

WRRD MONTHLY REPORT FOR

JUNE 1980

THIS DOCUMENT CONTAINS
POOR QUALITY PAGES

JULY 1980

 **EG&G** Idaho, Inc.



IDAHO NATIONAL ENGINEERING LABORATORY

DEPARTMENT OF ENERGY

IDAHO OPERATIONS OFFICE UNDER CONTRACT DE-AC07-76IDO1570

NRC Research and Technical
Assistance Report

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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

NRC Research and Technical
Assistance Report

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

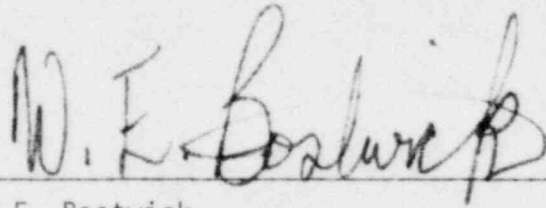
WBS - Work Breakdown Structure
WRRD - Water Reactor Research Directorate

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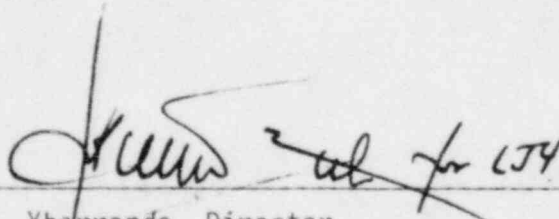
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W. E. Bostwick
Plans & Budget Branch



L. J. Ybarrondo, Director

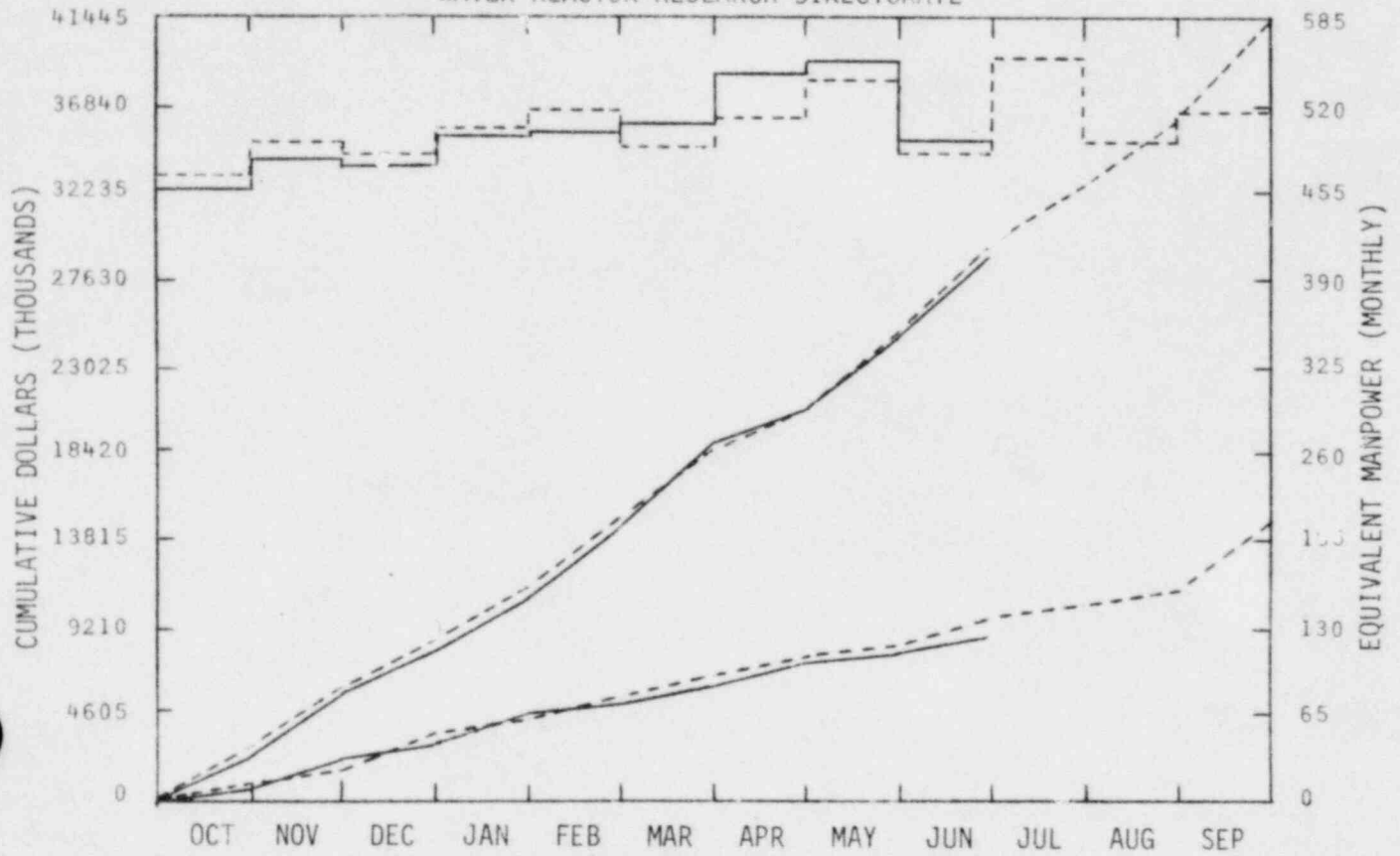
NRC Research and Technical
Assistance Report

Responsible Manager

L. J. Ybarrondo

EG&G Idaho, Inc.

WATER REACTOR RESEARCH DIRECTORATE



TOTAL PROGRAM

BUDGET	2671	5345	8868	11942	14944	18564	21971	25763	29446	32608	36247	41421
ACTUAL	2370	5262	8479	11195	14287	18636	21937	25329	28493			

BUDGET -----

MATERIAL

BUDGET	720	1560	2828	3210	4773	5920	7071	8452	9717	10830	11913	14859
ACTUAL	474	1659	2566	3339	4377	5656	6951	8002	8507			

ACTUAL -----

MANPOWER

BUDGET	468	492	479	508	518	486	513	537	482	540	492	517
ACTUAL	455	478	472	504	506	510	539	544	500			

YTD VARIANCE:

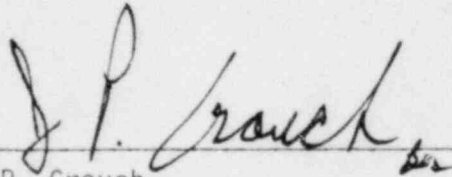
Individual 189a cost graphs will provide variance explanations.

Explanations for major 189a's (>\$500K) will be made if the variance exceeds \$25 K. Minor 189a graphs (<\$500K) will explain variance of over \$10 K. Any budget or cost changes from the previous month will also be explained on the individual cost graphs.

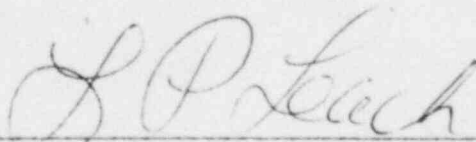
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SEMISCALE



J. P. Crouch
Plans & Budget Representative

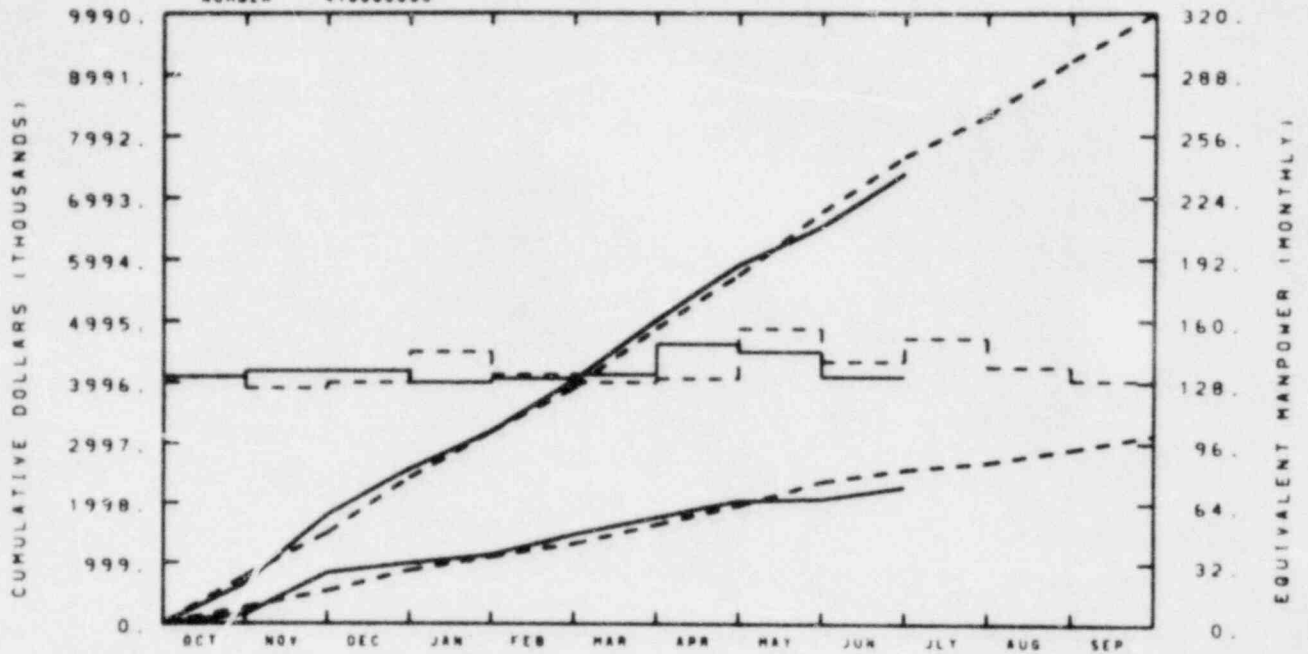


L. P. Leach, Manager

SEMISCALE
COST SUMMARY & COMMENTS

RESPONSIBLE
MANAGER
P. LEACH

EG&G IDAHO INC.
SEMISCALE PROGRAM
NUMBER 410000000



TOTAL PROGRAM												
BUDGET	783	1492	2425	3187	3904	4872	5736	6765	7655	8320	9217	9984
ACTUAL	656	1799	2568	3190	4029	5009	5818	6525	7391			

MATERIAL												
BUDGET	264	531	870	1097	1317	1626	1959	2359	2561	2682	2899	3134
ACTUAL	150	830	990	1132	1471	1758	2040	2069	2272			

MANPOWER												
BUDGET	131	125	128	144	132	128	130	156	129	151	136	129
ACTUAL	131	134	134	128	130	132	148	144	131			

BUDGET
- - - - -
ACTUAL

YTD VARIANCE: 264 (3%)

Individual cost graphs will give individual explanations.

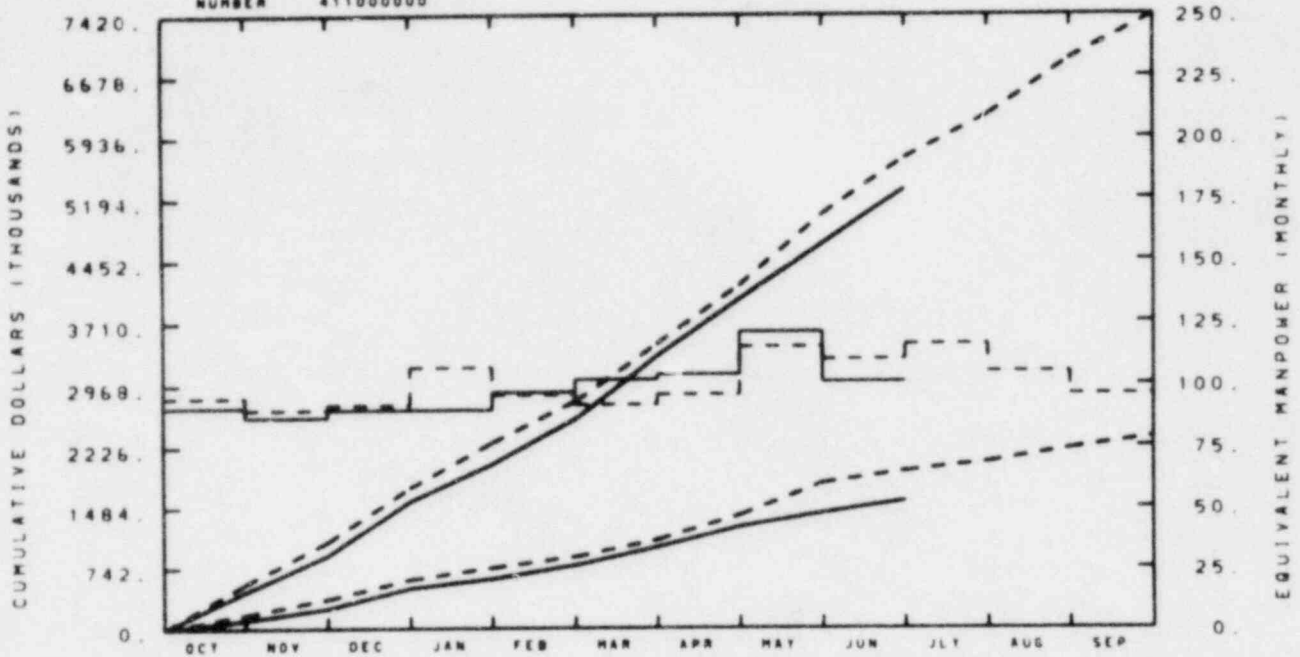
Explanations for major 189a's will be made if the variance exceeds \$25 K.
Minor 189a graphs will explain variance of over \$10 K.

Any change in the Semiscale overall cost graph is due to changes noted on the cost graph for A6043.

RESPONSIBLE
MANAGER
L. P. LEACH

EG&G IDAHO INC.
SEMISCALE

NUMBER 411000000



TOTAL PROGRAM

BUDGET	552	1064	1730	2272	2768	3446	4144	4998	5678	6202	6882	7415
ACTUAL	454	898	1563	2014	2553	3303	3979	4642	5302			

MATERIAL

BUDGET	174	364	600	742	875	1082	1384	1777	1921	2033	2195	2334
ACTUAL	106	248	496	607	771	992	1243	1410	1560			

MANPOWER

BUDGET	95	90	92	107	96	92	96	115	110	116	105	96
ACTUAL	91	87	90	90	97	102	104	121	101			

BUDGET

ACTUAL

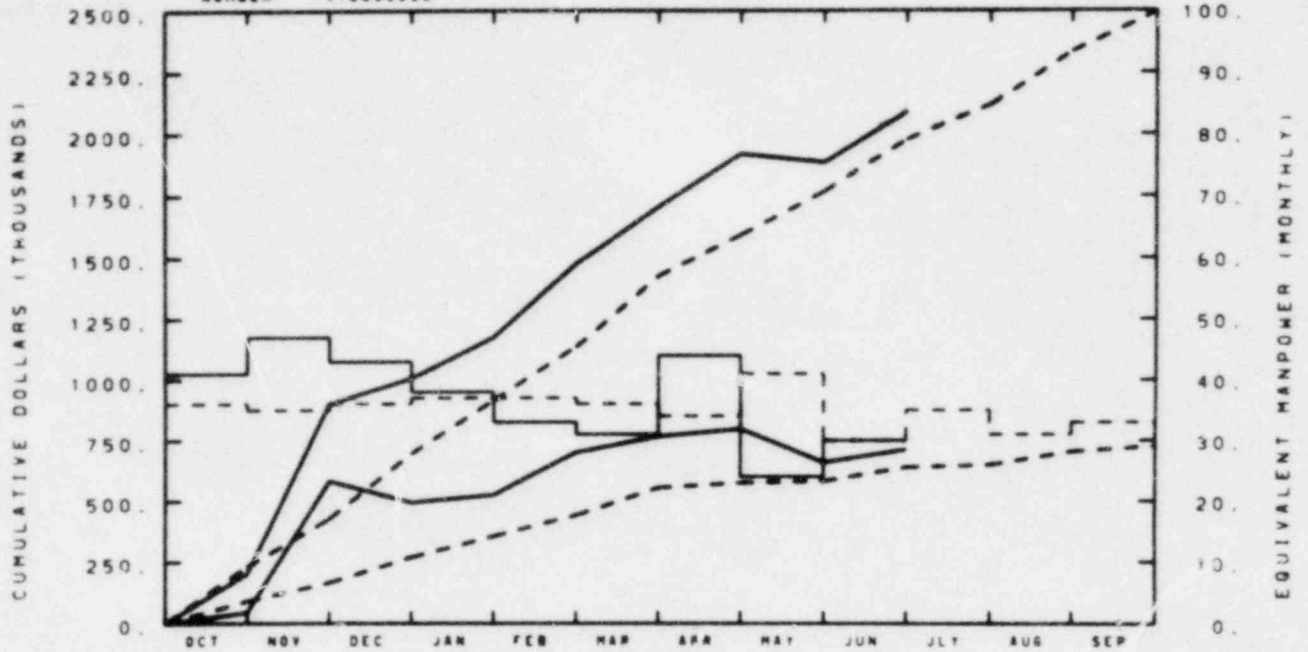
A6038

YTD VARIANCE: 376 (7%)

The variance stated above is based on comparison of year-to-date costs to a baseline that is not consistent with the scope of work being performed. A CCB to rebaseline the Semiscale Program has been submitted for approval and should be reflected in the July monthly report.

RESPONSIBLE
MANAGER
P. LEACH

EG&G IDAHO INC.
LOFT TEST SUPPORT FACILITY
NUMBER 412000000



TOTAL PROGRAM												
BUDGET	231	428	695	915	1136	1426	1592	1767	1977	2118	2335	2496
ACTUAL	202	901	1006	1175	1476	1706	1919	1983	2089			

MATERIAL												
BUDGET	90	167	270	356	441	554	575	582	639	649	704	727
ACTUAL	44	502	494	525	700	766	797	659	712			

MANPOWER												
BUDGET	36	35	36	37	37	36	34	41	30	35	31	33
ACTUAL	41	47	43	38	33	31	44	24	30			

BUDGET

ACTUAL

A6043 (LOFT Test Support Branch Portion)

YTD VARIANCE: <112> (6%)

Year-to-date costs are being brought into line with spending plan as additional scope reductions are identified. The difference in total budget between May and June is due to the approval of the following CCB actions: 80-162, 80-163, 80-164, 80-165, and 80-173.

SEMISCALE
CURRENT WORKING SCHEDULE

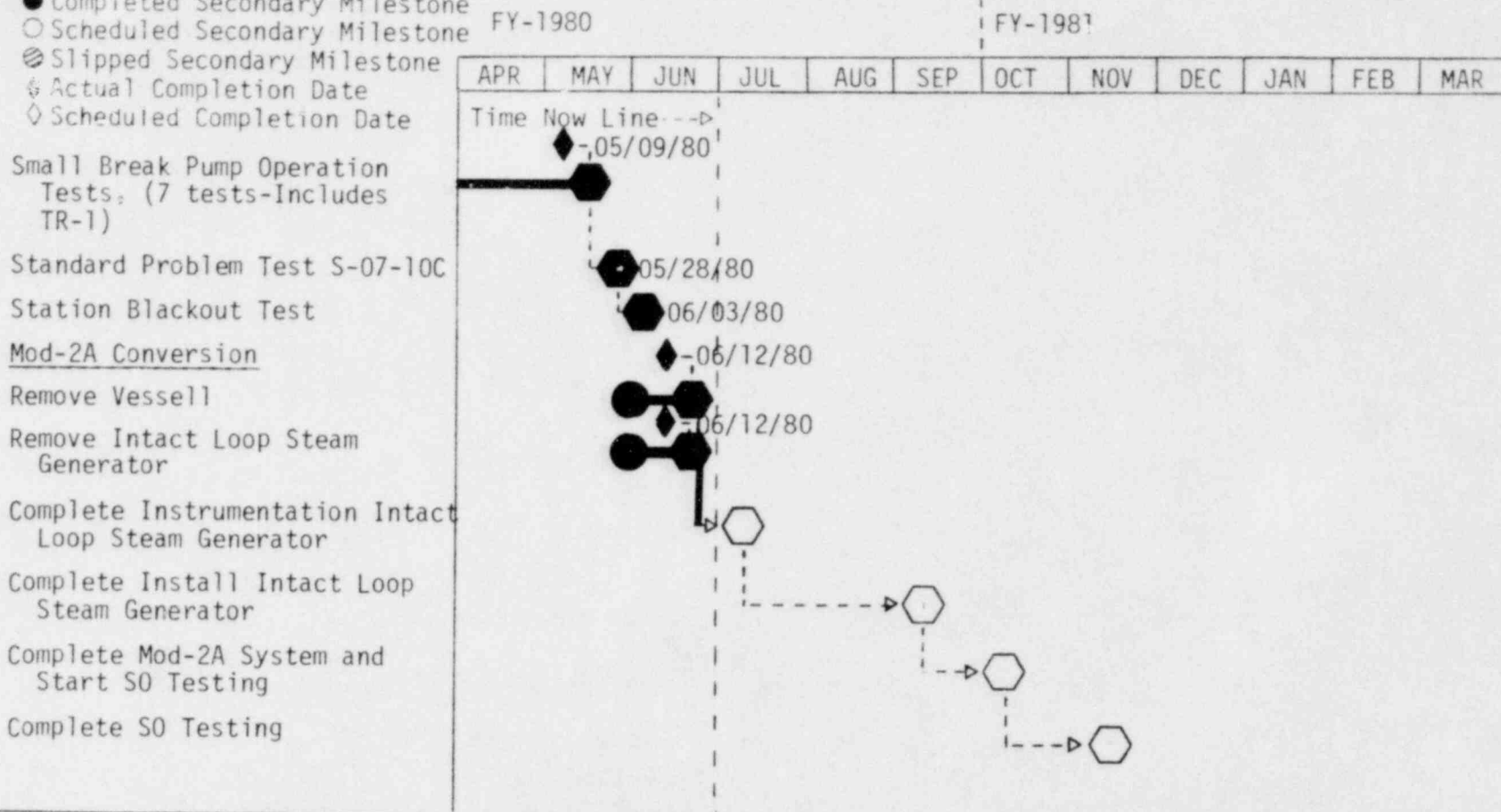
LEGEND

- 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

June 1980

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NOTES:

LEGEND

SEMISCALE PROGRAM

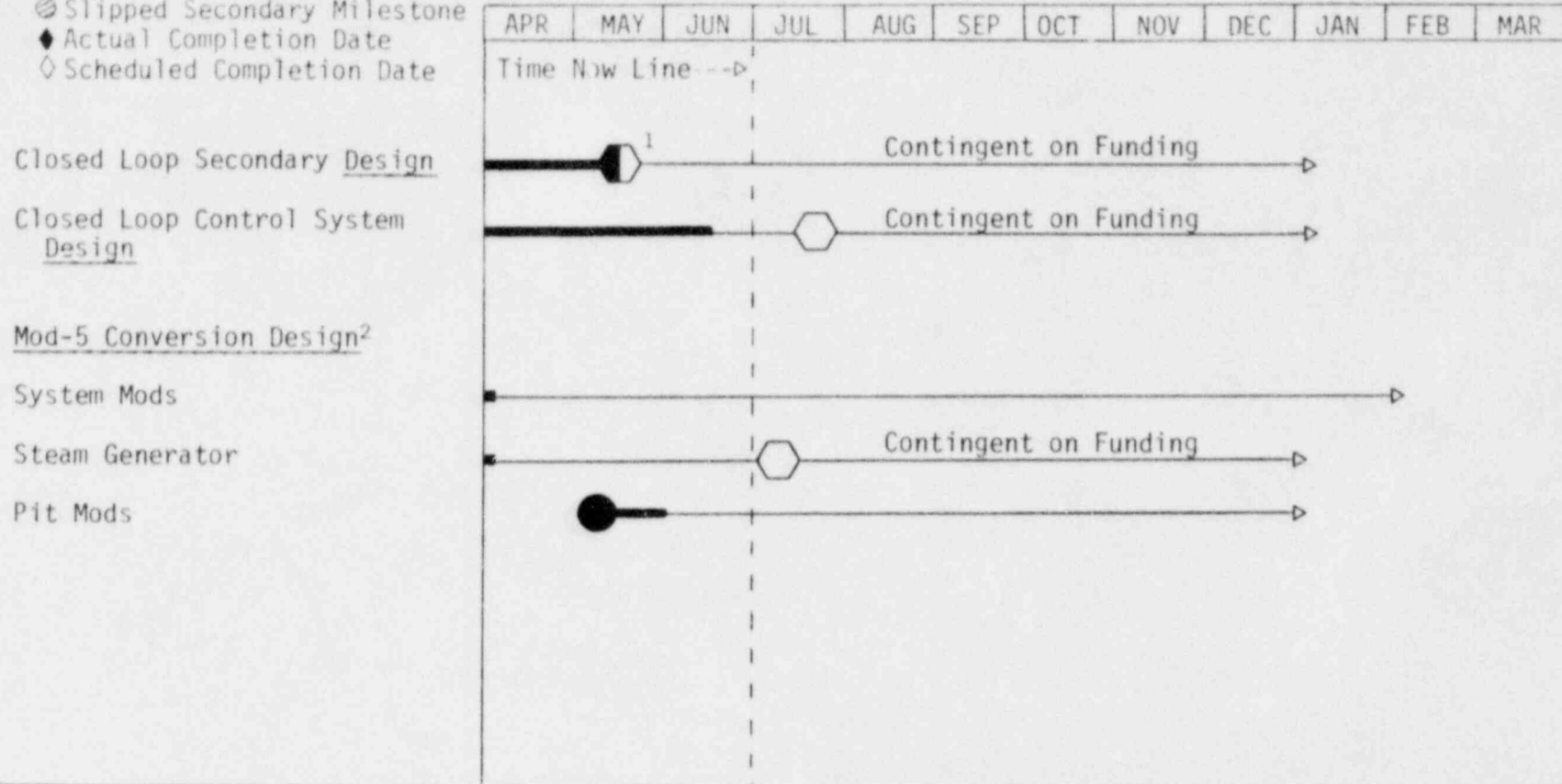
June 1980

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- Completed Major Milestone
- Scheduled Major Milestone
- ⊗ Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- ⊗ Slipped Secondary Milestone
- ◆ Actual Completion Date
- ◇ Scheduled Completion Date

FY-1980

FY-1981



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- 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.

SEMISCALE
CAPITAL EQUIPMENT

EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

Date June 1980

Program Semiscale

189 Number A6059 (A6038)

Manager L. P. Leach

Account Opened ○
 Money Committed △
 Account Closed ■

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Priority Number	Charge Number	Description	Authorized Amount	YTD Costs, & Commitments + 6%	Variance <Over>/Under
1	901992240	Data Acquisition System Support	25,000	6,413	18,587
2	901991520	DDAPS Support and Replacement Equip.	95,000	8,955	86,045
3	901992210	Multibeam Gamma Densitometers	100,000	27,859	72,141
4	901991680	ADPE (WRR FY-1979 Procurement Plan)	75,000	---	75,000
5	901992260	Control System Support Equipment	15,000	457	14,543
6	901992220	Systems Maintenance/Modification Miscellaneous Tools, etc.	10,000	4,788	5,212
7	901991650	Air-Water Loop Upgrade Equipment	80,000	29,022	50,978
			<u>400,000</u>	<u>77,494</u>	<u>322,506</u>

O	N	D	J	F	M	A	M	J	J	A	S
						●				△	
				●							△
						●					△
					●						△
						●				△	
						●					△
					●						△

FY-1980 Budget 600,000
 To FY-1979 <200,000>

 400,000
 YTD Costs & Commit. 77,494

 Balance 32,506

SEMISCALE
TECHNICAL REVIEW & SUMMARY

PROGRAM MANAGER'S SUMMARY
AND HIGHLIGHTS

The second station blackout simulation scoping test (Test S-TR-2) was performed on June 3, 1980, and a report comparing the results of the two station blackout tests is being prepared.

Outlines of small break and pumps on/pumps off topical reports were completed.

The new Mod-2A intact loop steam generator was delivered to the site, and the Mod-2A conversion work is proceeding on schedule.

The LOFT L3-4 spool piece calibration test was performed at the LOFT Test Support Facility. Test reports for the Wyle tests and LOFT modular drag disc turbine rake tests were issued.

1. 189a A6038 - Semiscale Program
2. Scheduled Milestones for June 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
	Perform Station Blackout Test S-TR-2	06-03-80	06-03-80
	Begin Mod-2A Conversion	06-03-80	06-11-80
	Remove Intact Loop Steam Generator	06-24-80	06-12-80
	Remove Vessel	06-24-80	06-12-80

3. Summary of Work Performed in June 1980

- a. 411CLOO Closed Loop Secondary

1. 411CL1100 Additional functional checks were performed on the secondary control system and better response time was achieved with higher controller gain settings. A planning package to inspect secondary system control valves was issued to determine spring range and coefficient of flow.
2. 411CL1200 Preliminary drawings for the closed loop secondary system were reviewed and comments on the design were transmitted to the Semiscale Design Branch for evaluation. Most of the comments addressed potential problems such as corrosion, water hammer, freezing in cold weather, and condenser sensitivity to wind gusts which were experienced in the LOFT System.

Specifications for the feedwater heaters and air cooled condenser to be used in the closed loop secondary were reviewed and approved.

Bid package preparation was begun for the major mechanical components (condenser, pump, and heat exchangers).

- b. 411DA00 Measurements Engineering

1. 411DA1200 The systems operated normally with no significant problems. Routine preventive maintenance was performed. On June 5, 1980 the data acquisition system (DAS) and digital data acquisition and processing system (DDAPS) systems were shut down, with the exception of the computers used for processing corrected data, and modifications for the Mod-2A configuration started.

2. 411DA2100 Details of the densitometer pulse mode electronics changeover were defined and modification work started. Direction on the revision of the data room layout and wiring, and the associated setup of system II as the mass flow computer, were given. The liquid level electronics and analog tape system were removed from the data room, the turbine electronics consolidated, and the system II amplifier and densitometer current mode electronics were removed.

The Steam-Air-Water (SAW) Loop work package was completed and distributed. Air conditioning ductwork for the loop data room was completed; electrical power for the room is 75% complete; and materials for installation of the regulated power for the data system have been ordered.

Special purpose drawings for the Westinghouse FLECHT test were started and are about 75% completed.

Special software for data acquisition and processing on the SAW Loop was 90% complete. Requisition for the valve and pump controller was processed. In the future, the densitometer upgrade work will be reported under charge number 901992210.

3. 411DA2200 The rough outline of the upgrading of the Semiscale data system was determined. Additional work in preparing specifications, 1830 forms, etc., to be accomplished during the remainder of FY-1980 was defined, as well as that hardware which would be purchased this year. Conversion of plotting routines to the F-computer was continued. Problems experienced with the new vector/raster converter of the plotting hardware were resolved.
4. 411DA2300 A final progress report meeting was held with Dr. Jack Cole (University of Arkansas) and Instrumentation Division personnel, presenting results of their work. The hydrostatic bearing turbine and optical pickup probe will be tested further in the SAW loop.

c. 411LE00 Semiscale Operations

1. 411LE1100 The Semiscale Mod-3 test system was prepared for Test S-TR-2 which was performed on June 3, 1980. This test was a scoping test to provide insight for code modeling

and evaluation of instrumentation and system response for planning a similar experiment for the Semiscale Mod-2A system. A power test (SOTP-03-13), for the broken loop pump, was performed on June 5, 1980.

The Semiscale system teardown for the Mod-2A conversion was started on June 6, 1980. Instrumentation, lagging, intact and broken loop steam generators, vessel and downcomer, and most of the loop piping spool pieces were removed from the test pit area by June 12, 1980. The broken loop steam generator and pressure vessel were disassembled and the pressure vessel lower plenum was sent to the TAN Area Machine Shop on June 16, 1980. The Semiscale system area was prepared for installation of the intact loop steam generator support structure. Installation of the intact loop steam generator support structure commenced on June 20, 1980. The structure has been installed and work is being completed for the decking, handrails, ladders, etc.

The shielding blocks were removed from the south pit area to allow photographs and measurements for planning and design for expected Mod-5 work. The shielding blocks were replaced on June 25, 1980.

The experiment data report for Tests S-SB-2 and S-SB-2A was completed and transmitted to DOE-ID on June 11, 1980 (LPL-92-80). Work on experiment data reports for Tests S-SB-P1, S-SB-P2, and S-SB-P7; Tests S-SB-P3 and S-SB-P4; and Test S-07-10D, is progressing on schedule.

2. 411LE1200 Additional calculations were done to help estimate the performance of various shielded thermocouple designs in a radiation heat transfer environment. A boundary layer approach was used to estimate the convective heat transfer coefficient on the thermocouple. The boundary layer approach gave a considerably higher heat transfer coefficient than was previously used. This reduced the estimated error in the thermocouple reading in a radiation heat transfer environment relative to previous cases. The error is still estimated to be as large as 25%. These calculations were documented in a letter recommending that various shielded thermocouple designs be evaluated in a separate effects facility.

Summaries and abstracts of three papers, to be presented at the Fuel Rod Simulator Symposium in Gatlinburg, Tennessee, were reviewed by management, cleared through the Documents and Controls Branch, and sent to the symposium organizer.

A transient two-dimensional heat conduction analysis for the thermocouple previously known as TFV-11 was attempted. Nonhomogeneous boundary conditions in both coordinate directions (r and z) have prohibited attaining success in obtaining a closed form solution. A numerical solution will be attempted (possibly use of the COUPLE code). Analysis of this problem will help shed light on braze material maximum temperature requirements.

Data from the broken loop pump was analyzed to help establish two-phase degradation characteristics. The results suggest that the broken loop pump behavior is somewhat different from the intact loop behavior, although a part of the difference may be due to measurement uncertainty.

Preparation for the July 10, 1980 Semiscale Review Group Meeting was initiated.

The Semiscale contribution to the next quarterly report was prepared. The results of two small cold leg break experiments in which the pumps were tripped early and late in the blowdown transient were discussed. The objectives of these tests were to determine the effect of pump operation on overall Semiscale system behavior and to assess the ability of existing computer codes to predict that behavior.

Work was begun on converting the RELAP5 model of the Mod-3 system to the Mod-2A configuration. This will involve changes to the intact loop and broken loop steam generators, addition of honeycomb insulators to the core and downcomer, and modeling of the band heaters on the loop piping.

The RELAP5 model of the Mod-3 system was changed to run on the experimental version of the RELAP5 code (Mod-1). This was done to facilitate the use of the latest code improvements. A transient calculation was completed for Test S-SB-P1 to 740 s after rupture. Preliminary analysis shows the calculated depressurization rate agrees well with the experimental data. A more detailed analysis of the calculated results is underway.

Posttest analysis of the pumps on/off testing continued. Calculations for Test S-SB-P1 were run to look at the effects of the use of slip in the intact and broken loop steam generator upflows and the vessel/hot leg junctions on

the system response. Analysis of these runs is currently being done. A preliminary analysis of the pretest calculations for the hot leg break tests was begun, but an in-depth analysis will not be done until the modeling work being done on Test S-SB-P1 is completed, so that model improvements identified there can be incorporated into the posttest model of the hot leg breaks.

Posttest analysis of Test S-TR-1 continued. A preliminary RELAP4/MOD7 calculation showed the intact loop steam generator secondary boiling off too rapidly. This was attributed to not modeling heat losses from the secondary to the environment in the RELAP4 calculation. The heat losses needed to give approximately the same boiloff rate in the calculation as in the experiment were estimated and incorporated into the RELAP4 model. A calculation with the additional heat losses in the intact loop steam generator secondary has been run to 4300 s and is being analyzed at this time.

3. 411LE1400 Test S-TR-2 was performed on June 3, 1980. A total of 320 data channels were used with no significant instrumentation problems. Of these, 10% were measurements required for data integrity checks and evaluation of new measurement systems which do not appear in experiment data reports. This test was terminated early, 3-1/2 hours into the test, as a result of a thermocouple blowout. This occurrence is detailed in Unusual Occurrence Report Number EG&G-80-19, June 5, 1980. Data were processed in the normal manner with quick look plots being available two hours after completion of test. Corrected long term and short term tapes were delivered to the Analysis Branch on June 26, 1980.

Data from Test S-07-10D were corrected and short term and long term tapes delivered to the Analysis Branch on June 24, 1980.

Scheduling and coordination of pretest day activities, data reviews and measurement problem identification, as well as data correction activities, were continued for the test conducted and data processed during the month.

Instrumentation was removed from the Mod-3 loop, identified, and temporarily stored for subsequent checking, refurbishment and calibration prior to reinstallation for Mod-2A. The purchased replacement 2100A computer was installed in system II and the leased one returned to Hewlett-Packard.

Steam generator tube prototype instrumentation cycle testing was completed. After an initial, unexplained, failure of some embedded thermocouples, this testing proceeded satisfactorily and proved the mechanical design adequate to withstand the thermal/pressure cycles expected in Semiscale. Because of the indicated thermocouple problem, an additional set of ten embedded units were fabricated, swaged and brazed into tube test pieces. They were checked for continuity, isolation from the Inconel sheath, etc. after each step in the process. None of the finally-fabricated units showed failures in any of these steps and on this basis, approval to proceed with the instrumenting of the tubes was given.

Work on making developmental heat flux measurements for piping spool piece external heaters was started. Calibration data requirements were defined for Standards Lab use.

4. 411LE1500 A draft of the Semiscale Master Facility Drawing (MFD) standard practice was completed. Air-Water Loop design support was continued. Torque table work for mechanical connections was continued. This information will aid maintenance operation and will be published as a Semiscale drawing. A design "fix" to utilize a new mechanical shaft seal in the Lawrence pump was completed.

d. 411M200 Mod-2A Conversion

1. 411M23100 Analysis Branch requirements for Mod-2A characterization and system operational tests were defined and documented.

Methods for estimating heat loss were discussed with site personnel. A procedure was developed for doing the heat loss estimate. A method for calibrating the loop external heaters was formulated. A letter was written documenting the results of an analysis to determine the optimum elevation for the pressurizer in the Semiscale Mod-2A system.

2. 411M25100 Major accomplishments to date:

- (a) Removal and disassembly of major components was completed ahead of schedule and below estimated cost.
- (b) The steam generator instrumented sample U-tube successfully passed qualification testing.
- (c) Installation of the steam generator support structure began and machine shop modifications on the vessel and steam generator were started.
- (d) The cause of the steam generator U-tube leak was isolated as a broken pressure port tube. Obtained new redesigned tubes which will eliminate recurrence of this problem.
- (e) The new Type II steam generator was shipped from Cleveland Precision (vendor).
- (f) The final design review of the overall Mod-2A system was conducted.
- (g) Critical procurements continue to be closely monitored. The steam generator fillers and external heater power supplies are on schedule. The core insulators are scheduled for delivery on July 25, 1980, which is one week prior to the need date.
- (h) The vessel downcomer insulators were inspected and there was no visible damage or deformation.
- (i) A draft of the vessel assembly procedure was completed and issued.
- (j) The C.C. and S.O. test list was issued.

3. 411M25200 The final design review for the intact loop steam generator "pant legs" was conducted. Preliminary design of the broken loop "pant legs" continued. Bid packages for long lead material (forgings) were issued.

e. 411M300 Mod-3 Upgrade

411M31200 Pyromet has experienced some problems with leaks in the honeycomb insulators (discovered in helium leak test). The

leaks are being repaired but the estimated delivery date has slipped. Presently, the last item is scheduled for delivery on July 25, 1980. This is one week prior to the actual due date, and we are closely monitoring progress.

A letter report describing the relative probabilities of the various conceivable honeycomb insulator failure modes was issued.

f. 411M500 Mod-5 Conversion

1. 411M51200 A draft requirements document (SDD) was completed.

EG&G design personnel visited Babcock & Wilcox to discuss various project aspects such as, steam generator, vessel and integrated control system.

Several layouts and Engineering Design Files (EDF's) were generated on various systems.

"As-built" configuration of the south pit was verified.

On June 18, 1980 the Nuclear Regulatory Commission (NRC) informed EG&G Idaho that funding problems will necessitate stopping the Mod-5 design effort. This has been accomplished, and a final report is being generated for the NRC.

2. 411M53100 Comments received on the draft of the Mod-5 requirements document were incorporated. Retyping of the document was completed.

Estimates of once-through steam generator transient boundary conditions were assembled. These estimates may eventually be used for the Babcock and Wilcox steam generator stress analysis if better boundary conditions cannot be provided in an appropriate time frame.

Numerous discussions with members at the conceptual design group were conducted. Topics included the pressure suppression system, core axial and radial power profile, and auxiliary systems.

g. 411NC00 Natural Circulation Series

411NC1100 Refined requirements for the instrumentation needed for the natural circulation tests were issued. New ideas including a catch tank concept to measure reflux flow rates were prepared. A letter describing these requirements and the expected thermal-hydraulic response for the natural circulation tests was prepared and distributed.

Analysis of reflux flow rates and the Kraftwerk Union primary coolant loop (PKL - Primarkrieslauf) natural circulation data was conducted.

Preparation of the experimental operating specification (EOS) for the natural circulation test series was started. Comments received on the preliminary outline of the series were evaluated for incorporation into the experimental operating specification.

h. 411SB00 Small Break Test Series

411SBX500 Outlines for two topical reports were prepared and submitted for management review. The first topical would cover Tests S-SB-2, S-SB-2A, S-SB-4, and S-SB-4A, and would emphasize the comparison of LOFT and Semiscale test results, along with results from pressurized water reactor (PWR) audit calculations. The second topical would cover Tests S-SB-P1, S-SB-P2, S-SB-P3, and S-SB-P4, and would address the effect of pump operation on overall system behavior and the ability of existing computer codes to predict that behavior.

The analysis for the topicals was begun. The areas presently being investigated include comparisons of code calculations with Semiscale data, an evaluation of measured break flows, and the determination of steam generator response characteristics.

i. 411SS00 Special Studies

1. 411SS1200 First level management review of the Karlsruhe report was completed. The report was in excellent shape and only minor modifications need to be made.
2. 411SS1Z00 Work was initiated to incorporate into the scaling report comments received from the WRRD Documentation Branch. This work should be completed by the first of July 1980.

j. 411T7400 Test Series 7

411T7X500 The final "mat" copy of a paper entitled "Experimental Determination of Lower Plenum ECC Injection Effectiveness" was completed and distributed. The paper will be presented at the 1980 ASME meeting in Chicago.

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

1. 411T1X100 Work on a draft of the experimental operating specification for Test Series 11 was initiated. The draft is approximately 20% complete.
2. 411T1X200 Electrical distribution boxes for the external heaters are being built in the TAN Shops.

The required technical information from the power supply vendor (Basafa Corporation - Compton, California) was received and control chassis design was begun. Long lead material (power supplies) are on schedule for late August 1980 delivery.

l. 411TR00 Blackout Simulations

411TR1100 Heat conduction calculations were performed to investigate time-temperature response of various Mod-3 structural components during the period of high superheat in Test S-TR-2. The calculations indicate that the structures did not reach temperatures much higher than fluid saturation temperature.

The "rapid look" letter for Test S-TR-2 was completed and transmitted to DOE-ID on June 6, 1980 (LPL-89-80).

Work on the quick look report for Tests S-TR-1 and S-TR-2 was initiated. The report will contain comparison of the two experiments, estimated effects and discussion of concerns due to the presence of superheated steam in the upper plenum, and recommendations for changes in test procedure for future blackout simulations.

m. 411TS00 Licensing Support

411TSX500 Work on the quick look report for Tests S-07-10 and S-07-10D was conducted. A draft of the report was completed on June 26, 1980. The "rapid look" letter for Test S-07-10D was completed and transmitted to DOE-ID on June 2, 1980 (LPL-85-80).

4. Scheduled Milestones for July 1980

None.

5. Summary of Work to be Performed in July 1980

a. 411CL00 Closed Loop Secondary

1. 411CL1100 Preliminary design work on the closed loop control room and panel layouts, determining instrumentation and control requirements (range, time response, accuracy), making equipment selections and identifying required drawings.

Secondary coolant control system operational checkout procedure work will continue.

2. 411CL1200 Evaluation of mechanical closed loop secondary mechanical drawing comments will be completed. Bid packages for all major hardware will be prepared and issued.

b. 411DA00 Measurements Engineering

1. 411DA2100 Work on the preparation of the Steam-Air-Water (SAW) Loop for the FLECHT test will be continued. A design review with Westinghouse, etc., will be held. The scanning densitometer traversing mechanism will be assembled and worked with the microprocessor control system. Work on the heat flux measurement will be continued. Guidance and monitoring of steam generator instrumentation installation will be conducted.

2. 411DA2200 Main work on conversion of the plotting software for use with the new Hewlett-Packard computer will be completed. Work will be started on development of the measurement system status program.

c. 411LE00 Semiscale Operations

1. 411LE1100 Mod-2A modifications will continue. System operation (S.O.), component checkout (C.C.) and system characterization (S.C.) tests for the Mod-2A system will be scheduled, coordinated, and written as necessary for the Mod-2A system.

Experiment data report preparation for Tests S-SB-P1, S-SB-P2, and S-SB-P7; Tests S-SB-P3 and S-SB-P4, and Test S-07-10D will continue. Work will also continue in the areas of safety, preventative maintenance, and spare parts.

2. 411LE1200 A solution to the upper plenum fluid Thermocouple two-dimensional heat conduction problem will be pursued.

Preparation of three papers for the Fuel Rod Simulator Symposium will be initiated.

The influence of loop pump heating in Semiscale will be evaluated.

Preparation for the July 10, 1980 Semiscale Review Group Meeting will be completed and presented in Washington, D. C.

Posttest analysis of small break and pumps on/off tests will continue.

RELAP5 work will continue in two areas:

1. Obtaining a calculation for Test S-SB-P1 and,
2. Converting the Mod-3 model to the Mod-2A configuration.

Posttest analysis of the station blackout test, Test S-TR-1, will continue.

3. 411L31400 Work on conversion of the data room and rewiring for the system II mass flow computer and the densitometer modifications will be continued.
4. 411LE1500 Hardware modification necessary to install the new Lawrence pump seal will be completed.

"As-built" piping and instrument diagram (P&ID) drawings will be completed in conjunction with the overall Mod-2A "as-building" program.

d. 411M200 Mod-2A Conversion

1. 411M23100 System operation and characterization test requirements and procedure work will continue.

2. 411M25100 Shop modifications of vessel and steam generator and instrumentation of steam generator U-tubes will continue.

The following long lead material will be received:
(1) Type II steam generator, (2) steam generator filler pieces, and (3) honeycomb insulators.

3. 411M25200 All drawings for the intact loop steam generator "pant legs" will be issued, bid packages will be completed for all hardware and placement of subcontracts will be expedited. Design of the broken loop steam generator "pant legs" will be completed.

e. 4411M300 Mod-3 Upgrade

411M31200 The honeycomb insulator fabrication progress will continue to be closely monitored until shipment, which is scheduled July 25, 1980.

f. 411M500 Mod-5 Conversion

411M52000 A final project report will be provided for the Nuclear Regulatory Commission. This report will consist of a copy of the draft system design description and a list of the additional engineering documents generated to date. The design package will be placed in Records Storage.

g. 411NC00 Natural Circulation Series

411NC1100 Planning and analysis will continue.

h. 4411SB00 Small Break Test Series

411SBX500 Analysis associated with the two topical reports for the Semiscale small break test series will continue.

i. 411SS00 Special Studies

1. 411SS1Z00 Progress of the scaling report through the technical editing procedure will be monitored.

2. 411SS1W00 Work will begin on the special study to identify a code to be used to calculate the Semiscale response during operational transient testing.

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

411T1X200 Fabrication of electrical distribution boxes will be completed and installation of the external heaters will begin. Design of control chassis will be completed and an order for material will be placed; cable and conduit will also be ordered.

5. Problems and Potential Problems

None.

1. 189a A6043 - LOFT Test Support Facility

2. Scheduled Milestones for June 1980

None.

3. Summary of Work Performed in June 1980

a. 412A000 Test Projects

1. 412AA00 The REBEKA heater rod for the nine-rod thermocouple quench test was pressurized, laser welding of external thermocouples was completed, and photographs of the rod and thermocouple attachment were taken.
2. 412AE00 L3-4 spool piece steady state calibration test was completed. Blowdown data were obtained which showed a secondary orifice will be required in LOFT for the turbine and drag device to perform without overranging.
3. 412AH00 Data analysis, review, and reporting were continued from Two-Phase Loop system operating tests conducted in March, April, and May, 1980. A letter documenting results was submitted for review.
4. 412AN00 Preparation of experiment data reports (EDRs) for the Wyle transient tests continued. One report was distributed by LOFT Configuration and Document Control System (CDCS), one report was submitted to Configuration and Document Control System (CDCS), and one report was submitted for review and approval. In addition, two report drafts were submitted for initial review, and the final report was submitted to word processing. Analysis of liquid level data is continuing.
5. 412AP00 Results of tests performed on the LOFT PC-2 modular drag disc turbine transducer (MDTT) rake in May 1980 were documented in a letter. Testing was limited to only a portion of the test specification due to instrument, loop, and time limitations.
6. 412AT00 Review and analysis of data from tests of the LOFT steam generator relief valves was continued. Analysis

of system thermal-hydraulic behavior using a RELAP5 model was continued. Results of these activities were reviewed in preparation for a presentation to Electric Power Research Institute (EPRI).

7. 412A900 Budget and schedule for FY-1980 tasks were reviewed and updated. Test plans for FY-1981 were discussed with LOFT Program personnel and work was initiated on FY-1981 work packages and schedule.

b. 412F000 Operations and Maintenance

1. Two-phase Flow Loop

- a. All experimental measurement transducers and cabling in preparation for platform modification were removed. All pressure transmitters were removed and sent to the calibration laboratory.
- b. Loop maintenance planning was completed and work started. The maintenance work planned includes repair of the pump and diesel, replacement of the steam and moisture separator manhole gaskets, and installation of a steam header overpressure control.

2. Blowdown Loop

- a. Instrument installation and checkout in preparation for LOFT L3-4 densitometer and drag screen turbine meter calibration testing was completed.

