-of-Pile Leakage	18			18
80-69	Loop Resin Clean/Inspection	104			104
80-70	OPTRAN 1-3 TT Long Lead Procurement	35	<35>		0
80-71	SAD Added Scope T.T. Support	10			10
80-73	PCM Fuel Behavior Report	<31>	31		0
80-75	LOC-6/7 Test Train	15			15
80-78	Severe Fuel Damage	416	82		498
80-80	In Pile Tube	34	56		90
80-81	PR-1 Update	5	<5>		0
80-86	Isothermal Check Valve	11			11
80-89	Data Process Management & Methods	32/<32>			0
80-91	PBF Design	<35>			<35>
80-92	In Pile Tube	35			35
80-72	Halden Representative	11			11
80-98	Thermal Fuels Administration	10			10
80-99	Integrated Management System	15			15
80-101	LOC-6 T.T. Added Scope	26			26
80-102	RIA 1-3 T.T.	<118>			<118>
80-103	Code Configuration	5			5
80-104	RIA 1-1 TRR	52			52
80-108	Hot Cell Rigor Improvement	<16>			<16>
80-109	RIA 1-3 EPR	<12>			<12>
80-110	RIA 1-4 PIE	<15>			<15>

CHANGE CONTROL BOARD ACTIONS (Continued)

($000)

CCB Number	Description	FY-1980	FY-1981	FY-1982/Beyond	Total Approved Action
80-111	Health Physics	19			19
80-112	Discretionary Reserve	37			37
80-107	TC-3	200*			-0-
80-88	LOFT Lead Rod	22*			-0-
80-106	TTAF Safety Upgrade	13			13
80-113	IFA 429 PIE	<40>	40		-0-
80-114	Program Development and Topical Report	30			30
80-115	LOC-6 Test Train	18			18
80-84	LOC-7 Test Train	25			25
80-90	LOC-3/5 PIE Merge	23/<23>	22/<22>		0
80-93	RIA 1-6 Design	17/<17>			0
80-105	OPTRAN 1-3 Design	<8>			<8>
80-118	Corrective Maintenance	14			14
80-119	Operating Crews	5			5
80-121	RIA/OPTRAN Planning and Coordination	12/<12>	102/<102>		0
80-122	OPTRAN T.T. Revision	<51>	72		21
80-125	TC-2 Budget Remaining	118/<118>	53/<53>		0
80-126	PCM-7 ESA	13			13
80-127	RIA Test Series Return	<66>			<66>
80-130	SUPER SARA Technical Support	17			17
80-131	PCM-7 Assembly	17			17
80-132	LOC-5 Posttest Analysis	15			15
80-128	PR-1 TRR	8	<8>		-0-
80-129	OPTRAN 1-2 EPR	<8>	8		-0-
80-134	IFA-430 Gas Mixture	13	<13>		-0-
80-135	Spare Parts	13			13
80-136	PCM-7 Test Train - Added Scope	14/<8>			6
80-137	In-Pile Tube	30			30
80-138	Hot Waste Loading Review Team	9			9

* LOFT Contingency, no affect on TFBP Management Reserve

CHANGE CONTROL BOARD ACTIONS (Continued)

($000)

CCB Number	Description	FY-1980	FY-1981	FY-1982/Beyond	Total Approved Action
80-139	Power Measurement Support	3			3
80-140	OPTRAN Planning & Coordination	4			4
80-141	OPTRAN 1-1 Test Train/ESA	<53>	58		5
80-142	OPTRAN 1-2 Test Train	<33>	35		2
80-143	Severe Fuel Damage	45/<46>			<1>
80-145	Fission Product Detection System	19			19

< > Return to Management Reserve

FY-1980 BUDGET STATUS REPORT

189a Number	New 189a Total
A6041	7,503
A6044	2,085
A6057	4,468
A6095	284
A6274	19
A6281	30
TOTAL	14,389
Management Reserve	90
Discretionary Reserve	10
	14,489

WRRD MONTHLY REPORT FOR

AUGUST 1980

2D/3D PROGRAM

R. A. DaBell
Plans & Budgets Representative

R. E. Rice, Manager
2D/3D Program

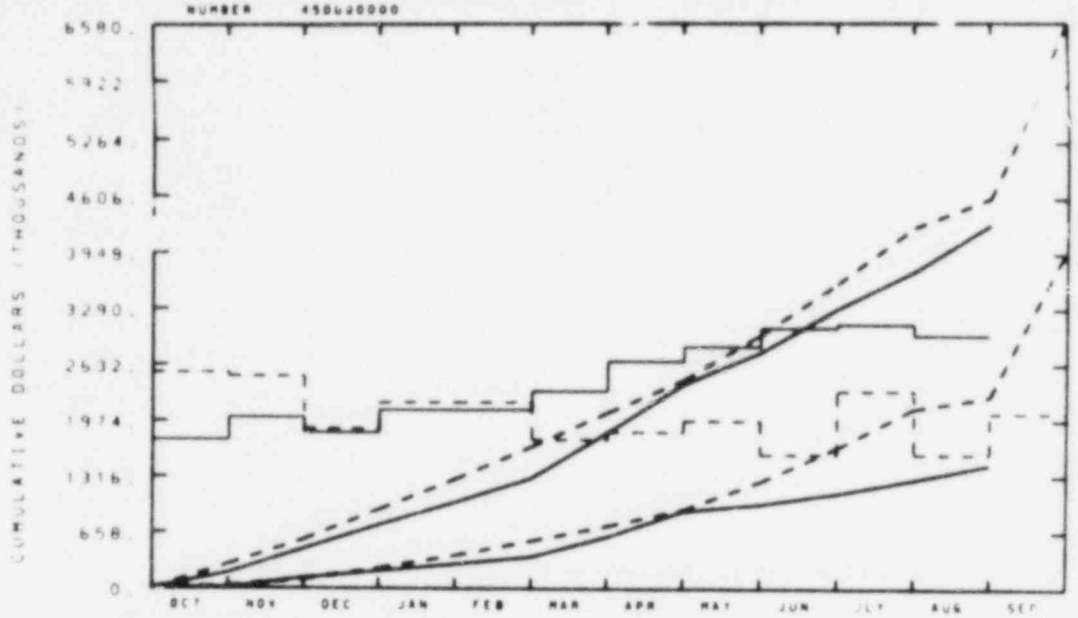
2D/3D
COST SUMMARY & COMMENTS

RESPONSIBLE
MANAGER
R. E. PRICE

EG&G IDAHO INC.

3 0 PROGRAM

NUMBER 450600000



TOTAL PROGRAM

BUDGET	283	577	928	1290	1673	2072	2455	2992	3597	4268	4614	6579
ACTUAL	185	467	749	1016	1301	1836	2408	2784	3300	3744	4300	

MATERIAL

BUDGET	32	108	242	390	561	735	929	1199	1459	2117	2259	
ACTUAL	13	128	208	289	375	611	910	994	1120	1281	1461	

MANPOWER

BUDGET	58	57	43	50	50	40	42	45	36	53	36	
ACTUAL	40	45	42	48	48	53	61	65	70		68	

YTD VARIANCE: 314 (7%)

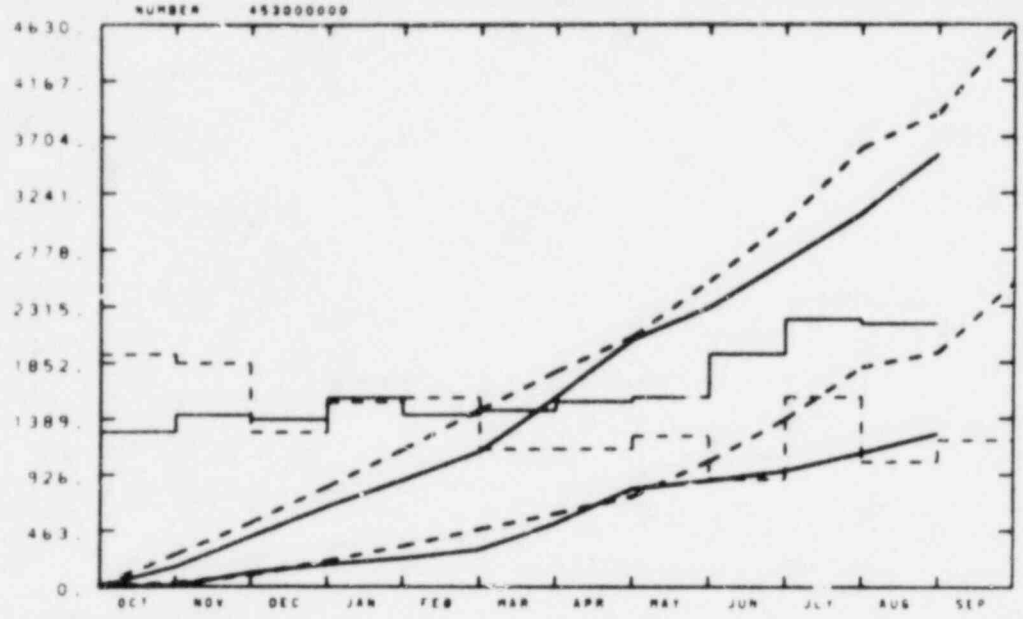
Individual cost graphs will give individual explanations.

Explanations for major 189a's will be made if the variance exceeds $25 K. Minor 189a graphs will explain variance of over $10 K.

EG&G IDAHO INC.

3-D EXPERIMENT PROJECT - A6.00

NUMBER 453000000



TOTAL PROGRAM

BUDGET	266	530	829	1134	1465	1780	2066	2518	3011	3613	3897	4627
ACTUAL	164	415	665	883	1120	1568	2044	2306	2685	3076	3563	

MATERIAL

BUDGET	31	100	215	336	477	606	747	1038	1385	1812	1931	2504
ACTUAL	11	118	184	236	310	526	813	877	960	1105	1262	

MANPOWER

BUDGET	54	52	36	43	44	32	32	35	25	44	29	34
ACTUAL	36	40	39	44	40	41	43	44	54	62	61	

BUDGET - - - - -

ACTUAL ———

A6100

YTD VARIANCE: 334 (9%)

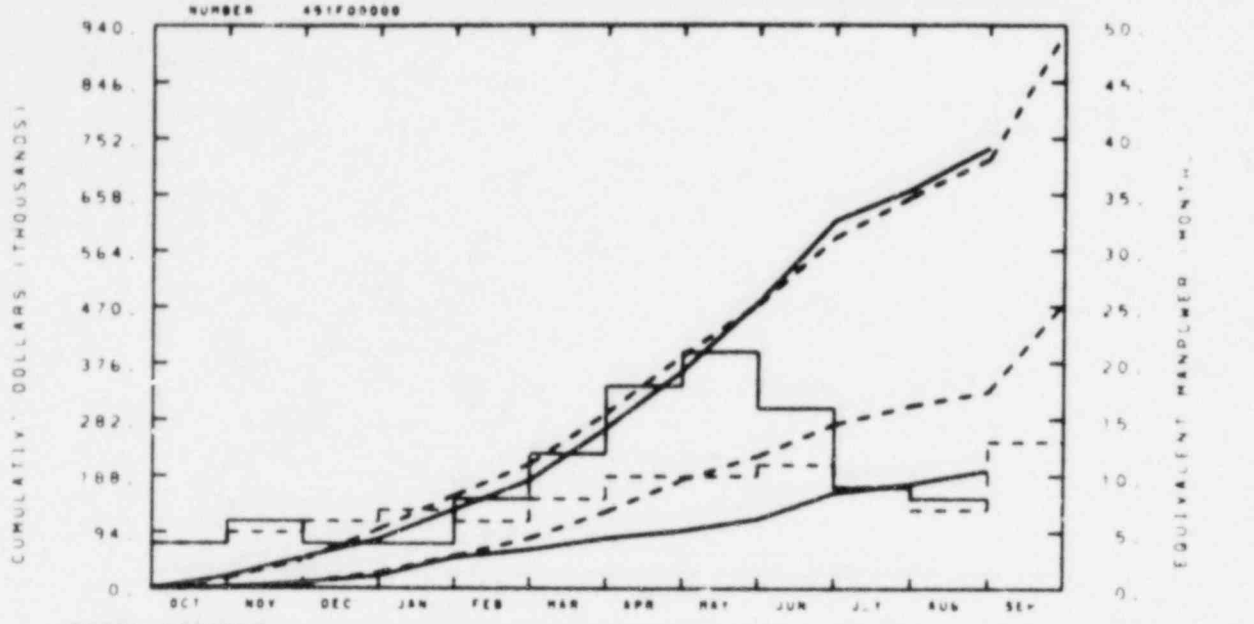
The principal reason for the $334 K underrun is the one-year project delay of all UPTF instruments. It is anticipated that at the fiscal year end this 189a will underrun approximately $200 - 300 K, which will be carryover scope into FY-1981.

RESPONSIBLE
MANAGER
R. F. RICE

EG&G IDAHO INC.

FLUID DISTRIBUTION GRIDS - A6282

NUMBER 491F00000



TOTAL PROGRAM

BUDGET	18	47	99	156	208	292	389	474	586	655	717	931
ACTUAL	20	52	83	133	181	260	363	478	615	667	736	

MATERIAL

BUDGET	1	8	27	54	84	129	181	221	274	305	327	476
ACTUAL	2	10	22	52	65	84	97	116	0	175	197	

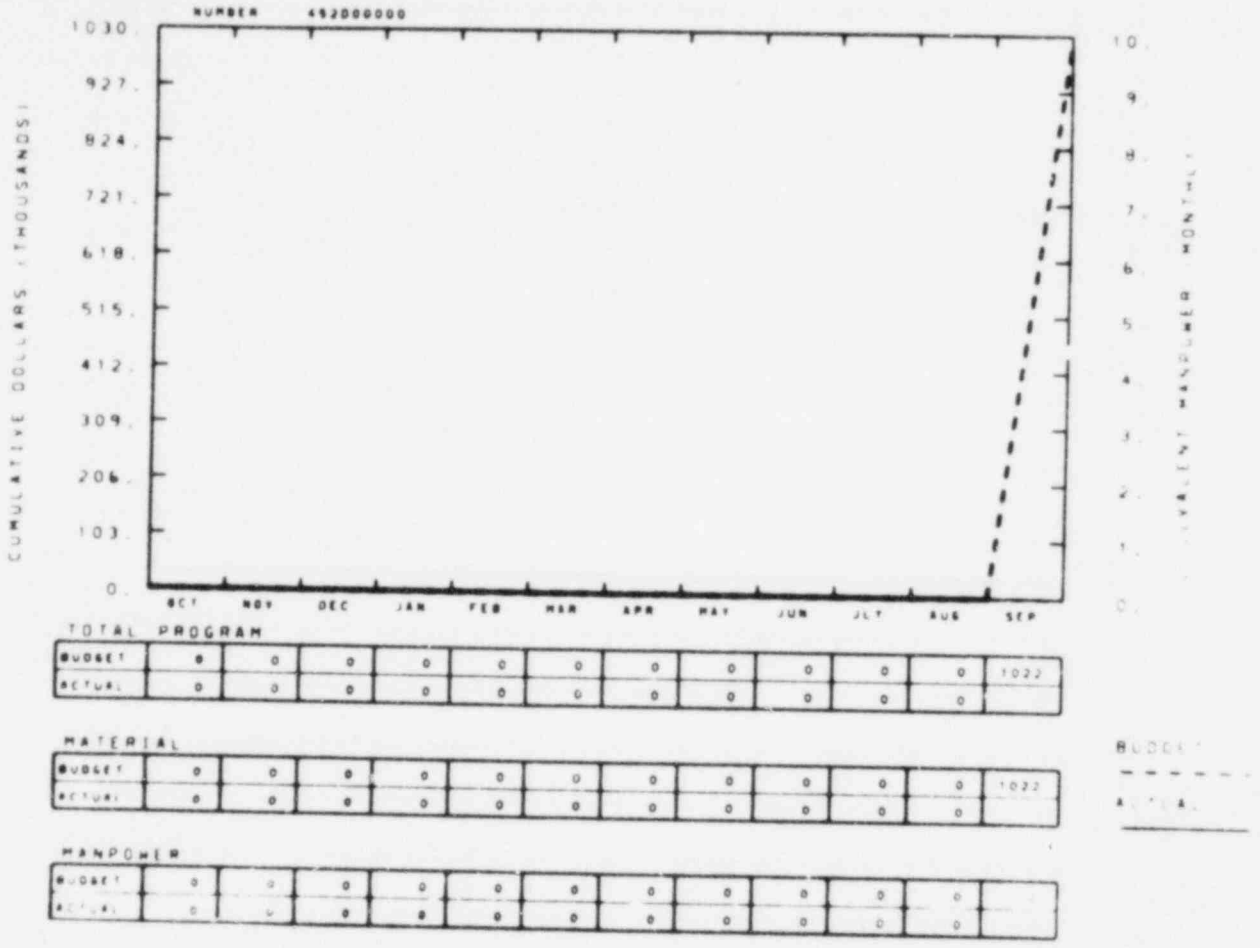
MANPOWER

BUDGET	4	5	6	7	6	8	10	10	11	9	1	13
ACTUAL	4	1	4	4	8	12	18	21	14	9	0	

A6282

YTD VARIANCE: <19> (3%)

RESPONSIBLE MANAGER
R E RICE



A6289

YTD VARIANCE: 0

The UPTF program is still delayed. Work on the UPTF DAS is presently scheduled to begin in the last quarter of FY-1981. The entire budget of $1,021 K will carryover into FY-1981.

2D/3D

CURRENT WORKING SCHEDULE

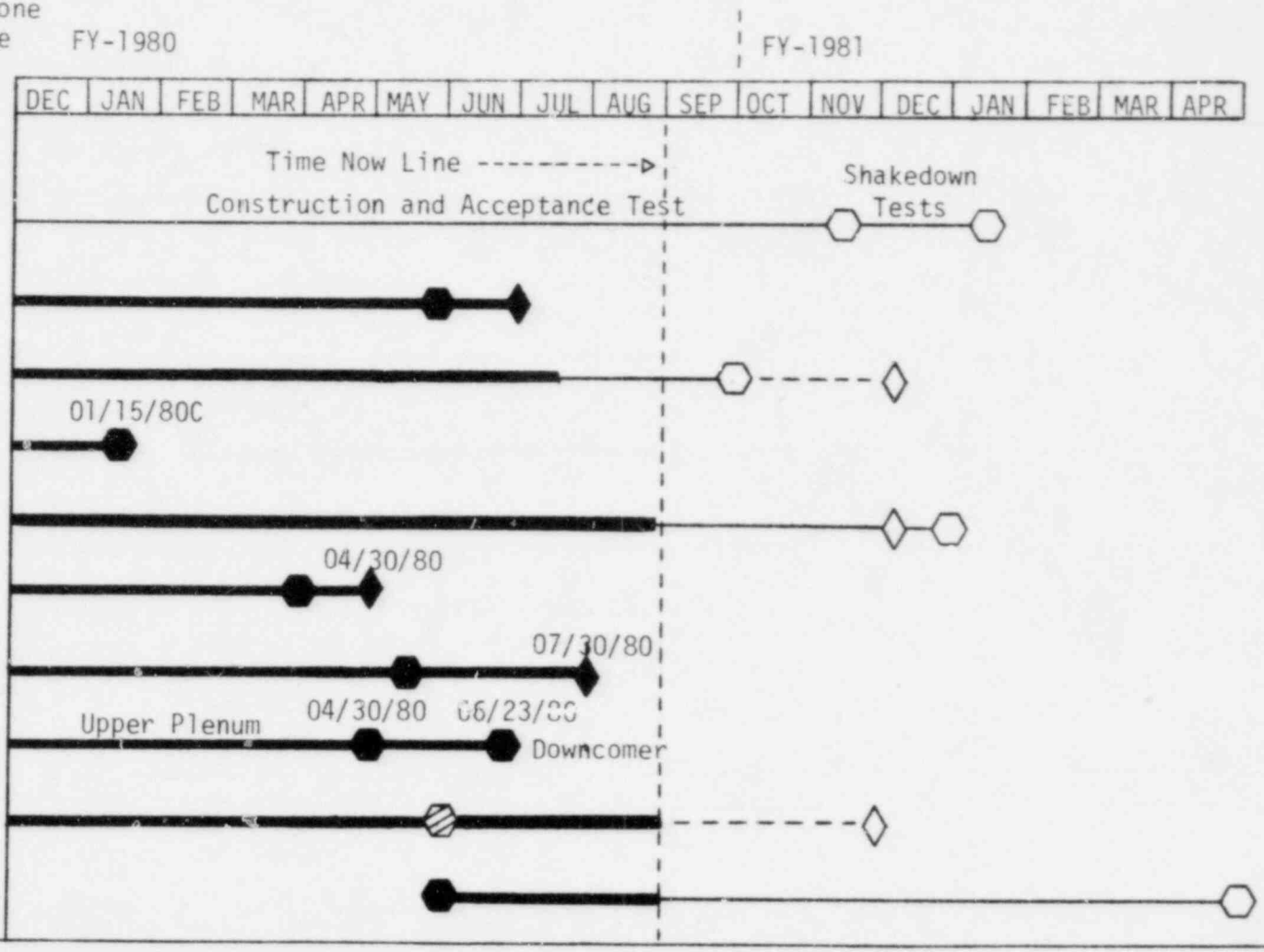
LEGEND

- Completed Major Milestone
- Scheduled Major Milestone
- Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- Slipped Secondary Milestone
- Actual Completion Date
- Scheduled Completion Date

2D/3D EXPERIMENT PROGRAM

SCTF Projects

August 1980



NOTES: Allow one month from shipment dates shown for delivery to meet JAERI requested schedule.

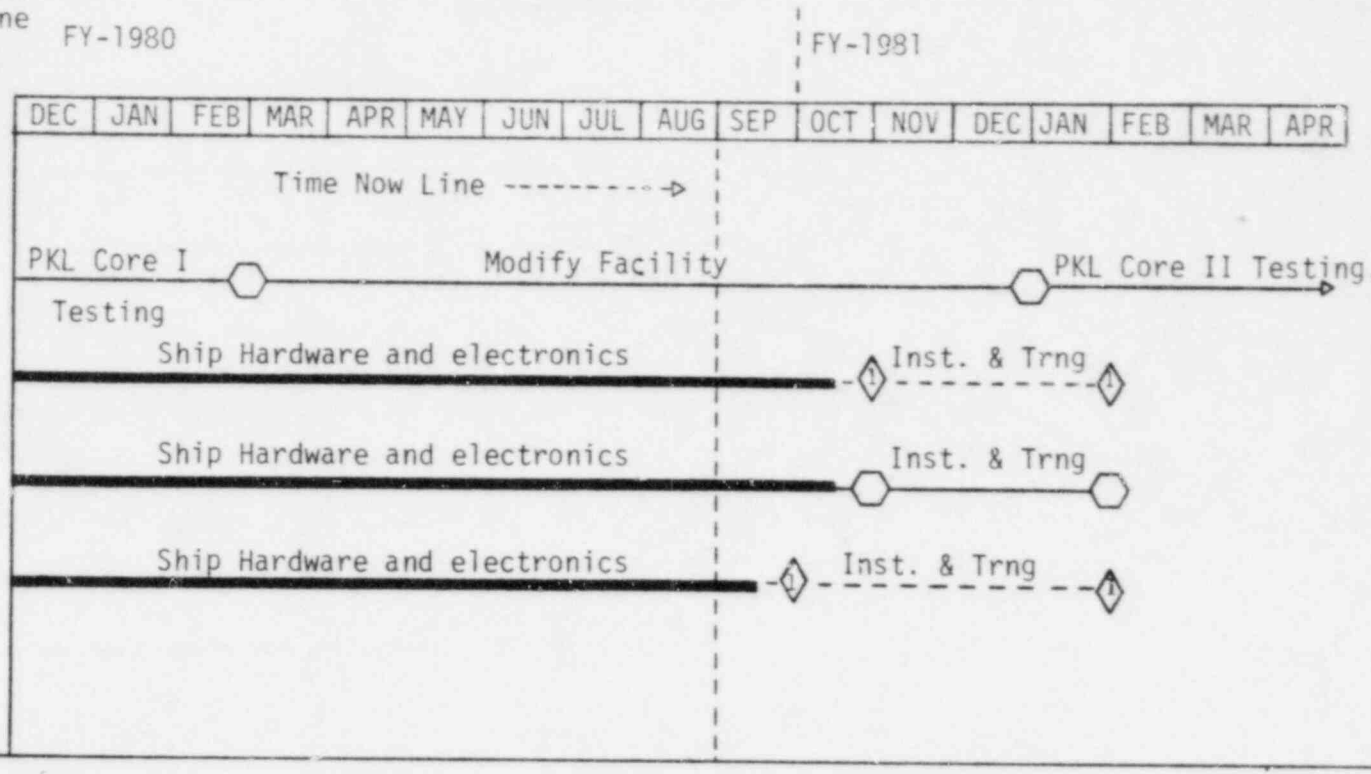
LEGEND

- ● Completed Major Milestone
- ⬡ Scheduled Major Milestone
- ⬡ Slipped Major Milestone
- ● Completed Secondary Milestone
- ○ Scheduled Secondary Milestone
- ○ Slipped Secondary Milestone
- ♦ Actual Completion Date
- ◇ Scheduled Completion Date

2D/3D EXPERIMENT PROGRAM

PKL Projects

August 1980



NOTES: Allow one month from shipment dates shown for delivery to meet PKL requested schedule.

◇① These milestones are to be unscheduled because PKL requirements are uncertain.

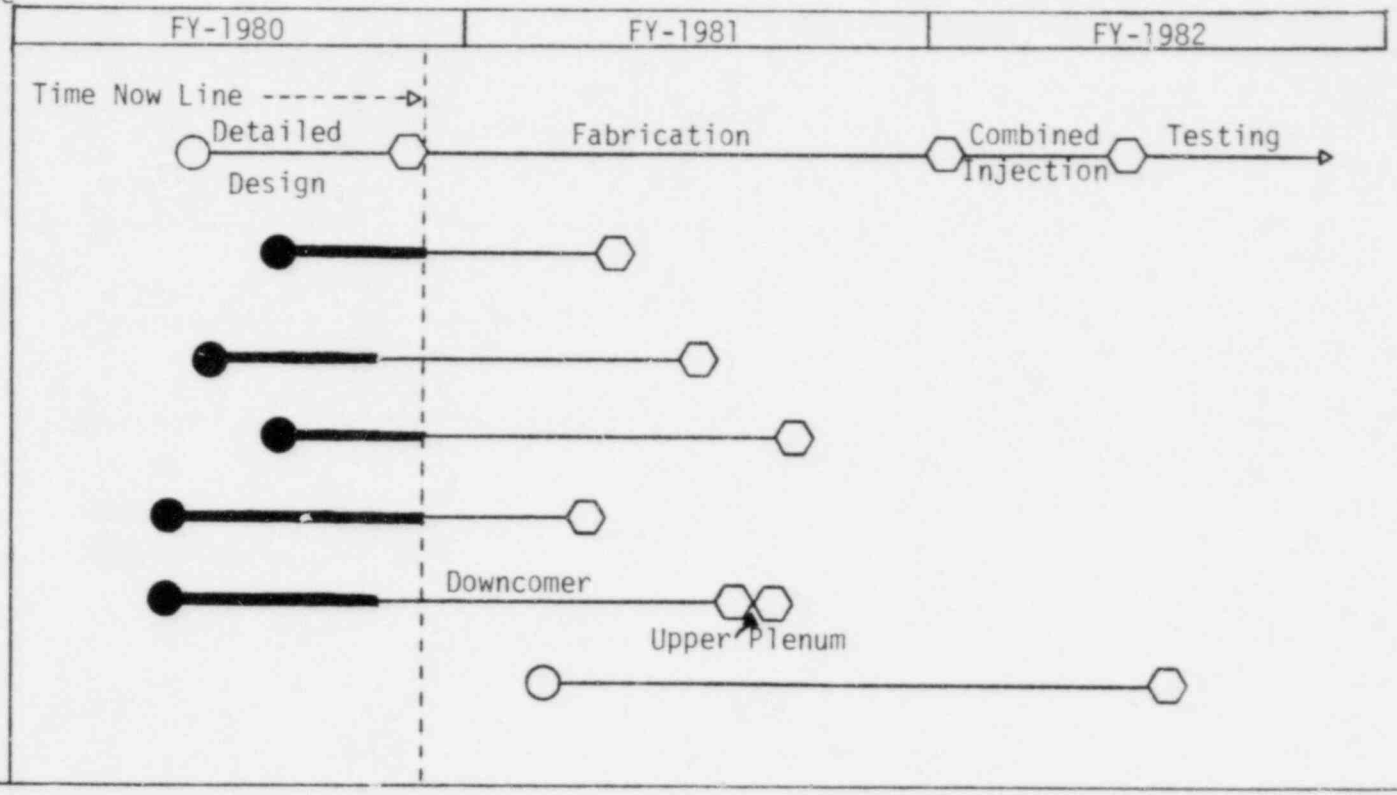
LEGEND

- Completed Major Milestone
- Scheduled Major Milestone
- Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- Slipped Secondary Milestone
- Actual Completion Date
- Scheduled Completion Date

2D/3D EXPERIMENT PROGRAM

CCTF-II Projects

August 1980



NOTES: Allow one month from shipment dates shown for delivery to meet JAERI requested schedule.

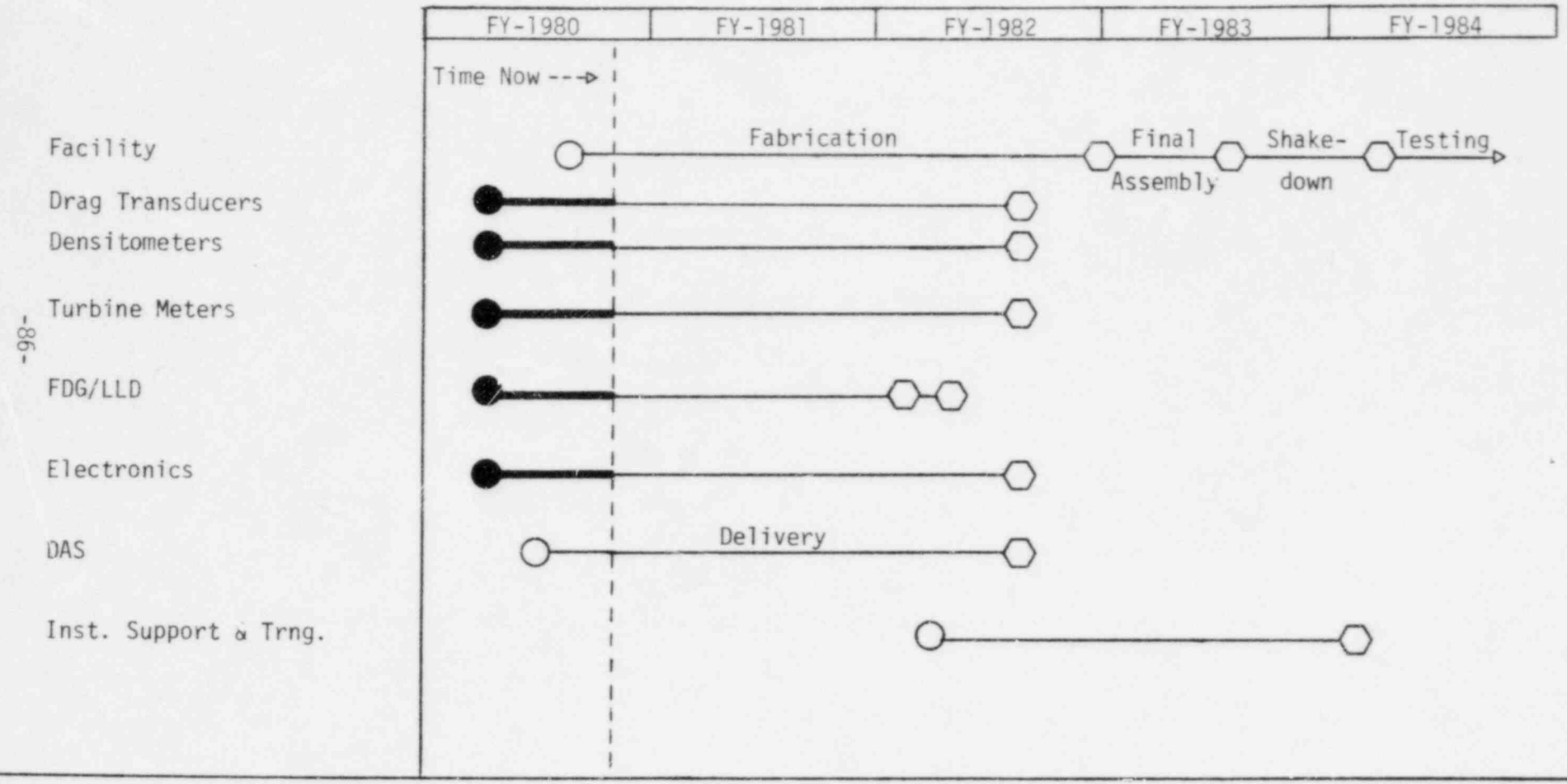
LEGEND

- ● Completed Major Milestone
- ○ Scheduled Major Milestone
- ⊘ Slipped Major Milestone
- ● Completed Secondary Milestone
- ○ Scheduled Secondary Milestone
- ⊘ Slipped Secondary Milestone
- ♦ Actual Completion Date
- ◊ Scheduled Completion Date

2D/3D EXPERIMENT PROGRAM

UPTF Projects

August 1980



NOTES: Allow one month from shipment dates shown for delivery to meet UPTF requested schedule.

2D/3D
TECHNICAL REVIEW & SUMMARY

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

Two Japanese personnel from the Japan Atomic Energy Research Institute (JAERI), Tokai Facility, visited 2D/3D Program personnel August 25-26 to discuss the software system to be provided by the 2D/3D Program for processing instrument data on the JAERI FACOM computer.

Mr. W. S. Farmer from the Nuclear Regulatory Commission visited 2D/3D Program personnel to review our program status, August 13-14. During this visit, a fluid distribution grid display that was developed for the Slab Core Test Facility at JAERI was demonstrated to Mr. Farmer.

Slab Core Test Facility densitometer components were received from vendors. Parts included all Type A and B assembly parts, Type B sources for the hot leg spool piece and upper core and end box densitometers and three beryllium test sleeves to be used for prototype tests.

Work packages with associated cost estimates and schedules are being drafted for all projects.

1. A6100 - 3D Technical Support and Instrumentation

2. Scheduled Milestones for August 1980

Node	Description	Due Date	Actual Date
None			

3. Summary of Work Performed in August 1980

a. Federal Republic of Germany (FRG) Primary Coolant Loop Instruments

1. Spool Pieces - No Activity

2. Conductivity Liquid Level Measurement System

The drawing package has been checked by the Engineering Services Branch and is in its final release cycle. The final draft of the Operation and Maintenance Manual was completed and is presently being reviewed by the 2D/3D Documentation Section.

The acceptance dry run of the total system was completed and the actual acceptance test was started. The fabrication of the electronics spare components was completed. The installation and checkout of the facility power protection equipment was completed.

3. Turbine Meters

Calibration of the turbine meters has been initiated.

b. Japan Atomic Energy Research Institute (JAERI) Slab Core Test Facility Instruments

1. Conductivity Liquid Level Measurement System - No activity.

2. Fluid Distribution Grid

A display was developed for the Slab Core Test Facility fluid distribution grid and demonstrated to the NRC. Development of the data acquisition and processing software continued.

3. Densitometers

The following densitometer components were received in August:

a. All Type A and Type B assembly parts (shipped from the vendor, Gemcor, Inc.),
b. the Type B sources for the hot leg spool piece and upper core and end box densitometers, and
c. the three beryllium test sleeves to be used for prototype tests.

Most engineering procedures for acceptance and prototype tests were completed and acceptance testing started. Fabrication of the assembly fixture was completed.

4. Hot Leg Spool Piece

Fabrication of the slab core simulator is approximately 70% complete. The weld preps were machined into the hot leg spool piece and all the bosses tack welded into place. Welding and X-ray inspection is in progress on the two large bosses. The stress report on the hot leg spool piece has been released and is in reproduction.

5. Turbine Meters

Fabrication and acceptance testing of the production turbine electronics and turbine rotors has been completed. Evaluation of the test data has been initiated.

6. Cold Leg and Vent Line Spool Piece

Work continued on the operation and maintenance manual during August. This is the last remaining activity to be completed on this project at EG&G Idaho.

7. Drag Disks

Calibration data was analyzed to establish coefficients and determine acceptability. One transducer was not acceptable because of nonlinearity which was attributed to the electronics. Five transducers for the hot leg spool piece were assembled and force calibrated.

c. Upper Plenum Test Facility Instruments

1. Drag Disks

A rough draft of the work package for the Upper Plenum Test Facility drag transducers was completed.

2. Fluid Distribution Grid

A work package, with associated schedules and cost estimates, was completed.

3. Turbine Meters

A preliminary draft of the engineering specification for Upper Plenum Test Facility turbine meter assemblies was completed and placed with Design Engineering personnel for review and further detail. Preliminary design work was temporarily discontinued pending evaluation of the impact the German schedule slippage will have on the project. Responses from several turbine meter supplier candidates were received and others will be available the first week in September for evaluation.

4. Gamma Densitometers

The action items from the 2D/3D International Meeting held in Munich, Germany, were assigned in August. A RELAP 4/MOD 6 analysis of the fluid environment in the Upper Plenum Test Facility hot and cold legs at blowdown was initiated. The analysis uses a Zion plant model modified by selected Upper Plenum Test Facility conditions.

d. Cylindrical Core Test Facility Core II Instruments

1. Turbine Meters

The specification and envelope drawings for procurement of the turbine systems are being completed.

2. Fluid Grid

The design for the optical liquid level probes is approximately 75% complete. Requisition of materials has started along with the drawings and procedures.

3. Thermocouple Velocimeter

Fabrication of the prototype has been initiated. Installation drawings were prepared for transmittal to Japan Atomic Energy Research Institute.

4. Spool Piece and Drag Disk Refurbishment

The refurbishment of instrumentation software for the Japan Atomic Energy Research Institute FACOM computer was added to the project and incorporated into the work breakdown structure. The final draft of the work breakdown structure was completed. Preparations for the refurbishment trip to JAERI in September/October 1980 were continued.

5. Conductivity Liquid Level Measurement System Refurbishment

A complete set of prints of the modified conductivity liquid level detector and support tube released drawings were sent to Japan Atomic Energy Research Institute.

