WRRD MONTHLY REPORT FOR

MAY 1980

JUNE 1980

EG&G Idaho, Inc.

IDAHO NATIONAL ENGINEERING LABORATORY

DEPARTMENT OF ENERGY

IDAHO OPERATIONS OFFICE UNDER CONTRACT DE-AC07-76IDO1570

## ACRONYMS

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

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

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

DAS - Data Acquisition System

EI - Energy, Inc.

FCF - Facility Change Form
FDG - Federal Republic of Germany

GE - General Electric

HDR - Heiss Dampf Reaktor

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

JAERI - Japan Atomic Energy Research Institute

KfK - Kernforschungszentrum Karlsruhe

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

NPRDS - Nuclear Plant Reliability [illegible] System

OPTRAN - Operational Transient
ORNL - Oakridge National Laboratory

ACRONYMS (Continued)

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

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

RFQ - Request for Quotes
RIA - Reactivity Initiated Accident

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

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

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

WBS - Work Breakdown Structure
WRRD - Water Reactor Research Directorate

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WRRD MONTHLY REPORT FOR

MAY 1980

William E. Bostwick

W. E. Bostwick, Officer
Planning & Budgets Branch

L P Leach for

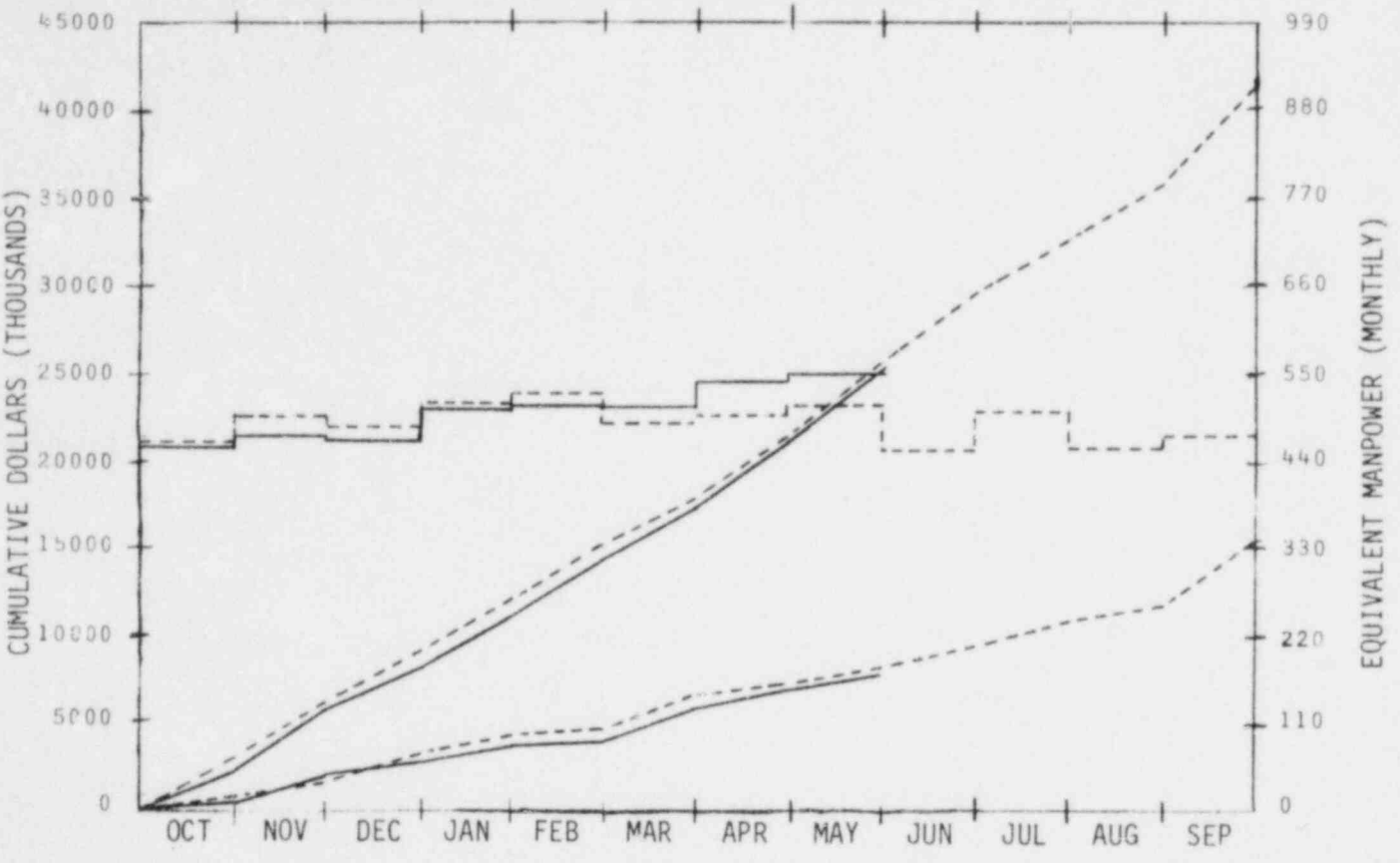
L. J. Ybarrondo, Director

Responsible Manager

L. J. Ybarrondo

EG&G Idaho, Inc.

WATER REACTOR RESEARCH DIRECTORATE




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 2689 | 5394 | 9033 | 12047 | 15069 | 18711 | 22046 | 25758 | 29396 | 32442 | 35811 | 41344 |
| ACTUAL | 2378 | 5262 | 8469 | 11102 | 14282 | 18332 | 21885 | 25329 | | | | |

BUDGET ---------

ACTUAL _____

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 727 | 1577 | 2865 | 3845 | 4812 | 5935 | 7077 | 8595 | 9833 | 10959 | 11940 | 15389 |
| ACTUAL | 503 | 1659 | 2565 | 3271 | 4375 | 5634 | 6924 | 7965 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 469 | 497 | 480 | 515 | 522 | 488 | 494 | 508 | 457 | 501 | 458 | 478 |
| ACTUAL | 455 | 478 | 471 | 500 | 513 | 509 | 535 | 540 | | | | |

YTD VARIANCE: 429 (2%)

Individual 189a cost graphs will provide variance explanations.

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

WRRD MONTHLY REPORT FOR

MAY 1980

SEMISCALE

John P. Crouch

J. P. Crouch
Plans & Budget Representative

L P Leach

L. P. Leach, Manager

SEMISCALE

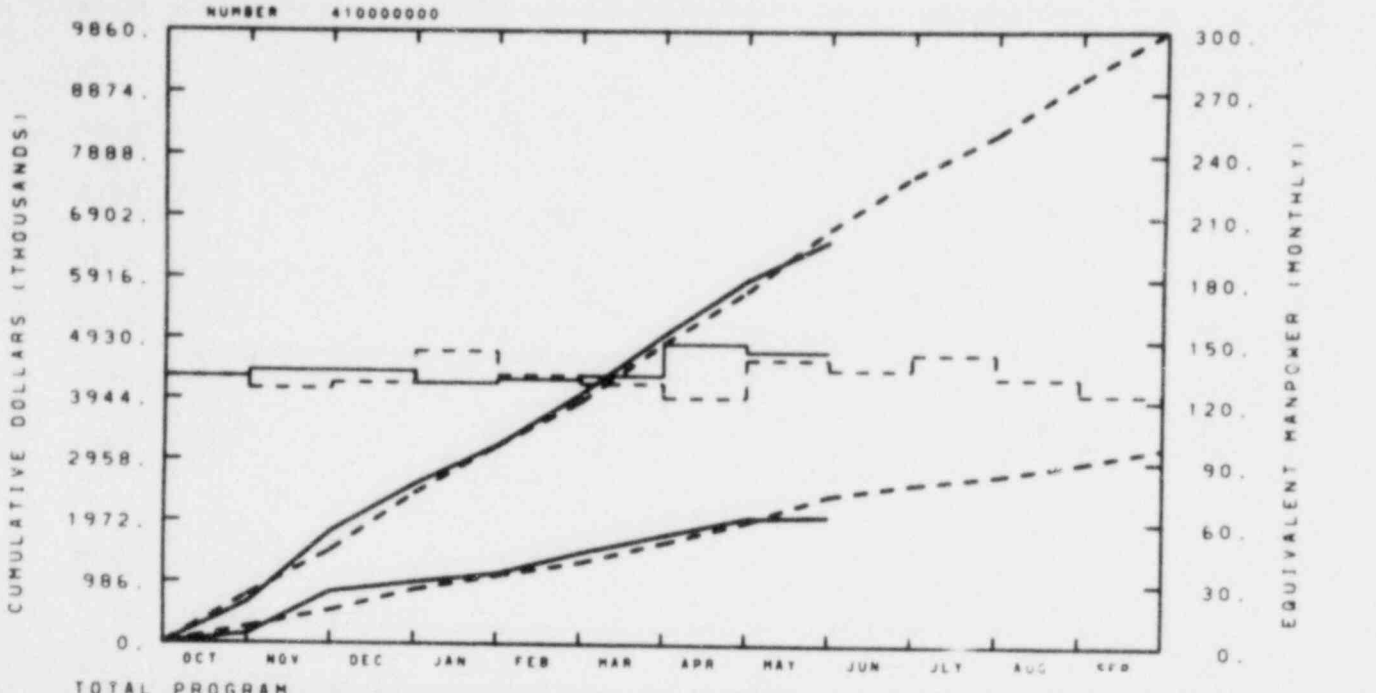
COST SUMMARY & COMMENTS

RESPONSIBLE MANAGER
L P LEACH

EG&G IDAHO INC.

SEMISCALE PROGRAM

NUMBER 410000000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 783 | 1492 | 2425 | 3187 | 3904 | 4872 | 5716 | 6716 | 7572 | 8235 | 9098 | 9858 |
| ACTUAL | 656 | 1799 | 2568 | 3190 | 4029 | 5009 | 5898 | 6525 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 264 | 531 | 870 | 1097 | 1317 | 1636 | 1974 | 2403 | 2590 | 2736 | 2943 | 3193 |
| ACTUAL | 150 | 830 | 990 | 1132 | 1471 | 1758 | 2040 | 2069 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 131 | 125 | 128 | 144 | 132 | 128 | 121 | 140 | 135 | 143 | 131 | 123 |
| ACTUAL | 131 | 134 | 134 | 128 | 130 | 132 | 148 | 144 | | | | |

BUDGET - - - - - -

ACTUAL ———

YTD VARIANCE: 191 (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.

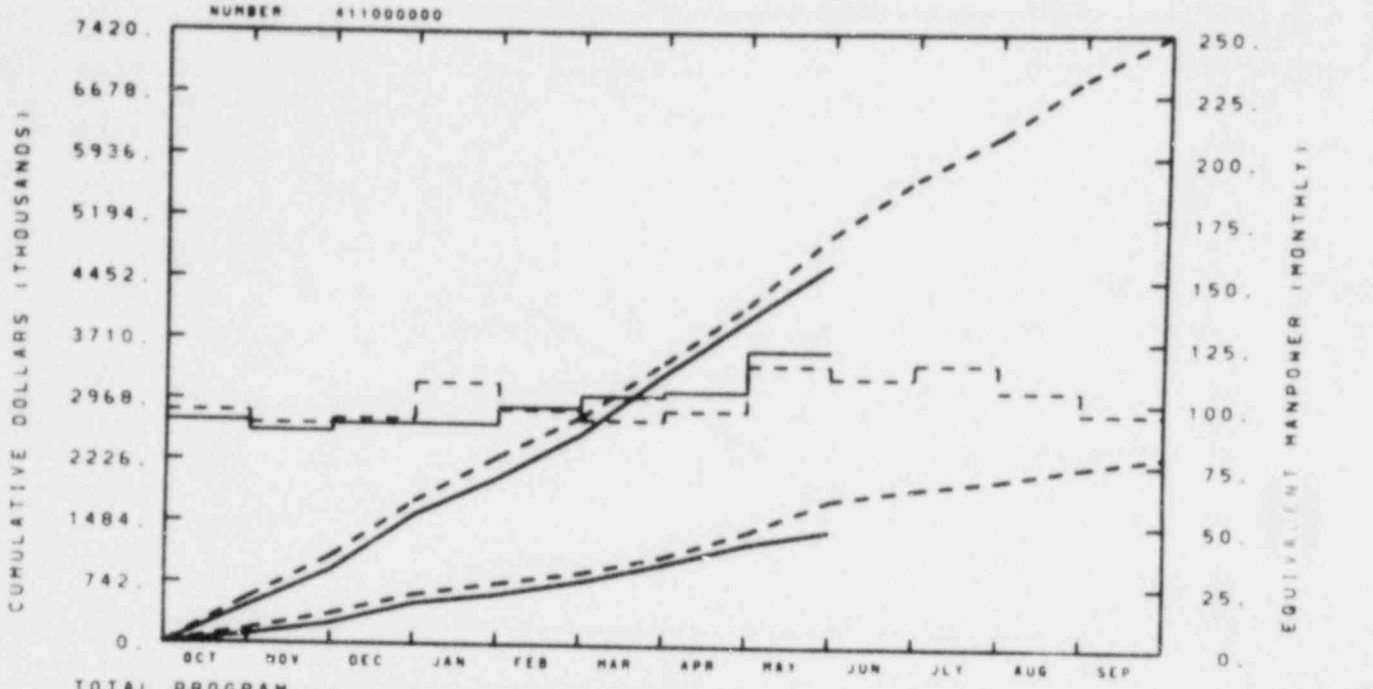
Any change in the Semiscale overall cost graph is due to changes noted on the cost graph for A6038.