Set up, maintained and operate data and control systems in support of LOFT L3-4 tests.

- b. The L3-4 test series was started but was terminated when the instrument being tested failed due to an instrument system design error. A back pressure orifice was installed to correct the problem. A systems operation (S.O.) test of the loop was successfully performed to verify the adequacy of the back pressure orifice.
- c. A sway restraining device for the blowdown suppression tank was designed and the required hardware has been ordered. Construction and installation will be completed by July 21, 1980.

- d. Materials for construction of precision flow control orifices were ordered and the design drawings were completed for the upcoming nine-rod heater test.
- e. Burst disc overpressure protection hardware was selected and ordered for the pressure suppression tank. Until this hardware arrives, the tank will be left open to the atmosphere during all tests to preclude damage.

3. Two-Phase Flow Loop Heat Exchanger

Funding was approved and requisition for a heat exchanger issued.

4. LTSF Utility Developments

Funding was approved. No progress was made during June 1980.

5. Installation of Tomographic Densitometer

Funding was approved and planning completed to remove and machine the spool piece.

6. Drain System Modification

Funding was approved. No progress has been made during June.

c. 4129000 Additional Work

- 1. 4411410 Analysis of the Bingham-Willamette Company test Loop was continued. A RELAP5 model was developed for predicting loop operating characteristics, and qualitative assessment of two-phase stability was performed. Input relative to program scope, instrumentation, and planning was received from Babcock and Wilcox and are reviewed. Cost and schedule estimates for measurement systems were reviewed, and the Bingham-Willamette Company continued work on cost and schedule for preparation and operation of the test facility. Delays in the Bingham-Willamette Company cost estimate and loop analysis precluded summary and documentation of results to the Nuclear Regulatory Commission (NRC).

2. 45JSHLO A completed work package and schedule were submitted to 2D/3D in support of hot leg spool piece calibration testing. The test specification was reviewed, and instrumentation needs were identified. Plans were drafted for the Two-Phase Loop for reconfiguration to support 2D/3D testing. Data acquisition requirements were reviewed.

d. Foreign Funded Activities

1. 5FNC801 All design work for the Two-Phase Flow Loop platform and stairs was completed and an Inter Contractor Work Authorization (ICWA) issued to prepare the site. All material was ordered with delivery scheduled for August 1, 1980.
2. 5F9C400 The construction package for the Two-Phase Loop boiler building as been released and issued.
3. 5F8CB01 Change Control Board (CCB) action was completed for the post-critical heat flux test program. Preparation of the experimental operating specification (EOS) has begun.
4. 5FNC301 Dr. R. Gay presented results of two-phase orifice modeling effort underway at Rensselaer Polytechnic Institute (RPI) in a presentation at Idaho National Engineering Laboratory (INEL). Data needs were identified to support code assessment, and future scope of work and schedule were discussed.
5. 5FNC301 Tasks to reformat data from four Wyle transient tests were initiated in support of Dr. R. Gay's orifice modeling effort at Rensselaer Polytechnic Institute (RPI).
6. 5F7C501 Results of tests of Type K thermocouples installed in a simulated LOFT guide tube for measuring superheated steam temperature were presented and reviewed. Data indicate the technique is not capable of producing a valid measurement due to thermal radiation and condensation effects. Plans for future work were discussed with LOFT and Measurement and Control Systems personnel.
7. 5F8C401 Equipment for support of the pressure balanced drag turbine developed by J. Cole for LOFT was located and

arrangement made for shipment to LOFT Test Support Facility (LTSF). Discussions concerning future testing of this prototype and review of an alternative design with optical pickup were held.

8. 5F8C8C A transient test for the suppression catch tank was performed which showed significant oscillations in the load cell responses. Filtering the responses at a frequency of 1 hertz removed most of the oscillations. An accurate mass flow rate determination is expected.

4. Scheduled Milestones for July 1980

None.

5. Summary of Work to be Performed in June 1980

a. 412A000 Test Projects

1. 412AC00 Preparations are expected to be completed for performing the L3-5 spool piece calibration during July 1980.
2. 412AH00 No activity planned due to testing in support of the LOFT L3-4 and L3-5 calibration testing in the Blowdown Facility.
3. 412AN00 The final experiment data reports (EDR) from the Wyle transient test program will be completed and submitted for review and approval. Analysis of liquid level data will continue.
4. 412AT00 A data report summarizing results of LOFT steam generator relief valve testing will be completed. Results of testing and analysis will be presented at an Electric Power Research Institute (EPRI) meeting on relief and safety valves.

b. 412F000 Operations and Maintenance

1. Two-Phase Flow Loop

Several maintenance items will be completed:

- a. The pump and diesel will be repaired.

- b. The steam and moisture separator manhole gaskets will be replaced.
- c. The steam header overpressure control will be installed.

2. Blowdown Loop

- a. LOFT L3-4 calibration tests will be completed. The loop, data system and control system will be modified in preparation for LOFT L3-5 testing.
- b. A sway restraining device will be installed for blowdown suppression tank.

3. Two-Phase Flow Loop Heat Exchanger

No work is scheduled before delivery of the heat exchanger.

4. LOFT Test Support Facility Utility Improvements

Design work will be complete during July 1980.

5. Installation of Tomographic Densitometer

Spool piece will be machined and material ordered.

6. Drain System Modification

Design work will be completed and work started.

c. 4129000 Additional Work

- 1. 45JSHLO Review of 2D/3D requirements for calibration testing of hot leg spool piece instrumentation, and capabilities of LOFT Test Support Facility (LTSF) test loops will be completed. Tasks concerned with hot leg spool piece calibration testing will be postponed until direction is received from the 2D/3D Program concerning future course and scope of work.
- 2. 4411410 Analysis of Bingham-Willamette Company test loop will be completed; cost estimates and schedules for instrumentation, data acquisition system, loop preparation, loop operation, test conduct, loop restoration, and data analysis and reporting will be summarized and forwarded to the Nuclear Regulatory Commission for review.


d. Foreign Funded Activities

1. 5FHC801 Site preparation for the Two-Phase Flow Loop platform and stairs will be completed so that installation can begin.
2. 5F9C400 An ICWA will be issued for the construction on the Two-Phase Loop boiler building.
3. 5FNC301 Assessment of the two-phase flow orifice model will continue at Rensselaer Polytechnic Institute. Documentation of results and a working version of the code for implementing the model will be prepared for shipment to the Idaho National Engineering Laboratory.
4. 5FNC501 Data from Wyle transient tests will be provided to Dr. R. Gay, Rensselaer Polytechnic Institute in support of two-phase flow orifice modeling effort.
5. 5F7C401 A meeting to discuss emergency core coolant rake modeling will be held with Dr. S. Bannerjee at the Idaho National Engineering Laboratory. Review of existing model used with Wyle data and suggestions for modifications will be addressed.
6. 5F7C402 Specifications and requirements for upgrading the two-phase loop steam supply vessels to 3000 psi will be presented to Applied Mechanics Branch for subsequent requalification effort. Analysis to support requalification will be initiated.
7. 5F7C501 Status of future work on steam probe research will be determined after assessment of work which can be performed under existing funding is completed by Measurement and Control Systems personnel.
8. 5F8C401 Equipment for testing the LOFT pressure balanced drag turbine will be stored at LOFT Test Support Facility (LFSF) in preparation for future testing as priorities in schedule dictate.

6. Problems and Potential Problems

None.

WRRD MONTHLY REPORT FOR
JUNE 1980
THERMAL FUELS BEHAVIOR PROGRAM



N. H. Drysdale
Plans & Budget Representative

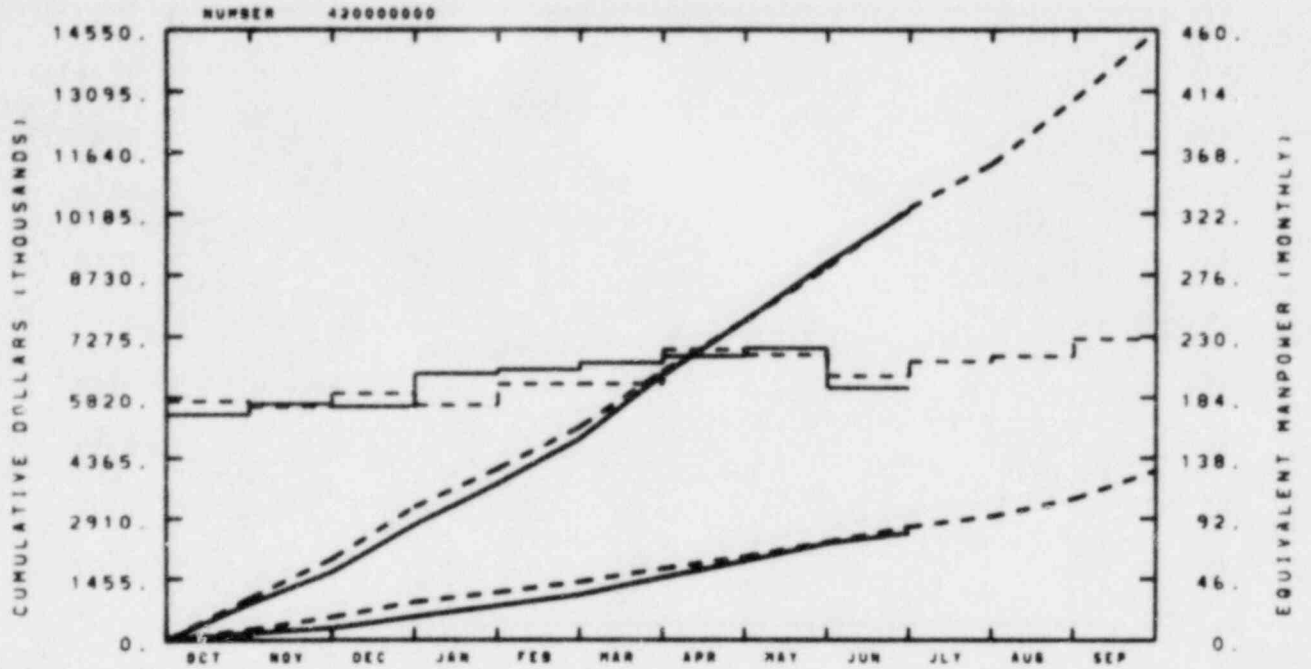


H. J. Zeile, Manager

THERMAL FUELS BEHAVIOR PROGRAM
COST SUMMARY & COMMENTS

RESPONSIBLE
MANAGER
J. ZEILE

EG&G IDAHO INC.
THERMAL FUELS BEHAVIOR PROGRAM



TOTAL PROGRAM

BUDGET	988	1930	3188	4106	5104	6438	7649	8907	10310	11361	12902	14550
ACTUAL	896	1613	2792	3749	4827	6357	7619	9007	10256			

MATERIAL

BUDGET	248	541	902	1130	1378	1698	1985	2338	2706	2961	3383	4064
ACTUAL	165	282	550	809	1072	1484	1874	2304	2557			

HANPOWER

BUDGET	181	177	187	178	194	194	220	216	200	211	215	228
ACTUAL	171	179	177	202	205	210	215	221	191			

BUDGET

ACTUAL

YTD VARIANCE: 54 (1%)

Individual cost graphs will give individual explanations.

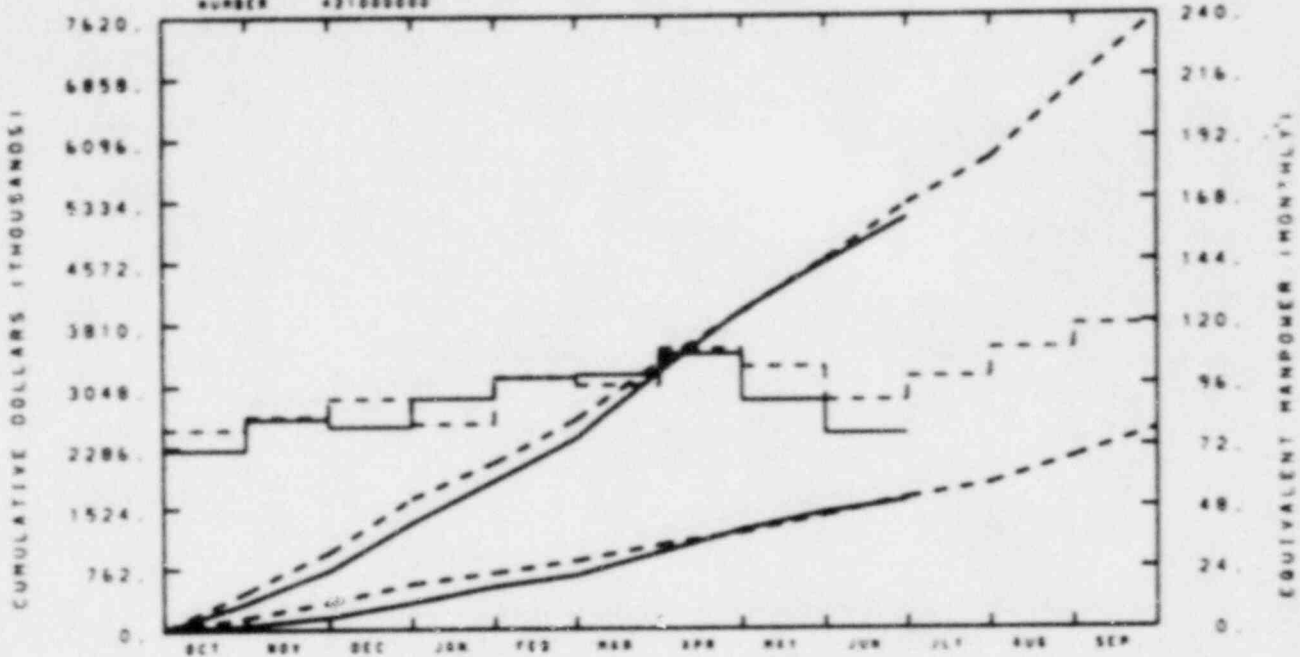
Explanations for major 189a's will be made if the variance exceeds \$25 K.
Minor 189a graphs will explain variance of over \$10 K.

Any change in the Thermal Fuels Behavior Program overall cost graph is due to changes noted on the following cost graphs: A6041, A6044, A6057, A6095, PBF/LOFT LRT Program, and Electric Heater Rod Evaluation.

RESPONSIBLE
MANAGER
PI MACDONALD

EG&G IDAHO INC.
TFBP EXPERIMENT DESIGN & ANAL

NUMBER #21000000



TOTAL PROGRAM												
BUDGET	473	967	1439	2000	2623	3319	3942	4591	5202	5839	6756	7619
ACTUAL	335	737	1035	1860	2388	3214	3913	4558	5108			

MATERIAL												
BUDGET	150	336	567	701	852	1049	1204	1420	1638	1812	2144	2485
ACTUAL	98	151	300	531	671	853	1237	1453	1608			

MANPOWER												
BUDGET	78	84	91	81	95	96	110	103	90	99	110	115
ACTUAL	71	83	80	91	99	100	108	90	77			

BUDGET

ACTUAL

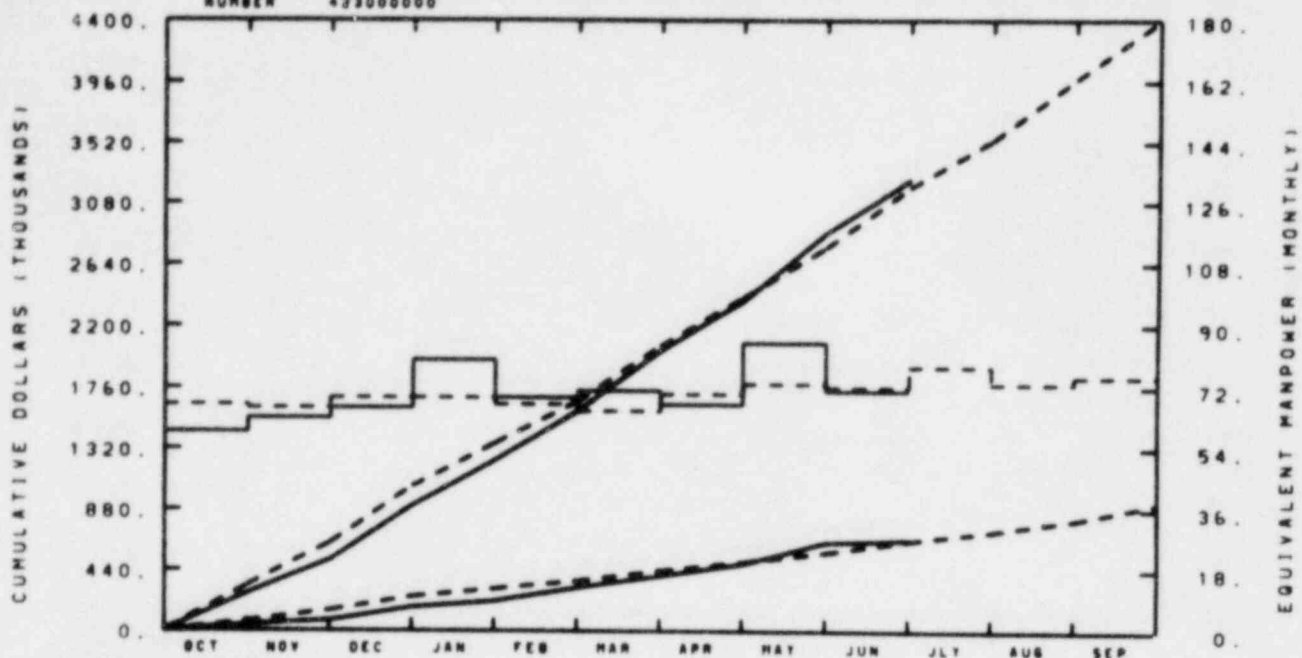
A6041

YTD VARIANCE: 174 (3%)

The underrun is caused by the LOC-7 test, which has been rescheduled to FY-1981. The increase in budget is due to the addition of the Severe Fuel Damage Test Series (CCB 80-78) plus six other CCB's (80-61, 80-65, 80-70, 80-71, 80-75, and 80-86), which added scope.

RESPONSIBLE
 WAGER
 DOUCETTE

EG&G IDAHO INC.
 PBF OPERATIONS
 NUMBER 433000000



TOTAL PROGRAM												
BUDGET	329	635	1047	1357	1661	2057	2401	2762	3156	3541	3982	4397
ACTUAL	270	513	905	1233	1591	2022	2377	2866	3252			

MATERIAL												
BUDGET	68	147	248	306	362	437	501	570	655	724	807	924
ACTUAL	44	74	171	216	313	399	487	642	662			

MANPOWER												
BUDGET	67	66	69	69	67	65	70	73	72	78	73	75
ACTUAL	59	63	66	80	69	71	67	85	71			

BUDGET
 - - - - -
 ACTUAL

A6057

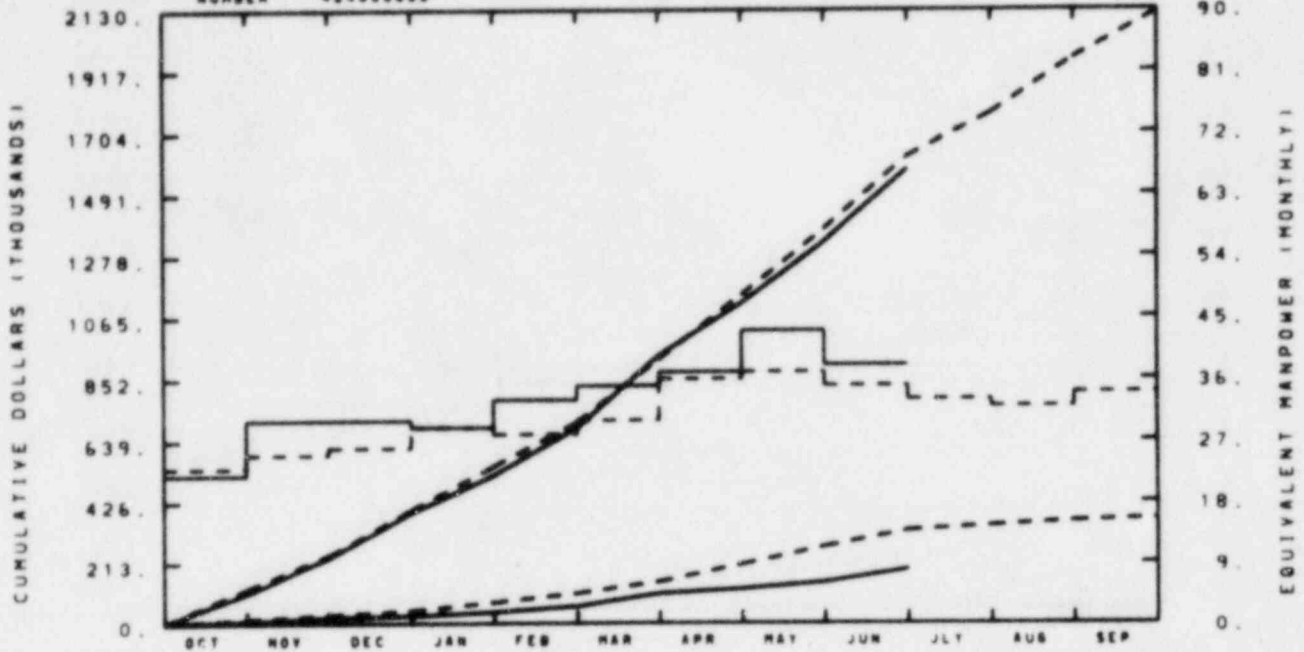
YTD VARIANCE: <56> (2%)

The overrun of \$56 K is due primarily to 1) procurement of materials, and 2) large costs associated with preparation for test PCM-7. Costs will fall in line gradually over the next two months. Materials required have already been purchased. There will be minimal maintenance and repair costs during the performance of test PCM-7. The increase in budget is due to CCB 80-47 to cover costs for special process spare heater elements for Spare Parts work package.

RESPONSIBLE
MANAGER
JD KESTER

EG&G IDAHO INC.
PBF ENGINEERING

NUMBER 434000000



TOTAL PROGRAM

BUDGET	123	241	401	551	703	920	1143	1370	1620	1769	1961	2120
ACTUAL	107	234	390	520	683	932	1114	1325	1576			

MATERIAL

BUDGET	15	29	46	74	106	147	207	269	326	343	358	368
ACTUAL	9	21	27	40	60	104	120	144	190			

MANPOWER

BUDGET	23	25	26	29	28	30	36	37	35	33	32	34
ACTUAL	22	30	30	29	33	35	37	43	38			

BUDGET

ACTUAL

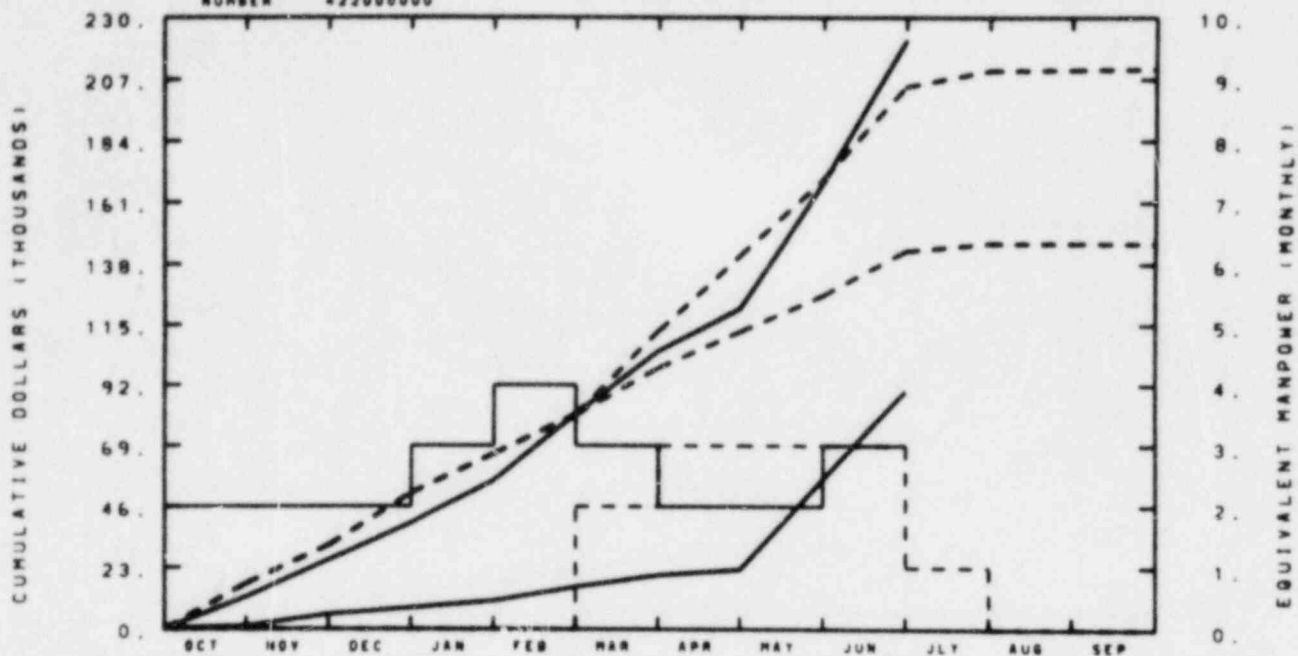
A6044

YTD VARIANCE: 44 (3%)

Both the dollar value and the percentage of the underrun variance has been reduced this month. This is an effect of the accrued costs associated with the Loop Inspection and Resin Change-out activities that were noted last month. The variance this month is consistent with the value predicted in last months report. Scope and expected engineering activities for the balance of the fiscal year are being reviewed to anticipate cost and manpower level requirements. Some adjustments will probably be required. The variance and budget increase reflects CCB 80-58 approval adjusting the Loop Performance Mod window to be compatible with the facility test schedule, which is rescheduled for FY-1981, and reflects CCB 80-69 approval increasing Loop Inspection/Resin Change-out work package scope.

RESPONSIBLE
MANAGER
KESTER

EG&G IDAHO INC.
PBF MODIFICATIONS
NUMBER 422000000



TOTAL PROGRAM

BUDGET	17	31	51	66	81	113	141	170	204	210	211	211
ACTUAL	12	26	40	56	81	105	111	168	222			

MATERIAL

BUDGET	17	31	51	66	81	99	112	126	143	146	146	146
ACTUAL	1	6	8	11	16	20	22	56	90			

HANPOWER

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

BUDGET

ACTUAL

A6095

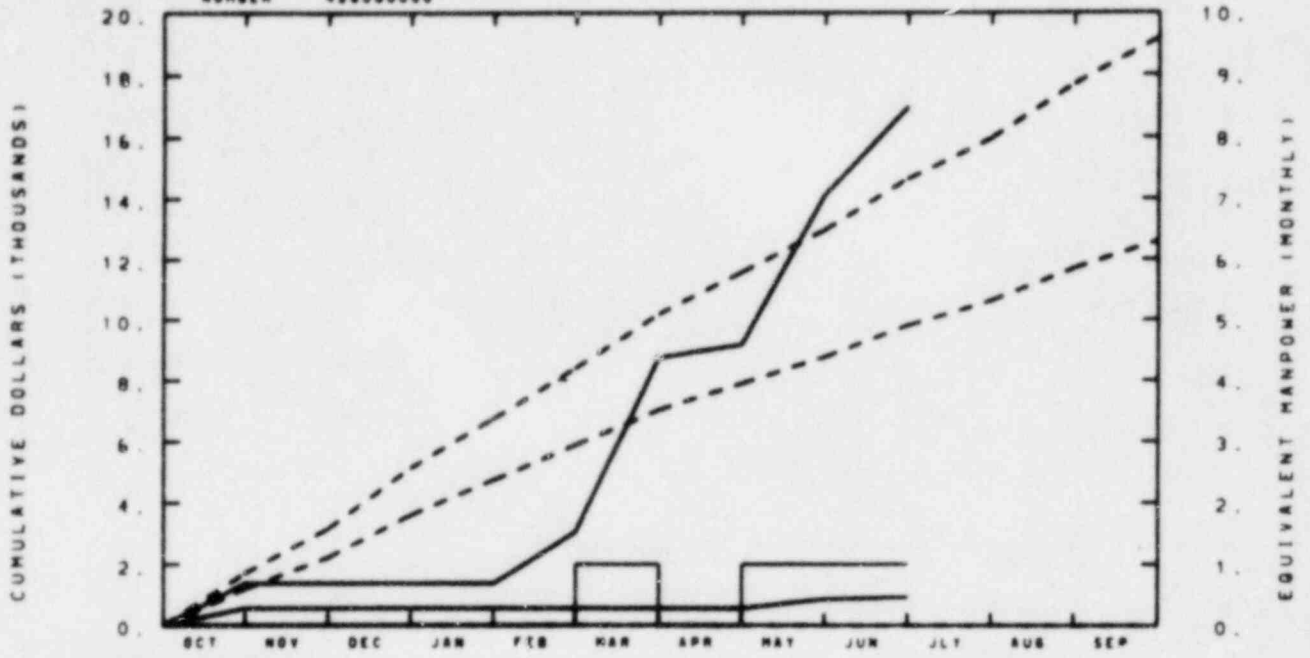
YTD VARIANCE: <18> (9%)

The graph (budget) reflects the CCB actions disapproval last month and the actual costs shown represent recent costs by EG&G personnel to resolve anticipated rework costs at the vendor. This rework was necessary to correct a tooling discrepancy and to straighten the nozzle at the root weld stage. The activity is identified in CCB 80-92 but is not yet reflected in the above budget figures. Vendor repair activities and costs are being monitored to anticipate close-out costs. Further actions are pending completion of the current nozzle rework cycle. CCB 80-80 was approved covering EG&G support personnel (Quality Assurance and Materials Engineering) for additional repair of In-Pile Tube nozzle and covering EG&G share of reheat treatment costs. CCB 80-48 covering additional General Atomic repair work on In-Pile Tube nozzle was also approved.

RESPONSIBLE
MANAGER
PC MACDONALD

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	2	9	9	14	17			

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

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

BUDGET

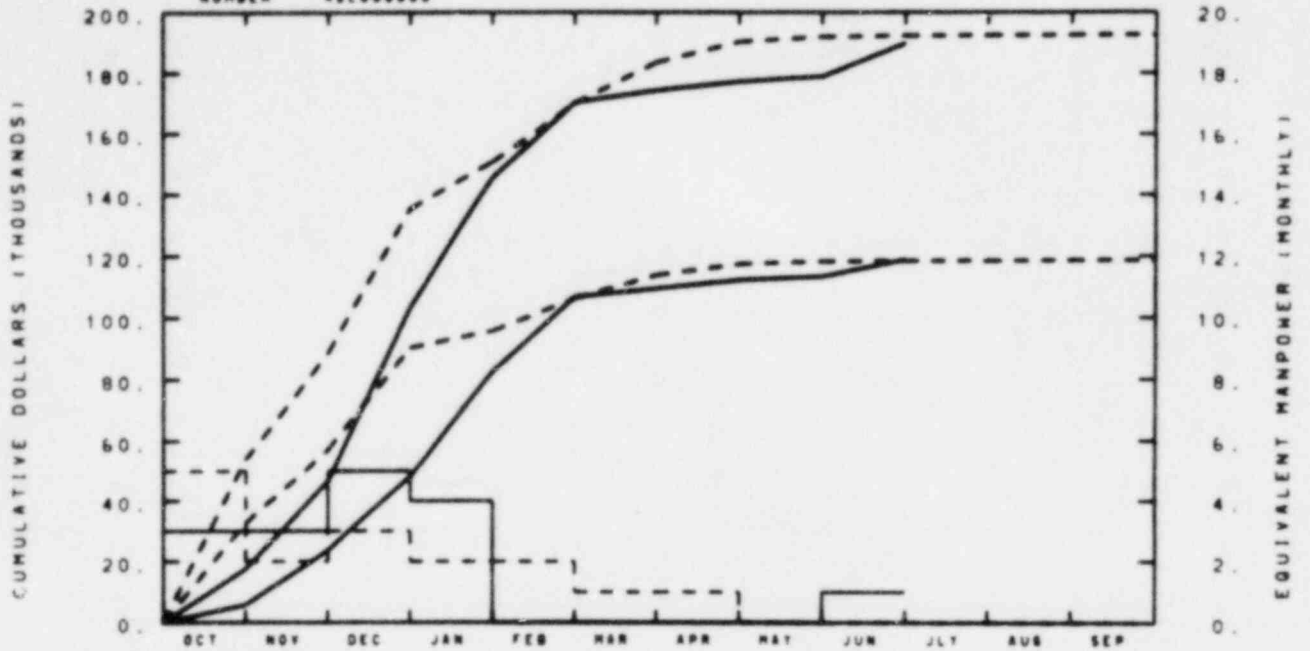
ACTUAL

A6274

YTD VARIANCE: <2> (13%)

RESPONSIBLE
 WAGER
 W. BARNER

EG&G IDAHO INC.
 PBF/LOFT LRT PROGRAM
 NUMBER 421000000



TOTAL PROGRAM												
BUDGET	54	89	135	151	170	184	190	192	192	192	193	193
ACTUAL	17	47	103	146	170	174	177	179	190			

MATERIAL												
BUDGET	33	57	90	96	106	114	117	118	118	119	119	119
ACTUAL	6	24	48	82	107	109	112	115	119			

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

BUDGET
 - - - - -
 ACTUAL

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

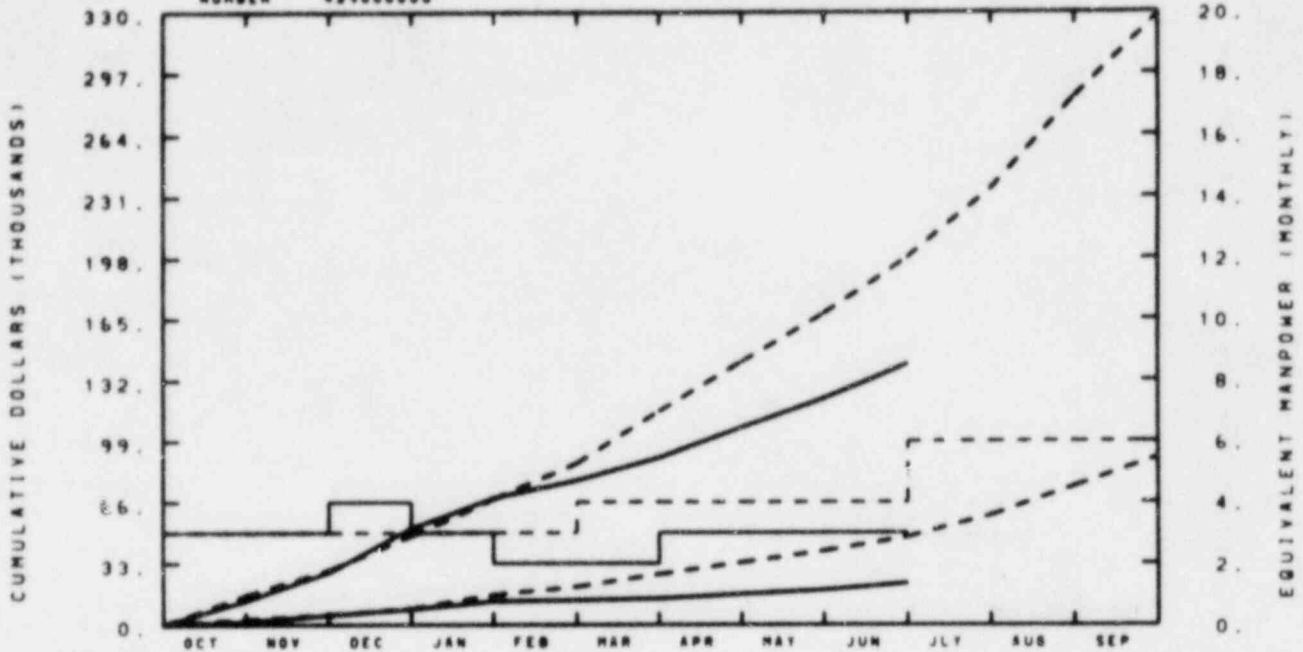
YTD VARIANCE: 2 (1%)

\$22 K (CCB 80-88) from Contingency has been added to this program.

RESPONSIBLE
MANAGER
R. A. CUSHMAN

EG&G IDAHO INC.
ELECTRIC HEATER ROD EVALUATION

NUMBER 429000000



TOTAL PROGRAM

BUDGET	14	29	48	68	87	115	142	168	198	235	284	328
ACTUAL	13	28	52	68	78	90	116	122	141			

MATERIAL

BUDGET	3	5	9	14	20	27	33	40	47	59	74	90
ACTUAL	2	5	8	13	13	14	16	19	22			

MANPOWER

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

BUDGET

ACTUAL

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

YTD VARIANCE: 57 (29%)

The \$30 K Electric Heater Rod Performance Review effort did not begin until July 1, but will be completed by September 30. Some of the analyses planned for this year will be carried over to next year, as the IFA-511 test program at the Halden Reactor is behind schedule. The BWR TRAC computer model of the IFA-511 test loop is nearing completion and calculations will be performed this fiscal year.

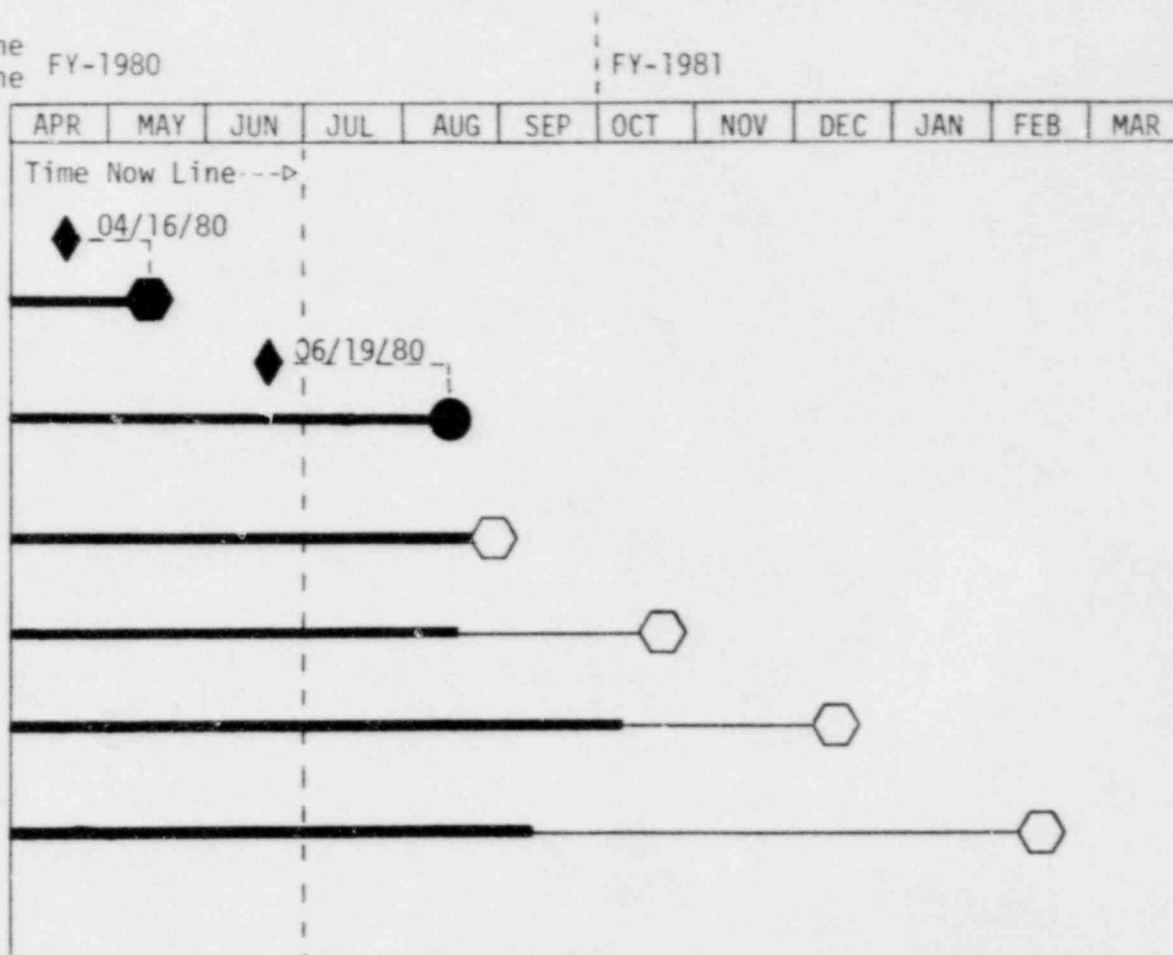
THERMAL FUELS BEHAVIOR PROGRAM
CURRENT WORKING SCHEDULE

LEGEND

THERMAL FUELS BEHAVIOR PROGRAM

June 1980

- Completed Major Milestone
- Scheduled Major Milestone
- ⊗ Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- ⊗ Slipped Secondary Milestone
- ◆ Actual Completion Date
- ◇ Scheduled Completion Date



-48-

NOTES: New Baseline currently being established with a target date of August 4, 1980.

⊂CB for Loop Resin Clean and Component Inspection was approved. PBF Facility portion complete. Analysis underway.

TC-2 will not be run.

TC-3 will be added on Baseline #3 and be run after LOC-6.

THERMAL FUELS BEHAVIOR PROGRAM
CAPITAL EQUIPMENT

EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

CARRYOVER

Date June 1980

Program Thermal Fuels Behavior

Manager H. J. Zeile

189 Number A6044 (A6091)

Account Opened O
 Money Committed A
 Account Closed ■

Charge Number	Description	Authorized Amount	YTD Costs, & Commitments + 6%	Project To Date	Variance <Over>/Under
9E2988890	DARS Data Processing Software	30,000	18,161	20,521	9,479
9E2988910	ADPE Funding	11,000	---	---	11,000
9E2988960	DARS System Input/Interfaces	50,000	11,781	32,640	17,360
9E2989010	DARS Memory Expansion	25,000	10,950	30,666	<5,666>
9E2989150	DARS Test Maint & Comb Equipment	57,000	22,851	39,733	17,267
9E2989670	ADPE Funding	30,000	---	---	30,000
9E299046	PBF Monitor and Timer System	132,000	725	725	131,275
	Closed EA's and Miscellaneous from prior years	426,022	56,193	423,392	2,630
		761,022	120,661	547,677	213,345

Carryover Budget 334,006
 YTD Costs & Commit. <120,661>
 Balance 213,345

FY 79	O	N	D	J	F	M	A	M	J	J	A	S
●▲												
●▲												
●▲												
●▲												
●▲												
●▲												
●▲												

EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

CARRYOVER

Date June 1980

Program Thermal Fuels Behavior

Manager H. J. Zeile

189 Number A6046 (A6093)

Account Opened 0
 Money Committed Δ
 Account Closed ■

-52-

Charge Number	Description	Authorized Amount	YTD Costs, & Commitments + 6%	Project To Date	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

FY 79	O	N	D	J	F	W	A	M	J	J	A	S
●	▲							■				

EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

Date June 1980

Program TFBP Combined List

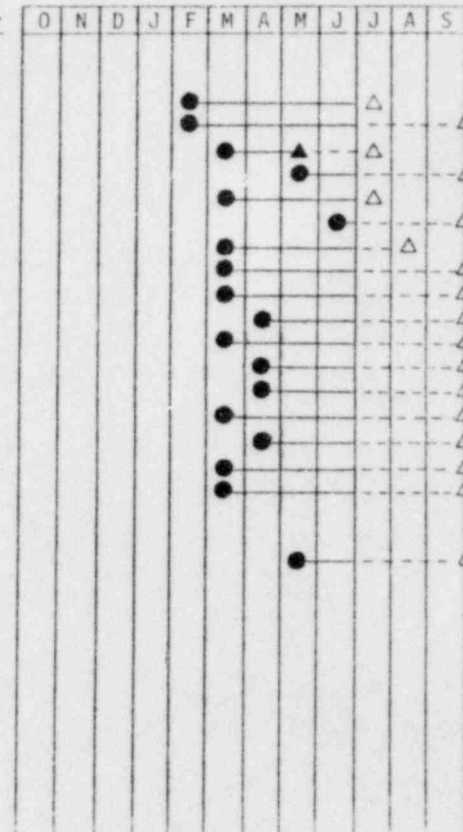
189 Number A6087(A6041)-A6091(A6044)

Manager H. J. Zeile

Account Opened 0
 Money Committed Δ
 Account Closed ■

-53-

Priority Number	Charge Number	Description	Authorized Amount	YTD Costs, & Commitments + 6%	Variance <Over>/<Under>
1		PBF P&M System Replacement Phase II	305,000	---	305,000
2	9E4991500	MTR Canal Air Clean System	45,000	42,158	2,842
3	9E4991400	PBF Exp. Output and Data Syst Inter.	40,000	13,768	26,232
4	9E4991780	0.028-inch TC Production Equipment	3,375	3,375	-0-
5	9E4991940	Data System Module Check-out & Maint.	60,000	9,755	50,245
6	9E4991790	MTR Canal Miscellaneous Tools	25,000	19,543	5,457
7	9E4991970	Signal Preconditioning Equipment	25,000	3,590	21,410
8	9E4991800	Replace Laser Welder	87,625	---	87,625
9	9E4991860	PBF Data Syst Test & Maint. Equip.	30,000	29,273	727
10	9E4991810	Upgrade Gas Collection System	22,500	---	22,500
11	9E4991900	Process Instruments and Equipment	35,000	16,772	18,228
12	9E4991820	Fuel Rod Length Meas Device	5,000	---	5,000
13	9E4991950	Flow Rate Integrator	5,000	1,127	3,873
14	9E4991910	Chamber Electronics	13,000	10,576	2,424
15	9E4991830	Leak Detection and Support Fixturing	1,000	---	1,000
16	9E4991960	FPDS Upgrade	32,100	21,933	10,167
17	9E4991840	Upgrade Photographic Capability	600	---	600
18	9E4991850	Questar Telescope	800	---	800
19		Liquid Nitrogen Generator	---	---	---
20		Data Conditioning Equipment	11,000	---	11,000
21	9E4992600	Zeolite Filter Installation	75,000	---	75,000
			822,000	171,870	650,130



FY-1980 Budget-A6081	232,000
A6091	568,000
From A6087 Carryover	800,000
	22,000
YTD Costs & Commit.	822,000
	171,870

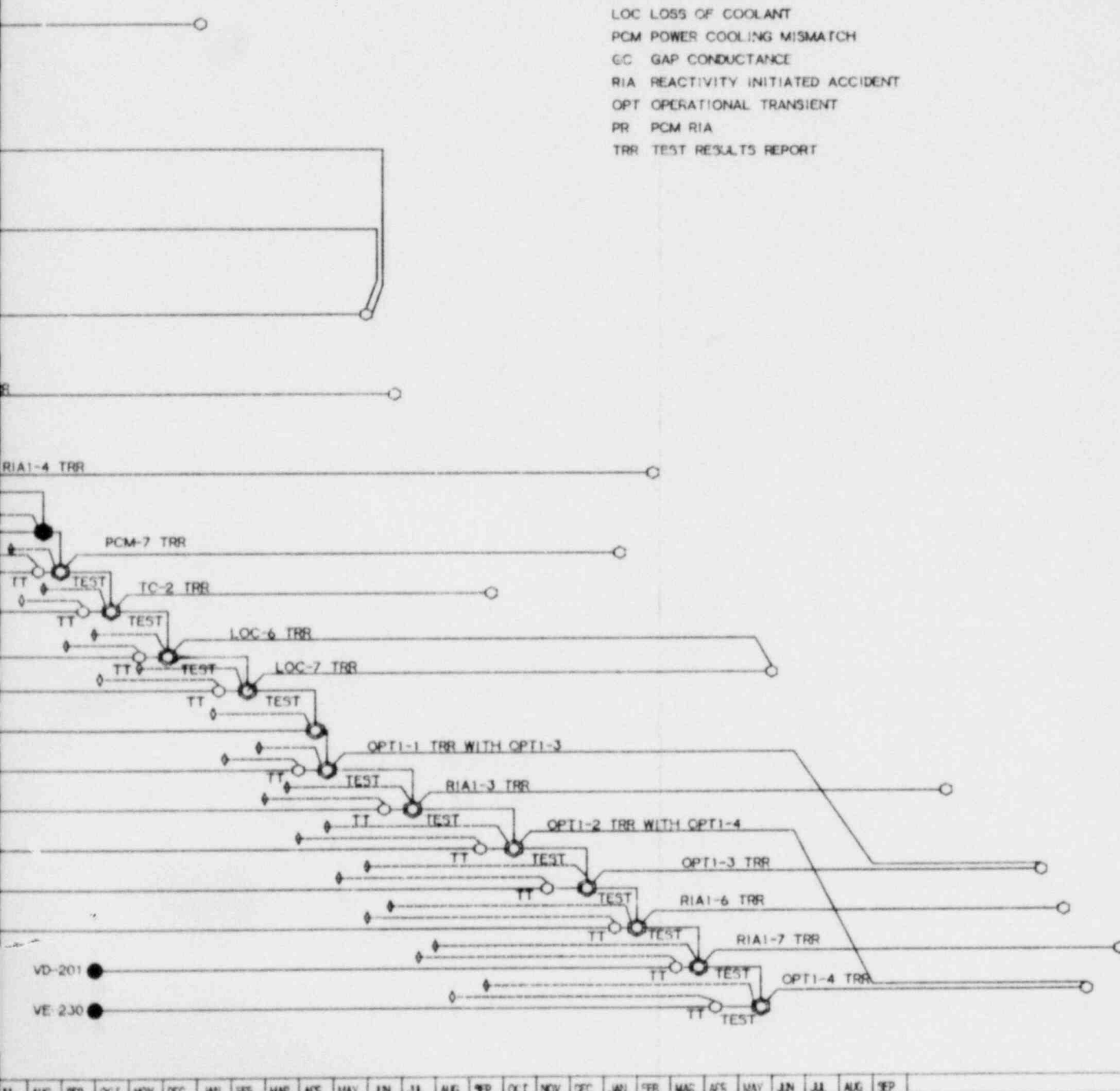
THERMAL FUELS BEHAVIOR PROGRAM
TEST SUMMARY SCHEDULE

MANAGEMENT SUMMARY SCHEDULE

FY-1981												FY-1982									BEYOND						
JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	BEYOND

LEGEND

- ◊ WORKING SCHEDULE
- MAJOR MILESTONE ACTIVITIES
- OTHER MILESTONE
- INTERMEDIATE NODES
- TT TEST TRAIN
- LOC LOSS OF COOLANT
- PCM POWER COOLING MISMATCH
- GC GAP CONDUCTANCE
- RIA REACTIVITY INITIATED ACCIDENT
- OPT OPERATIONAL TRANSIENT
- PR PCM RIA
- TRR TEST RESULTS REPORT



JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

THERMAL FUELS BEHAVIOR PROGRAM
TECHNICAL REVIEW & SUMMARY

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

Progress continues towards completion of the Power-Cooling-Mismatch (PCM) Test 7, the final test of the PCM Test Series, in the Power Burst Facility (PBF) included filling the loop coolant system, installing the test train in the in-pile tube, and completing the loop hydrostatic testing. Plant and equipment nuclear startup, performance of the flux wire calibration phase of the test, and removal of the test train for flux wire changeout were also completed. Preliminary results of the test will be discussed in the next reporting period.