Fabrication and testing of the first set of 20 probe-to-cable assemblies was completed, resulting in 19 QA Level II accepted units ready for conductivity liquid level detector assembly work. The final draft of the work breakdown structure was completed. The five conductivity liquid level detector spares from Japan Atomic Energy Research Institute were returned to INEL and delivered to the Measurement & Control Systems Division.

4. Scheduled Milestones for September 1980

Node	Description	Due Date	Actual Date
Page 1-93	Slab Core Test Facility CLLMS Technical Manual to be Issued	3DP-14-80 09-01-80	NCR Pending
Page 1-91	Slab Core Test Facility Fluid Distribution Grid Technical Manual to be Issued	3DP-13-80 09-01-80	NCR Pending
Page 1-93	Installation Support for Slab Core Test Facility Turbine Flowmeters	3DP-12-80 09-30-80	NCR Pending
Page 1-93	Slab Core Test Facility Drag Disk Installation Support	3DP-16-80 09-03-80	NCR Pending

5. Summary of Work to be Performed in September 1980

a. Federal Republic of Germany (FRG) Primary Coolant Loop Instruments

1. Spool Pieces - No activity.

2. Conductivity Liquid Level Measurement System

The drawing package will be released. The acceptance test procedure for the total system and the acceptance tests will be completed. Review of the Operation & Maintenance Manual will be continued. Shipping preparations will be started.

3. Turbine Meters

Calibration of the turbine meter assemblies will be completed.

b. Japan Atomic Energy Research Institute Slab Core Test Facility

1. Conductivity Liquid Level Measurement System

Personnel will travel to Japan and begin installation of hardware at the Japan Atomic Energy Research Institute.

2. Fluid Distribution Grid

Personnel will travel to JAERI and begin installation of hardware. Work will continue on the data acquisition and processing software.

3. Gamma Densitometers

Fabrication of the M1/M2 test section will be completed in September. Testing of the hot leg spool piece densitometers will be completed so they can be installed on the hot leg spool in September. The Prototype A source will be received in September. Testing of the test beryllium sleeves will be completed in September.

4. Hot Leg Spool Piece

Fabrication of the slab core simulator will be completed in September and installation of the assembly into the LOFT Test Support Facility two-phase flow loop will begin in late September. The modification of the Japan Atomic Energy Research Institute hot leg spool piece will be completed followed by a hydrostatic pressure test.

5. Turbine Meters

Evaluation of tne turbine test data will be completed and production electronics will be shipped to INEL. Fabrication of spare parts will be initiated.

6. Cold Leg and Vent Line Spool Piece

Work will continue on the Operation and Maintenance Manual.

7. Drag Disks

Five hot leg spool piece transducers will be flow calibrated and acceptance tested. Four transducers will be installed in the hot leg spool piece. The calibration coefficients for the downcomer drag transducers will be established. The spare downcomer drag transducer will be furnished to Oak Ridge for testing with their string probe. The purpose of these tests is to establish an algorithm for mass flow measurement.

c. Upper Plenum Test Facility

1. Drag Disks

The finalized work package will be completed for the Upper Plenum Test Facility drag transducers.

2. Fluid Grid - No activity.

3. Turbine Meters

Work will resume on the preliminary design effort and continue on the engineering specification. A technical review of the MPR specification will be completed and comments compiled. The completed list of responding turbine supplier candidates will be evaluated.

4. Gamma Densitometers

The RELAP 4/MOD 6 analysis of hot leg and cold leg fluid environment will be completed in September.

d. Cylindrical Core Test Facility Core II Instruments

1. Turbine Meters

The procurement specification and envelope drawings will be completed. A preliminary design review will be conducted.

2. Fluid Grid

The design of the optical liquid level probes and associated electronics will be completed and ready for preliminary design review. Material will also begin to arrive and some assembly will begin.

3. Thermocouple Velocimeter

Work on prototype and test fixture fabrication will continue. Test procedures for prototype tests will be prepared.

4. Spool Piece and Drag Disk Refurbishment

The final overseas refurbishment schedule and manpower assignments will be completed. EG&G technical personnel will be traveling to the Japan Atomic Energy Research Institute Tokai Facility to initiate system refurbishment work.

5. Conductivity Liquid Level Measurement System Refurbishment

The conductivity liquid level detector spares returned from Japan will be refurbished. A probe assignment schedule will be prepared and the number of additional probe-to-cable assemblies will be determined.

6. Problems and Potential Problems

Slab Core Test Facility Turbine Meters and Drag Disks

The installation support trip has been postponed at Japan Atomic Energy Research Institute's request. A new installation schedule is being negotiated.

Slab Core Test Facility Densitometers

The vendor for the beryllium sleeves has slipped deliver dates of the Type A and Type B sleeves from an original date of mid-August to late September and now, to a partial shipment on October 7, and the final shipment on October 20. Most of the acceptance and prototype tests must wait until these sleeves are received. This development has the potential of delaying the required shipment date to Japan Atomic Energy Research Institute.

WRRD MONTHLY REPORT FOR

AUGUST 1980

CODE DEVELOPMENT & ANALYSIS PROGRAM

S. F. Tuck
Plans & Budget Representative

P. North, Manager

CODE DEVELOPMENT & ANALYSIS PROGRAM

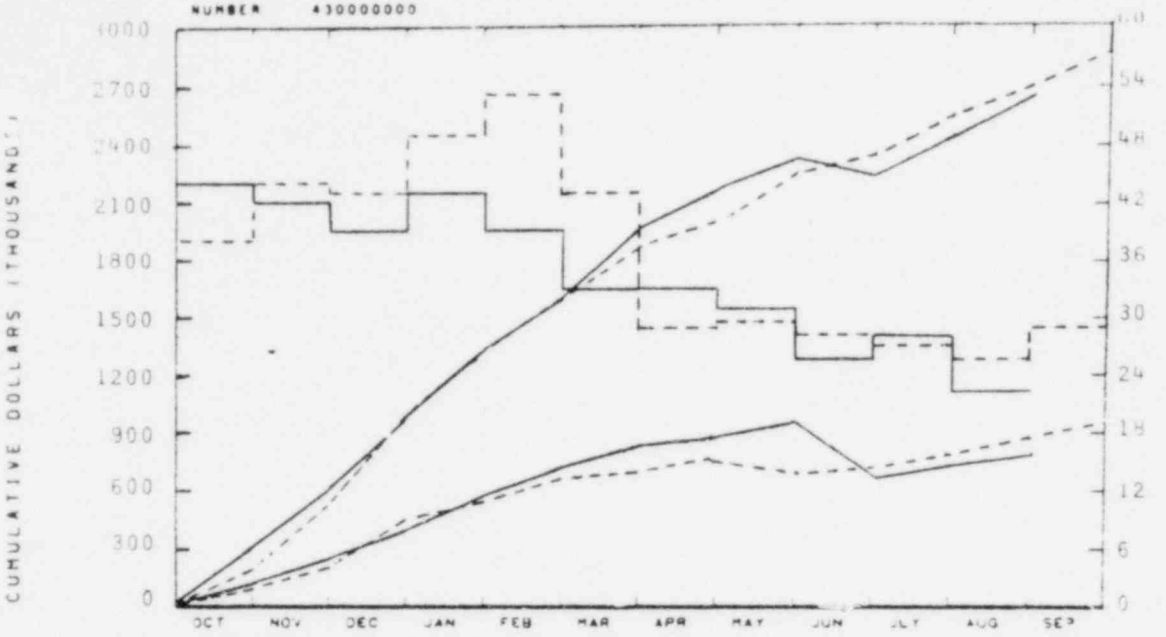
COST SUMMARY & COMMENTS

RESPONSIBLE MANAGER
P NORTH

EG&G IDAHO INC.

CODE DEVELOPMENT & ANALYSIS PROG

NUMBER 430000000



TOTAL PROGRAM

BUDGET	274	567	1013	1314	1600	1824	2062	2268	2363	2526	2701	2975
ACTUAL	302	599	1009	1315	1598	1960	2164	2349	2276	2435	2625	

MATERIAL

BUDGET	95	213	441	531	613	671	749	717	770	803	886	928
ACTUAL	104	232	428	537	643	801	885	935	713	766	812	

BUDGET - - - - -
ACTUAL ———

MANPOWER

BUDGET	38	44	43	49	53	43	28	29			45	38
ACTUAL	44	42	39	43	39	33	33	31	25	27	23	

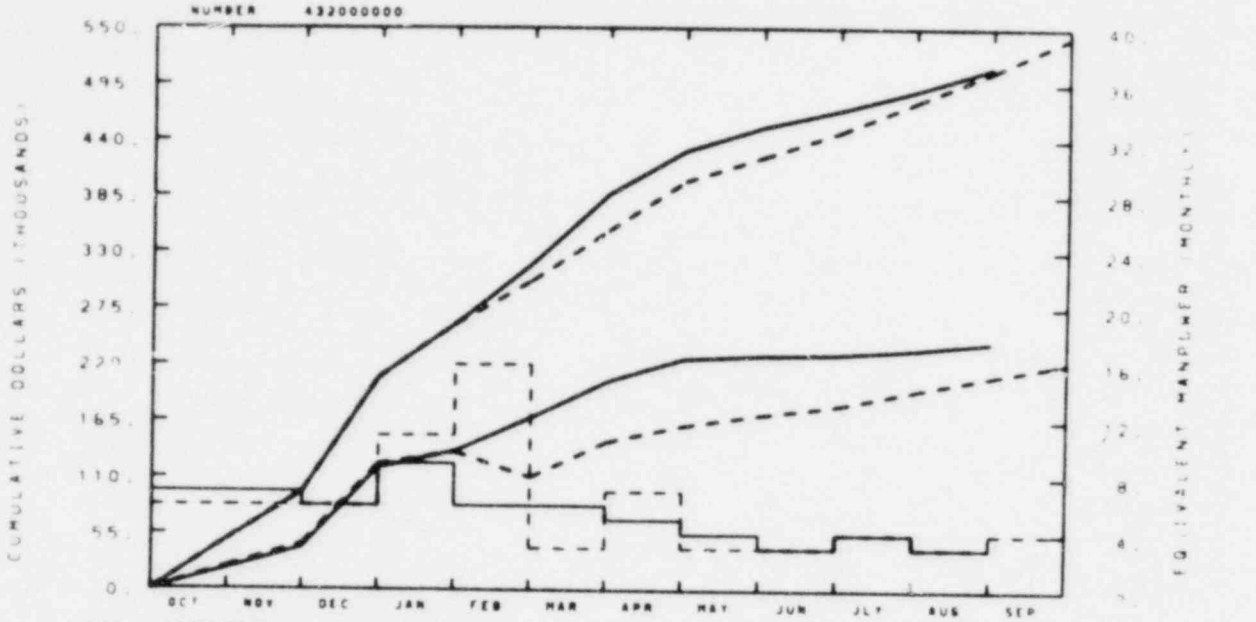
YTD VARIANCE: 76 (3%)

Individual cost graphs will give individual explanations.

Explanations for major 189a's will be made if the variance exceeds $25 K. Minor 189a graphs will explain variance of over $10 K.

EG&G IDAHO INC.

CONTAINMENT ANALYSIS DEVELOPMENT



TOTAL PROGRAM

BUDGET	49	96	207	260	302	351	400	424	448	478	508	542
ACTUAL	49	96	207	260	318	387	430	453	470	489	512	

MATERIAL

BUDGET	23	45	123	135	110	145	160	171	180	195	208	222
ACTUAL	20	41	120	136	168	203	226	229	230	235	242	

MANPOWER

BUDGET	6	6	6	11	16	3	7	3	3	4	3	4
ACTUAL	7	7	6	9	6	6	5	4	3	4	3	

BUDGET

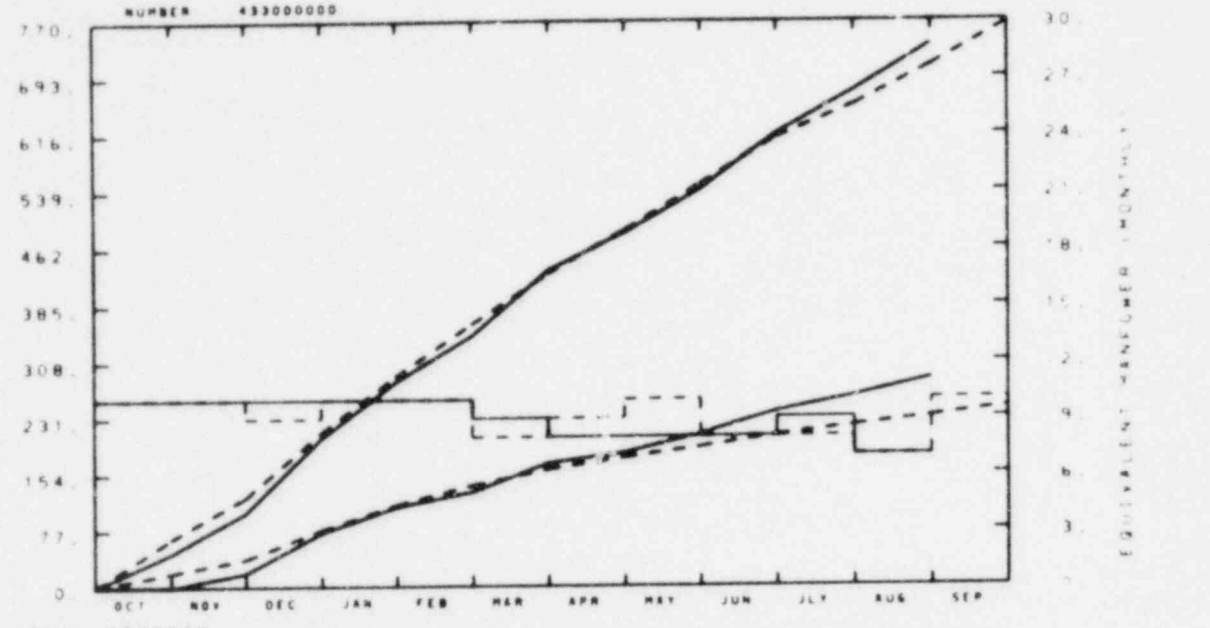
ACTUAL

A6042

YTD VARIANCE: <4> (1%)

EG&G IDAHO, INC.

FUEL BEHAVIOR MODEL DEVELOPMENT



TOTAL PROGRAM

BUDGET	66	123	212	289	360	428	486	548	611	655	708	767
ACTUAL	46	102	205	282	344	432	483	541	616	674	737	

MATERIAL

BUDGET	20	39	78	112	139	161	177	191	206	219	231	244
ACTUAL	0	20	74	110	130	169	183	208	239	260	284	

MANPOWER

BUDGET	10	16	9	10	10	8	9	10	8	8	7	10
ACTUAL	10	10	10	10	10	9	8	8	8	9	7	

A6050

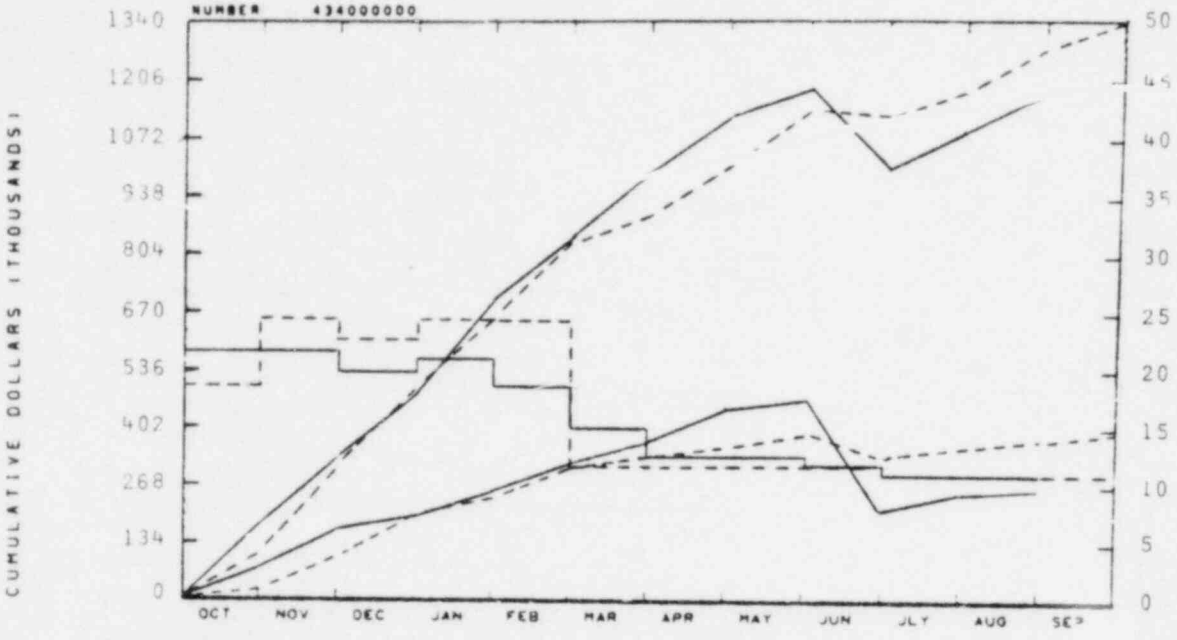
YTD VARIANCE: <29> (4%)

Approximately $12 K of the year-to-date variance are computer costs that should have been incurred against another account. These costs are being transferred to the appropriate account. Minor personnel changes will allow closure within budget.

ESPONSIBLE
ANAGER
P NORTH

EG&G IDAHO INC.

LOSS OF COOLANT ACCIDENT ANALY



TOTAL PROGRAM

BUDGET	119	286	518	665	817	905	1019	1125	1119	1135	1273	1339
ACTUAL	168	344	520	684	827	1016	1112	1203	1011	1082	1182	

MATERIAL

BUDGET	33	100	206	245	288	312	354	395	331	355	381	394
ACTUAL	67	147	205	250	311	394	439	461	209	226	247	

BUDGET - - - - -

ACTUAL ———

MANPOWER

BUDGET	18	24	23	24	24	12	12	12	12	11	11	11
ACTUAL	22	22	20	21	18	15	13	13	12	11	11	

A6052

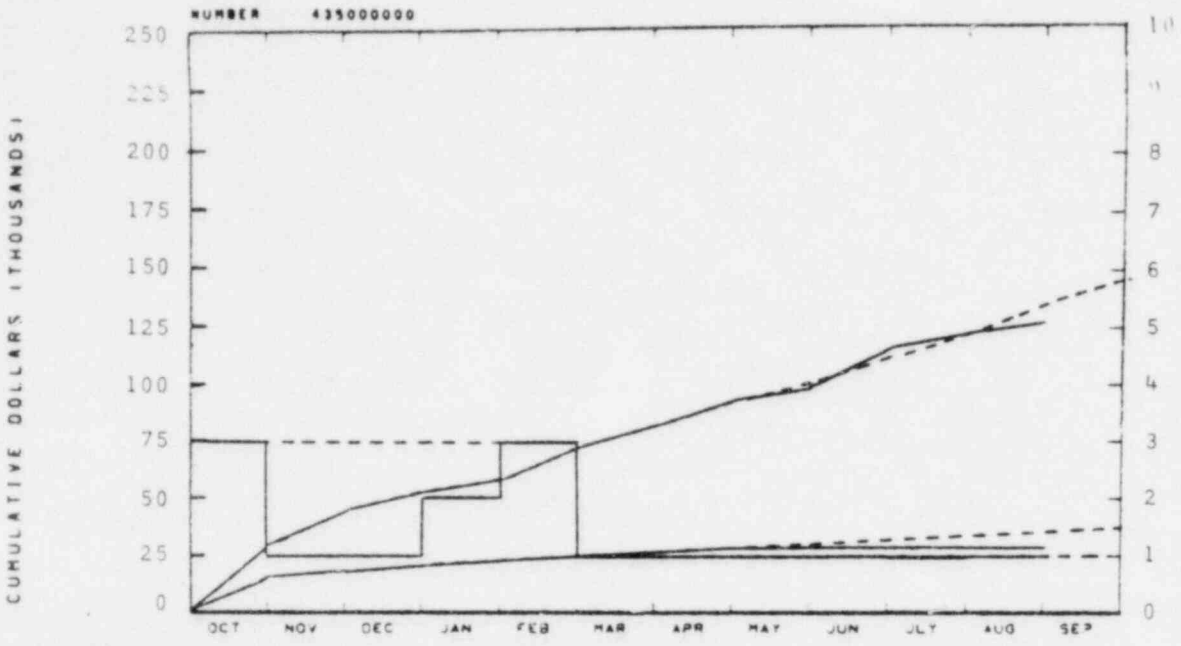
YTD VARIANCE: 91 (7%)

Current projections indicate about a $70 K carryover into FY-1981. Approximately $41 K is associated with RELAP4/MOD7 Documentation, which is being postponed. The remaining $29 K is associated with RELAP4 enhancement tasks.

RESPONSIBLE MANAGER
P NORTH

EG&G IDAHO INC.

CORRELATION VERIFICATION



TOTAL PROGRAM

BUDGET	30	42	51	59	72	81	90	101	112	123	134	146
ACTUAL	30	42	51	59	72	81	90	97	118	122	124	

MATERIAL

BUDGET	15	21	23	24	25	26	27	28	29	30	31	32
ACTUAL	15	21	23	24	25	26	27	27	27	27	27	

MANPOWER

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

BUDGET - - - - -
ACTUAL ———

A6278

YTD VARIANCE: 10 (7%)

All identified work scope is completed. Unless additional scope is defined, a $22 K underrun is projected for the close of FY-1980.

CODE DEVELOPMENT & ANALYSIS PROGRAM

CURRENT WORKING SCHEDULE

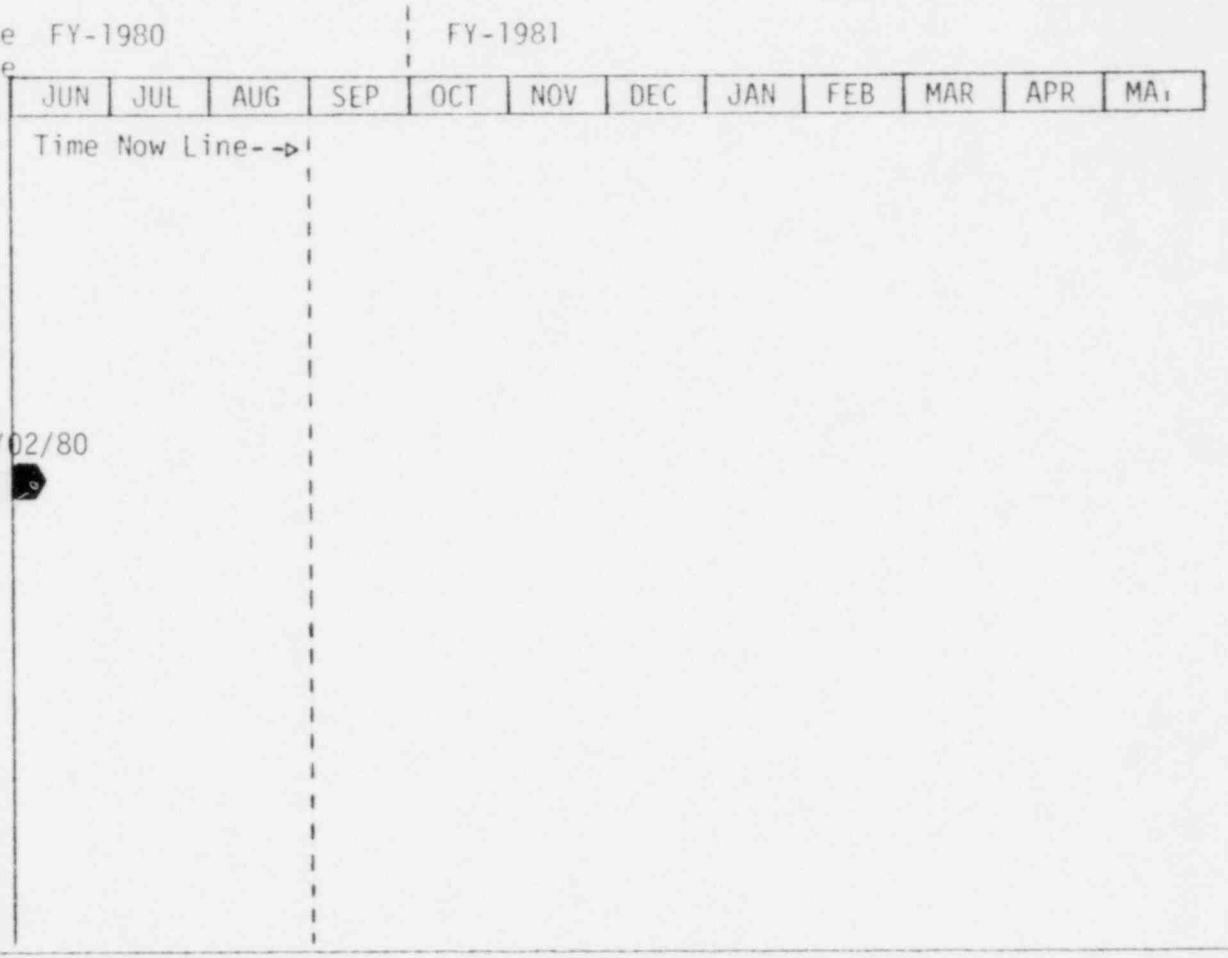
LEGEND

- Completed Major Milestone
- Scheduled Major Milestone
- Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- Slipped Secondary Milestone
- Actual Completion Date
- Scheduled Completion Date

CODE DEVELOPMENT AND ANALYSIS PROGRAM

BEACON Code Development (A6042)

August 1980



NOTES:

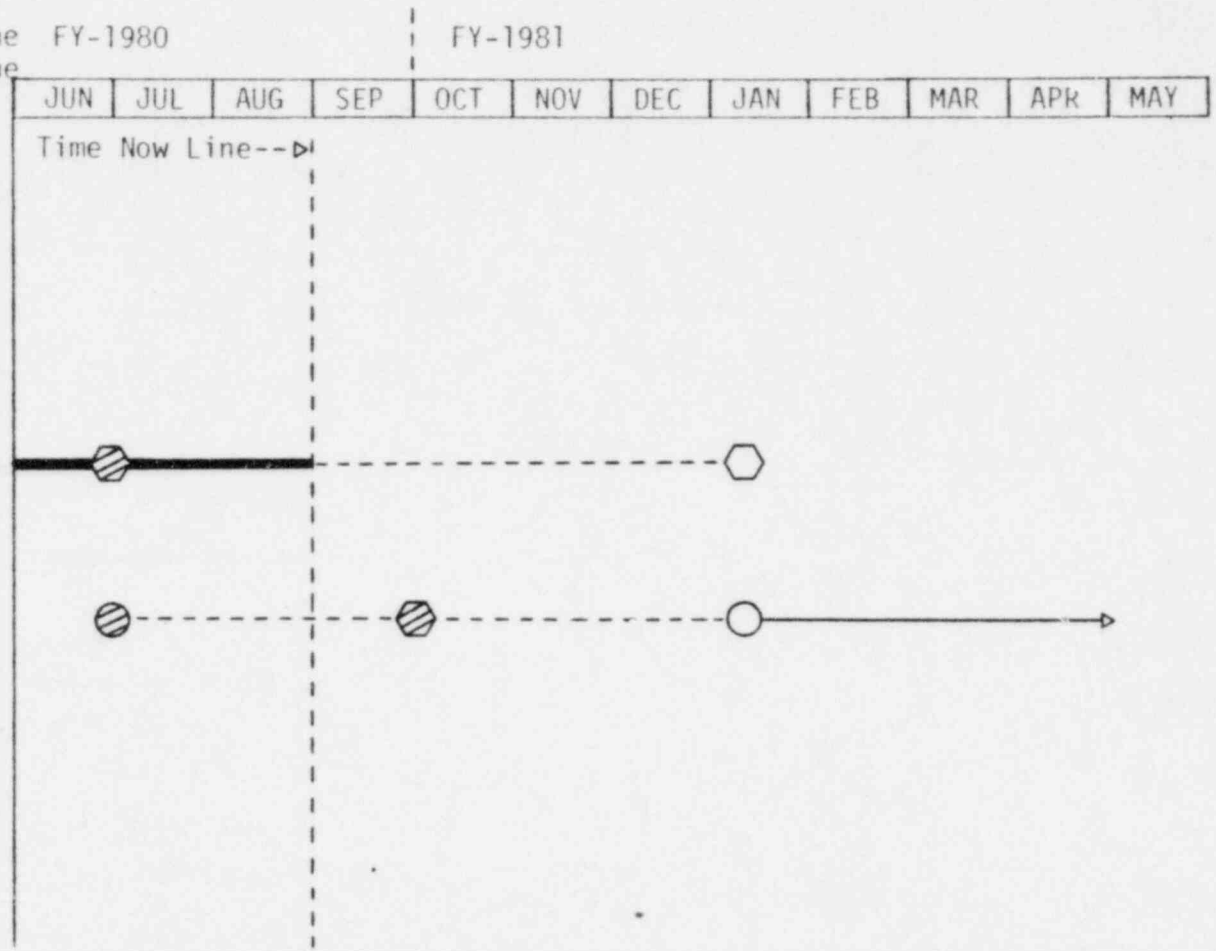
LEGEND

- Completed Major Milestone
- Scheduled Major Milestone
- Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- Slipped Secondary Milestone
- Actual Completion Date
- Scheduled Completion Date

CODE DEVELOPMENT AND ANALYSIS PROGRAM

MATPRO Development (A6050)

August 1980



NOTES: MATPRO-11 represents the last version in the development of the MATPRO subcode. Revisions will be supplied to reflect maintenance.

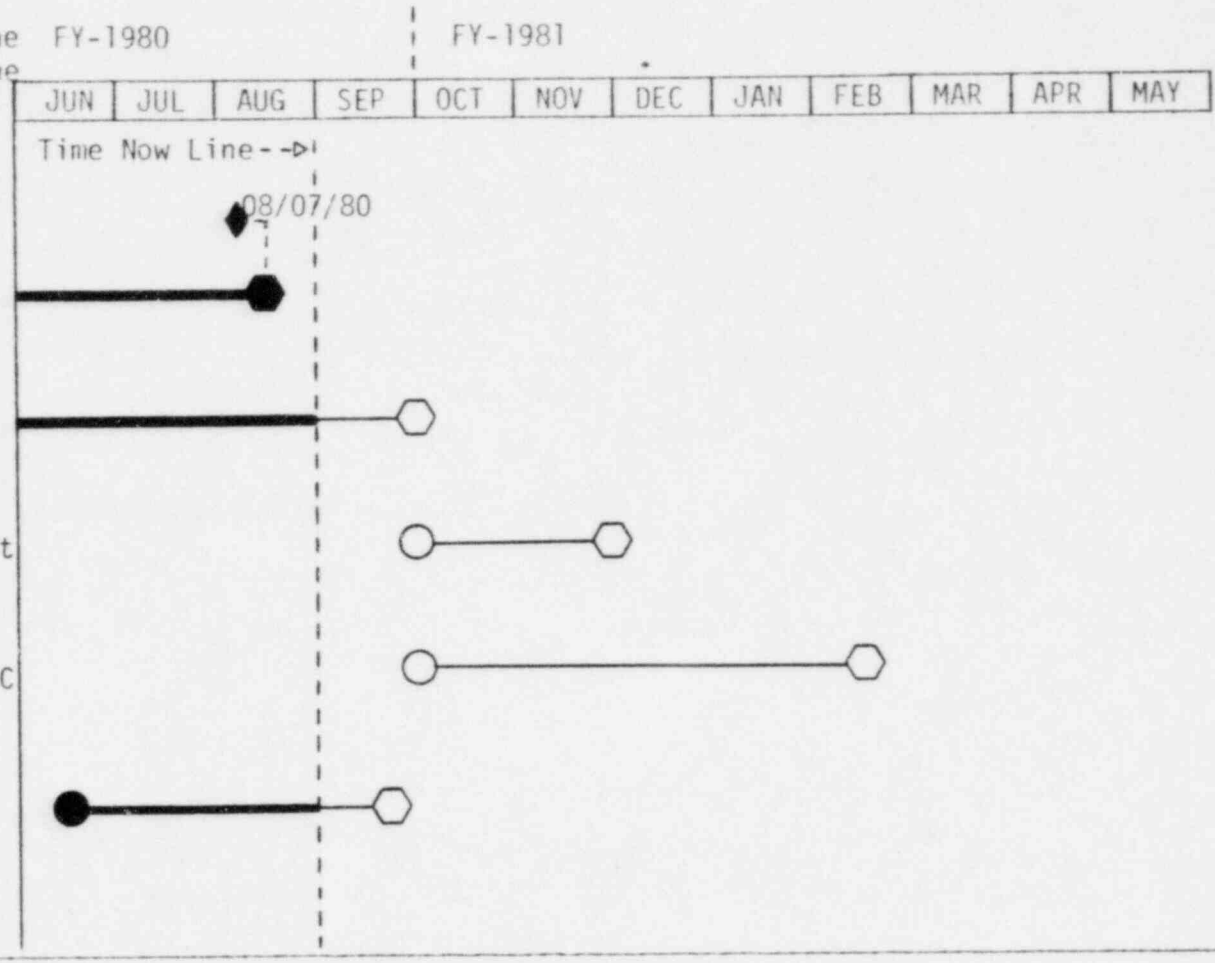
LEGEND

- Completed Major Milestone
- Scheduled Major Milestone
- Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- Slipped Secondary Milestone
- Actual Completion Date
- Scheduled Completion Date

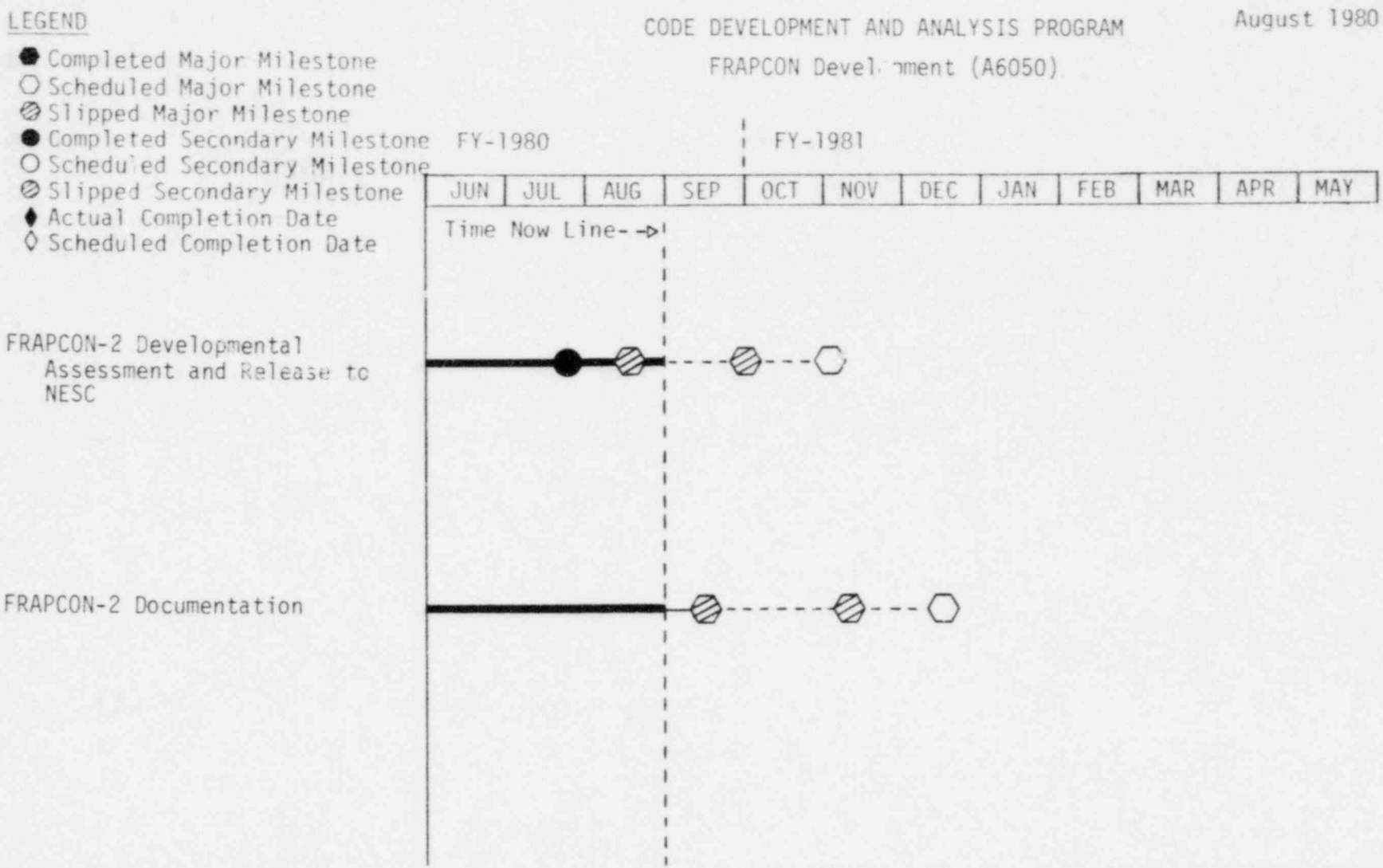
CODE DEVELOPMENT AND ANALYSIS PROGRAM

August 1980

FRAP-T Development (A6050)



NOTES:



NOTES: The start dates for the FRAPCON-2 Developmental Assessment and Documentation have been rescheduled.