RESPONSIBLE MANAGER
L P LEACH

EG&G IDAHO INC.

SEMISCALE

NUMBER 411000000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 552 | 1064 | 1730 | 2272 | 2748 | 3446 | 4144 | 4998 | 5678 | 6202 | 6882 | 7415 |
| ACTUAL | 454 | 898 | 1553 | 2014 | 2553 | 3303 | 3979 | 4642 | | | | |

MATERIAL

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

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

A6038

YTD VARIANCE: 356 (7%)

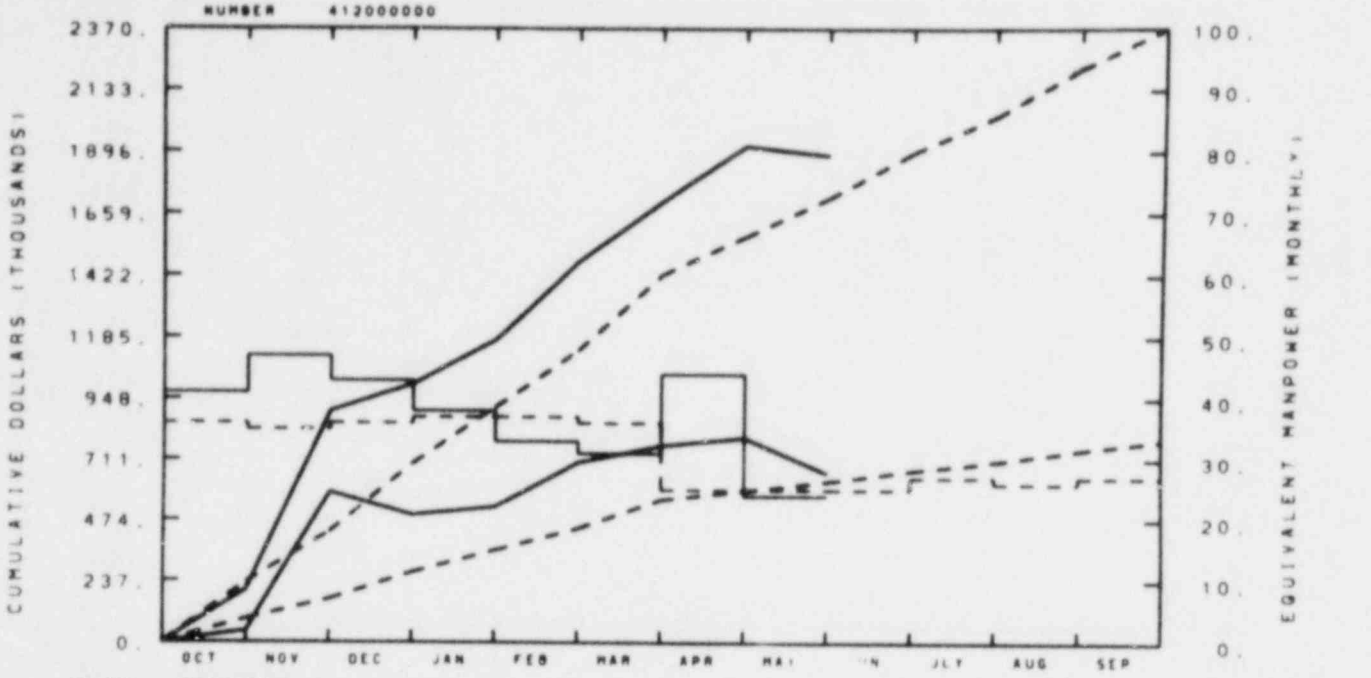
This variance is <11 K> labor and $367 K material. The material variance is due to an incorrect loading in the budget of anticipated spending. The rework of the Semiscale Program baseline will resolve this discrepancy. The difference in the total budget for April and May is attributable to the following approved CCB actions: SS 80-10 through 13, and SS 80-15.

L P LEACH

EG&G IDAHO INC.

LOFT TEST SUPPORT FACILITY

NUMBER 412000000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 231 | 428 | 695 | 915 | 1136 | 1426 | 1572 | 1719 | 1894 | 2033 | 2216 | 2370 |
| ACTUAL | 202 | 901 | 1006 | 1175 | 1476 | 1706 | 1919 | 1883 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 90 | 167 | 270 | 356 | 441 | 554 | 590 | 626 | 669 | 703 | 748 | 786 |
| ACTUAL | 44 | 582 | 494 | 525 | 700 | 766 | 797 | 659 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 36 | 35 | 36 | 37 | 37 | 36 | 25 | 25 | 25 | 27 | 26 | 27 |
| ACTUAL | 41 | 47 | 43 | 38 | 33 | 31 | 44 | 24 | | | | |

BUDGET - - - - -

ACTUAL ———

A6043 (LOFT Test Support Branch Portion)

YTD VARIANCE: <164> (10%)

Cost transfers of (198 K + 43 K + 5.3 K actual) versus (230 K + 45 K + 10 planned) have reduced the YTD costs. A new baseline (LTSF 80-2) was prepared to assess budget requirements to complete the year. This baseline indicates a need for an additional $150.2 K. A CCB for $50 K was approved on June 6, 1980 reducing the total projected overrun to $100.2 K. Scope reductions are being identified to bring the spending plan in line with the budget available.

SEMISCALE

CURRENT WORKING SCHEDULE

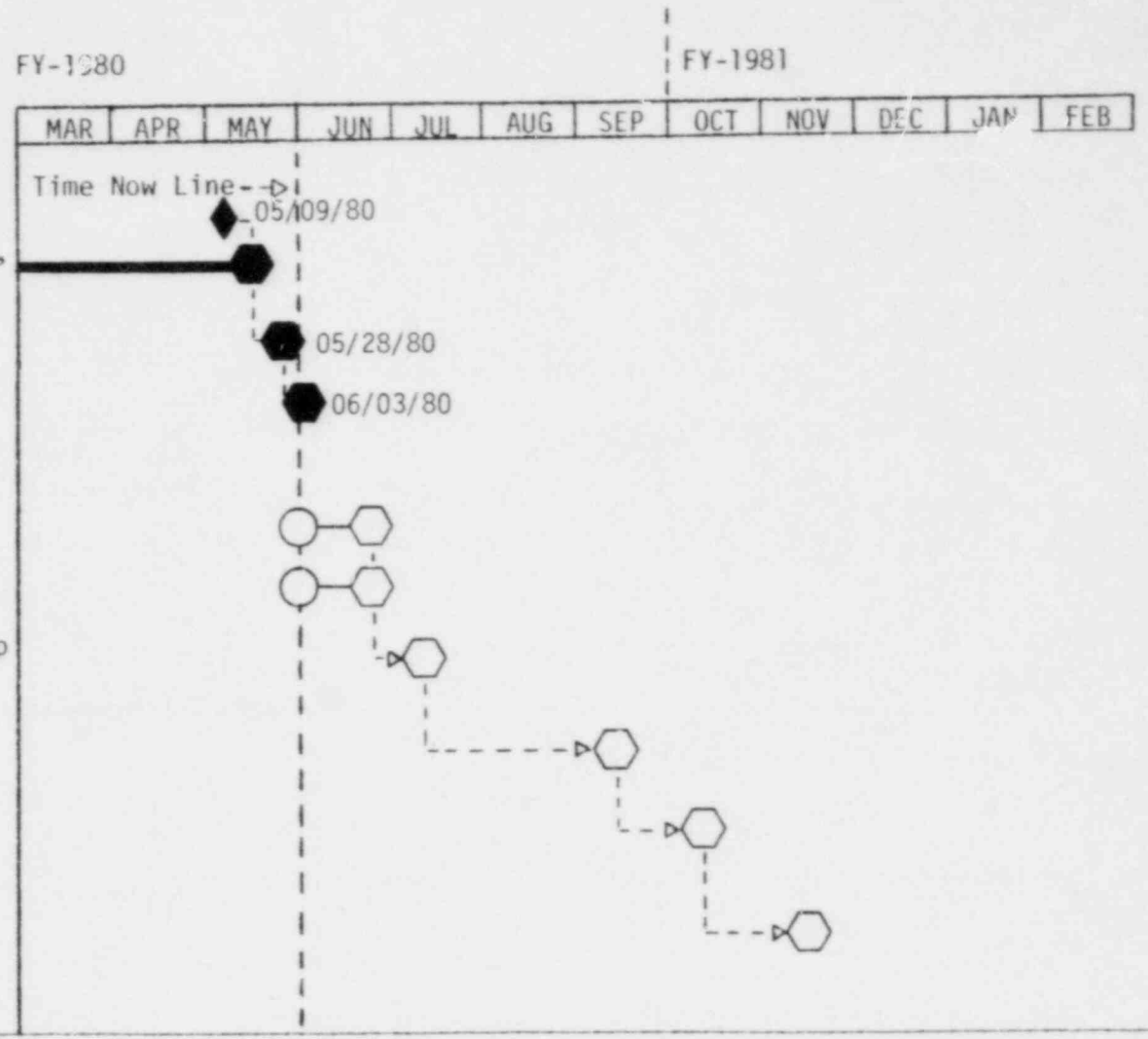
SEMISCALE PROGRAM

May 1980



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




1 Small Break Pump Operation Tests, (7 tests - includes TR-1)

2 Standard Problem Test S-07-10C

Station Blackout Test

3 Mod-2A Conversion

Remove Vessel

Remove Intact Loop Steam Generator

Complete Instrumentation Intact Loop Steam Generator

Complete Install Intact Loop Steam Generator

Complete Mod-2A System and Start SO Testing

Complete SO Testing

NOTES:

1 Small Break Pump Operation Test Schedule, which included Station Blackout Test TR-1, was moved back from 05/22/80 to 05/13/80 per CCB SS-80-17.

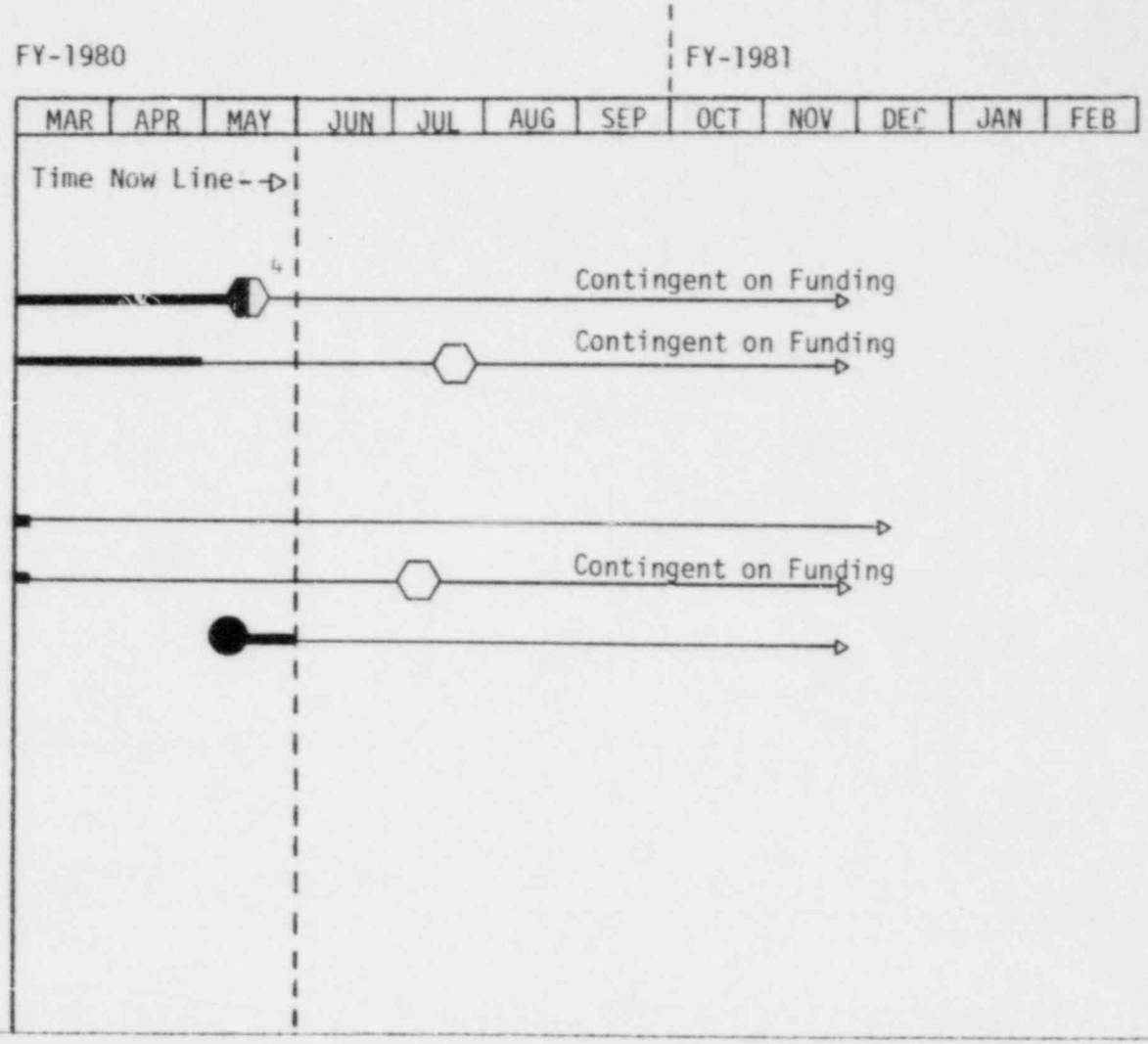
2 Standard Problem Test Repeat S-07-10C and Station Blackout Test TR-2 were added to the Semiscale Testing Schedule per CCB SS-80-17.