Assembly of the test fuel rods for Loss-of-Coolant Accident Test LOC-6, the next test to be performed in the PBF, continued, as did the structural refurbishment for the Thermocouple Effects Test (TC-3) scheduled to follow Test LOC-6.

The remainder of the loop cleanup column resin was removed and transported to the Test Area North hot cells. All resin has been packaged for disposal and samples have been sent to the Chemical Processing Plant for analysis.

Design was initiated to provide cylinders of compressed air as an emergency backup to the air operator on the reactor vessel raw water emergency fill valve and to the canal gate seal. The use of nitrogen was eliminated to preclude the possibility of nitrogen mixing with the plant breathing air.

1. 189a A6041 - TFBP Experiment Design and Analysis
2. Scheduled Milestones for June 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
#3, Line 3	IFA-430 Fuel Relocation & Thermal Performance (Formal Report)	06-01-80T	05-23-80C
#6, Line 1	PCM-7 Test Train	06-17-80T	04-30-80C

3. Summary of Work Performed in June 1980

- a. Power-Cooling-Mismatch Test Series

Data qualification for Test PR-1 continued, an outline of the report to document the test results was prepared, and draft report preparation and data analysis were initiated. Pretest preparations for Test PCM-7 were completed and test conduct initiated. Compilation of the results from the PCM-8-1RF, 8-1RS, and Critical Heat Flux Scoping Tests and draft report preparation continued.

- b. Operational Transient Test Series

The OPTRAN 1-1 Experiment Operating Specifications and the OPTRAN 1-1, 1-3 Experiment Predictions document drafts were completed. Draft preparation for the OPTRAN 1-2 Experiment Predictions document and Experiment Operating Specifications was initiated. The design of OPTRAN 1-2 continued. FRAP-T plots were completed for the OPTRAN 1-1 Experiment Predictions document.

- c. Loss-of-Coolant Accident Test Series

The Test TC-3 Experiment Operating Specifications was completed for final approval, the Test LOC-6 Experiment Predictions document was drafted, and efforts on the Tests LOC-3 and LOC-5 Fuel Rod Behavior and Fuel Rod Materials Behavior Reports continued. Assembly of the LOC-6 test train and fabrication of the Test LOC-7 machined parts and instruments continued. Processing of flux-wire data for Tests LOC-3 and LOC-5 was completed.

- d. Reactivity Initiated Accident Test Series

Management review comments were incorporated and a draft of the Test RIA 1-1 Fuel Behavior Report was transmitted for final management review. A draft of the Test RIA 1-2 Fuel Behavior Report was completed for management review. The

Test RIA 1-4 postirradiation examination continued and posttest analysis of Test RIA 1-4 was initiated. Reactor physics and thermal-hydraulic calculations for the Capsule Driver Core continued. The design of the RIA 1-6 test train assembly continued.

e. Reactivity Initiated Accident - Scoping Test Topical Report

Results from the examination of the fuel particles was incorporated into the analysis.

f. Power-Cooling-Mismatch Topical Report

The first draft of the topical report discussing the thermal-hydraulic behavior observed during the power-cooling-mismatch tests was completed.

g. Halden Program

Analysis of the Fission Gas Release Test-1 continued, including recently acquired data on ^{131}I release. The draft of the Xe/He pressure effects report was submitted for management review. A paper on the release of fission gases from UO_2 fuel during nuclear operation was presented at the Enlarged Halden Programme Group Meeting. The Instrumented Fuel Assembly 429 fuel rods were shipped to Harwell.

4. Scheduled Milestones for July 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
#5, Line 3	PCM-7 Test Quick Look Report	07-22-80T	07-22-80E
#5, Line 6	LOFT Lead Rod Test Results Report/Fuel Rod Materials Behavior Report	07-01-80T	07-14-80E

5. Summary of Work to be Performed in July 1980

a. Power-Cooling-Mismatch Test Series

Data qualification for Test PR-1 will be completed and draft preparation for the PR-1 Fuel Rod Behavior Report will continue. Test PCM-7 will be conducted and the Quick Look Report issued. The first draft of the PCM-8-1RS, 8-1RF, and Critical Heat Flux Scoping Test Fuel Rod Behavior Report will be completed. Preparations will be made for receipt of the PCM-7 test train at the Hot Cells.

b. Operational Transient Test Series

The OPTRAN 1-1, 1-3 Experiment Predictions document will be issued, as well as the OPTRAN 1-1 Experiment Operating Specifications. Draft preparation for the OPTRAN 1-2 Experiment Predictions and Experiment Operating Specifications will continue. The OPTRAN 1-2 test train assembly will be completed.

c. Loss-of-Coolant Accident Test Series

The Test LOC-6 Experiment Operating Specifications and Experiment Predictions documents will be issued, Tests LOC-3 and LOC-5 Fuel Rod Behavior and Fuel Rod Materials Behavior Reports will continue, and the LOC-6 test train assembly will be completed. The Test TC-3 test train assembly will continue.

d. Reactivity Initiated Accident Test Series

Since the remaining RIA tests, RIA 1-3, RIA 1-6, and RIA 1-7 have been postponed indefinitely, only design fabrication of Test RIA 1-3 will be completed. All other work will be suspended except for the examination, analysis, and reporting of previous RIA tests, RIA 1-1, RIA 1-2, and RIA 1-4. The management review comments will be incorporated into the Test RIA 1-1 and RIA 1-2 Fuel Behavior Reports, the Test RIA 1-4 postirradiation examination will continue and the RIA 1-6 test train assembly design will be completed. Reactor physics and thermal-hydraulic calculations for the Capsule Driver Core will continue.

e. Reactivity Initiated Accident - Scoping Test Topical Report

Scanning electron microscope examinations of the debris will be completed and writing of the draft will be initiated.

f. Power-Cooling-Mismatch Topical Report

The draft will be completed and submitted to the Documentation Office for review.

g. Halden Program

The first draft of a report on Fission Gas Release Test-1 in Instrumented Fuel Assembly 430 will be completed as will the final draft of the report on Xe and fill gas pressure effects on fuel temperature. The postirradiation examination of four IFA-429 rods will be initiated.

6. Problems and Potential Problems

None.

1. 189a A6044 - PBF Design Engineering

2. Scheduled Milestones for June 1980

None.

3. Summary of Work Performed in June 1980

a. Red Mike Evacuation System Expansion

The reactor building all-area evacuation modification was completed. Design was completed for the Red Mike speaker installation in the new PBF support building.

b. Ground Fault Indication Modification

Design was completed and parts were ordered to add detection and alarm for a ground fault on the three-phase power distribution system.

c. Resin Cleanout

The remainder of the loop cleanup column resin was removed and transported to the hot cell. All resin has been packaged for disposal and samples have been sent to the Chemical Processing Plant for chemical analysis.

d. Inspection of Loop Components and Loop Strainer Replacement

Inspection of loop components for U^{235} and component vacuuming were completed. The loop strainer was found to have collapsed due to external pressure. The strainer was removed and design of a replacement strainer was initiated.

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

Installation of the upgraded LOCA utilities cooling hoses was completed to all connections except to the gamma densitometers which are not installed for the present plant configuration.

f. Cooling Tower Fire Alarm Modification

Design was completed for modifications to eliminate false fire alarms at the cooling tower upon loss of commercial power.

g. Control Room Emergency Lighting

Installation of control room emergency lighting was 90% completed.

h. Plant and Instrument Air Compressor

Proposals were received and evaluated and a new compressor has been ordered.

i. Addition of Emergency Backup Gas Supply for Reactor Vessel Fill Valve and Canal Gate Seal

Design was initiated to provide cylinders of compressed air as as emergency backup to the air operator on the reactor vessel raw water emergency fill valve and to the canal gate seal. The use of nitrogen was eliminated to preclude the possibility of nitrogen mixing with the plant breathing air.

j. Primary Coolant Relief Valve

A study was initiated to review the primary coolant relief valve as a potential flooding problem for the reactor basement in the event the valve were to open and remain open.

4. Scheduled Milestones for July 1980

None.

5. Summary of Work to be Performed in July 1980

a. Red Mike Evacuation System Expansion

Red Mike speakers will be installed in the new PBF support building prior to occupancy.

b. Resin Cleanout

Chemical analysis of resin samples will be completed and resin drums should be shipped to Waste Management for disposal.

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

Installation of the two remaining air hoses will be completed when the instrumented spools are installed for Test LOC-6.

d. Loop Strainer Replacement

Design and fabrication of a replacement loop strainer will be completed.

e. Addition of Emergency Backup Gas Supply for Reactor Vessel Fill Valve and Canal Gate Seal

Design and installation will be completed to provide a compressed air cylinder emergency backup to the air operator on the reactor vessel raw water fill valve and to the canal gate seal.

f. Ground Fault Indication Modification

An installation package will be prepared and installation will be contingent upon receipt of parts.

g. Cooling Tower Fire Alarm Modification

Installation of new pressure and flow switches with the associated wiring will begin.

h. Control Room Emergency Lighting

Installation and checkout of control room emergency lighting will be completed.

i. Drain Collection Trough

The new drain collection trough installation will be completed.

j. Primary Coolant Relief Valve

Design will be completed to eliminate the potential flooding problem of the primary coolant relief valve in the event the valve should actuate and remain open.

k. Utility Cooling Water System Upgrade

Installation of a larger pump and associated equipment will be completed to provide increased capacity for the Utility Cooling Water System.

6. Problems and Potential Problems

None.

1. 189a A6057 - PBF Operations
2. Scheduled Milestones for June 1980
None.
3. Summary of Work Performed in June 1980
 - a. PBF Plant Operations

The work performed during this reporting period was primarily associated with plant preparations and conduct of the first phase of the Power-Cooling-Mismatch (PCM) Test 7.

Inspection of the loop strainer was completed in support of the secondary criticality analysis. During the inspection, the strainer screen was observed to have collapsed and lead was noted in the drain line. The strainer screen was subsequently removed and the drain line acid cleaned. The strainer housing and drain line were then reinstalled to allow performance of Test PCM-7. Shipment of the remaining three loads of resin to Test Area North (TAN) for packaging and disposal was completed.

Replacement of the instrumentation on the initial condition spool piece and calibration of the plant and process instrumentation were completed in preparation for Test PCM-7.

Filling of the loop coolant system, installation of the PCM-7 test train into the in-pile tube, and loop hydrostatic testing were completed. Plant and equipment nuclear startup and performance of the flux wire calibration phase of Test PCM-7 were completed. The plant and equipment were shutdown and the test train removed from the in-pile tube for the flux wire changeout.

b. PBF Operations Support

Preventive maintenance examinations for July were planned and are scheduled to be performed after Test PCM-7. Diesel engine modification work completed during this reporting period includes the installation of the engine drain pit and the raising of the exhaust stack. Design work has started on the engine lube oil fill, drain, and prime piping modifications. Design effort on other facility improvements include the completion of the canal tie rail and hot waste sample line reroute.

Corrective maintenance efforts for this reporting period include plant cleanup, support for the loop strainer inspection, and support for the starting of Test PCM-7.

Data qualification for LOC-5A is complete except for wide-band data which is scheduled for data reduction immediately after Test PCM-7 completion. Special input corrections for RIA 1-4 and PR-1 are ready for processing as soon as the schedule permits.

The Experiment Operating Procedure (EOP-060) for the performance of Test PCM-7 was approved. Seven revisions to the PBF Standard Practice Manual were completed. Numerous document revision requests were processed to support Revision 31 to the PBF Technical Specifications Manual.

4. Scheduled Milestones for July 1980

None.

5. Summary of Work to be Performed in July 1980

Perform Test PCM-7.

6. Problems and Potential Problems

During inspection of the loop strainer, the strainer screen was observed to have collapsed. Reinstallation of the strainer screen was completed to allow performance of Test PCM-7. Resolution of the defective loop strainer will be required for upcoming tests.

1. 189a A6095 - Major Modifications

2. Scheduled Milestones for June 1980

None.

3. Summary of Work Performed in June 1980

The buildup on the nozzle and in-pile tube, the machining of weld preparations, and the root passes on all welds were completed.

4. Scheduled Milestones for July 1980

None.

5. Summary of Work to be Performed in July 1980

The welding of the nozzles should be completed and the in-pile tube made ready for induction annealing.

6. Problems and Potential Problems

None.

1. 189a A6274 - PBF Cooperative Research - Austria

2. Scheduled Milestones for June 1980

None.

3. Summary of Work Performed in June 1980

The acceptance tests and calibrations have been completed. Some additional tests were made at elevated temperature for comparison in order to resolve an existing Quality Discrepancy Report (QDR) against the internal linear variable differential transformer (LVDT).

4. Scheduled Milestones for July 1980

None.

5. Summary of Work to be Performed in July 1980

The acceptance test and calibration data package will be assembled and the QDR will be resolved. The instrument will then be shipped to the Materials Test Reactor (MTR).

6. Problems and Potential Problems

None.

1. 189a A6275 - Electrical Heater Rod Evaluation Studies

2. Scheduled Milestones for June 1980

None.

3. Summary of Work Performed in June 1980

a. Electrical Heater Rod Performance Review

Documentation of the Instrumented Fuel Assembly 511 (IFA-511) data analysis was begun.

Comparison of REBEKA vs. FLECHT test response continued.

Initial RELAP5 models are being set up for analyzing the Blowdown Facility Quench test data. RELAP5 calculations will provide the basis for assessing the latest heat transfer models and for evaluation if major differences between electric and nuclear rod response is predicted for rapid cooling transients.

An abstract and summary for a paper entitled, "An Assessment of LOFT Fuel Rod Quench Behavior Based on Electric-Rod Quench Tests," was submitted for acceptance at the Gatlenburg Fuel Rod Simulator Symposium to be held in October.

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

Modeling of the IFA-511-II Test Series with one-dimensional TRAC has begun. Resources have been identified to model the IFA-511-II test system with RELAP5 as well. Resources have also been identified to perform calculations of circumferential cladding temperature gradients in the five-rod test assembly proposed by the British for testing rod ballooning under reflood conditions in the IFA-511 test rig.

c. COSIMA Testing

No analytical work was carried out in support of COSIMA during the past month.

d. Swiss Reflood Tests

Procedures have been identified for fabrication of the Swiss NEPTUN LOFT thermocouple simulators. A Site Work Release has been issued for fabrication.

4. Scheduled Milestones for July 1980

None.

5. Summary of Work to be Performed in July 1980

a. Electrical Heater Rod Performance Review

Analysis efforts will continue toward evaluating electric rod performance review.

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

Modeling of the IFA-511-II test rig with one-dimensional TRAC will be completed.

c. COSIMA Testing

Depending on the results of the latest tests at Kernforschungszentrum Karlsruhe (KfK) using the previously analyzed valve program, additional RELAP4 calculations may be carried out.

d. Swiss Reflood Tests

Fabrication of NEPTUN thermocouples will proceed.

6. Problems and Potential Problems

None.

THERMAL FUELS BEHAVIOR PROGRAM
CHANGE CONTROL BOARD ACTIONS

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)

<u>CCB Number</u>	<u>Description</u>	<u>FY-1980</u>	<u>FY-1981</u>	<u>FY-1982/Beyond</u>	<u>Total Approved Action</u>
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

< > Return to Management Reserve

CHANGE CONTROL BOARD STATUS

<u>Cost Account</u>	<u>CCB #</u>	<u>Description</u>	<u>Status</u>	<u>Date</u>
4233B11	80-47	Spare Parts	Approved	06/30/80
4242B14	80-58	Loop Performance Mod	Approved	06/30/80
4216D52	80-59	LOC-3 Fuel and Instrument Evaluation	Approved	06/30/80
4213F63	80-60	PCM-5 PIER	Approved	06/30/80
421AB52	80-61	PR-1 PIE	Approved	06/30/80
4218C64	80-62	RIA 1-1 Fuel Behavior Report	Approved	06/30/80
4215XXX	80-63	GAPCON PIE	Approved	06/30/80
4212C53	80-65	Out-of-pile Leakage	Approved	06/30/80
+242B62	80-69	Loop Resin Clean/Inspection	Approved	06/30/80
4219D24	80-70	OPTRAN 1-3 T.T. Long Lead Procurement	Approved	06/30/80
4212CA41	80-71	SAD Added Scope Test Train Support	Approved	06/30/80
4213A41	80-73	PCM Fuel Behavior Report	Approved	06/30/80
4216F25	80-75	LOC-6/7 Test Train	Approved	06/30/80
4216G25	80-75	LOC-6/7 Test Train	Approved	06/30/80
426XXXX	80-78	Severe Fuel Damage	Approved	06/30/80
42B1C45	80-79	TC-2 Data Qualification	Disapproved	06/30/80
4221C11	80-80	In Pile Tube	Approved	06/30/80
4213A11	80-81	PR-1 Update	Approved	06/30/80
4216F68	80-86	Isothermal Check Valve	Approved	06/30/80
4216F69	80-86	Isothermal Check Valve	Approved	06/30/80
4212A11				
421AB44				
4216E44	80-89	Data Process Management & Methods	Approved	06/30/80
4216D44				
4212A41				
4242B91	80-91	PBF Design	Approved	06/30/80
4243B91	80-91	PBF Design	Approved	06/30/80
4221C11	80-92	In-Pile Tube	Approved	06/30/80

CHANGE CONTROL BOARD STATUS (Continued)

<u>Cost Account</u>	<u>CCB #</u>	<u>Description</u>	<u>Status</u>	<u>Date</u>
421BB22	80-72	Halden Representative	Pending	06/30/80
4211B11	80-98	Thermal Fuels Administration	Pending	06/30/80
4211A11	80-99	Integrated Management System	Pending	06/30/80
4216F26	80-101	LOC-6 T.T. Added Scope	Pending	06/30/80
4218E26	80-102	RIA 1-3 T.T.	Pending	06/30/80
4212D11	80-103	Code Configuration Control	Pending	06/30/80
4218CXX	80-104	RIA 1-1 TRR	Pending	06/30/80
4212H11	80-108	Hot Cell Rigor Improvement	Pending	06/30/80
4218E16	80-109	RIA 1-3 EPR	Pending	06/30/80
4218F62	80-110	RIA 1-4 PIE	Pending	06/30/80
4232D31	80-111	Health Physics and Safety	Pending	06/30/80
42M1112	80-112	Discretionary Reserve	Pending	06/30/80

FY-1980 BUDGET STATUS REPORT

<u>189a Number</u>	<u>New 189a Total</u>
A6041	7,602
A6044	2,081
A6057	4,398
A6095	246
A6274	19
A6281	29
	<hr/>
TOTAL	14,375
	<hr/> <hr/>
Management Reserve	110
Discretionary Reserve	4
	<hr/>
	14,489

WRRD MONTHLY REPORT FOR

JUNE 1980

2D/3D PROGRAM

R. A. DaBell

R. A. DaBell
Plans & Budgets Representative

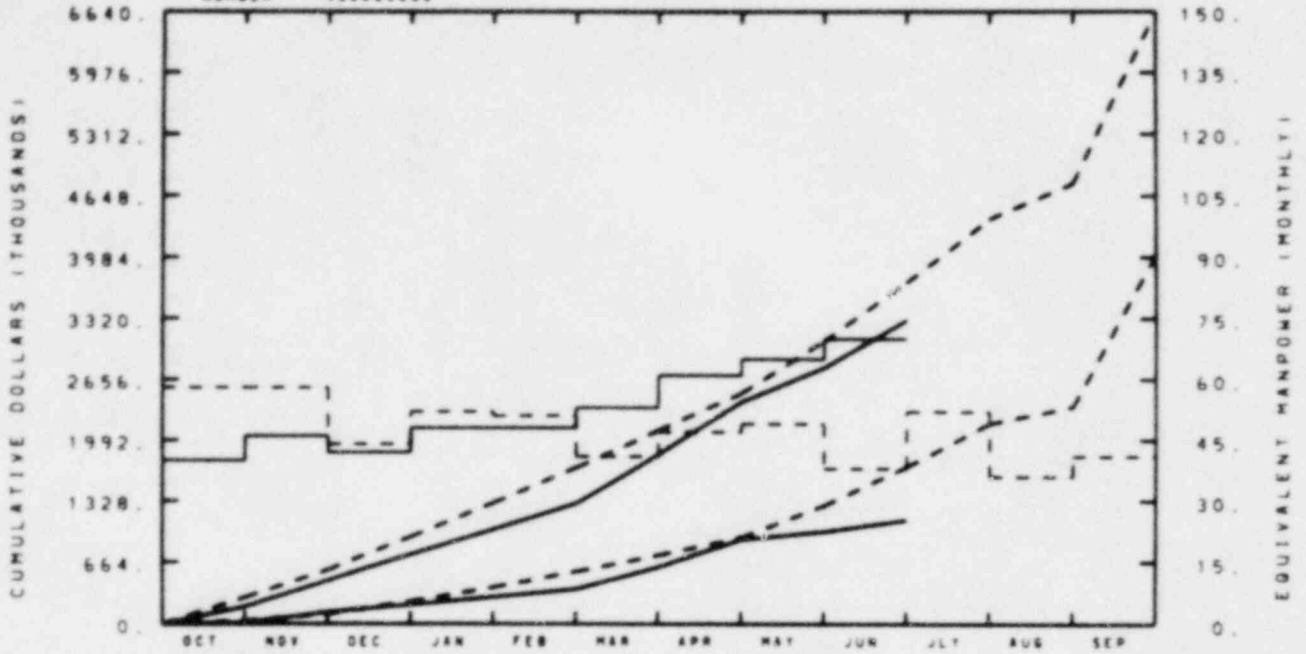
RE Rice / BW

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

2D/3D
COST SUMMARY & COMMENTS

RESPONSIBLE
MANAGER
RICE

EG&G IDAHO INC.
3-D PROGRAM
NUMBER 45000000



TOTAL PROGRAM												
BUDGET	284	579	937	1306	1693	2097	2502	3075	3712	4356	4781	6631
ACTUAL	185	467	749	1016	1301	1836	2478	2784	3300			

MATERIAL												
BUDGET	32	108	242	392	563	738	931	1277	1702	2175	2356	4011
ACTUAL	13	128	208	289	375	611	910	994	1120			

MANPOWER												
BUDGET	58	58	44	52	51	41	47	49	38	52	36	41
ACTUAL	40	46	42	48	48	53	61	65	70			

BUDGET

ACTUAL

YTD VARIANCE: 412 (11%)

Individual cost graphs will give individual explanations.

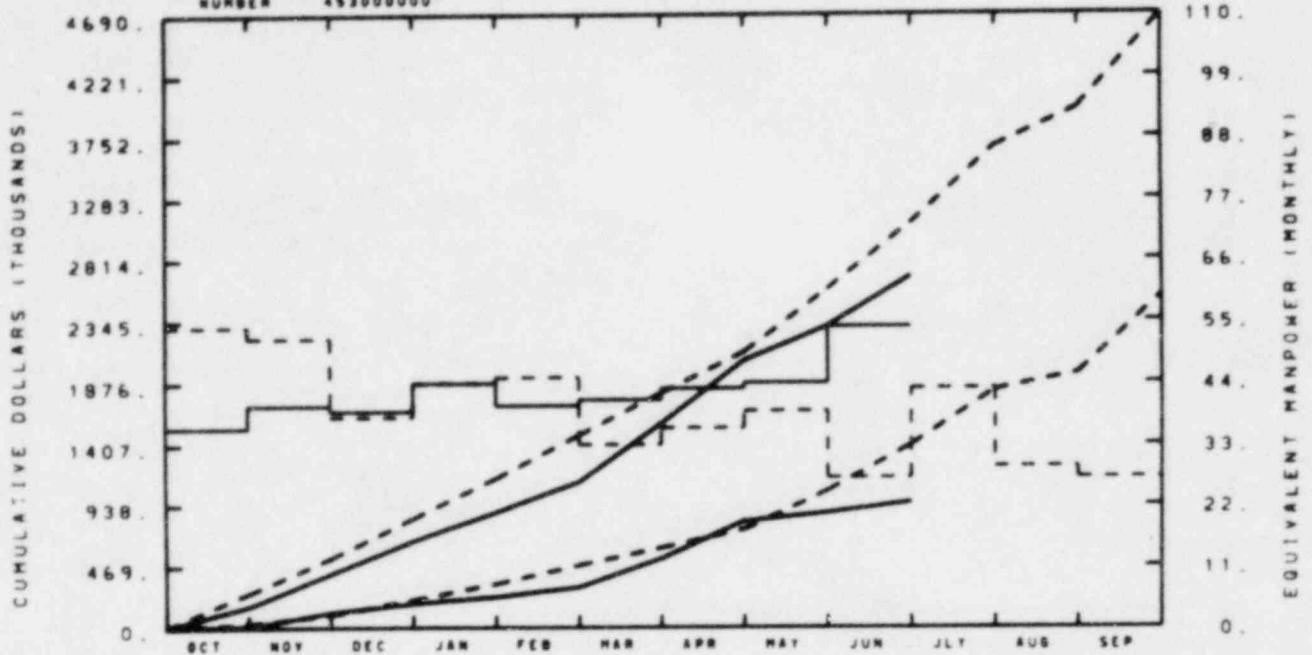
Explanations for major 189a's will be made if the variance exceeds \$25 K.
Minor 189a graphs will explain variance of over \$10 K.

Any change on the 2D/3D Program overall cost graph is due to changes noted on the cost graph for A6100.

RESPONSIBLE
 WABER
 RICE

EG&G IDA40 INC.
 3-D EXPERIMENT PROJECT - A6100

NUMBER 453000000



TOTAL PROGRAM

BUDGET	261	532	837	1147	1481	1799	2108	2587	3092	3681	3969	4688
ACTUAL	164	415	565	803	1120	1568	2014	2306	2685			

MATERIAL

BUDGET	31	100	215	336	477	609	750	1049	1402	1820	1945	2536
ACTUAL	11	118	186	236	310	526	813	877	960			

MANPOWER

BUDGET	54	52	38	44	48	33	36	39	27	43	29	27
ACTUAL	36	40	39	44	40	41	43	44	54			

BUDGET

ACTUAL

A6100

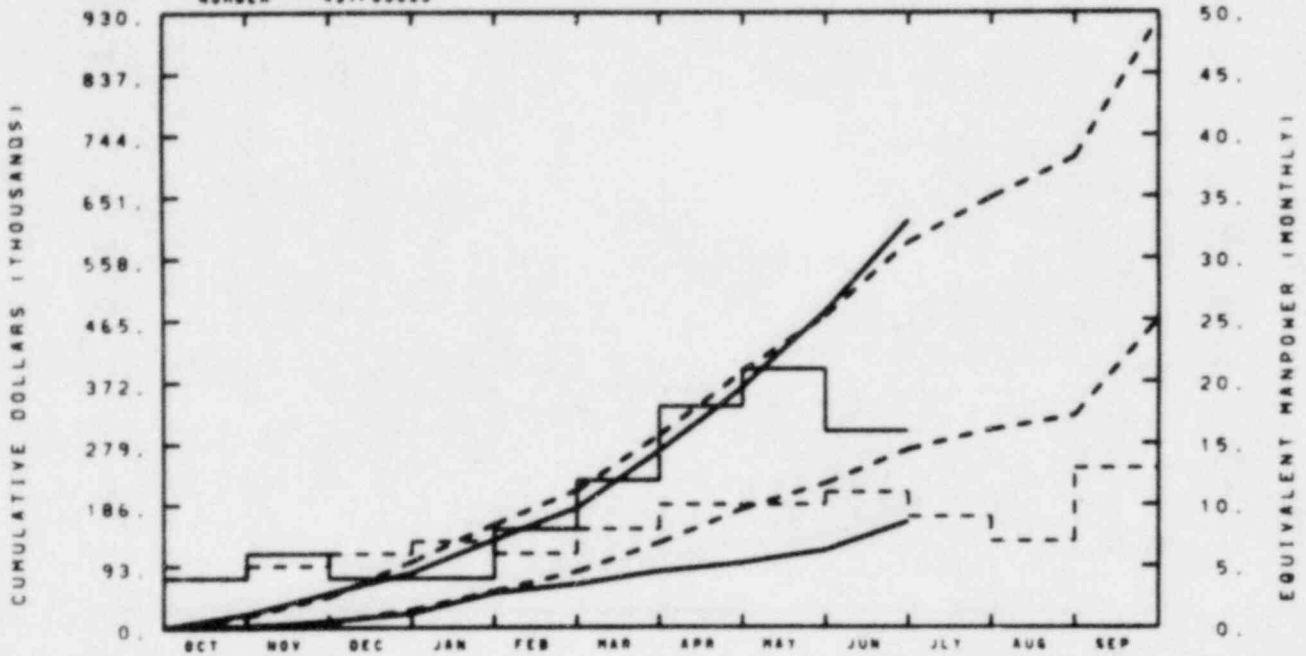
YTD VARIANCE: 407 (13%)

The principal reasons for the 407K underrun are the rescheduled delivery dates for instruments going to SCTF at JAERI (76K), PKL in FRG (42K) and the one year project delay in all UPTF instrumentation (290K).

The underrun at the end of the fiscal year is presently estimated at approximately 250K, which will be due to the UPTF schedule reevaluation.

RESPONSIBLE
MANAGER
N E RICE

EG&G IDAHO INC.
FLUID DISTRIBUTION GRIDS - A6282
NUMBER 451F00000



TOTAL PROGRAM

BUDGET	18	47	99	156	208	291	386	471	581	649	710	921
ACTUAL	20	52	83	133	181	268	313	478	615			

MATERIAL

BUDGET	1	8	27	54	84	128	179	218	270	299	321	466
ACTUAL	2	10	22	52	55	84	97	116	160			

HANPOWER

BUDGET	4	5	6	7	6	8	10	10	11	9	7	13
ACTUAL	4	6	4	4	8	12	18	21	16			

BUDGET

ACTUAL

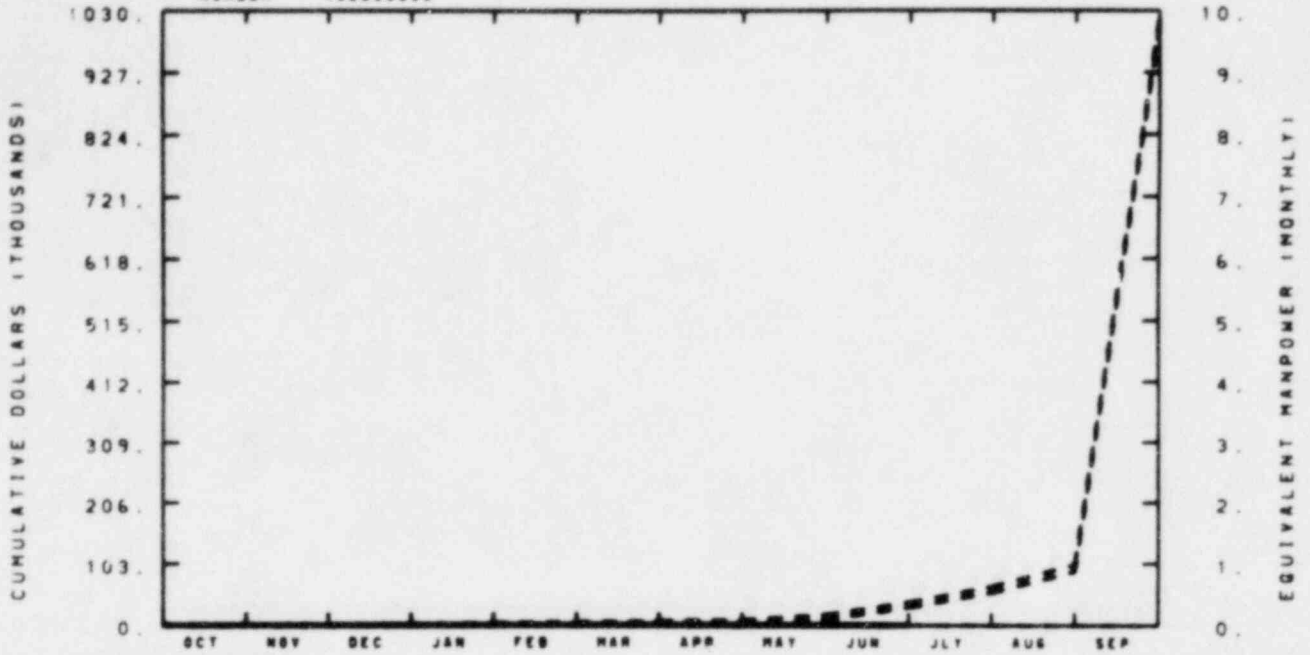
A6282

YTD VARIANCE: <34> (6%)

The results of the Prototype Engineering and Vendor Qualification task has shown it preferable to fabricate FDG's inhouse. This reevaluation will impact the budget for other tasks and a new budget spread will be submitted for July business.

RESPONSIBLE
MANAGER
E RICE

EG&G IDAHO INC.
UPTF DATA SYSTEM - A6289
NUMBER 452000000



TOTAL PROGRAM												
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP
BUDGET	0	0	0	3	5	6	8	17	39	65	102	1022
ACTUAL	0	0	0	0	0	0	0	0	0			

MATERIAL												
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP
BUDGET	0	0	0	2	2	2	2	10	30	55	90	1009
ACTUAL	0	0	0	0	0	0	0	0	0			

MANPOWER												
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP
BUDGET	0	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	0	0	0	0			

BUDGET
- - - - -
ACTUAL

A6289

YTD VARIANCE: 39 (100%)

A program delay by FRG for the development of the UPTF Data Acquisition System has caused the entire schedule for this activity to be moved into FY-1981. A new schedule from FRG will be forthcoming. Until that time, the entire amount of funding from this 189a will carryover into FY-1981 (\$1,021.5 K).

2D/3D
CURRENT WORKING SCHEDULE

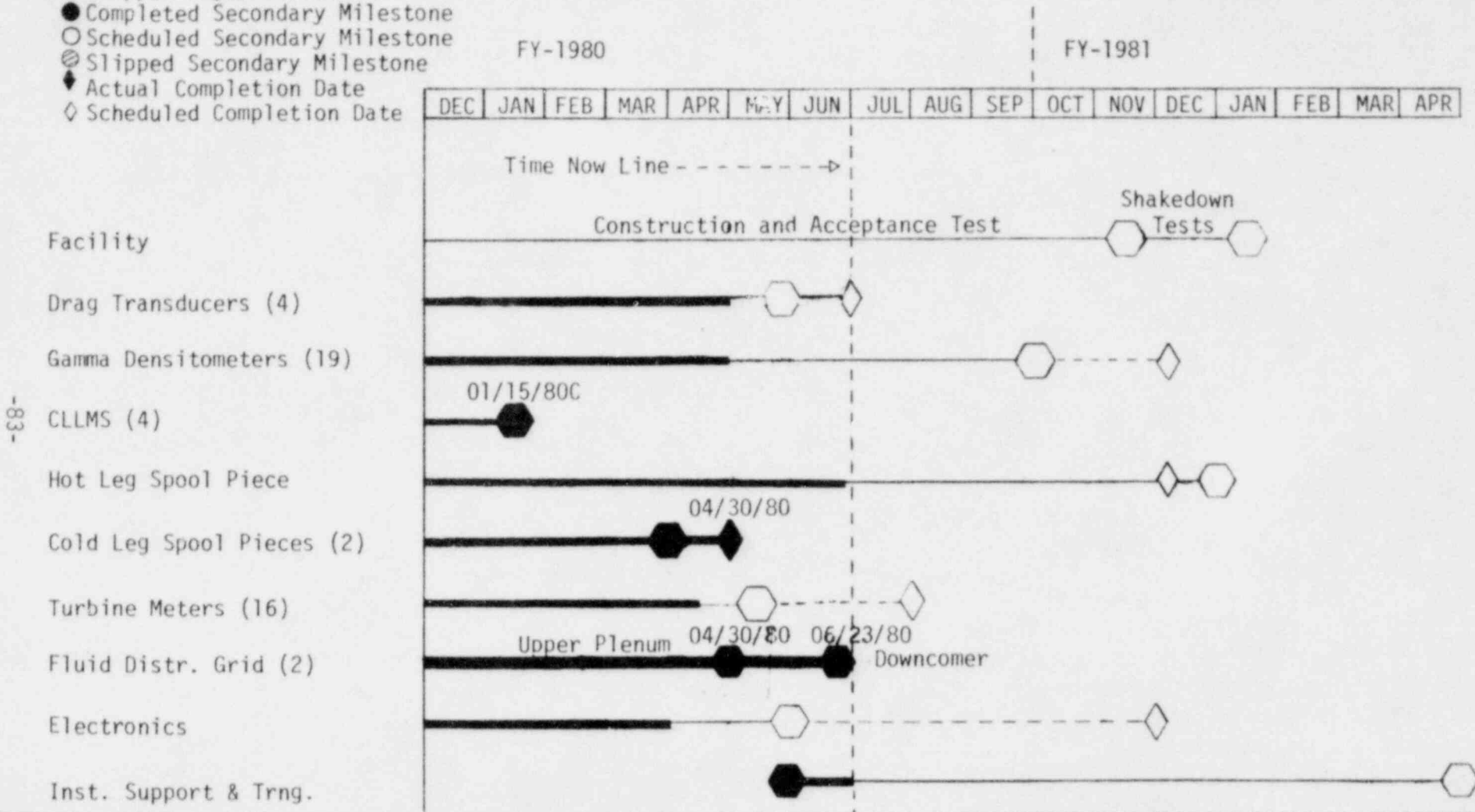
LEGEND

2D/3D EXPERIMENT PROGRAM

June 1980

SCTF Projects

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

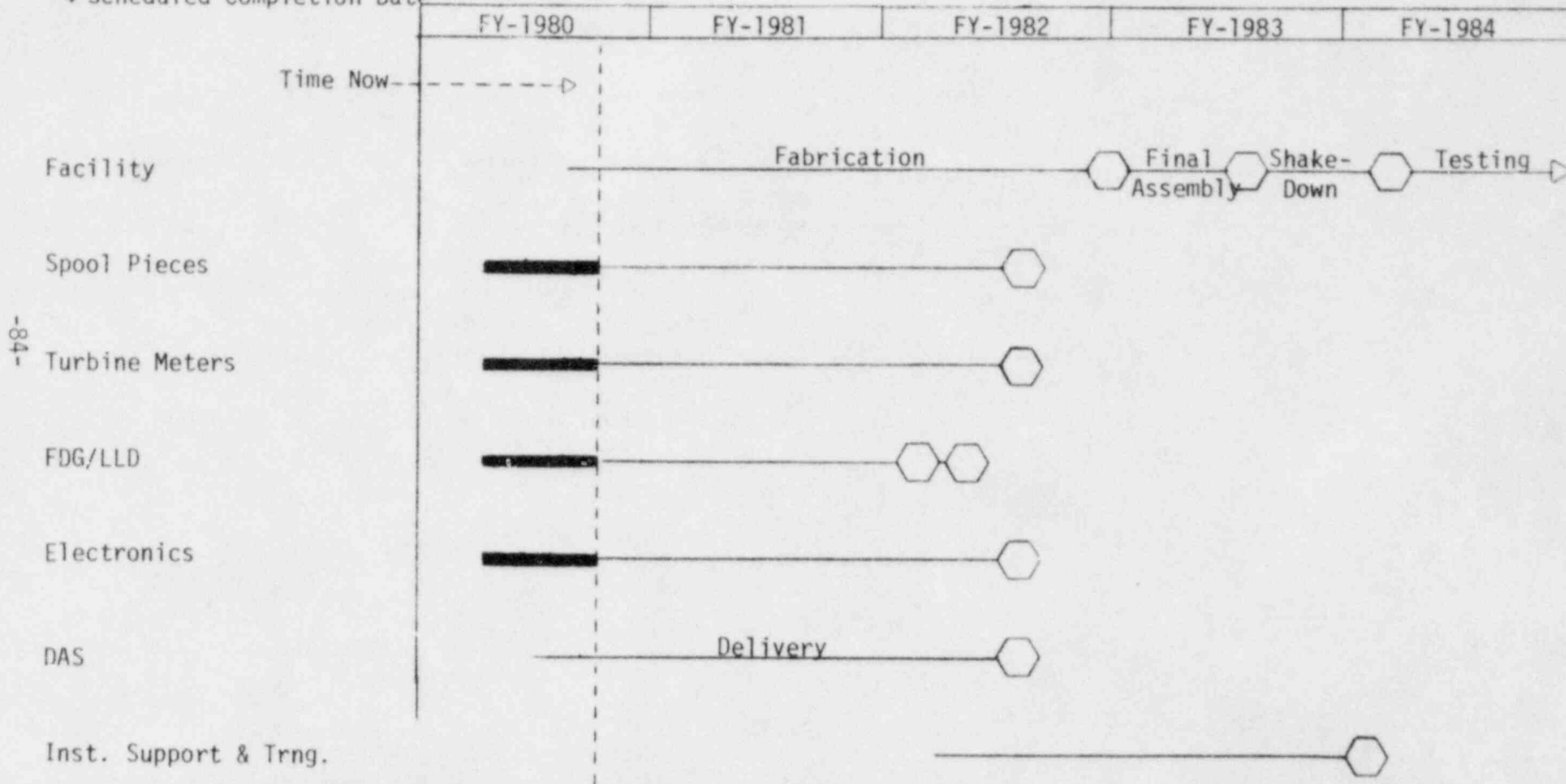
LEGEND

2D/3D EXPERIMENT PROGRAM

June 1980

UPTF Projects

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

LEGEND

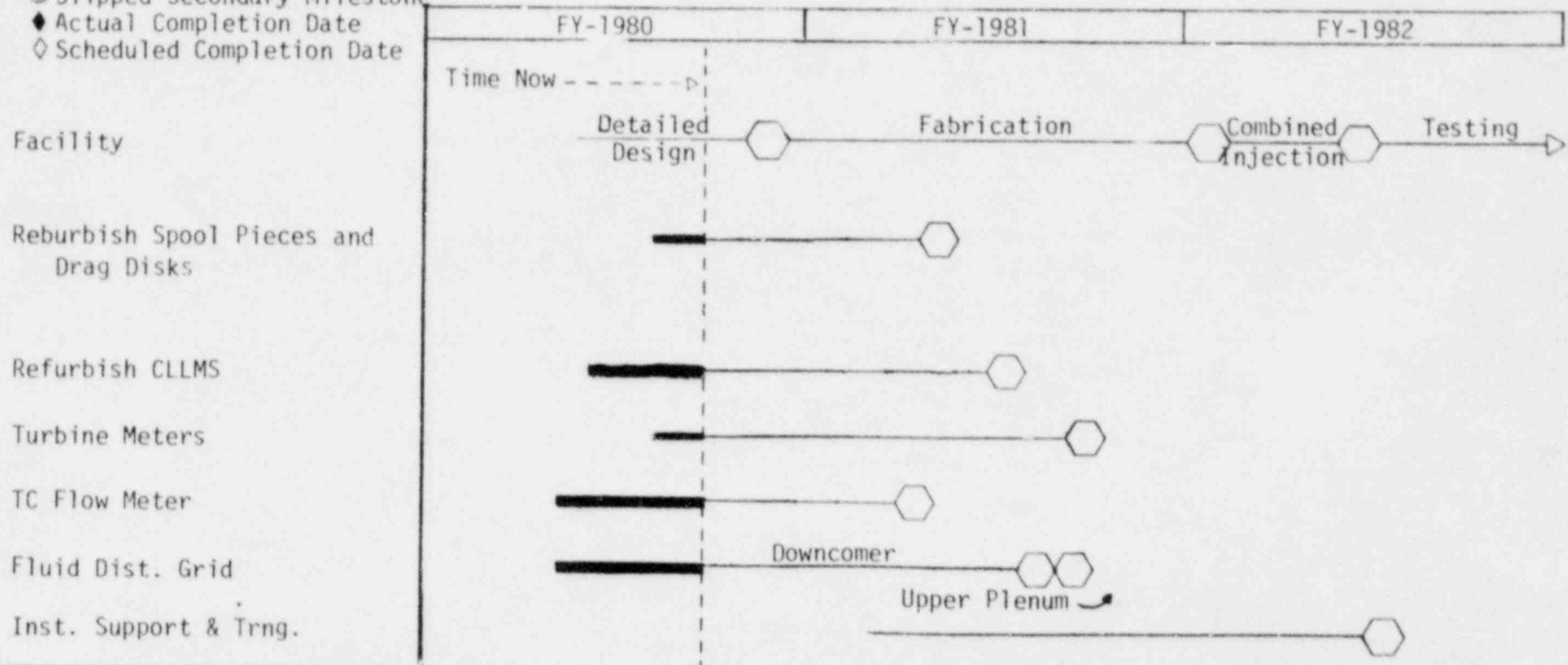
2D/3D EXPERIMENT PROGRAM

June 1980

CCTF-II Projects

- Completed Major Milestone
- Scheduled Major Milestone
- ⊗ Slipped Major Milestone
- Completed Secondary Milestone
- Schedule Secondary Milestone
- ⊗ Slipped Secondary Milestone
- ◆ Actual Completion Date
- ◇ Scheduled Completion Date

-85-



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

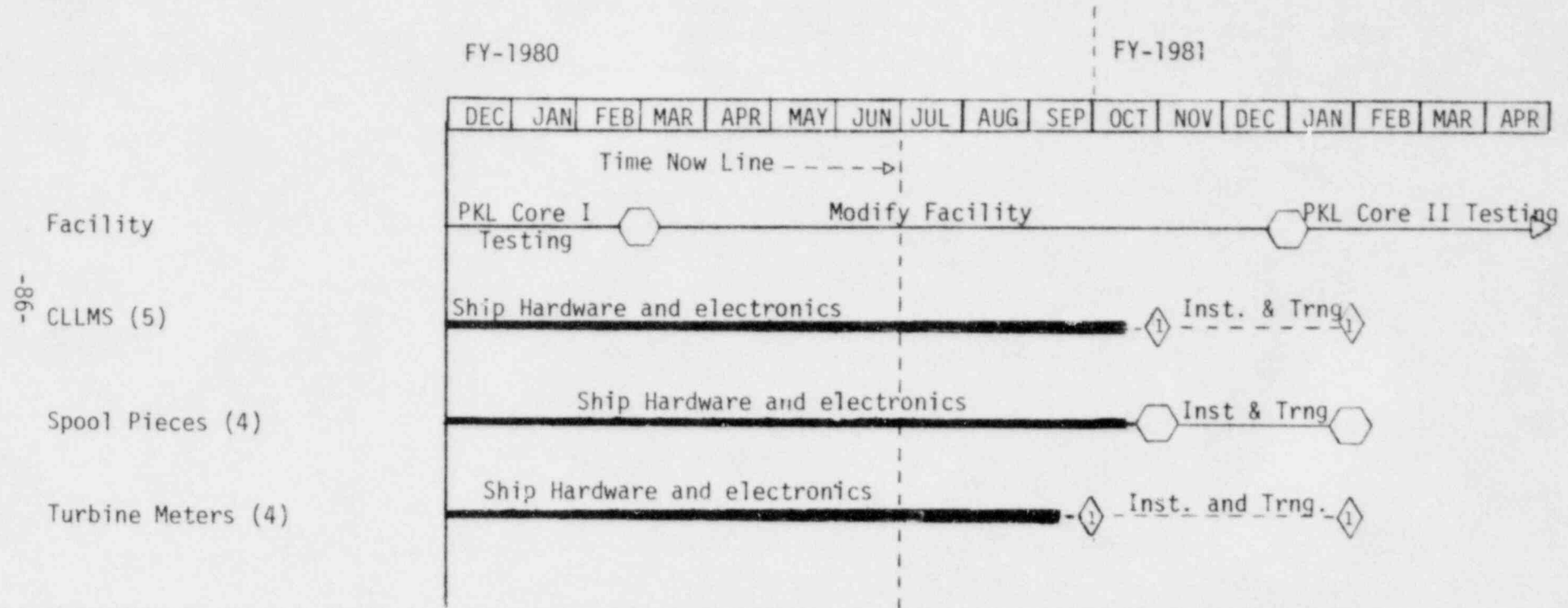
LEGEND

2D/3D EXPERIMENT PROGRAM

June 1980

PKL Projects

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

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

2D/3D
TECHNICAL REVIEW & SUMMARY

PROGRAM MANAGER'S
SUMMARY AND HIGHLIGHTS

The electronics for the conductivity liquid level measurement system and the downcomer and spare liquid level detectors for the fluid distribution grid system were shipped to the Slab Core Test Facility in Japan.

The training course for two Japanese, Mr. Wakabashi and Mr. Oyama, was successfully completed for the Slab Core Test Facility turbine meters, downcomer drag transducers, fluid distribution grid and liquid level detectors during the weeks of June 23 and 30.