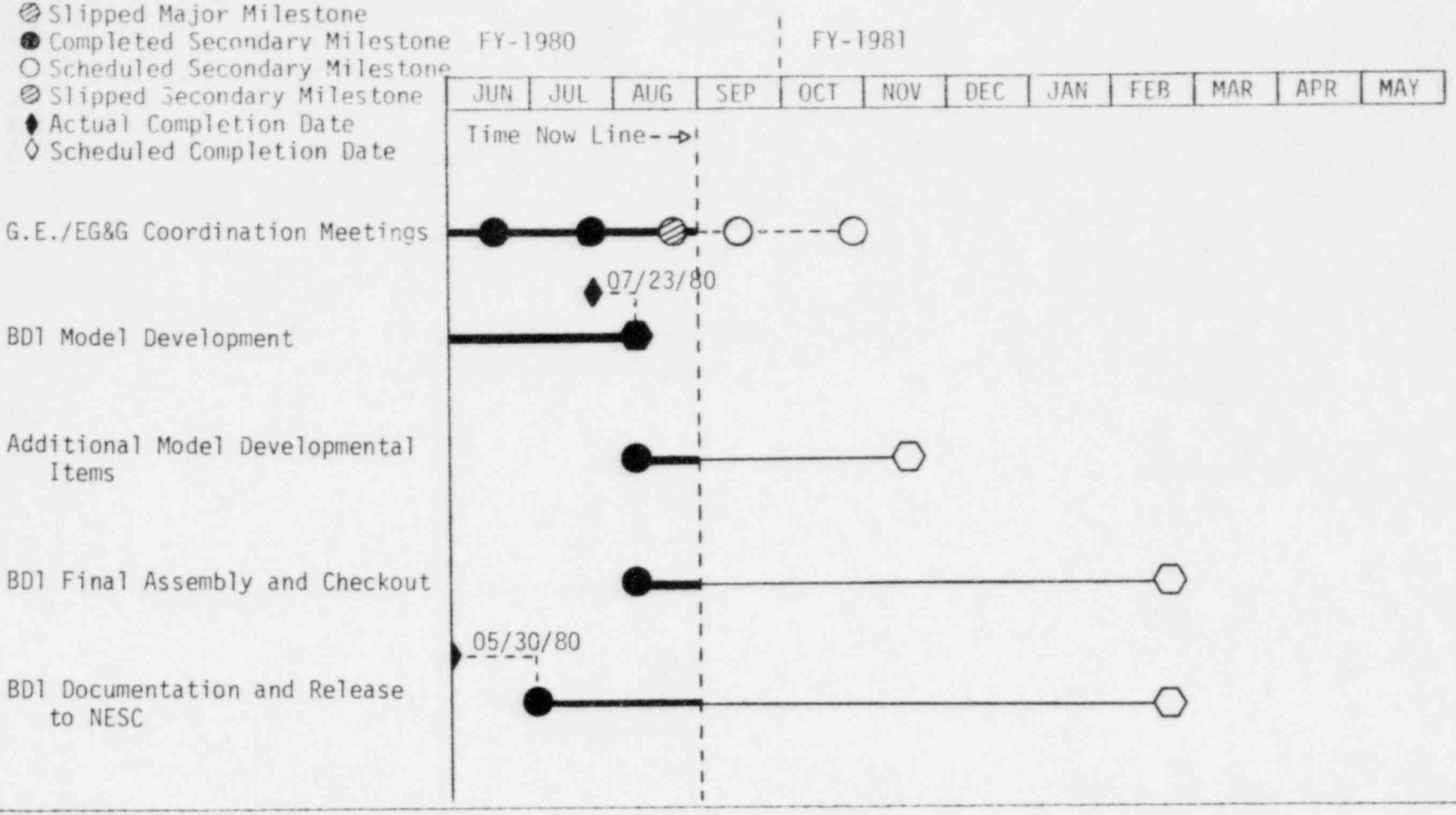
LEGEND

- Completed Major Milestone
- Scheduled Major Milestone
- Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- Slipped Secondary Milestone
- Actual Completion Date
- Scheduled Completion Date

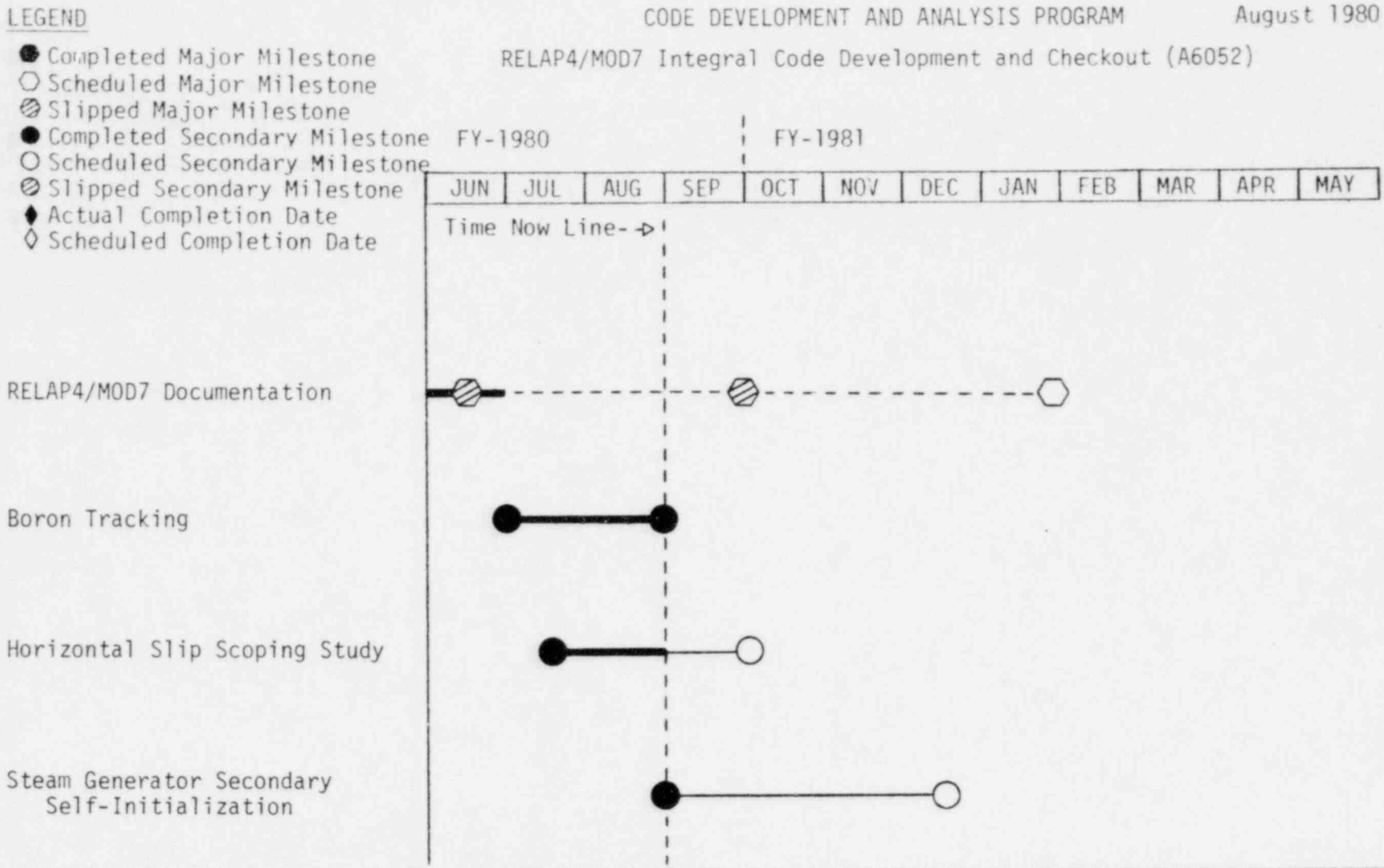
CODE DEVELOPMENT AND ANALYSIS PROGRAM

TRAC-B Development (A6052)

August 1980



NOTES:



NOTES: The RELAP4/MOD7 Documentation task and Enhancement tasks were rescheduled (PN-101-80).

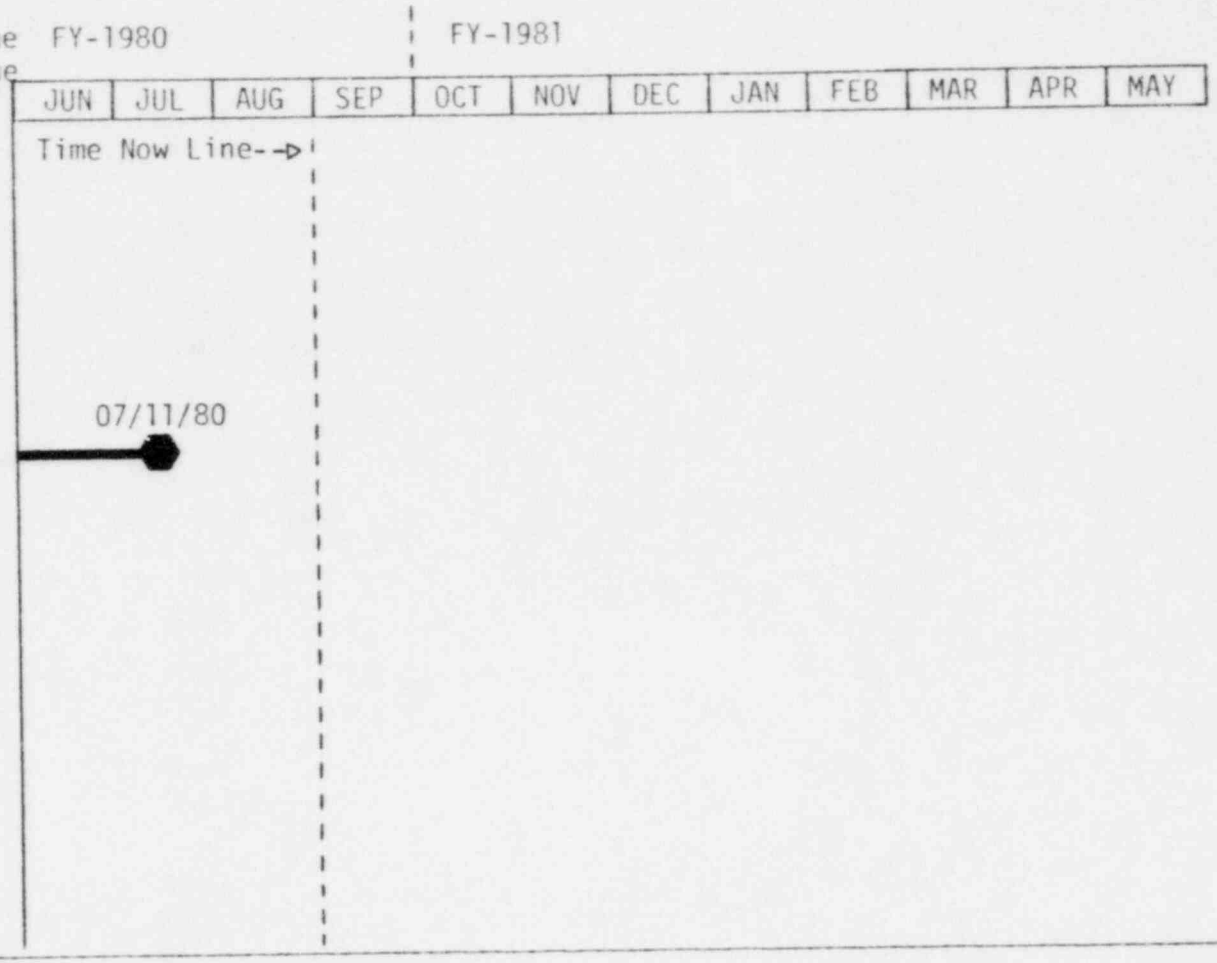
LEGEND

- ● Completed Major Milestone
- ○ Scheduled Major Milestone
- ⊘ Slipped Major Milestone
- ◐ Completed Secondary Milestone
- ○ Scheduled Secondary Milestone
- ⊘ Slipped Secondary Milestone
- ♦ Actual Completion Date
- ◊ Scheduled Completion Date

CODE DEVELOPMENT AND ANALYSIS PROGRAM

August 1980

Heat Transfer (A6278)



NOTES: All other tasks on this 189a suspended pending NRC redirection.

CODE DEVELOPMENT & ANALYSIS PROGRAM

CAPITAL EQUIPMENT

EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

CARRYOVER

Program Code Development

189 Number A6109 (A6052)

Date August 1980

Manager P. North

Planned { Account Opened o, Money Committed Δ, Account Closed □ } Actual { ● ▲ ■ }

Charge Number	Description	Authorized Amount	Current YTD Costs & Commitments	Total Costs, & Outstanding Commitments	Variance <Over>/Under
9SA990240	Tape Drive and Controller	10,000	---	---	10,000
	Closed EA's	2,863	---	4,958	<2,095>
	Uncommitted	10,000	---	---	10,000
		22,863	-0-	4,958	17,905

Carryover Budget	17,905
YTD Costs & Commit.	-0-
Balance	17,905

EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

Date August 1980

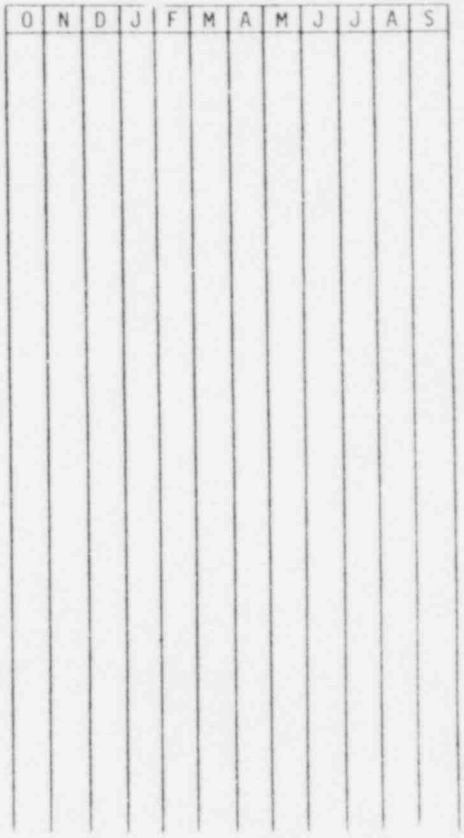
Program Code Development

189 Number A6109 (A6052)

Manager P. North

Planned { Account Opened o / Money Committed Δ / Account Closed □ } Actual { ● / ▲ / ■ }

Priority Number	Charge Number	Description	Authorized Amount	Total Costs, & Outstanding Commitments	Variance <Over>/Under
		Uncommitted funding	10,000	---	10,000



CODE DEVELOPMENT & ANALYSIS PROGRAM

TECHNICAL REVIEW & SUMMARY

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

The Nuclear Regulatory Commission (NRC) has proposed that the TRAC-BWR team participate in the design and possibly development of TRAC-PF1, the Los Alamos Scientific Laboratory (LASL) "fast" code. The extent of INEL participation will be defined in meetings with LASL and NRC scheduled for September. The committed TRAC-BD1 scope and schedule will not be affected by this development.

TRAC-PD2 is operational on the INEL system and available for CAAP use.

Only limited developmental assessment of BEACON will continue and documentation of results to date will be completed. Manpower will be reassigned to other work.

The developmental assessment and checkout of FRAPCON-2 was completed, and the code was delivered to CAAP for independent assessment.

1. 189a A6052 - Loss-of-Coolant Accident Analysis

2. Scheduled Milestones for August 1980

No scheduled milestones for August.

3. Summary of Work Performed in August 1980

TRAC BD

The completion report on the conservation of momentum through area changes has been started. Additional model development is underway to incorporate the momentum modifications into the jet pump component and into the vessel to pipe momentum source terms.

A meeting was held with LASL and NRC to discuss the modifications to TRAC-PF1 data structure proposed by LASL. NRC proposed that INEL actively participate in the design of the TRAC "first" version.

Code Maintenance and Enhancement

TRAC-PD2 is operational on the INEL system. The boron tracking for RELAP4/MOD7 model has been developed, implemented and documented (PN-106-80) per schedule commitment identified in PN-101-80. Work on the steam generator secondary self initialization task has begun.

4. Scheduled Milestones for September 1980

Node	Description	Due Date	Actual Date
L1, N6 Page 3-20	Documentation of MOD7 Manual and Developmental Checkout	9-21-80	1-23-81E PN-101-80

5. Summary of Work to be Performed in September 1980

TRAC BD

Work will begin on implementing the CISE-GE CHF correlation and on modeling of the upper plenum. A meeting will be attended at LASL to determine to what extent it will be feasible for LASL and EG&G to cooperatively work on the design and possibly development of TRAC-PF1.

Code Maintenance and Enhancement

The horizontal slip scoping study will be completed and documented. Work on the documentation of RELAP4/MOD7 will begin.

6. Problems and Potential Problems

FY-81 plans for TRAC-BD will be delayed because of the unexpected NRC proposal that INEL participate with LASL in the design and possible development of TRAC-PF1. The extent of INEL participation will be defined in

September. Delivery of the CISE-GE CHF correlation from GE is due. In the event of late delivery, manpower will be diverted to developmental assessment activities.

1. 189a A6278 - Heat Transfer Correlation Development and Assessment

2. Scheduled Milestones for August 1980

   No scheduled milestones for August.

3. Summary of Work Performed in August 1980

   Tentative plans for FY-81 work scope have been discussed with NRC. Manpower has been identified to start work on this task.

4. Scheduled Milestones for September 1980

   No scheduled milestones for September.

5. Summary of Work to be Performed in September 1980

   Additional discussion will be held with NRC to further define work scope and commitments.

6. Problems and Potential Problems

   No additional work in FY-80 is contemplated.

1. 189a A6042 - Containment Analysis Development

2. Scheduled Milestones for August 1980

   No scheduled milestones for August.

3. Summary of Work Performed in August 1980

   Limited success in performing developmental assessment runs have been achieved to date. Several simple test cases have been run in an attempt to identify problem areas. The DREXEL entrainment/de-entrainment problem has been run successfully to 50 sec. In addition, several of the Battelle-Frankfurt D-Series problems have been run.

4. Scheduled Milestones for September 1980

Node	Description	Due Date	Actual Date
L1, N2 Page 3-11	Compare BEACON to various Test Data	9-30-80	

5. Summary of Work to be Performed in September 1980

   Limited developmental assessment will continue and documentation of the results to date will be completed. In view of the anticipated FY-81 funding, manpower will be reassigned to other efforts.

6. Problems and Potential Problems

   None.

1. 189a A6050 - Fuel Behavior Model Development

2. Scheduled Milestones for August 1980

Node	Description	Due Date	Actual Date
36108	FRAPCON-2 Developmental Assessment	8-5-80	8-22-80
L2, N2 Page 2-11	FAST/GRASS Link with FRAP-T6	8-15-80	8-7-80C

3. Summary of Work Performed in August 1980

FRAPCON-2

The developmental assessment and checkout of FRAPCON-2 was completed and the code was delivered to CAAP for independent assessment. A description of the new fuel relocation model was written for inclusion in the FRAPCON-2 code description manual. The draft users manual was not completed due to the delays encountered in the code developmental assessment. The documentation efforts have been rescheduled per FA-13-80.

FRAP-T6

Only a limited amount of effort was directed towards linking the dynamically dimensioned version of FRACAS-II with FRAP-T6 due to the problems encountered in FRAPCON-2. This effort will be completed during September. The I/O package, graphics package, and FAST/GRASS links with FRAP-T6 were checked out. The additional heat transfer correlations were incorporated and are being checked out.

MATPRO

The UO_2 viscosity data was analyzed and a preliminary model was constructed. Eutectic melt data from the Hagen experiments as modeled in the EXMEL code was reviewed as a candidate MATPRO eutectic melt model.

Special Projects

The FRAIL-6 coding was completed, update cards for FRAP-T6 were prepared, and checkout is in process. A draft document describing FRAIL-6 was prepared and in the process of review. Checkout of the BALOON-2 model was completed. A review of available literature on severe fuel damage was begun and preparation of a list of keywords to be used for a complete literature search is in process.

4. Scheduled Milestones for September 1980

Node	Description	Due Date	Actual Date
L13, N2 Page 2-11	FRAIL-6 Subcode Update - Issue Description Report	9-15-80	
36040 Page 2-11	Programming of FRAP-T6	9-29-80	

5. Summary of Work to be Performed in September 1980

FRAPCON-2

Preparation of the draft FRAPCON-2 User's Manual will be completed.

FRAP-T6

Programming of the FRAP-T6 code will be completed.

MATPRO

Reports will be written to describe the new UO_2 viscosity model and the eutectic melt model.

Special Projects

Reports describing the FRAIL-6 subcode and the BALOON-2 model will be issued. Formulation of the basic objectives of the severe fuel damage code will be completed and a draft list of the phenomenon to be included in the code will be prepared.

6. Problems and Potential Problems

The program remains understaffed. One outstanding offer was accepted during the period and one offer was made during the period. One vacancy remains unfilled and another is expected by the end of September.

WRRD MONTHLY REPORT FOR

AUGUST 1980

CODE ASSESSMENT & APPLICATIONS PROGRAM

E. L. Pierson
Plans & Budget Representative

J. A. Dearien, Manager

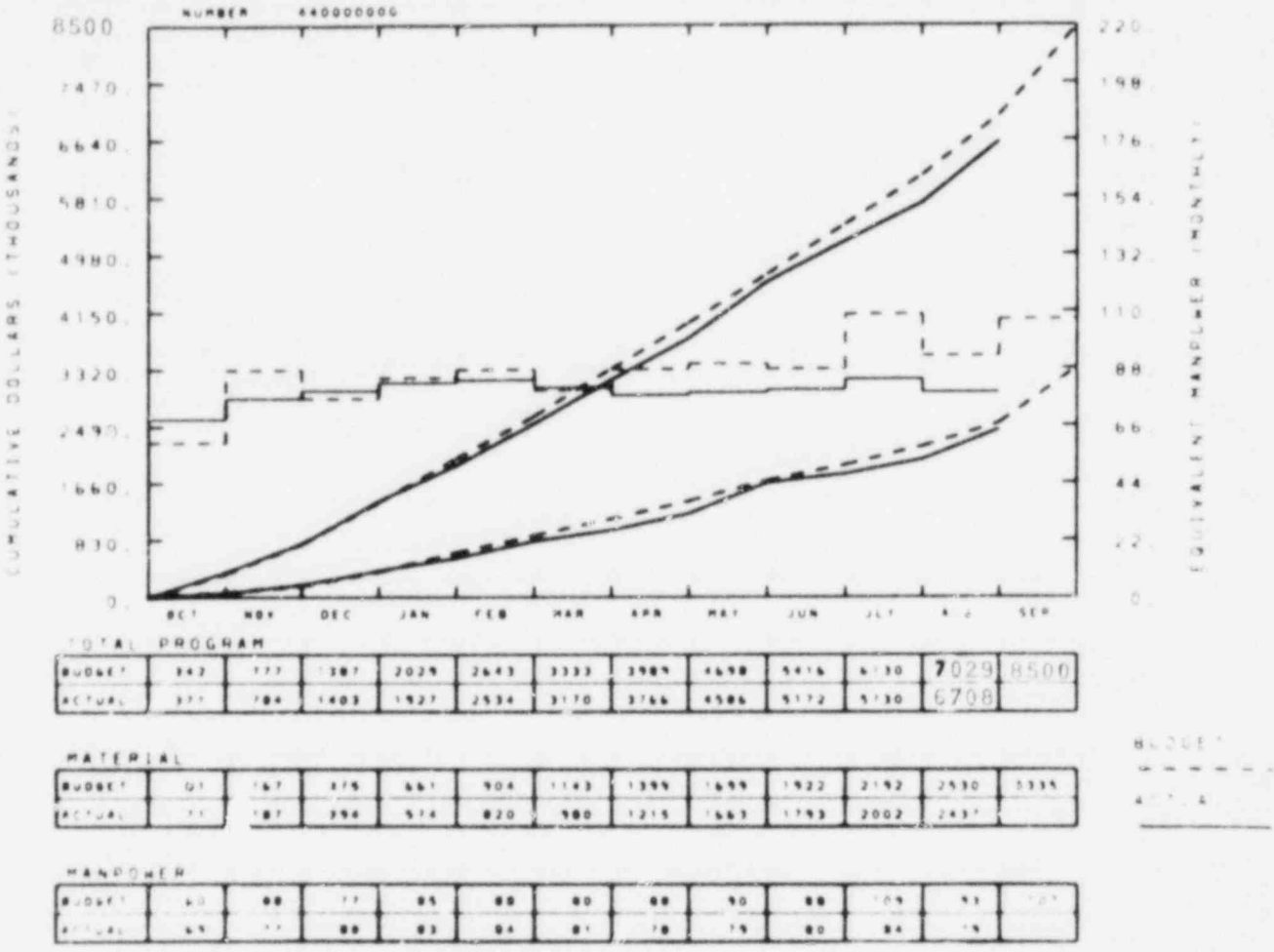
CODE ASSESSMENT & APPLICATIONS PROGRAM

COST SUMMARY & COMMENTS

RESPONSIBLE
MANAGER
K DEARIEN

EG&G IDAHO INC.

CODE ASSESSMENT & APPLICATIONS



TOTAL PROGRAM

BUDGET	342	777	1387	2029	2643	3333	3989	4698	5416	6130	7029	8500
ACTUAL	377	784	1403	1927	2534	3170	3766	4586	5172	5730	6708	

MATERIAL

BUDGET	91	167	275	441	704	1143	1399	1699	1922	2192	2530	3335
ACTUAL	71	187	396	574	820	980	1215	1663	1793	2002	2437	

MANPOWER

BUDGET	60	88	77	85	88	80	88	90	88	109	91	107
ACTUAL	69	77	80	83	84	81	78	79	80	84	79	

YTD VARIANCE: 321 (5%)

Individual cost graphs will give individual explanations.

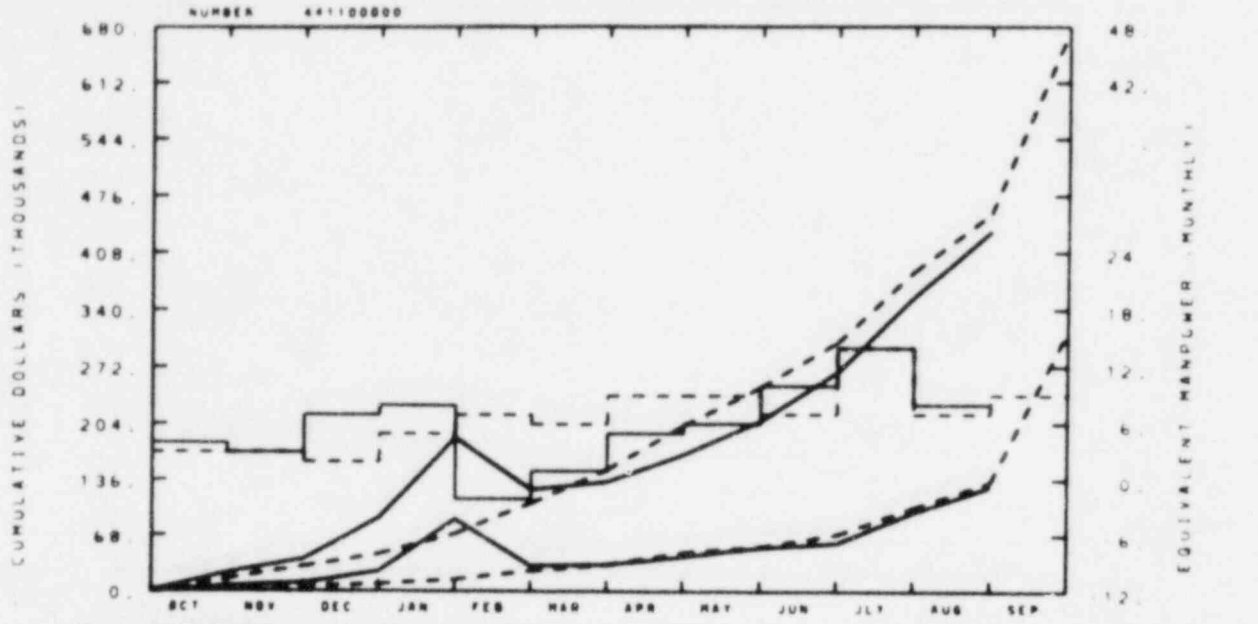
Explanations for major 189a's will be made if the variance exceeds $25 K. Minor 189a graphs will explain variance of over $10 K.

RESPONSIBLE MANAGER
A. DEARIEN

EG&G IDAHO INC.

TECH SUP FOR NRC/INDUST A6039

NUMBER 441100000



TOTAL PROGRAM

BUDGET	15	30	45	71	108	149	202	248	301	386	455	475
ACTUAL	24	39	90	100	125	134	167	208	266	355	433	

MATERIAL

BUDGET	3	6	9	15	25	33	48	54	69	102	133	314
ACTUAL	6	10	27	69	32	33	42	53	59	96	128	

MANPOWER

BUDGET	3	3	2	5	7	6	9	9	7	14	7	9
ACTUAL	4	3	7	8	2	1	5	6	10	14	8	

BUDGET - - - - -

ACTUAL ———

A6039

YTD VARIANCE: 22 (5%)

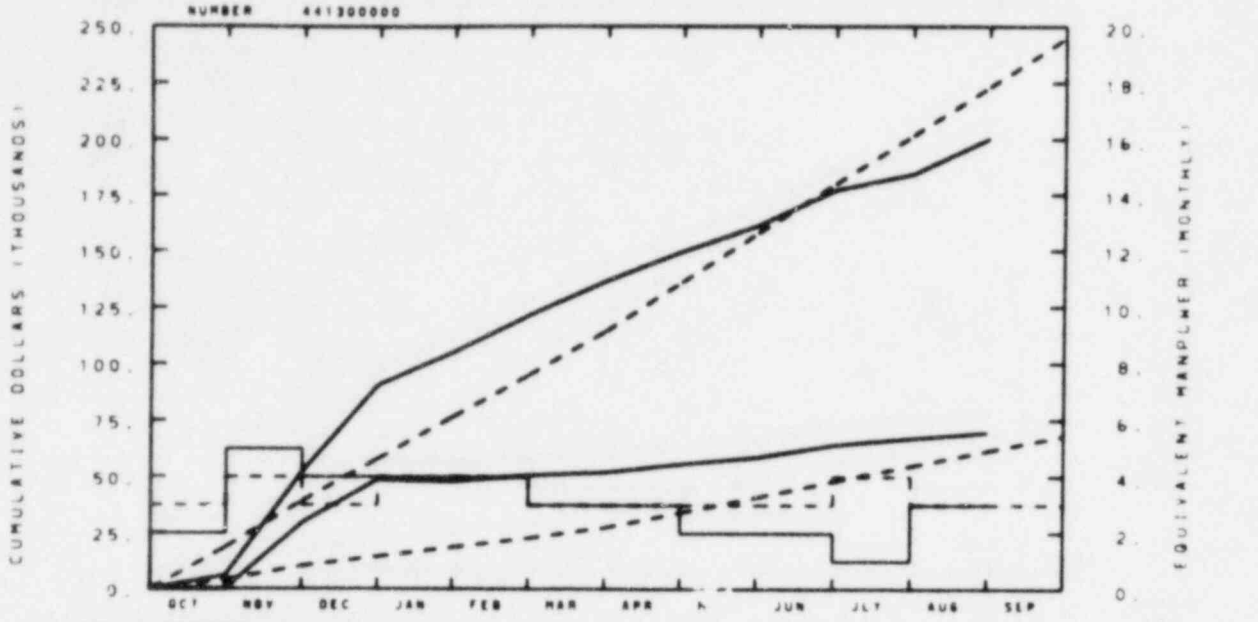
At mid-year it was established that up to a $70 K carryover (in addition to supplemental funding of $175 K) was desirable. Large computer expenditure tasks were initiated in June and July. These tasks impacted the actual expenditures in August and will in September. Thus, the underrun at fiscal year end will be approximately $40 K of the original funding and $175 K supplemental.

RESPONSIBLE MANAGER
A DEARIEN

EG&G IDAHO INC.

FUEL CODE ASSESSMENT A6046

NUMBER 441300000



TOTAL PROGRAM

BUDGET	19	39	58	77	95	115	136	158	180	202	223	245
ACTUAL	6	52	91	105	122	137	150	161	177	184	200	

MATERIAL

BUDGET	4	10	15	19	23	28	34	41	48	55	61	68
ACTUAL	0	30	45	48	51	52	56	59	64	67	70	

MANPOWER

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

A6046

YTD VARIANCE: 23 (10%)

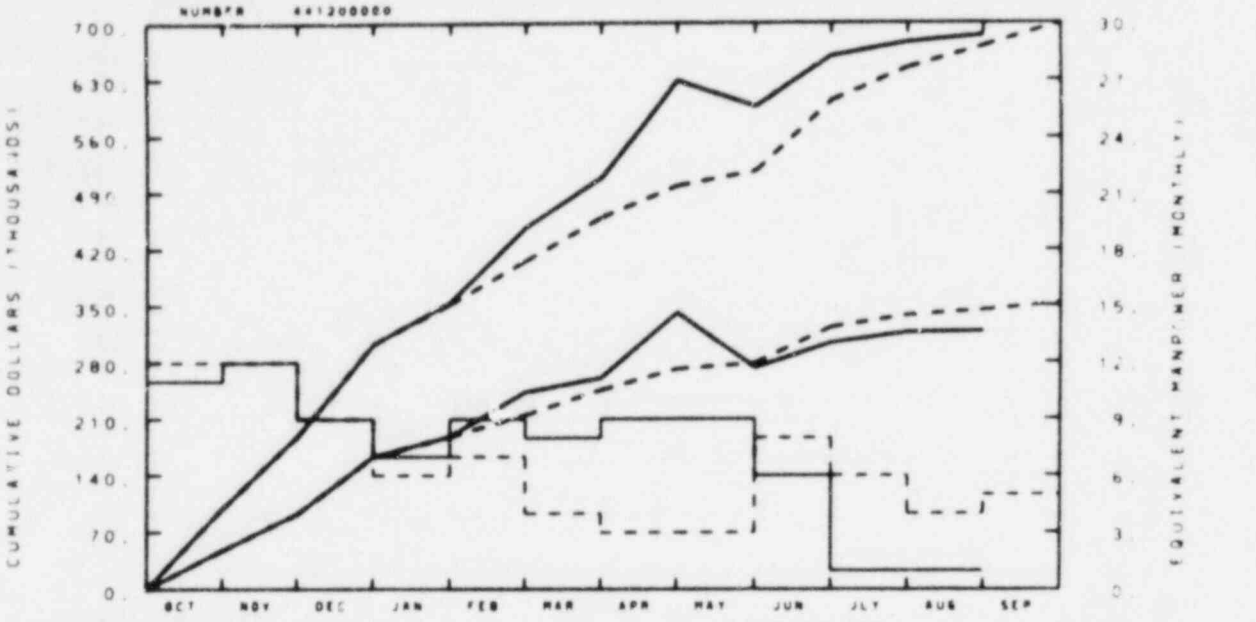
Delay in receiving FRAPCON-2 for independent assessment has resulted in a temporary delay in A6046 spending. A carryover of approximately $25 K is expected at fiscal year end.

RESPONSIBLE MANAGER
J. K. DEARIEN

EG&G IDAHO INC.

THERMAL HYDRAULIC CODE AS A6047

NUMBER 441200000



TOTAL PROGRAM

BUDGET	99	188	302	353	406	460	499	518	605	645	671	700
ACTUAL	99	188	302	355	448	510	629	598	659	676	685	

MATERIAL

BUDGET	48	92	163	188	215	246	272	279	323	338	345	353
ACTUAL	48	92	163	189	243	261	341	273	304	317	318	

MANPOWER

BUDGET	12	12	9	6	7	4	3	3	8	6	4	5
ACTUAL	11	12	9	7	9	8	9	9	6	1	1	

BUDGET - - - - - -

ACTUAL _____

A6047

YTD VARIANCE: <14> (2%)

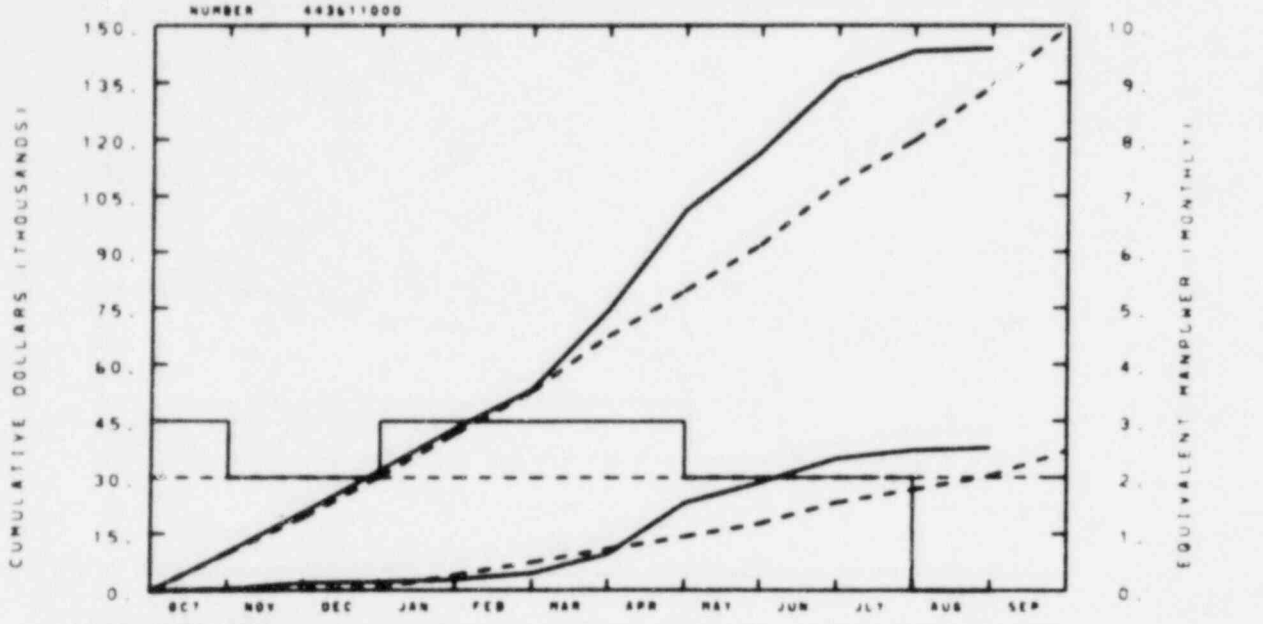
Effort on this task was accelerated in anticipation of adequate supplemental funding to complete specified tasks. Since only $100 K additional funding was received, work has been decreased in order to pull the costs in line with the budget at fiscal year end.

RESPONSIBLE MANAGER
A. A. DEARIEN

EG&G IDAHO INC.