3 Mod-2A Converson commitment schedule per CCB SS-80-17.

SEMISCALE 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




NOTES: [4] Design has proceeded as far as possible without funding for hardware.

SEMISCALE

TECHNICAL REVIEW & SUMMARY

## PROGRAM MANAGER'S

## SUMMARY AND HIGHLIGHTS

The first station blackout simulation (Test S-TR-1) was successfully completed in the Semiscale Mod-3 system. The simulation of loss of electrical power was conducted to provide data for future test planning and to provide information for code modeling and instrumentation responses during a blackout simulation.

A small break test was successfully performed in the Mod-3 system to experimentally characterize the thermal-hydraulic behavior of the system during a small (10%) pipe break. This test (S-07-10D) was performed to provide better boundary conditions than an earlier test which was designated a Nuclear Regulatory Commission standard problem problem; the experiment data report for the earlier test (Test S07-10[A]) was published this month.

The quick look report for the hot leg break pumps on/pumps off small break test was completed. Results of the pumps on/pumps off tests were discussed in a meeting with NRC, utilities, EPRI, and reactor vendors on May 21 and 22, 1980.

The LOFT relief valve tests and low flow DTT performance evaluation tests were performed in the two-phase flow loop at LTSF. Final assembly of the L3-4 spool piece calibration apparatus was continued. Assembly of the nine-rod heater bundle for quench testing was also completed.

1. 189a A6038 - Semiscale Program

2. Scheduled Milestones for May 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| | Perform Small Break Test S-SB-P4 | 05-01-80 | 04-18-80 |
| | Perform Small Break Test S-SB-P6 | 05-08-80 | 04-23-80 |
| | Perform Station Blackout Test S-TR-1 | 05-22-80 | 05-09-80 |
| | Perform Mod-3 Baseline Test S-07-10D | 06-12-80 | 05-28-80 |
| | Publish Experiment Data Report for Mod-3 Baseline Test S-07-10 | 05-29-80 | 05-29-80 |
| | Perform Station Blackout Test S-TR-2 | 05-30-80 | Rescheduled |

3. Summary of Work Performed in May 1980

a. 411CL00 Closed Loop Secondary

1. 411CL1100 The core inlet temperature controllers were balanced and adjusted for a controller unit within 2°F of the setpoint for the full span of 500 to 600°F. Both the intact loop and broken loop steam generator level control loops are functional.

2. 411CL1200 Drawings of the closed loop secondary have been completed to the extent possible. The information needed to complete the design will become available during the procurement process, which will begin when funding becomes available. These drawings have been transmitted for comment. This will constitute an "interim" design review, and a formal design meeting will be scheduled upon completion of the drawings.

b. 411DA00 Measurements Engineering

1. 411DA2100 The mechanically sealed beryllium ring design for the low energy densitometer was checked out, installed, and used successfully in Test S-07-10D.

The Air-Water Loop control room construction was completed. Schematic flow and electrical diagrams for that loop were completed, reviewed, and review changes were begun. The related equipment layout drawings are about 80% complete. Planning and status charts, and a critical path method (CPM) network, were completed and the work package approved for loop reconstruction. A cost estimate/schedule and technical proposal were prepared to support testing of the FLECHT upper plenum. Meetings were subsequently held with Westinghouse personnel on May 29 and 30, 1980, concerning these flooding tests to be conducted in the Air-Water Loop.

NUREG/CR-1361 (EGG-2025) was transmitted to DOE-ID on May 29, 1980. This report, by J. L. Anderson, was entitled "Drag Devices for Two-Phase Mass Flow Measurements."

Work was begun on a several-minute film documenting the evolution, status, and most recent accomplishments in optical probe data acquisition.

Study was initiated of how special flow measurements will be attempted in early Mod-2A testing. Problems includes single- and two-phase natural circulation (very low) flows, countercurrent two-phase flows due to refux conditions in the steam generators, and steam-water-inert gas flows. Discussions were held withn FLECHT personnel on these subjects since they face the same problem. Some modifications to steam generator instrumented spool designs have been suggested as a first step in this area.

2. 411DA2200 Work on adapting existing plotting application software to the new Hewlett-Packard (HP-1000) system was continued. Comparisons of processing speed (between old and new systems) indicate the new system will be signficantly faster. Requisitions for upgrading equipment for tne Air-Water Loop data system were processed. Coordination meetings with Mini-Systems Division personnel were held to facilitate specification and procurement activities for the FY-1980 Semiscale data system upgrading and with regard to optical probe data processing plans.

3. 411DA2300 Testing of the hydrostatic bearing turbine prototype at the University of Arkansas was successfully completed. The unit and final report were transported to the Idaho National engineering Laboratory at the end of May 1980 for applications testing and checkout at the Semiscale

facility. The optical pickup probe (refer 411DA3200) was completed, transported to the University of Arkansas, and installed on the hydrostatic bearing turbine prototype. During testing there, the probe also successfully performed its intended function of turbine blade passage detection without the penalty of magnetic drag. The combined University of Arkansas and EG&G Idaho Instrumentation Divison effort, timing, and success represent a substantial accomplishment in external-expert/EG&G Idaho coordination and teamwork.

4. 411DA3200 Work necessary to get to the design review stage on both the few-channel analyzer and the digital/analog Sub. 2 multiplexer was accomplished. Cycle testing of the high temperature/pressure optical pickup probe was delayed in order to be accomplished in the same tests as the steam generator instrumentation, (i.e., much greater number of cycles in a short time than could be accomplished by putting it into Semiscale). Documentation of the optical/electrical prototype circuit was continued after testing was completed at the University of Arkansas.

c. 411LE00 Semiscale Operations

1. 411LE1100 Tests S-TR-1 (station blackout) and S-07-10D (Mod-3 baseline) were performed on May 9 and May 28, 1980, respectively. The attempt at performance of Test S-07-10C, on May 19, 1980, was found to be invalid when it was determined that leakage through the intact loop steam generator steam valve caused sufficient pressure drop to invalidate the test. As a result of the completion of Test S-07-10D, Test S-TR-2 has been rescheduled for June 3, 1980.

The "Experiment Data Report for Semiscale Mod-3 Small Break Test S-07-10 (Baseline Test Series)," NUREG/CR-1456 (EGG-2035) was printed and transmitted to DOE-ID on May 29, 1980.

Operations activities for May included the installation of the auxiliary makeup system (mechanical) and a system hydrostatic test to 2250 psig which was performed on May 1, 1980.

Core power was switched to serpentine resistance load for calibration of shunt amplifers and a component checkout was performed on the auxiliary makeup system on May 5, 1980. Pretest checkout procedures for Test S-TR-1, and its associated steam valve calibration, were performed on May 5, and 6, 1980.

Setup work for Test S-TR-2, which is scheduled for June 3, 1980, was begun on May 29, 1980.

Plot reviews for the experiment data reports for Tests S-SB-P1, S-SB-P2, and S-SB-P7 began in mid-May 1980. The experiment data report schedule for Tests S-SB-P3 and S-SB-P4 was submitted along with the necessary plot requests and engineering uncertainty data to be provided by the Reliabiity and Statistics group.

2. 411LE1200 Calculations done to examine shielded thermocouple performance were documented.

Analysis of two-phase pump behavior was performed. The analysis showed that a "hysteresis loop" phenomena exists for two-phase pump head degradation. Data analysis and reduction techniques are being written to indicate this phenomena more definitively.

Analysis of data from small break Tests S-SB-P3 and S-SB-P4, as well as calculations of the system mass inventory and distribution during each test, was performed. The quick look report for Tests S-SB-P3 and S-SB-P4 was written and transmitted on May 16, 1980.

Considerable effort was expended in analysis of data from the pumps on/pumps off small break tests, in preparation of the analysis results for presentation at the Nuclear Regulatory Commission (NRC)/vendor meeting held in Washington, D.C., May 21 and 22, 1980.

The break orifice calibration data was compiled and compared with the measured data from Test S-SB-P2. The calibration data agrees well with the test data at the higher pressures, but is as much as 45% higher than the test data at lower pressures. The orifice calibration data was 10 to 25% higher than obtained from the Henry-Fauske break flow model.

Work was completed on a computer program for generating 3-D plots. Also utility programs were created to produce 2-D MAGNUM plots of core void fraction versus time and system energy versus time.

The new intact loop pump test plan will be completed with completion of illustrations, which should be available by the mid-June 1980.

The specification for a permanent primary coolant system leakage makeup system was written.

A study of the relocation of the pressurizer in the Mod-2A system to make the system volume versus elevation more representative of that in the Zion pressurized water reactor (PWR) system was completed.

Work to set up the RELAP4/MOD7 model that will be used to perform posttest calulations for the station blackout tests was begun.

Work was continued on the RELAP5 calculation of Test S-SB-P1.

Posttest analysis of the pumps on/pumps off small break test series continued. Posttest calculations for Tests S-SB-P1 and S-SB-P7 were completed using RELAP4/MOD7. Analysis of the results of the Test S-SB-P7 calculations indicate relatively good results were obtained when new two-phase pump head degradation multipliers (based on Test S-SB-P7 data) were used. Analysis of both calculations is continuing to try to understand these results and identify further areas for analysis and posttest calculations.

Posttest analysis for Tests S-SB-P3 and S-SB-P4 was begun by comparing the results of the pretest calculations to the experimental data. Areas where the model can be improved will be identified and posttest calculations made where appropriate.

Results of the above analysis were compiled for presentation to the NRC/vendor/utilities in Washington, D.C. on May 21 and 22, 1980.

3. 411LE1400 The corrected short term data tapes for Tests S-SB-P3 and S-SB-P4 were completed and delivered to Semiscale analysis personnel on May 2, 1980.

Tests S-TM-1 and S-TM-2, system operation (S.O.) tests to evaluate performance of the steam generator steam valves prior to running Test S-TR-1, were run on May 7, 1980. As a result of these tests, the steam generator steam vent valves were modified with positioners to enable their use to simulate pressure relief valves during the performance of Test S-TR-1.

In the performance of Test S-TR-1, 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 will not appear in experiment data reports. Quick look plots were available two hours after the test was complete. Corrected long term data tapes were completed and delivered to Semiscale analysis personnel on May 14, 1980.

Test CAL, a series of S.O. tests to collect data to be used for low flow calibration of the high pressure and low pressure injection system pumps, was run on May 16, 1980. All requested data was gathered, processed, and delivered to the test engineering section the same day.

In performing Test S-07-10C, a total of 320 data channels were used with no significant instrumentation problems. As usual, 10% were measurements required for data integrity checks and evaluation of new measurement system, and will not appear in experiment data reorts. Quick look plots were available two hours after the test was complete. By studying these plots, it was determined that leakage through the intact loop steam generator steam valve caused sufficient pressure drop to invalidate the test.

In Test S-07-10D, a total of 320 data channels were run with no significant instrumentation problems; 10% were measurements required for data integrity checks. Quick look plots were available two hours after the test was complete.

The draft of the system configuration control and documentation plan was completed and issued for review. Meetings were held to discuss modification work to be done in conjunction with the Mod-2A conversion, and additional site work releases were identified to cover this work. Cycle testing of steam generator tube instrumentation was started. Scheduling and coordination of pretest day activities, data reviews, measurement problems identification, and data correction activities was continued for the several tests conducted during the month.

d. 411M200 Mod-2A Conversion

1. 411M23100 Discussions were held with Semiscale measurements engineering and Idaho Labaratories Corporation personnel concerning some prototype heat flux devices. It appears that the technology necessary for use of these devices is available, but the details have yet to be worked out.