EG&G technical personnel traveled to Japan to assess the status of the Cylindrical Core Test Facility Core I instrumented spool piece and downcomer drag disk flow measurement systems. The systems were found to be in satisfactory condition. They also completed installation of the cold leg and vent pipe spool pieces in the Slab Core Test Facility Core I.

1. A6100 - 3D Technical Support and Instrumentation
2. Scheduled Milestones for June 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
Page 1-93	Slab Core Test Facility - Ship Electronics for Conductivity Liquid Level Measurement System	3DP-14-80 6-30-80E	6-23-80C
Page 1-91	Slab Core Test Facility Ship Downcomer for Fluid Distribution Grid System	3DP-13-80 6-15-80E	6-23-80C
Page 1-91	Slab Core Test Facility Ship Electronic Interface for Fluid Distribution Grid System	3DP-13-80 6-30-80E	6-23-80C
Page 1-93	Slab Core Test Facility Installation Support on Cold Leg & Vent Pipe Spool Piece	3DP-15-80 6-18-80E	6-18-80C
Page 1-93	Slab Core Test Facility Final Design Review for Gamma Densitometers	3DP-9-80 6-04-80E	5-19-80C

3. Summary of Work Performed in June 1980

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

1. Conductivity Liquid Level Measurement System

Firmware checkout, debugging and functional testing of the digital interface was completed. Work on the Conductivity Liquid Level Measurement System Technical Manual was initiated. Communications with Kraftwerk Union-Primary Coolant Loop have clarified several interface considerations and work is proceeding on the final system integration.

2. Turbine Meters

Fabrication of the turbine meters and electronics was completed.

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

1. Conductivity Liquid Level Measurement System

Electronics were shipped from INEL June 23. A rough draft of the technical manual documentation was given to JAERI personnel as part of training on June 24-25 at INEL.

2. Fluid Distribution Grid

Downcomer and spare liquid level detectors were shipped from INEL June 23. A rough draft of technical manual documentation was given to JAERI personnel June 24-25 at INEL during training. Electronics interface was shipped from INEL on June 1980.

3. Densitometers

The design and documentation of the test fixtures and tools necessary to assemble, test and maintain the densitometers was completed. The test plan for prototype and acceptance testing was completed. Assistance to vendors was provided as needed. Dummy densitometers (one Type A and three Type B) were fabricated for shipment to JAERI for fitup and interfacing with the facility. A Type B assembly fixture was fabricated and shipped to Gemcor for use in assembling and performing vendor tests on the Type B densitometers.

4. Hot Leg Spool Piece

The hot leg spool piece drawings have been released and a cost estimate has been prepared for modifying the spool piece. Materials for the SCTF simulator are on order and the manufacturing planning is complete. The test support stand and blind flanges for use during the ARA III testing is 90% complete. The test plan is being routed for signatures. The stress analysis has been completed and the formal report is in the final stages of review.

5. Turbine Meters

Actions items from the final design review were resolved and fabrication of the production turbine meter systems was initiated. The JAERI training course was completed.

6. Cold Leg & Vent Line Spool Piece

The installation of the cold leg and vent pipe spool piece in JAERI Slab Core Test Facility in Japan was completed.

7. Drag Disks

The assembly of four downcomer drag transducers was completed. The thermal shock testing on a sample drag transducer beam and disk was completed and was successful. The velocity profile on the calibration test spool piece was completed. The survivability testing on the drag transducer disk was completed. The momentum flux limit was exceeded and the beam was slightly bent. The disk was reduced in size and the smaller size disk passed the survivability test. The calibration of three drag transducers was completed.

c. Upper Plenum Test Facility Instruments1. Drag Disks - No activity.2. Gamma Densitometers

A conceptual design has been prepared for positioning the source in the center of the pipe. This design will be presented at the Upper Plenum Test Facility Coordination Meeting to be held in Munich.

3. Turbine Meters

Work continued on the turbine meter work package with all estimates completed except the design effort which will not be available until the second week of July. A search for potential suppliers of measurement systems for the project was initiated through procurement personnel.

4. Oak Ridge National Laboratory Turbine Meters

The air/water ball bearing turbine meter assembly was reworked at Measurements Incorporated and returned to ORNL for further testing. A second air/water unit using jeweled bearings was also fabricated at Measurements, Inc., and installed in the ORNL air/water loop for comparison with the ball bearing unit.

The steam/water turbine meter assembly was installed in the steam/water loop after completing scoping tests in the air/water loop. Facility tests are continuing using this unit.

5. Spool Pieces

A preliminary test specification for the two-phase flow testing of the instrumented pipe section was completed.

d. Upper Plenum Test Facility Data System - No activity

e. Cylindrical Core Test Facility Core II Projects

1. Turbine Meters -

Responses to the action items generated in the May Interface Meeting in Japan were addressed and corresponding modifications to the turbine probe design have been initiated.

2. Fluid Grid - No Activity.

3. Heated Thermocouple Velocimeter

A conceptual design of a thermocouple velocimeter was presented as well as drawings of a test calibration of production units.

4. Spool Piece and Drag Disk Refurbishment

EG&G technical personnel traveled to the JAERI Facility in Tokai, Japan, to assess the status of the CCTF-I instrumented spool piece and downcomer drag disk flow measurement systems. The systems were found in satisfactory condition with the following exceptions:

- a. Two dewars were found deficient and were prepared for shipment to the Tokyo repair company.
- b. Nine out of a total of 16 turbine meter magnetic pickup probes did not meet the requirements for insulation resistance at specified elevated temperature and will be replaced with new, improved pickup probes.

A work release was prepared and issued to the functional organizations.

A cost spread table was prepared and given to the Planning & Budgets organization.

5. Conductivity Liquid Level Measurement System Refurbishment

Cost and schedule estimates and a cost spread table were prepared for FY-80. Preparation of the work package was continued. Procurement of long-lead items was deferred to July 1980.

6. Prototype Development and Vendor Qualification

Optical probes have been designed and 12 have been fabricated for prototype testing. Design of the prototype electrooptics is complete and prototype model is in fabrication. Fabrication of prototype is complete. Prototype test plan and test procedures have been written and are in the review cycle. Thermal shock testing of probe tips was performed for vendor qualification.

4. Scheduled Milestones for July 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
Page 1-93	Slab Core Test Facility Package and Ship Turbine Meters	7-31-80E	
Page 1-93	Slab Core Test Facility Ship Drag Disks	7-03-80E	

5. Summary of Work to be Performed in July 1980a. Federal Republic of Germany (FRG) Primary Coolant Loop Instruments1. Conductivity Liquid Level Measurement System

Quality Level II engineering drawings will be released and firmware documentation completed. Final acceptance test procedures will be completed and a dry run performed on the total system. Work on the Conductivity Liquid Level Measurement System Operation and Maintenance Manual will be continued.

2. Turbine Meters

Final acceptance/calibration testing of the turbine systems will be initiated.

b. Japan Atomic Energy Research Institute Slab Core Test Facility Instruments1. Conductivity Liquid Level Measurement System

A final draft of the technical manual will be reviewed and the revised pages will be sent for compilation. Preparations for September electronics and liquid level detector final installation will be routinely made.

2. Fluid Distribution Grid

A final draft of the technical manual will be reviewed and the revised pages will be sent for compilation. A software functional specification will be finalized and algorithms programmed. Preparations for September electronics and liquid level detector installation will be routinely made.

3. Gamma Densitometers

All remaining unreleased drawings will be released. Gemcor will deliver four each, Type B, detector assemblies and two each, Type B, source assemblies to INEL. Acceptance testing of these units will start. The dummy densitometers will be shipped to JAERI.

4. Hot Leg Spool Piece

The project plans to finish the fabrication of the support stand, continue fabrication of the SCTF simulator and start the modifications to the hot leg spool piece. Work will continue on the documentation.

5. Turbine Meeters

Fabrication and initial checkout of the Slab Core Test Facility turbine flowmeter systems will be completed and shipped to EG&G.

6. Cold Leg & Vent Line Spool Piece

The preliminary draft of the operation and maintenance manual will be complete.

7. Drag Disks

The calibration of one remaining downcomer drag transducer will be completed. The buoyancy, response and pressure test on the downcomer drag transducer will be completed. The three calibrated downcomer drag transducers and sleeve assemblies will be sent to Japan. The training seminar for JAEA personnel for drag transducers will be completed. The calibration of four hot leg drag transducers will begin.

c. Upper Plenum Test Facility Instruments

1. Drag Disks -

Preliminary work package will be initiated.

2. Gamma Densitometers

The conceptual design for positioning the densitometer source in the center of the pipe will be presented at the Upper Plenum Test Facility Coordination Meeting being held in Munich.

3. Turbine Meters

Estimates for the design effort will be collected and the work package finalized. Start of preliminary design work is anticipated following a mid-July meeting in Munich.

4. Oak Ridge National Laboratory Turbine Meters

The performance of the turbine meters in Oak Ridge National Laboratory's test loops will be followed.

5. Spool Pieces

Further work is on hold until after the 3D Coordination Meeting in Munich July 14-18.

d. Upper Plenum Test Facility Data System - No Activity.

e. Cylindrical Core Test Facility Core II Projects

1. Turbine Meters

We will continue interface with JAERI to firm up the envelope design of the turbine meter probes.

2. Fluid Distribution Grid

Prototype testing will be completed. Long-lead materials will be ordered, a systems specification will be drafted, and the work package will be redrafted.

3. Heated Thermocouple Velocimeter

Action items generated in the design review will be resolved.

4. Spool Piece and Drag Disk Refurbishment

Based on the detailed information obtained from the JAERI trip in June 1980, the refurbishment schedule and cost estimates will be updated and the activities expected to be performed during the next JAERI trip will be formulated. Efforts toward completion of the work package and procurement of long-lead items will be continued.

5. Conductivity Liquid Level Measurement System Refurbishment

Preparation of the work package will be continued and long-lead items will be ordered. The CCTF-I drawings of the support tubes, clearance gauges and liquid level detector assemblies will be updated to define the new dimensions required for CCTF-II application.

6. Prototype Development and Vendor Qualification

Prototype testing will be performed and test report will be started.

6. Problems and Potential Problems

Upper Plenum Test Facility Turbine Meters

An indicated slippage in the German schedule of up to one year could significantly increase project costs.

Cylindrical Core Test Facility Core II Prototype Development and Vendor Qualification

Both probe tip suppliers failed to meet the qualification criterion for thermal shock. The low acceptance rate of the current design has a potential cost impact.

WRRD MONTHLY REPORT FOR
JUNE 1980
CODE DEVELOPMENT & ANALYSIS PROGRAM

S. F. Tuck

S. F. Tuck
Plans & Budget Representative

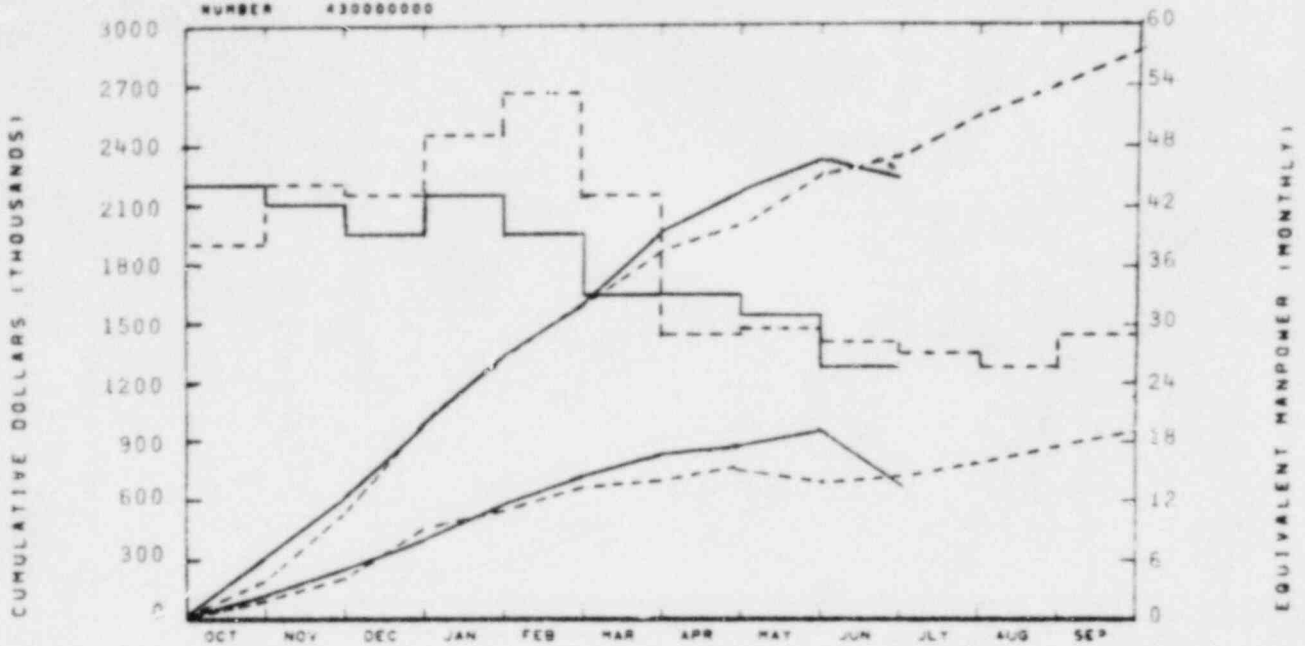
J. M. Howe for P. North

P. North, Manager

CODE DEVELOPMENT & ANALYSIS PROGRAM
COST SUMMARY & COMMENTS

RESPONSIBLE
MANAGER
NORTH

EG&G IDAHO INC.
CODE DEVELOPMENT & ANALYSIS PROG
NUMBER 430000000



TOTAL PROGRAM

BUDGET	274	567	1019	1314	1600	1824	2062	2268	2363	2526	2701	2875
ACTUAL	302	599	1009	1315	1598	1960	2164	2349	2276			

MATERIAL

BUDGET	95	213	441	531	613	671	749	717	779	833	886	928
ACTUAL	104	232	428	537	643	801	885	935	716			

HANDPOWER

BUDGET	38	44	43	49	53	43	28	29	27	26	25	28
ACTUAL	44	42	39	43	39	33	33	31	25			

BUDGET

ACTUAL

YTD VARIANCE: 87 (4%)

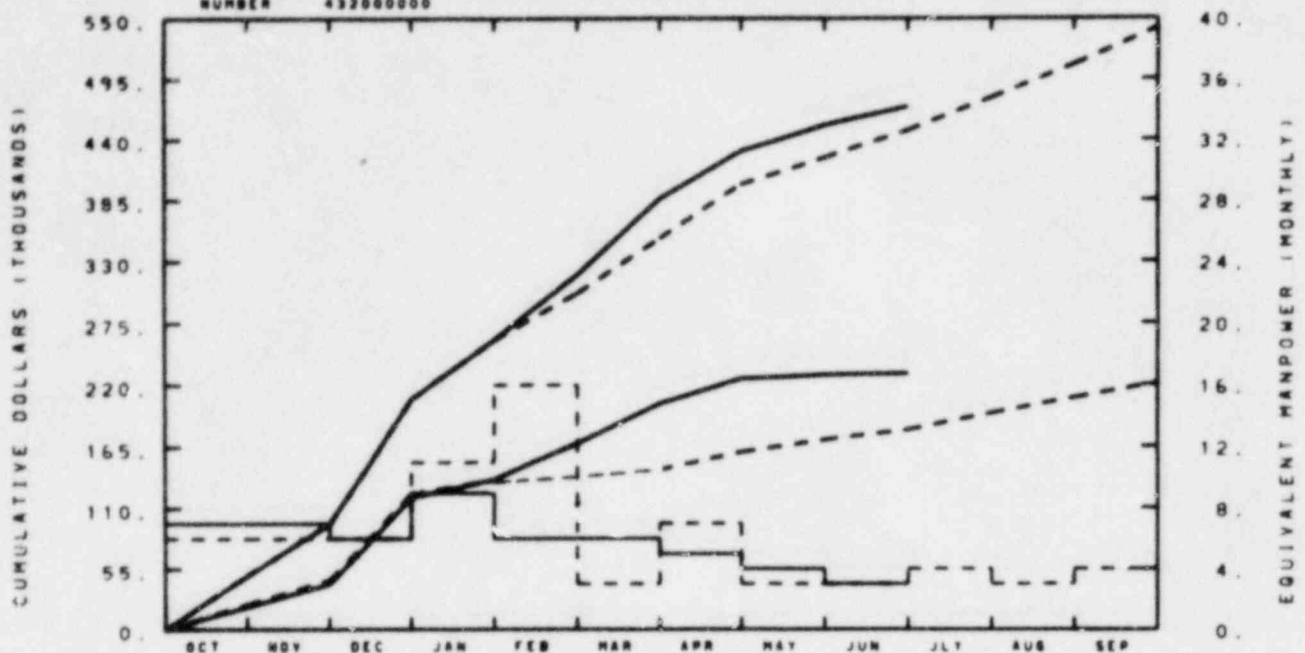
Individual cost graphs will give individual explanations.

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
008TH

EG&G IDAHO INC.
CONTAINMENT ANALYSIS DEVELOPMENT

NUMBER 432000000



TOTAL PROGRAM

BUDGET	49	96	207	260	302	351	400	424	448	478	508	542
ACTUAL	49	96	207	260	318	387	410	453	470			

MATERIAL

BUDGET	22	45	123	135	140	145	160	171	180	195	208	222
ACTUAL	20	41	120	136	168	203	226	229	230			

MANPOWER

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

BUDGET

ACTUAL

A6042

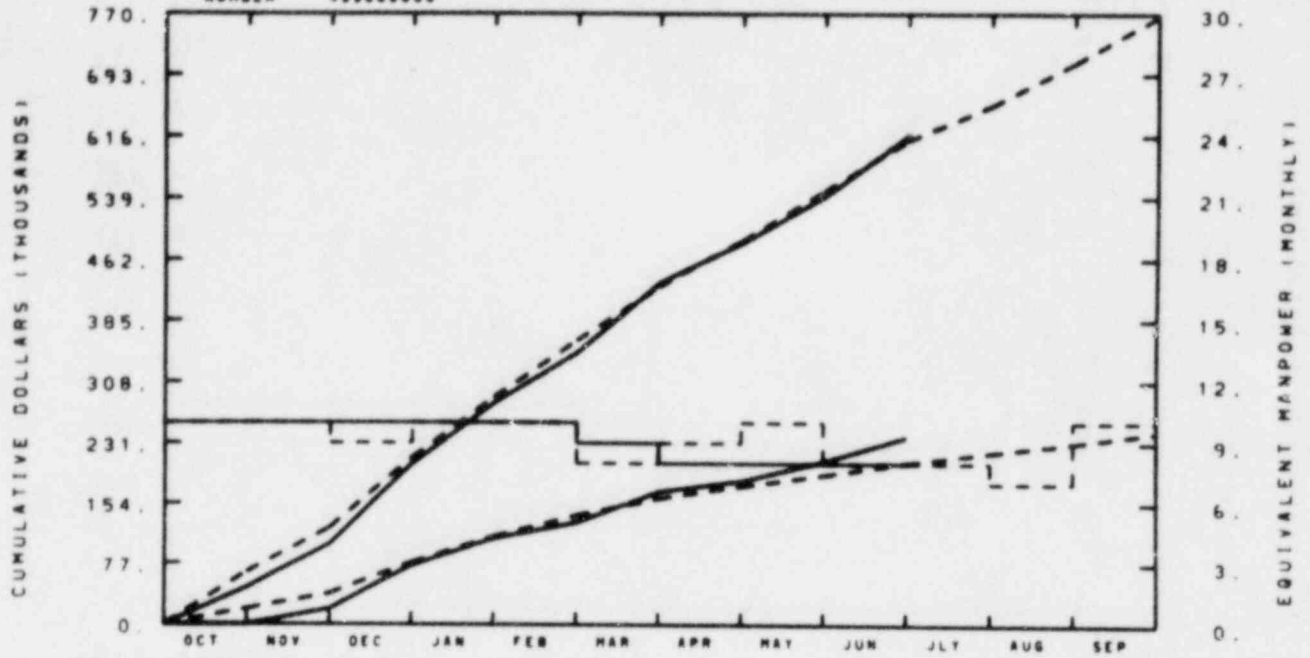
YTD VARIANCE: <22> (5%)

The extensive code running associated with checkout problem resolution has increased costs. Manpower reductions are being made during the second half of FY-1980 and only low priority computing is being employed. Some check calculations will not be completed in FY-1980 and a study of the interphase drag related stability problems is being conducted instead.

RESPONSIBLE
MANAGER
NORTH

EG&G IDAHO INC.
FUEL BEHAVIOR MODEL DEVELOPMENT

NUMBER 433000000



TOTAL PROGRAM												
BUDGET	66	123	212	289	360	428	486	548	611	655	708	767
ACTUAL	46	102	205	282	344	432	493	541	616			

MATERIAL												
BUDGET	20	39	78	112	139	161	177	191	206	215	231	244
ACTUAL	0	20	74	110	130	169	183	208	239			

MANPOWER												
BUDGET	10	10	9	10	10	8	9	10	8	8	7	10
ACTUAL	10	10	10	10	10	9	8	8	8			

BUDGET

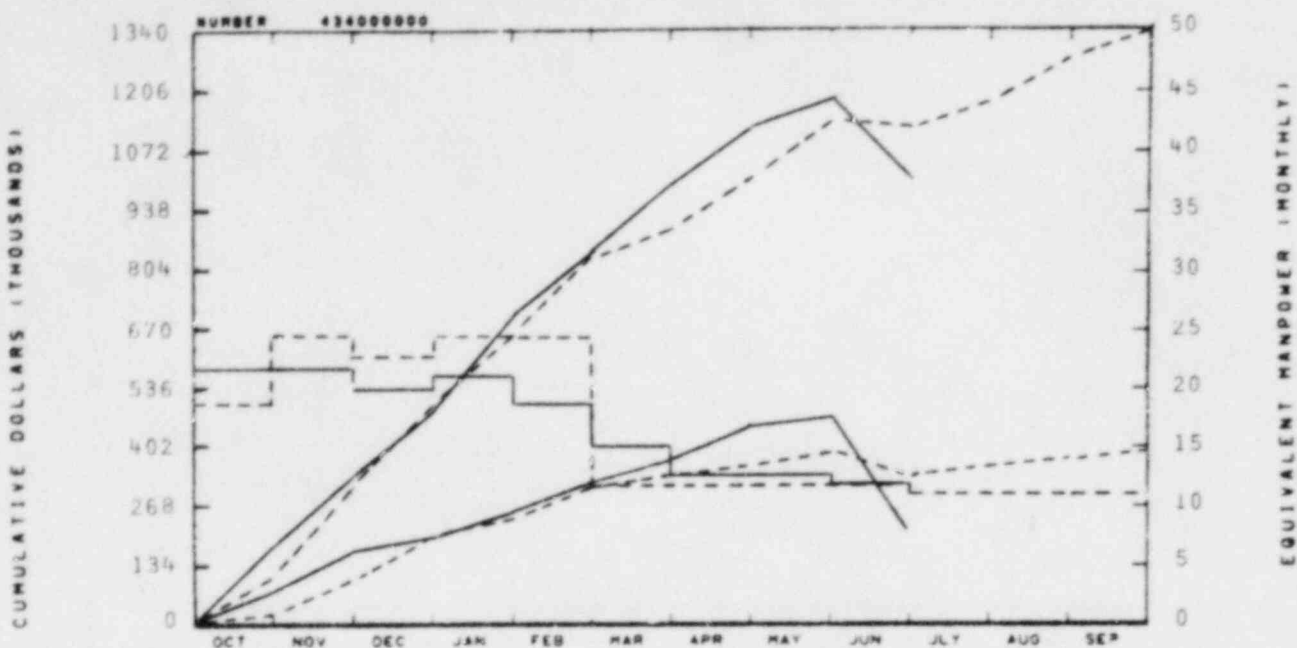
ACTUAL

A6050

YTD VARIANCE: <5> (1%)

RESPONSIBLE
MANAGER
P MONTH

EG&G IDAHO INC.
LOSS OF COOLANT ACCIDENT ANALY



TOTAL PROGRAM

BUDGET	119	289	518	665	817	905	1019	1125	1119	1195	1273	1339
ACTUAL	168	344	520	684	827	1016	1112	1203	1011			

MATERIAL

BUDGET	33	100	206	245	288	312	354	395	331	355	381	394
ACTUAL	67	147	205	259	311	394	439	461	209			

HANPOWER

BUDGET	18	24	23	24	24	17	12	12	12	11	11	11
ACTUAL	22	22	20	21	18	15	13	13	12			

BUDGET

ACTUAL

A6052

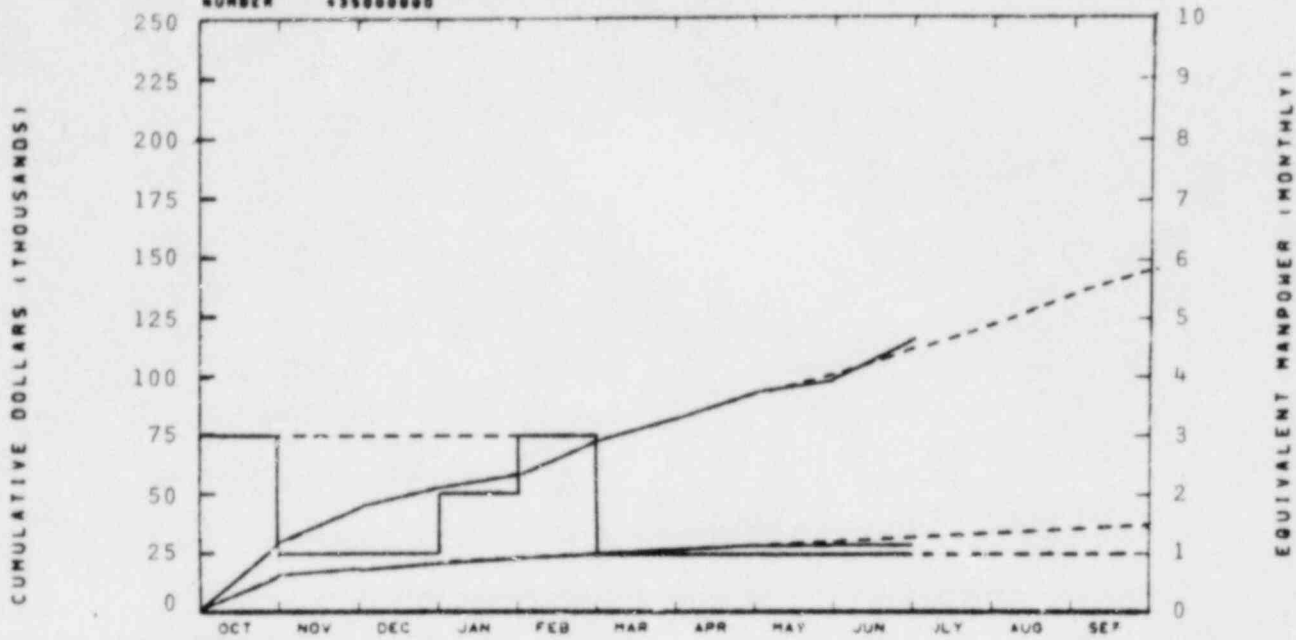
YTD VARIANCE: 108 (10%)

A \$270 K credit and a \$100 K decrease in authorized funding have been made to this account per NRC/DOE instruction. Currently planned tasks for the remainder of FY-1980 will lead to a year-end closeout on budget.

RESPONSIBLE
MANAGER
NORTH

EG&G IDAHO INC.
CORRELATION VERIFICATION

NUMBER *35000000



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			

MATERIAL

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

BUDGET

ACTUAL

A6278

YTD VARIANCE: <6> (5%)

CODE DEVELOPMENT & ANALYSIS PROGRAM
CURRENT WORKING SCHEDULE

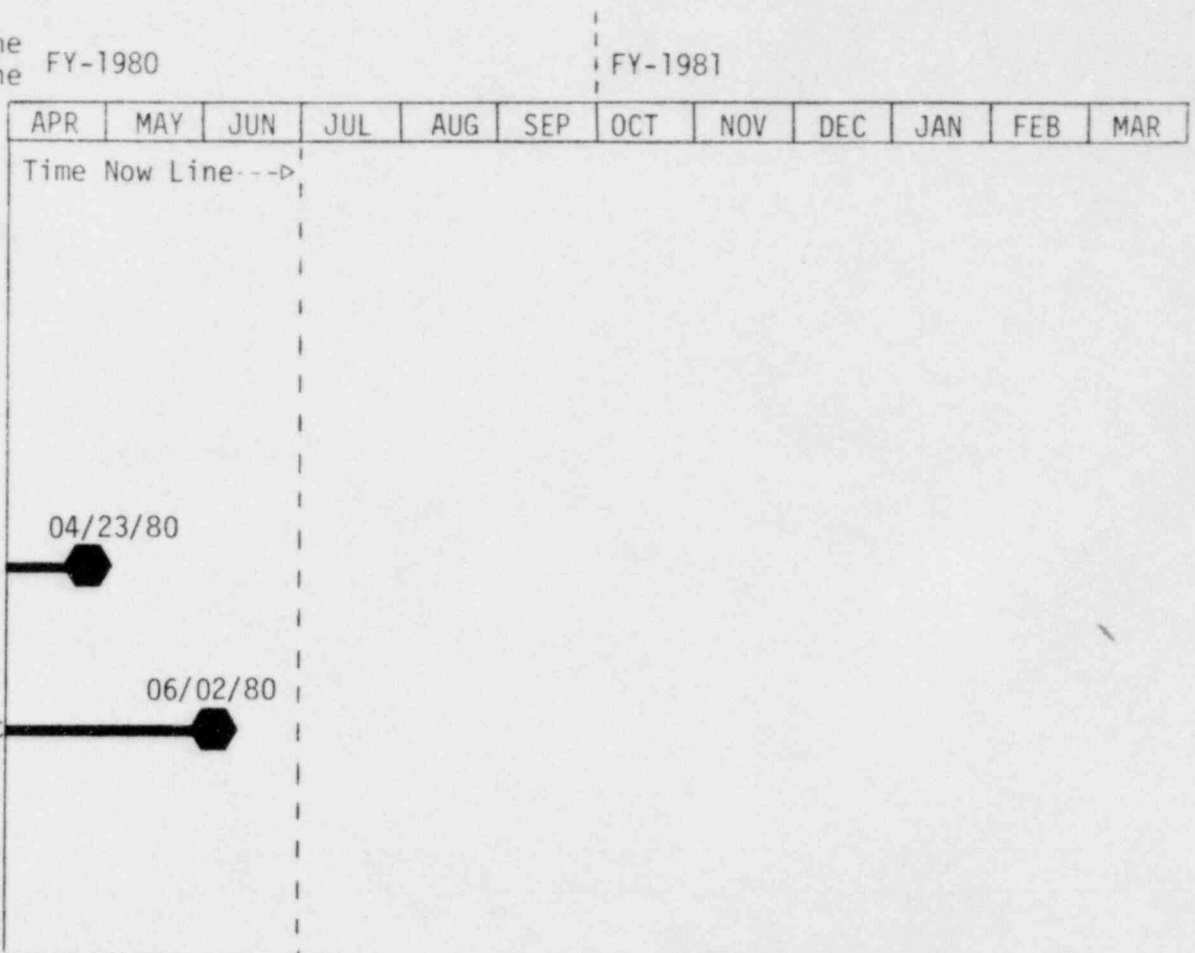
LEGEND

CODE DEVELOPMENT AND ANALYSIS PROGRAM

June 1980

- Completed Major Milestone
- Scheduled Major Milestone
- ⊗ Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- ⊗ Slipped Secondary Milestone
- ◆ Actual Completion Date
- ◇ Scheduled Completion Date

BEACON Code Development (A6042)



BEACON/MOD3

Code Debug and Checkout

04/23/80

Developmental Assessment Report

06/02/80

NOTES:

-105-

LEGEND

CODE DEVELOPMENT AND ANALYSIS PROGRAM

June 1980

MATPRO Development (A6050)

- Completed Major Milestone
- Scheduled Major Milestone
- ⊗ Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- ⊗ Slipped Secondary Milestone
- ◆ Actual Completion Date
- ◇ Scheduled Completion Date

FY-1980

FY-1981

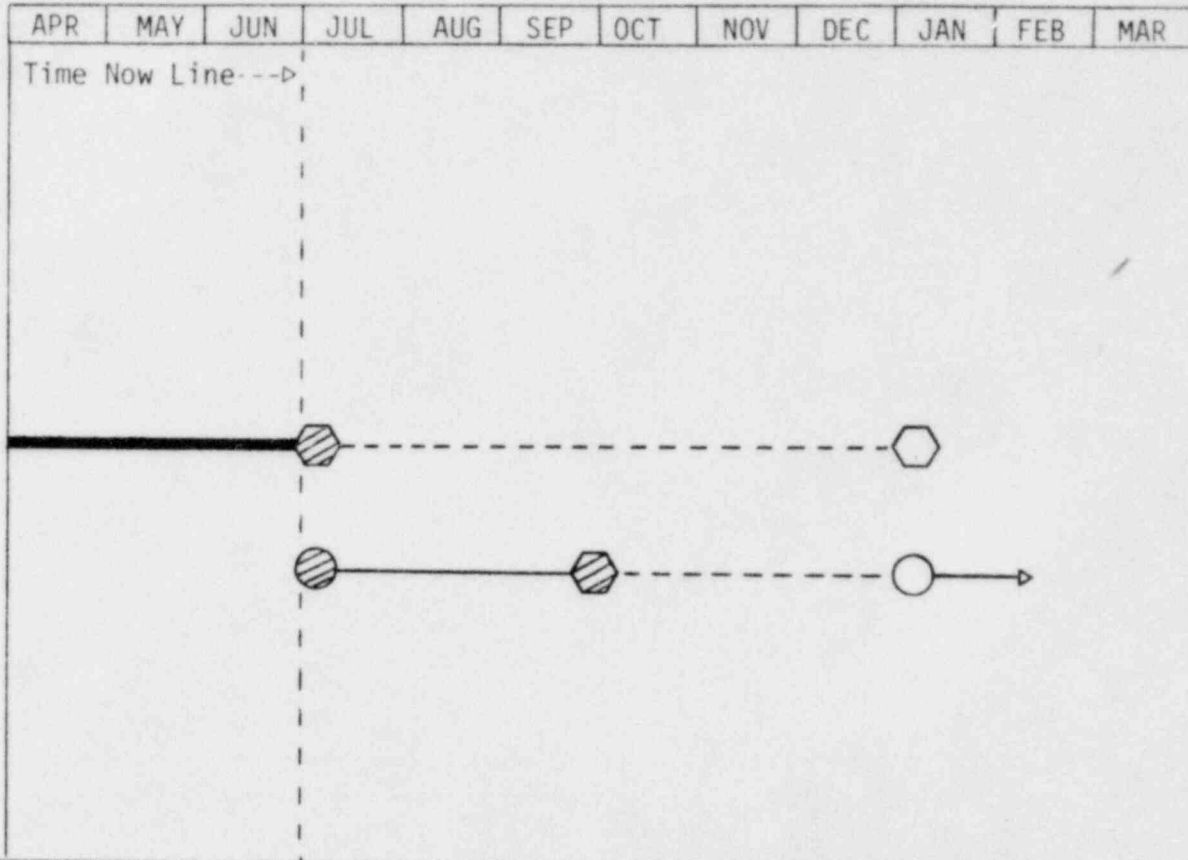
APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Time Now Line---▷

MATPRO-11, Revision 2

Maintenance

Documentation



-106-

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

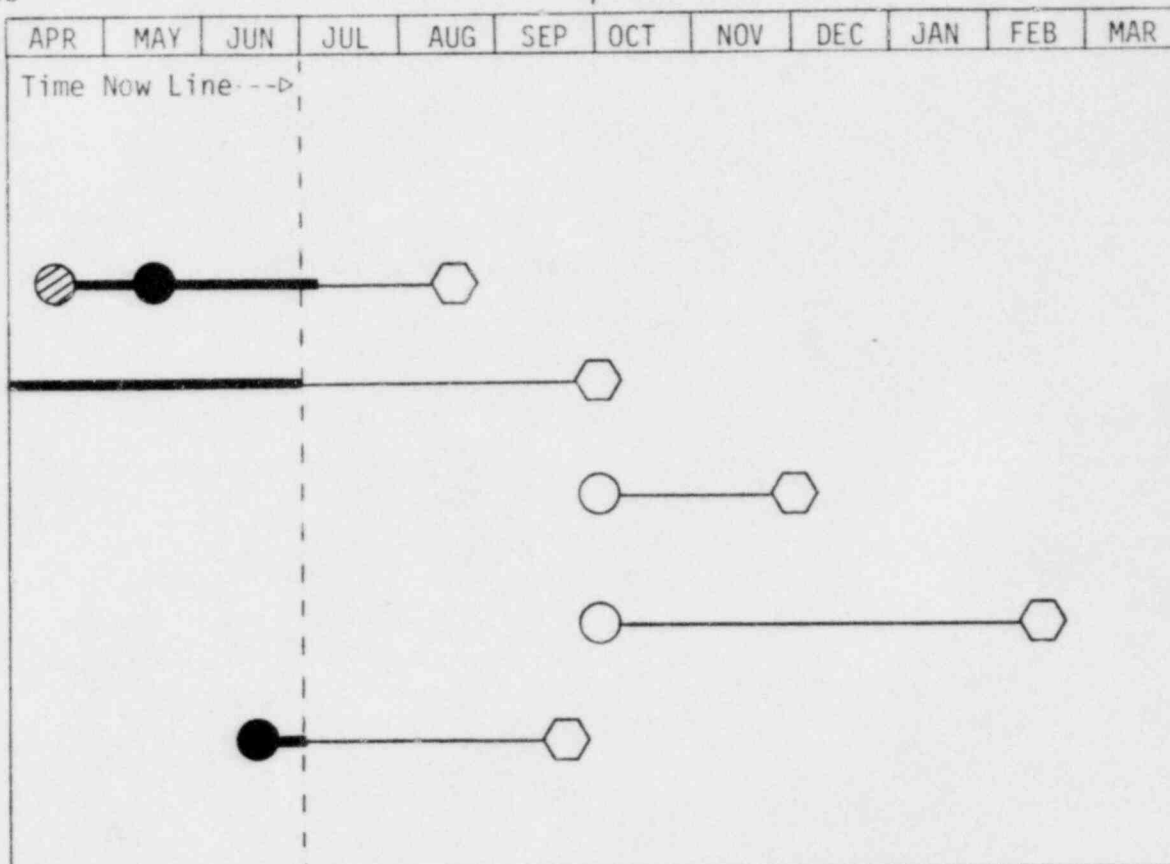
CODE DEVELOPMENT AND ANALYSIS PROGRAM

June 1980

FRAP-T Development (A6050)

FY-1980

FY-1981



NOTES:

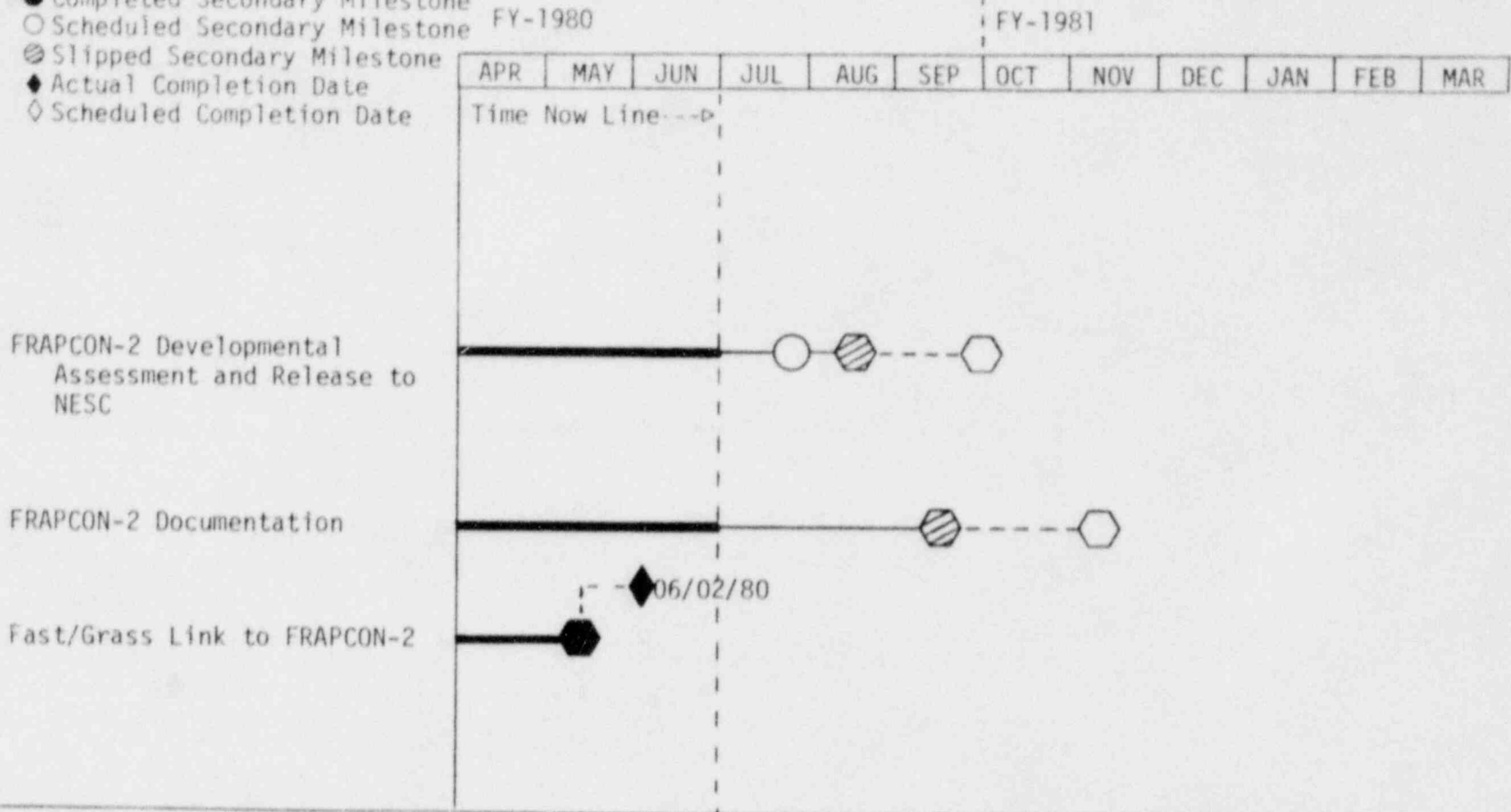
LEGEND

- 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

June 1980

FRAPCON Development (A6050)



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

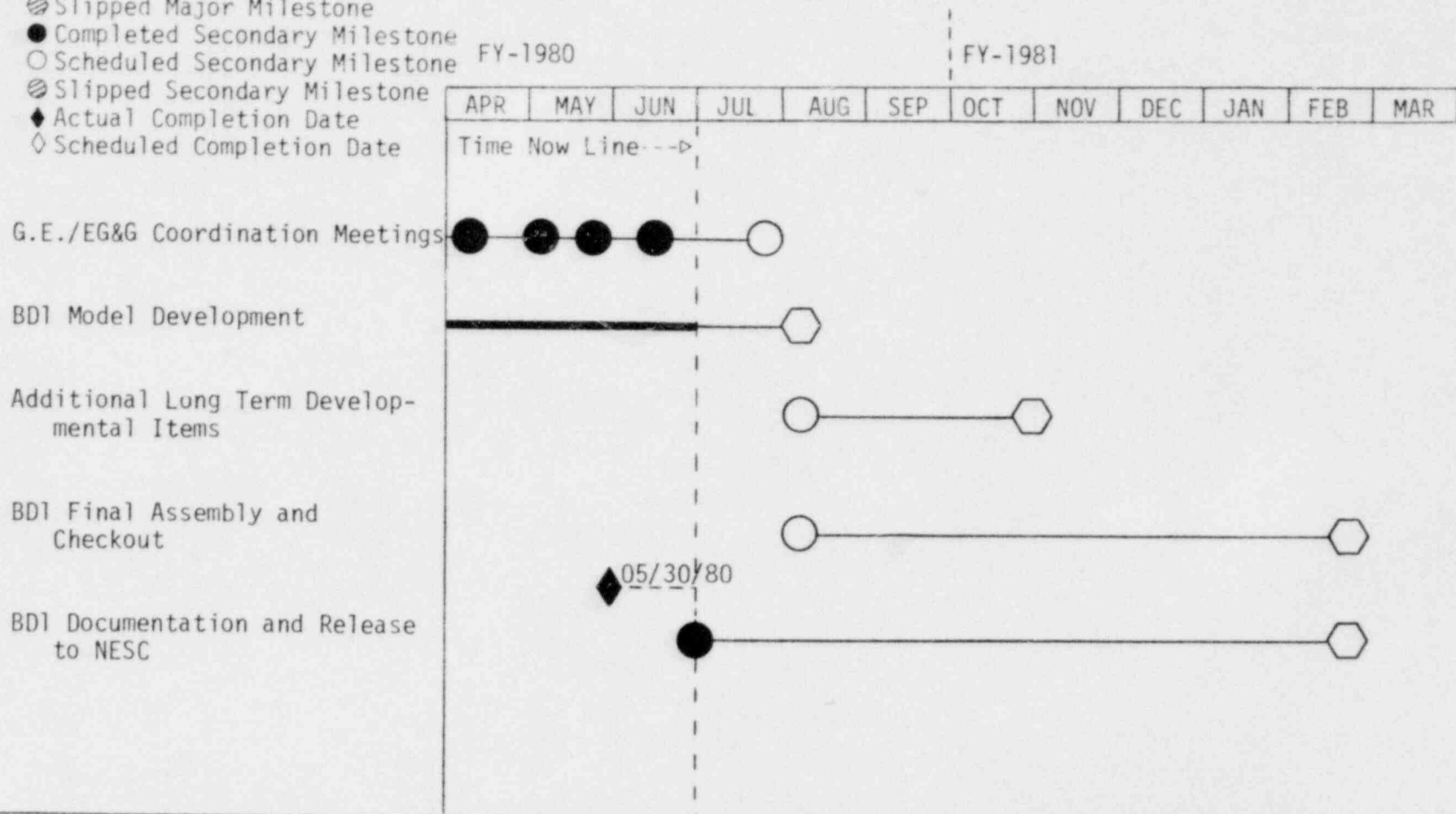
LEGEND

- 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

June 1980

TRAC-B Development (A6052)



NOTES: The previous monthly schedule was contingent on receiving additional funding. As only partial additional funding was received, adjustments have been made in the TRAC-B Development schedule. (ref: P. North ltr to S. Fischer, PN-80-80, Funding Adjustment to A6052, Jun 11, 1980.)