STAND PROB ANALY & HEAT A6048B

NUMBER 443611000



TOTAL PROGRAM

BUDGET	10	19	30	42	53	68	80	92	108	120	134	150
ACTUAL	10	21	32	43	54	74	101	117	136	143	144	

MATERIAL

BUDGET	0	1	1	4	7	11	14	18	23	27	30	37
ACTUAL	0	2	2	3	5	10	23	29	35	37	38	

MANPOWER

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

BUDGET

ACTUAL

A6048B

YTD VARIANCE: <10> (7%)

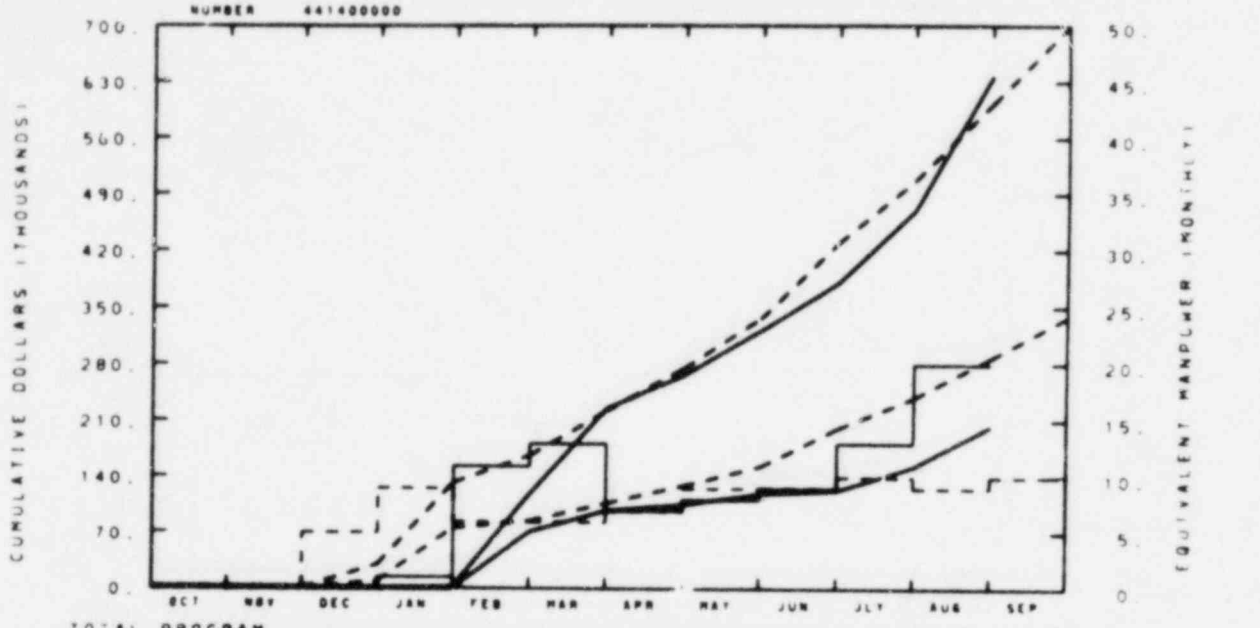
Manpower has been temporarily diverted to computer support to NRR. No carryover funds at fiscal year end is anticipated.

RESPONSIBLE
MANAGER
R. DEANIEN

EG&G IDAHO INC.

SEVERE ACCIDENT SEQ ANAL A6048C

NUMBER 4411400000



TOTAL PROGRAM

BUDGET	0	0	30	133	167	223	276	337	430	508	604	700
ACTUAL	0	0	0	2	119	226	267	322	381	471	638	

MATERIAL

BUDGET	0	0	9	76	86	108	130	153	201	239	288	339
ACTUAL	0	0	0	0	72	99	106	120	124	153	203	

MANPOWER

BUDGET	0	0	5	9	6	6	7	9	9	10	9	10
ACTUAL	0	0	0	1	11	13	7	8	9	13	20	

BUDGET - - - - -
ACTUAL ———

A6048C

YTD VARIANCE: <34> (6%)

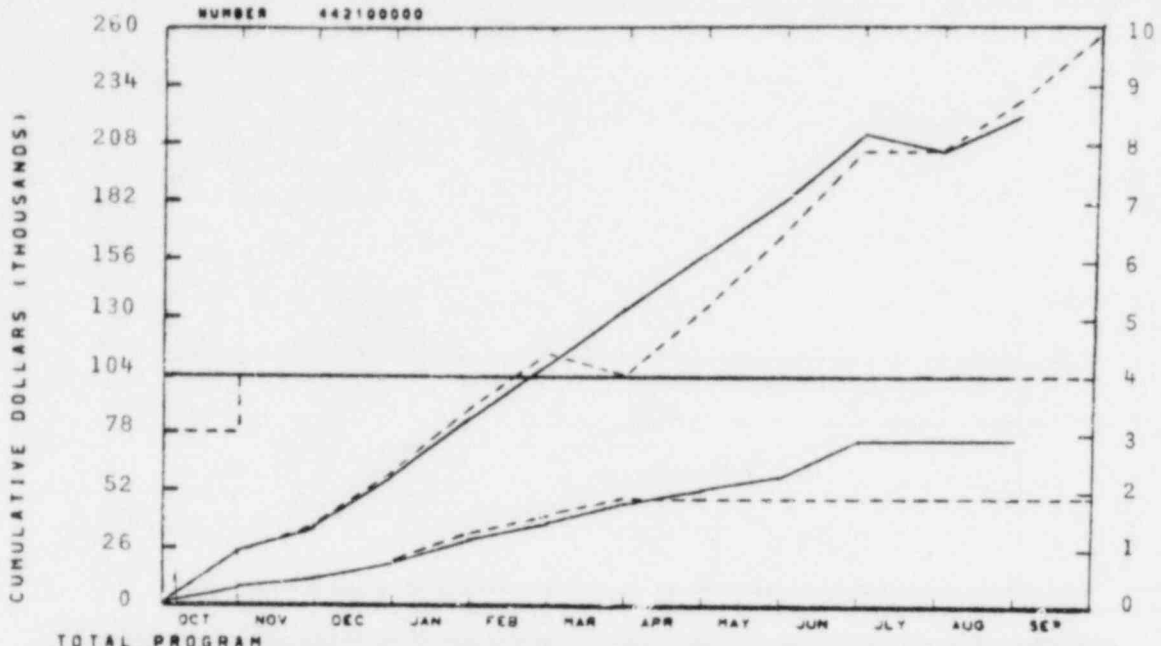
Manpower from this task has been used to perform computer calculations in support of NRR. A carryover of funds into FY-1981 is not anticipated.

RESPONSIBLE MANAGER
J A DEARIEN

EG&G IDAHO INC.

NRC/RSR DATA BANK & HEAT A6102

NUMBER 442100000



TOTAL PROGRAM

BUDGET	21	33	64	90	116	105	138	171	205	205	225	255
ACTUAL	21	38	63	85	110	135	159	185	212	205	218	

MATERIAL

BUDGET	6	10	15	27	38	42	42	42	42	42	42	42
ACTUAL	6	10	15	25	35	40	48	58	70	70	70	

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6102

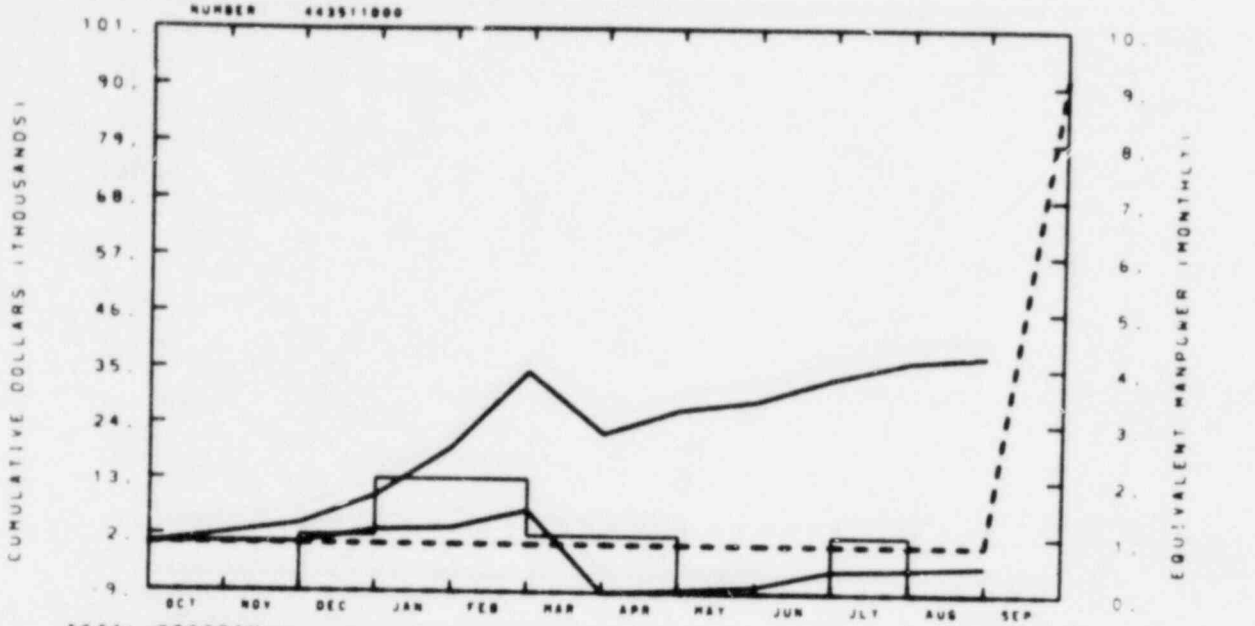
YTD VARIANCE: 7 (3%)

RESPONSIBLE MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

PREP OF DOC FOR TAP-A1 A6279

NUMBER 443511000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	0	0	0	0	0	91
ACTUAL	2	4	9	19	34	22	26	28	33	36	37	

MATERIAL

BUDGET	0	0	0	0	0	0	0	0	0	0	0	91
ACTUAL	0	0	3	3	7	-5	-8	-7	-4	-4	-3	

MANPOWER

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

A6279

YTD VARIANCE: <37>

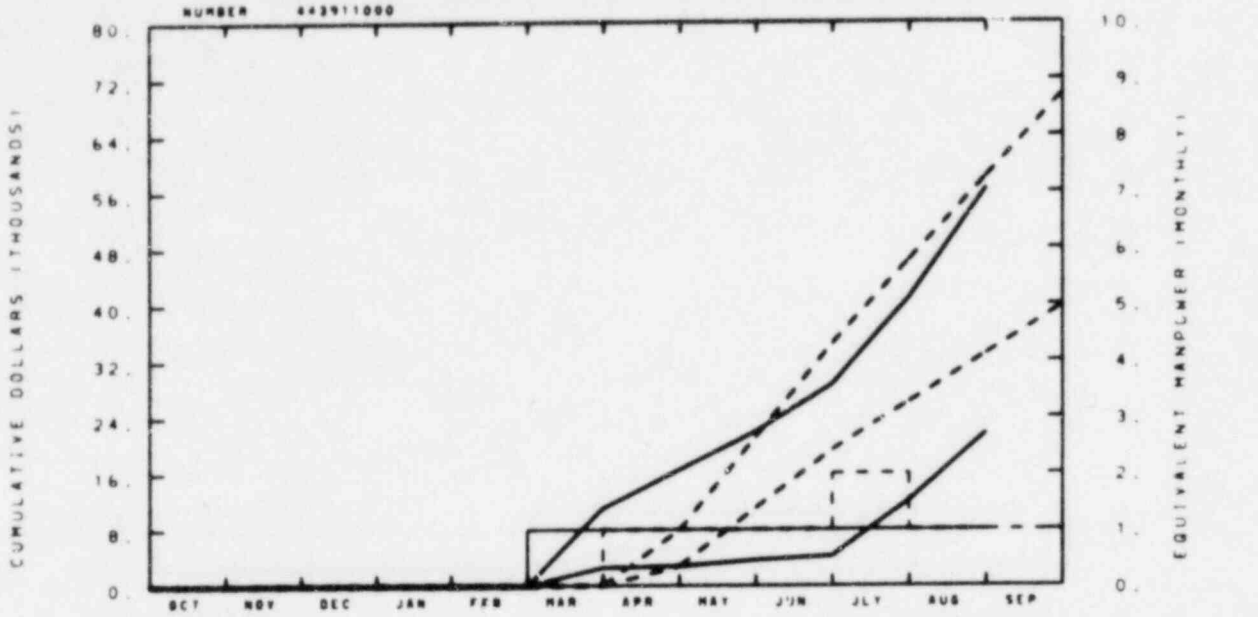
Work on this task will continue to be conducted on an "as requested" basis until a definite work scope is defined. A $53 K carryover into FY-1981 is anticipated.

RESPONSIBLE MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

RESIDENT ENGINEER GERMANY A6304

NUMBER 443911000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	8	21	34	46	58	70
ACTUAL	0	0	0	0	0	11	17	22	29	41	56	

MATERIAL

BUDGET	0	0	0	0	0	0	3	11	19	26	33	40
ACTUAL	0	0	0	0	0	3	3	4	4	12	22	

MANPOWER

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

BUDGET

ACTUAL

A6304

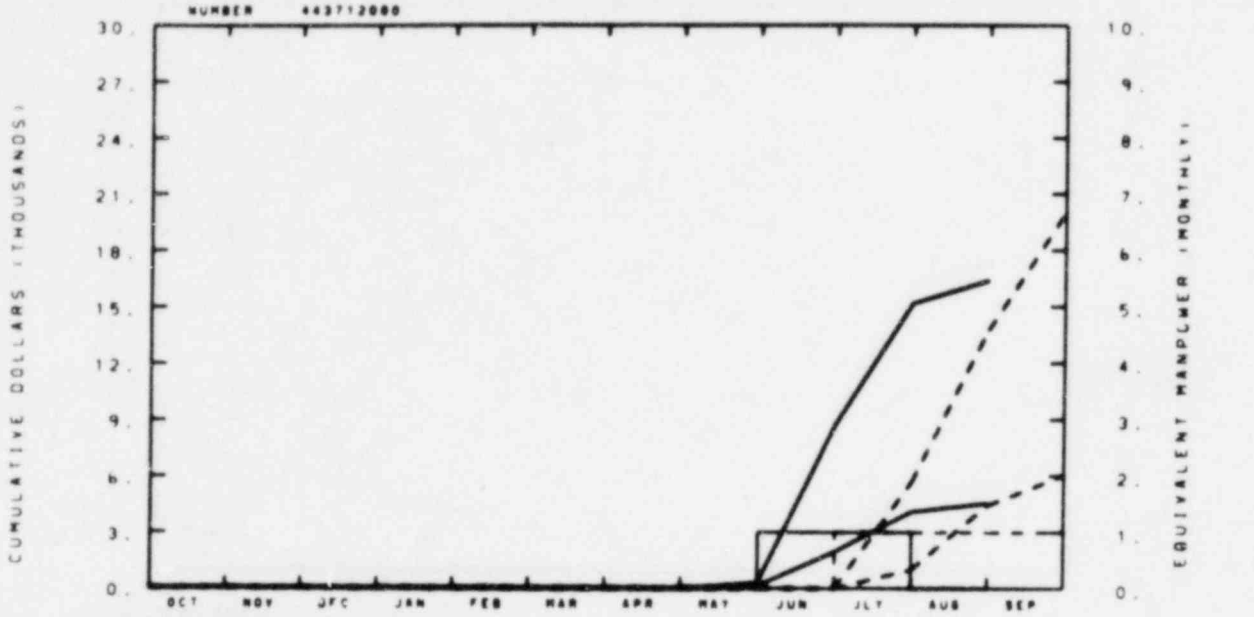
YTD VARIANCE: 2 (3%)

RESPONSIBLE MANAGER
J. R. STATEN

EG&G IDAHO INC.

HDR COMP RESPONSE ANALYSIS A6306

NUMBER 443712000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	0	0	0	6	14	20
ACTUAL	0	0	0	0	0	0	0	0	9	15	16	

MATERIAL

BUDGET	0	0	0	0	0	0	0	0	0	1	4	6
ACTUAL	0	0	0	0	0	0	0	0	2	4	5	

MANPOWER

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

A6306

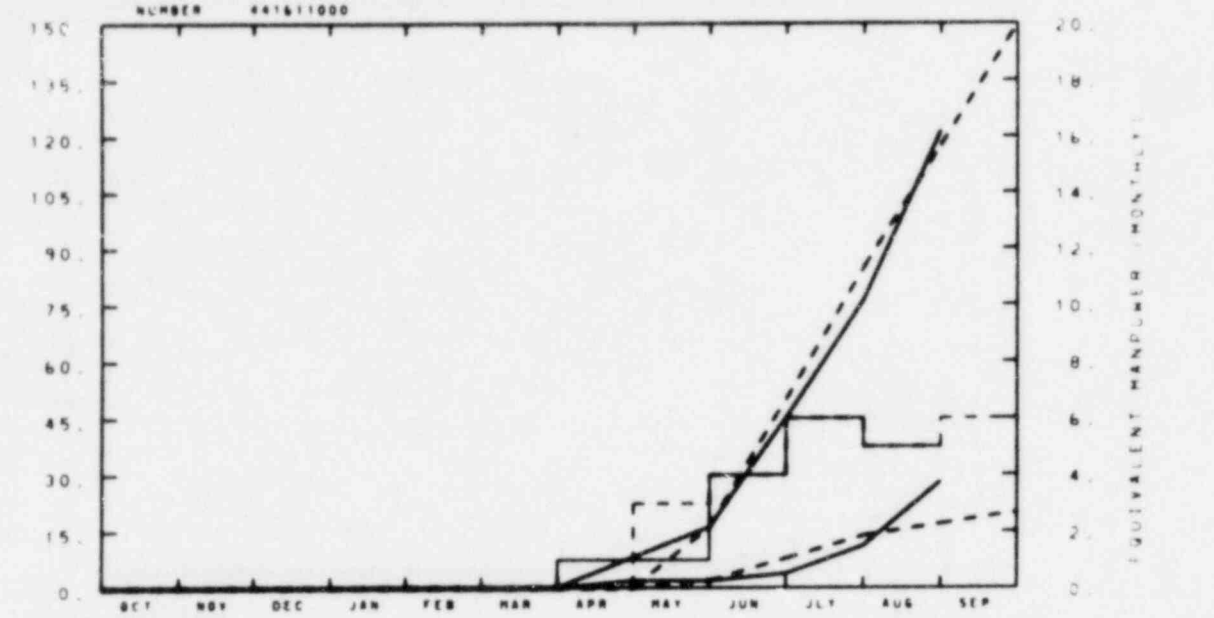
YTD VARIANCE: <2> (14%)

RESPONSIBLE
MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

NRC RELIEF VALVE PROGRAM A6348

NUMBER 4416111000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	0	14	50	85	118	150
ACTUAL	0	0	0	0	0	0	8	16	45	76	122	

MATERIAL

BUDGET	0	0	0	0	0	0	0	2	8	14	17	20
ACTUAL	0	0	0	0	0	0	2	2	4	11	28	

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

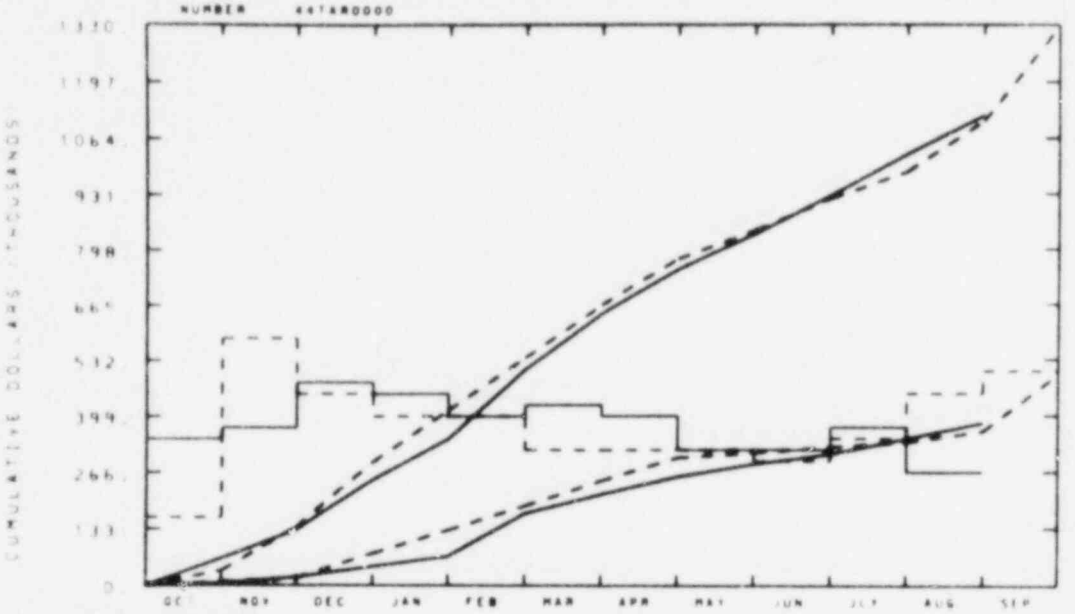
A6348

YTD VARIANCE: <4> (3%)

EG&G IDAHO INC.

NRR/PAS TECHNICAL SUPPORT

NUMBER 441AR0000



TOTAL PROGRAM

BUDGET	35	137	291	413	537	665	776	844	921	985	1105	1327
ACTUAL	63	131	249	345	510	644	751	835	929	1027	1118	

MATERIAL

BUDGET	8	19	75	129	187	246	301	312	326	337	363	496
ACTUAL	4	20	45	68	169	214	256	285	309	346	383	

MANPOWER

BUDGET	6	22	17	15	15	12	12	12	11	13	17	15
ACTUAL	13	14	18	17	15	16	15	12	12	14	12	

BUDGET

ACTUAL

YTD VARIANCE: <13> (1%)

A6276	8	(3%)
A6283	< 2>	(1%)
A6290	3	(1%)
A6291	<12>	(9%)
A6293	< 5>	(7%)
A6294	7	(4%)
A6296	<11>	(9%)

Higher than anticipated computer and travel costs have resulted in a composite overage of $13 K. However, there will be a projected underrun of $118 K at fiscal year end.

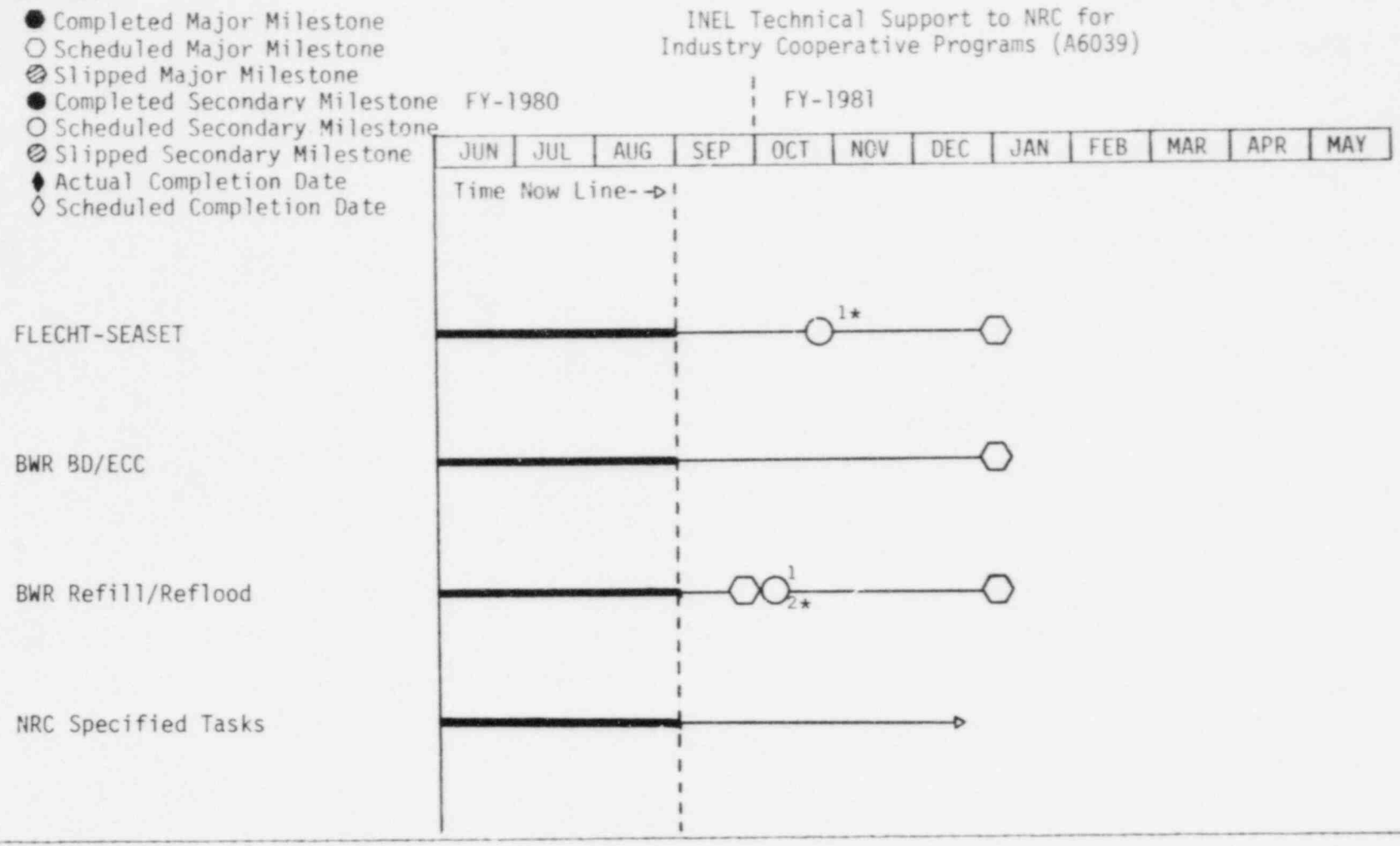
CODE ASSESSMENT & APPLICATIONS PROGRAM

CURRENT WORKING SCHEDULE

CODE ASSESSMENT AND APPLICATIONS PROGRAM

August 1980

INEL Technical Support to NRC for
Industry Cooperative Programs (A6039)

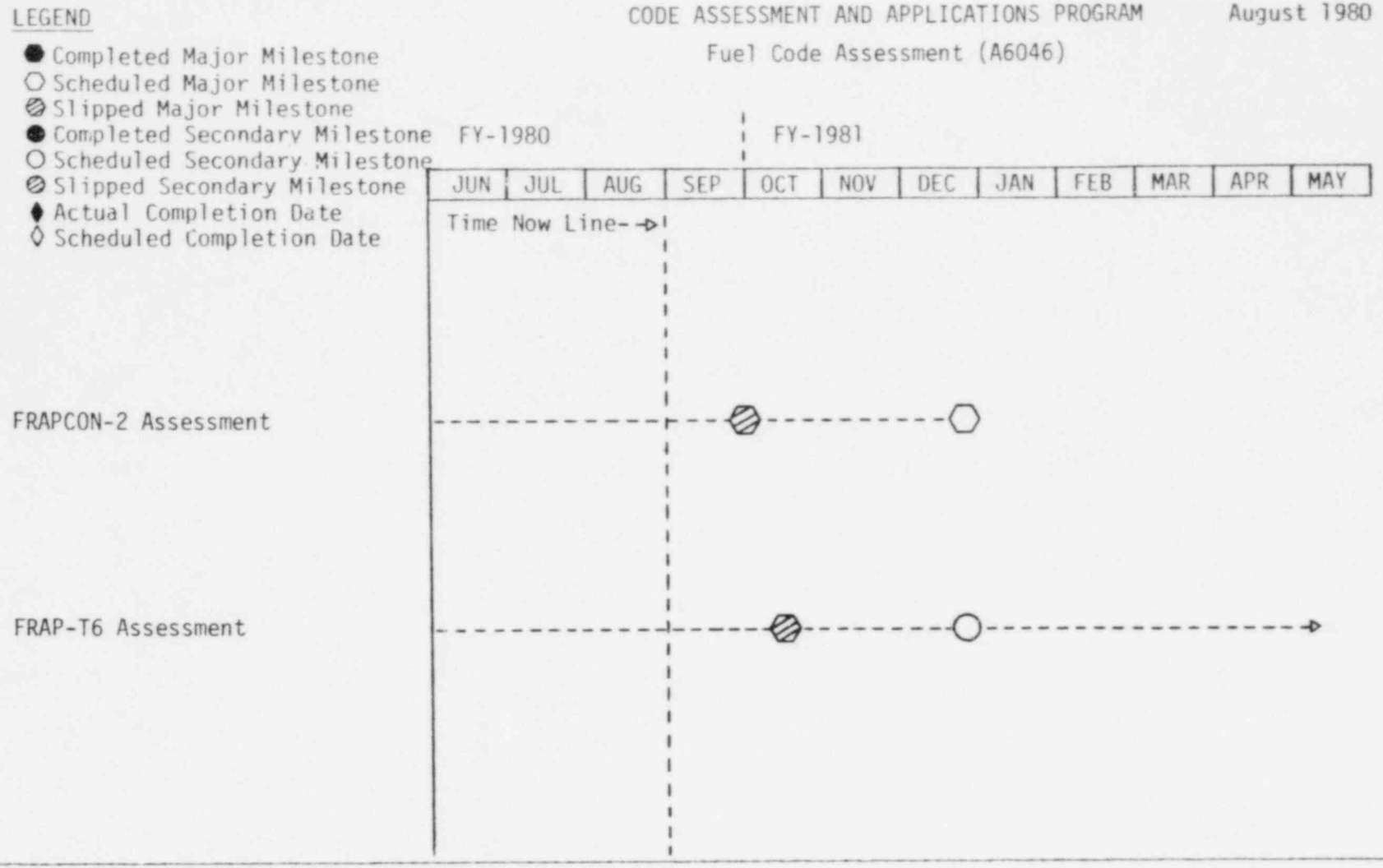


NOTES: Three major milestones have been deleted per NCR's 10, 11, and 12 to provide additional support to other tasks.

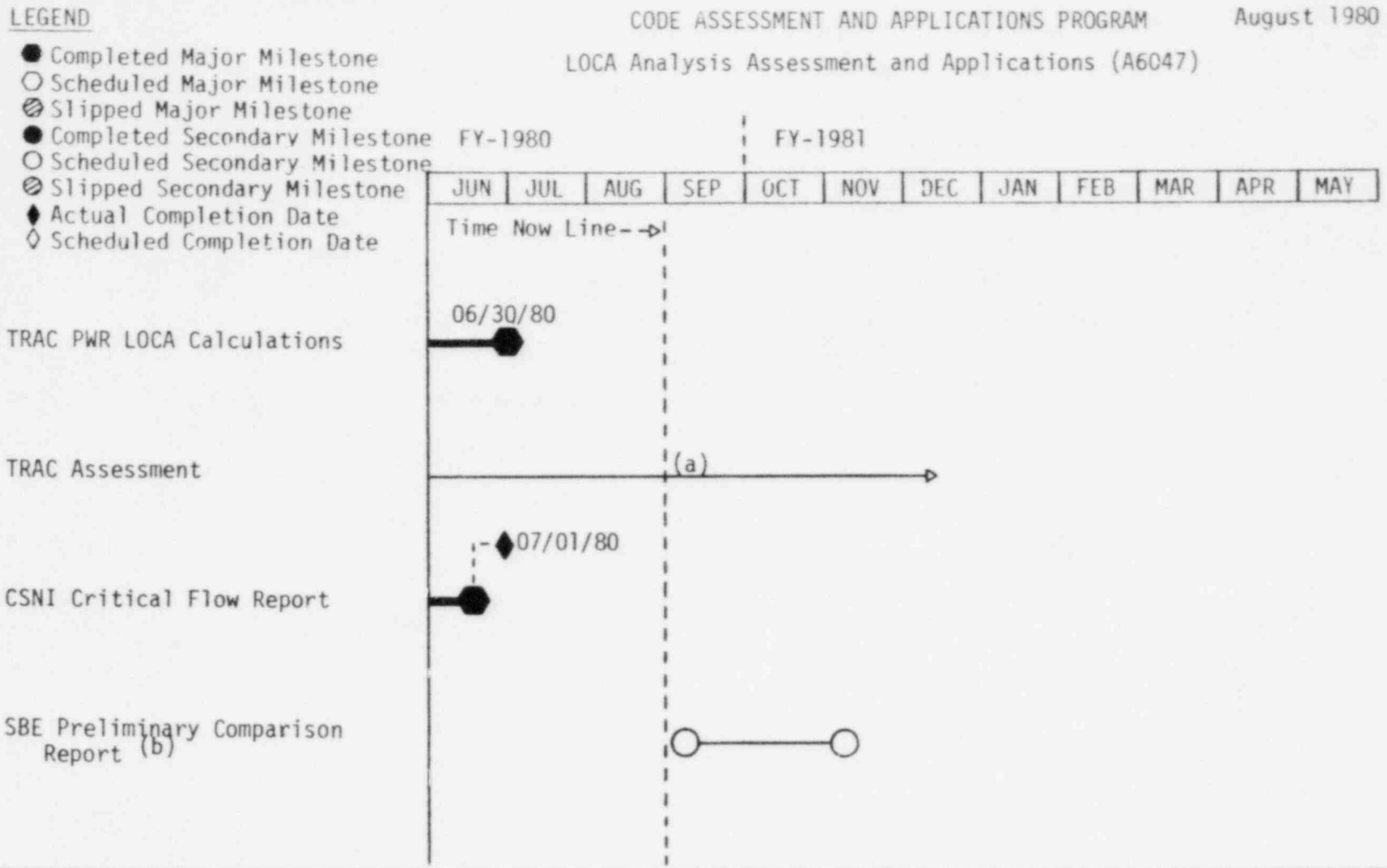
1 Two secondary milestones have been added.

1* With NRC concurrence, the blockage interim report scheduled for October will become a letter report.

2* With NRC concurrence, the single heated bundle test prediction will be issued as a letter report in October. Full documentation will become a part of the test program evaluation report issued in December.



NOTES: The completion of FRAPCON-2 and FRAP-T6 Assessment tasks will be slipped to reflect the delay in receiving FRAPCON-2 from Code Development & Analysis Program.



NOTES: (a) TRAC P1A Assessment has stopped at the direction of the NRC due to lack of funding.

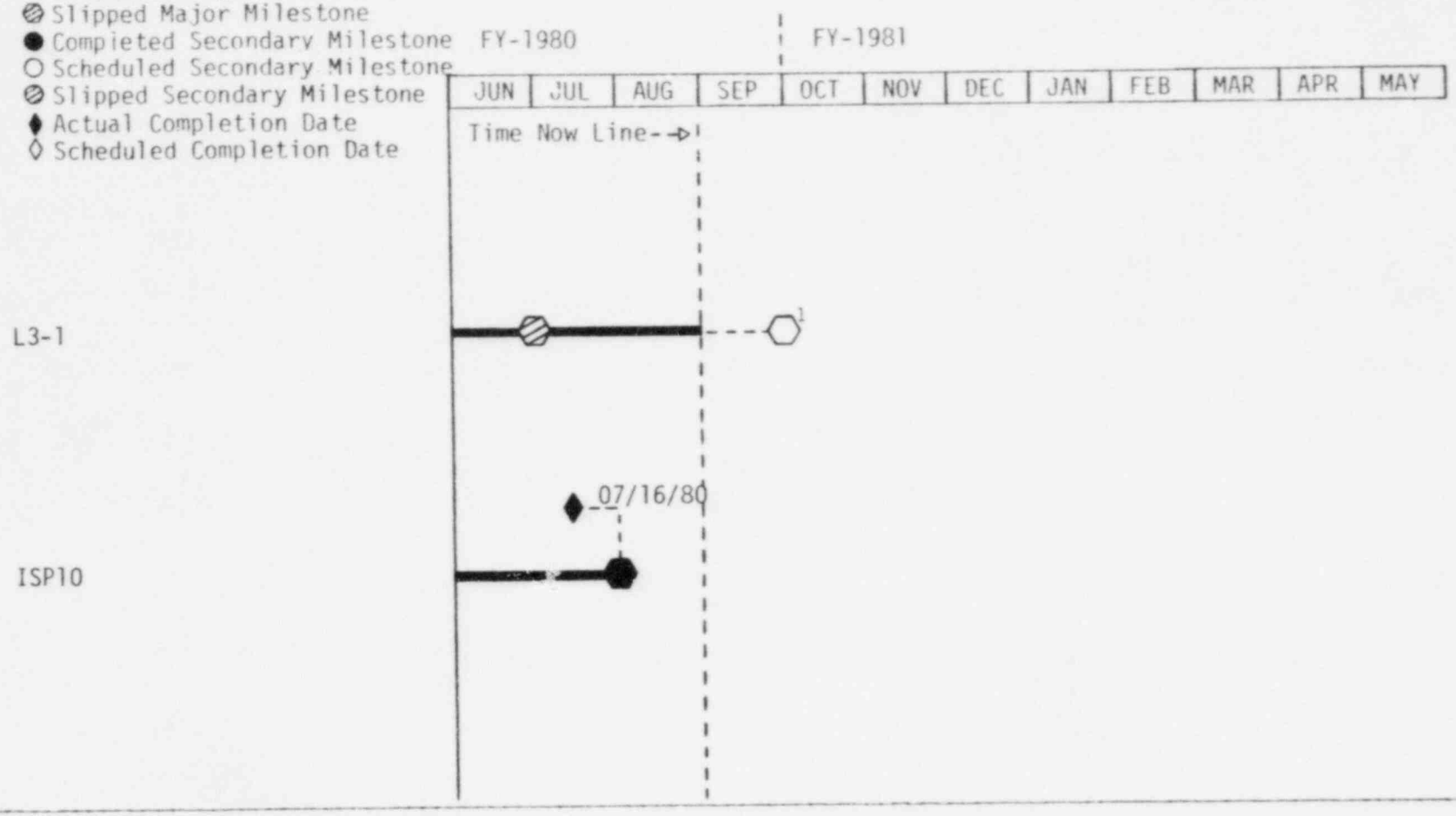
(b) An NRC letter was received directing that this task be completed in A6047 instead of A6048B.

CODE ASSESSMENT AND APPLICATIONS PROGRAM August 1980

Standard Problem (A6048B)

LEGEND

- Completed Major Milestone
- Scheduled Major Milestone
- Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- Slipped Secondary Milestone
- Actual Completion Date
- Scheduled Completion Date



NOTES: [1] This task was extended due to a revision of LOFT data.

The ISP8 Comparison Report is being prepared by Battelle Northwest Laboratory (BNL).

USSP8 will not be scheduled until comments are received from vendors.