Locations for pipe metal thermocouples needed to control the band heaters were discussed with Semsicale measurements engineering and design personnel. Tests on a spool piece and the installed thermocouples will be performed when the heaters arrive.

2. 411M25100 Mod-2A conversion drawings are 95% complete. Site work releases are 80% complete. All site work releases required during the first month of the work window are complete and issued.

   Qualification of the steam generator instrumentation welding and brazing procedure was complete and transient testing of the sample was started.

   Steam generator fillers are on order and on schedule. The long lead material deliveries are also on schedule.

e. 411M312 Honeycomb Insulators

411M31200 Leak testing of the honeycomb insulators at Pyromet Industries, San Carlos, California was witnessed by Semiscale design personnel on May 21, 1980. Minor schedule problems and repair cycles will cause a slight shipping delay; however, the vendor's present estimated shipment date (June 13,1980) is still prior to the need date.

f. 411M500 Mod-5 Conversion

1. 411M5200 The Mod-5 vessel core design, and also the external downcomer design for the vessel, was selected.

   An evaluation of the location of a control room was made. It has been recommended that a new building be constructed to house the control room. A preliminary equipment layout of the south and center pits was completed.

2. 411M53100 A draft of the Mod-5 requirements document was completed and distributed. The document will be revised as comments are received. The instrumentation requirements for the proposed Mod-5 system were written and put in tabular form with measurement locations and ranges for various types of tests. This table will be incorporated into the final requirements document.

g. 411NC00 Natural Circulation Series

411NC1100 Planning and literature review for natural circulation tests were continued. An overview of our thoughts on the experiments and required instrumentation were presented to Westinghouse personnel on May 29 and 30, 1980. An outline of the natural circulation series of tests was written.

h. 411T700 Test Series 7

411T7X500 A new input/output package was put into COBRA-IV-I and checked out. Work is continuing to provide the necessary links between the data and the numerous programs. Minimal programming work needs to be completed before model checkout and analysis starts.

i. 411T100 External Heaters

411T1X200 Besafa, Incorporated, of Compton, California, was awarded the contract for the power supplies. The control panel design is complete except for information to be supplied by Besafa on control and monitor signals. The site work release for distribution panel prefabrication has been sent to the field. The site work release for heater band wiring is 90% complete.

j. 411TR00 Blackout Simulations

411TR1100 Following performance of the first blackout test (S-TR-1), a preliminary assessment letter was assembled and transmitted. The results from Test S-TR-1 were used to help plan the second blackout test (S-TR-2) which will be performed June 3, 1980. An experiment operating specification (EOS) is being prepared for this test.

k. 411TS00 Licensing Support

411SXS00 An experiment operating specification (EOS) was prepared and issued for a rerun of Test S-07-10. Additionally, a pretest review was held, a critical instrumentation list assembled, and continuous analysis support for the tests was carried on for a period of about two weeks.

A preliminary assessment letter is being prepared and work on a quick look report for Test S-07-10D will begin immediately.

4. Scheduled Milestones for June 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| | Perform Station Blackout Test S-TR-2 | 06-03-80 | _____ |
| | Begin Mod-2A Conversion | 06-03-80 | _____ |

5. Summary of Work to be Performed in June 1980

a. 411C100 Closed Loop Secondary

1. 411CL1100 An additional function check on the closed loop controls with the higher controller settings will be completed. The three element control (level, steam flow, feedwater flow) will be temporarily modified to a one-element control (level) and functionally tested. The flow fluctuation and offset problem work will be continued.

2. 411CL1200 Comments on closed loop secondary drawings will be received and evaluated.

Work on the formal System Design Description (SDD) for the closed loop secondary will begin. The first draft should be completed in July 1980.

b. 411DA00 Measurements Engineering

1. 411DA2100 Details of several Mod-2A conversion tasks will be defined and direction and priority assigned for accomplishing them. Some of these are: Densitometer pulse mode electronics changeover, broken loop densitometer refurbishment, intact loop drag screen installation, conversion of System II to mass flow computer, revision of data room layout and wiring.

The Air-Water Loop reconstruction work associated with preparations for testing will be started. The newly constructed loop will be renamed Steam-Air-Water (SAW) Loop. Work will be continued on the low flow, reflux, etc., measurement problems.

2. 411DA2200 Requisitions will be placed for needed additional Steam-Air-Water Loop components. Final definition of Semiscale data system upgrading will be addressed. Applications software plotting routines will be continued with resolution of some hardware/software problems with the new hard copy unit expected.

c. 411LE00 Semiscale Operations

1. 411LE1100 System preparation, in support of station blackout Test S-TR-2, will be completed. Mod-2A modifications will commence after completion of Test S-TR-2 on June 3, 1980.

Experiment data report preparation for Tests S-SB-P1C, S-SB-P2, S-SB-P7, S-SB-P3, and S-SB-P4 will continue. The experiment data report for Tests S-SB-2 and S-SB-2A will be published.

2. 411LE1200 Shielded thermocouple calculations (revised) will be completed.

Posttest analysis of the pumps on/pumps off small break tests (Tests S-SB-P1, S-SB-P7, S-SB-P3 and S-SB-P4) will continue and posttest calculations made where appropriate.

Work will continue with the RELAP5 code to complete a calculation of Test S-SB-P1.

Posttest calculations for the station blackout tests will be completed and analysis of them begun. Work will begin on documenting the results of the analysis of the Semiscale small break orifice calibration test data.

An ASME paper describing the results of Semiscale small break Test S-SB-2 will be transmitted to the conference chairman.

Work will be initiated on test procedures for steam/water testing of the new intact loop pump.

Analysis associated with the two topical reports for the Semiscale small break test series will be initiated, and outlines of each topical will be written.

3. 411LE1400 Data from Tests S-07-10D and S-TR-2 will be processed. Mod-3 instrumentation will be removed from the loop, catalogued, and stored. Work on the Mod-2A conversion will begin. The newly purchased Hewlett-Packard (HP-2100A) computer will be installed and checked out in System II and the existing rental unit returned. Steam generator tube instrumentation work will continue. Detailed flow charts for FORTRAN source code generation, and procedures for implementation of the system configuration control, will be started.

4. 411LE1500 As-built process and instrument drawing (P&ID) drawings will be completed and a draft of the Semiscale master facility drawing standard practice will be distributed for review.

   Air-Water Loop design support will continue.

d. 411M200 Mod-2A Conversion

1. 411M25100 A final design review, which integrates the various substasks and provides an overview of the entire Mod-2A task, will be held on June 6, 1980. Drawings of this sytem will be completed, as will site work releases.

   Preparation of component checkout (C.C.) and system operation (S.O.) test procedures will begin.

   Mod-2A ripout and equipment modifications will begin. The vessel assembly procedure will be completed and issued.

   Critical procurement will continue to be monitored, i.e., steam generator filler, honeycomb insulators, instact loop steam generator.

2. 411M25200 Design of the steam generator "pant legs" will be finalized.

e. 411M311 Instrumentation Support

411M31100 Monitoring of the beryllium washer during the tests scheduled prior to the Mod-2A shutdown will be conintued. Inspection of the washer upon completion of testing will be accomplished. The need and schedule for procurement of additional washers will be determined. A decision will be made on the schedule for the vessel turbo-probe modifications.

f. 411M312 Honeycomb Insulators

411M31200 Close monitoring of the honeycomb insulators fabrication process until shipment, which is expected on June 13, 1980, will continue.

g. 411M500 Mod-5 Conversion

1. 411M52000 A layout of the pressurizer will be completed and a stress analysis on the Babcock & Wilcox (B&W) steam generator (19-tube) will begin.

A detailed functional and operational requirements document, in system design description format, will be completed.

The applicability of the present Semicale pumps to the Mod-5 system will be evaluated.

Electrical equipment layout, including conduit and cable tray routing, will be completed. The engineering design file for power requirements will be prepared.

2. 411M53100 A final version of the Mod-5 requirements document will be completed. Support necessary to conceptual design effort will be provided as necessary.

h. 411NC00 Natural Circulation Series

411NC1100 Planning for the natural circulation test series will continue.

i. 411PC00 Program Control and Documentation

411PC1300 Final inspection/hydro test on the itact loop steam generator will be performed.

Source inspection and functional checkout of the scanning densitometer assembly at ABCP Tool and Die, Phoenix, Arizona, will be performed. Inspection and testing on the preproduction model of the steam generator filler pieces will also be performed.

j. 411TR00 Blackout Simulations

411TR1100 Test S-TR-1 data will be analyzed. Planning for Test S-TR-2 will be completed, the experiment will be conducted, and the data also analyzed.

k. 411T100 Test Series 11

411T1X100 Planning will continue for Test Series 11, and preparation of a draft EOS will begin.

l. 411TIX2 External Heaters

411TIX200 A site work release for wiring of the heater bands will be issued. Design of the control panel for the power supply transformers will begin after necessary information is received from Besafa, Incorporated.

A purchase order for the main breaker panel, conduit, and cable trays will be issued.

m. 411TS00 Licensing Support

411SX500 A draft quick look report for Tests S-07-10B and S-07-10D will be completed.

5. Problems and Potential Problems

None.

1. 189a A6043 - LOFT Test Support Facility

2. Scheduled Milestones for May 1980

None

3. Summary of Work Performed in May 1980

a. 412A000 Test Projects

1. 412AA00 The nine-rod heater vessel has been installed in the Blowdown Loop. The rod bundle will be installed in the vessel when it becomes available.

2. 412AE00 The L3-4 experimental test hardware has been installed in the Blowdown Loop.

3. 412AF00 The hardware requirements and design has been completed for the L3-6 calibration test in the Two-Phase Loop. L3-5 hardware has been fabricated and is, with the exception of LOFT supplied spool pieces, ready for installation in the Two-Phase Loop in support of the L3-6 program.

4. 412AH00 Some Two-Phase Flow Loop startup operation tests were performed during May along with the modular drag disc turbine transducer (MDTT) rake testing. The tests that were performed did, however, demonstrate the ability of the loop to heat up and operate at maximum operating pressure (6.0 MPa), maximum temperature (257°C) and maximum single-phase liquid flow (420 kg/s). In addition, by changing the orifice in the water metering line and operating the diesel at 1000 rpm, the loop liquid operating range was extended from 42 - 420 kg/s to 4 - 420 kg/s over the entire loop operating pressure and temperature range.

5. 412AN00 Work continued on preparation of experiment data reports (EDRs) for WYLE transient tests. Two EDR's were transmitted to configuration document control system (CDCS) and one other draft was submitted for review. Analysis of liquid level data was initiated.

6. 412AP00 Testing of the LOFT PC-2 MDTT rake was performed over a limited portion of the test specification. Data analysis was initiated to support a preliminary report.

7. 412AT00 Testing of the LOFT secondary system relief valves was completed. In all, three LOFT steam generator relief valves were tested.

8. 412A900 The test proposals (189a) for FY-1981 were discussed with LOFT Analysis and Instrumentation Divisions personnel. FY-1981 budget and schedules were reviewed.

b. 412F000 Operations and Maintenance

1. Two-Phase Flow Loop - Testing of the modular drag disc turbine transducer (MDTT) has been completed. Loop mechanical problems prevented all but the high flow survivability tests from being completed. The testing that was completed covered the high flow range of the loop (290 kg/s to 420 kg/s at 6.0 MPa).

2. Blowdown Loop - Installation of test hardware for the nine-rod quench test and the L3-4 spool piece calibration has been completed. Calibration of the Blowdown Loop catch tank has been completed and L3-4 spool piece calibratio has been started. Preparation of data and control systems for LOFT L3-4 tests was continued as time and manpower were available.

c. 4129000 Additional Work

1. 45JSHL0 Work has been performed to complete work packages and schedules for the 3-D hot leg spool piece calibration test program, complete design activity for revised system supports, complete instrumentation requirements and an experimental operating specification.

2. 4411410 Analysis to define Bingham-Willamette Company (BWC) loop capability and stability was initiated. Measurement and data acquisition system requirements were prepared. Equipment liability was established. A request for cost estimate for loop preparation and operation was forwarded to BWC. Assessment of Babcock & Wilcox participation in feasibility study was conducted.

d. Foreign Funded Activities

1. 5F8C801 Catch tank calibration was completed. Static accuracy was determined to be within 0.1%.

2. 5F7C401 A design package for the LOFT emergency core coolant (ECC) rake was prepared for transmittal to Sanjoy Banerjee for support of modeling effort.

4. Scheduled Milestones for June 1980

None

5. Summary of Work to be Performed in June 1980

a. 412A000 Test Projects

1. 412AA00 No activity planned due to L3-4 testing.

2. 412AE00 L3-4 spool piece calibration testing is expected to be conducted during the entire month of June.