LEGEND

CODE DEVELOPMENT AND ANALYSIS PROGRAM

June 1980

RELAP4/MOD7 Integral Code Development and Checkout (A6052)

- Completed Major Milestone
- Scheduled Major Milestone
- ⊗ Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- ⊗ Slipped Secondary Milestone
- ◆ Actual Completion Date
- ◇ Scheduled Completion Date

FY-1980

FY-1981

APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
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Time Now Line --->

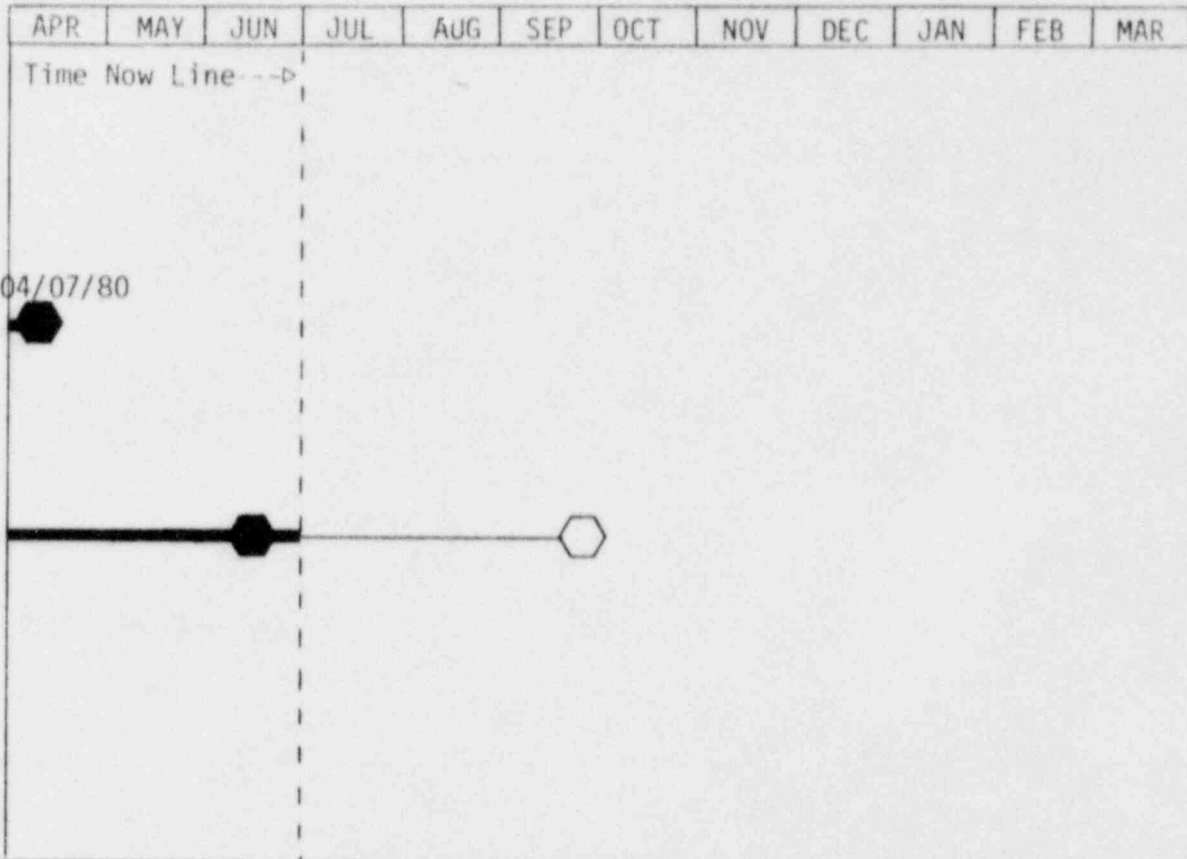
Development Assessment Runs
and Release to NESC

04/07/80

EGG Documentation

-110-

NOTES:



LEGEND

CODE DEVELOPMENT AND ANALYSIS PROGRAM

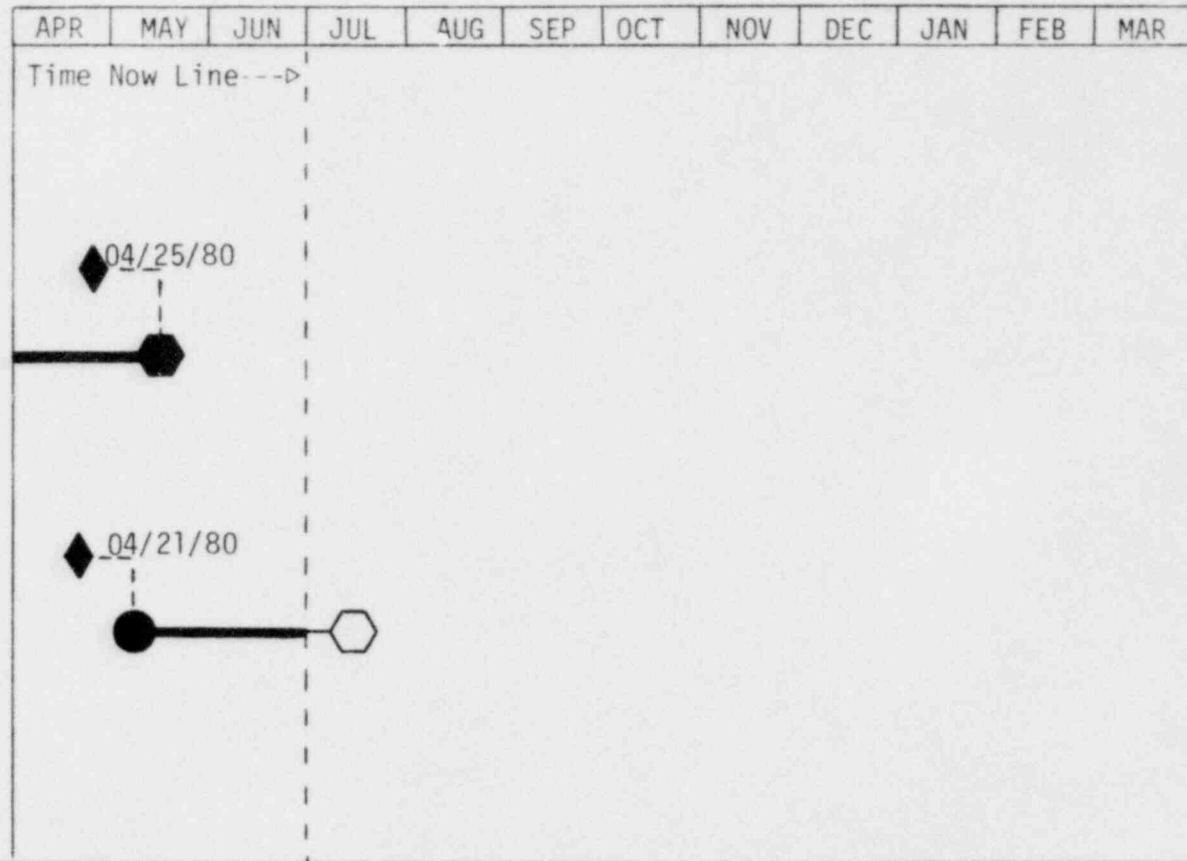
June 1980

Heat Transfer (A6278)

- Completed Major Milestone
- Scheduled Major Milestone
- ⊗ Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- ⊗ Slipped Secondary Milestone
- ◆ Actual Completion Date
- ◇ Scheduled Completion Date

FY-1980

FY-1981



- 111 -

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

Date June 1980

Manager P. North

Account Opened 0
 Money Committed Δ
 Account Closed ■

CARRYOVER

189 Number A6052 (A5109)

Program Code Development

Charge Number	Description	Authorized Amount	YTD Costs, & Commitments + 6%	Project To Date	Variance <Over-/Under
95A990240	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

FV	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
79																																
	●																															

EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

Date June 1980

Program Code Development

189 Number A6052 (A6109)

Manager P. North

Account Opened
Money Committed
Account Closed

Priority Number	Charge Number	Description	Authorized Amount	YTD Costs, & Commitments + 6%	Variance <Over>/Under	O	N	D	J	F	M	A	M	J	J	A	S
		Uncommitted Funding	10,000	---	10,000												

CODE DEVELOPMENT & ANALYSIS PROGRAM
TECHNICAL REVIEW & SUMMARY

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

The development of TRAC-BD1 is proceeding on schedule with all items completed except for the CCFL and multiple source connection tasks. Coding has been completed and acceptance testing is in progress on these two outstanding items.

As indicated in PN-55-80, due to lack of funding the TRAC-BD1 checkout has been delayed until FY-81. Work on additional model development tasks, which have been mutually defined by GE and EG&G, will be initiated by July 1.

Significant response was made in the developmental checkout and assessment of the FRAPCON-2 code. All of the model additions were successfully incorporated in FRAPCON-2 and only minor coding problems remain to be corrected before the final developmental assessment cases can be performed.

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

2. Scheduled Milestones for June 1980

No scheduled milestones for June 1980.

3. Summary of Work Performed in June 1980

a. RELAP4/MOD7

Formal documentation of RELAP4/MOD7 continued. A draft copy of the RELAP4/MOD7 Research Information Letter has been prepared and is under review. At the request of the NRC, a presentation was made at the OECD Code Workshop in Paris and the CSNI meeting was attended.

b. TRAC BD-1

Completion reports on all tasks except CCFL and multiple sources have been written and are being reviewed. Work continued on the CCFL and multiple source addition tasks. Discussions were held with LASL personnel regarding the addition of multiple source capability to TRAC.

Due to the lack of supplemental funding, the TRAC BD-1 code checkout was delayed until early FY-81. Additional model development tasks were mutually defined by GE and EG&G. These tasks include review and incorporation of the proposed CISE-GE CHF correlation, modification to conserve momentum through area changes and initiating work on upper plenum modeling.

4. Scheduled Milestones for July 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
New Page 3-19	BD-1 Model Development	7-30-80	

5. Summary of Work to be Performed in July 1980

a. RELAP4/MOD7

Work will be initiated on the RELAP4/MOD7 enhancement tasks.

b. TRAC BD-1

The presently defined TRAC BD-1 model development will be completed. Completion reports on all tasks will be submitted. Model development on the CHF, momentum equation modifications and upper plenum modeling tasks will be initiated. Other long term model development tasks will continue. The TRAC Coordination Committee Meeting in Washington will be attended and presentations on TRAC BD-1 made.

6. Problems and Potential Problems

Manpower limitations will impact the RELAP4/MOD7 work effort. Schedules will be reviewed and modified in early July to reflect these limitations.

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

2. Scheduled Milestones for June 1980

No scheduled milestones for June.

3. Summary of Work Performed in June 1980

A draft copy of the Research Information Letter on Transient CHF has been written and is being reviewed.

4. Scheduled Milestones for July 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
L3, N2 Page 1-35	Transient CHF RIL Draft	7-11-80	

5. Summary of Work to be Performed in July 1980

The draft Research Information Letter on Transient CHF will be completed.

6. Problems and Potential Problems

None

1. 189a A6042 - Containment Analysis Development

2. Scheduled Milestones for June 1980

No scheduled milestones for June 1980.

3. Summary of Work Performed in June 1980

The BEACON/MOD3 Assessment/Adjustment Report was completed and released. Two methods have been developed to increase the stability of the BEACON numerical scheme, allowing proper calculation of entrainment/deentrainment phenomena. Complete checkout is awaiting receipt of additional computing funds.

4. Scheduled Milestones for July 1980

No scheduled milestones for July.

5. Summary of Work to be Performed in July 1980

Present effort on BEACON is directed toward improving the calculational efficiency. This will continue through most of July, when a new internal code version will be prepared. A presentation on BEACON/MOD3 will be made at the Containment Code Review Group Meeting on June 18 in Washington.

6. Problems and Potential Problems

All presently scheduled developmental assessment tasks for FY-80 are still indefinitely delayed due to lack of computing funds.

1. 189a A6050 - Fuel Behavior Model Development

2. Scheduled Milestones for June 1980

No scheduled milestones for June.

3. Summary of Work Performed in June 1980

a. FRAPCON-2

The restart, AXISYM, and FRACAS-II subcode updates were incorporated in FRAPCON-2. A representative from PNL was at the INEL to assist EG&G personnel in incorporating all of the PELET subcode updates and checkout of the PNL supplied developmental assessment decks. Developmental assessment continued during the period with checkout of the INEL developmental assessment decks. Emphasis is on getting all options to be functional so that the final developmental assessment can be performed and the code delivered for independent assessment.

b. FRAP-T6

Work continued on incorporating the dynamically-dimensioned FAST/GRASS subcode in FRAP-T6. FRACAS-II logic was modified to improve code running time and incorporation of the FRACAS-II subcode in FRAP-T6 is in progress. The basic formulation of the coolant transient enthalpy rise model was completed and a driver is being prepared to checkout the model before inserting into FRAP-T6. FRAP-T6 was modified to utilize the MATPRO-11, Rev 1 materials property subcode. The θ -varying heat transfer boundary condition and nonuniform gap size models were documented. The power multiplier and cladding specific heat models were incorporated in FRAP-T6 and checked out. The pellet-cladding interaction model in the regime of high cladding temperatures was modified and is in the process of being checked out.

c. Special Projects

Work continued on the BALOON-2 model coding for FRAP-T6. A CDAP report describing FRIDA was issued. Due to problems with AXISYM model development, the CDAP report describing AXISYM was not started. The galley for the FRAPCON-1 EGG report is in the process of review. FRAIL-6 model development was initiated.

4. Scheduled Milestones for July 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
36108 Page 2-11	FRAPCON-2 Developmental Assessment	7-21-80	

5. Summary of Work to be Performed in July 1980a. FRAPCON-2

Developmental assessment of FRAPCON-2 will be completed. Some special optimization will be performed to reduce the code running time requirements for independent assessment. Code documentation will continue.

b. FRAP-T6

The pellet-cladding interaction model will be checked out. All of the model changes incorporated during June will be documented. The link between FRAP-T6 and FAST/GRASS will be completed and work will continue on linking FRAP-T6 with the dynamically dimensioned FRACAS-'I subcode. The transient enthalpy rise model will be completed. Work will begin on incorporating additional heat transfer correlations in FRAP-T6.

c. Special Projects and MATPRO

The new cladding creep model coding will be completed and documented, and a review of the BCL annealing model will begin. Work will begin on the MATPRO-11 eutectic melting model. Development of the FRAIL-6 and BALOON-2 models will continue and preparation of the AXISYM CDAP report will be initiated. The FRAPCON-1 EGG document will be issued.

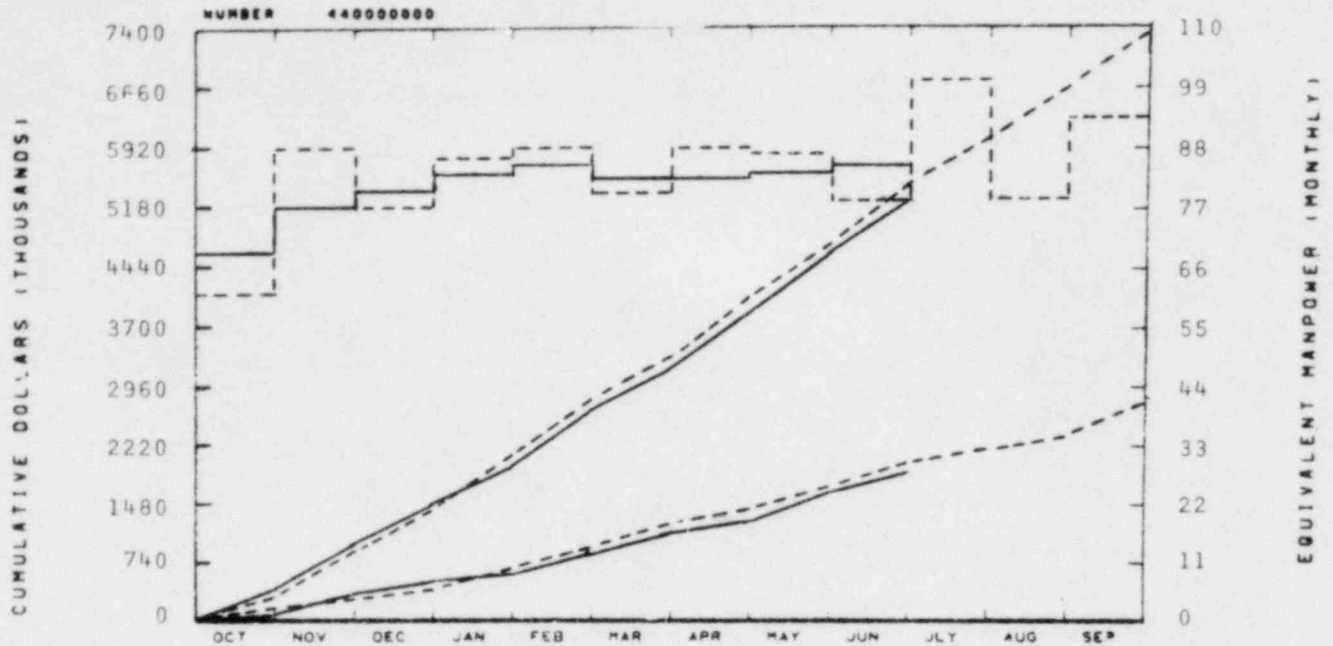
6. Problems and Potential Problems

None

CODE ASSESSMENT & APPLICATIONS PROGRAM
COST SUMMARY & COMMENTS

RESPONSIBLE
MANAGER
J A DEARIEN

EG&G IDAHO INC.
CODE ASSESSMENT & APPLICATIONS



TOTAL PROGRAM

BUDGET	342	777	1387	2029	2643	3333	4022	4748	5406	6005	6646	7381
ACTUAL	371	784	1401	1925	2532	3201	3818	4664	5270			

MATERIAL

BUDGET	81	167	373	660	902	1177	1447	1761	1969	2179	2389	2722
ACTUAL	42	187	390	572	816	1002	1242	1700	1842			

MANPOWER

BUDGET	69	88	77	85	88	80	88	87	78	100	80	91
ACTUAL	69	77	80	83	84	82	82	83	83			

BUDGET
- - - - -
ACTUAL

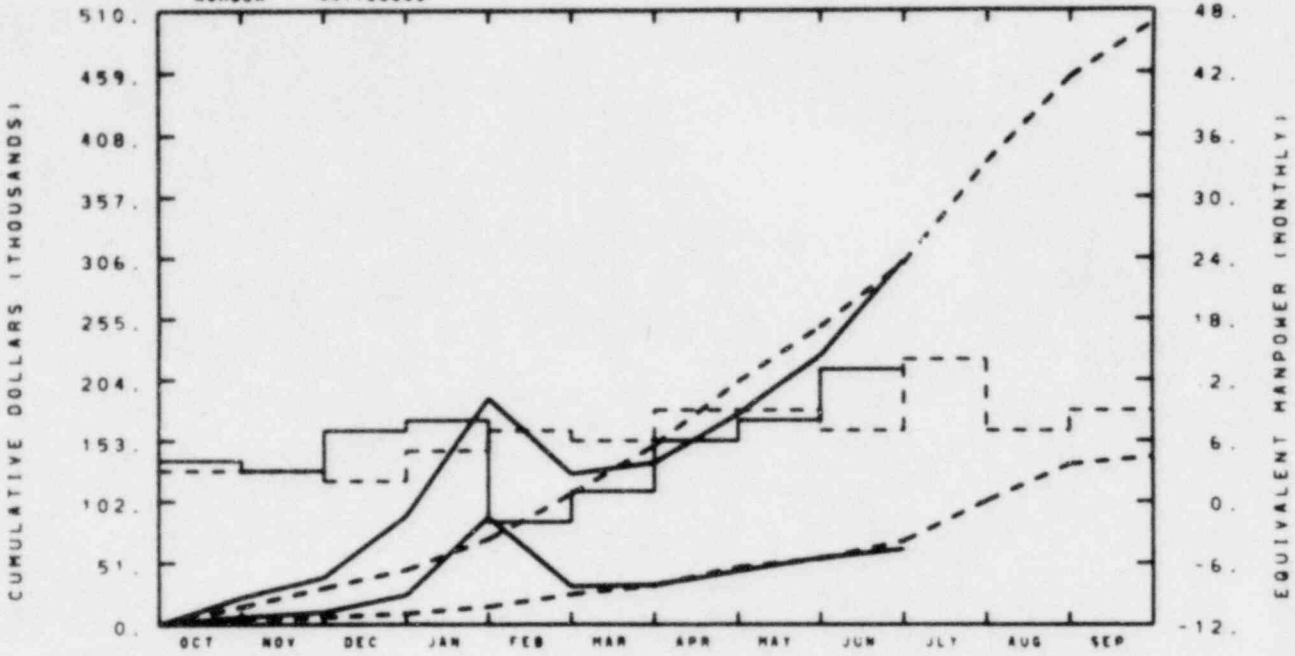
YTD VARIANCE: 136 (3%)

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.

RESPONSIBLE
MANAGER
J. A. DEARICH

EG&G IDAHO INC.
TECH SUR FOR NRC/INDUST A6039
NUMBER 441100000



TOTAL PROGRAM

BUDGET	15	30	45	71	108	149	202	248	301	386	455	500
ACTUAL	22	39	90	188	125	134	175	224	304			

MATERIAL

BUDGET	3	6	9	15	25	33	48	54	69	102	133	139
ACTUAL	6	10	24	89	32	33	44	55	63			

MANPOWER

BUDGET	3	3	2	5	7	6	9	9	7	14	7	9
ACTUAL	4	3	7	8	-2	1	6	8	13			

BUDGET

ACTUAL

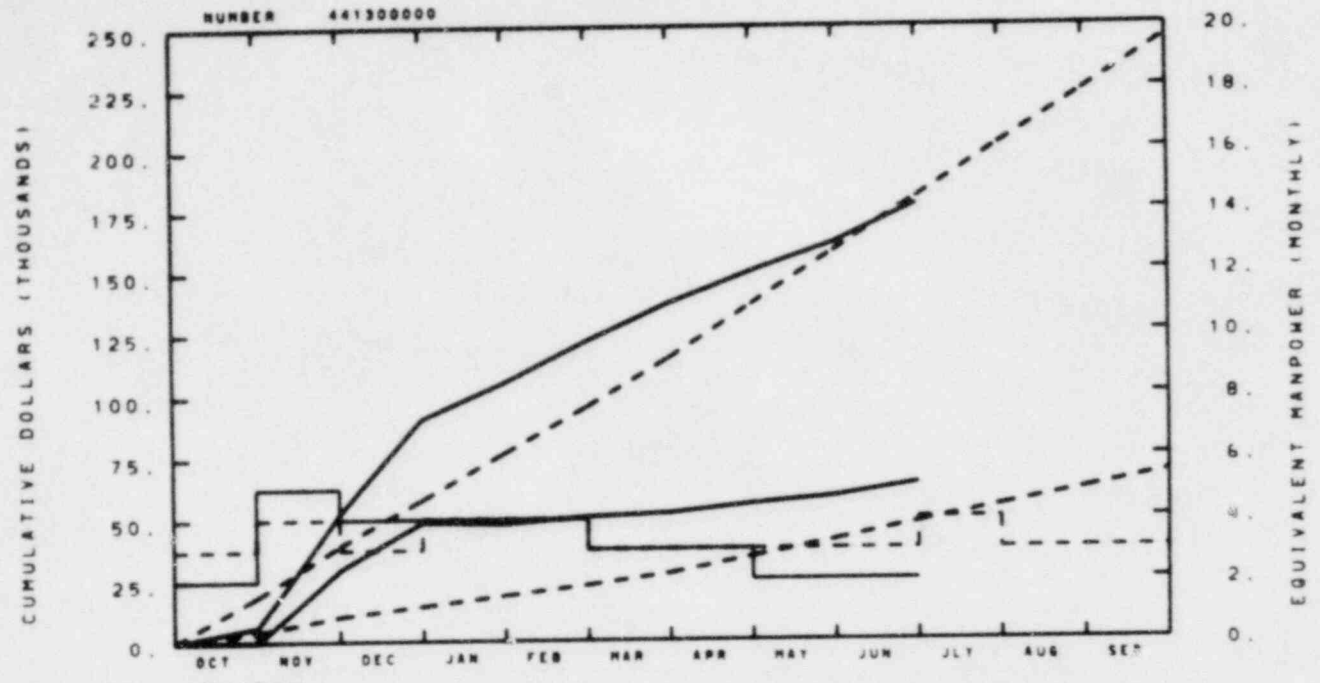
A6039

YTD VARIANCE: <3> (1%)

RESPONSIBLE
HABER
J. A. DEARIE

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			

MATERIAL												
BUDGET	4	10	15	19	23	28	34	41	48	55	61	68
ACTUAL	0	30	49	48	51	52	56	59	64			

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

BUDGET

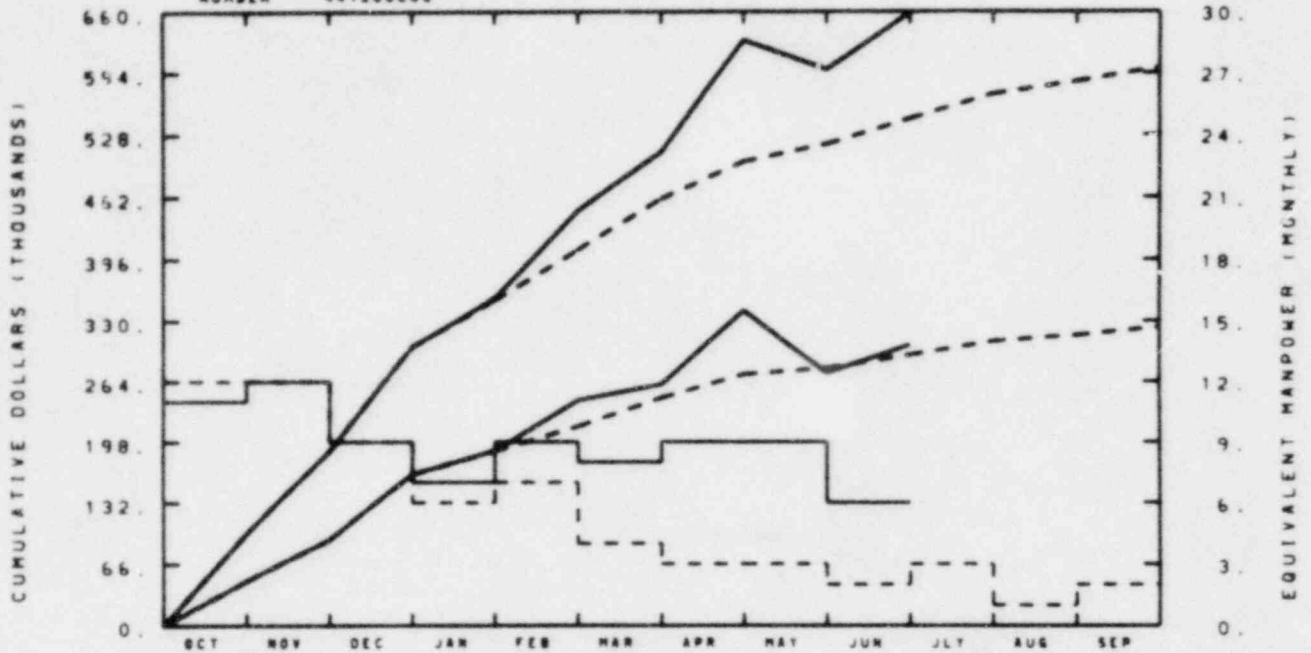
ACTUAL

A6046

YTD VARIANCE: 3 (2%)

RESPONSIBLE
MANAGER
J A DEARIEH

EG&G IDAHO INC.
THERMAL HYDRAULIC CODE AS A6047
NUMBER 441200000



TOTAL PROGRAM

BUDGET	99	188	302	353	404	460	499	518	545	572	585	600
ACTUAL	99	188	302	355	448	510	579	598	659			

MATERIAL

BUDGET	48	92	163	188	215	246	272	279	293	308	315	323
ACTUAL	48	92	163	189	243	261	341	273	304			

MANPOWER

BUDGET	12	12	9	6	7	4	3	3	2	3	1	2
ACTUAL	11	12	9	7	9	8	9	9	6			

BUDGET

ACTUAL

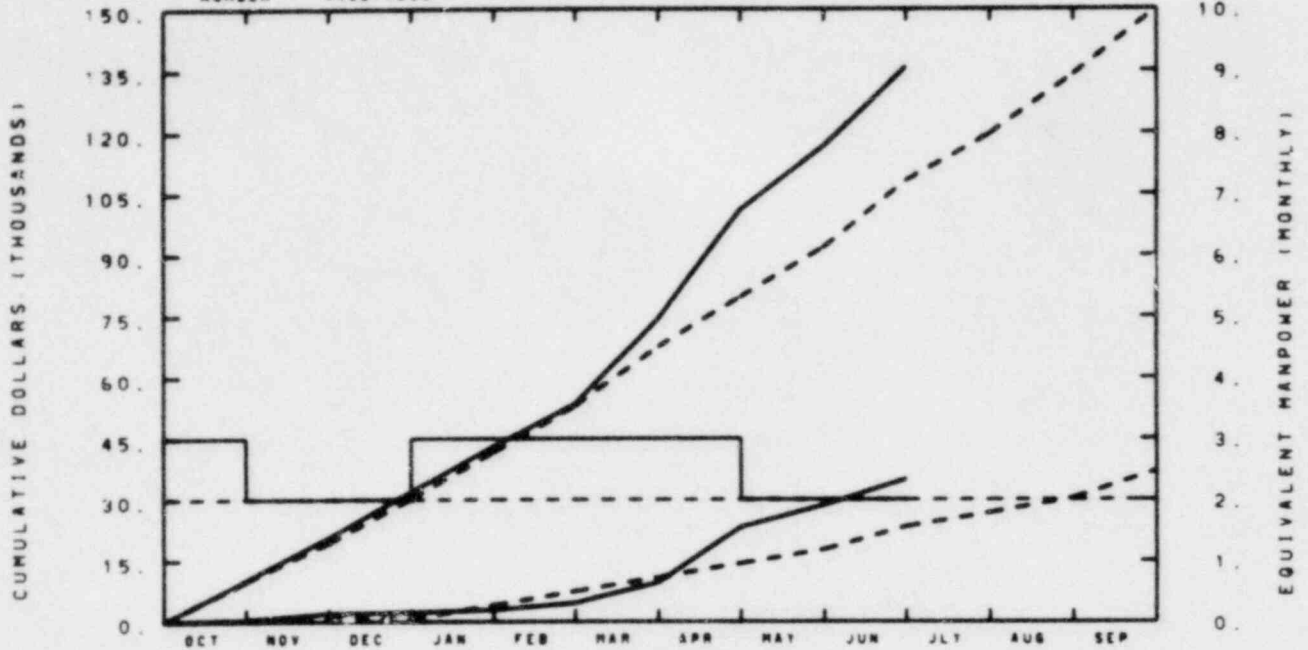
A6047

YTD VARIANCE: <114> (21%)

An additional \$100 K has been authorized for this task. The scope of this task will be decreased appropriately.

RESPONSIBLE
 NAME
 & DESIGN

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	111	117	136			

MATERIAL

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

MANPOWER

BUDGET	2	2	2	2	2	2	2	2	2	2	2	2
ACTUAL	3	2	2	3	3	7	3	2	2			

BUDGET
 - - - -
 ACTUAL

A6048B

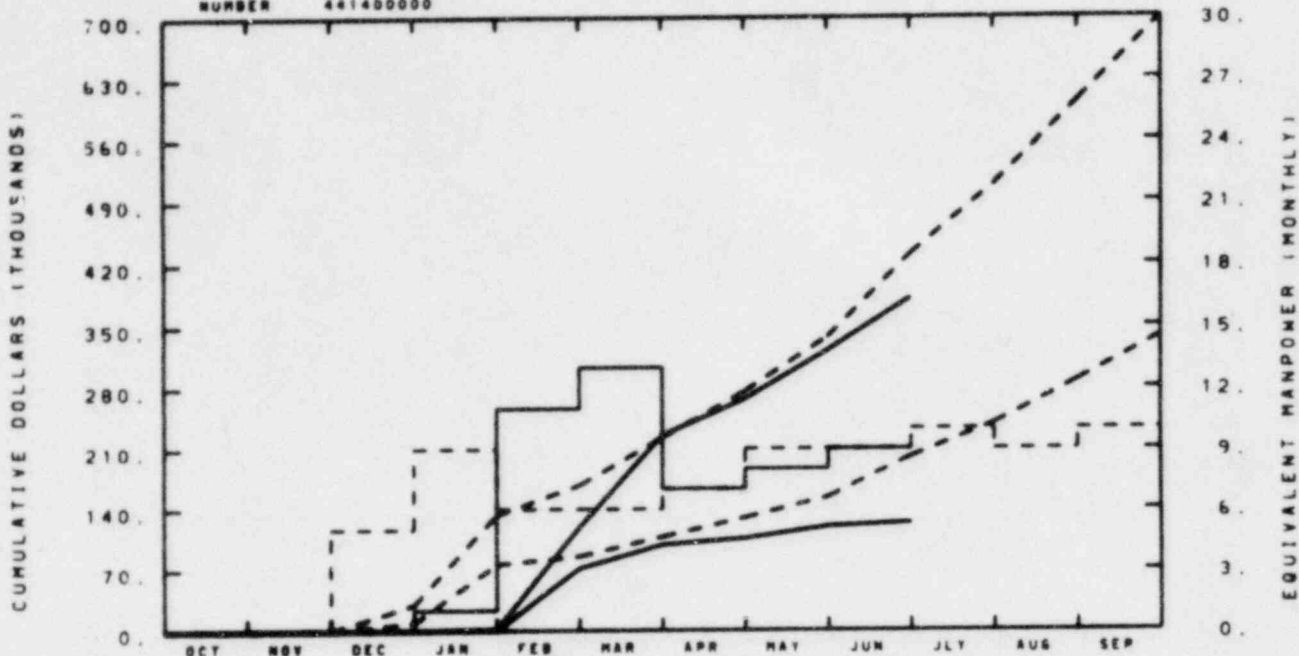
YTD VARIANCE: <28> (26%)

The increase in manpower and material costs reflect efforts on tasks whose schedules were dependent on the receipt of information from the Nuclear Regulatory Commission. The effort will be above budget for the next three months and below budgeted costs for the duration of FY-1980.

RESPONSIBLE
MANAGER
JA DEARIEH

EG&G IDAHO INC.
SEVERE ACCIDENT SEQ ANAL A6048C

NUMBER 441400000



TOTAL PROGRAM												
BUDGET	0	0	30	133	167	223	276	337	430	508	604	700
ACTUAL	0	0	0	2	119	226	217	322	381			

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

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

BUDGET

ACTUAL

A6048C

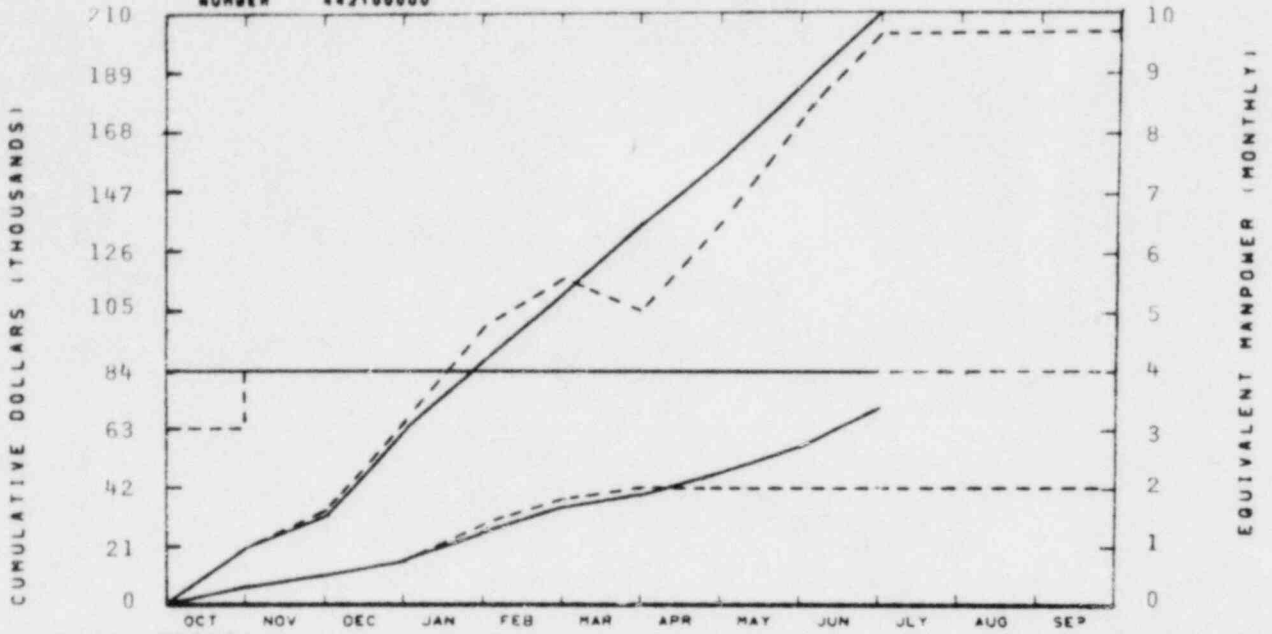
YTD VARIANCE: 49 (11%)

The BWR Simulator training exercise in July will make up \$21 K of the underrun. Manpower will be utilized from this task to support the computer efforts for tasks just beginning. With this in mind, a carry-over into FY-1981 is not anticipated.

RESPONSIBLE
MANAGER
A. BEARIEN

EG&G IDAHO INC.
NRC/RSR DATA BANK & HEAT A6102

NUMBER 442100000



TOTAL PROGRAM		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP
BUDGET		21	39	64	90	116	105	138	171	205	205	205	205
ACTUAL		21	38	63	95	110	135	159	185	212			

MATERIAL		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP
BUDGET		6	10	15	27	38	42	42	42	42	42	42	42
ACTUAL		6	10	15	25	35	40	48	58	70			

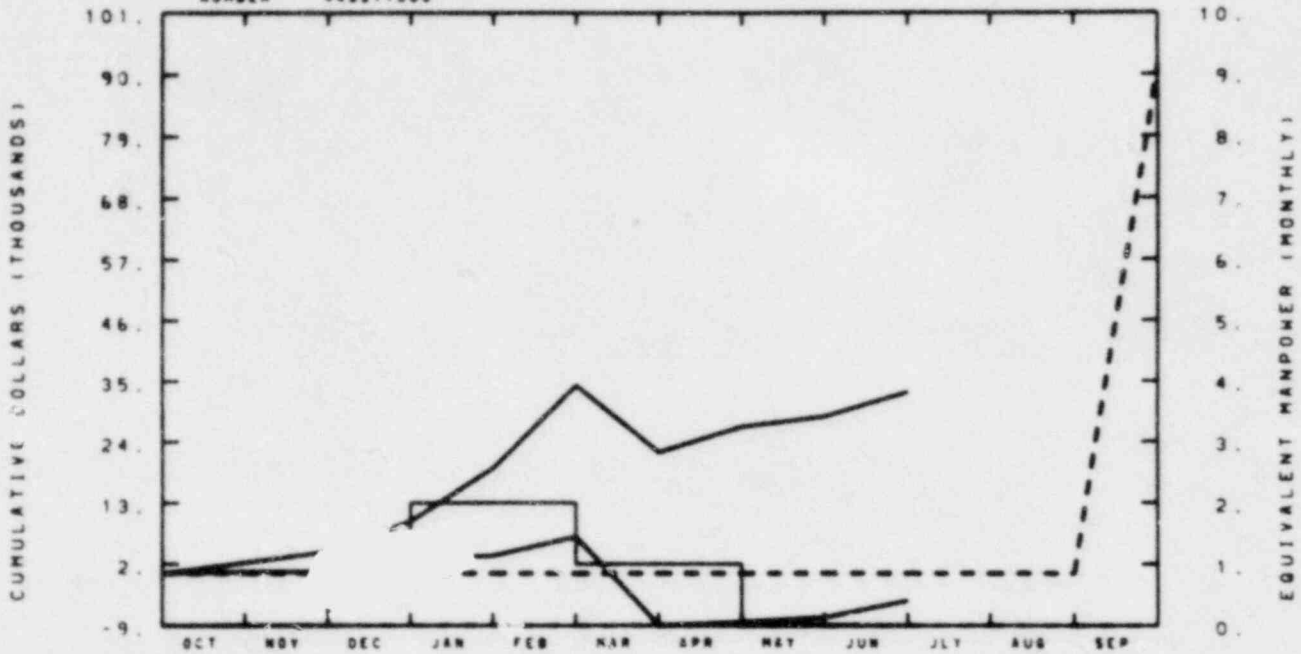
MANPOWER		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP
BUDGET		3	4	4	4	4	4	4	4	4	4	4	4
ACTUAL		4	4	4	4	4	4	4	4	4			

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	28	33				

MATERIAL

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

MANPOWER

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

BUDGET

ACTUAL

A6279

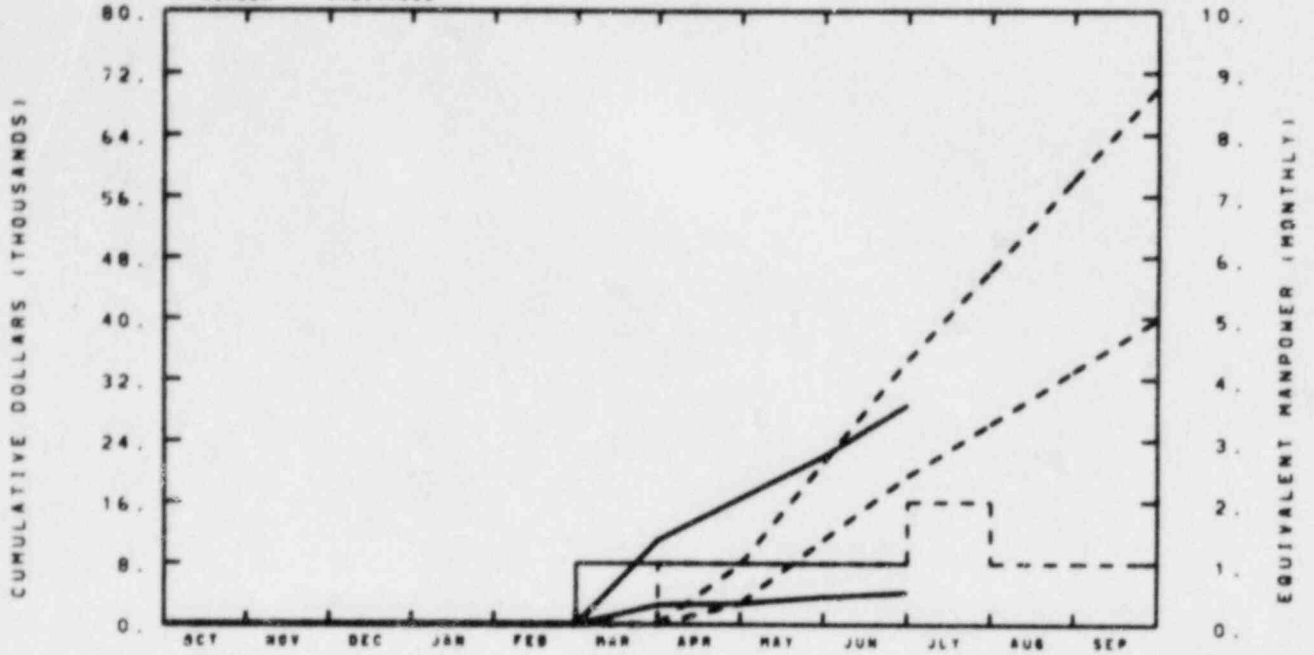
YTD VARIANCE: <33>

Work on this task will continue to be conducted on an "as requested" basis until a definite work scope is defined. Currently, a Water Hammer Summary Report is being revised.

RESPONSIBLE
MANAGER
J. A. DEARIEH

EG&G IDAHO INC.
RESIDENT ENGINEER GERMANY A6304

NUMBER 443911000



TOTAL PROGRAM												
BUDGET	0	0	0	0	0	0	8	21	35	46	58	70
ACTUAL	0	0	0	0	0	11	17	22	29			

MATERIAL												
BUDGET	0	0	0	0	0	0	3	11	19	26	33	40
ACTUAL	0	0	0	0	0	3	3	4	4			

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

BUDGET

ACTUAL

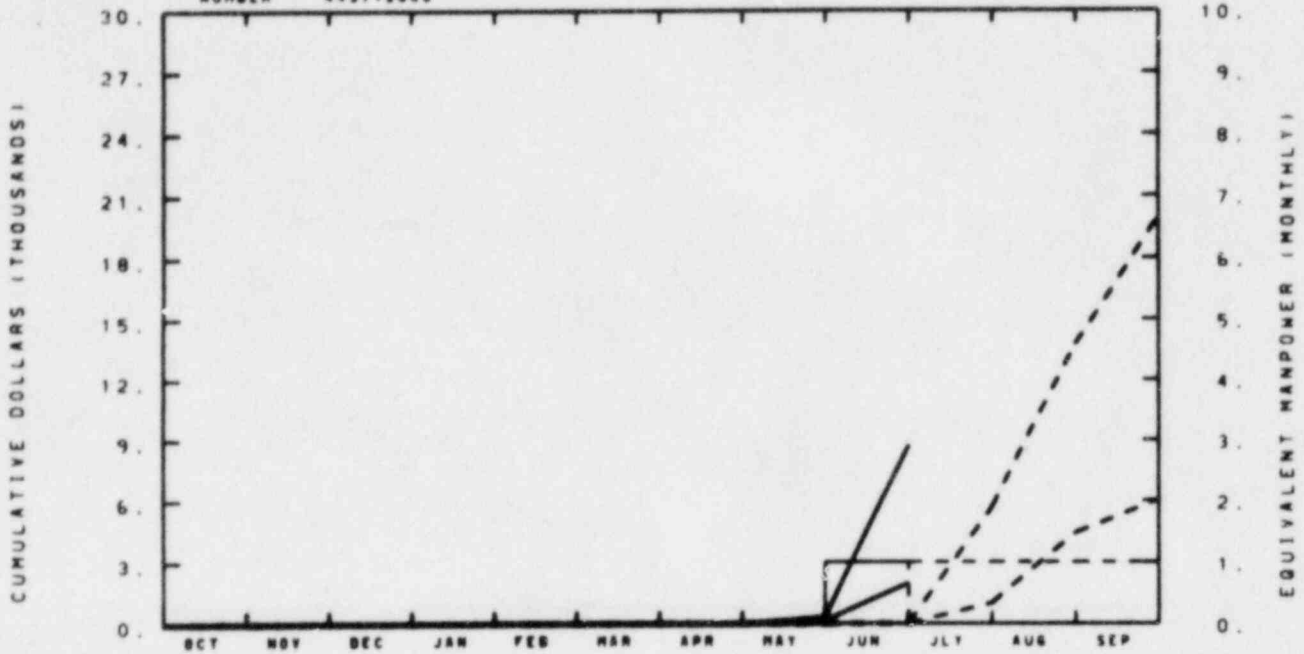
A6304

YTD VARIANCE: 6 (17%)

RESPONSIBLE
MANAGER
J. A. DEARIEN

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			

MATERIAL

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

MANPOWER

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

BUDGET

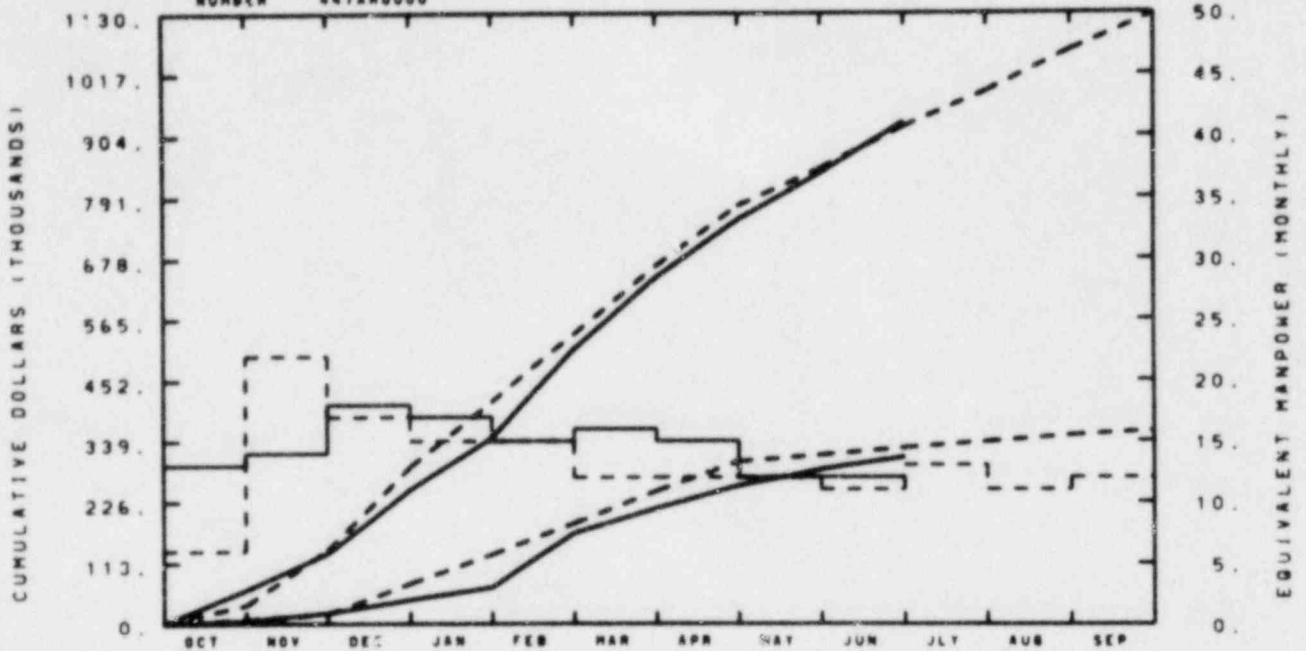
ACTUAL

A6306

YTD VARIANCE: <9>

RESPONSIBLE
MANAGER
J & DEARIEN

EG&G IDAHO INC.
NRR/PAS TECHNICAL SUPPORT
NUMBER 447AR0000



TOTAL PROGRAM		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP
BUDGET		35	135	291	413	537	665	776	844	921	985	1060	1127
ACTUAL		63	131	249	345	510	644	751	835	929			

MATERIAL		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP
BUDGET		8	19	75	129	187	246	301	312	326	337	349	358
ACTUAL		6	20	45	68	149	214	256	285	309			

MANPOWER		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP
BUDGET		6	22	17	15	15	12	12	12	11	13	11	12
ACTUAL		13	14	18	17	15	16	15	12	12			

BUDGET

ACTUAL

YTD VARIANCE: < 8> (1%)

A6276 14 (6%)
A6283 < 8> (7%)
A6290 <11> (8%)
A6291 <10> (9%)
A6293 <10> (19%)
A6294 19 (13%)
A6296 < 1>

CODE ASSESSMENT & APPLICATIONS PROGRAM
CURRENT WORKING SCHEDULE

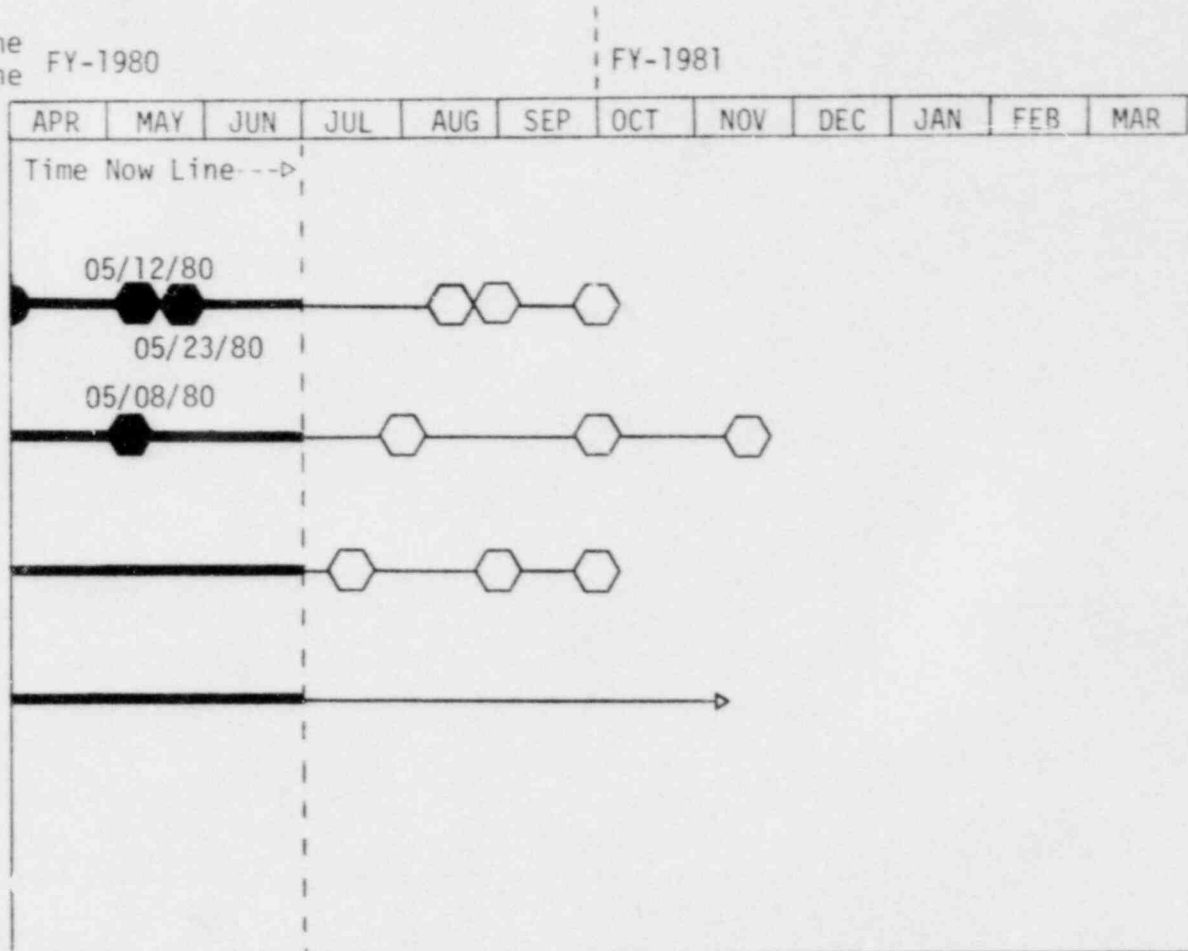
LEGEND

- 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 ASSESSMENT AND APPLICATIONS PROGRAM