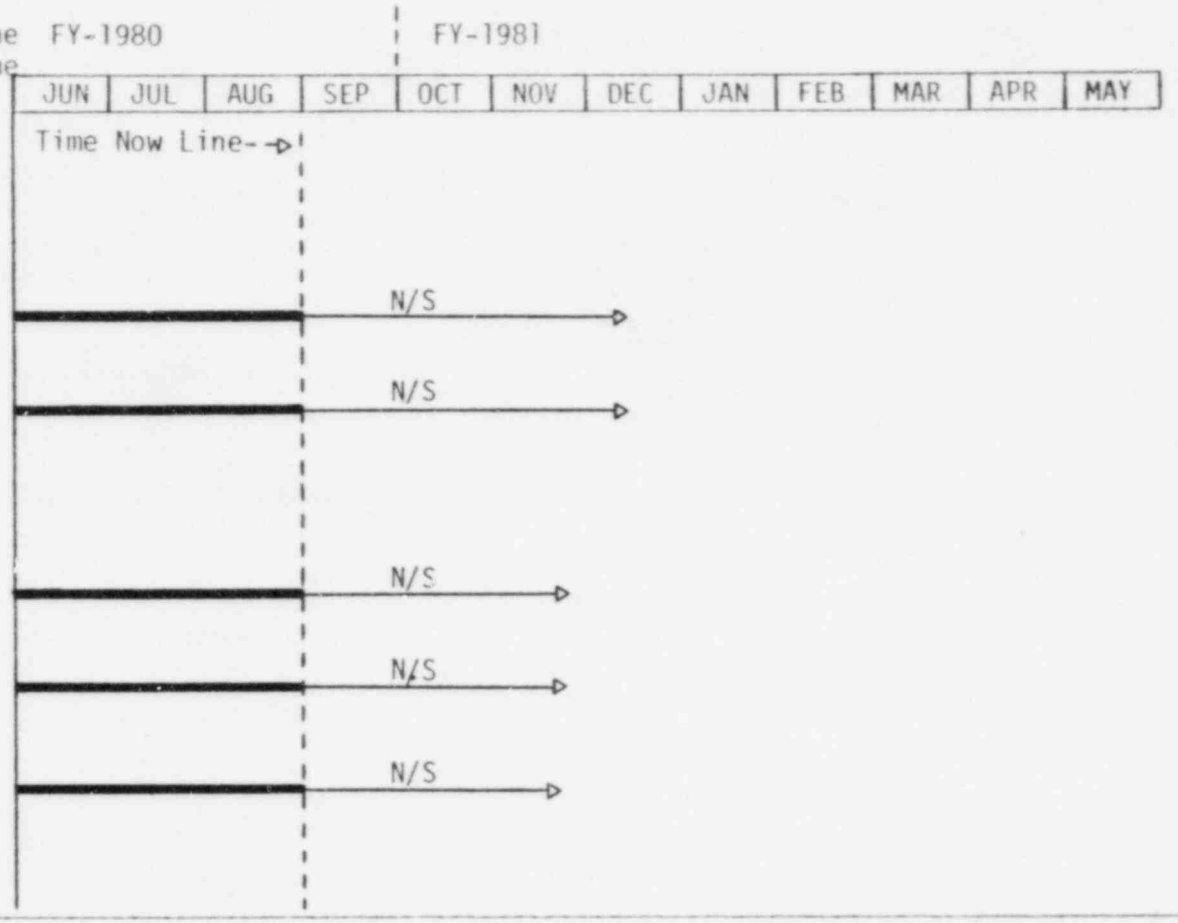
ISP9 will not be started in FY-1980. It will be scheduled in FY-1981 when participant calculations are received.

LEGEND

- ● Completed Major Milestone
- ○ Scheduled Major Milestone
- ▨ Slipped Major Milestone
- ● Completed Secondary Milestone
- ○ Scheduled Secondary Milestone
- ▨ Slipped Secondary Milestone
- ♦ Actual Completion Date
- ◊ Scheduled Completion Date

CODE ASSESSMENT AND APPLICATIONS PROGRAM August 1980

Severe Accident Sequence Analysis (A6048C)



NOTES:

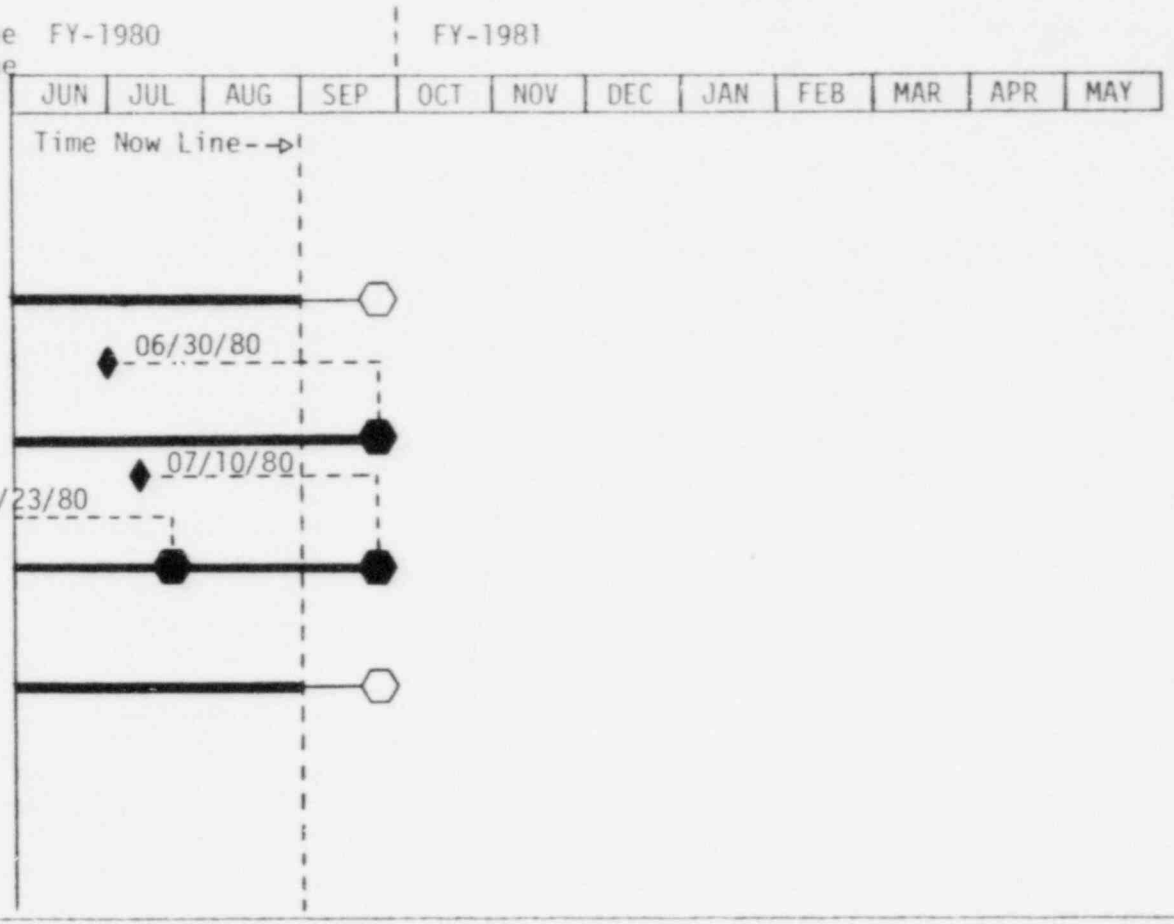
LEGEND

- Completed Major Milestone
- Scheduled Major Milestone
- Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- Slipped Secondary Milestone
- Actual Completion Date
- Scheduled Completion Date

CODE ASSESSMENT AND APPLICATIONS PROGRAM

Data Bank Processing System (A6102)

August 1980



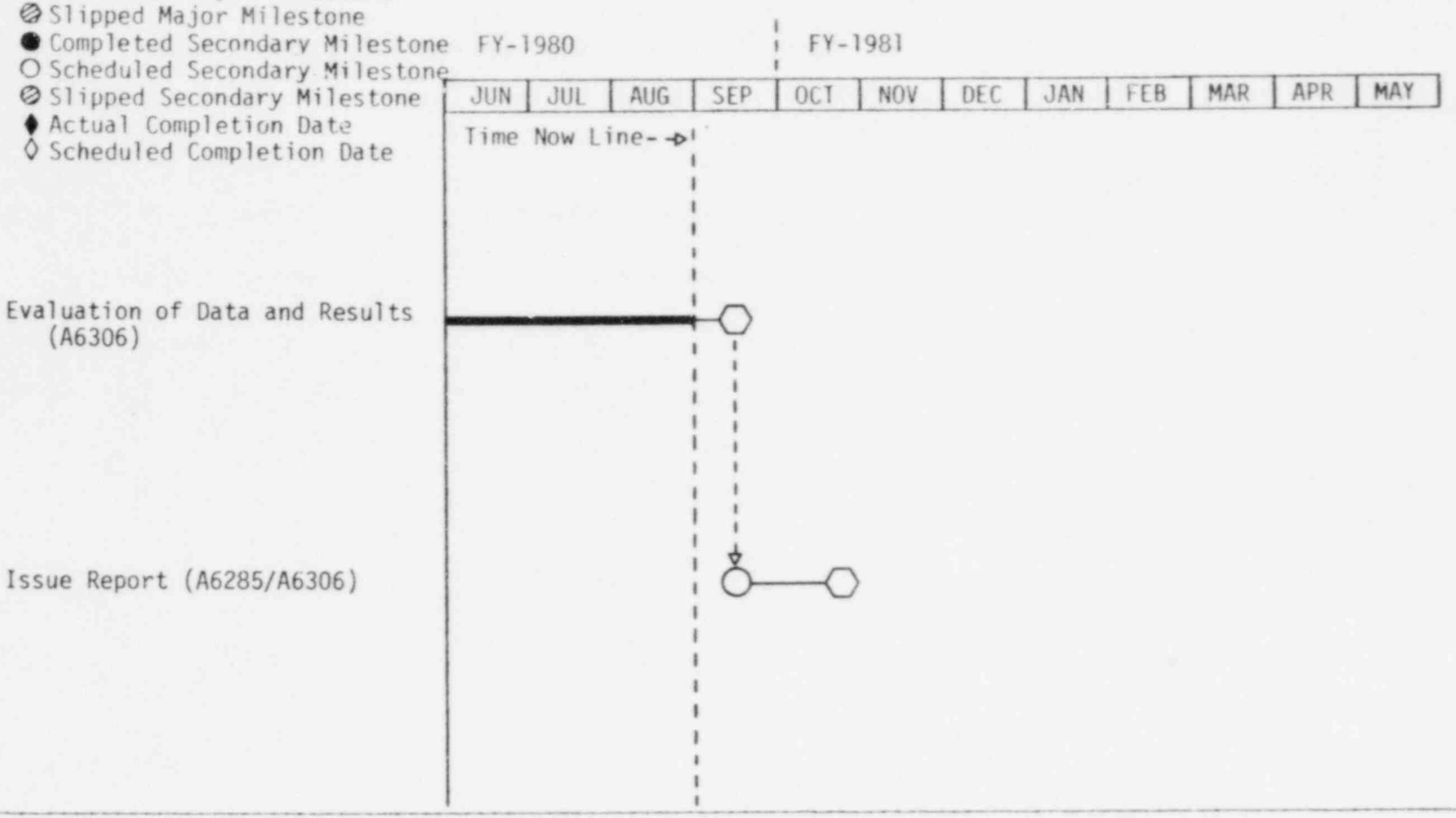
NOTES: * Dependent on additional funding.

LEGEND

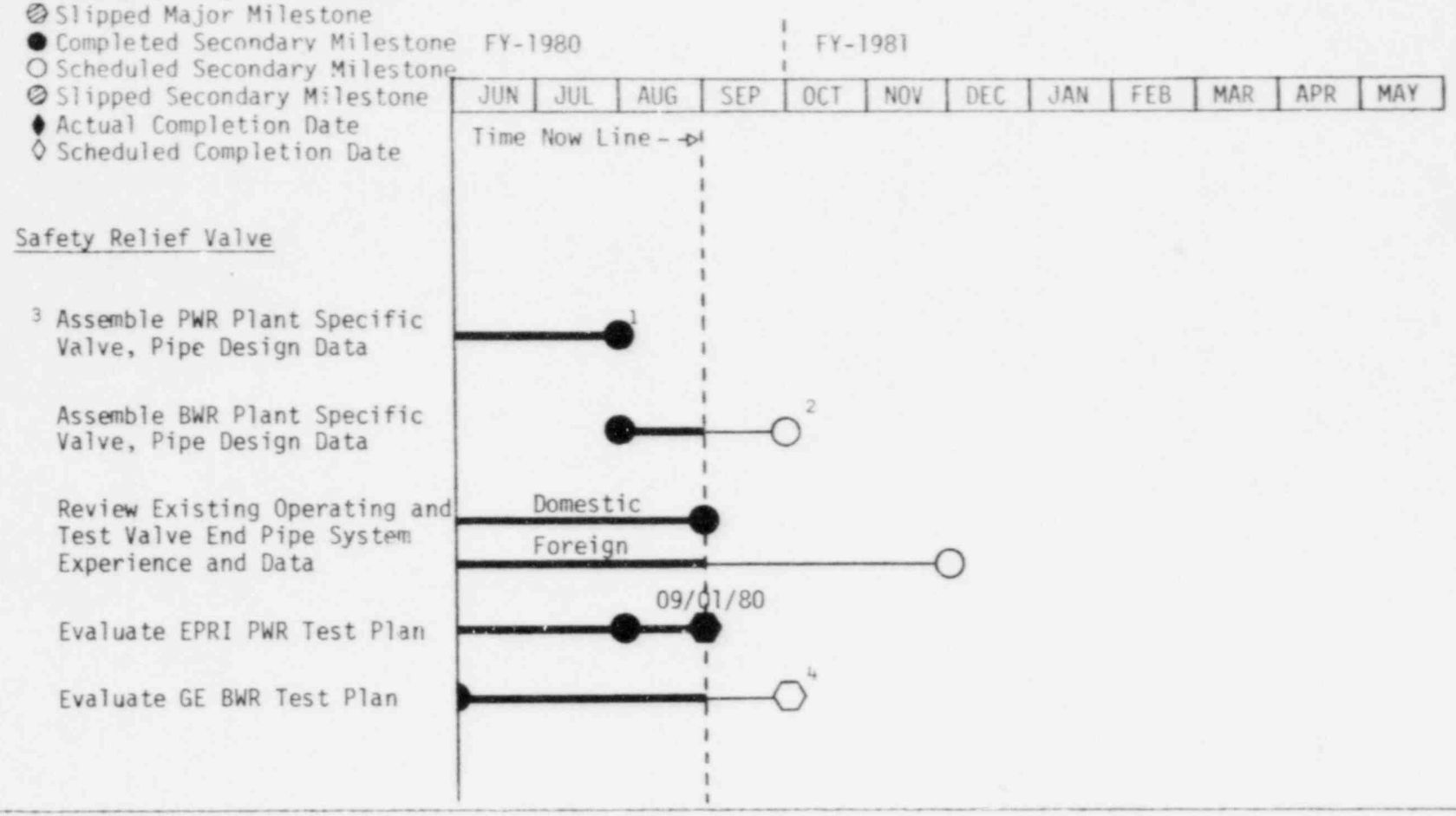
- ● Completed Major Milestone
- ○ Scheduled Major Milestone
- ⊘ Slipped Major Milestone
- ● Completed Secondary Milestone
- ○ Scheduled Secondary Milestone
- ⊘ Slipped Secondary Milestone
- ♦ Actual Completion Date
- ◊ Scheduled Completion Date

CODE ASSESSMENT AND APPLICATIONS PROGRAM August 1980

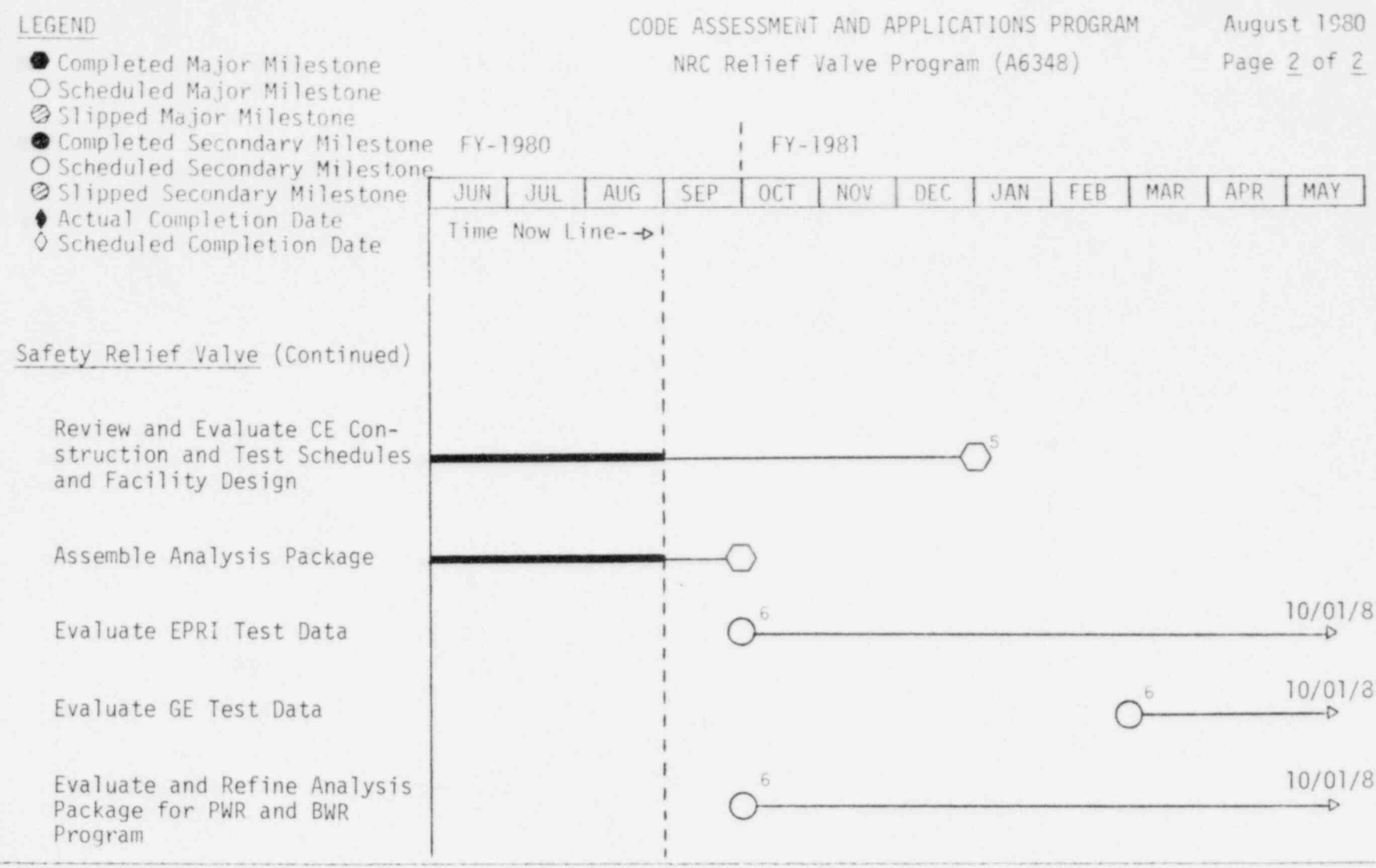
HDR Mechanical Component Response Analysis (A6306)



NOTES:



NOTES:
1. Completion date depends on date information is received from EPRI.
2. Completion date depends on date information is received from GE.
3. Safety Relief Valve (SVR) used in this schedule denotes activity supporting the EPRI Safety/Relief Valve Program.
4. Completion depends upon agreement between NRC and the BWR Owners Group with respect to test program work scope.



NOTES: [5] Completion date depends on date construction, test, and design information is received from EPRI and Combustion Engineering (CE).

[6] Start Date will depend upon the date EPRI or GE will transmit the data to NRC/EG&G.

CODE ASSESSMENT & APPLICATIONS PROGRAM

CAPITAL EQUIPMENT

EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

CARRYOVER

Program Code Assessment

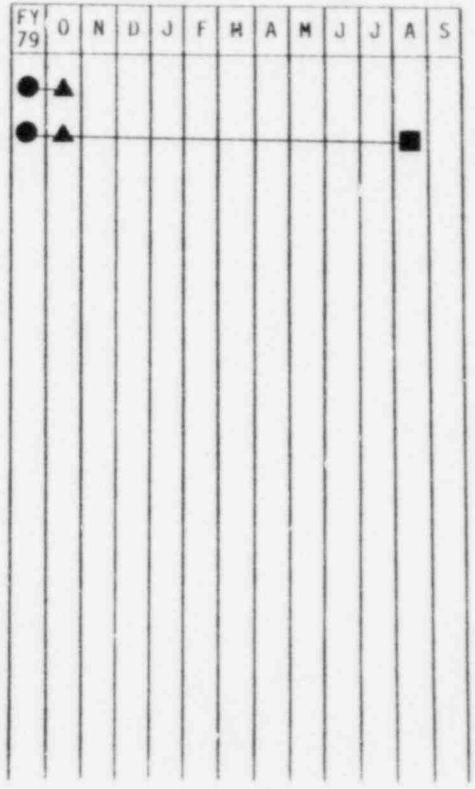
Date August 1980

Manager J. A. Dearien

189 Number A6102 (A6117)

Planned { Account Opened o, Money Committed Δ, Account Closed □ } Actual { ● ▲ ■ }

Charge Number	Description	Authorized Amount	Current YTD Costs & Commitments	Total Costs, & Outstanding Commitments	Variance <Over>/Under
9KA989240	Tektronix Graphic Tablet	8,468	5,606	5,606	2,862
	Closed EA's and Miscellaneous from prior years	13,532	---	13,256	276
		22,000	5,606	18,862	3,138



Carryover Budget	8,744
YTD Costs & Commit.	<5,606>
Balance	3,138

EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

Program Code Assessment

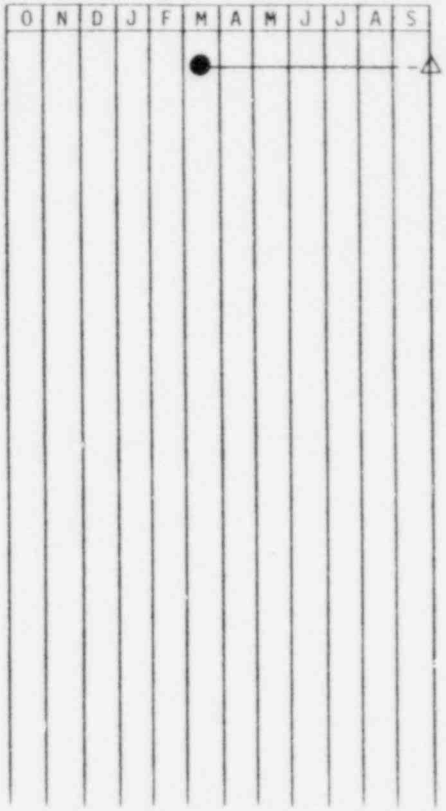
189 Number A6116

Date August 1980

Manager J. A. Dearien

Priority Number	Charge Number	Description	Authorized Amount	Total Costs, & Outstanding Commitments	Variance <Over>/Under
1	9KB991740	ADPE	15,000	7,422	7,578

Planned { Account Opened o; Money Committed Δ; Account Closed □ } Actual { ● ▲ ■ }



EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

Date August 1980

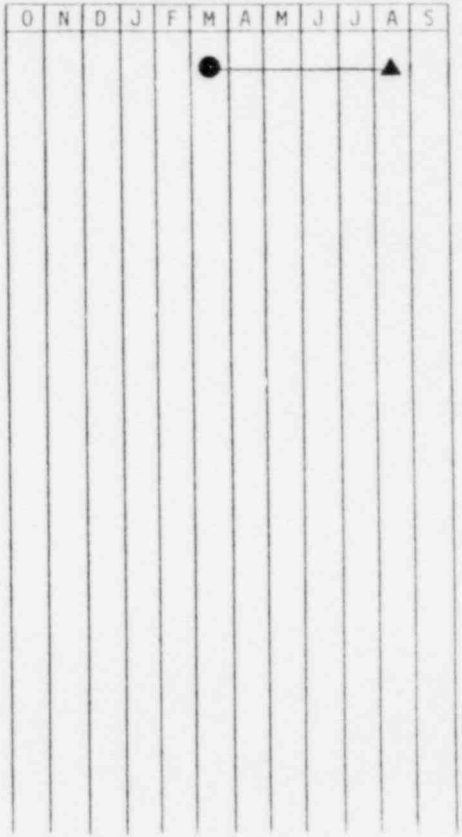
Program Code Assessment

189 Number A6117

Manager J. A. Dearien

Priority Number	Charge Number	Description	Authorized Amount	Total Costs, & Outstanding Commitments	Variance <Over>/Under
1	9KA991750	ADPE	20,000	11,079	8,921

Planned { Account Opened o / Money Committed Δ / Account Closed □ } Actual { ● / ▲ / ■ }



CODE ASSESSMENT & APPLICATIONS PROGRAM

TECHNICAL REVIEW & SUMMARY

PROGRAM MANAGER'S SUMMARY AND HIGHLIGHTS

During August, a presentation was made to the Nuclear Regulatory Commission (NRC) on the Boiling Water Reactor (BWR) blowdown Emergency Core Cooling (ECC) research facility which recommended a multi-bundle test facility.

The FRAPCON-2 code assessment efforts began in August and the comparison report for S-07-10D was initiated.

A6279: A revised water hammer summary report was issued (Letter JAD-198-80 dated August 15, 1980).

A6276: The final report on Containment Penetrations (EGG-EA-5188) was completed and submitted to NRC (Letter JAD-213-80).

1. A6039 - INEL Technical Support to NRC for Industry Cooperative Programs

2. Scheduled Milestones for August 1980

Node	Description	Due Date	Actual Date

None scheduled.

3. Summary of Work Performed in August 1980

The Code Assessment and Applications Program (CAAP) recommendations for continued BWR BD/ECC research was transmitted to the NRC. CAAP also participated in a review group meeting on this subject.

RELAP4/MOD7 and RELAP5 models of the FLECHT-SEASET Systems Effects Facility have been completed. The RELAP5 model is being run in the natural circulation mode of operation. In support of this task we participated in the Electric Power Research Institute (EPRI) sponsored workshop at Stanford Research Institute (SRI).

COBRA and TRAC models of the FLECHT-SEASET 21 Rod Blockage Facility are being run to verify the proposed data reduction technique. The RELAP5 model of the BWR-Refill/Reflood Single Heated Bundle Facility was completed and check out runs initiated. Construction of the BWR-Refill/Reflood 30 degree Sector Facility TRAC model continued.

4. Scheduled Milestones for September 1980

Node	Description	Due Date	Actual Date

None scheduled.

5. Summary of Work to be Performed in September 1980

The analyses in the following areas will be continued:

FLECHT-SEASET System Effects Facility natural circulation
FLECHT-SEASET 21-Rod Blockage Facility
BWR-Refill/Reflood Single Heated Bundle Separate Effects Test
BWR-Refill/Reflood 30 Degree Sector model construction

6. Problems and Potential Problems

None

1. Task A6046 - Fuel Behavior Analysis Assessment

2. Scheduled Milestones for August 1980

Node	Description	Due Date	Actual Date

None scheduled.

3. Summary of Work Performed in August 1980

The final version of FRAPCON-2 was given to Code Assessment on August 27, 1980. About 70% of the runs have been completed which will be used to assess the FRACAS-I, PELET, and FRACAS-II rod deformation models.

4. Scheduled Milestones for September 1980

Node	Description	Due Date	Actual

None scheduled.

5. Summary of Work to be Performed in September 1980

The remaining runs to evaluate the deformation models will be completed, the code-to-data comparisons will be performed, and a single best estimate model will be selected. Then, the runs to assess the various gas release models will be completed.

6. Problems and Potential Problems

None

1. A6047 - LOCA Analysis Assessment and Applications

2. Scheduled Milestones for August 1980

Node	Description	Due Date	Actual Date
None scheduled.			

3. Summary of Work Performed in August 1980

Planning for the FY-1981 program was initiated.

4. Scheduled Milestones for September 1980

Node	Description	Due Date	Actual Date
None scheduled.			

5. Summary of Work to be Performed in September 1980

Planning for FY-1981 Code Assessment programs will be performed.

A presentation for the 8th Water Reactor Safety Meeting on assessment performed at the INEL will be prepared.

The preparation of a comparison report on Semiscale Mod-1 Test S-07-10D will be initiated.

6. Problems and Potential Problems

As a result of the lack of supplemental funding, Code Assessment staff was transferred to other tasks.

1. Task A6048B - Standard Problem Analysis & Heat Transfer Assistance

2. Scheduled Milestones for August 1980

Node	Description	Due Date	Actual Date

None scheduled.

3. Summary of Work Performed in August 1980

The draft on a preliminary comparison report on LOFT Test L3-1 was revised.

4. Scheduled Milestones for September 1980

Node	Description	Due Date	Actual Date

None scheduled.

5. Summary of Work to be Performed in September 1980

Preliminary comparison report on LOFT Test L3-1 will be issued.

6. Problems and Potential Problems

None

1. Task A6048C - Severe Accident Sequence Analysis Task Force (SASA)

2. Scheduled Milestones for August 1980

Node	Description	Due Date	Actual Date

None scheduled.

3. Summary of Work Performed in August 1980

An analysis of station blackout in Zion I using the minimum or maximum operating range values to produce the shortest time to core uncovery was completed. An investigation of backup sources of water for station blackout in Zion was also completed.

A statistical study is continuing to determine the loss of offsite power duration.

The interim Browns Ferry model was run out to 1000 s for loss of offsite power transient.

4. Scheduled Milestones for September 1980

Node	Description	Due Date	Actual Date

None scheduled.

5. Summary of Work to be Performed in September 1980

A presentation describing the EG&G SASA activities will be made. The Pressurized Water Reactor (PWR) effort will include initiation of work on a calculation of a loss of feedwater.

Initiate work on a calculation of a loss of feedwater. Also, event trees presented in EG&G's report will be expanded to consider more detailed information. These trees will then be used as a starting place for committee study of the accident sequences.

Plans in the Boiling Water Reactor (BWR) area include continuation of the Browns Ferry loss of offsite power calculations using RELAP4/MOD7, completion of a 218-BWR/6 small break calculation using RELAP4/MOD7 and LOCA-DBA/small break calculations for the 218-BWR/6 generic plants using BWR-TRAC.

6. Problems and Potential Problems

None

1. A6102 - Data Bank Processing System

2. Scheduled Milestones for August 1980

Node	Description	Due Date	Actual Date
None scheduled.			

3. Summary of Work Performed in August 1980

Data for three Peach Bottom tests were received and a REFORM program to add these to the Data Bank is being written. LOFT Test L3-7 was added to the Data Bank and data tapes from these tests were sent to Los Alamos Scientific Laboratory (LASL). Data for General Electric (GE)/TLTA Test 6431 Run 1 was received and added to the Data Bank for NRC use.

Plans were formulated to demonstrate Data Bank capabilities to offsite users.

4. Scheduled Milestones for September 1980

Node	Description	Due Date	Actual Date
	Add 20 Tests to Data Bank	9-28-80	7-10-80C JAD-178-80

5. Summary of Work to be Performed in September 1980

A trip to GE-San Jose to demonstrate Data Bank capabilities has been scheduled for September 12. A demonstration at Westinghouse will be scheduled.

Test 3.03.6AR from Thermal Hydraulic Test Facility (THTF), requested by NRC, will be added to the Data Bank. Studsvik data (Gota) will be added for use by TRAC-BD1 development.

A request for Sequoyah data (requested by LOFT) will be transmitted.

Two Data Bank "flyers" for Data Bank users will be issued.

6. Problems and Potential Problems

None

1. Task A6279 - Preparation of Documents for TAP A-1

2. Scheduled Milestones for August 1980

Node	Description	Due Date	Actual Date

None scheduled.

3. Summary of Work Performed in August 1980

A revised version of the water hammer summary report was issued: R. L. Chapman, Summary of Nuclear Regulatory Commission (NRC) Sponsored Water Hammer Studies, EG&G Idaho Interim Report CAAP-TR-053 (Rev. 1), July 1980.

4. Scheduled Milestones for September 1980

Node	Description	Due Date	Actual Date

None scheduled.

5. Summary of Work to be Performed in September 1980

No activity.

6. Problems and Potential Problems

None

1. Task A6285/A6306 - HDR Mechanical Component Response Analysis Testing

2. Scheduled Milestones for August 1980

Node	Description	Due Date	Actual Date

None scheduled.

3. Summary of Work Performed in August 1980

Comparison work continued using NUPIPE to investigate parameter sensitivities. Comparison plots were prepared and a technical report was drafted.

4. Scheduled Milestones for September 1980

Node	Description	Due Date	Actual Date

None scheduled.

5. Summary of Work to be Performed in September 1980

The report will be finalized and a presentation for the Water Reactor Safety Information Meeting will be prepared.

6. Problems and Potential Problems

None

1. Task A6348 - NRC Safety/Relief Valve Program

2. Scheduled Milestones for August 1980

Node	Description	Due Date	Actual Date
	Assemble Pressurized Water Reactor (PWR) Plant Specific Valve, Pipe Design Data	8-1-80	7-23-80
	Complete Prel Eval of Electric Power Research Institute (EPRI) PWR Test Plan	8-1-80	7-20-80

3. Summary of Work Performed in August 1980

EPRI Test Facility meeting was attended to discuss design, test capabilities, and status of the three EPRI safety/relief valve test facilities.

NRC program review group meeting was attended to discuss the final revision of the current EPRI/PWR program plan. The EG&G evaluation of this plan was completed and presented to NRC and EPRI prior to this meeting.

NRC program review group meeting was attended to discuss the necessity for Boiling Water Reactor (BWR) high pressure testing of BWR safety/relief valves.

A final EG&G program milestone schedule and work scope activity description were transmitted to NRC.

TRAC, RELAP5, and RELAP4 calculations for five basic problems were completed. Explanations for some of the differences between the three codes were generated.

A proposal for NRC participation in the startup of a Taiwan Power BWR was generated. One aspect of the proposal included safety/relief valve measurements.

4. Scheduled Milestones for September 1980

Node	Description	Due Date	Actual Date
	Review Existing Domestic Operating Test Experience and Data	9-1-80	7-9-80
	Complete Final Eval of EPRI-PWR Test Plan	9-1-80	8-19-80C JAD-211-80

5. Summary of Work to be Performed in September 1980

Continue evaluating applicable foreign data.

Continue assembling BWR plant specific valve, pipe design data.

Continue evaluating BWR test plan.

Continue reviewing and evaluating EPRI test facility construction and test schedules and facility design.

Continue assembling analysis package.

6. Problems and Potential Problems

None

I-661 DIVISION OF SYSTEMS AND RELIABILITY RESEARCH (DSRR)

TASK

A6276	LER Failure Rate Analysis
A6283	Common Cause Data Analysis
A6290	NPRDS Data Analysis
A6291	LER Flagging Analysis
A6293	Flood Occurrence Rate Analysis
A6294	Plant Status Monitoring
A6296	Integrated Reliability Evaluation Program

2. Scheduled Milestones for August 1980

A Nos.	Node	Description	Due Date	Actual Date
A6276	None scheduled.			
A6283	None scheduled.			
A6290	None scheduled.			
A6291	None scheduled.			
A6293	None scheduled.			
A6294	None scheduled.			
A6296	None scheduled.			

3. Summary of Work Performed in August 1980

A6276 - The following report was completed and submitted to NRC (Letter JAD-213-80): D. W. Sams and M. Trojovsky, Data Summaries of Licensee Event Reports from January 1, 1972 to December 31, 1978 of Primary Containment Penetrations at U. S. Commercial Nuclear Power Plants, EGG-EA-5188, August 1980.

Writing of the Instrumentation and Controls draft report was started. Addition to the data base of 122 previously overlooked pump Licensee Event Reports (LERs) was started.

A6283 - The common cause analysis of the LER pump data continued.

A6290 - The task of generating gross failure rate estimates from the Nuclear Plant Reliability Data System for 20 out of 27 components was completed. Software development for constructing contingency tables was restarted.

A6291 - Work continued on developing a methodology for flagging. An initial trial on all LER data on a methodology looks promising.

A6293 - Continued to respond to work requests of Nuclear Regulatory Commission (NRC)/Division of Systems and Reliability Research (DSRR). A plan for future work was partially formulated. Preparation of a user's manual draft for the FLOE code progressed nearly to the point of internal review.

A6294 - Program reviewed with NRC on August 8, 1980 including work in progress, proposed trip to Surry and Peach Bottom plants, and proposed scope of work for FY-1981. A modified scope of FY-1981 work was sent to NRC on August 21, 1980.

A6296 - Work on this Financial No. has been completed. Future work pertaining to the Interim Reliability Evaluation Program (IREP) will be funded via a Sandia Laboratory purchase order. A meeting was held in Albuquerque on August 18, 1980 to discuss IREP procedures. Received drawings for Browns Ferry, Unit 1, from Tennessee Valley Authority (TVA).

4. Scheduled Milestones for September 1980

A Nos.	Node	Description	Due Date	Actual Date
A6276	None scheduled.			
A6283	None scheduled.			
A6290	K22	Methodology Draft Report	9-15-80	8-15-80C JAD-209-80
A6291	None scheduled.			
A6293	K36	Fld Occur Prog Report	9-30-80	
A6294	None scheduled.			
A6296	None scheduled.			

5. Summary of Work to be Performed in September 1980

A6276 - The Instrumentation and Controls draft report will be completed.

A6283 - Pump common cause analysis will be continued in order to account for the 122 new events added to the data base. Preparation of a paper for the Department of Energy (DOE) statistical symposium will be started.

A6290 - Gross failure rates will be estimated for 7 remaining components. It is expected that NRC/DSRR will call for additional gross failure rate estimates in order to support the IREP. The analysis of Emergency Core Cooling System (ECCS) valve data will recommence.

A6291 - The analysis of diesel generator LER reports will recommence using a newly developed methodology.

A6293 - A user's manual draft for the FLOE code will be completed.

A6294 - A visit will be made to Surry and Peach Bottom plants during the first week of September to obtain information about how key engineered safety feature components are monitored.

A6296 - A meeting regarding IREP procedures is scheduled for the week of September 8 in Bethesda. The evaluation of the Browns Ferry plant will commence between September 1 and September 15 with a meeting in Albuquerque by all participants sometime in that period.