3. 512AN00 Experiment data reports for remaining WYLE transient tests will be completed. Liquid level data will be processed and analyzed in support of a data report.

4. 412AP00 A data report documenting testing of the PC-2 modular drag disc turbine transducer will be prepared.

5. 412AT00 A data report documenting testing of the LOFT secondary system relief values will be prepared.

6. 412A900 Work on FY-1980 and FY-1981 work packages will continue.

b. 412F000 Operations and Maintenance

1. Two-Phase Flow Loop - Maintenance work on the loop will be planned and started during this shutdown period.

2. Blowdown Loop - L3-4 spool piece calibration will be completed.

c. 412900 Additional Work

1. 45JSHL0 The experiment operating specification for 3-D spool piece calibration will be completed. Instrumentation and hardware design will be completed. Data acqusition requirements will be finalized.

2. 4411410 Analysis of the Bingham Willamette Company test loop will be performed. A conceptual test matrix, measurement system, and test program costs will be summarized and forwarded to the NRC for review.

d. Foreign Funded Activities

1. 5FNC500 Data will be provided to Rensselaer Polytechnic Institute (RPI) as requested in support of the drag disc turbine transducer and orifice flow modeling efforts.

2. 5F7C401 Data will be provided to Sanjoy Banerjee as required in support of emergency core coolant rake modeling effort.

3. 4F7C500 Data and conclusions will be presented from steam probe tests at review meetings and future course of action for further work will be established.

4. 5FAC300 Upgrade of Two-Phase Loop steam supply tanks to 3000 psi will be initiated.

6. Problems and Potential Problems

Additional acceptance testing of the Two-Phase Flow Loop will be delayed indefinitely by the necessity to divert all LOFT Test Support Facility (LTSF) personnel to the tight test schedule in effect through the remainder of FY-1980.

WRRD MONTHLY REPORT FOR

MAY 1980

THERMAL FUELS BEHAVIOR PROGRAM

N. H. Drysdale
Plans & Budget Representative

cc H. J. Zeile, Manager

THERMAL FUELS BEHAVIOR PROGRAM

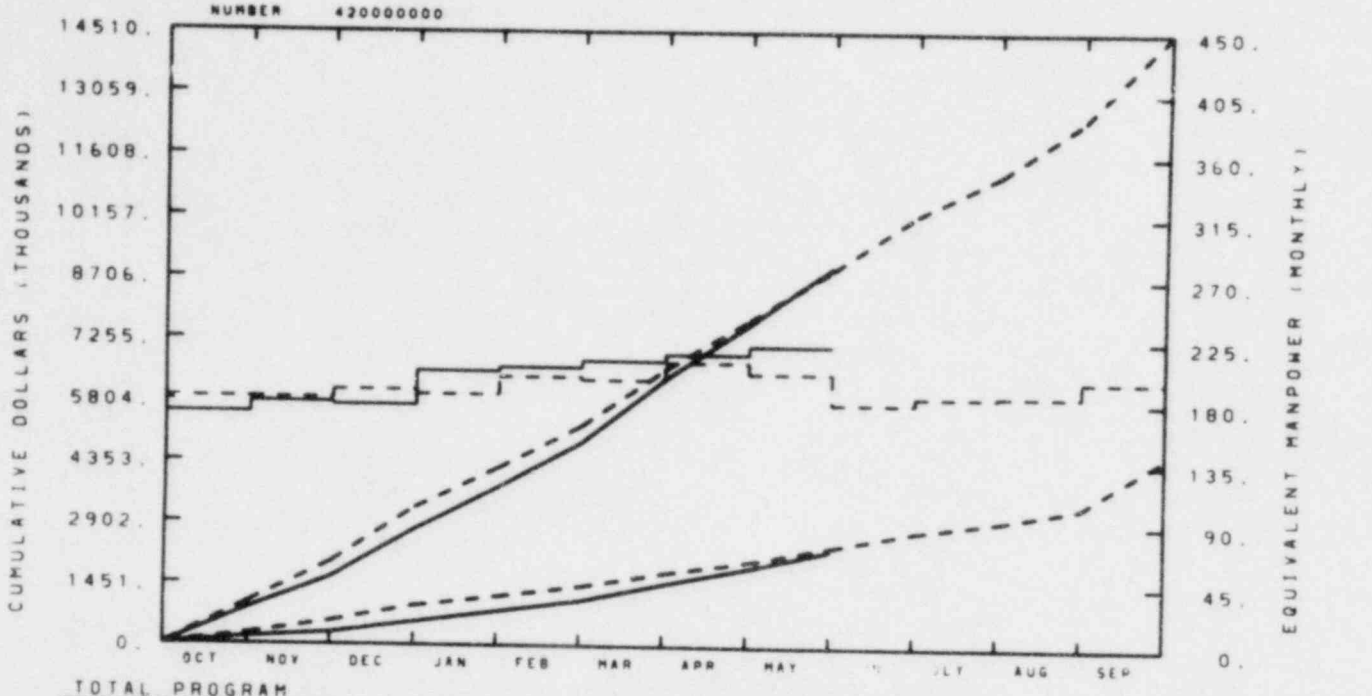
COST SUMMARY & COMMENTS

[redacted]
RJ ZEILE

EG&G IDAHO INC.

THERMAL FUELS BEHAVIOR PROGRAM

NUMBER 420000000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 1006 | 1979 | 3265 | 4211 | 5229 | 6585 | 7744 | 8943 | 10233 | 11180 | 12477 | 14503 |
| ACTUAL | 856 | 1613 | 2752 | 3749 | 4827 | 6357 | 7649 | 9007 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 255 | 558 | 937 | 1164 | 1415 | 1747 | 2024 | 2381 | 2750 | 3000 | 3341 | 4538 |
| ACTUAL | 165 | 282 | 550 | 809 | 1072 | 1484 | 1874 | 2304 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 182 | 182 | 188 | 185 | 198 | 196 | 209 | 201 | 179 | 184 | 185 | 196 |
| ACTUAL | 171 | 179 | 177 | 202 | 205 | 210 | 215 | 221 | | | | |

BUDGET

ACTUAL

YTD VARIANCE: <64> (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 if over $10 K.

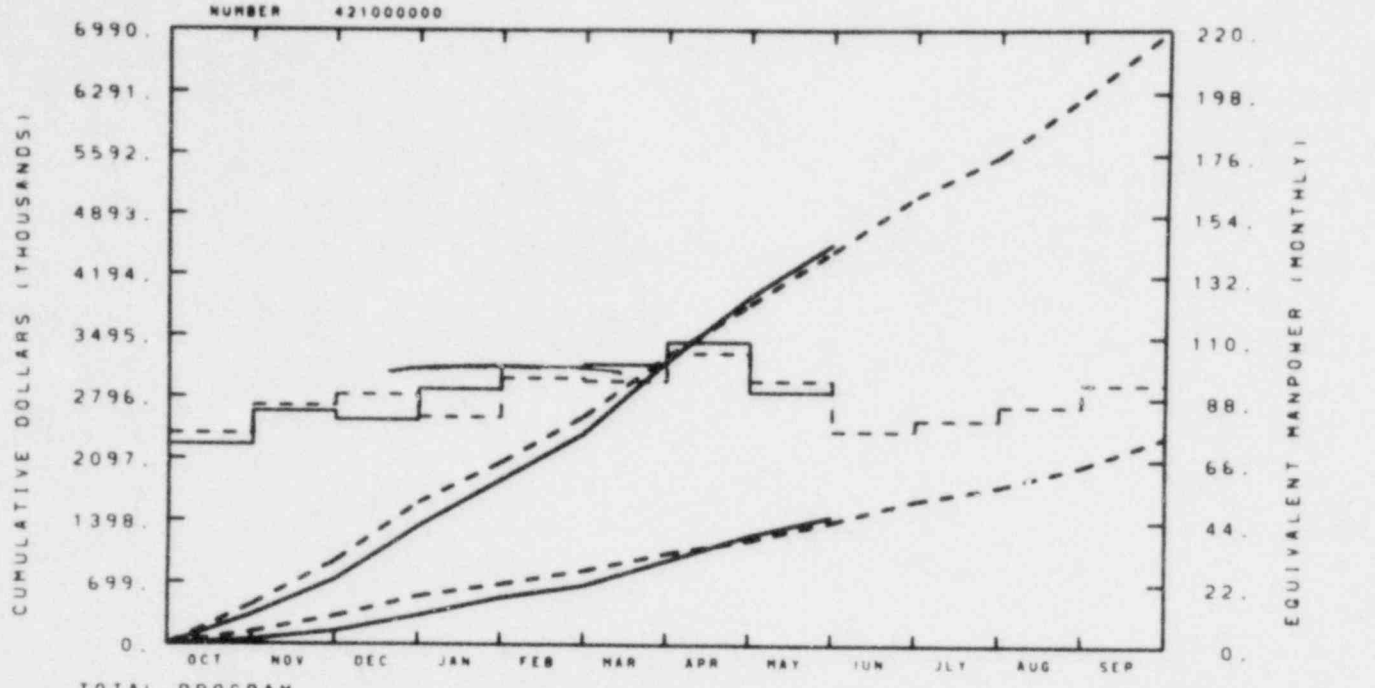
Any change on Thermal Fuels Behavior Program overall cost graph is due to the changes noted on the cost graphs for A6041, A6057, and A6095.

RESPONSIBLE
MANAGER
PE MACDONALD

EG&G IDAHO INC.

TFBP EXPERIMENT DESIGN & ANAL

NUMBER 421000000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 450 | 946 | 1605 | 2059 | 2585 | 3273 | 3862 | 4469 | 5109 | 5577 | 6256 | [illegible] |
| ACTUAL | 335 | 737 | 1335 | 1860 | 2388 | 3214 | 3953 | 4558 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 139 | 321 | 548 | 685 | 839 | 1036 | 1185 | 1394 | 1633 | [illegible]93 | 2028 | 2357 |
| ACTUAL | 50 | 151 | 330 | 531 | 671 | 953 | 1237 | 1453 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 75 | 85 | 89 | 81 | 95 | 94 | 104 | 94 | 76 | 80 | 85 | 93 |
| ACTUAL | 71 | 83 | 80 | 91 | 99 | 100 | 108 | 90 | | | | |

BUDGET - - - - - -

ACTUAL ———

A6041

YTD VARIANCE: <89> (2%)

Analysis of the budget indicates that the 2% overrun is a carryover problem from the two previous months which included overspending on the LOC-3 postirradiation examination, the RIA 1-1 Fuel Behavior Report, and the RIA 1-4 and PCM-7 test train assemblies. Change Control Board actions have been submitted to resolve these overruns. Spending for the month of May was within 0.3% of the budget.

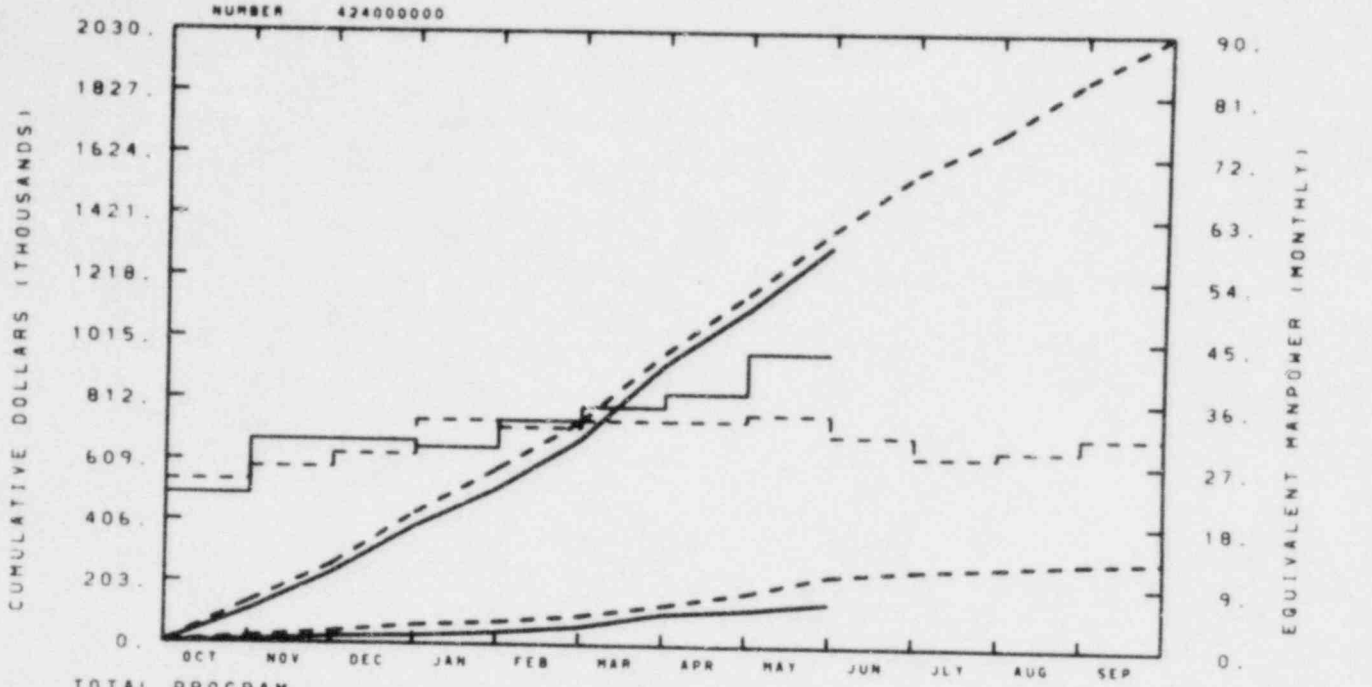
Budget decrease is caused by CCB-80-73, PCM Fuel Behavior Report, which was rescheduled to FY-1981.