June 1980

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



-137-

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

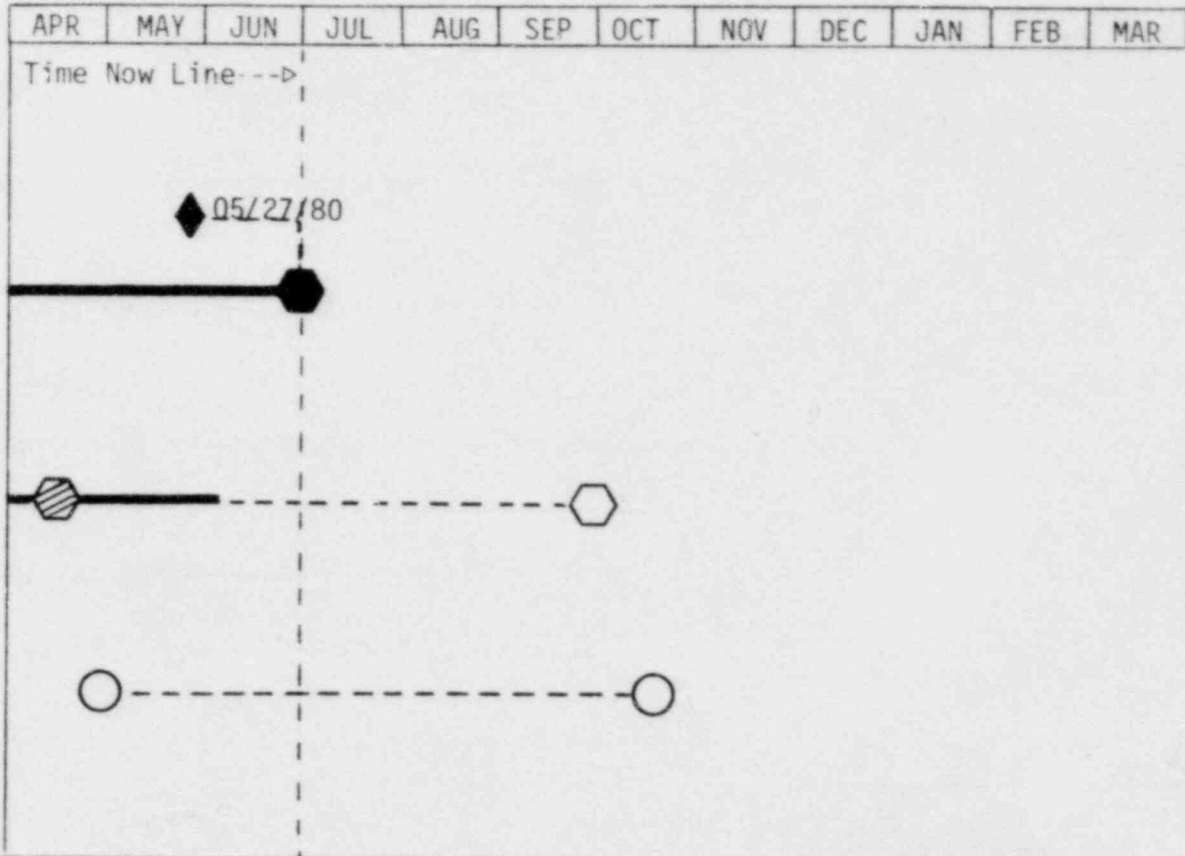
CODE ASSESSMENT AND APPLICATIONS PROGRAM

June 1980

Fuel Code Assessment (A6046)

FY-1980

FY-1981



-138-

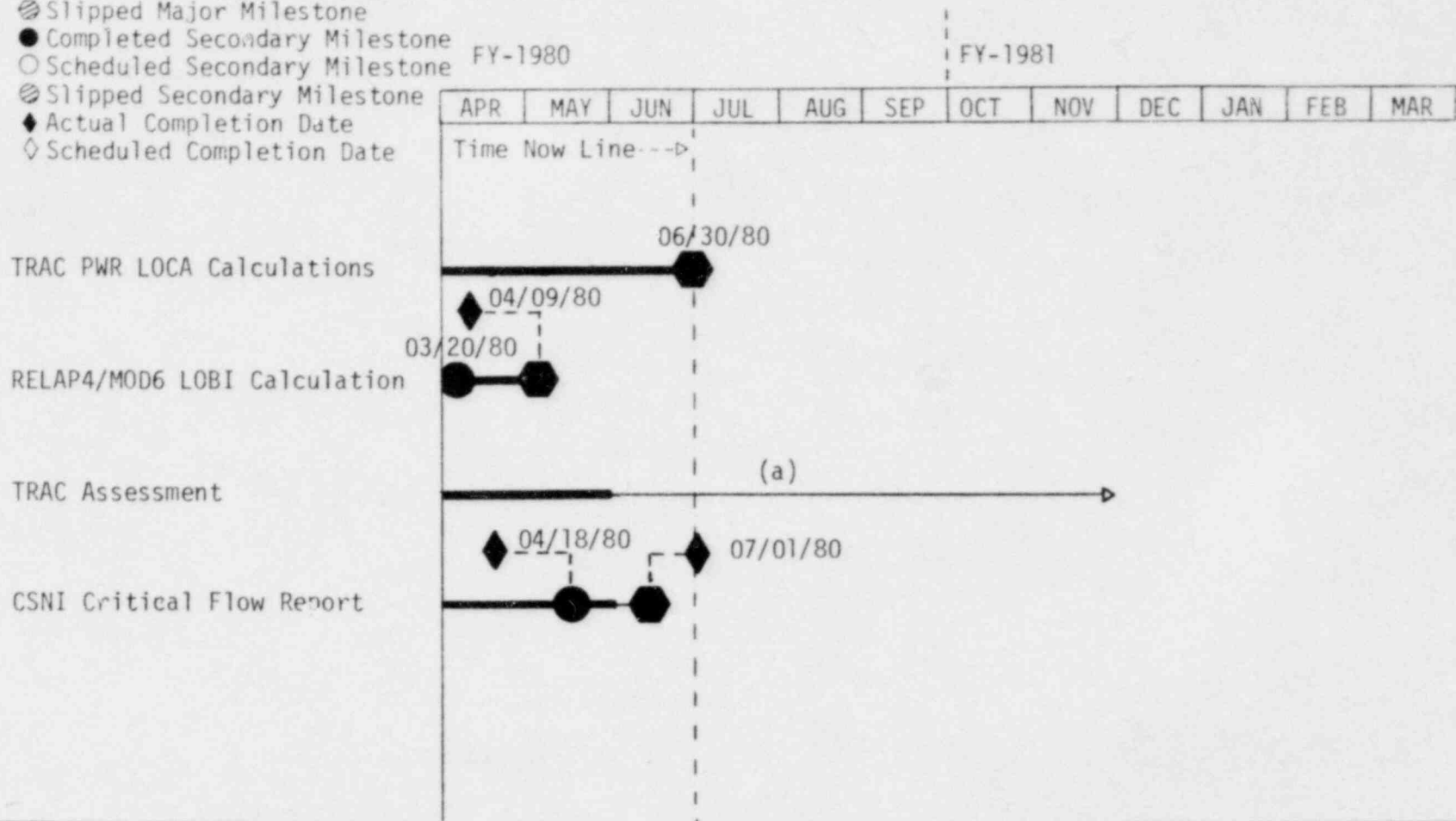
NOTES: The completion of FRAPCON-2 and FRAP-T6 Assessment tasks will be slipped to reflect the delay in receiving FRAPCON-2 from Code Development & Analysis Program.

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
 LOCA Analysis Assessment and Applications (A6047)

June 1980



-139-

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

LEGEND

CODE ASSESSMENT AND APPLICATIONS PROGRAM

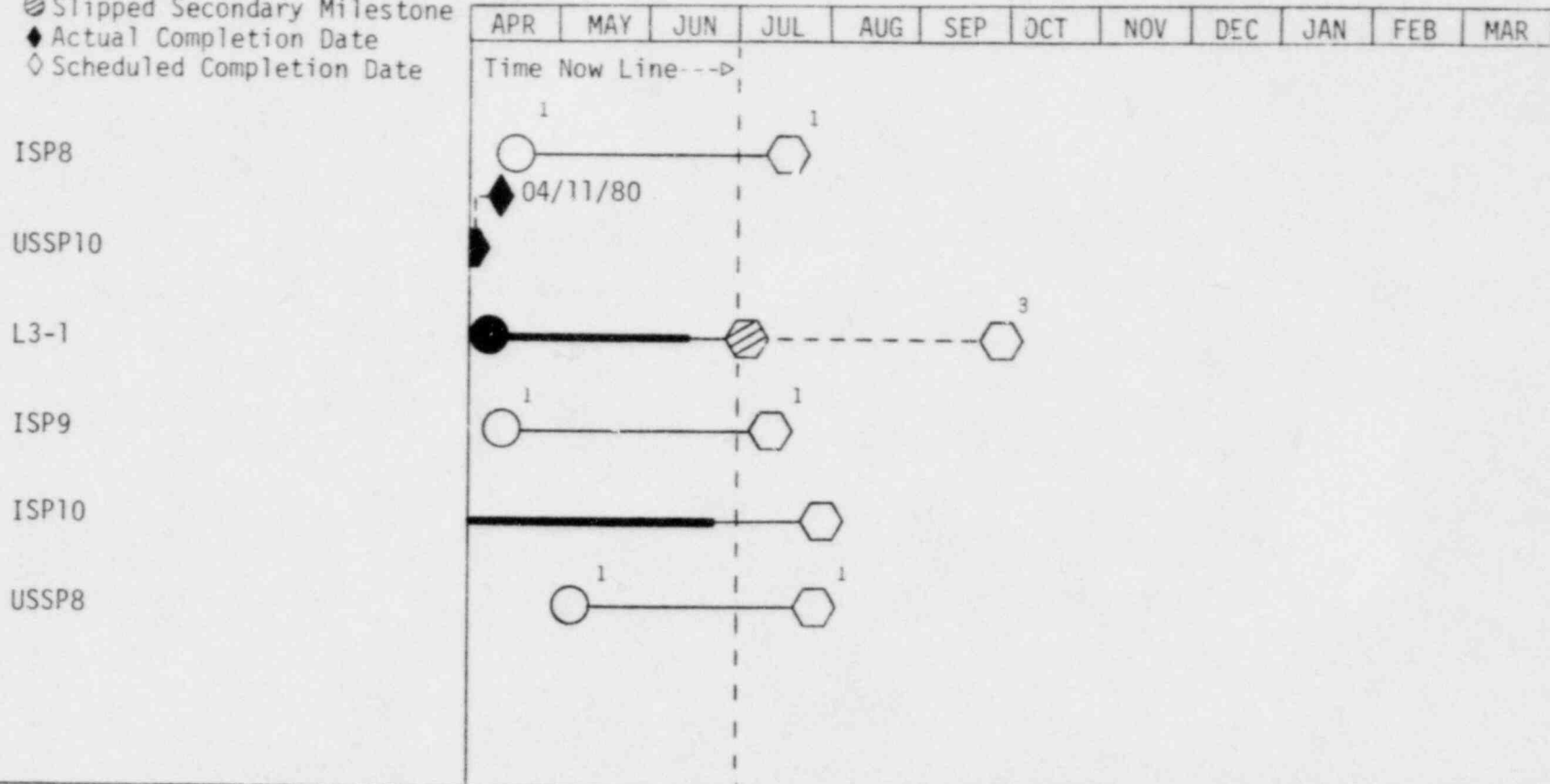
June 1980

Standard Problem (A6048B)

- Completed Major Milestone
- Scheduled Major Milestone
- ⊗ Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- ⊗ Slipped Secondary Milestone
- ◆ Actual Completion Date
- ◇ Scheduled Completion Date

FY-1980

FY-1981



-140-

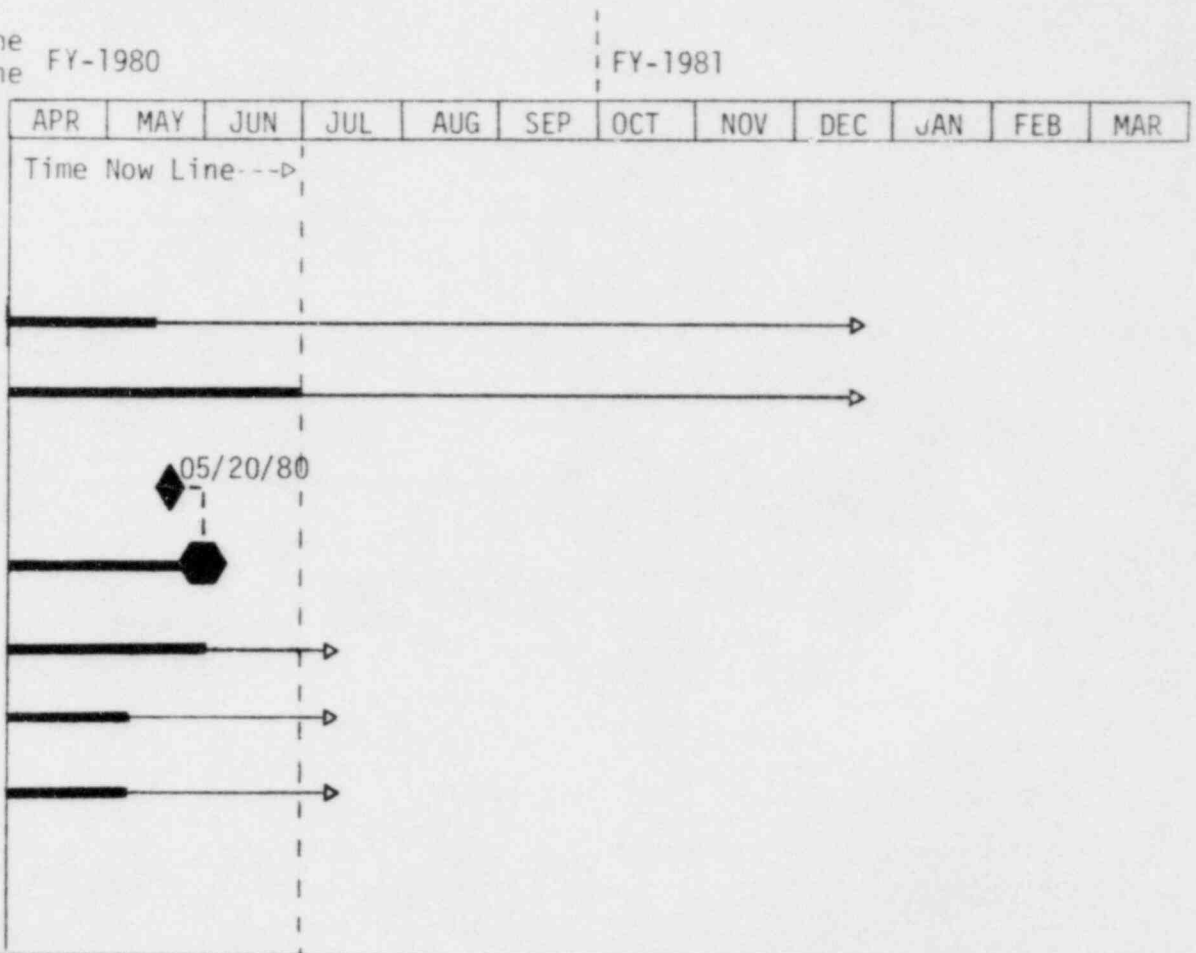
- NOTES:
- ¹ Schedule depends upon when participant calculations are received from NRC.
 - ² This task was stopped pending NRC decision to either rerun Test S-07-10B or rerun the calculations.
 - ³ This task was extended due to a revision of LOFT data.

LEGEND

CODE ASSESSMENT AND APPLICATIONS PROGRAM
Severe Accident Sequence Analysis (A6048C)

June 1980

- Completed Major Milestone
- Scheduled Major Milestone
- ⊗ Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- ⊗ Slipped Secondary Milestone
- ◆ Actual Completion Date
- ◇ Scheduled Completion Date



-141-

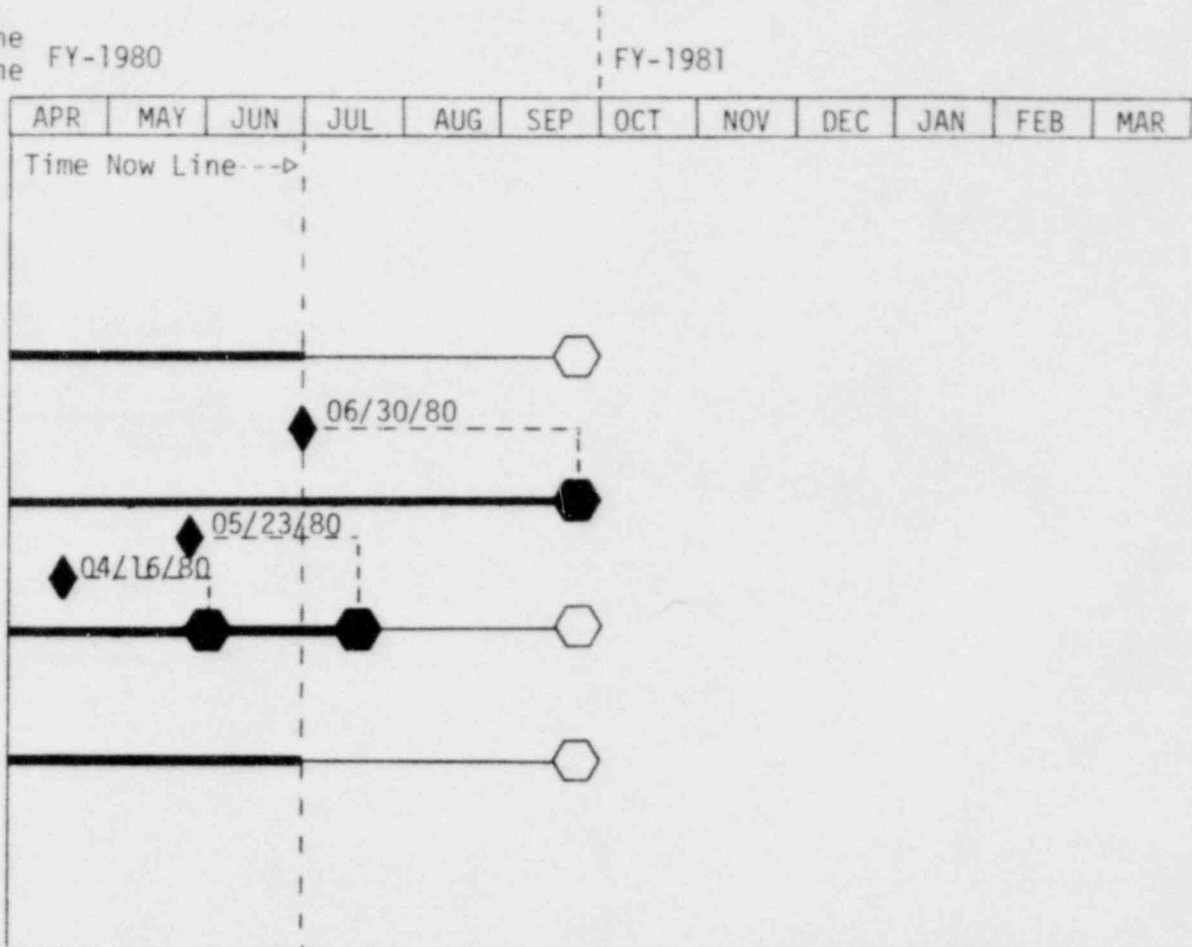
NOTES:

LEGEND

CODE ASSESSMENT AND APPLICATIONS PROGRAM
Data Bank Processing System (A6102)

June 1980

- Completed Major Milestone
- Scheduled Major Milestone
- ⊗ Slipped Major Milestone
- Completed Secondary Milestone
- Scheduled Secondary Milestone
- ⊗ Slipped Secondary Milestone
- ◆ Actual Completion Date
- ◇ Scheduled Completion Date



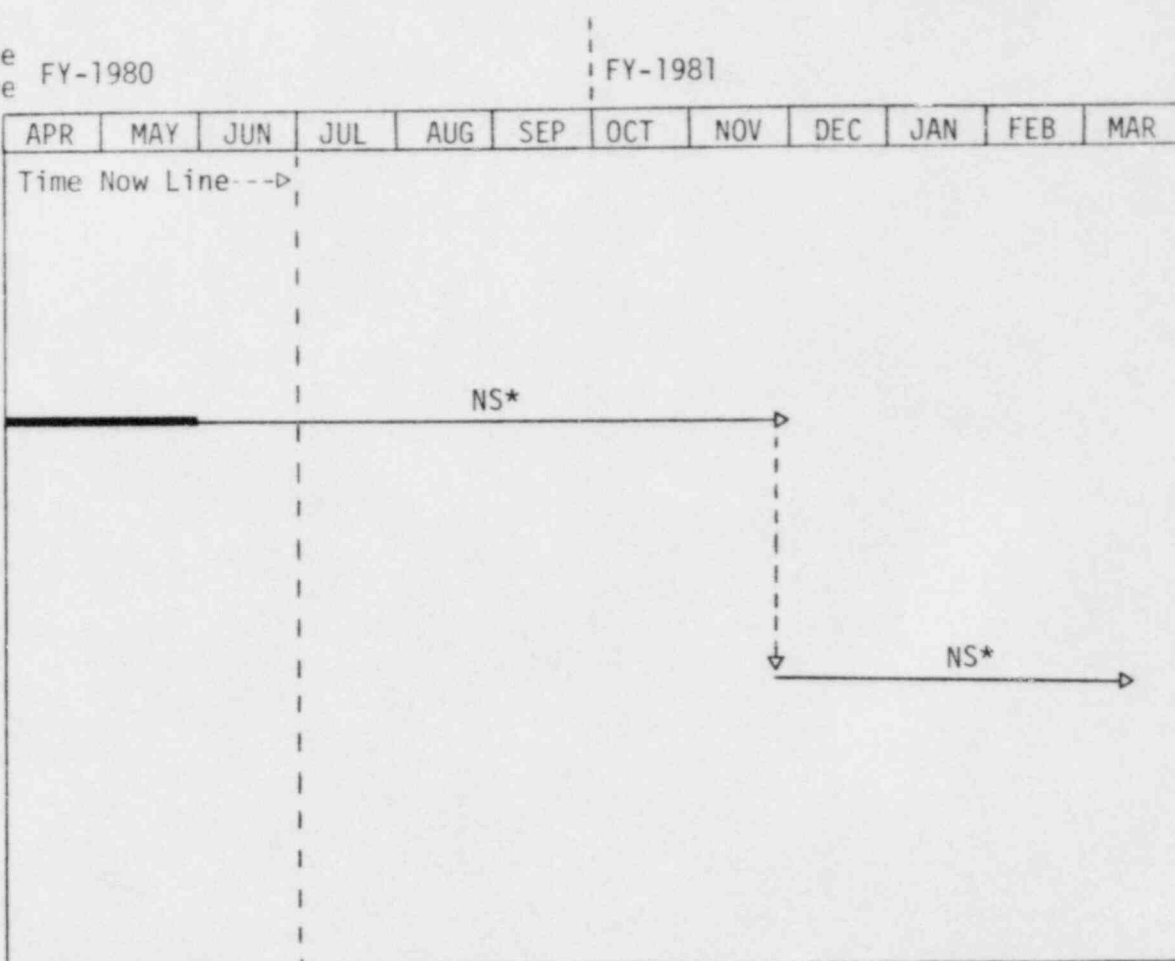
NOTES: * Dependent on additional funding.

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
 HDR Mechanical Component Response Analysis (A6306)

June 1980



NOTES: * Schedule will be established upon completion of initial review of data.

CODE ASSESSMENT & APPLICATIONS PROGRAM
CAPITAL EQUIPMENT

EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

CARRYOVER

Date June 1980

Manager J. A. Dearien

Account Opened o
 Money Committed Δ
 Account Closed ■

Program Code Assessment

189 Number A6102 (A6117)

Charge Number	Description	Authorized Amount	YTD Costs, & Commitments + 6%	Project To Date	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

FY 79	O	N	D	J	F	M	A	M	J	J	A	S
●▲												
●▲												

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

EG&G IDAHO, INC.

CAPITAL EQUIPMENT PRIORITY LIST

Date June 1980

Program Code Assessment

189 Number A6116

Manager J. A. Dearien

Account Opened
Money Committed
Account Closed

Priority Number	Charge Number	Description	Authorized Amount	YTD Costs, & Commitments + 6%	Variance <Over>/Under
1	9KB991750	ADPE	15,000	---	15,000

O	N	D	J	F	M	A	M	J	J	A	S
					●						△

EG&G IDAHO, INC.
CAPITAL EQUIPMENT PRIORITY LIST

Program Code Assessment

189 Number A6117

Date June 1980

Manager J. A. Dearien

Account Opened
 Money Committed
 Account Closed

Priority Number	Charge Number	Description	Authorized Amount	YTD Costs, & Commitments + 6%	Variance <Over>/<Under>
1	9KA9917400	ADPE	20,000	---	20,000

O	N	D	J	F	M	A	M	J	J	A	S
					●						△

CODE ASSESSMENT & APPLICATIONS PROGRAM
TECHNICAL REVIEW & SUMMARY

PROGRAM MANAGER'S
SUMMARY AND HIGHLIGHTS

1. A6291: The initial draft of the "Quick Look Flagging Report for Valves" was transmitted to NRC (letter JAD-150-80).
2. A6294: EG&G personnel participated in review of the final draft of the Crystal River Safety Study Report.
3. Eighteen additional tests were added to the Data Bank.
4. Three preliminary assessment reports documenting seven TRAC-PIA calculations for selected loss-of-coolant accidents in pressurized water reactors were issued.
5. A preliminary assessment report documenting a comparison of Semiscale Mod-1 Test S-04-6 test data and TRAC-PIA calculations was issued.

1. A6039 - INEL Technical Support to NRC for Industry Cooperative Programs2. Scheduled Milestones for June 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
-------------	--------------------	-----------------	--------------------

None scheduled.

3. Summary of Work Performed in June 1980

The review of six, BWR-Refill/Reflood program documents was completed.

The BWR-Refill/Reflood, Single Heated Bundle test prediction effort continued.

The in-depth study of natural circulation in the FLECHT-SEASET System Effects Facility was initiated with model development. A study of potential hot leg liquid films in the FLECHT-SEASET System Effects Facility during natural circulation and reflux modes was completed.

A draft of the Code Assessment and Applications Program recommendations for future BWR research was completed.

4. Scheduled Milestones for July 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
-------------	--------------------	-----------------	--------------------

None scheduled.

5. Summary of Work to be Performed in July 1980

Issue letter reports documenting: a) BWR document review, b) FLECHT-SEASET hot leg liquid film study and c) recommendations for future BWR research.

Continue BWR-Refill/Reflood Single Heated Bundle test prediction.

Initiate FLECHT-SEASET blockage evaluation study and BWR-Refill/Reflood 30° Sector test prediction.

6. Problems and Potential Problems

None

1. Task A6046 - Fuel Behavior Analysis Assessment2. Scheduled Milestones for June 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
-------------	--------------------	-----------------	--------------------

None scheduled.

3. Summary of Work Performed in June 1980

The conversion of all steady state input decks to FRAPCON-2 format was completed. The subsets of code assessment data base runs to be used to evaluate the deformation and gas release models of FRAPCON-2 were selected.

The table of runs and references for the FRAPCON-2 report were updated to reflect newly added input decks. Drafting of the introductory material for the FRAPCON-2 report was started.

New data bank input was reviewed, corrected, and added to the data bank data.

Work was initiated on generating generic printouts for each data category.

4. Scheduled Milestones for July 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual</u>
-------------	--------------------	-----------------	---------------

None scheduled.

5. Summary of Work to be Performed in July 1980

When FRAPCON-2 is frozen and transmitted for code assessment, the commercial rod studies will be run and the results will be plotted. Evaluation of the remainder of the input decks will begin, particularly the subsets chosen for the deformation and gas release model checkout and the beginning of life pressure comparisons.

6. Problems and Potential Problems

None

1. A6047 - LOCA Analysis Assessment and Applications2. Scheduled Milestones for June 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
	Issue PAR & Tape on Test S-04-6	6-18-80T	6-18-80C JAD-166-80

3. Summary of Work Performed in June 1980

Three preliminary assessment reports documenting seven TRAC-PIA calculations for LOCAs in a PWR were completed.

A preliminary assessment report on a TRAC-PIA calculation of Semiscale Mod-1 Test S-04-6 was issued.

4. Scheduled Milestones for July 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
	Issue PARs on 7 PWR TRAC LOCA Calculations	7-1-80T	6-30-80C JAD-161-80

5. Summary of Work to be Performed in July 1980

The model of Semiscale Mod-1 Test S-04-6 will be converted to TRAC PD2 input format. Obtain the TRAC PD2 computer code.

6. Problems and Potential Problems

A delay in the release date of TRAC PD2 could impact the initiation of TRAC PD2 assessment.

1. Task A6048B - Standard Problem Analysis & Heat Transfer Assistance2. Scheduled Milestones for June 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
-------------	--------------------	-----------------	--------------------

None scheduled.

3. Summary of Work Performed in June 1980

A draft of a Preliminary Assessment Report (PAR) on LOFT Test L3-1 was reissued.

A draft of a PAR on International Standard Problem 10 (ISP10) was completed.

4. Scheduled Milestones for July 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
-------------	--------------------	-----------------	--------------------

	PKL Calc & Rpt	7-4-80T	
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5. Summary of Work to be Performed in July 1980

Issue a PAR on ISP10.

Issue a PAR on LOFT Test L3-1.

6. Problems and Potential Problems

None

1. Task A6048C - Severe Accident Sequence Analysis Task Force2. Scheduled Milestones for June 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
-------------	--------------------	-----------------	--------------------

None scheduled.

3. Summary of Work Performed in June 1980

Boiling Water Reactor (BWR) training was started with a one-week course presented by General Physics Corporation.

The development of an interim Browns Ferry RELAP4/MOD7 model was continued.

A control system logic for BWRs was transmitted to the RELAP5 development staff.

A statistical study of the duration of loss-of-offsite power was continued.

A review of initiating events for Pressurized Water Reactors (PWRs) for severe accident sequence analyses was continued.

4. Scheduled Milestones for July 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
-------------	--------------------	-----------------	--------------------

None scheduled.

5. Summary of Work to be Performed in July 1980

BWR training will continue at the Tennessee Valley Authority simulator.

Development of the interim Browns Ferry RELAP4/MOD7 model will continue.

Initiating events for PWRs will continue to be reviewed.

6. Problems and Potential Problems

Lack of plant specific data for Zion and Browns Ferry continues to impact the work effort. This data has been requested through the NRC but not received.

1. A6102 - Data Bank Processing System2. Scheduled Milestones for June 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
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None scheduled.

3. Summary of Work Performed in June 1980

Eighteen more tests were added to the Data Bank to fulfill the node scheduled for July 31, 1980 (2 months ahead of schedule).

LOFT data tapes for 5 LOFT tests were sent to Los Alamos as requested.

A REFORM program was written to incorporate Cylindrical Core Test Facility (3-D) data into Data Bank format. A REFORM program was written to add Studsvik data to the Data Bank.

The "on-line" Data Bank contents information file has been written, coded and is being debugged.

4. Scheduled Milestones for July 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
-------------	--------------------	-----------------	--------------------

	Add 18 Tests to Data Bank	7-31-80T	5-23-80C JAD-155-80
--	---------------------------	----------	------------------------

5. Summary of Work to be Performed in July 1980

Adding new tests to the Data Bank will continue. LOFT L6-5 will be added to the Data Bank upon release of the LOFT-EDR for L6-5. CCTF 2 and 3 will be added.

The "on-line" Data Bank contents information will be released to Data Bank users.

6. Problems and Potential Problems

Funding for the rest of FY80 is yet to be resolved.

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

2. Scheduled Milestones for June 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
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None scheduled.

3. Summary of Work Performed in June 1980

Received comments from NRC on the water hammer summary report. Work to incorporate these comments was initiated.

4. Scheduled Milestones for July 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
-------------	--------------------	-----------------	--------------------

None scheduled.

5. Summary of Work to be Performed in July 1980

Efforts to complete the revisions to the water hammer summary report will continue.

6. Problems and Potential Problems

No NRC direction currently exists or is expected on this task.

1. Task A6285/A6306 - HDR Mechanical Component Response Analysis Testing2. Scheduled Milestones for June 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
Z10	Prepare & Issue Eval of Structural Tests of HDR Systems and Components	5-13-80T	N/S JAD-116-80

3. Summary of Work Performed in June 1980

Response spectra corresponding to the HDR measured data were generated and compared to analytical predictions. Vertical response comparisons were good; horizontal response comparisons were not as good. It is believed that these comparisons could be improved by recalculating the response using a lower and more realistic damping value.

4. Scheduled Milestones for July 1980

<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
None scheduled.			

5. Summary of Work to be Performed in July 1980

Comparisons of measured versus predicted data will continue. The ANSYS computer code will be utilized to recalculate the HDR piping response for a lower damping value.

6. Problems and Potential Problems

None

I-661 PROBABILISTIC ANALYSIS STAFF

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 June 1980

<u>A Nos.</u>	<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
A6276	None	scheduled.		
A6283	None	scheduled.		
A6290	None	scheduled.		
A6291	K27	Valve Data Draft Report	6-30-80T	6-12-80C JAD-150-80
A6293	None	scheduled.		
A6294	None	scheduled.		
A6296	None	scheduled.		

3. Summary of Work Performed in June 1980

A6276 - Continued to catalog Licensee Event Reports (LERs) covering Instrumentation and Controls.

A6283 - Worked on theoretical beta-binomial model. Applied theoretical models to pump failure data.

A6290 - Continued development of capability to extract data for analysis. Worked on draft report covering analysis methodology.

A6291 - Finished draft valve flagging report and transmitted to NRC (JAD-150-80). Began draft flagging report on diesel engines and generators.

A6293 - Continued to respond to direction from NRC-PAS.

A6294 - Met with Science Applications, Inc. (SAI) personnel to define work scope for FY81 activities.

A6296 - Met with Sandia and NRC-PAS on June 16, to discuss Interim Reliability Evaluation Program plans. Two individuals participated in a short course at Sandia Labs concerning human factors. Reviewed final draft of the Crystal River Safety Study Report.

4. Scheduled Milestones for July 1980

<u>A Nos.</u>	<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
A6276	None	scheduled.		
A6283	None	scheduled.		
A6290	None	scheduled.		
A6291	K28	Diesel Data Draft Report	7-18-80T	
A6293	None	scheduled.		
A6294	None	scheduled.		
A6296	None	scheduled.		

5. Summary of Work to be Performed in July 1980

A6276 - Continue to work on a summarization of LERs on Instrumentation and Controls.

A6283 - Continue to apply theoretical models to pump failure data.

A6290 - Start processing data in order to evaluate gross failure rates of all types of components in the data base.

A6291 - Work toward draft flagging report on diesel engines.

A6293 - Continue to respond to direction from NRC-PAS.

A6294 - SAI will continue to develop operator information requirements for following important accident sequences. Will also prepare list of information needs from plants for forthcoming visits to Surry and Peach Bottom.

A6296 - Nothing scheduled.

6. Problems and Potential Problems

None

WR&D MONTHLY REPORT FOR
JUNE 1980
CODE DEVELOPMENT & ANALYSIS PROGRAM
CODE ASSESSMENT & APPLICATIONS PROGRAM
(NRR)

E. L. Pierson

E. L. Pierson
Plans & Budget Representative

J. M. Howe for P. North

P. North, Manager
Code Development & Analysis Program

J. A. Dearien / C. P. Oberhauser

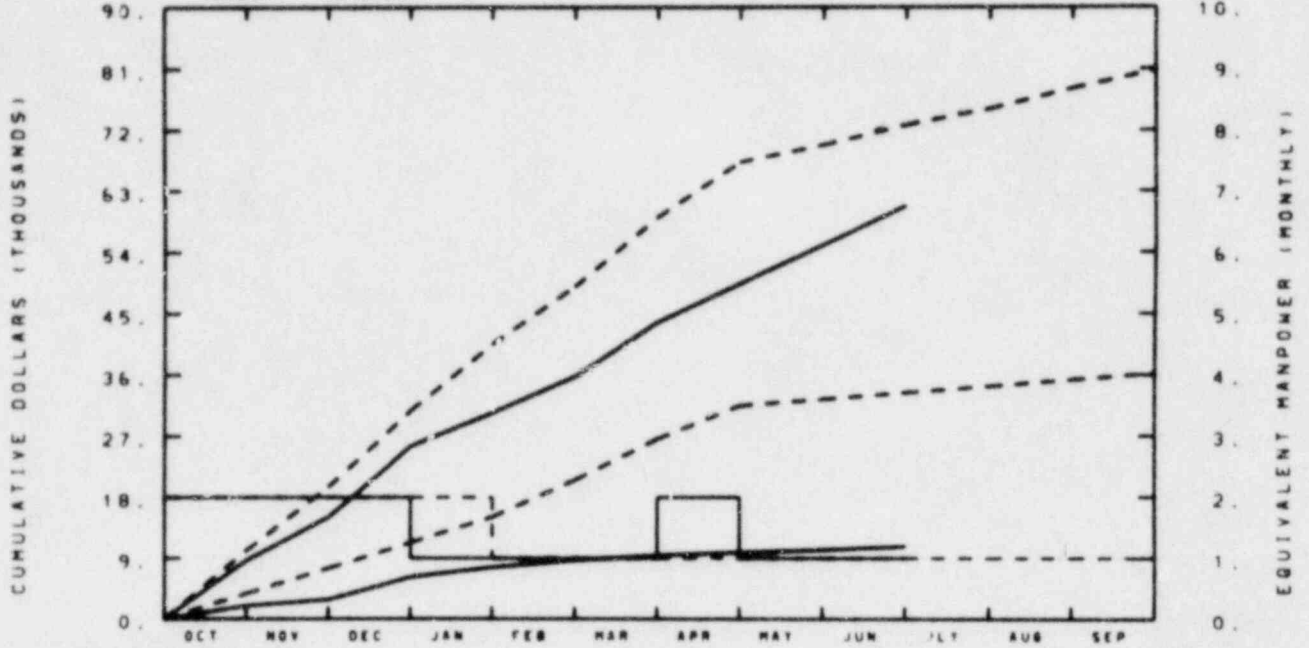
J. A. Dearien, Manager
Code Assessment & Applications Program

CODE DEVELOPMENT & ANALYSIS PROGRAM
NRR
COST SUMMARY & COMMENTS

RESPONSIBLE
WASER
NORTH

EG&G IDAHO INC.
CONTAINMENT ANALYSIS

HURBER 431000000



TOTAL PROGRAM												
BUDGET	10	20	31	41	49	59	67	70	73	75	78	81
ACTUAL	9	15	26	30	26	44	19	55	61			

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

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

BUDGET
- - - - -
ACTUAL

A6009

YTD VARIANCE: 12 (16%)

The problem identification section of the CONTEMPT4 checkout was completed ahead of schedule and below cost. An early start was made on the problem resolution section. The currently scheduled FY-1980 problem resolution work will lead to a year-end closeout on budget.

CODE DEVELOPMENT & ANALYSIS PROGRAM
NRR
TECHNICAL REVIEW & SUMMARY

PROGRAM MANAGER'S
SUMMARY AND HIGHLIGHTS

Work on the CONTEMPT4 improvements has progressed with approximately 75% of the work completed on the heat structure model and 25% of the fan cooler model corrections complete.

189a A6009

Page 1

1. 189a A6009 - Containment Analysis

2. Scheduled Milestones for June 1980

No scheduled milestones for June.

3. Summary of Work Performed in June 1980

Work proceeded as scheduled on the corrections to CONTEMPT4. Several requests for CONTEMPT-LT were received and fulfilled.

4. Scheduled Milestones for July 1980

No scheduled milestones for July.

5. Summary of Work to be Performed in July 1980

Work will continue on CONTEMPT4 corrections.

6. Problems and Potential Problems

None

CODE ASSESSMENT & APPLICATIONS PROGRAM

NRR

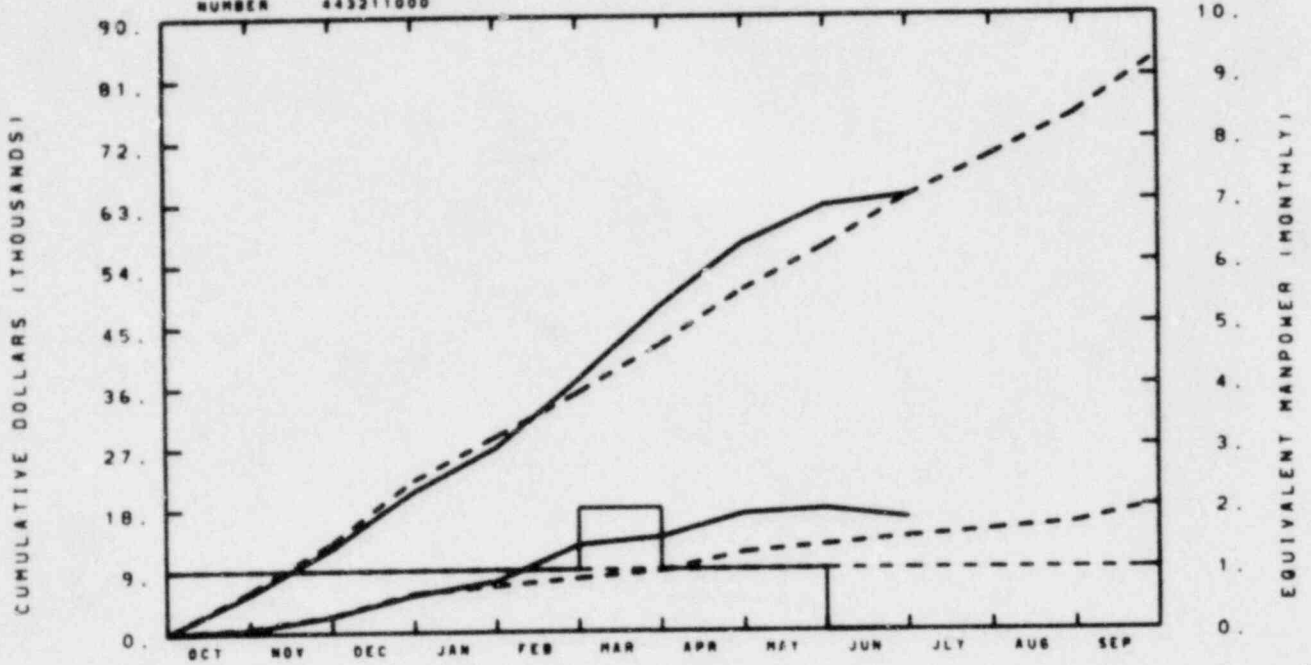
COST SUMMARY & COMMENTS

POSSIBLE
 ASER
 J. A. DEARREN

EG&G IDAHO INC.

PMR/BER PRIMARY SYS RESP A6152

NUMBER 443211000



TOTAL PROGRAM												
BUDGET	6	13	22	29	35	42	50	56	64	70	75	84
ACTUAL	6	12	21	27	37	48	57	62	64			

MATERIAL												
BUDGET	1	2	6	7	8	9	11	12	14	15	16	18
ACTUAL	0	2	5	7	13	14	17	18	16			

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

BUDGET
 - - - - -
 ACTUAL

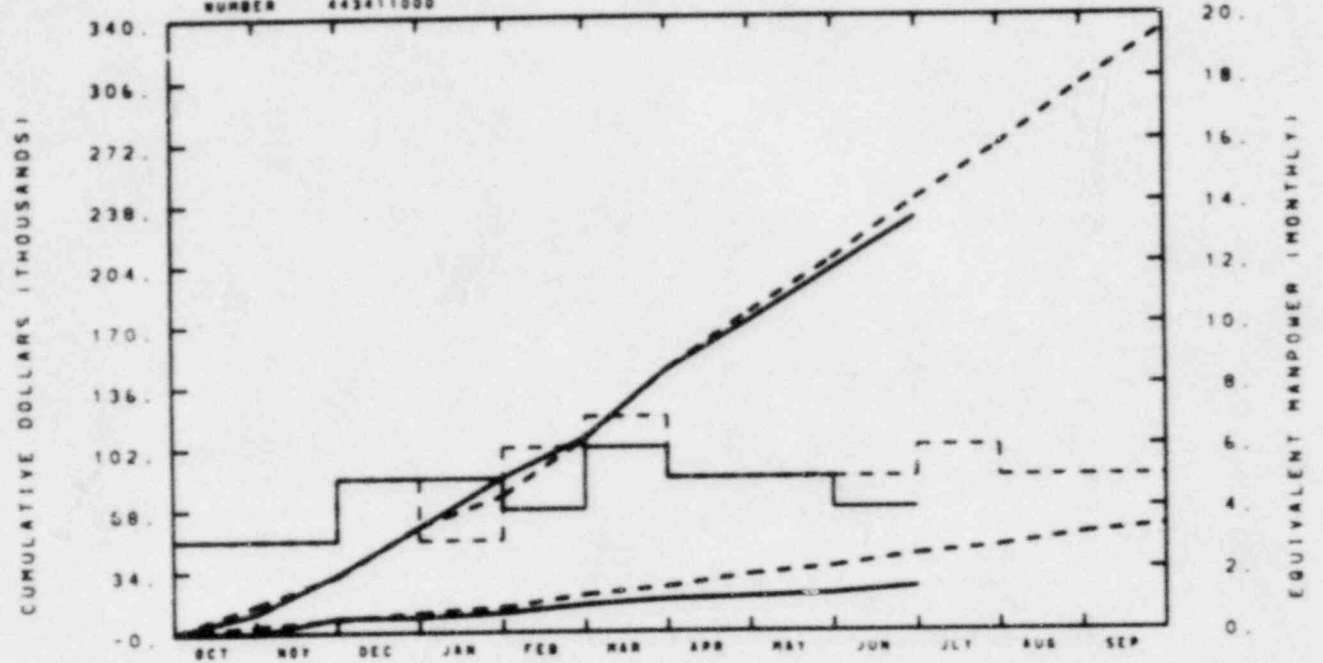
A6152

YTD VARIANCE: 0

RESPONSIBLE
MANAGER
J. A. DEARICH

EG&G IDAHO INC.
TECH ASST ASYMM LOCA LOADS A6156

NUMBER 443411000



TOTAL PROGRAM												
BUDGET	15	31	55	75	106	145	177	206	240	269	302	332
ACTUAL	11	22	38	55	107	145	172	201	230			

MATERIAL												
BUDGET	4	7	11	14	20	25	31	35	42	46	52	57
ACTUAL	0	8	8	11	15	18	19	20	24			

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

BUDGET

ACTUAL

A6156

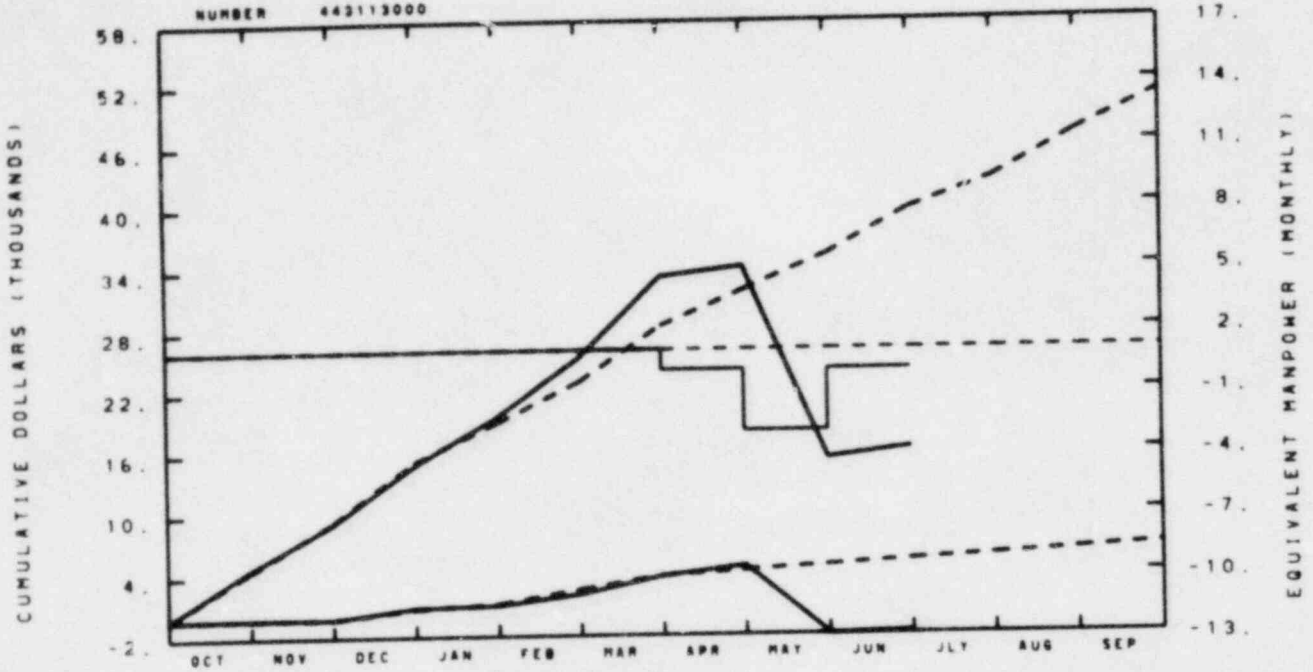
YTD VARIANCE: 10 (4%)

Reduced manpower on this task due to vacations. Some funds and work scope may be carried over the FY-1981 if vendor responses are not prompt.