6. Problems and Potential Problems

None

WRRD MONTHLY PEPORT FOR

AUGUST 1980

CODE DEVELOPMENT & ANALYSIS PROGRAM

CODE ASSESSMENT & APPLICATIONS PROGRAM

(NRR)

E. L. Pierson
Plans & Budget Representative

P. North, Manager
Code Development & Analysis Program

J. A. Dearien, Manager
Code Assessment & Applications Program

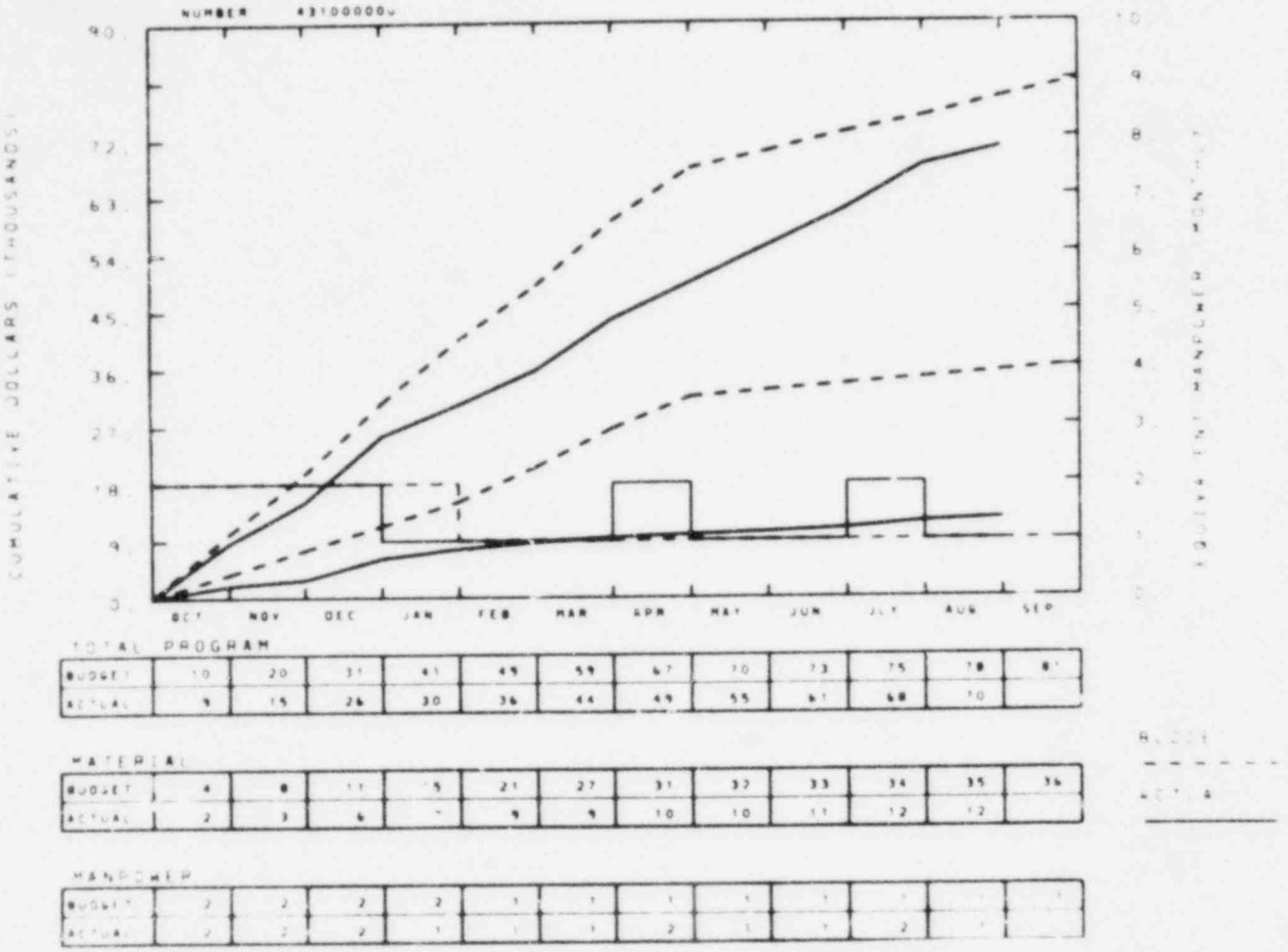
CODE DEVELOPMENT & ANALYSIS PROGRAM

NRR

COST SUMMARY & COMMENTS

EG&G IDAHO INC.

CONTAINMENT ANALYSIS



TOTAL PROGRAM

BUDGET	10	20	31	41	49	59	67	70	73	75	78	81
ACTUAL	9	15	26	30	36	44	49	55	61	68	70	

MATERIAL

BUDGET	4	8	11	15	21	27	31	32	33	34	35	36
ACTUAL	2	3	6	-	9	9	10	10	11	12	12	

MANPOWER

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

A6009

YTD VARIANCE: 8 (10%)

A $10 K underrun will exist at the close of FY-1980 because of personnel terminations. Manpower has been allocated to resume the work scope which will be completed in FY-1981.

CODE DEVELOPMENT & ANALYSIS PROGRAM

NRR

TECHNICAL REVIEW & SUMMARY

PROGRAM MANAGER'S
SUMMARY AND HIGHLIGHTS

Some delay in committed CONTEMPT4 work is anticipated because of personnel turnover. Manpower has been allocated to resume the work scope. Schedule changes, if required, will be identified early in FY-1981.

1. 189a A6009 - Containment Analysis

2. Scheduled Milestones for August 1980

   No scheduled milestones for August.

3. Summary of Work Performed in August 1980

   Discussions were held with NRR regarding manpower requirements and work scope for FY-81. Dr. T. Cheng will take over the CONTEMPT work next fiscal year.

4. Scheduled Milestones for September 1980

   No scheduled milestones for September.

5. Summary of Work to be Performed in September 1980

   Familiarization with CONTEMPT4 and review of past work will begin.

6. Problems and Potential Problems

   Some delay in previous commitments is anticipated due to the turnover in personnel. Schedule changes if required will be identified early in FY-81.

CODE ASSESSMENT & APPLICATIONS PROGRAM

NRR

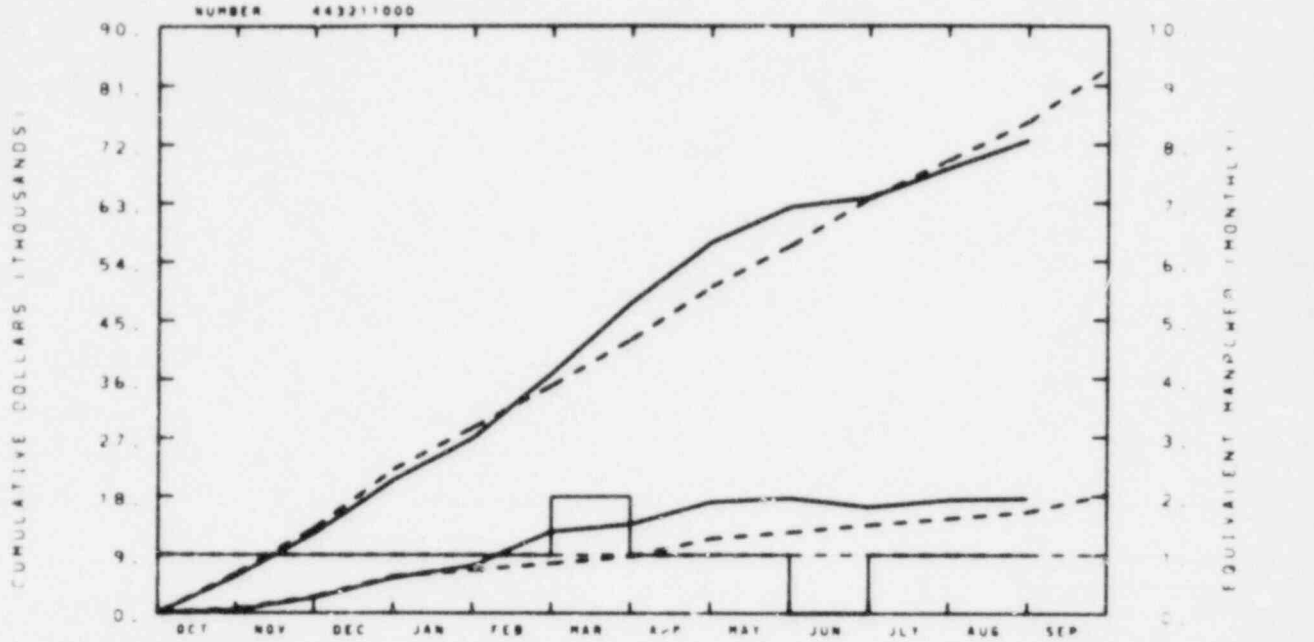
COST SUMMARY & COMMENTS

RESPONSIBLE MANAGER
K. DEARIEN

EG&G IDAHO INC.

PWR/BER PRIMARY SYS RESP A6152

NUMBER 443211000



TOTAL PROGRAM

BUDGET	6	13	24	29	35	42	50	56	64	70	75	84
ACTUAL	6	12	21	27	37	45	51	62	64	68	73	

MATERIAL

BUDGET	1	2	4	7	8	9	11	12	14	15	16	18
ACTUAL	0	2	5	7	13	14	17	18	16	17	18	

MANPOWER

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

A6152

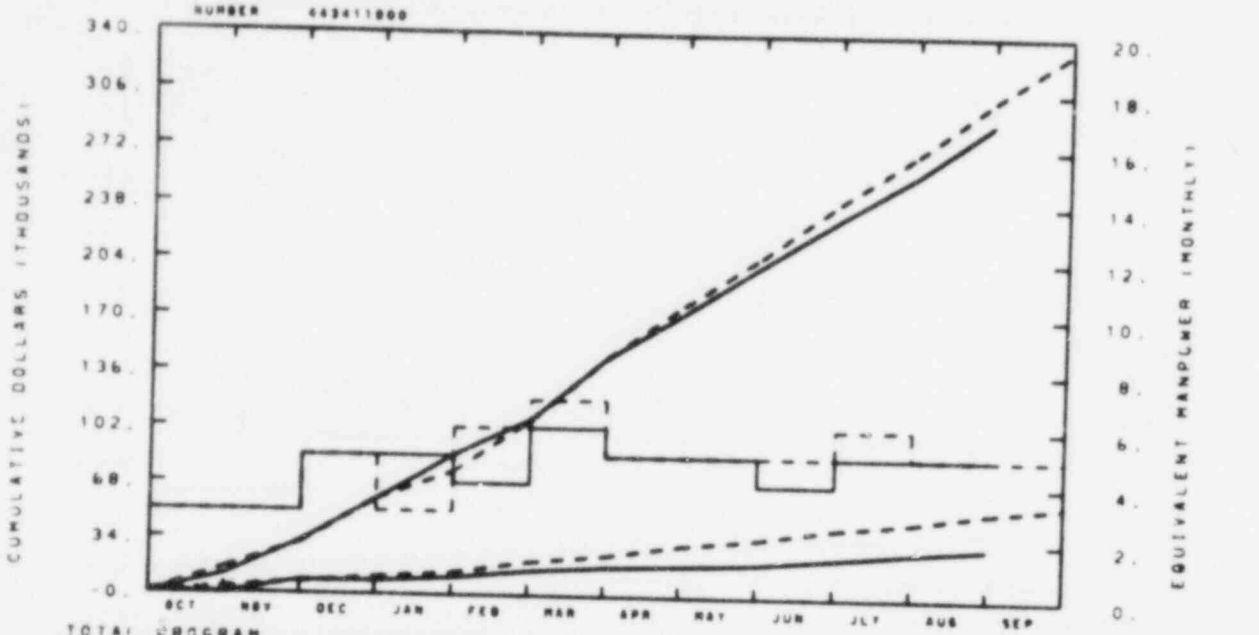
YTD VARIANCE: 2 (3%)

RESPONSIBLE MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

TECH ASST ASYMM LOCA LOADS A6156

NUMBER 443411000



TOTAL PROGRAM

BUDGET	19	31	59	75	106	145	177	206	240	269	302	332
ACTUAL	11	32	58	85	107	145	172	201	230	257	288	

MATERIAL

BUDGET	4	7	11	14	20	25	31	35	42	46	53	57
ACTUAL	0	0	0	11	15	18	19	20	24	28	31	

MANPOWER

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

A6156

YTD VARIANCE: 14 (5%)

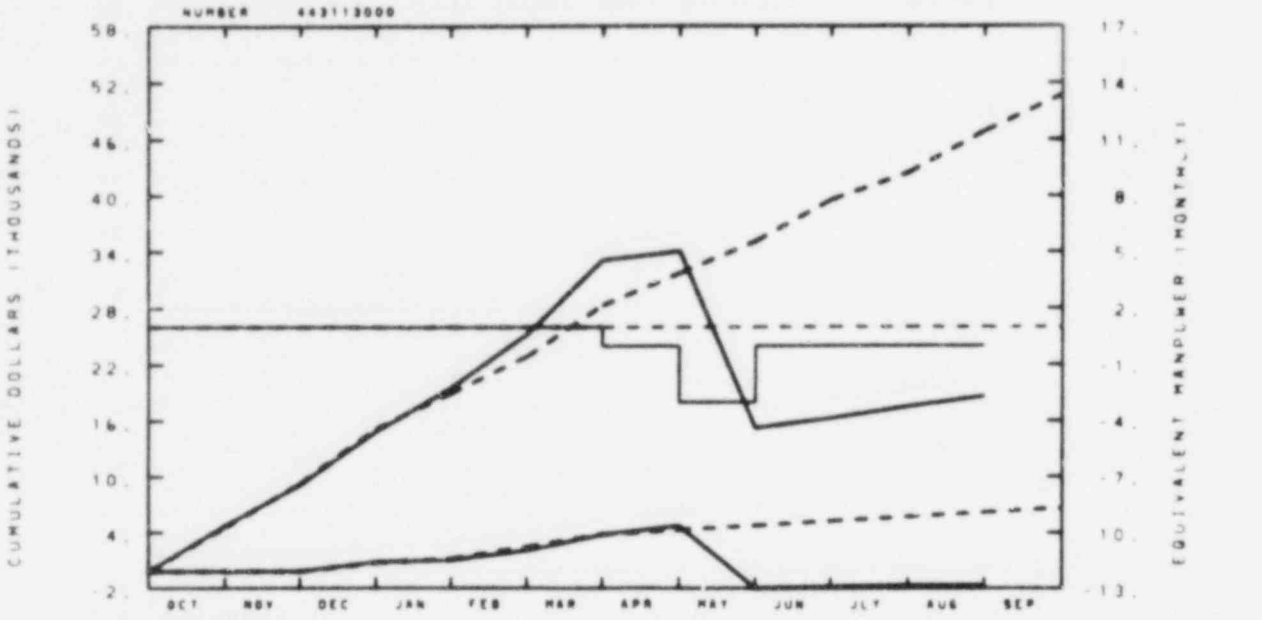
Some funds and work scope will be carried over to FY-1981 as vendor responses to initial questions have not been received.

RESPONSIBLE MANAGER
J. K. DEARIEN

EG&G IDAHO INC.

FUEL ASSY SEISMIC & LOCA A6157

NUMBER 443113000



TOTAL PROGRAM

BUDGET	5	9	15	19	23	29	32	35	40	43	47	51
ACTUAL	5	9	15	20	25	33	34	15	16	18	19	

MATERIAL

BUDGET	0	0	1	1	3	4	4	5	5	6	6	7
ACTUA	0	0	1	1	2	4	5	-1	-1	0	0	

MANPOWER

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

BUDGET - - - - -
ACTUAL ———

A6157

YTD VARIANCE: 28 (60%)

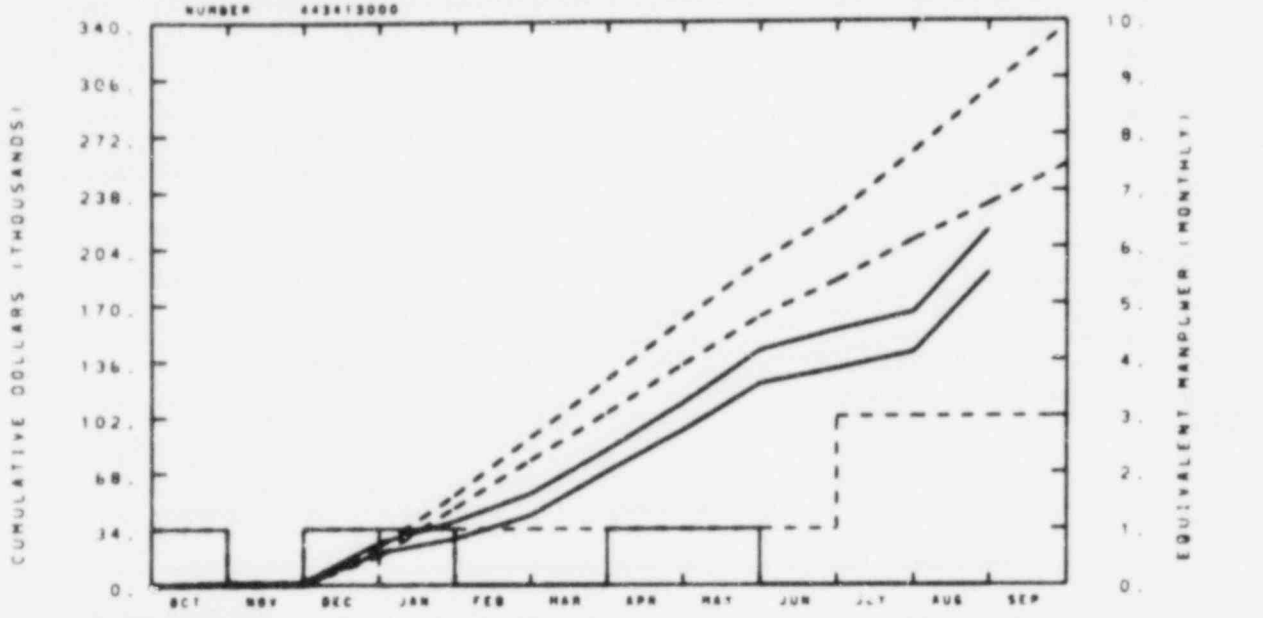
The Combustion Engineering and Babcock & Wilcox fuel assembly structural analysis submittals have not been received. Hence, funds will be carried over to the next fiscal year.

RESPONSIBLE MANAGER

EG&G IDAHO INC.

ON-CALL ASSIST AT OPER LWRSA6159

NUMBER 443413000



TOTAL PROGRAM

BUDGET	1	2	24	54	90	125	160	196	224	262	299	338
ACTUAL	1	2	26	39	55	82	110	142	154	165	215	

MATERIAL

BUDGET	0	0	[illegible]	47	76	105	134	163	184	209	230	254
ACTUAL	0	0	28	28	42	69	94	122	131	141	189	

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6159

YTD VARIANCE: 84 (28%)

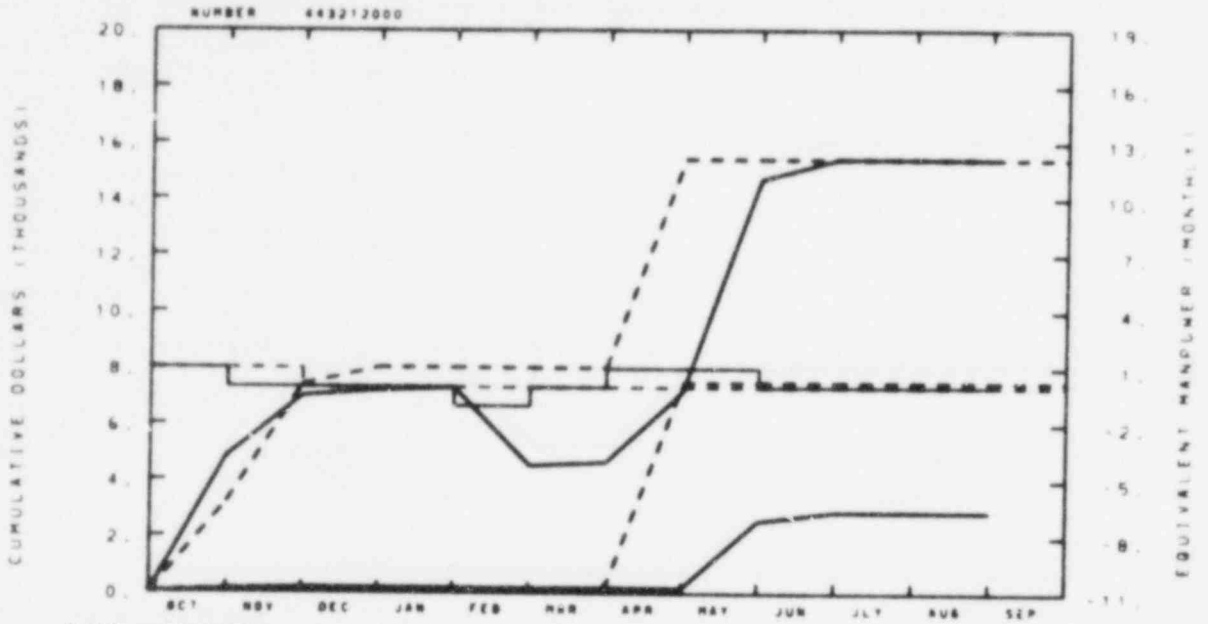
The On-Call Technical Assistance subtask for this FIN number has created an underrun. In addition, the temporary/mobile radwaste task started about two months later than originally anticipated. It is expected that $100 K will be carried over into FY-1981. The carryover estimate will be reevaluated on a monthly basis. Approximately $60 K of the carryover funding will be required to complete specified scope of work. The remainder will be for On-Call Assistance.

RESPONSIBLE MANAGER
. K DEARIEN

EG&G IDAHO INC.

FRACTURE TOUGHNESS CRITER A6166

NUMBER 443212000



TOTAL PROGRAM

BUDGET	3	7	8	8	8	8	15	15	15	15	15	15
ACTUAL	5	7	7	7	5	5	7	15	15	15	15	

MATERIAL

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

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6166

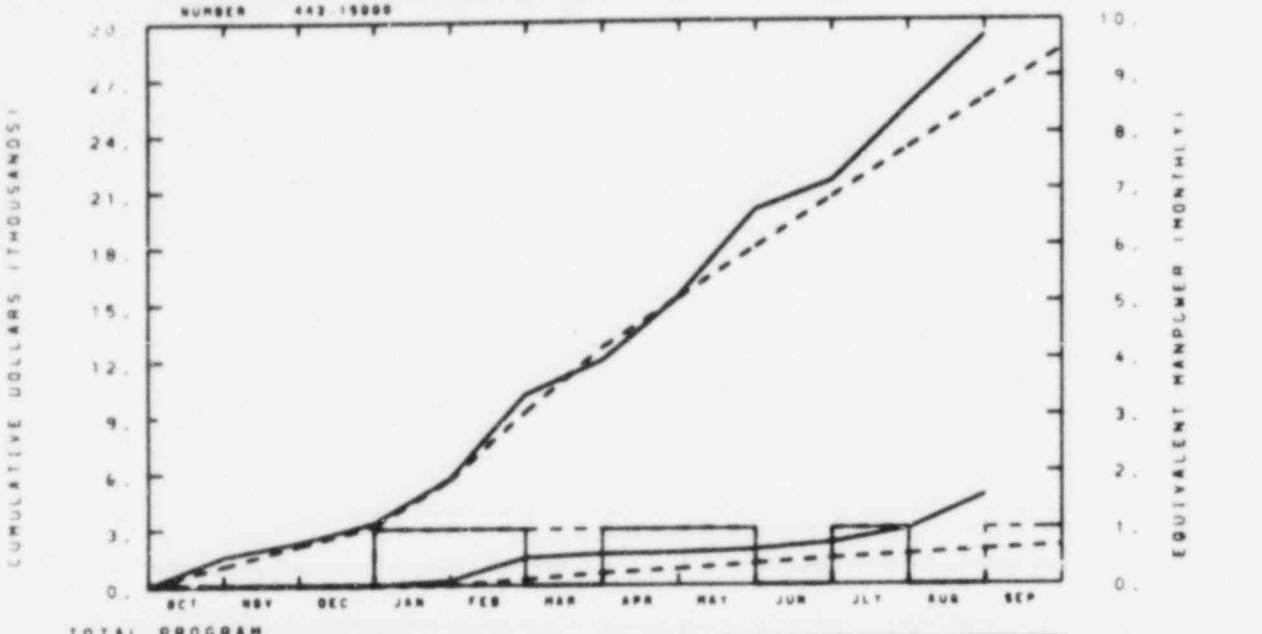
YTD VARIANCE: 0

RESPONSIBLE MANAGER
J. R. DEARIEN

EG&G IDAHO INC.

FUEL PERF CODE APPLICATION A6167

NUMBER 443.15000



TOTAL PROGRAM

BUDGET	1	2	3	4	9	13	15	18	21	23	26	28
ACTUAL	2	2	3	6	10	12	15	20	21	25	29	

MATERIAL

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

MANPOWER

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

A6167

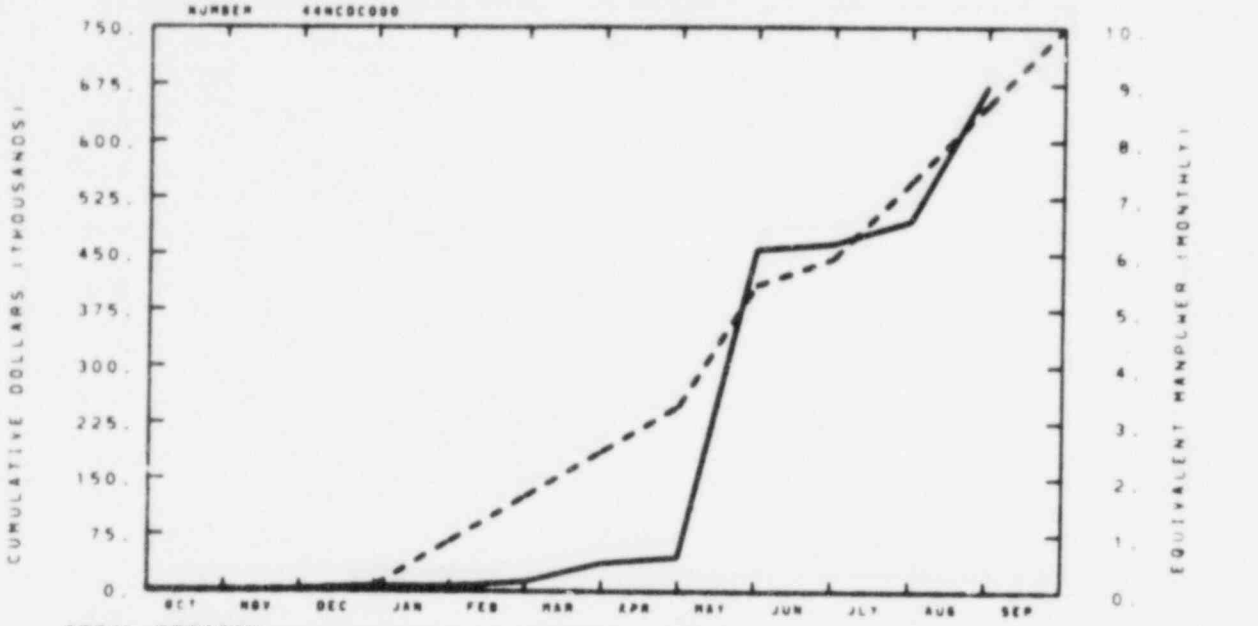
YTD VARIANCE: <3> (12%)

RESPONSIBLE MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

NRC USE OF INEL CDC A6209

NUMBER 44NCDC000



TOTAL PROGRAM

BUDGET	1	2	7	67	127	188	248	408	444	546	648	750
ACTUAL	0	3	7	7	13	38	46	456	464	494	673	

MATERIAL

BUDGET	1	2	7	67	127	188	248	408	444	546	648	750
ACTUAL	0	3	7	7	13	38	46	456	464	494	673	

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	

A6209

YTD VARIANCE: < 25 > (4%)

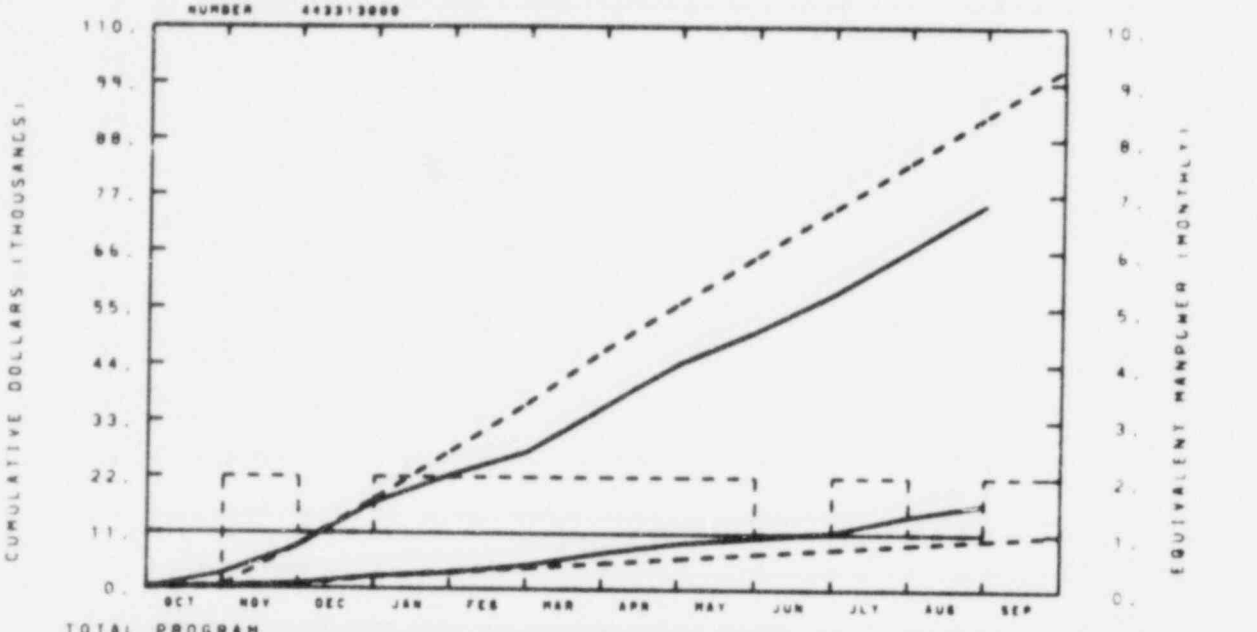
The $25 K overrun is the result of straightline budgeting and increased computer usage. Additional funding in this FIN in September will result in an underrun.

RESPONSIBLE MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

ENG SUP FOR PIPE BREAK IN A6250

NUMBER 4433130000



TOTAL PROGRAM

BUDGET	0	9	18	27	36	47	56	65	74	83	93	102
ACTUAL	3	8	17	22	27	36	44	5	58	66	79	

MATERIAL

BUDGET	0	1	2	3	4	5	6	7	8	9	10	11
ACTUAL	0	1	2	3	5	7	9	10	11	15	17	

MANPOWER

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

A6250

YTD VARIANCE: 18 (19%)

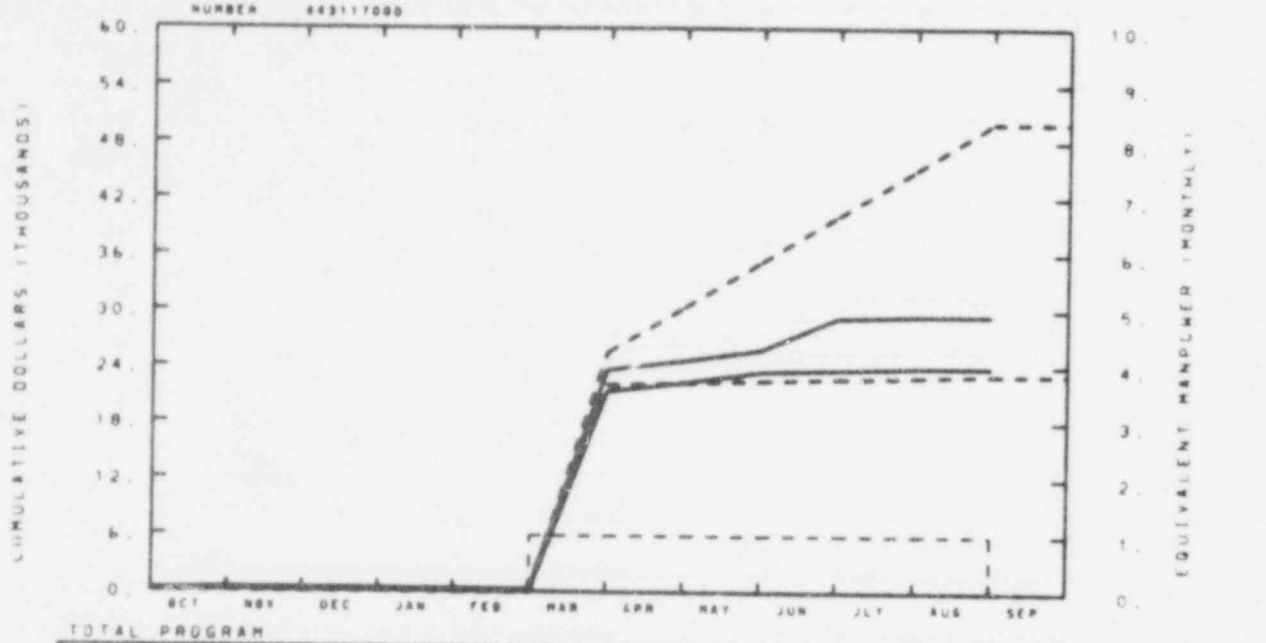
Information being received at slower than expected pace. Underspending will continue. This task's fiscal status will continue to be monitored closely. Approximately $20 K will be carried over to FY-1981 to complete the FY-1980 scope of work.

RESPONSIBLE MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

WATER HAMMER REVIEW & EVAL A6251

NUMBER 443117080



TOTAL PROGRAM

BUDGET	0	0	0	0	0	26	30	35	40	45	50	50
ACTUAL	0	0	0	0	0	24	25	26	29	29	29	

MATERIAL

BUDGET	0	0	0	0	0	22	22	22	23	23	23	23
ACTUAL	0	0	0	0	0	21	22	23	24	24	24	

MANPOWER

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

BUDGET

ACTUAL

A6251

YTD VARIANCE: 21 (42%)

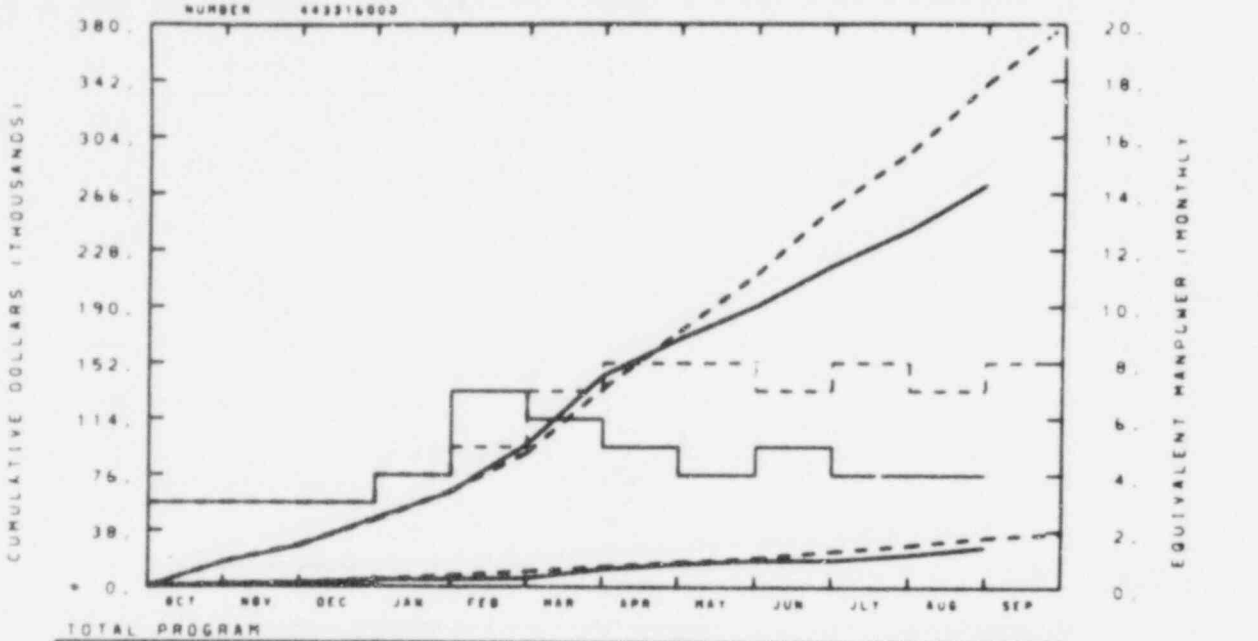
This task is completed. The $21 K will be carried over into FY-1981 as the analyses were not performed in Task E of the Statement of Work.

RESPONSIBLE MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

EICS SUPPORT 46256

NUMBER 443316000



TOTAL PROGRAM

BUDGET	17	29	45	65	91	135	173	212	257	294	340	380
ACTUAL	16	28	46	69	97	143	168	191	218	242	272	

MATERIAL

BUDGET	1	2	5	8	11	14	17	20	25	29	34	37
ACTUAL	1	2	5	5	6	12	16	18	19	22	27	

MANPOWER

BUDGET	3	3	3	4	5	7	8	9	7	8	7	8
ACTUAL	3	3	3	4	7	6	5	4	5	4	4	

BUDGET

ACTUAL

A6256

YTD VARIANCE: 68 (20%)

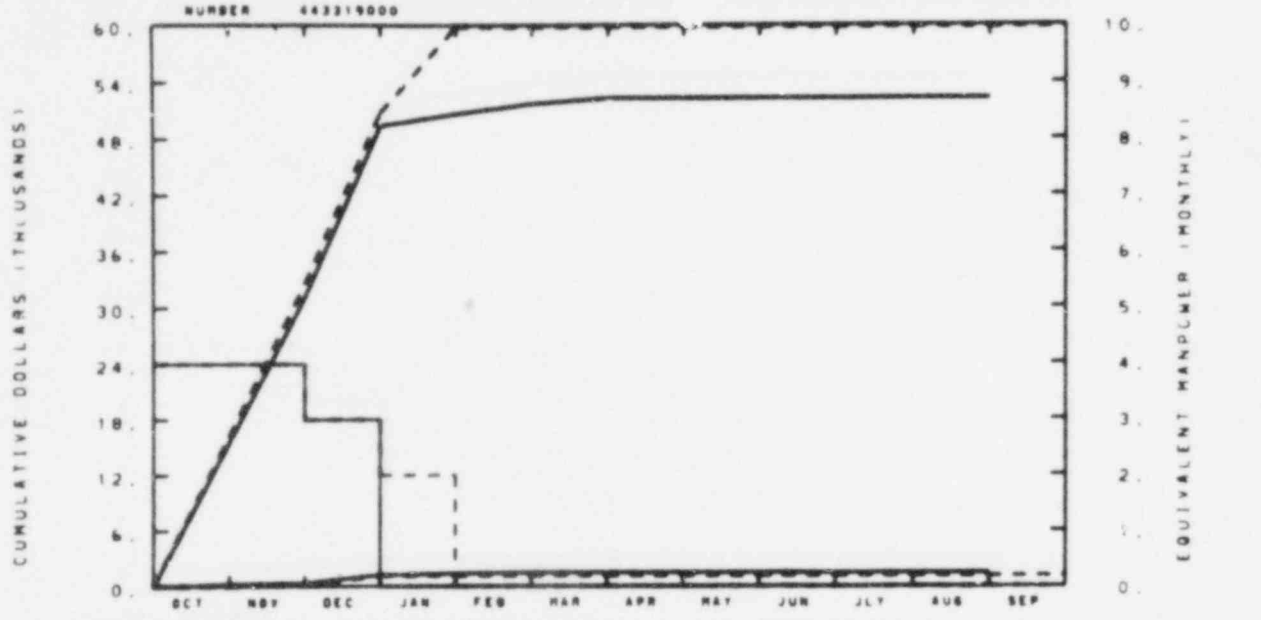
This task is underspent due to lack of complete information from NRC and licensees needed to complete tasks on schedule. Resolution of this problem is being attempted at this time. Also, the On-Call Assistance for Equipment Qualification task is being under-utilized due to lack of requests from NRC. An underrun of $85 K will be carried into FY-1981 to complete specified work scope and On-Call Assistance.