RESPONSIBLE MANAGER
JP KESTER

EG&G IDAHO INC.

PBF ENGINEERING

NUMBER 424000000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 134 | 262 | 435 | 586 | 743 | 971 | 1165 | 1376 | 1569 | 1700 | 1878 | 2026 |
| ACTUAL | 107 | 234 | 390 | 520 | 683 | 932 | 1114 | 1325 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 20 | 39 | 63 | 75 | 96 | 133 | 176 | 234 | 255 | 268 | 283 | 293 |
| ACTUAL | 9 | 21 | 27 | 40 | 60 | 104 | 120 | 144 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 24 | 26 | 28 | 33 | 32 | 33 | 33 | 34 | 31 | 28 | 29 | 31 |
| ACTUAL | 22 | 30 | 30 | 29 | 33 | 35 | 37 | 43 | | | | |

BUDGET - - - - -

ACTUAL ———

A6044

YTD VARIANCE: 51 (4%)

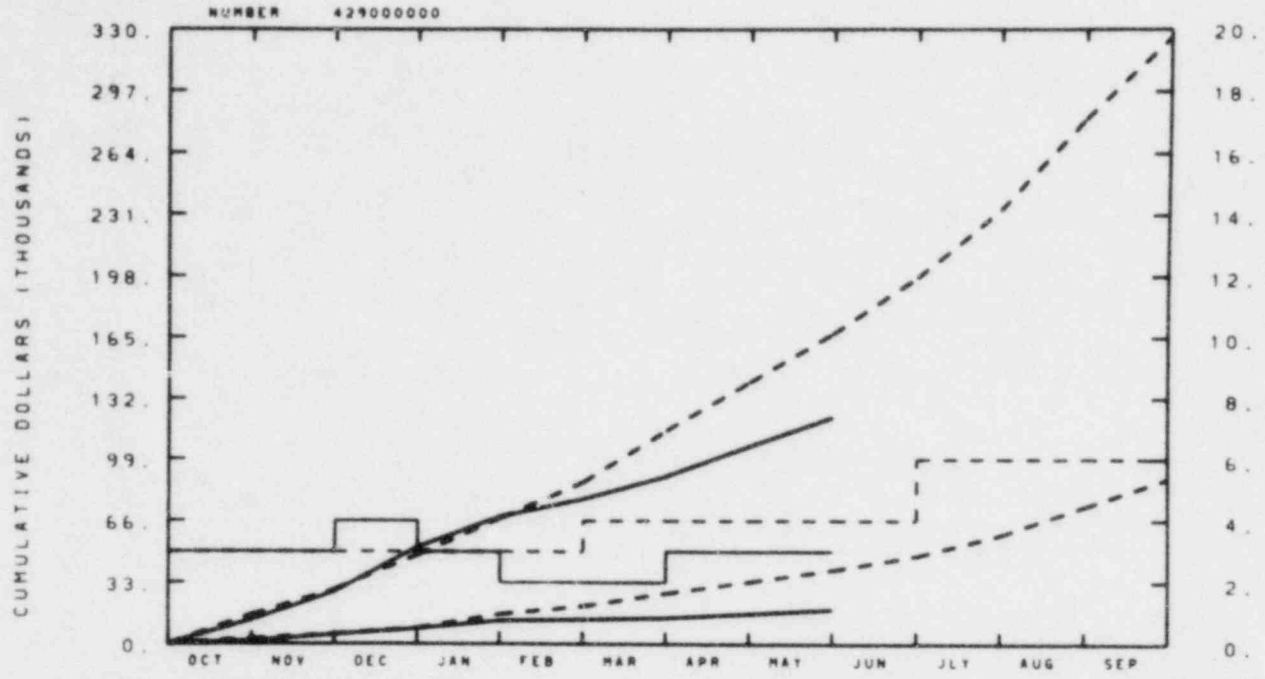
The variance this month is the same magnitude as last month with the percent dropping somewhat to less than the 4% reported last month. A CCB (80-58) to adjust the Loop Performance Mod work window to be compatible with the facility test schedule has been approved. The effect of this action, not yet reflected above, is to reduce the variance to less than 3% (~$37 K). A second effect is the additional scope added to the Loop Inspection/Resin Change-out work package by the pending CCB (80-69). While this will increase the budget value, these costs will be incurred in June as the resin transfer/loop inspection activities are completed. The other variances discussed last month have been resolved, although the OPTRAN PPS design requirements work package requires further resolution.

RESPONSIBLE MANAGER
R.A. CUSHMAN

EG&G IDAHO INC.

ELECTRIC HEATER ROD EVALUATION

NUMBER 429000000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 16 | 29 | 48 | 67 | 87 | 115 | 141 | 167 | 198 | 234 | 283 | 326 |
| ACTUAL | 13 | 28 | 52 | 68 | 78 | 90 | 106 | 122 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 3 | 5 | 9 | 16 | 20 | 27 | 33 | 40 | 47 | 58 | 73 | 88 |
| ACTUAL | 2 | 5 | 8 | 13 | 13 | 14 | 16 | 19 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| ACTUAL | 3 | 3 | 4 | 3 | 2 | 2 | 3 | 3 | | | | |

BUDGET - - - - - -

ACTUAL ———

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

YID VARIANCE: 45 (27%)

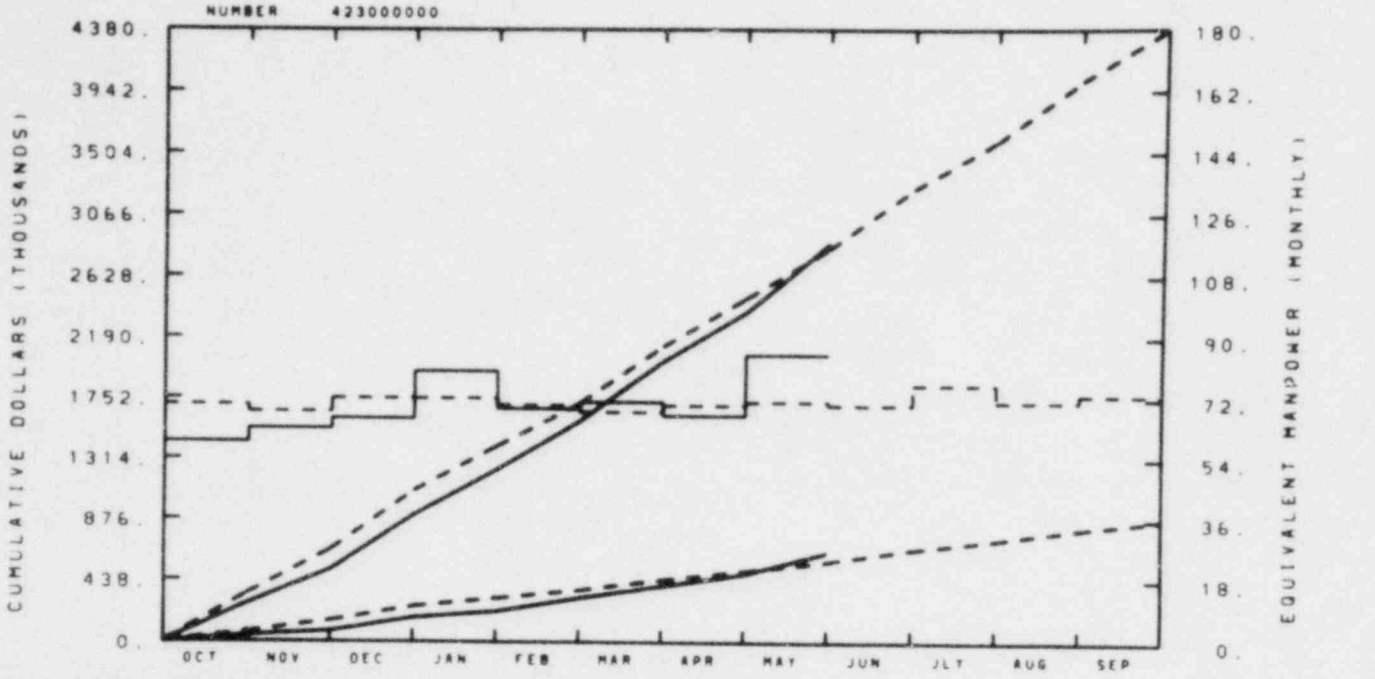
Effort on the Electric Heater Rod Performance Review has not yet started, but is expected to be completed on schedule. Less effort will be needed for COSIMA testing than expected. Computer expenses for the IFA-511 task are so far less than expected because model development has not been completed.

[redacted]IBLE
MANAGER
CO DOUCETTE

EG&G IDAHO INC.

PBF OPERATIONS

NUMBER 423000000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 341 | 657 | 1083 | 1405 | 1720 | 2132 | 2478 | 2830 | 3254 | 3592 | 4019 | 4374 |
| ACTUAL | 270 | 513 | 905 | 1233 | 1591 | 2022 | 2377 | 2866 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 69 | 149 | 251 | 311 | 368 | 444 | 509 | 577 | 662 | 730 | 809 | 873 |
| ACTUAL | 44 | 74 | 171 | 216 | 313 | 399 | 487 | 642 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 70 | 68 | 72 | 72 | 70 | 68 | 70 | 71 | 70 | 76 | 71 | 73 |
| ACTUAL | 59 | 63 | 66 | 80 | 69 | 71 | 67 | 85 | | | | |

BUDGET - - - - - -

ACTUAL ———————

A6057

YTD VARIANCE: <36> (1%)

The indicated overrun of $36 K is due primarily to approximately $80 K of electric utility costs that should not have been charged to this account. The correction is being processed and will be reflected in next months report. At this time, there is an approximate underrun of $44 K or 1.5%. There is no other significant item contributing to this underrun. It represents that net sum of several accounts.

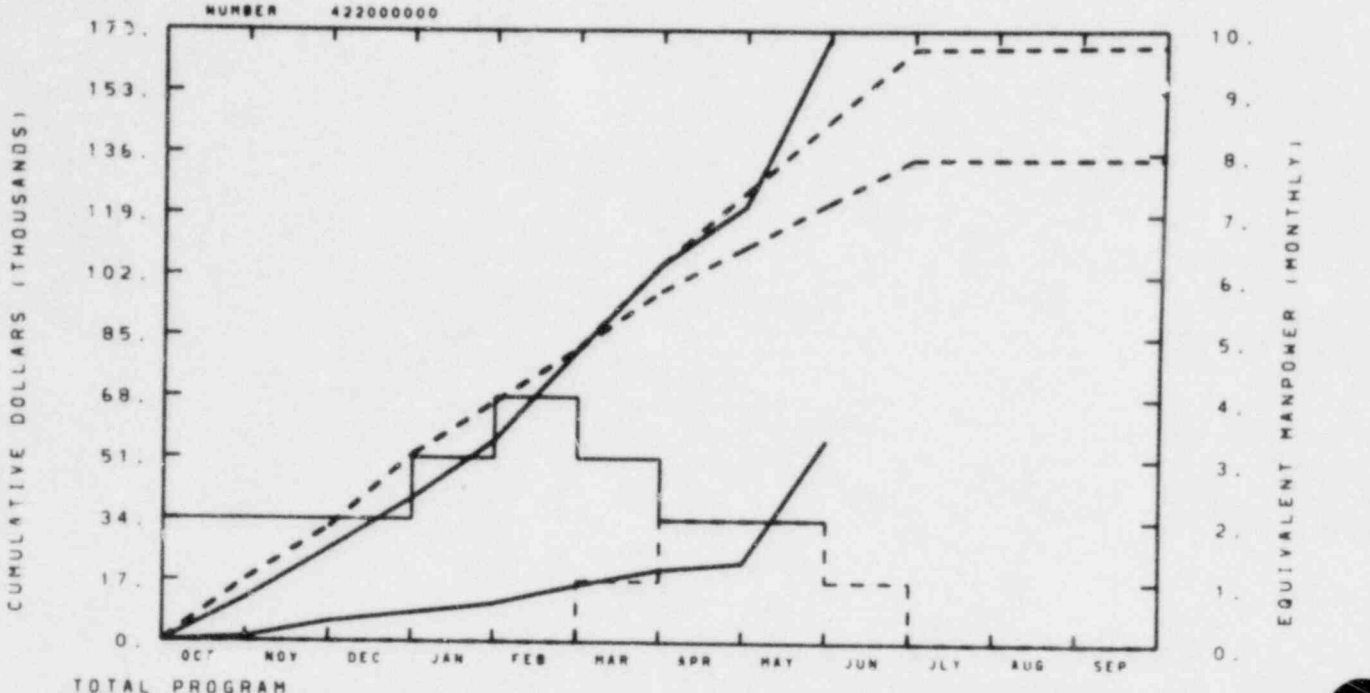
Diesel overhaul rescheduled from April and May to spread between April and July.