POSSIBLE
 NUMBER
 DEARIEH

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	14	15	16			

MATERIAL												
BUDGET	0	0	1	1	3	4	4	5	5	6	6	7
ACTUAL	0	0	1	1	2	4	5	-1	-1			

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

BUDGET
 - - - - -
 ACTUAL

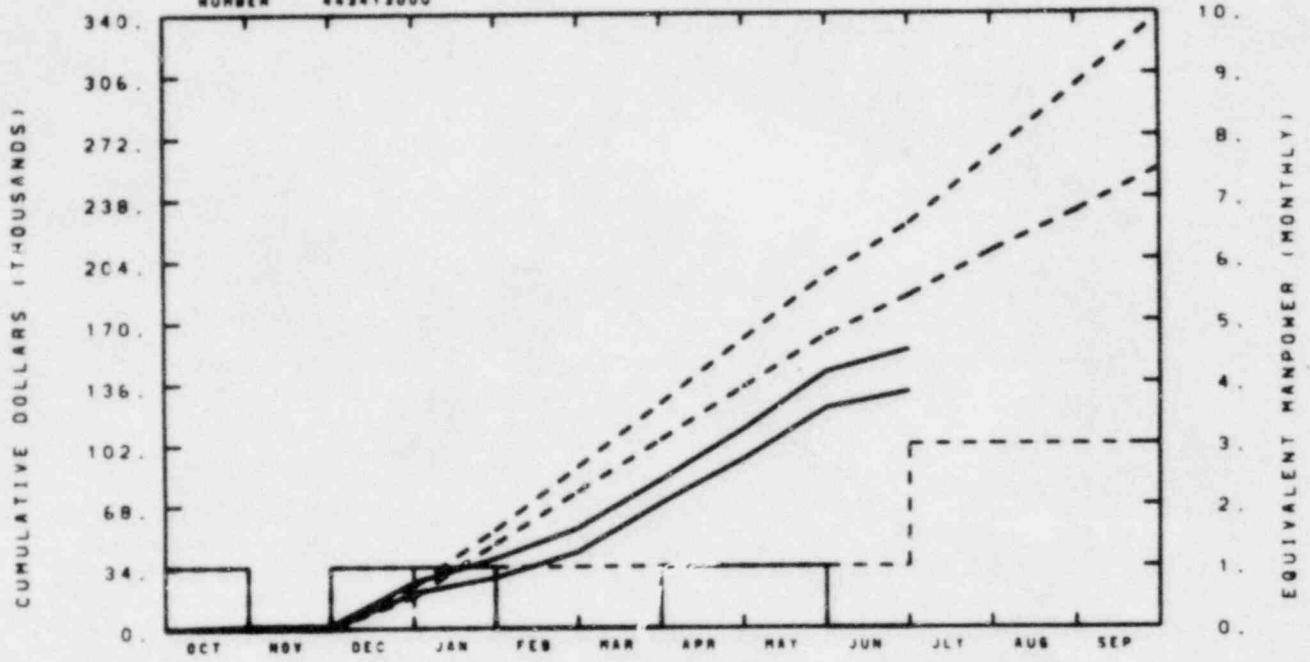
A6157

YTD VARIANCE: 24 (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. Review of a new Westinghouse submittal is to be performed and charged to this task this fiscal year. Costs originally charged to this task for work performed under A6269 (Post Blowdown LOCA Fuel) have been transferred from this account.

RESPONSIBLE
MANAGER
J. A. DEANICH

EG&G IDAHO INC.
ON-CALL ASSIST AT OPGR LM/SA6159
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	156			

MATERIAL												
BUDGET	0	0	18	47	76	105	134	163	184	209	230	254
ACTUAL	0	0	20	28	42	69	94	122	131			

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

BUDGET

ACTUAL

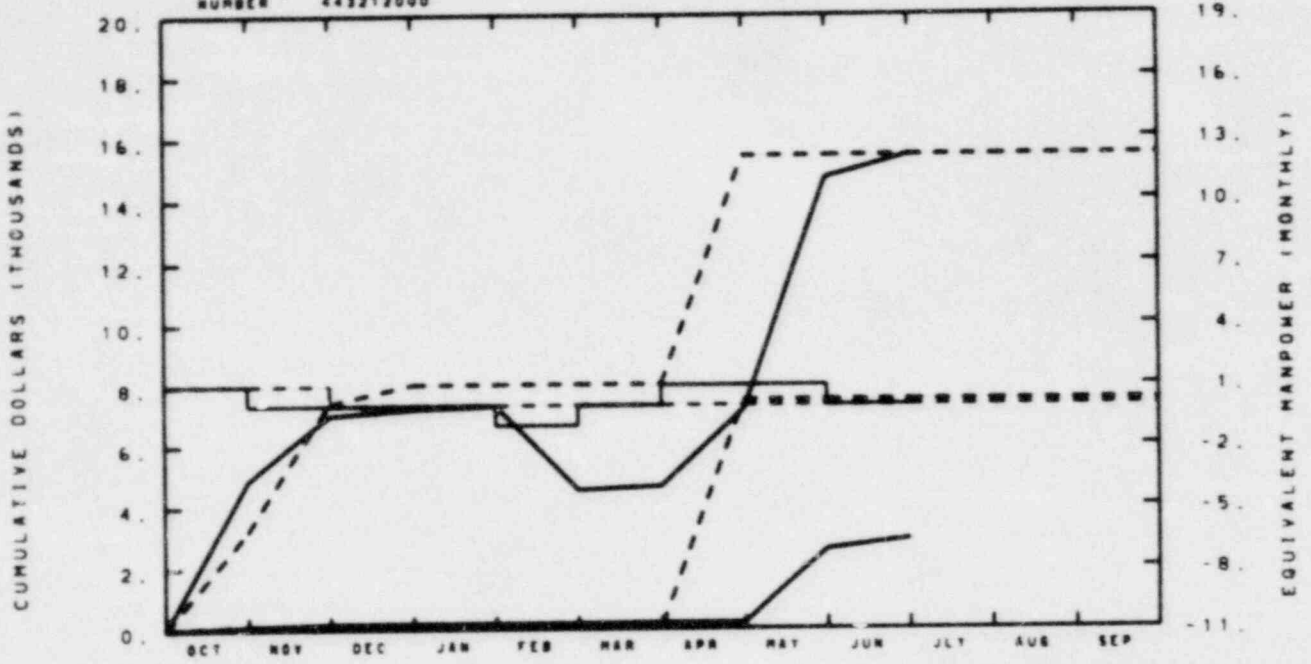
A6159

YTD VARIANCE: 70 (31%)

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.

POSSIBLE
ASER
& DEARREN

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			

MATERIAL												
BUDGET	0	0	0	0	0	0	8	8	6	8	8	8
ACTUAL	0	0	0	0	0	0	0	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			

BUDGET

ACTUAL

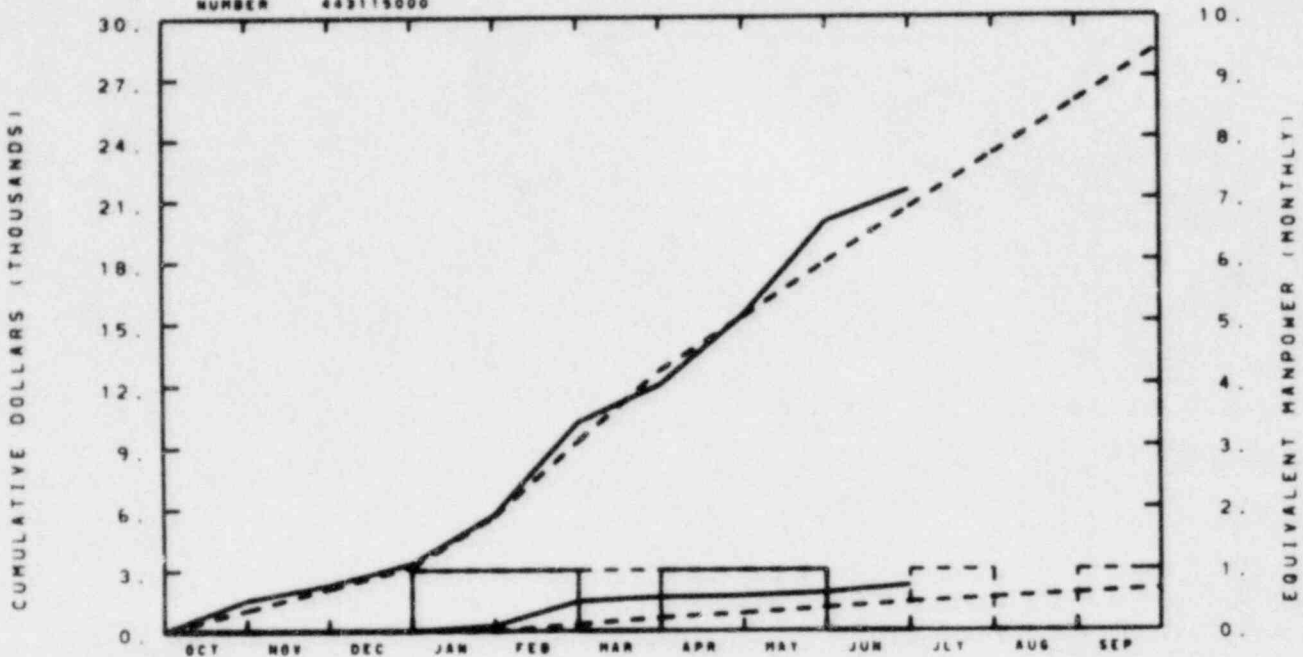
A6166

YTD VAPIANCE: 0

RESPONSIBLE
MANAGER
J. A. DEARLEN

EG&G IDAHO INC.
FUEL PERF CODE APPLICATION A6167

NUMBER 443115000



TOTAL PROGRAM

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

MATERIAL

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

MANPOWER

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

BUDGET

ACTUAL

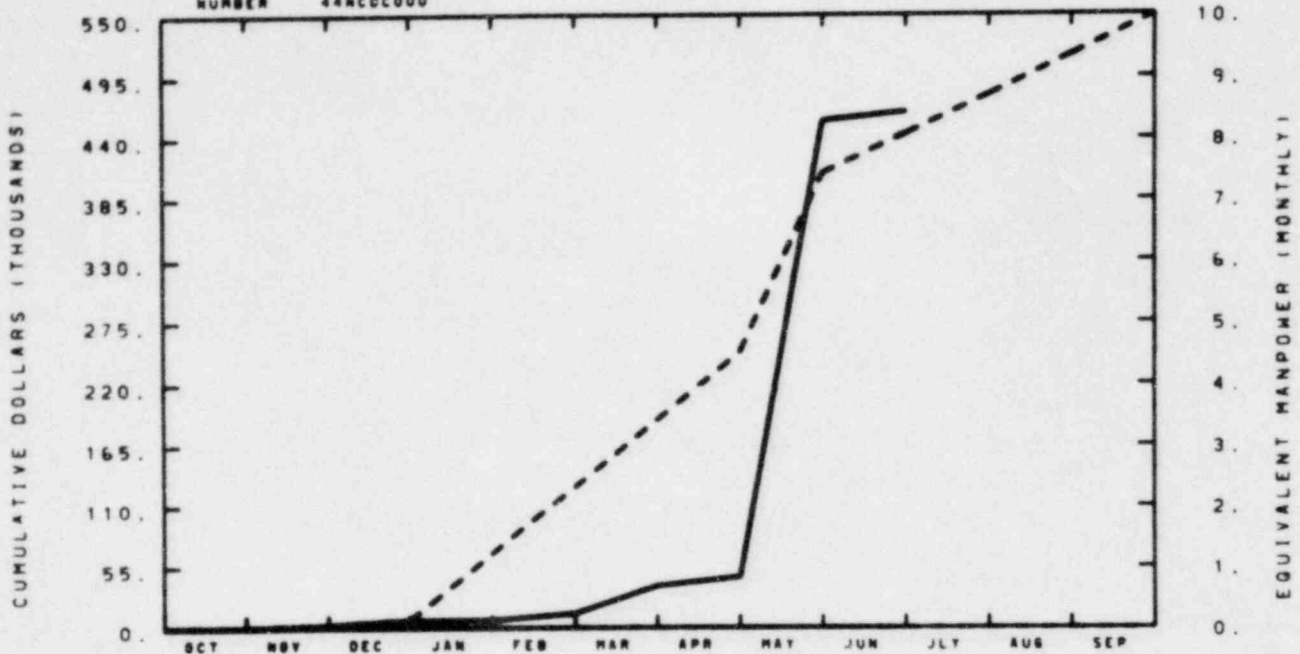
A6167

YTD VARIANCE: 0

RESPONSIBLE
MANAGER
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	479	514	550
ACTUAL	0	3	7	7	13	38	16	456	464			

MATERIAL

BUDGET	1	2	7	67	127	188	248	408	444	479	514	550
ACTUAL	0	3	7	7	13	38	16	456	464			

MANPOWER

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

BUDGET

ACTUAL

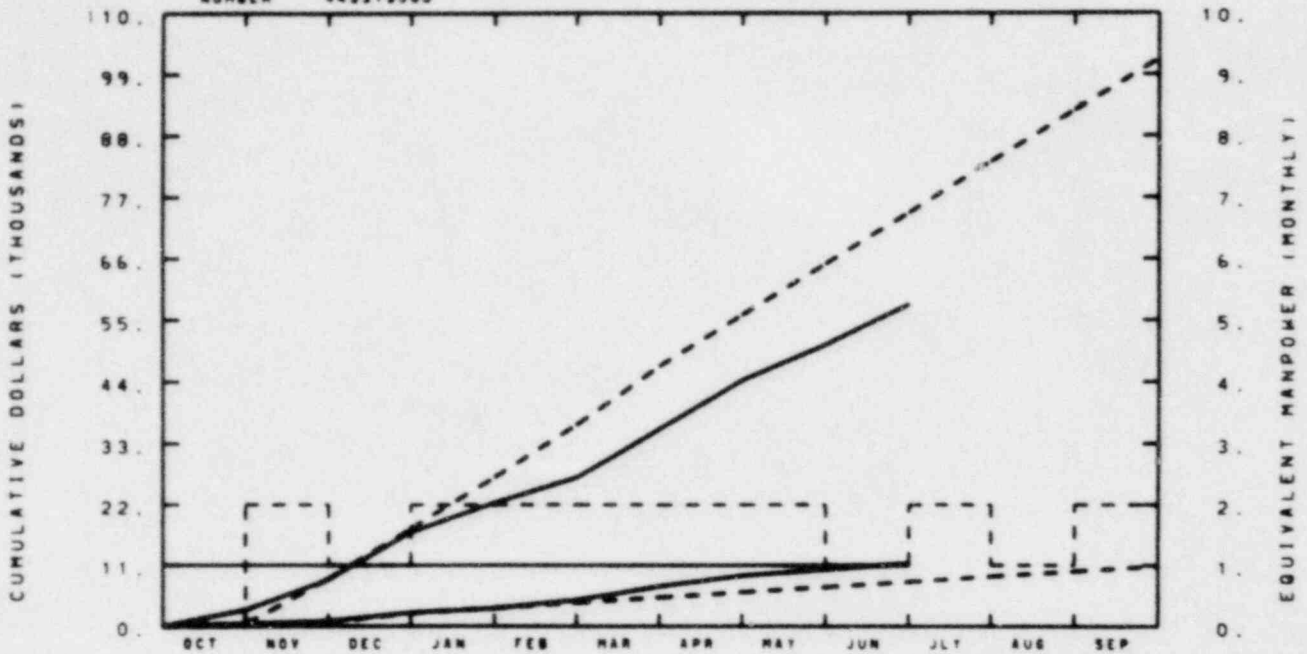
A6209

YTD VARIANCE: <20> (5%)

This is a computer fund available on an as-required and justified, but unscheduled basis. Since this funding is not allocated to specifically defined tasks, its expenditure rate cannot be accurately forecast and the present over-expenditure has no significance. Per NRC direction, \$400 K of costs for Three Mile Island (TMI) were transferred into this 189a in May from other tasks, which accounts for the sharp increase. Additional funding of \$200 K is anticipated for July. Tasks have already been defined and agreed to by NRC to utilize the new funds.

RESPONSIBLE
MANAGER
J. A. DEARIEN

EG&G IDAHO INC.
ENG SUP FOR PIPE BREAK IN A6250
NUMBER 443313000



TOTAL PROGRAM												
BUDGET	0	9	18	27	36	47	56	65	74	83	93	102
ACTUAL	3	8	17	22	27	36	44	51	58			

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

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

BUDGET

ACTUAL

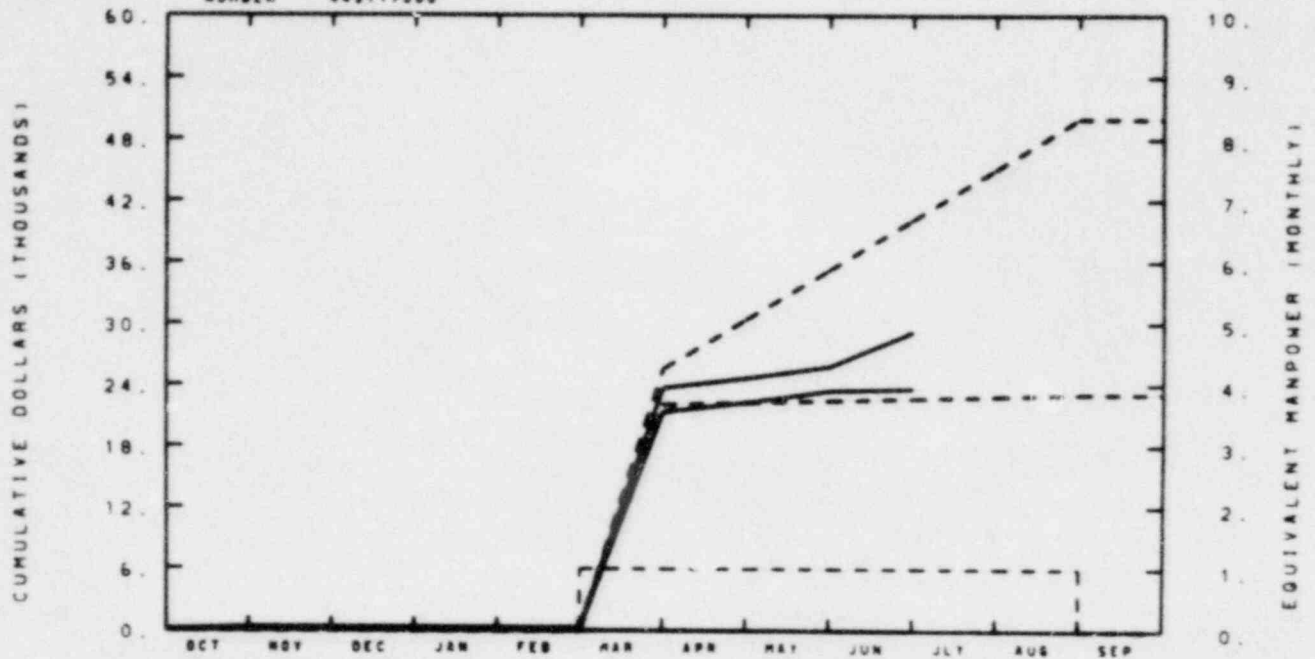
A6250

YTD VARIANCE: 16 (22%)

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

EG&G IDAHO INC.
WATER HAMMER REVIEW & EVAL A6251

NUMBER 443117000



TOTAL PROGRAM

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

MANPOWER

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

BUDGET

ACTUAL

A6251

YTD VARIANCE: 11 (28%)

This task will be completed in July with issuance of a technical report. Approximately \$20 K is expected to remain in this FIN as no analyses were performed with Task E of the Statement of Work.

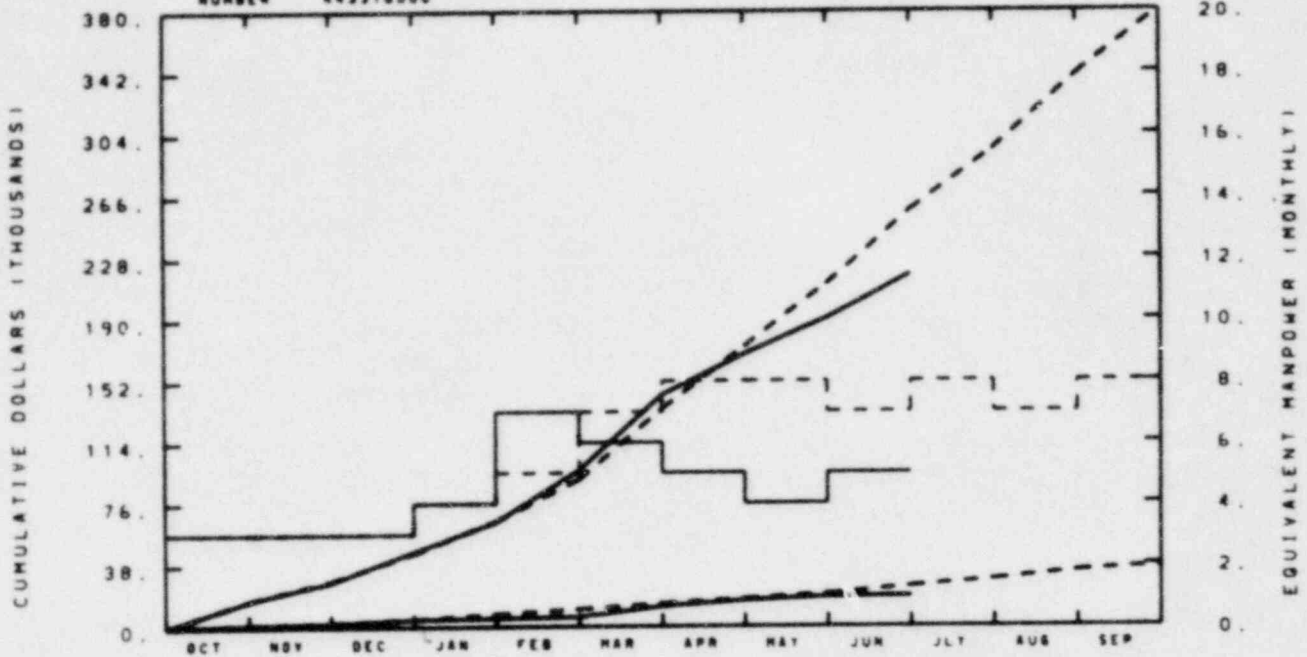
RESPONSIBLE
MANAGER
J. W. DEARIEN

EG&G IDAHO INC.

EICS SUPPORT

A6256

NUMBER 443316000



TOTAL PROGRAM

BUDGET	17	29	45	65	91	135	173	212	257	294	340	380
ACTUAL	16	28	44	65	97	143	168	191	218			

MATERIAL

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

MANPOWER

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

BUDGET

ACTUAL

A6256

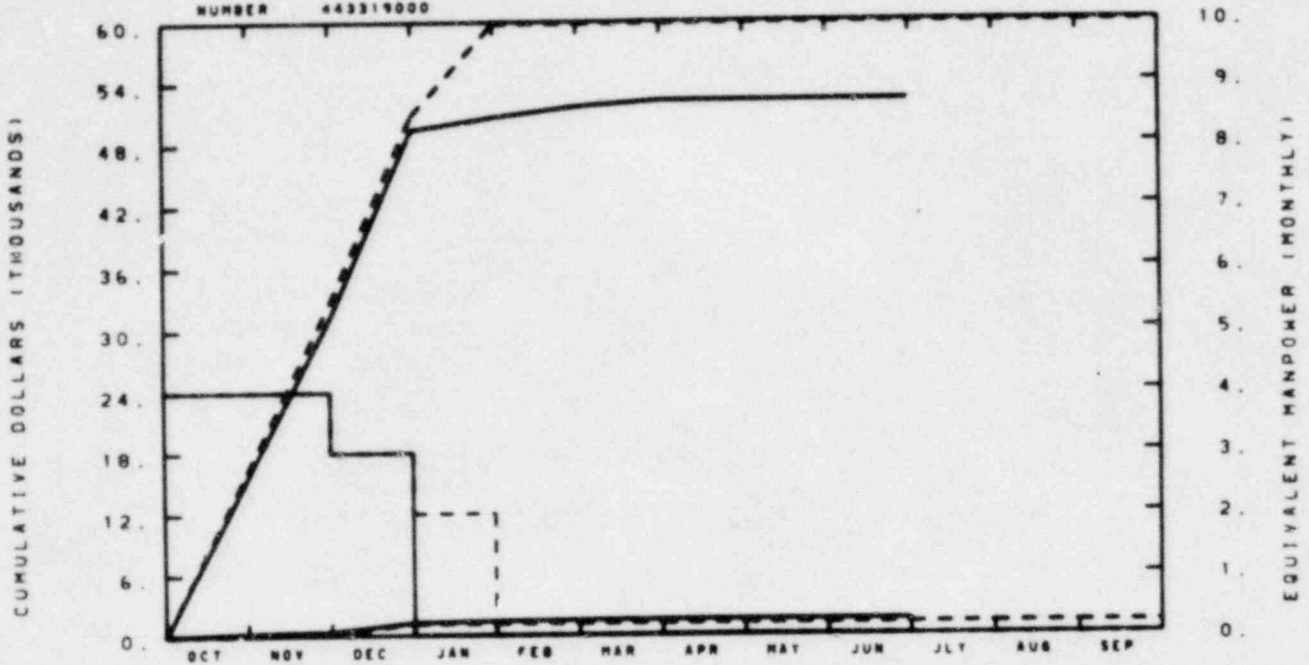
YTD VARIANCE: 39 (15%)

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.

RESPONSIBLE
 ASHER
 A DEARIEN

EG&G IDAHO INC.
 STEAM GENERATOR WATER HAM A6257

NUMBER 443319000



TOTAL PROGRAM												
BUDGET	16	33	51	60	60	60	60	60	60	60	60	60
ACTUAL	15	31	49	51	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			

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

BUDGET
 - - - -
 ACTUAL

A6257

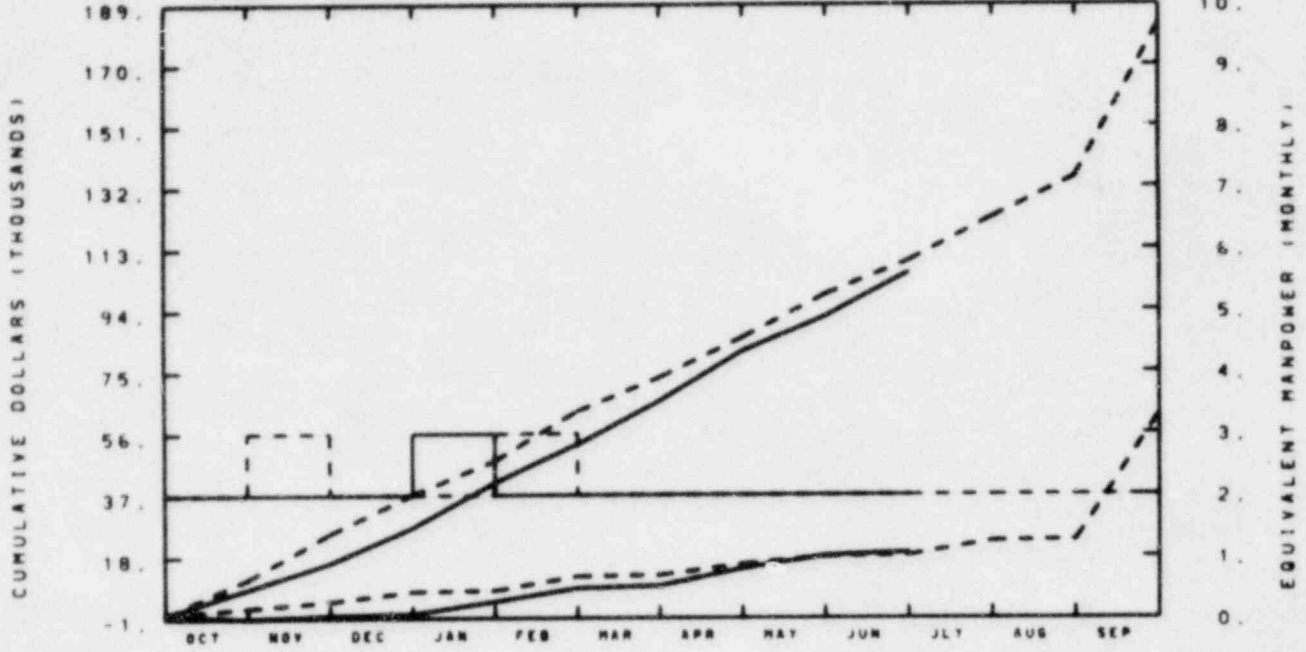
YTD VARIANCE: 8 (13%)

This task has been completed. The \$8 K underrun remains for use at the Nuclear Regulatory Commissions discretion.

RESPONSIBLE
MANAGER
J. A. BEARIEN

EGAG 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	71	92	105			

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

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

BUDGET

ACTUAL

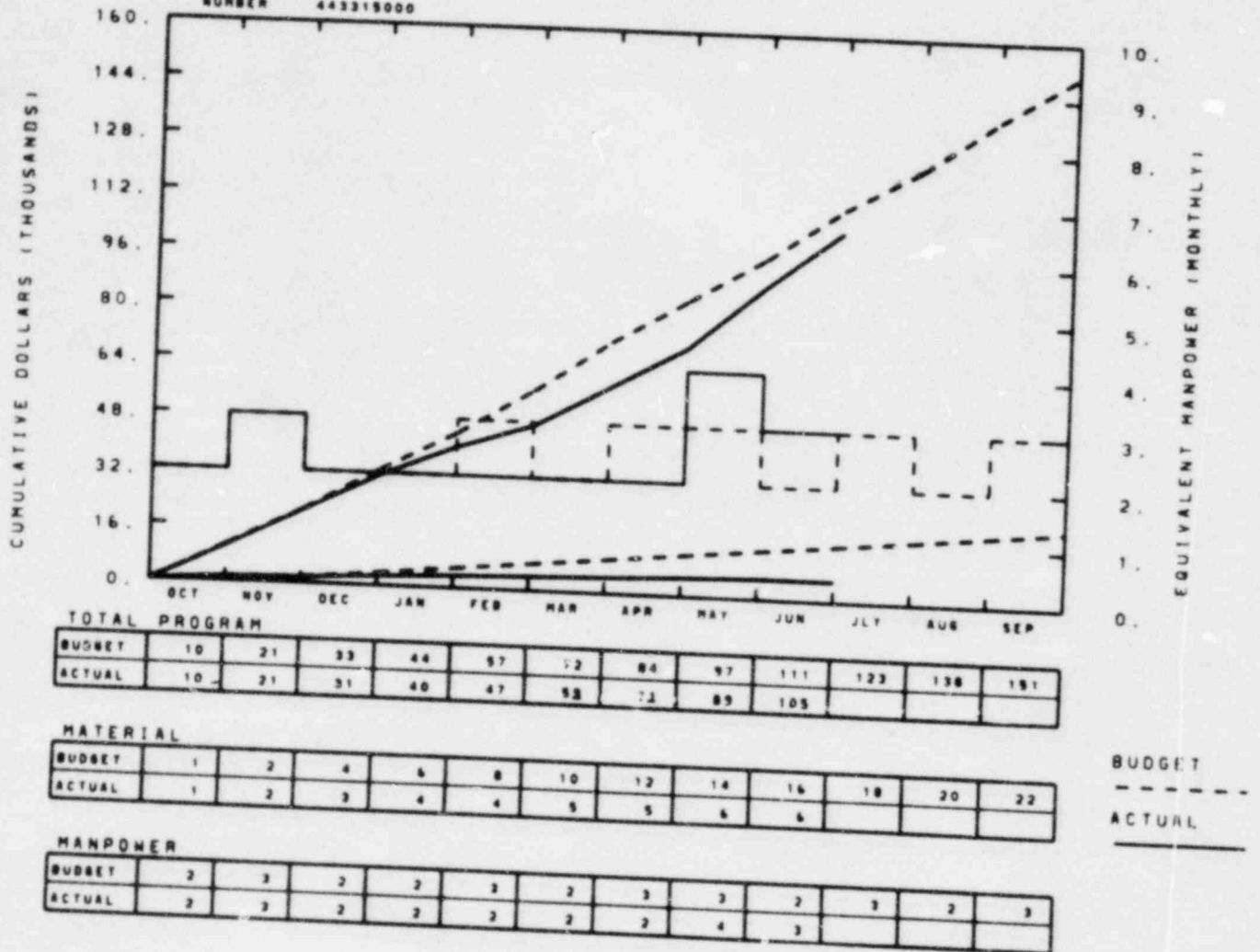
A6258

YTD VARIANCE: 4 (4%)

RESPONSIBLE
MANAGER
DEARIEEN

EG&G IDAHO INC.
EICS SUPPORT FOR SEP A6260

NUMBER 443318000



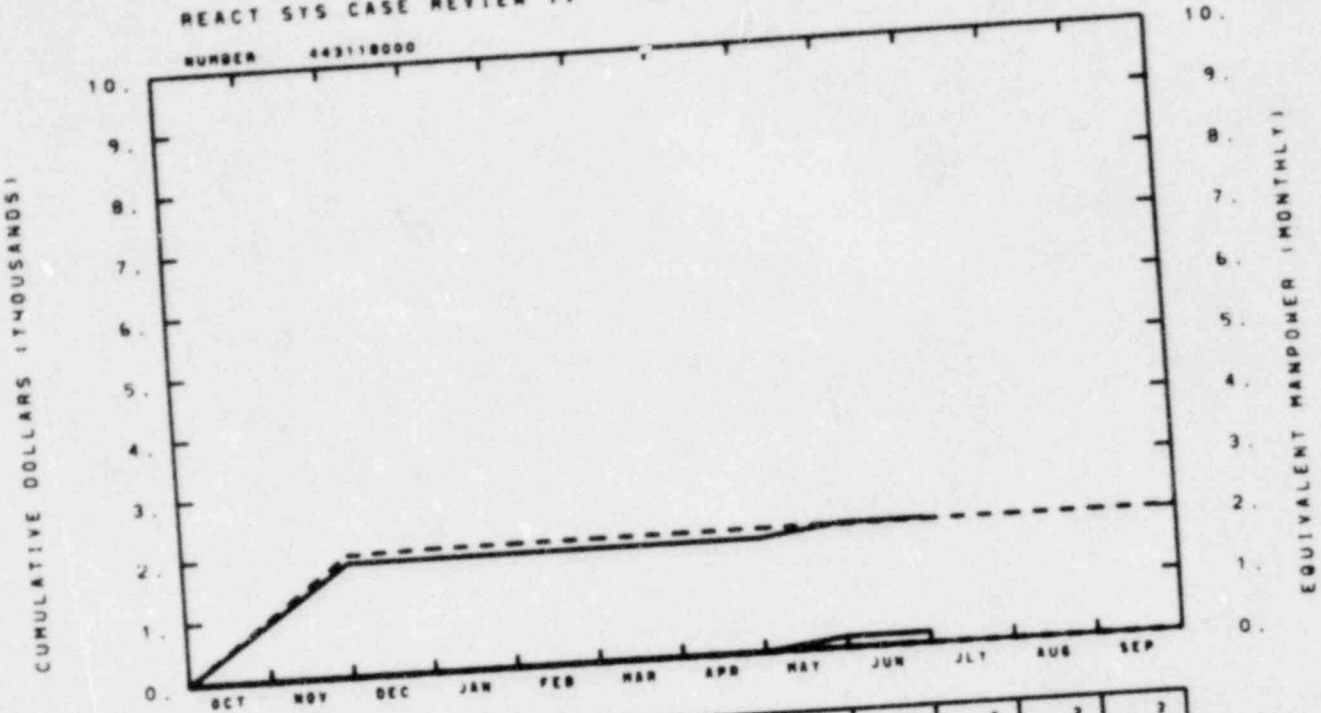
A6260

YTD VARIANCE: 6 (5%)

RESPONSIBLE
MANAGER
J. A. DEARICH

EG&G IDAHO INC.
REACT SYS CASE REVIEW II A626

NUMBER 443118000



TOTAL PROGRAM											
BUDGET	1	2	2	2	2	2	2	2	2	2	2
ACTUAL	1	2	2	2	2	2	2	2	2		

MATERIAL											
BUDGET	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	0	0	0	0		

MANPOWER											
BUDGET	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	0	0	0	0		

BUDGET

ACTUAL

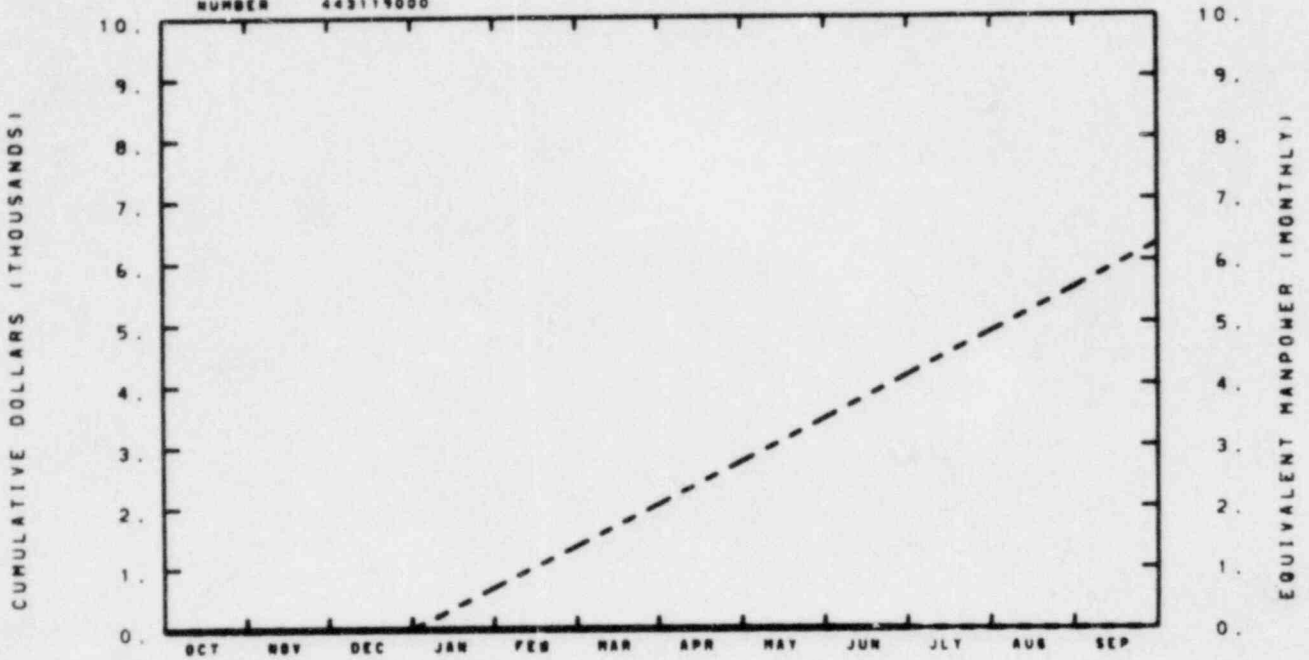
A626.

YTD VARIANCE: 0

RESPONSIBLE
 OFFICER
 A. DEARIEH

EG&G IDAHO INC.
 ECCS UNAVAILABILITY STUDY A6264

NUMBER 443119000



TOTAL PROGRAM												
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP
BUDGET	0	0	0	1	1	2	3	3	4	5	6	6
ACTUAL	0	0	0	0	0	0	0	0	0			

MATERIAL												
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP
BUDGET	0	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	0	0	0	0			

MANPOWER												
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP
BUDGET	0	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	0	0	0	0			

BUDGET
 - - - - -
 ACTUAL

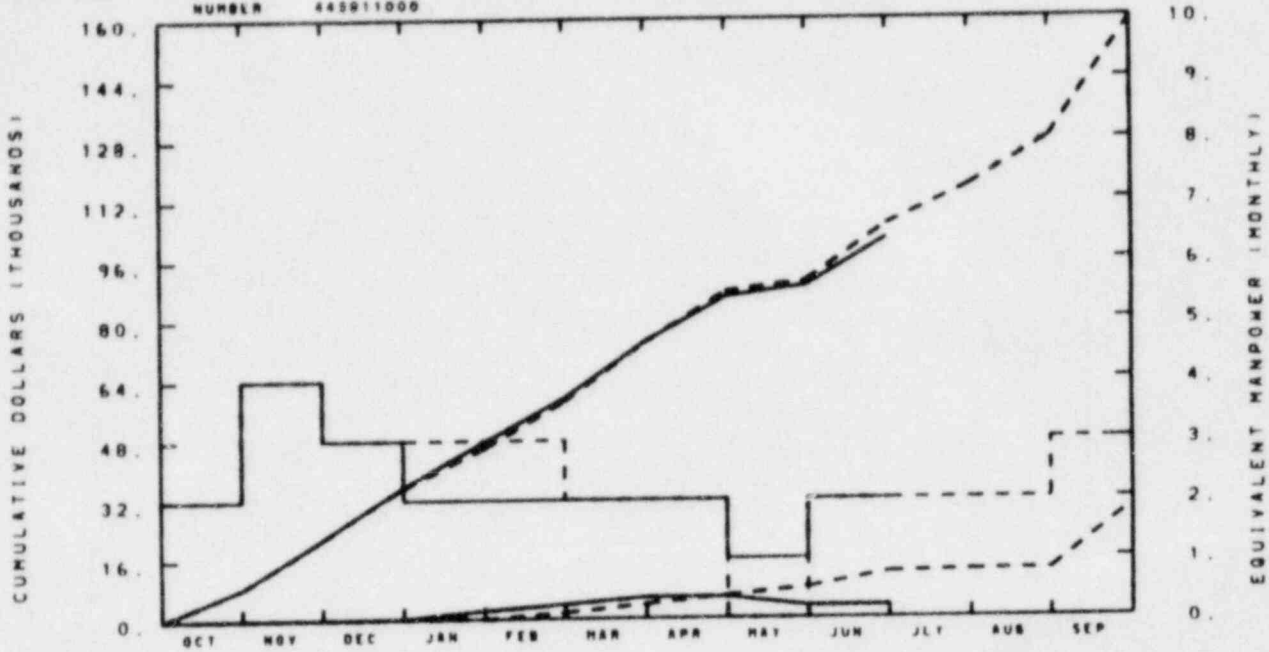
A6264

YTD VARIANCE: 4 (100%)

RESPONSIBLE
MANAGER
J A DEARIEH

EG&G IDAHO INC.
INSERVICE TESTING - DSS A6265

NUMBER 442R11000



TOTAL PROGRAM												
BUDGET	0	22	35	46	58	74	88	90	105	116	128	159
ACTUAL	0	22	36	48	59	74	76	89	102			

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

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

BUDGET

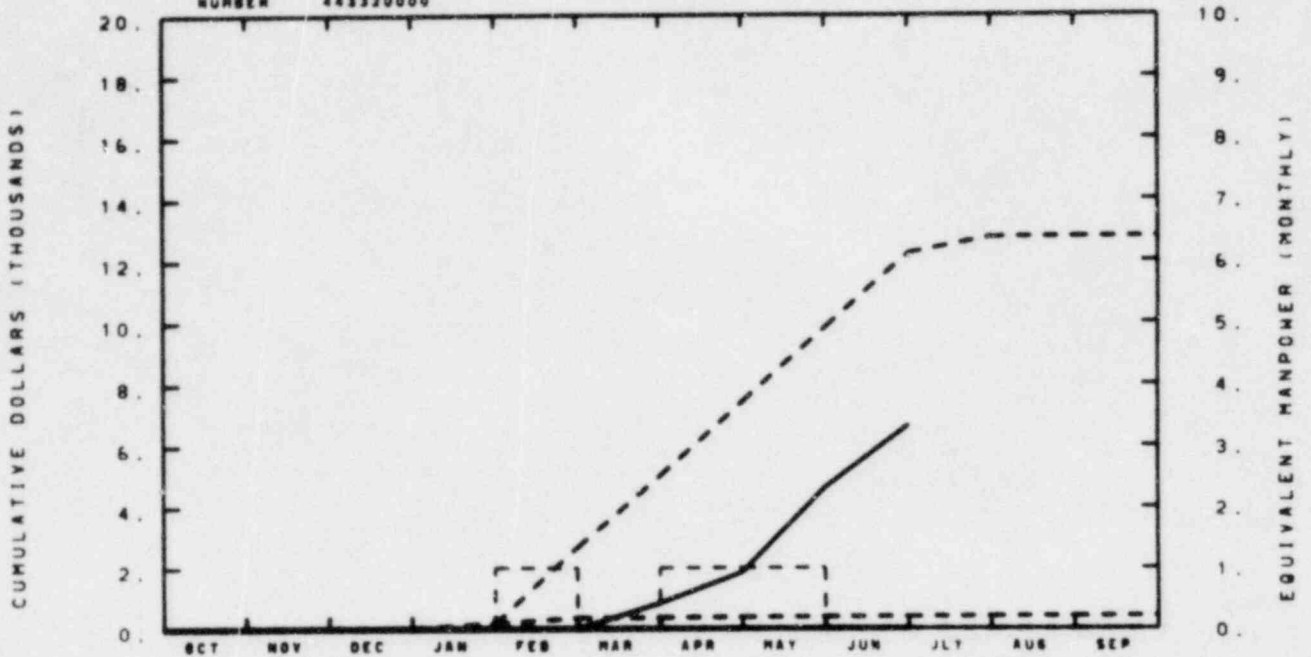
ACTUAL

A6265

YTD VARIANCE: 3 (3%)

RESPONSIBLE
 WAGER
 A DEARIEH

EG&G IDAHO INC.
 N-1 LOOP OP BEAV VAL ZION A6267
 NUMBER 443320000



TOTAL PROGRAM												
BUDGET	0	0	0	0	2	5	7	10	12	13	13	13
ACTUAL	0	0	0	0	0	1	2	5	7			

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	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	0

BUDGET
 - - - - -
 ACTUAL

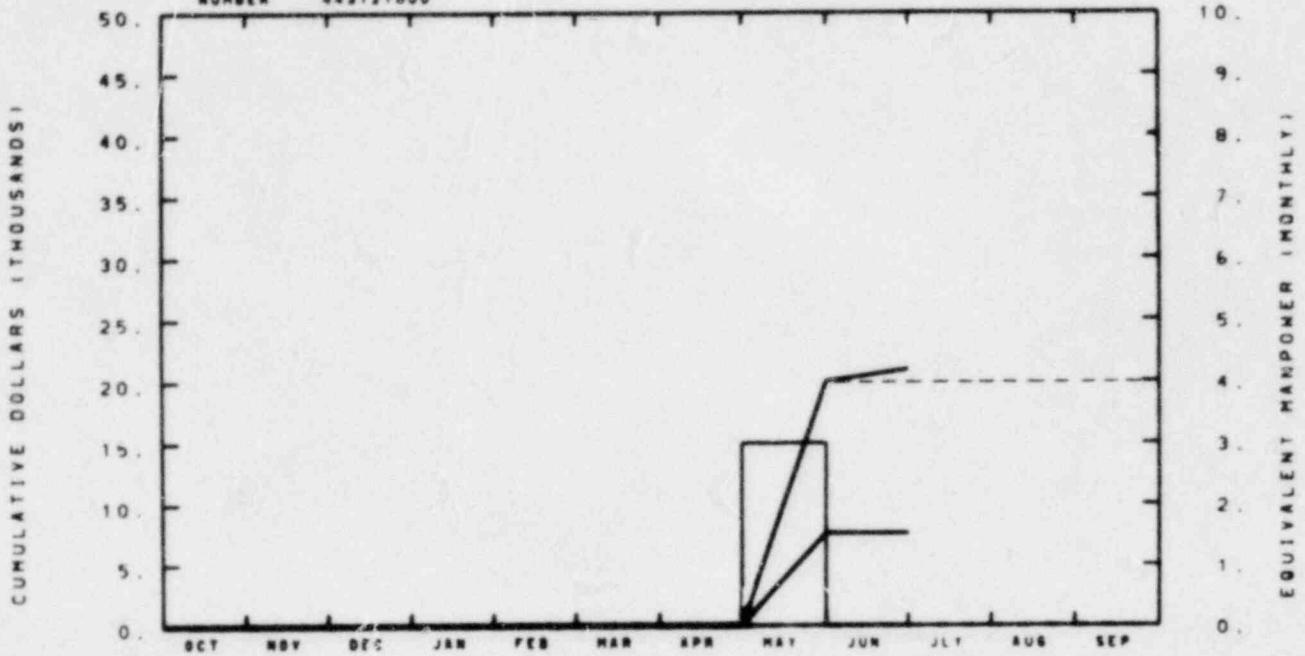
A6267

YTD VARIANCE: 5 (42%)

RESPONSIBLE
MANAGER
J. BEARIEN

EG&G IDAHO INC.
POST BLOWDOWN LOCA FUEL A6269

NUMBER 443121000



TOTAL PROGRAM

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

MATERIAL

BUDGET	0	0	0	0	0	0	0	0	20	20	20	20	20
ACTUAL	0	0	0	0	0	0	0	0	8	8			

MANPOWER

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

BUDGET

ACTUAL

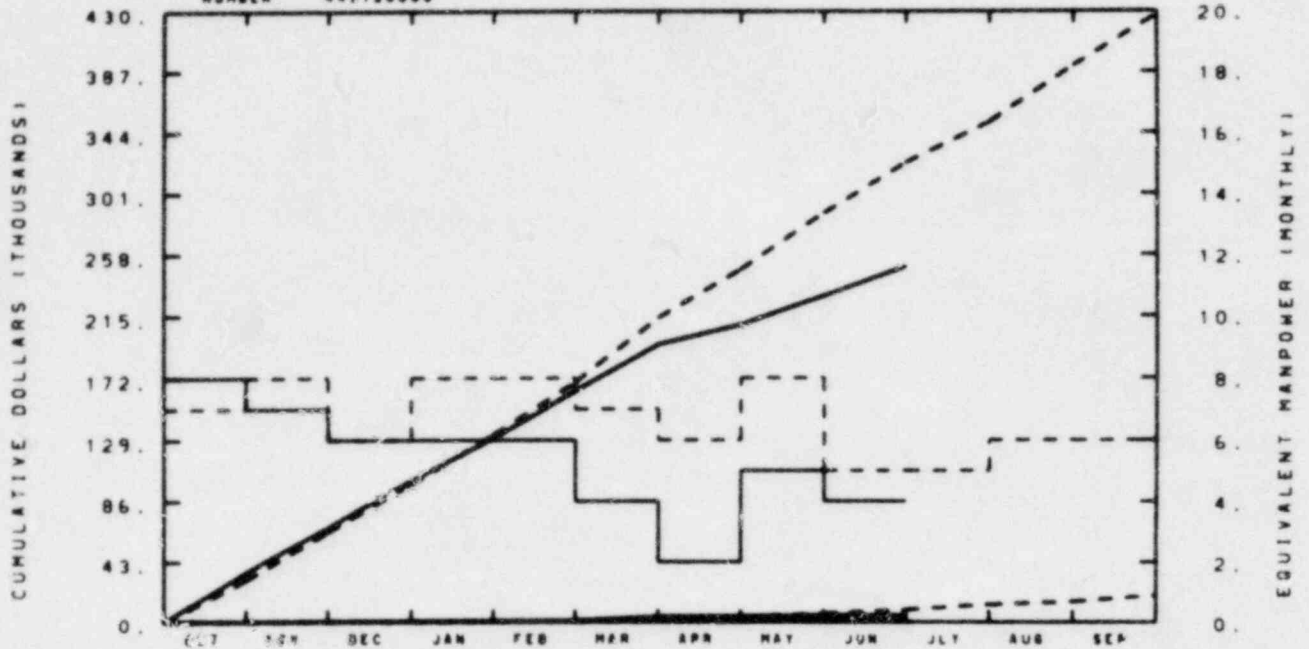
A6269

YTD VARIANCE: <1> (5%)

Costs in this task were collected in A6157 and transferred when funding arrived. This task is completed.