RESPONSIBLY
MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

STEAM GENERATOR WATER HAM A6257

NUMBER 443319000



TOTAL PROGRAM

BUDGET	14	33	51	60	60	60	60	60	60	60	60	60
ACTUAL	15	31	49	51	52	52	52	52	52	52	52	

MATERIAL

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

MANPOWER

BUDGET	4	4	3	2	0	0	0	0	0	0	0	0
ACTUAL	4	4	3	0	0	0	0	0	0	0	0	

BUDGET - - - - - -

ACTUAL ———

A6257

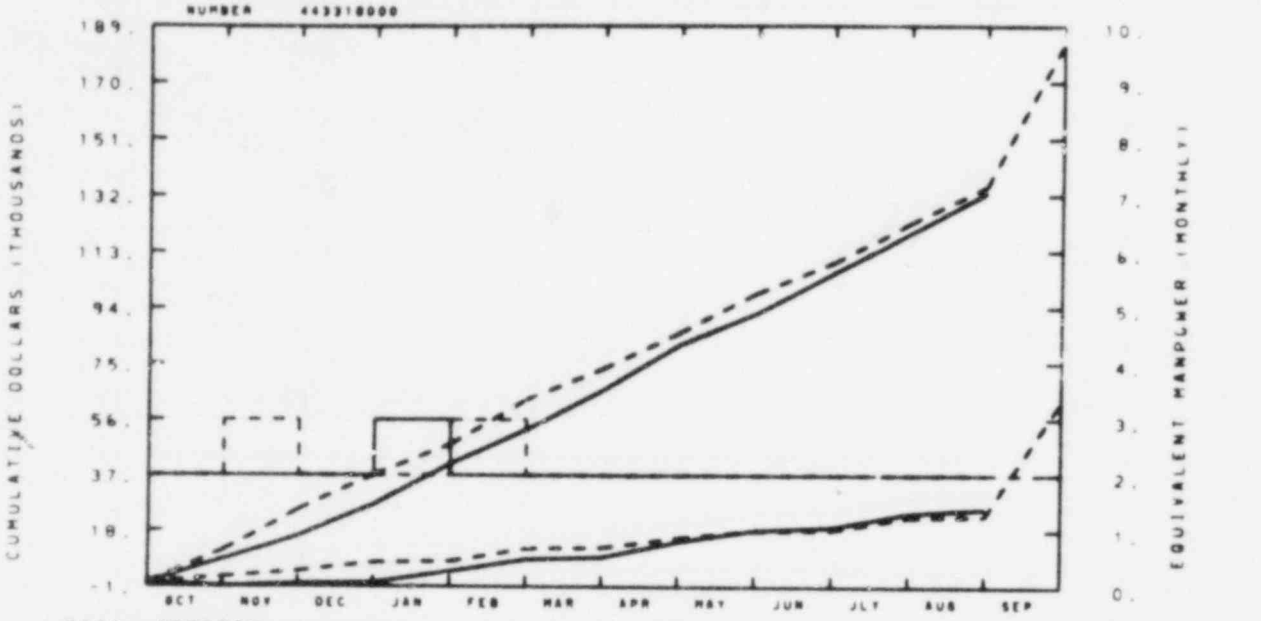
YTD VARIANCE: 8 (13%)

RESPONSIBLE
MANAGER
/ A DEAPIEN

EG&G IDAHO INC.

SYSTEM ENGINEERING SUPPORT A6258

NUMBER 443318000



TOTAL PROGRAM

BUDGET	11	25	37	47	63	73	85	99	109	122	135	183
ACTUAL	8	16	27	41	52	66	81	92	105	119	133	

MATERIAL

BUDGET	2	4	7	7	12	12	15	18	18	22	23	62
ACTUAL	0	0	0	4	8	9	14	18	19	24	25	

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

A6258

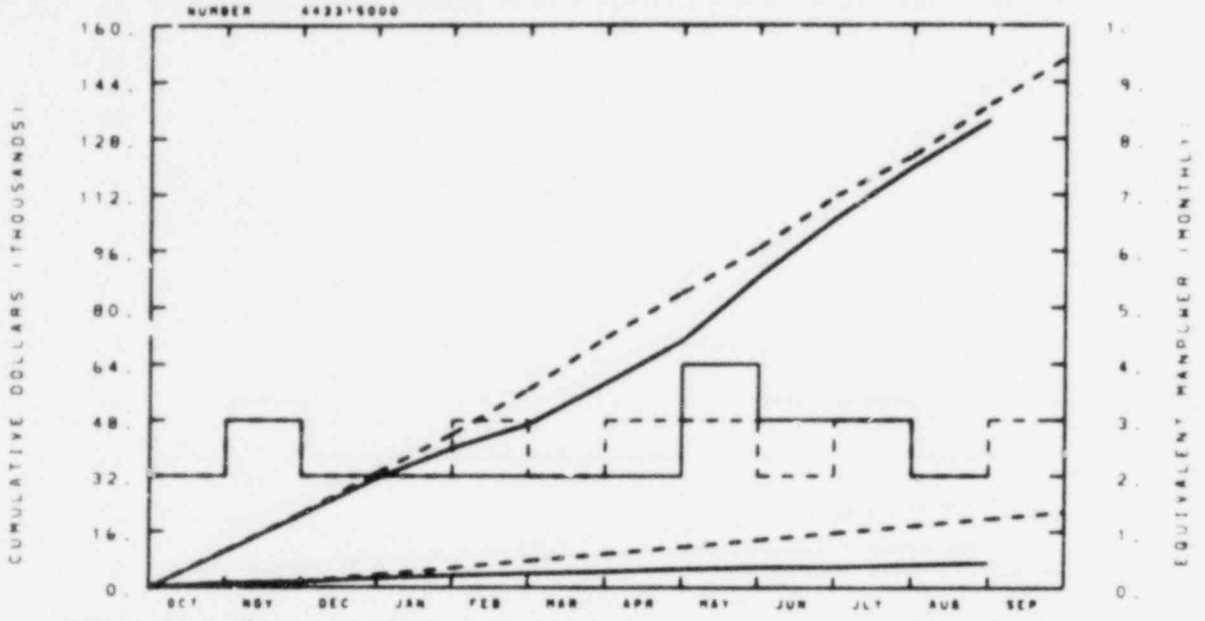
YTD VARIANCE: 2 (1%)

RESPONSIBLE
MANAGER
J. R. DEARIEN

EG&G IDAHO INC.

EICS SUPPORT FOR SEP A6260

NUMBER 4433*9000



TOTAL PROGRAM

BUDGET	10	21	33	44	57	72	84	97	111	123	138	151
ACTUAL	10	21	31	40	47	59	71	89	105	120	133	

MATERIAL

BUDGET	1	2	4	6	8	10	12	14	16	18	20	22
ACTUAL	1	2	3	4	4	5	5	6	6	7	7	

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6260

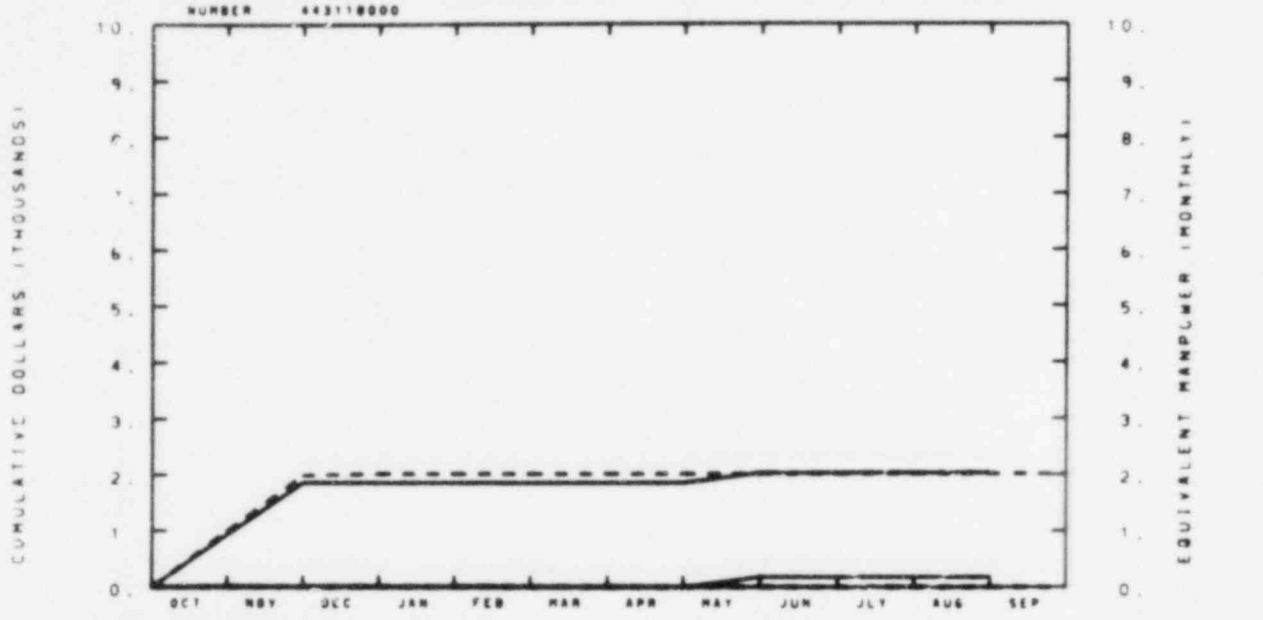
YTD VARIANCE: 5 (3%)

RESPONSIBLE
MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

REACT SYS CASE REVIEW II A6263

NUMBER 443118000



TOTAL PROGRAM

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

MATERIAL

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	

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 ———

A6263

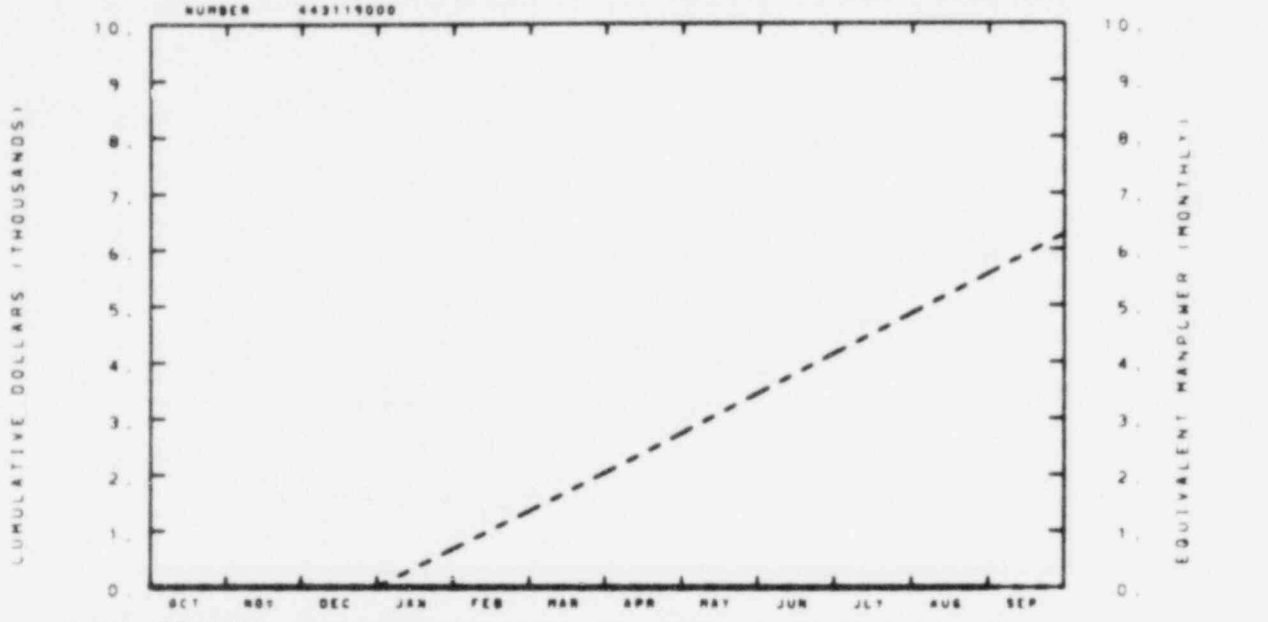
YTD VARIANCE: 0

RESPONSIBLE
MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

ECCS UNAVAILABILITY STUDY A6264

NUMBER 443119000



TOTAL PROGRAM

BUDGET	0	0	0	1	1	2	3	3	4	5	6	6
ACTUAL	0	0	0	0	0	0	0	0	0	0	0	

MATERIAL

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	

MANPOWER

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

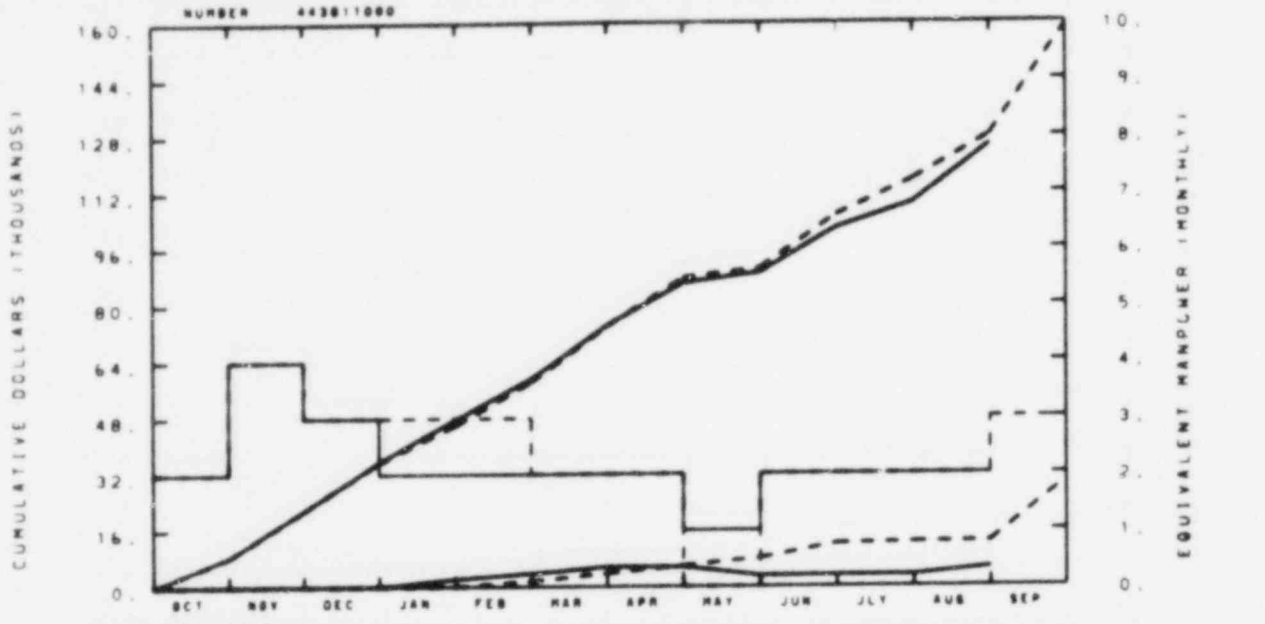
A6264

YTD VARIANCE: 6 (100%)

RESPONSIBLE MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

INSERVICE TESTING - DSS A6265



TOTAL PROGRAM

BUDGET	0	22	35	46	58	74	88	90	105	116	128	159
ACTUAL	0	22	36	48	59	74	86	89	102	109	125	

MATERIAL

BUDGET	0	0	0	0	2	4	6	8	12	13	13	30
ACTUAL	0	0	0	2	4	6	6	5	3	3	5	

MANPOWER

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

A6265

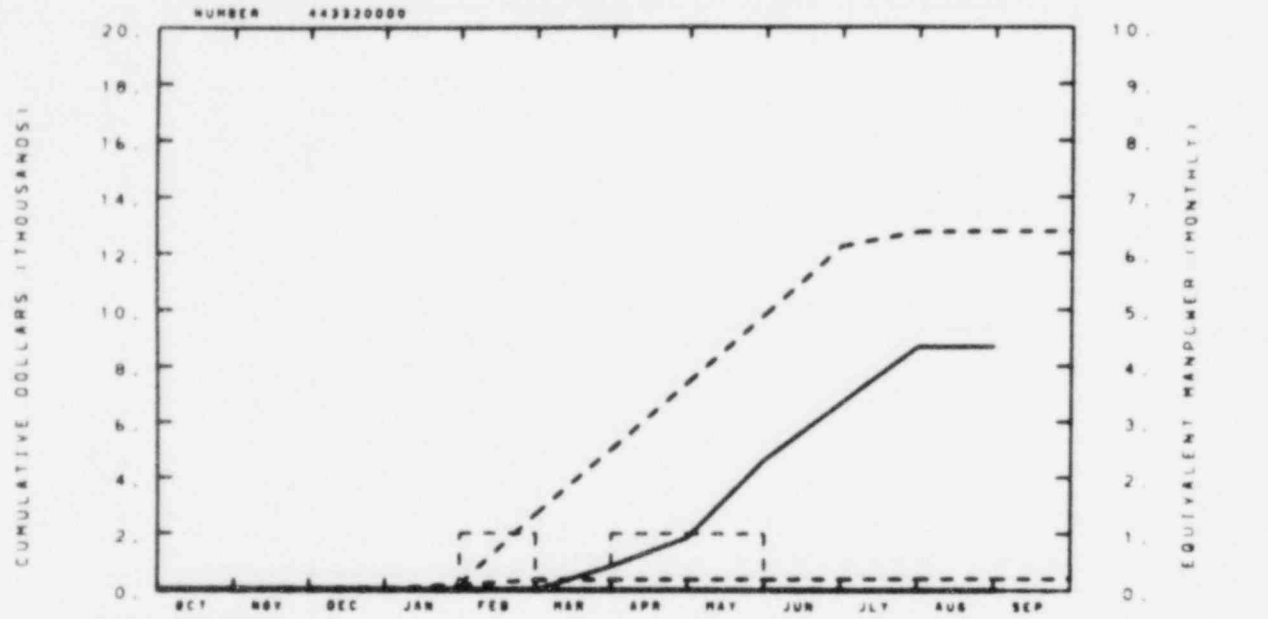
YTD VARIANCE: 3 (2%)

RESPONSIBLE
MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

N-1 LOC OP BEAV VAL ZION A6267

NUMBER 443320000



TOTAL PROGRAM

BUDGET	0	0	0	0	3	5	7	10	12	13	13	13
ACTUAL	0	0	0	0	0	1	2	5	7	9	9	

MATERIAL

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	

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

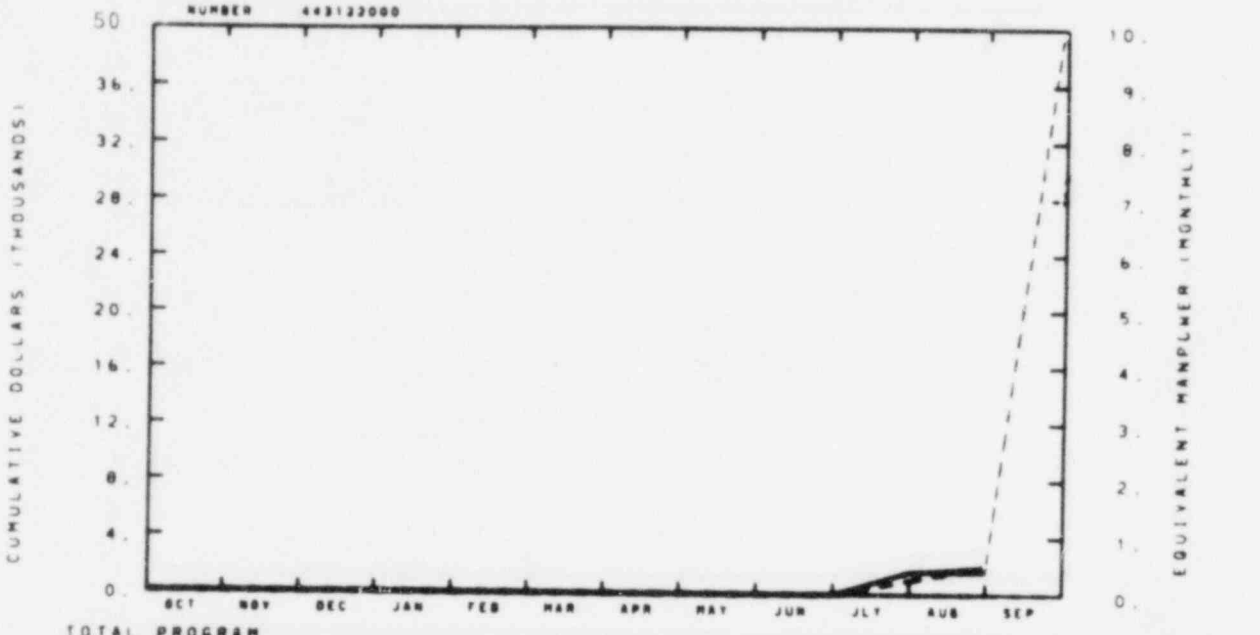
A6267

YTD VARIANCE: 4 (31%)

SPONSIBLE
NAGER
A DEARIEN

EG&G IDAHO INC.

INEL FUEL PERF CODE APP II A6268



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	0	0	0	1	2	50
ACTUAL	0	0	0	0	0	0	0	0	0	2	2	

MATERIAL

BUDGET	0	0	0	0	0	0	0	0	0	1	2	30
ACTUAL	0	0	0	0	0	0	0	0	0	2	2	

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

A6268

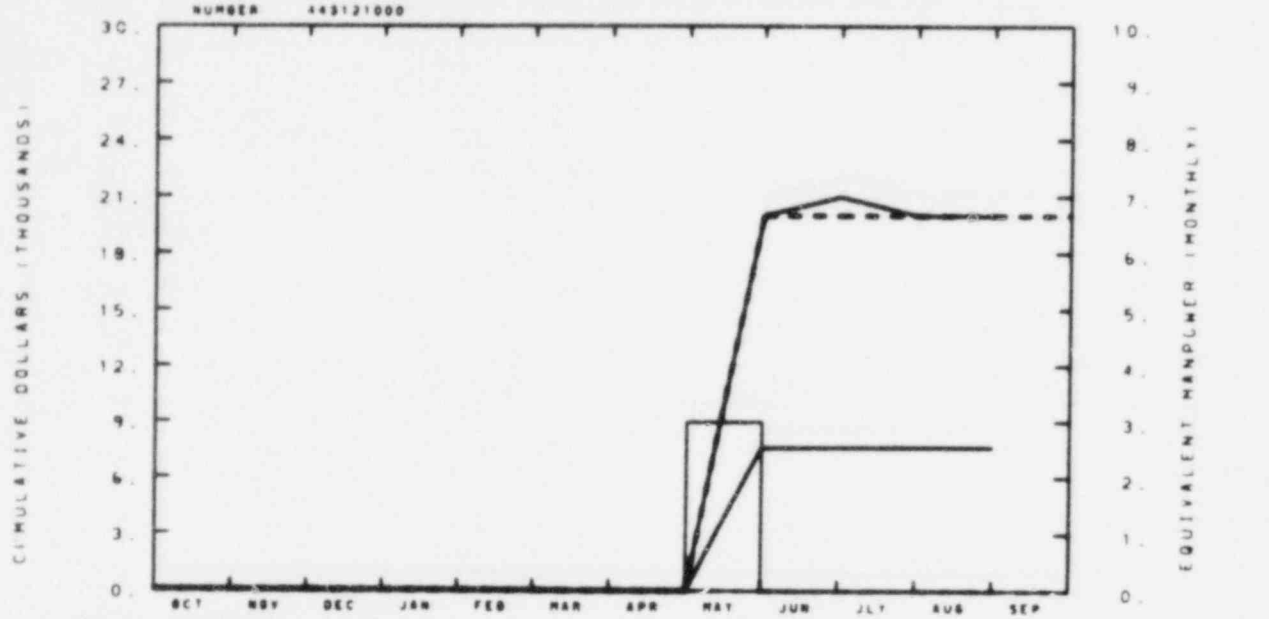
YTD VARIANCE: 0

RESPONSIBLE
MANAGER
J. DEARIEN

EG&G IDAHO INC.

POST BLOWDOWN LOCA FUEL A6269

NUMBER 443121000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	0	20	20	20	20	20
ACTUAL	0	0	0	0	0	0	0	20	21	20	20	

MATERIAL

BUDGET	0	0	0	0	0	0	0	20	20	20	20	20
ACTUAL	0	0	0	0	0	0	0	0	0	0	0	

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

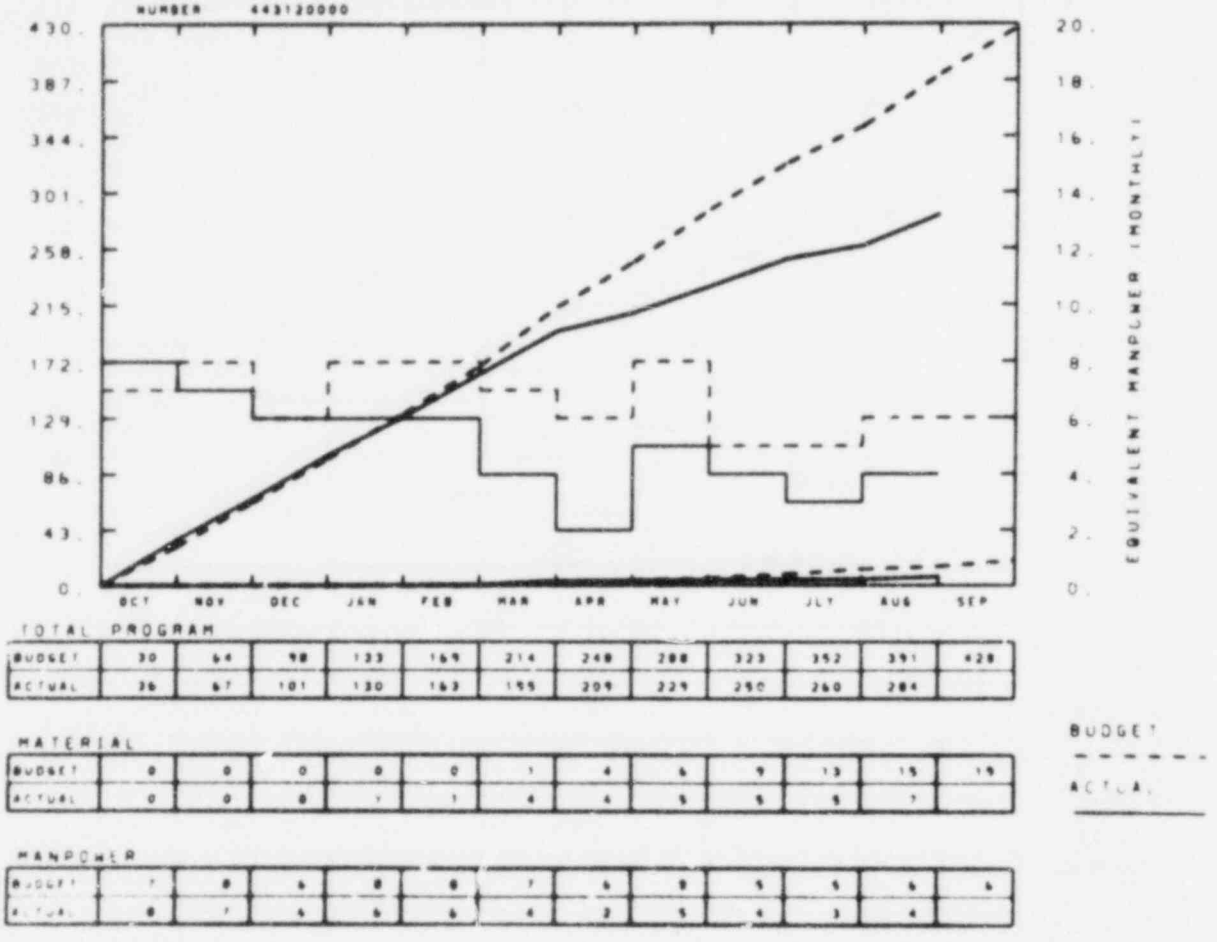
A6269

YTD VARIANCE: 0

RESPONSIBLE MANAGER
A DERRIEN

EG&G IDAHO INC.

REACT SYS CASE REVIEW III A6270



TOTAL PROGRAM

BUDGET	30	64	98	133	169	214	248	288	323	352	391	428
ACTUAL	26	67	101	130	163	195	209	229	250	260	284	

MATERIAL

BUDGET	0	0	0	0	0	1	4	6	9	13	15	19
ACTUAL	0	0	0	1	1	4	4	5	5	5	7	

MANPOWER

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

A6270

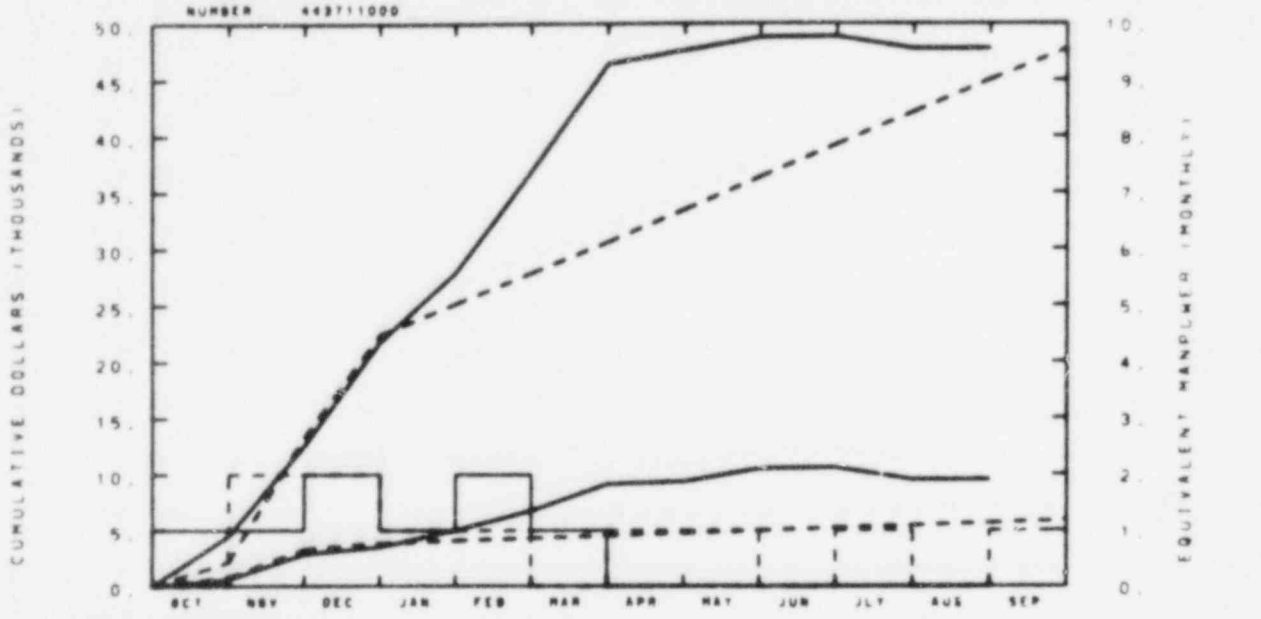
YTD VARIANCE: 107 (27%)

Lack of responses to first round questions has resulted in temporary reassignment of personnel to other tasks and delay of projected travel into FY-1981. A fiscal year end carryover of $113 K is currently forecast.

RESPONSIBLE
MANAGER
. A DEARIEN

EG&G IDAHO INC.

HDR COMP RESPONSE ANALYSIS A6285



TOTAL PROGRAM

BUDGET	3	13	22	25	28	31	34	36	39	42	45	48
ACTUAL	4	13	22	28	37	46	48	49	49	48	48	

MATERIAL

BUDGET	1	3	4	4	4	5	5	5	5	5	6	6
ACTUAL	1	3	4	6	7	9	9	11	11	10	10	

MANPOWER

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

BUDGET - - - - - -

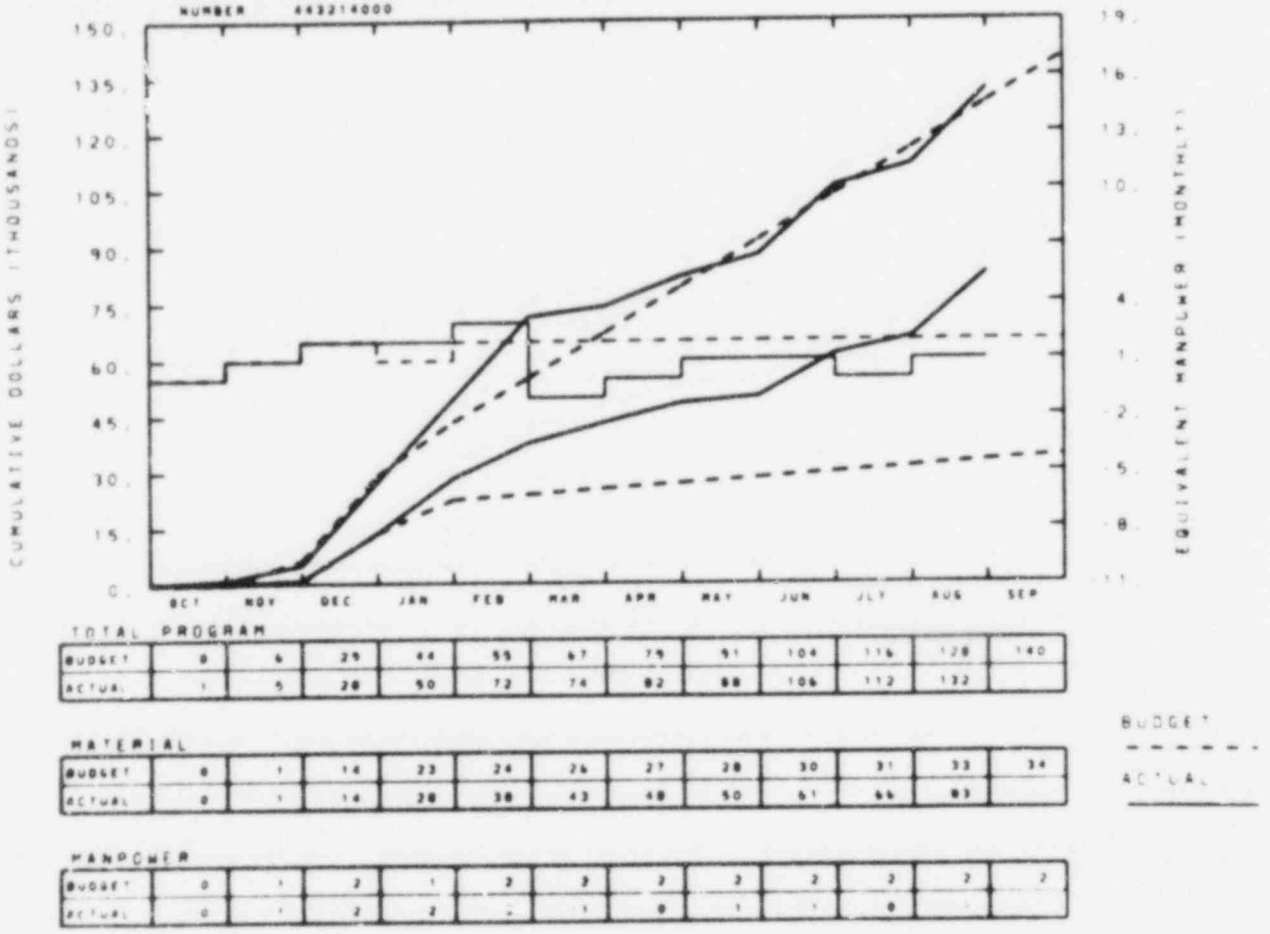
ACTUAL ———————

A6285

YTD VARIANCE: <3> (7%)

EG&G IDAHO INC.