RESPONSIBLE MANAGER
JP KESTER

EG&G IDAHO INC.

PBF MODIFICATIONS

NUMBER 422000000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 17 | 32 | 52 | 67 | 81 | 105 | 125 | 145 | 165 | 165 | 165 | 166 |
| ACTUAL | 12 | 26 | 40 | 56 | 81 | 105 | 121 | 168 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 17 | 32 | 52 | 67 | 81 | 98 | 110 | 122 | 134 | 134 | 134 | 134 |
| ACTUAL | 1 | 6 | 8 | 11 | 16 | 20 | 32 | 36 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 1 | 0 | 0 | 0 |
| ACTUAL | 2 | 2 | 2 | 3 | 4 | 3 | 2 | 2 | | | | |

A6095

YTD VARIANCE: <23> (16%)

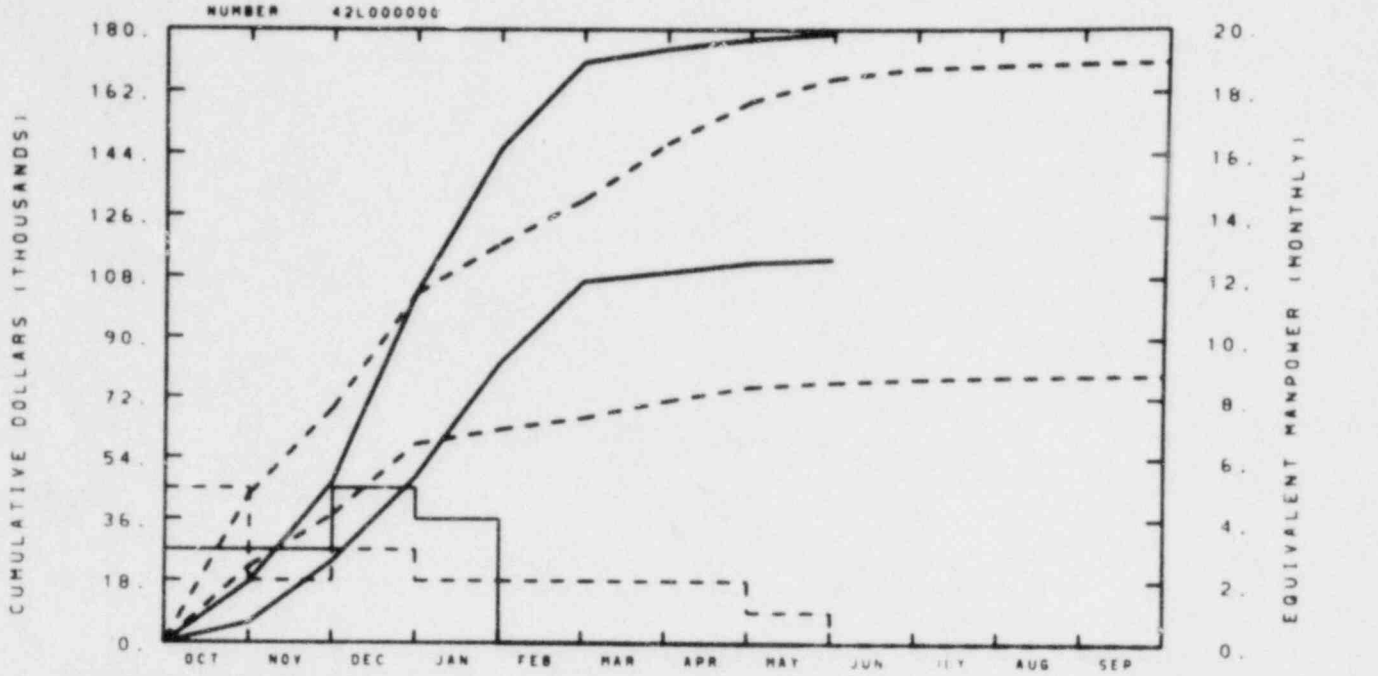
The graph of the actual costs-to-date shows the effect of the EG&G support personnel (Quality Assurance and Materials Engineering) during May as the IPT nozzle repair progressed at the vendors facility. A recent CCB (80-80) is being processed to account for these repair costs and for the outstanding commitments against the original fabrication contract. This action represents currently foreseeable costs to complete the repair activities. Further actions are pending completion of this repair process.

[redacted]
MANAGER
R W GARNER

EG&G IDAHO INC.

PBF/LOFT LRT PROGRAM

NUMBER 42L000000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 43 | 69 | 103 | 118 | 131 | 147 | 159 | 166 | 169 | 170 | 170 | 171 |
| ACTUAL | 17 | 47 | 103 | 146 | 170 | 174 | 177 | 179 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 22 | 37 | 58 | 62 | 66 | 71 | 75 | 77 | 78 | 78 | 79 | 79 |
| ACTUAL | 6 | 24 | 48 | 82 | 107 | 109 | 112 | 113 | | | | |

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

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

YTD VARIANCE: <13> (8%)

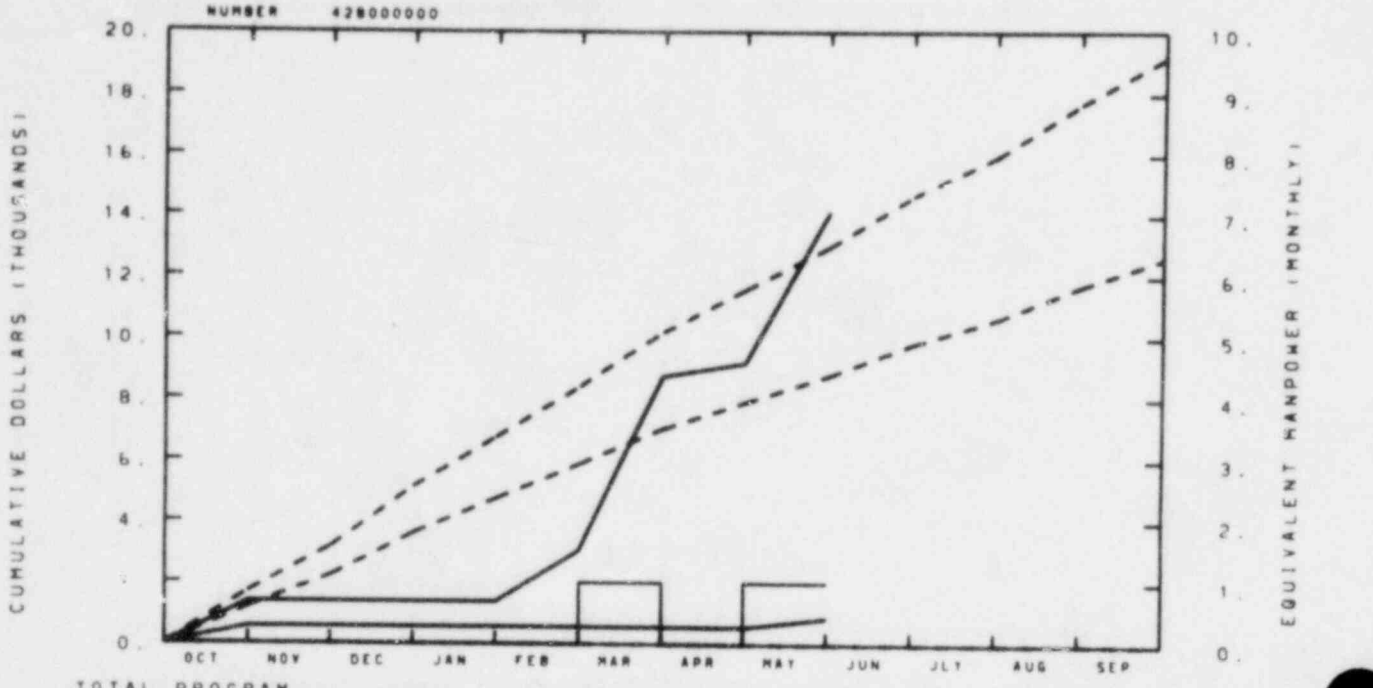
Overruns in the LLR Program can be attributed to a $10 K overrun in the PIE. $22 K from contingency has been added to the program.

RESPONSIBLE
MANAGER
PE 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 | 3 | 9 | 9 | 14 | | | | |

MATERIAL

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

BUDGET - - - - - -

ACTUAL ———

A6274

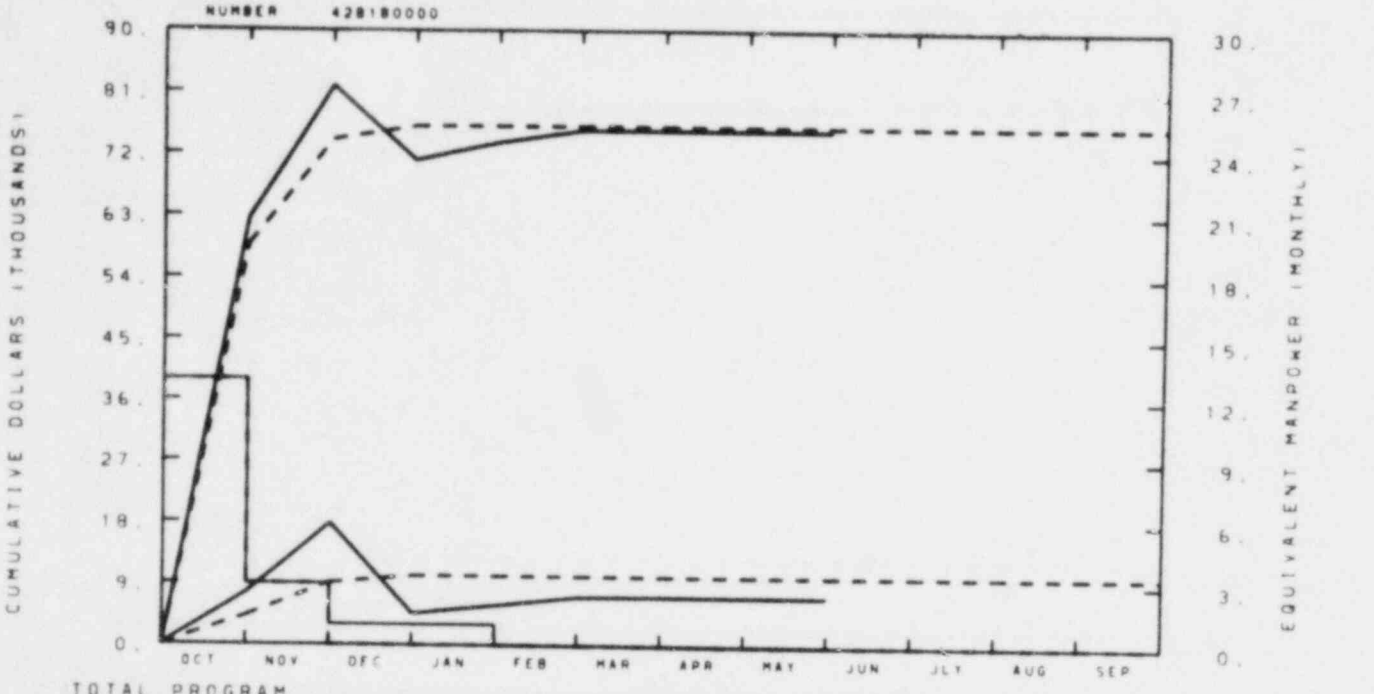
YTD VARIANCE: <1> (8%)

RESPONSIBLE MANAGER
T R YACKLE

EG&G IDAHO INC.