RESPONSIBLE
HARER
DEARIEN

EG&G IDAHO INC.
REACT SYS CASE REVIEW III A6270
NUMBER 443120000



TOTAL PROGRAM												
BUDGET	30	64	98	133	169	214	248	288	323	352	391	428
ACTUAL	35	67	101	130	163	195	219	229	250			

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

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

BUDGET

ACTUAL

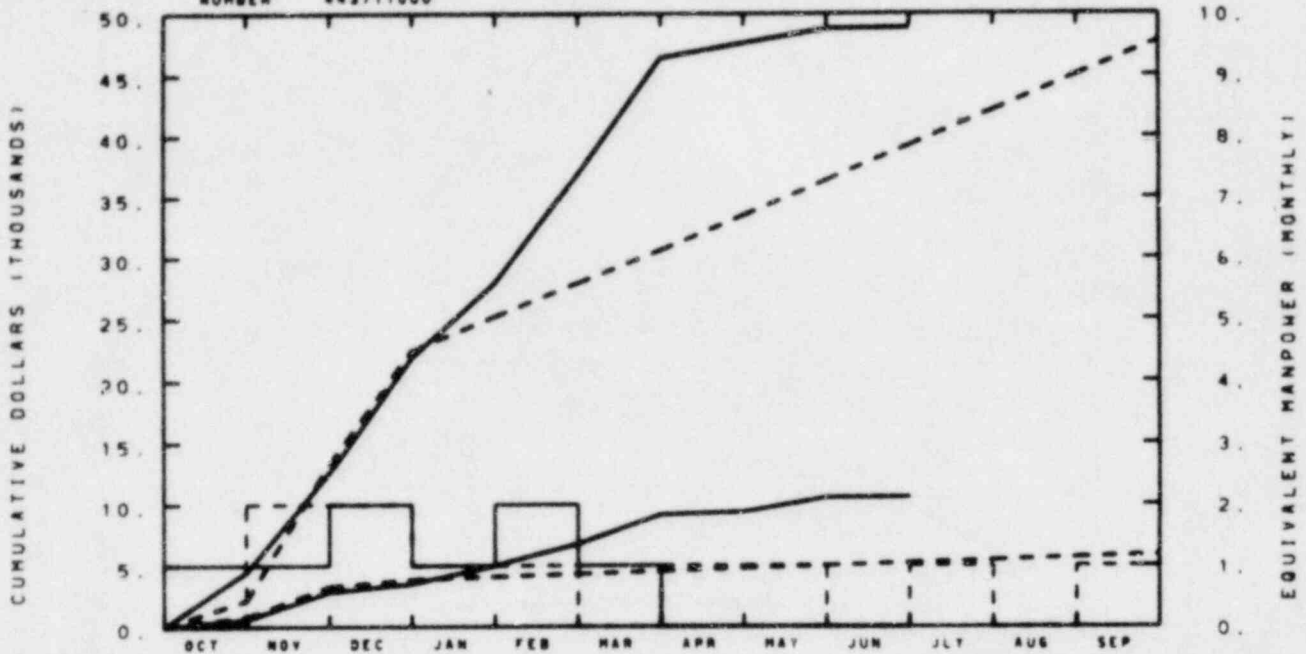
A6270

YTD VARIANCE: 73 (23%)

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
J. S. DEARIEN

EG&G IDAHO INC.
HDR COMP RESPONSE ANALYSIS A6285
NUMBER 443711000



TOTAL PROGRAM

BUDGET	2	13	22	25	28	31	34	36	39	42	45	48
ACTUAL	4	13	22	28	37	46	48	49	49			

MATERIAL

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

MANPOWER

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

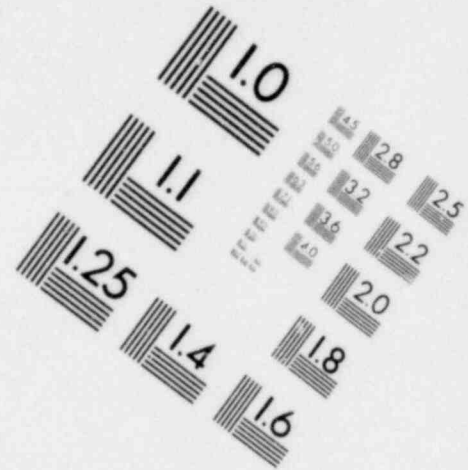
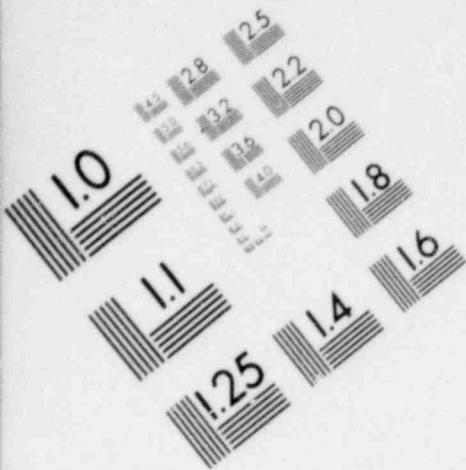
BUDGET

ACTUAL

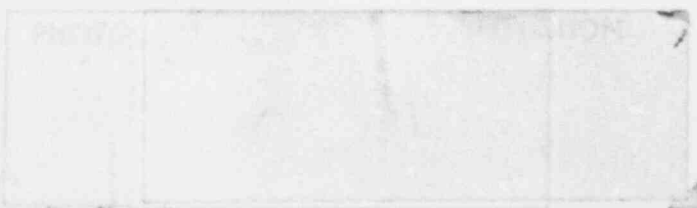
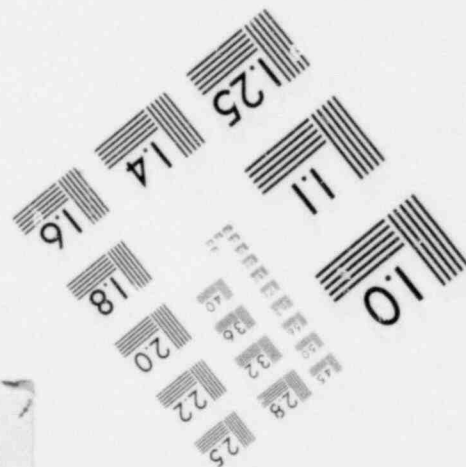
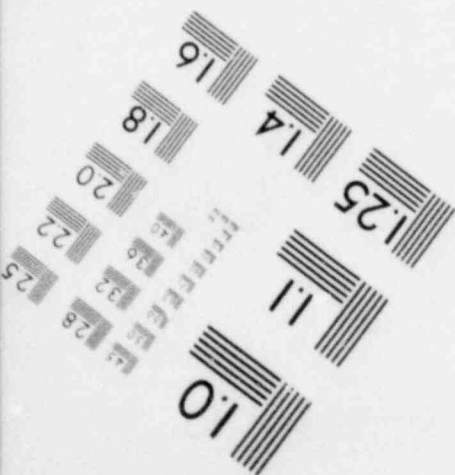
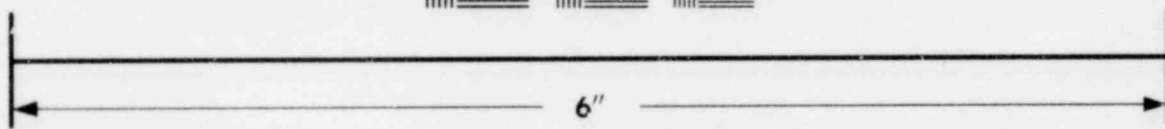
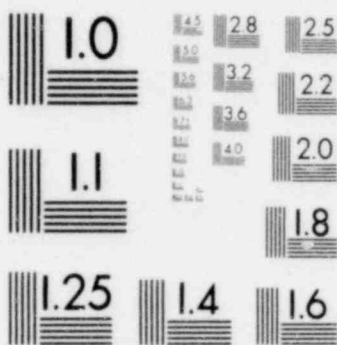
A6285

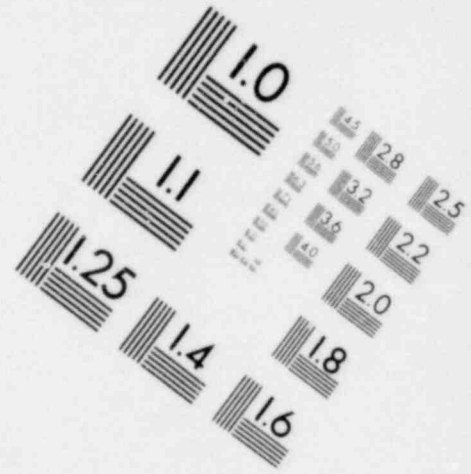
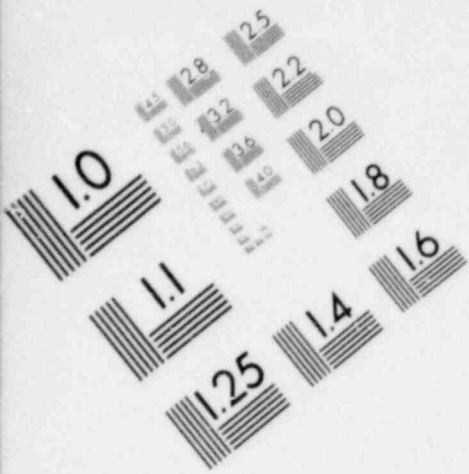
YTD VARIANCE: <10> (26%)

This task has been completed ahead of schedule. A draft report has been prepared.

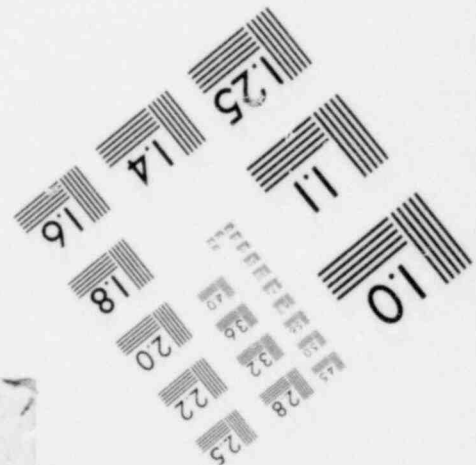
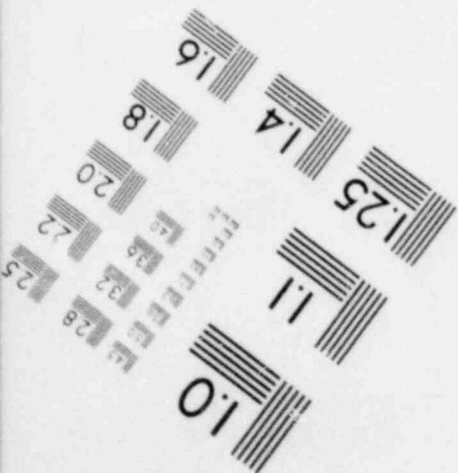
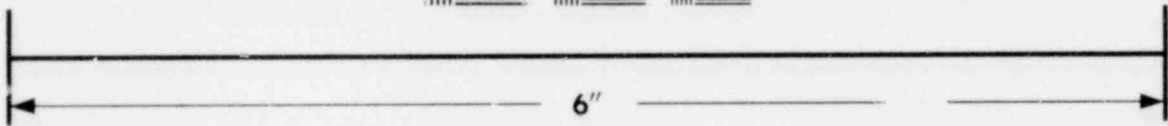
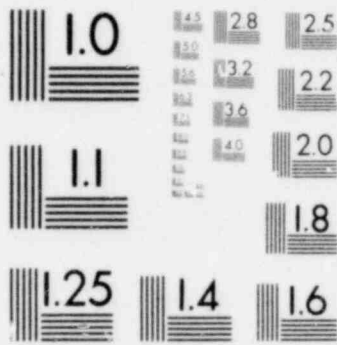


**IMAGE EVALUATION
TEST TARGET (MT-3)**



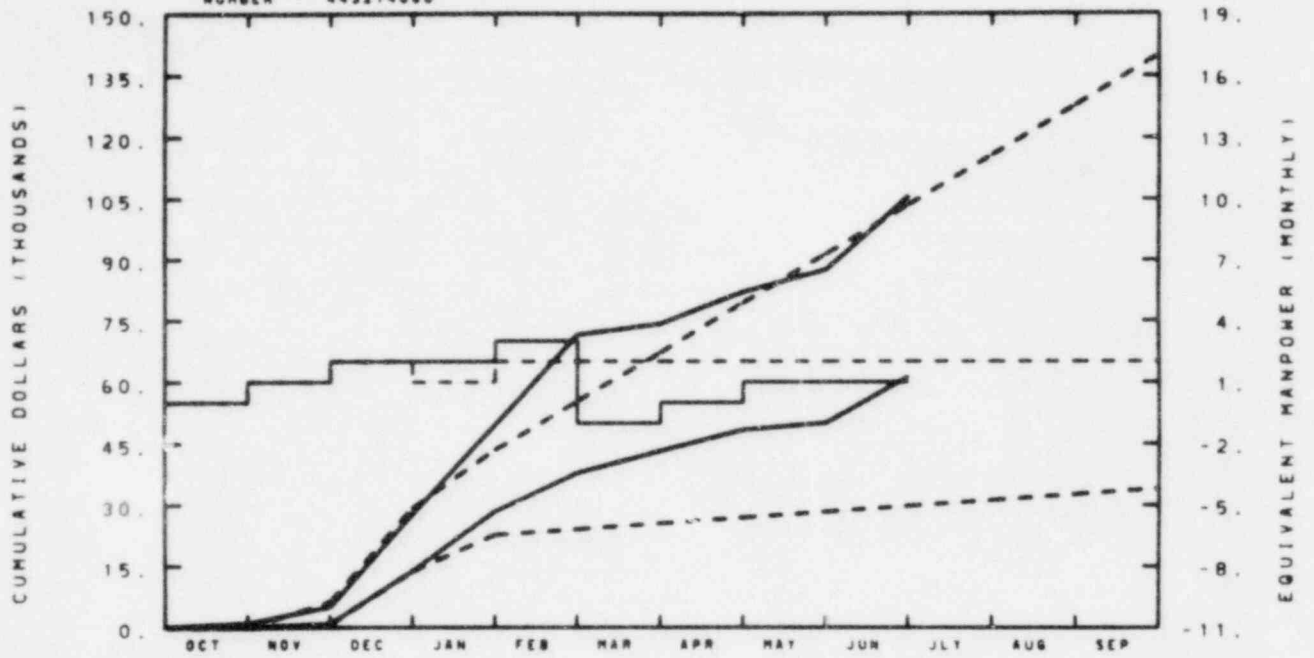


**IMAGE EVALUATION
TEST TARGET (MT-3)**



RESPONSIBLE
 AGER
 DEARIEN

EG&G IDAHO INC.
 MATERIAL ENGR CASE REV 1 A6401
 NUMBER 443214000



TOTAL PROGRAM												
BUDGET	0	6	29	44	55	67	79	91	104	116	128	140
ACTUAL	1	5	28	50	72	74	92	88	106			

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

MANPOWER												
BUDGET	0	1	2	1	2	2	2	2	2	2	2	2
ACTUAL	0	1	2	2	2	-1	0	1	1			

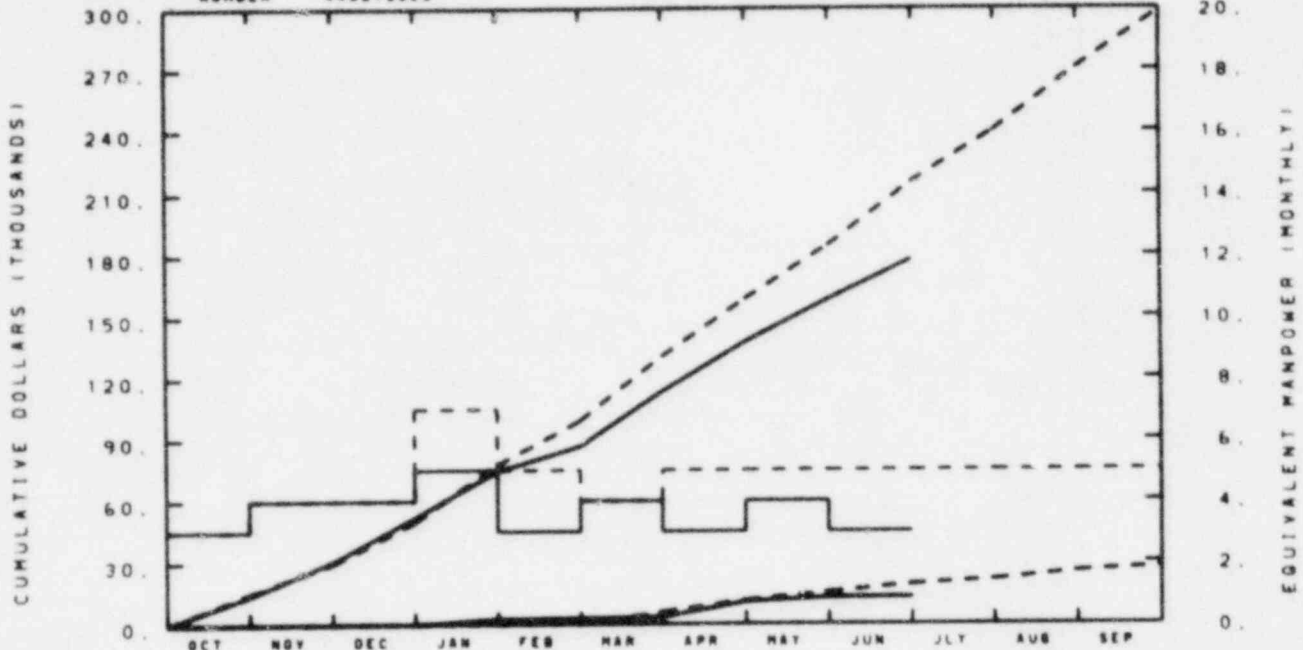
BUDGET
 - - - -
 ACTUAL

A6401

YTD VARIANCE: <2> (2%)

RESPONSIBLE
MANAGER
J A DEARIEW

EG&G IDAHO INC.
STRICT ENGR CASE REVIEW 11 A6402
NUMBER 443218000



TOTAL PROGRAM												
BUDGET	15	29	50	70	99	131	159	195	216	240	271	298
ACTUAL	14	31	52	75	97	114	118	159	178			

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

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

BUDGET

ACTUAL

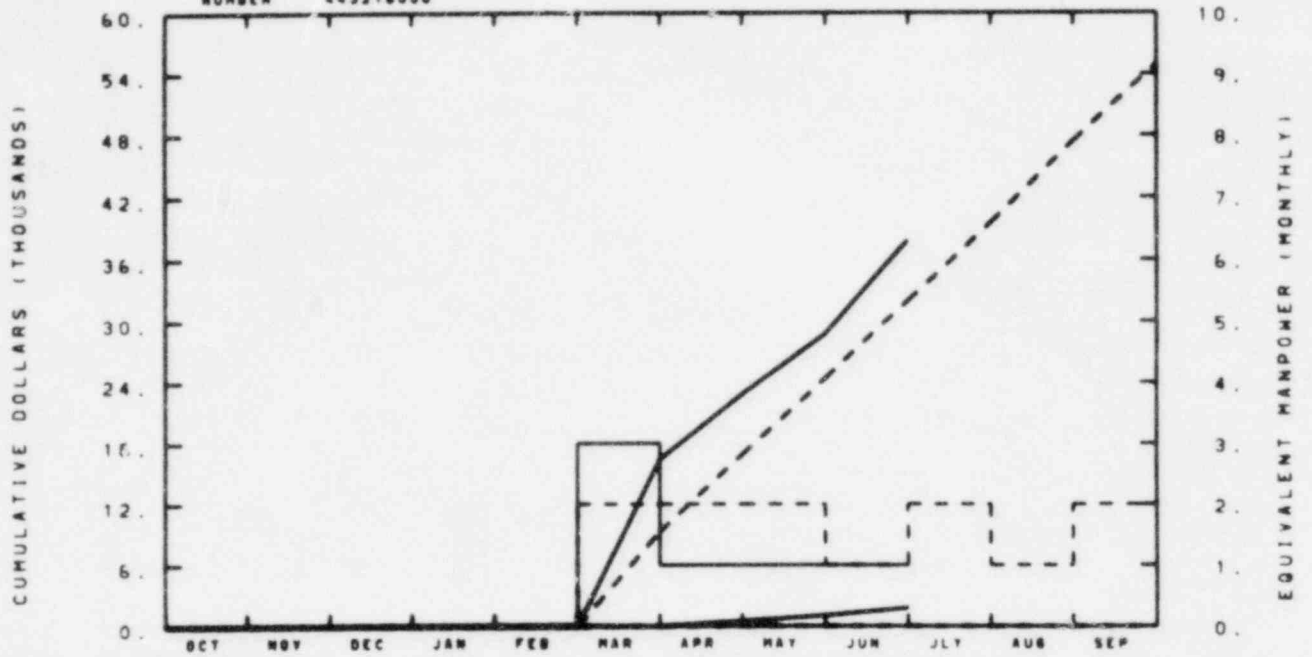
A6402

YTD VARIANCE: 38 (18%)

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 is being altered. A letter to DOE-ID and NRC will be prepared documenting this and the fiscal status of this effort.

RESPONSIBLE
MANAGER
DEARIEH

EG&G IDPHO INC.
FRACT TOUGHNESS PCB BATL A6404
NUMBER 443216000



TOTAL PROGRAM												
BUDGET	0	0	0	0	0	9	17	24	32	40	47	55
ACTUAL	0	0	0	0	0	16	23	29	38			

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

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

BUDGET

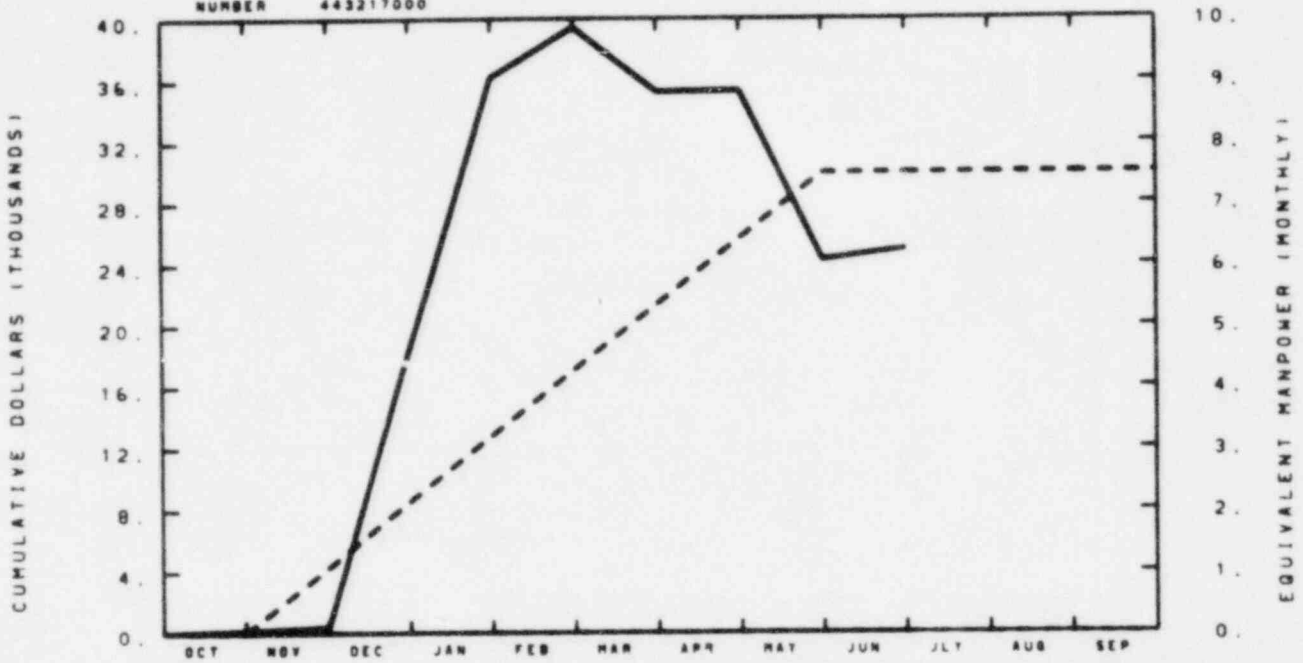
ACTUAL

A6404

YTD VARIANCE: <6> (19%)

RESPONSIBLE
MANAGER
J A DEARIEN

EG&G IDAHO INC.
IN-SERVICE INSPECTION A6405
NUMBER 443217000



TOTAL PROGRAM

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

MATERIAL

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

BUDGET

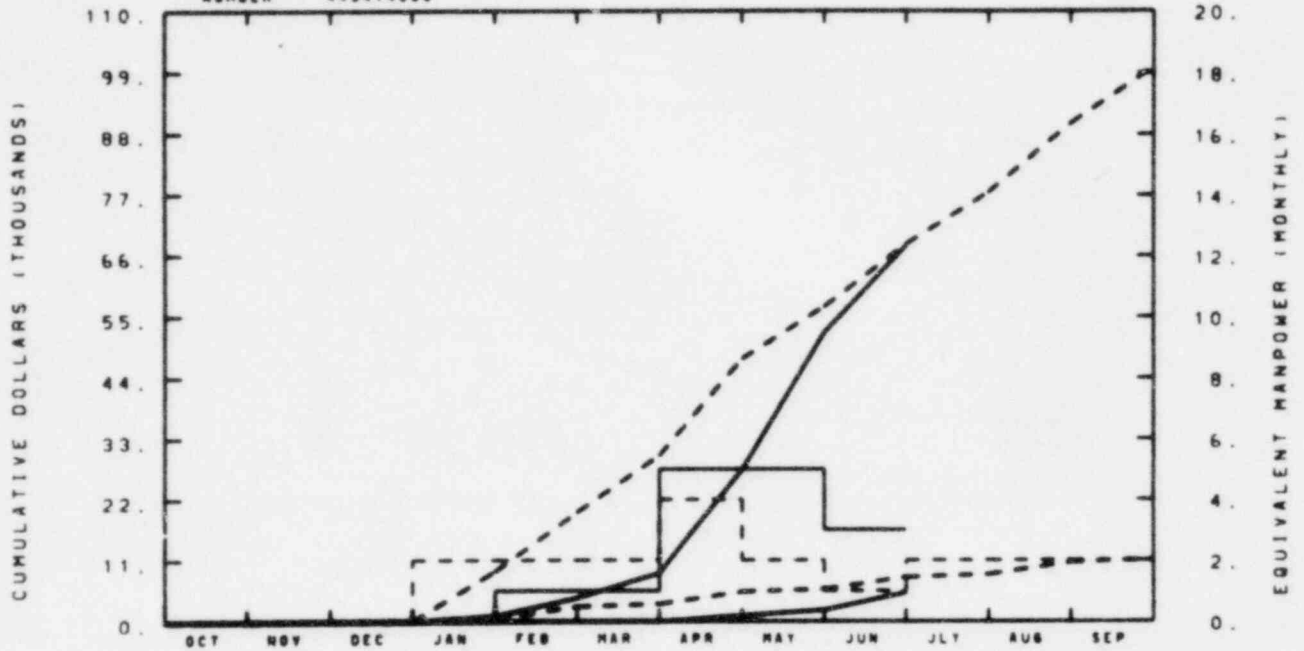
ACTUAL

A6405

YTD VARIANCE: 5 (17%)

RESPONSIBLE
MANAGER
DEARIEN

EG&G IDAHO INC.
SAF REL PUMP/VALVE REL OP A6407
NUMBER 443414000



TOTAL PROGRAM												
BUDGET	0	0	0	9	20	30	47	57	68	78	90	100
ACTUAL	0	0	0	1	4	9	17	52	68			

MATERIAL												
BUDGET	0	0	0	0	3	3	5	6	8	8	11	11
ACTUAL	0	0	0	0	0	0	1	2	5			

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

BUDGET

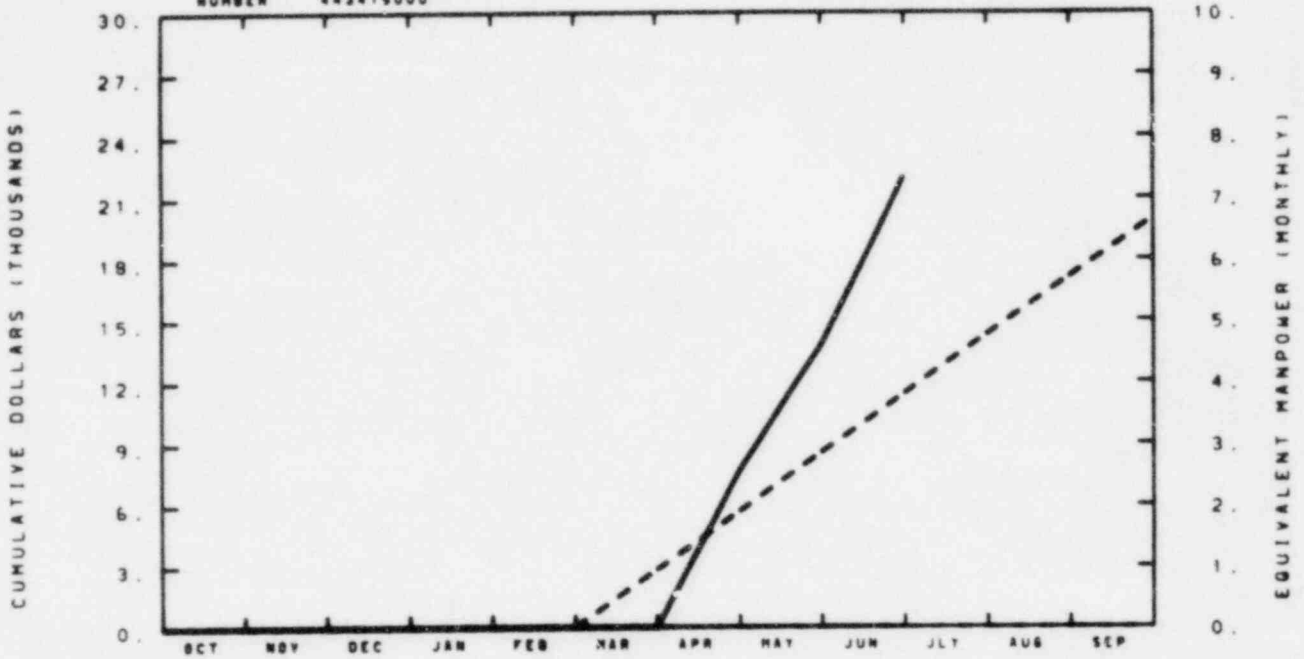
ACTUAL

A6407

YTD VARIANCE: 0

RESPONSIBLE
MANAGER
J A DEARIEN

EG&G IDAHO INC.
ON-CALL TECH ASST FRAC MEC A6411
NUMBER 443419000



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			

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

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	0

BUDGET

ACTUAL

A6411

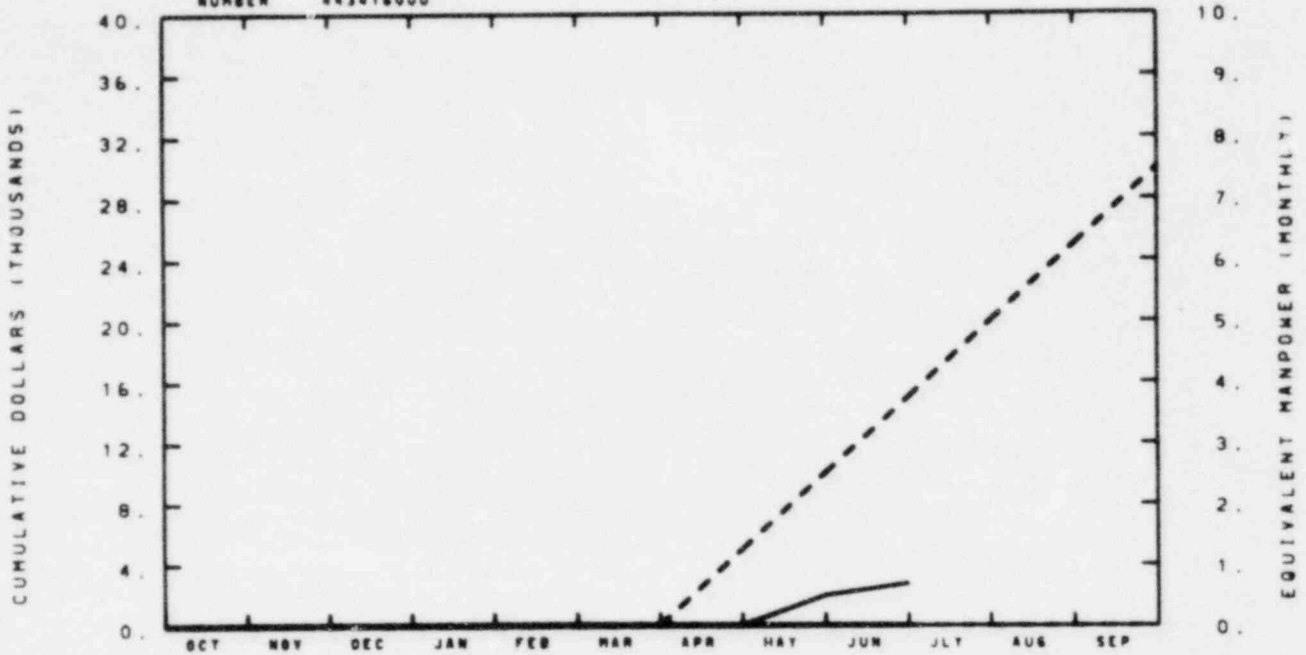
YTD VARIANCE: <11> (100%)

Services of consultant retained for NRC under this contract have been required at a higher than initially anticipated level. The \$2 K total overrun is due to an accrual adjustment and will be rectified next month.

RESPONSIBLE
 MANAGER
 DEARISH

EG&G IDAHO INC.
 PIPE CRACK STUDY GROUP A6412

NUMBER 443416000



TOTAL PROGRAM													
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	
BUDGET	0	0	0	0	0	0	5	10	15	20	25	30	
ACTUAL	0	0	0	0	0	0	0	2	3				

MATERIAL													
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	
BUDGET	0	0	0	0	0	0	5	10	15	20	25	30	
ACTUAL	0	0	0	0	0	0	0	0	0				

MANPOWER													
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	
BUDGET	0	0	0	0	0	0	0	0	0	0	0	0	
ACTUAL	0	0	0	0	0	0	0	0	0				

A6412

YTD VARIANCE: 12 (80%)

Services of the consultant retained for NRC under this contract have not been required at the initially anticipated level.

CODE ASSESSMENT & APPLICATIONS PROGRAM
NRR
TECHNICAL REVIEW & SUMMARY

PROGRAM MANAGER'S
SUMMARY AND HIGHLIGHTS

1. A6256: The following reviews were completed:
 - a. Containment Purge, TMI Unit 1, TAC #10205, Cost = \$4328.
 - b. Degraded Grid A, Monticello, TAC #10034, Cost = \$1034.
 - c. Overpressure Mitigating Systems, Arkansas Unit 1, TAC #6806, Cost = \$2548.
 - d. Beaver Valley Unit I, Quench Spray Modifications, TAC #7170, Cost = \$1136.
2. A6159: A camera-ready copy of the report on BWR Augmented Off-Gas Systems was provided to NRC.
3. The following potential problem areas are highlighted.
 - a. A6405: Restarting of this effort must be authorized by July 7, 1980 in order to guarantee completion of FY80 work scope in FY80.
 - b. A6152: Internal hydraulic loads are required to complete the Comanche Peak analysis. EG&G has the capability to determine these loads if requested by NRC.

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 June 1980

<u>A Nos.</u>	<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
A6250	None scheduled.			
A6256	P3	Tech Assist on Asymmetric LOCA Loads		6-30-80C JAD-162-80
A6260	J2	Comp 2 Assessments	6-30-80T	6-25-80C

3. Summary of Work Performed in June 1980

A6250 - The Oyster Creek final report was drafted and is approximately 95% complete. New information was incorporated in the control rod drive (CRD) return line piping model and its response recalculated. Work was initiated on one Millstone piping system.

A6256 The following reviews were completed: 1) Containment Purge, TMI Unit 1, TAC #10205, Cost = \$4328. 2) Degraded Grid A, Monticello, TAC #10034, Cost = \$1034. 3) Overpressure Mitigating Systems, Arkansas Unit 1, TAC #6806, Cost = \$2548. 4) Beaver Valley Unit I, Quench Spray Modifications, TAC #7170, Cost = \$1136.

A6260 - Revised drafts were completed for diesel generator loading for all SEP plants. Revised drafts were also completed for Big Rock Point, DC Bus Monitoring and Yankee Rowe Loop Isolation.

4. Scheduled Milestones for July 1980

<u>A Nos.</u>	<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
A6250	None scheduled.			
A6256	None scheduled.			
A6260	None scheduled.			

5. Summary of Work to be Performed in July 1980

A6250 - The Oyster Creek final report will be completed and its review initiated. Additional work on Palisades and Millstone systems will be performed as data becomes available.

A6256 - Continue work on reverses of 64 active plant issues.

A6260 - Work will continue on revision of draft reports and research on SEP plant safe shutdown systems.

6. Problems and Potential Problems

Approximately 1 week was required to incorporate the additional information supplied on the CRD line for Oyster Creek into the computer model and to recalculate the seismic response. While not identifying a cost impact at this time, this effort was in addition to what was anticipated in a recent budget analysis (JAD-131-80). Also, delays in receiving the Palisades and Millstone information could, in the future, cause a schedular and manpower impact.

1. DIVISION OF ENGINEERING - DE

TASK

A6152 Primary System 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 June 1980

<u>A Nos.</u>	<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
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 June 1980

A6152 - A meeting with Westinghouse and Texas Utilities Services, Inc., was held to describe the EG&G Idaho analysis and to identify the remaining information required to complete this activity. Effort this month consisted of preparing for and attending this meeting.

A6156 - Review of the Combustion Engineering, B&W, Westinghouse Owner's Group reports continued with the formulation of questions and comments. A meeting was held with NRC to discuss the detail of the review and the approach to resolving the EG&G questions and comments. Final questions were developed for review prior to issuance to NRC.

Work continued on the PWR feedwater pipe cracking task. Studies to investigate the best type of finite element to use were initiated.

A6166 - A letter report was drafted describing the effort in support of NRC's Pipe Crack Study Group. This document is currently being reviewed.

A6258 - Reviews of the Oyster Creek and Maine Yankee Inservice Testing Programs were completed and questions transmitted to NRC. A meeting was held at Quad Cities with NRC and the utility to discuss questions on their program.

A6265 - Review of the North Anna Inservice Testing Program was completed and questions were transmitted to NRC.

A6401 - Work on assessing the longitudinal/transverse Charpy V-Notch (CVN) ratio was initiated. This task is being performed to support a recommended procedure currently contained in MTEB 5-2. Preparations for a seminar on non-destructive testing (NDE) techniques to be presented to the NRC continued. A cursory review was made of the revised Shoreham PSI plan.

A6402 - Byron/Braidwood work continued with development of a vertical model of a portion of the auxiliary building. Two separate meetings with NRC personnel in Bethesda during the weeks of June 9 and June 23, 1980 resulted in a redirection of the independent analysis for the auxiliary building. A model to predict the lateral response of the auxiliary building will be developed instead of pursuing the vertical analysis. Approximately one man-month has been expended toward development of the vertical model on Byron/Braidwood.

The Grand Gulf effort was continued by making revisions to the containment model to reflect later information on equipment masses. Also, foundation motions were modified to the SAP-IV input format.

Containment shell test calculations were made to account for pressure and temperature effects. The Grand Gulf auxiliary building analysis effort will be redirected to be the same as for Byron/Braidwood.

Revised analysis work scopes for the auxiliary building analysis will be prepared and transmitted to DOE-ID and the NRC.

A6404 - Work is continuing on the review of pump and valve materials. A letter report is being prepared. The NRC technical monitor requested that a copy be provided before they visit the INEL. The requested copy can be furnished by early July.

A6405 - No activity.

A6407 - The engineering data for pumps has been compiled, summarized and tabulated. A letter report for issuance to NRC has been prepared. Valve engineering component data has been summarized on the basis of nominal inlet size, operator type, valve type and function. A data file containing reported valve failures has been created.

4. Scheduled Milestones for July 1980

<u>A Nos.</u>	<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
A6152	None scheduled.			
A6156	V14	CE Owners Group Submittals-Submit 6 SERs	N/S 7-1-80 JAD-162-80	
A6166	None scheduled.			
A6258	None scheduled.			
A6265	None scheduled.			
A6401	None scheduled.			
A6402	None scheduled.			
A6404	H9	Pump & Valve Review Literature, Ltr Rpt	7-31-80T	
A6405	None scheduled.			
A6407	None scheduled.			

5. Summary of Work to be Performed in July 1980

A6152 - Performer has been assigned other work. Effort on Comanche Peak may resume toward the end of the month. When restarted, revisions to the finite element model will be made to reflect the data acquired in a June meeting with Westinghouse.

A6156 - Final questions resulting from the review of each Owner's Group submittal will be transmitted formally to the NRC. Work will continue on plant specific reviews until Owner's Group responses are received. Work on the PWR feedwater cracking problem will be continued using a refined finite element mesh.

A6166 - The letter report describing the piping analysis performed in support of NRC's Pipe Crack Study Group will be issued.

A6258 - A meeting will be held at Maine Yankee with NRC and the utility to discuss questions on their Inservice Testing (IST) Program.

A6265 - Preparation of the final safety evaluation report for the Salem IST program will continue. Pending receipt of drawings from NRC, review of the Davis Besse IST program will begin.

A6401 - Work will continue on review of Shoreham and on evaluation of the CVN Longitudinal/transverse correlation in MTEB 5-2, preparing for the NDE seminar to be presented to NRC.

A6402 - Byron/Braidwood and Grand Gulf efforts will be continued with finite element model formulation of the auxiliary building incorporation of data to be received from utilities into analysis, and adaptation of forcing function to EG&G Idaho computer codes.

A6404 - Work oriented toward the high strength material literature review and the final report will continue.

A6405 - Assuming remaining funding is authorized in early July, work will be restarted.

A6407 - Valve failures will be correlated with summaries of the engineering component data. This step will require more manpower than for the pumps because of the size of the data set.

6. Problems and Potential Problems

A6405 - Restarting this effort must be authorized by July 7, in order to guarantee completion of FY80 work scope in FY80.

A6152 - At this time no firm procedures exist for providing the internal Hydraulic loads are required to complete the Comanche Peak analysis. EG&G has the capability to provide these loads if requested by NRC (cost = \$15K).

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
 A6262 Fuel Performance Code Applications II
 A6270 Reactor Systems Case Review III

2. Scheduled Milestones for June 1980

<u>A Nos.</u>	<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
A6157	None	scheduled.		
A6159	None	scheduled.		
A6167	None	scheduled.		
A6268	None	scheduled.		
A6270	None	scheduled.		

3. Summary of Work Performed in June 1980

A6157 - No activity.

A6159 - The evaluation of temporary/mobile radioactive waste management systems was continued with a visit to the Palisades nuclear plant to observe a solidification process by Delaware Custom Material.

The direct radiation task continued with further evaluation of Thermal Luminescent Dosimeter (TLD) data and a visit to the NRC. The original purpose of this task was determination of the direct radiation contribution from multiple reactor sites. The readily available data from these sites has been exhausted, particularly those data of sufficient accuracy and completeness to permit further analysis. Two very good sets of TLD data which may provide field verifiable quality levels for TLD's were obtained from NRC.

The deminimus radioactivity level task was continued by acquiring pertinent literature, reviewing this literature, upgrading and finalizing the annotated bibliography of guidances, public laws, Codes of Federal Regulations, and other pertinent literature, writing a version of Section 2 of the final report, finalizing and documenting a survey of reactor operator licensee practices, and finalizing and documenting a survey of pathway analyses of doses to the public.

Revisions have been incorporated into the final report on the radiological consequences of containment purge; however, printing and issuance of the report are being held up pending confirmation of some of the technical specification data. A camera-ready copy of the report on BWR augmented off-gas systems was provided NRC.

A6167 - All figures for the FRAPCON-1 evaluation model documentation and checkout report were finalized. A report on the NRC thermal performance benchmark problem was drafted.

A6268 - No activity, pending NRC review of the FRAP-T5 documents forwarded to them last month.

A6270 - Preparation of draft Safety Evaluation Reports (SER) for the Byron/Braidwood and Catawba plants continued.

4. Scheduled Milestones for July 1980

<u>A Nos.</u>	<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
A6157	None	scheduled.		
A6159	None	scheduled.		
A6167	None	scheduled.		
A6268	None	scheduled.		
A6270	None	scheduled.		

5. Summary of Work to be Performed in July 1980

A6157 - Review of the WCAP-9401 methods will be continued upon receipt of additional data.

A6159 - Visits will be made to two reactors to observe solidifications by Hittman Nuclear and Development Corporation and Chemical Nuclear Systems, Inc. Evaluations of TLD data will continue. During July, a draft of the final report on the deminimus task will be prepared for initial review. The final report on the radiological consequences of containment purge is expected to be issued.

A6167 - The FRAPCON-1 evaluation model documentation and checkout report will be reviewed and finalized. Work on the benchmark problem report will continue.

A6268 - Upon receiving the NRC-DSS questions on FRAP-T5, responses will be made with additional information and code assessment results. Work on an internal report will be initiated.

A6270 - Pending receipt of utility responses to first round questions, second round reviews of Byron/Braidwood and Waterford SERs will begin. Preparation of draft SERs for Byron/Braidwood and Catawba 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 June 1980

<u>A Nos.</u>	<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
A6156	None	scheduled.		

3. Summary of Work Performed in June 1980

A6251 - The final report on this task has been drafted and is currently being reviewed. This report describes Tasks C and D of the A6251 Statement of Work. It was agreed with NRC that no work would be required within the scope of Task E.

4. Scheduled Milestones for July 1980

<u>A Nos.</u>	<u>Node</u>	<u>Description</u>	<u>Due Date</u>	<u>Actual Date</u>
A6251	None	scheduled.		

5. Summary of Work to be Performed in July 1980

A6251 - The final report will be issued.

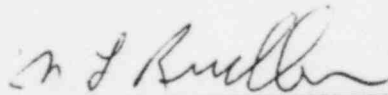
6. Problems and Potential Problems

None

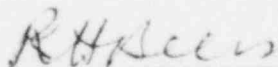
WRRD MONTHLY REPORT FOR

JUNE 1980

GPP AND LINE ITEMS



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



R. H. Beers, Manager
Project Management Division

SEMISCALE

THERMAL FUELS BEHAVIOR PROGRAM