MATERIAL ENGR CASE REV 1 A6401



TOTAL PROGRAM

BUDGET	0	4	29	44	55	67	79	91	104	116	128	140
ACTUAL	1	5	28	50	72	74	82	88	106	112	132	

MATERIAL

BUDGET	0	1	14	23	24	26	27	28	30	31	33	34
ACTUAL	0	1	14	28	38	43	48	50	61	66	83	

MANPOWER

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

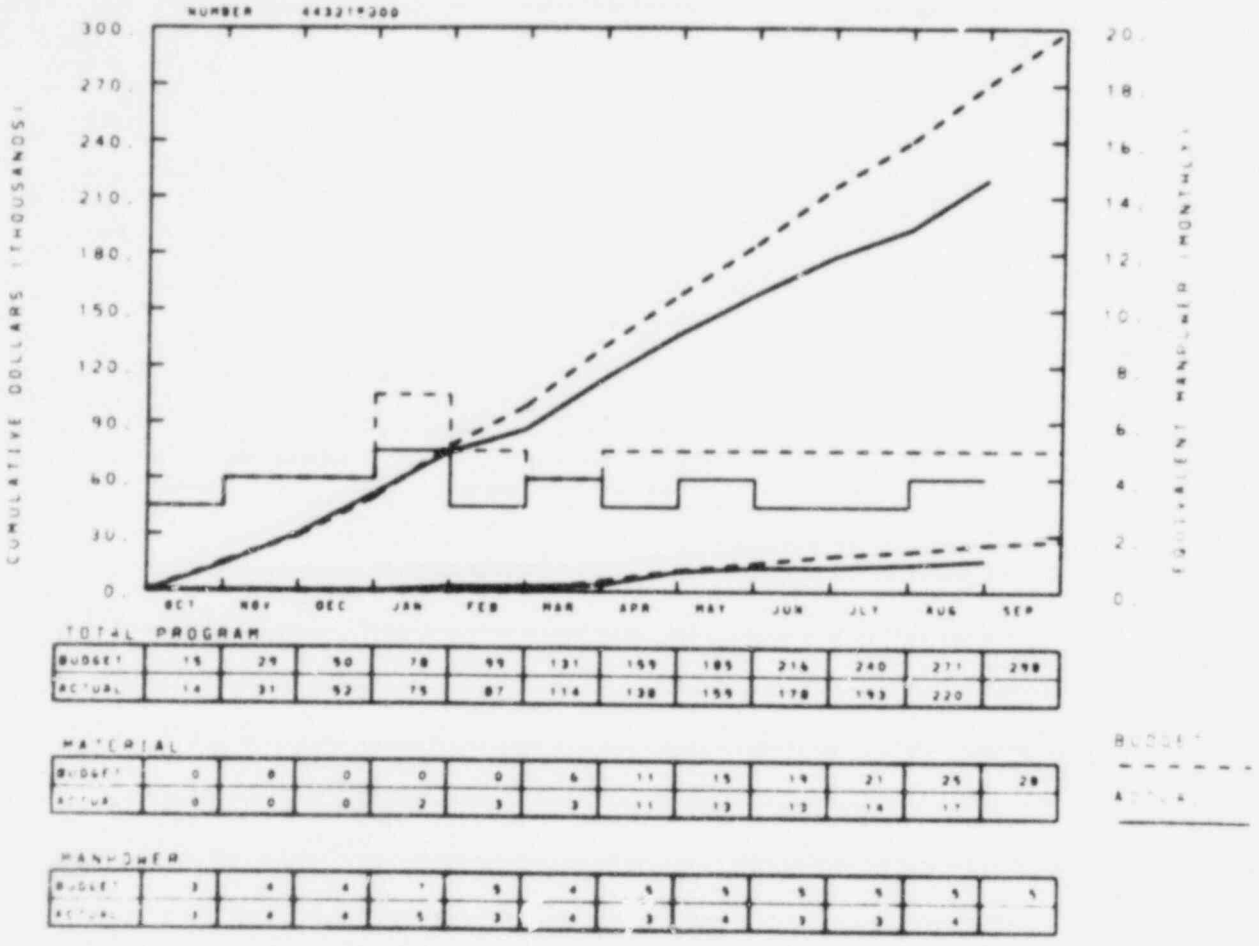
A6401

YTD VARIANCE: <4> (3%)

RESPONSIBLE MANAGER
A. DEARIEN

EG&G IDAHO INC.

STACT ENGR CASE REVIEW II A6402



TOTAL PROGRAM

BUDGET	15	29	50	78	99	131	159	185	216	240	271	298
ACTUAL	14	31	52	75	87	114	138	159	178	193	220	

MATERIAL

BUDGET	0	0	0	0	0	6	11	15	19	21	25	28
ACTUAL	0	0	0	2	3	3	11	13	13	14	17	

MANPOWER

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

A6402

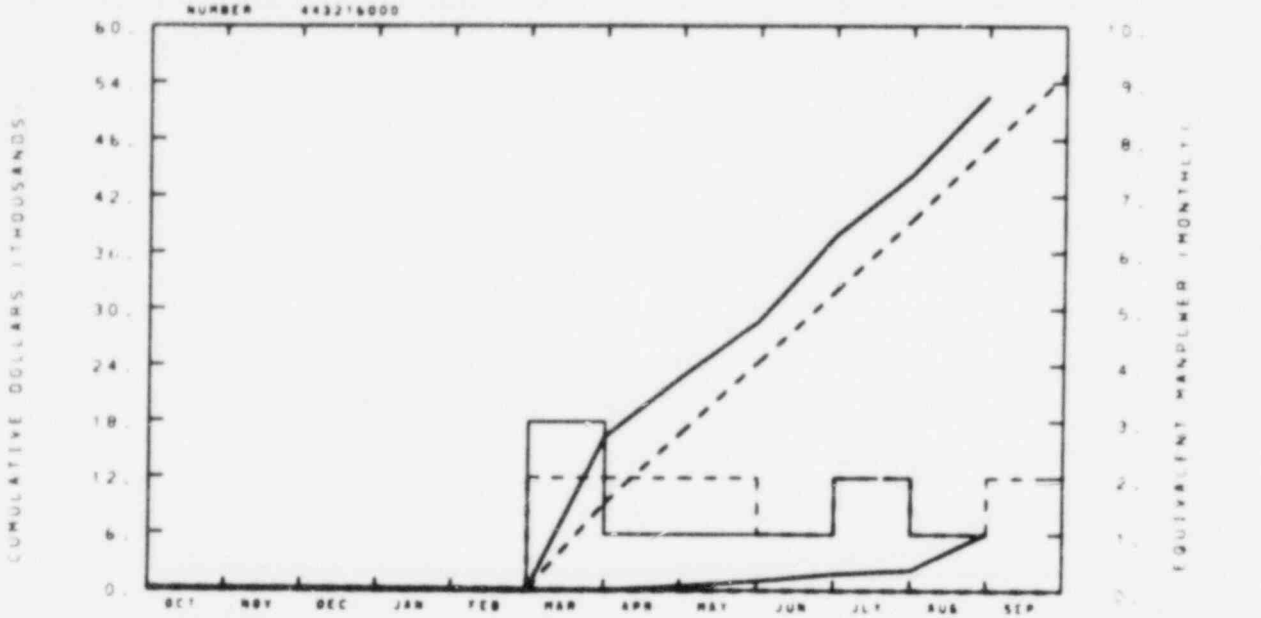
YTD VARIANCE: 51 (19%)

The independent analysis is now proceeding at its expected level. This effort will not be completed this fiscal year and hence, some funds will be carried over to FY-1981. Further delays may be encountered in receiving information. This coupled with the amount of preparation time for the EG&G Idaho audit at the architect engineer's office will require a detailed assessment of this task's fiscal status. The analysis scope of this task has been altered and documented to DOE-ID. The fiscal status of this task will be reviewed at the end of the current fiscal year sufficient to complete the task.

EG&G IDAHO INC.

FRACT TOUGHNESS RCB MATL A6404

NUMBER 443216000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	9	17	24	32	40	47	55
ACTUAL	0	0	0	0	0	14	23	29	38	44	53	

MATERIAL

BUDGET	0	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	0	0	1	2	2	4	

MANPOWER

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

BUDGET

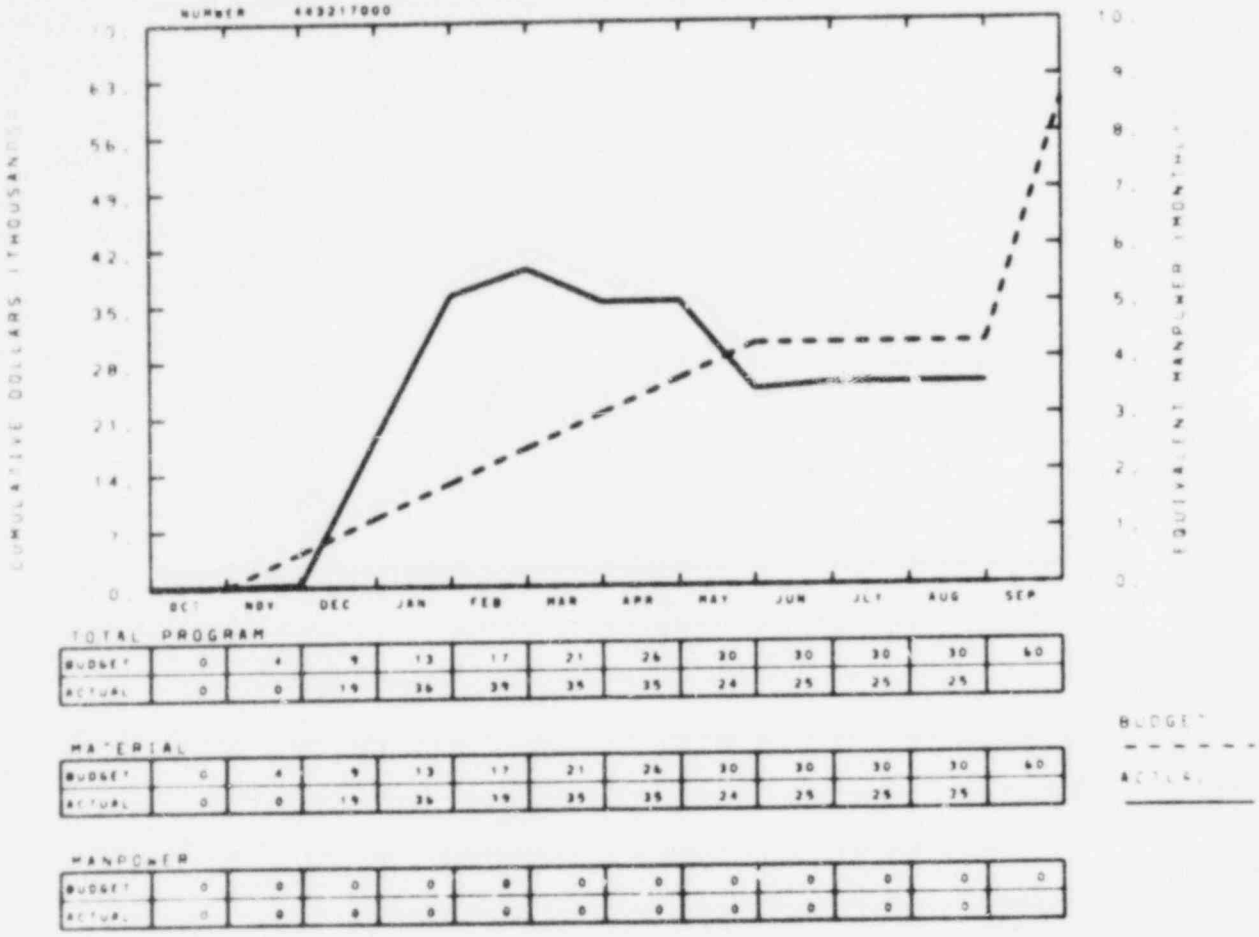
ACTUAL

A6404

YTD VARIANCE: <6> (13%)

EG&G IDAHO INC.

IN-SERVICE INSPECTION A6405



TOTAL PROGRAM

BUDGET	0	4	9	13	17	21	26	30	30	30	30	40
ACTUAL	0	0	19	36	39	35	35	24	25	25	25	

MATERIAL

BUDGET	0	4	9	13	17	21	26	30	30	30	30	40
ACTUAL	0	0	19	36	39	35	35	24	25	25	25	

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	

A6405

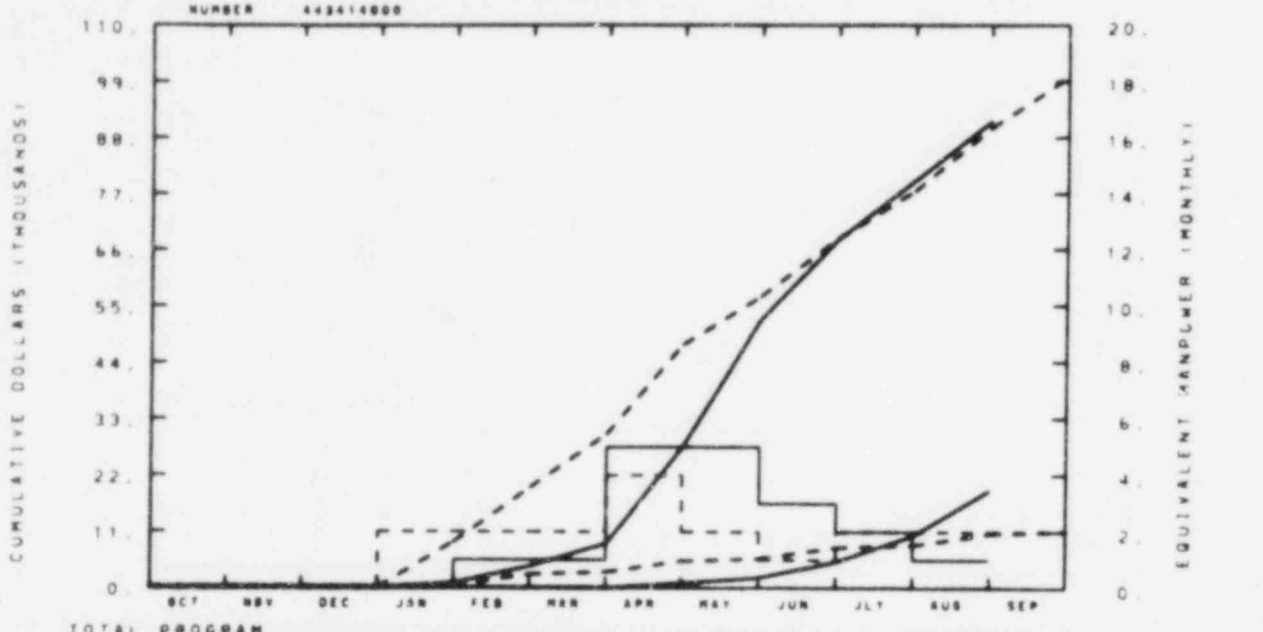
YTD VARIANCE: 5 (17%)

RESPONSIBLE MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

SAF REL PUMP/VALVE REL OP A&407

NUMBER 443414000



TOTAL PROGRAM

BUDGET	0	0	0	9	20	30	47	57	68	78	90	100
ACTUAL	0	0	0	1	4	9	27	52	68	80	91	

MATERIAL

BUDGET	0	0	0	0	3	3	5	6	8	8	11	11
ACTUAL	0	0	0	0	0	0	1	2	5	10	19	

MANPOWER

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

BUDGET

ACTUAL

A6407

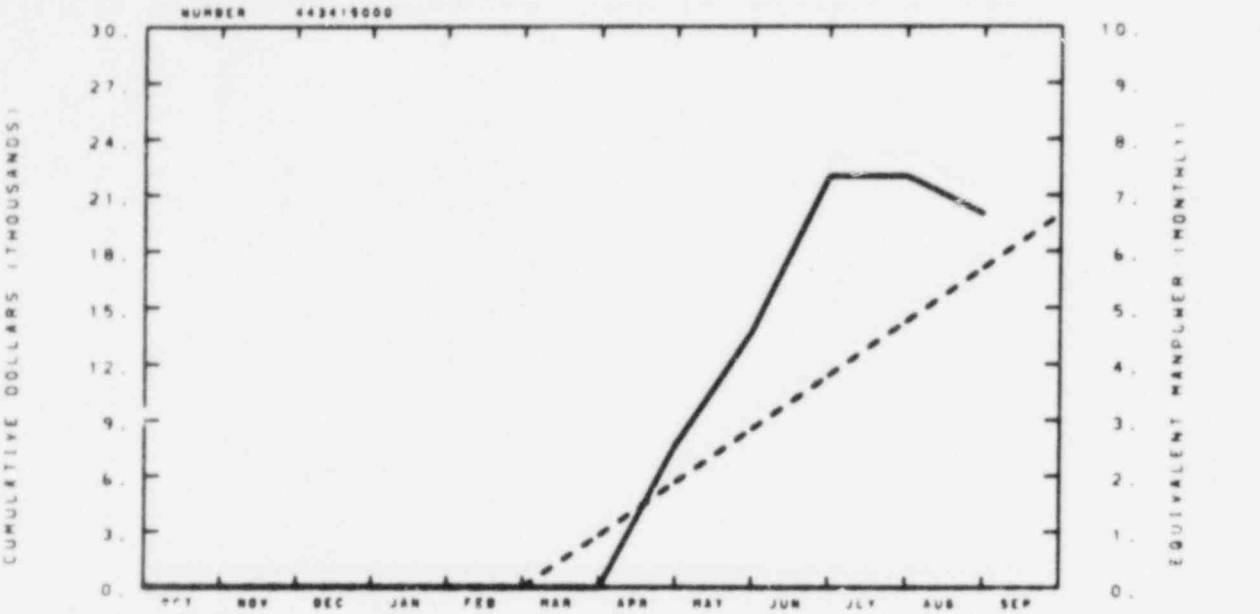
YTD VARIANCE: <1> (1%)

RESPONSIBLE
MANAGER
J A DEARIEN

EG&G IDAHO INC.

ON-CALL TECH ASST FRAC MEC A6411

NUMBER 443415000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	3	6	9	11	14	17	20
ACTUAL	0	0	0	0	0	0	8	14	22	22	20	

MATERIAL

BUDGET	0	0	0	0	0	3	6	9	11	14	17	20
ACTUAL	0	0	0	0	0	0	8	14	22	22	20	

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 ———

A6411

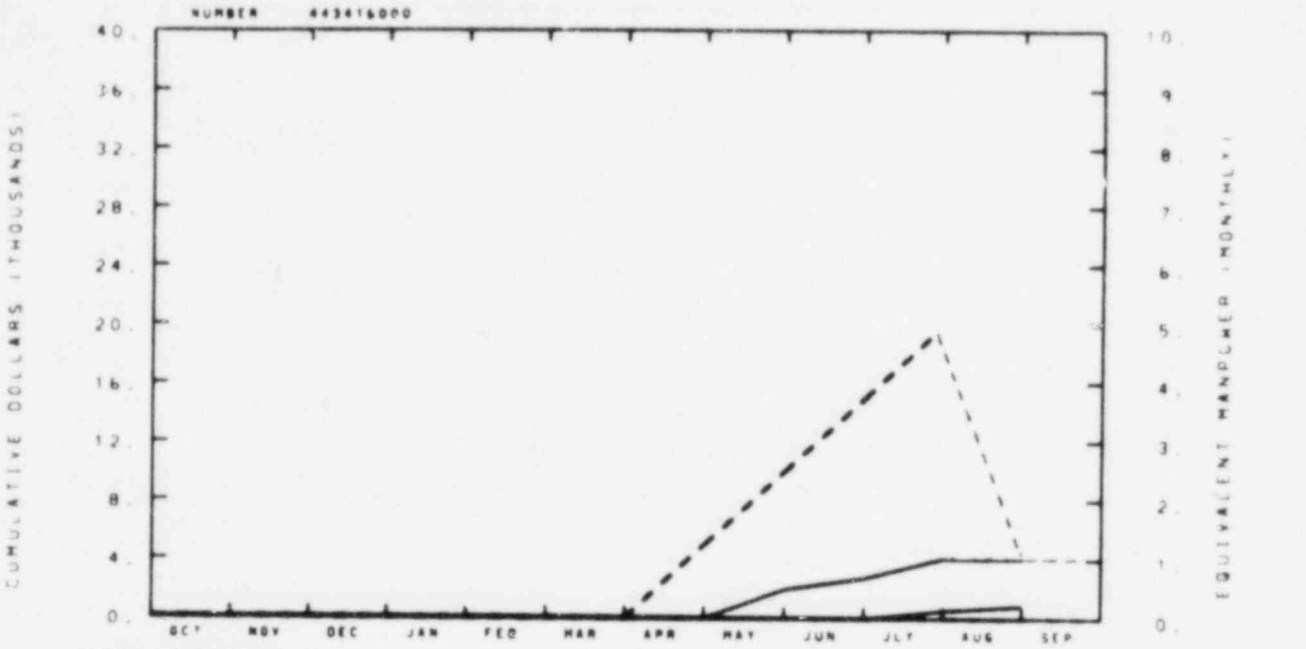
YTD VARIANCE: <3> (18%)

RESPONSIBLE MANAGER J. K. TARIEN

EG&G IDAHO INC.

PIPE CRACK STUDY GROUP A6412

NUMBER 443416000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	5	10	15	20	4	4
ACTUAL	0	0	0	0	0	0	0	2	3	4	4	

MATERIAL

BUDGET	0	0	0	0	0	0	5	10	15	20	4	4
ACTUAL	0	0	0	0	0	0	0	0	0	1	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	

A6412

YTD VARIANCE: 0

CODE ASSESSMENT & APPLICATIONS PROGRAM

NRR

TECHNICAL REVIEW & SUMMARY

PROGRAM MANAGER'S
SUMMARY AND HIGHLIGHTS

A6256: The following revisions were completed and reports issued:

a. D. C. Cook, Unit 1 (Degraded Grid Protection), Technical Assistance Contract (TAC) #10015, Cost = $5292.

b. D. C. Cook, Unit 1 (Containment Temperature Measurements), TAC #12981, Cost = $1151.

c. D. C. Cook, Unit 2 (Containment Temperature Level Measurement), TAC #12982, Cost = $1152.

A6258: The Safety Evaluation Report (SER) for the Millstone Inservice Testing (IST) program was issued (Letter JAD-192-80).

A6265: Questions resulting from our review of the Davis Besse IST program were transmitted to NRC.

A6156: The Beaver Valley plant review was completed and transmitted to NRC (Letter JAD-223-80).

1. DIVISION OF PROJECT MANAGEMENT - DPM

TASK

A6250 Engineering Support for Pipe Break Inside Containment
A6256 Electrical Instrumentation and Control System (EICS)
A6260 EICS Support for the Systematic Evaluation Program (SEP)

2. Scheduled Milestones for August 1980

A Nos.	Node	Description	Due Date	Actual Date
A6250	None scheduled.			
A6256	None scheduled.			
A6260	None scheduled.			

3. Summary of Work Performed in August 1980

A6250 - The final report for the Oyster Creek piping analyses was transmitted to NRC for review.

Reanalysis of the Dresden 2 recirculation loop piping was completed. A letter report describing the results of this analysis was prepared. Per their request, preliminary copies of the letter report were sent to NRC for review.

Final computer runs were made for the Palisades Residual Heat Removal (RHR) and Component Cooling (CC) lines.

Finite element models were completed for the feedwater and shutdown cooling systems at Millstone.

A6256 - The following plant reviews were completed:

a. D. C. Cook, Unit 1 (Degraded Grid Protection), Technical Assistance Contract (TAC) #10015, Cost = $5292.

b. D. C. Cook, Unit 1 (Containment Temperature Measurements), TAC #12981, Cost = $1151.

c. D. C. Cook, Unit 2 (Containment Temperature Level Measurement), TAC #12982, Cost = $1152.

A6260 - Safe shutdown draft evaluations were completed for Big Rock Point and Haddam Neck. Containment purge draft evaluations were completed for Ginna and Palisades.

4. Scheduled Milestones for September 1980

A Nos.	Node	Description	Due Date	Actual Date
A6250	None scheduled.			
A6256	None scheduled.			
A6260	None scheduled.			

5. Summary of Work to be Performed in September 1980

A6250 - Additional finite element models for the Palisades and Millstone analyses will be prepared. New material will be reviewed upon receipt.

A6256 - Continue work on active plant issue reviews.

A6260 - Work will continue on revision of draft reports and preparation of assigned safe shutdown reviews.

6. Problems and Potential Problems

Additional progress on the Palisades and Millstone analyses within the scope of A6250 is dependent upon the receipt of necessary information. The information needed has been requested and is documented by various telecons and letters.

1. DIVISION OF ENGINEERING - DE

TASK

A6152	Primary System Loss of Coolant Accident (LOCA) Response
A6156	Technical Assistance on Asymmetric LOCA Loads
A6166	Fracture Toughness Criteria
A6258	System Engineering Support (IST)
A6265	Inservice Testing - DSS
A6401	Materials Engineering Case Review I
A6402	Structural Engineering Case Review II
A6404	Fracture Toughness of Reactor Coolant Pressure Boundary Materials
A6405	Inservice Inspection
A6407	Safety Related Pump and Valve Reliability and Operability

2. Scheduled Milestones for August 1980

A Nos.	Node	Description	Due Date	Actual Date
A6152	None scheduled.			
A6156	None scheduled.			
A6166	None scheduled.			
A6258	None scheduled.			
A6265	None scheduled.			
A6401	None scheduled.			
A6402	None scheduled.			
A6404	None scheduled.			
A6405	None scheduled.			
A6407	None scheduled.			

3. Summary of Work Performed in August 1980

A6152 - Work continued on revising the Comanche Peak finite element model. This consists of incorporating the latest data obtained from Westinghouse into the previously completed finite element model. Discussions were also held with the Nuclear Regulatory Commission (NRC) and Westinghouse concerning the applied hydraulic loads and other plant details.

A6156 - Work of the review of vendor submittals for asymmetric LOCA loads continued with the review of specific plant submittals until the vendor owners group final reports were received. One specific plant review, Beaver Valley 1, was completed and transmitted formally to the NRC. Review of the final owners group reports was initiated with the Westinghouse report taking the lead at the request of the NRC.

The feedwater pipe crack task was continued with the formulation of a detailed finite element model of the D. C. Cook feedwater elbow and nozzle. Thermal analysis utilizing this model was initiated.

A6166 - Work scope completed: no activity.

A6258 - A meeting was held at Trojan to discuss questions resulting from our review of their Inservice Testing (IST) program. The Safety Evaluation Report (SER) for the Millstone IST program was issued (JAD-192-80). The SER for Beaver Valley was completed and is in final typing. Work on the Rancho Seco SER continued and the Salem-1 SER was started.

A6265 - Questions resulting from our review of the Davis Besse IST program were transmitted to NRC. A meeting was held at D. C. Cook to discuss questions resulting from our review of their IST program. Preparation of the Salem-2 SER continued.

A6401 - A statistical analysis has been made by the Engineering Analysis Division. It was found that there is no relation of the Charpy L_{USE} (longitudinal uppershelf energies) to the T_{USE} (transverse uppershelf energy) for 14 heats surveyed as a whole - i.e., one cannot say that $T_{USE}/L_{USE} = 0.65$ and that be conservative. The value of T_{USE}/L_{USE} varies too much and is a function only of the heat of steel. An average value of T_{USE}/L_{USE} and the limits within which it should fall 95% of the time will be determined. A report is being written.

A6402 - The development of an ADINA containment stick model for Byron/Braidwood was completed and the first 12 natural frequencies were calculated using this model as a means of checking it out. The results compared exactly to those obtained using a similar SAP 4 model. The time history seismic analysis was not completed using the ADINA model due to problems determining proper scale factors to be applied to the base design acceleration time history supplied by Sargent and Lundy engineers. This minor problem is being worked out.

The development of the Byron/Braidwood containment three dimensional shell element half model is complete. A response spectra seismic analysis using this model is also complete. Nearly all static load cases have been run using this model. The results of these individual load cases compare favorably to the results obtained by Sargent and Lundy engineers.

The Grand Gulf analyses were continued as follows: 1) A detailed stick model for the containment and internals was completed for analysis with the ADINA code. This model is now being debugged. 2) Bechtel's forcing functions were revised to the ADINA format. 3) Dead load, live load, normal operating pressure, hydrostatic pressure, and thermal load conditions on the 3-D shell model of the containment were finalized.

A6404 - Per a recent NRC request EG&G Idaho personnel are collecting K_{Ie} and J_{Ic} data on the high strength materials (ASTM A-533 C1. 2 Gr. A, B, C, and A-508 C1. 2a). The letter report (due September 30, 1980) is being revised to include these data with the Charpy impact data already requested. This request is not expected to impact the expected finishing date of this report.

A6405 - No activity.

A6407 - A form letter was prepared for use by NRC to request information from utilities required to support this program. An internal letter report was prepared and is currently being reviewed. Work on preparation of a technical report has been initiated.

4. Scheduled Milestones for September 1980

A Nos.	Node	Description	Due Date	Actual Date
A6152	None scheduled.			
A6156	None scheduled.			
A6166	None scheduled.			
A6258	None scheduled.			
A6265	None scheduled.			
A6401	D16	Watts Bar Prep SER Supplemental		N/S Vollmer to Williams Ltr Dated 8-1-80
	D24	BB Prep SER Sup		N/S Vollmer to Williams Ltr dated 8-1-80
A6402	C10	GG Struct Seismic Ana	9-30-80	
	C22	BB Struct Seismic Ana	9-30-80	
A6404	H16	High Strength Matl Rev Literature ltr	9-30-80	
A6405	None scheduled.			
A6407	U8	Issue Letter Report	9-30-80	

5. Summary of Work to be Performed in September 1980

A6152 - Work will continue on the Comanche Peak model possibly to the calculation of mode shapes and frequencies. Some revision to finite element model may be required if the applied loads are received from Westinghouse.

A6156 - Work will continue on the owners group final report reviews. The Westinghouse review will be completed and preliminary evaluations and questions submitted formally this month. Thermal and stress analyses of the feedwater pipe region for D. C. Cook should be completed.

A6166 - No activity planned.

A6258 - A meeting will be held at Oyster Creek to discuss questions resulting from our review of their IST program. Review of the Nine Mile Point IST program will be completed and questions transmitted to NRC. SER's for Beaver Valley and Rancho Seco will be issued and the Salem-1 SER will be completed.

A6265 - A meeting will be held at North Anna to discuss questions resulting from our review of their IST program. The SER for the Salem IST program will be completed.

A6401 - The report will be completed by the end of the month. NRC personnel will be visiting INEL September 3, 1980. Fuels and Materials Division (F&MD) personnel will discuss the above results with them at that time.

A6402 - The Byron/Braidwood containment seismic time history analysis will be completed using the ADINA stick model. The response spectrum at the polar crane elevation will be developed. Results from the SAP 4 three dimensional analysis of containment will be continued for the various load cases in accordance with the load combination requirements. This will be accomplished using the computer code COMBINE. Allowable stress levels for containment will be calculated.

Grand Gulf containment analysis will accomplish the following: 1) Base mat spectra will be generated from Bechtels' forcing functions. 2) Seismic spectra will be run on the three diminsional shell model. 3) Load combination calculations on the three dimensional shell model will be completed. 4) Transient analysis using the containment three dimensional stick model and internals model will be completed. 5) Floor response motions will be converted to spectra for the stick model.

A6404 - Fuel & Materials Division (F&MD) expects to finish the letter report on high-strength materials and to start the final report (due October 31, 1980).

A6405 - No activity.

A6407 - A letter report on the valve phase of the study will be transmitted to the NRC.

6. Problems and Potential Problems

A6152 - Westinghouse considers the pressure transients to be proprietary and does not want to supply these loads. EG&G and NRC are currently discussing alternatives to obtaining this information.

A6156 - Pending significant additional information, this task cannot be completed (final SERs cannot be written). Funding for FY-81 may be insufficient to allow the writing of final SERs.

1. DIVISION OF SYSTEMS INTEGRATION - DSI

TASK

A6157	Fuel Assembly Seismic and LOCA Response
A6159	Technical Assistance to Environmental Evaluation Branch
A6167	Fuel Performance Code Applications
A6268	Fuel Performance Code Applications II
A6270	Reactor Systems Case Review III

2. Scheduled Milestones for August 1980

A Nos.	Node	Description	Due Date	Actual Date
A6157	None scheduled.			
A6159	None scheduled.			
A6167	None scheduled.			
A6268	None scheduled.			
A6270	None scheduled.			

3. Summary of Work Performed in August 1980

A6157 - This task is primarily awaiting data from various fuel vendors at present; however, at the request of the NRC, a review of an Indian Point 2 reload fuel submittal was completed and questions were supplied formally to the NRC. Several technical discussions concerning these questions have been held with the various parties involved.

A6159 - The evaluation of temporary/mobile radioactive waste management systems effort was continued by completion of the information gathering process. The advantages and disadvantages of the various mobile waste solidification systems have been identified. Preparation of a draft report on the direct radiation task has been initiated and should be completed in early September. A draft of the final report on the very-low-level waste task has been completed and is being reviewed. The remaining information required to complete the report on radiological consequences of containment purge task has been received from NRC and was incorporated into the report.

A6167 - FRAPCON-1/EM: The last two reports of this program were completed and transmitted early to the NRC. These two reports, EGG-CAAP-5217 and EGG-CAAP-5219, describe and assess the preliminary FRAPCON-1 evaluation models.

This completes all scheduled and funded work on A6167. This FIN number will therefore be dropped from future monthly reports.

FRAP-T5 Uncertainty Study: Input decks for the nine selected cases were assembled and are being debugged.

A6268 - Creation of FRAPCON-1 and FRAP-T5 files for NRC-CPB use on the INEL CDC computer was begun (Milestone D).

A6270 - Review of applicant responses to first round questions and preparation of a draft SER for Byron/Braidwood continued. Responses to some first round questions for Waterford were received and review was started.

4. Scheduled Milestones for September 1980

A Nos.	Node	Description	Due Date	Actual Date
A6157	None scheduled.			
A6159	L14	Demin Radioactive Levels Iss Rpt	9-30-80	
A6167	None scheduled.			
A6268	None scheduled.			
A6270	None scheduled.			

5. Summary of Work to be Performed in September 1980

A6157 - A September 9 meeting is scheduled in Bethesda concerning the licensing of the San Onofre power plant fuel. The licensing of this fuel is directly dependent upon the present EG&G review of CENPD-178. Additional information should be forthcoming in this area and the CENPD-178 review will be resumed. A review of the Indian Point 2 reload fuel response to the questions provided NRC by EG&G Idaho will be performed.

A6159 - Additional data needed in the mobile/temporary radwaste systems evaluation will be requested from the vendors and licensees. The need for further observations of systems will be established. Internal review of the reports on the direct radiation and very-low-level waste tasks will be completed. The reports will not be formally issued until comments from the NRC are received, reviewed, and incorporated into the reports. The final report on the Radiological Consequences of Containment Purge task will be published.

A6167 - FRAP-T5 Uncertainty Study: The nine input decks will be debugged and the cases will be run. Analysis of results will also commence.

A6268 - Work on creation of FRAPCON-1 and FRAP-T5 files for NRC-CPB use will continue (Milestone D). When needed input is received from the NRC, work will commence on Milestone B, "Respond to NRC Questions".

A6270 - Review of the applicant responses to first round questions and preparation of draft SERs for Byron/Braidwood and Waterford will continue.

6. Problems and Potential Problems

None

1. DIVISION OF SAFETY TECHNOLOGY - DST

TASK

A6251 Modifications to Water Hammer Review and Evaluation

2. Scheduled Milestones for August 1980

A Nos.	Node	Description	Due Date	Actual Date
A6251	None scheduled.			

3. Summary of Work Performed in August 1980

A6251 - No activity.

4. Scheduled Milestones for September 1980

A Nos.	Node	Description	Due Date	Actual Date
A6251	None scheduled.			

5. Summary of Work to be Performed in September 1980

A6251 - No activity planned.

6. Problems and Potential Problems

None

WRRD MONTHLY REPORT FOR

AUGUST 1980

GPP AND LINE ITEMS

M. L. Rucker, Administrator Supervisor "B"
Plans & Budget Division

R. H. Beers, Manager
Project Management Division

SEMISCALE

EG&G IDAHO, INC.

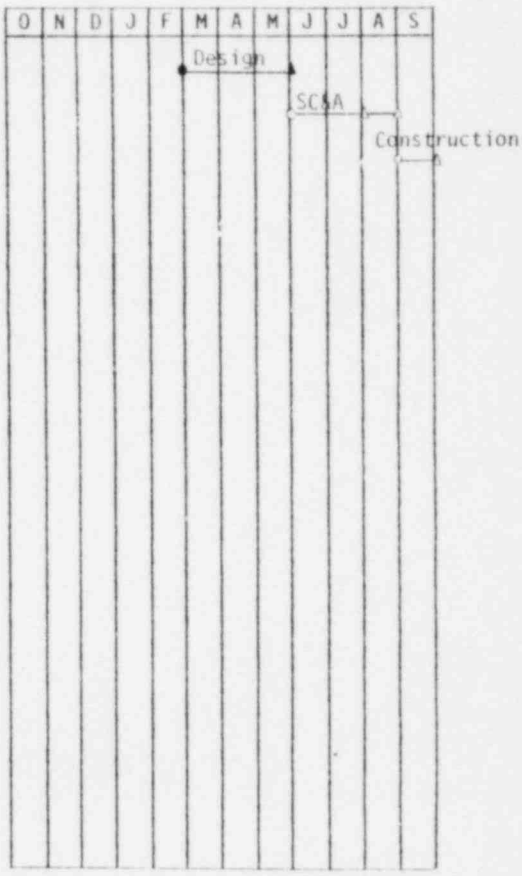
GPP/LINE ITEM

PROGRAM SEMISCALE FY-1980 MANAGER L. P. Leach

189a No. A6038

EA No.	Item Description	Original PA Amount	($000) Current Est. Cost	Project To Date Costs
934000000	WRRTF Sanitary Sewer Upgrade	100	60	$ 11,669

Task Initiated o
Task Completed Δ



THERMAL FUELS BEHAVIOR PROGRAM

EG&G IDAHO, INC.

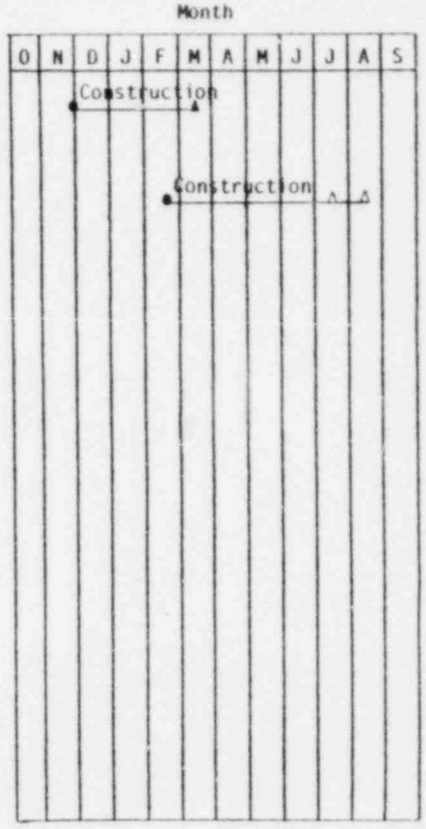
GPP ITEMS

PROGRAM THERMAL FUELS BEHAVIOR PROGRAM

MANAGER J. P. Kester

189 No. A6044

EA No.	Item Description	Original PA Amount	($000) Current Est. Cost	Project To Date Costs
931600000	PBF Control Room Noise Abatement	59	38	EG&G $ 17,251 MK 20,411 2/
931900000	PBF Support Building 1/	509	575	EG&G $ 80,154 MK 428,807



1/Schedules are for planning only and subject to change.

2/Work is complete.