TC-1 TEST

NUMBER 428180000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 59 | 74 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 |
| ACTUAL | 63 | 82 | 71 | 74 | 75 | 76 | 76 | 76 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 4 | 9 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| ACTUAL | 8 | 18 | 5 | 6 | 7 | 7 | 7 | 7 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 13 | 3 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| ACTUAL | 13 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | | | | |

BUDGET - - - - -

ACTUAL ———

A6281

YTD VARIANCE: 0

THERMAL FUELS BEHAVIOR PROGRAM

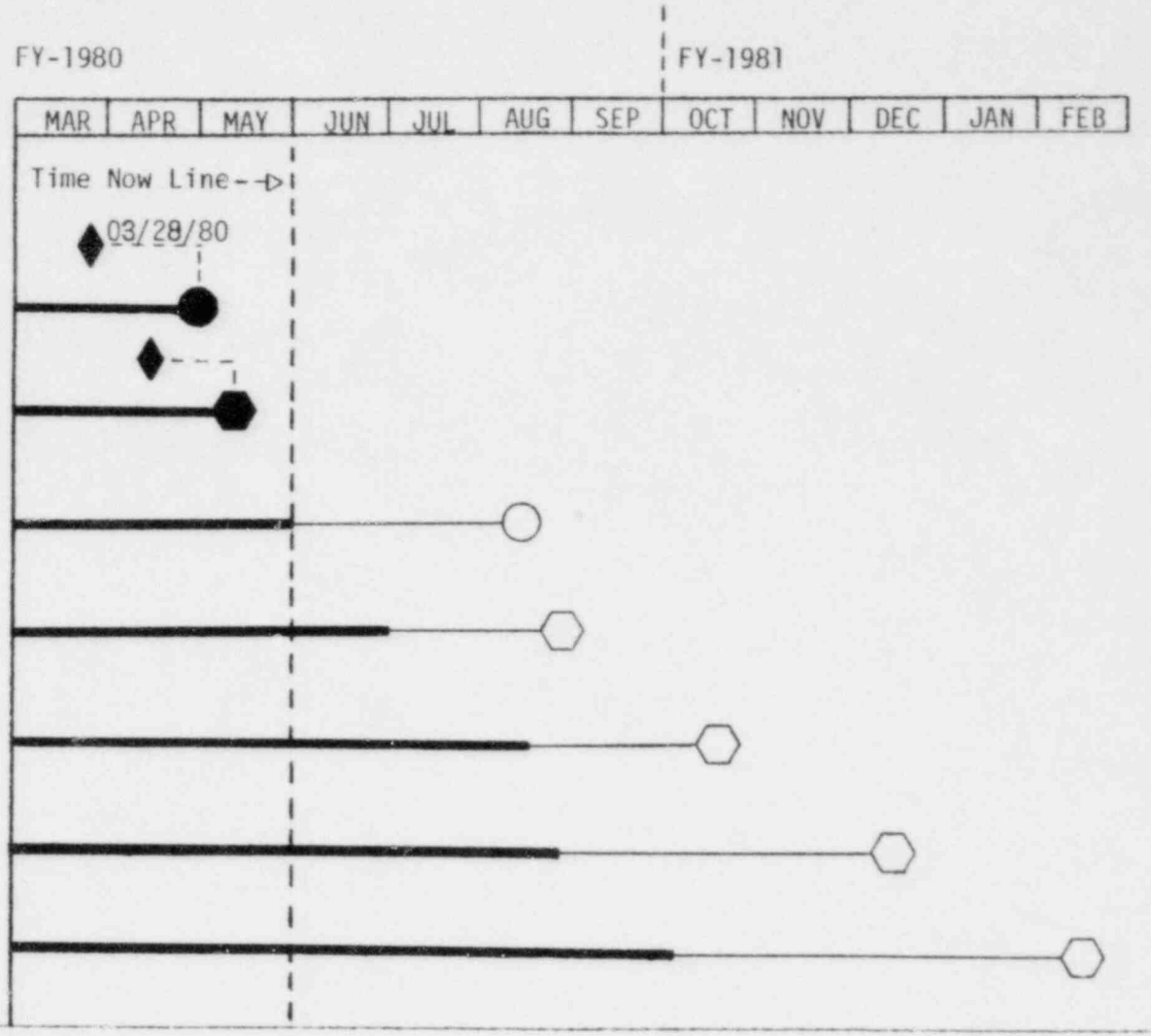
CURRENT WORKING SCHEDULE

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

THERMAL FUELS BEHAVIOR PROGRAM

May 1980

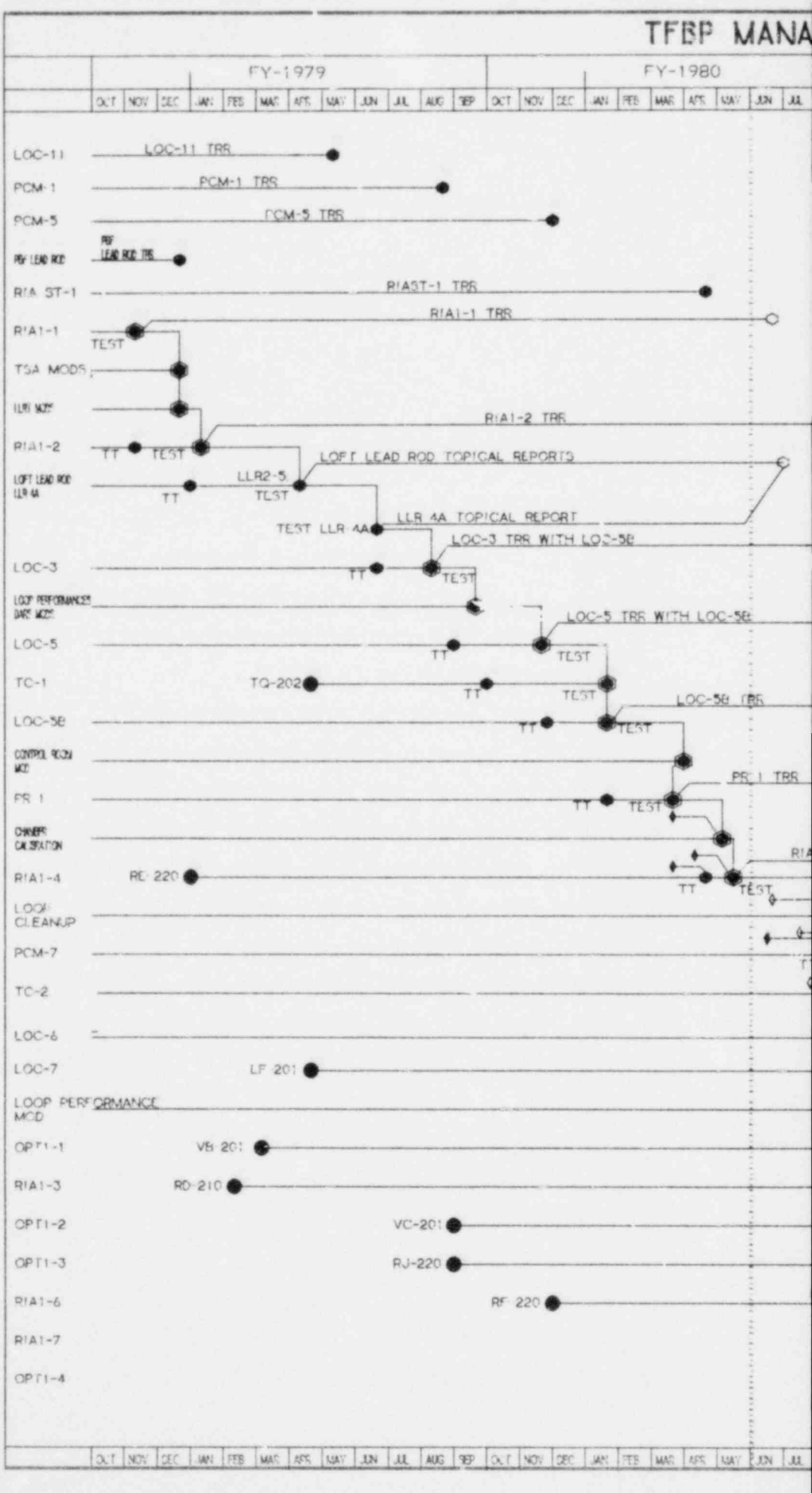


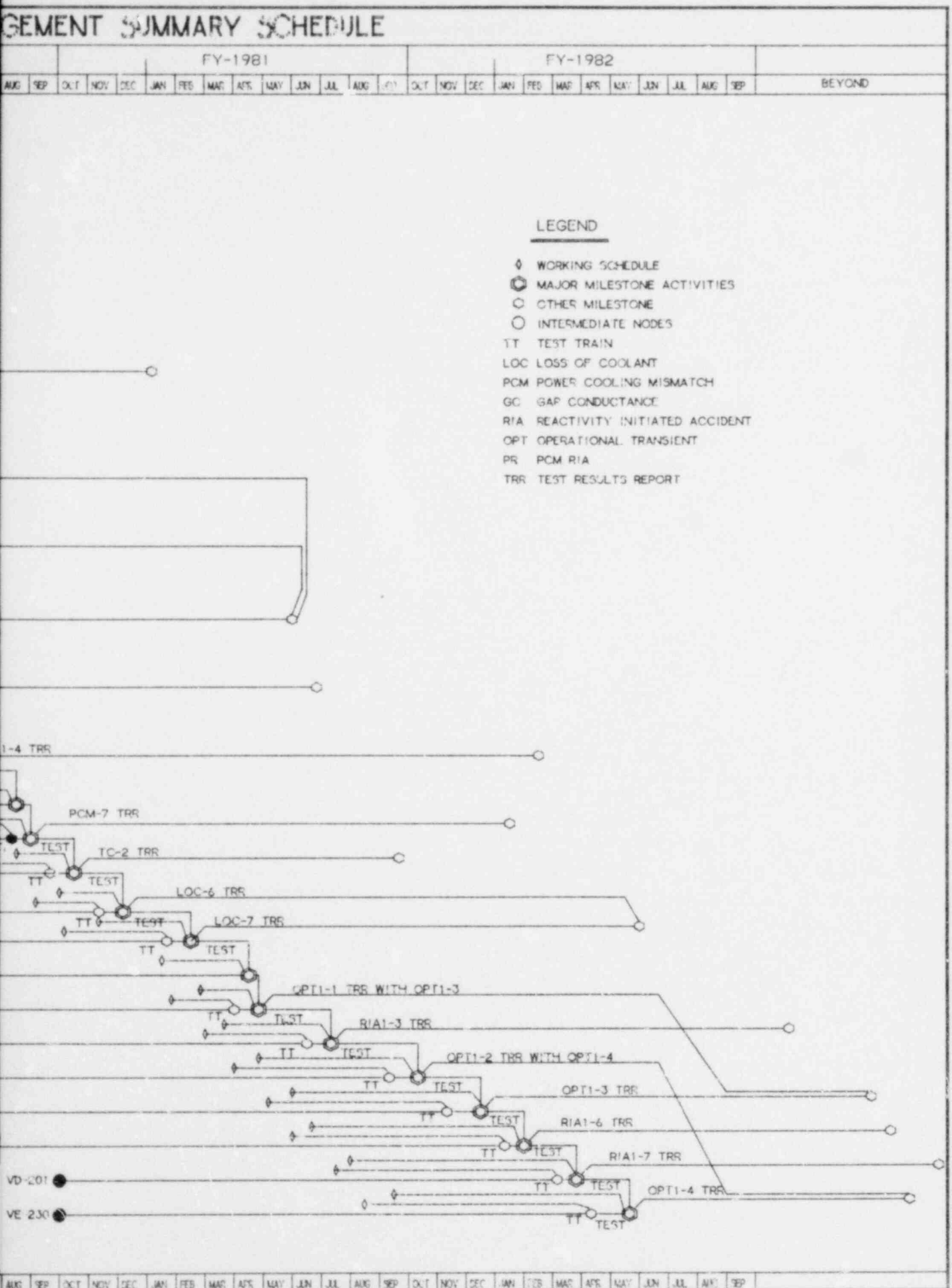

NOTES: New Baseline currently being established with a target date of July 18, 1980.

CCB in progress to change Loop Clean-up to Loop Resin Clean and Component Inspection.

THERMAL FUELS BEHAVIOR PROGRAM

TEST SUMMARY SCHEDULE


TFBP MANA
FY-1979
FY-1980
OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL
LOC-11
LOC-11 TRR
PCM-1
PCM-1 TRR
PCM-5
PCM-5 TRR
PBF LEAD ROD
PBF LEAD ROD TRR
R1A ST-1
R1AST-1 TRR
R1A1-1
R1A1-1 TRR
TEST
TSA MODS
R1A1-2
R1A1-2 TRR
TT
TEST
LOFT LEAD ROD TOPICAL REPORTS
LOFT LEAD ROD LLR 4A
LLR2-5
TT
TEST
TEST LLR 4A
LLR 4A TOPICAL REPORT
LOC-3 TRR WITH LOC-5B
LOC-3
TT
TEST
LOOP PERFORMANCE DATA MODS
LOC-5 TRR WITH LOC-5B
LOC-5
TT
TEST
TC-1
TQ-202
TT
TEST
LOC-5B
LOC-5B TRR
TT
TEST
CONTROL ROOM MOD
PR-1
PR-1 TRR
TT
TEST
CHANNEL CALIBRATION
R1A1-4
RE-220
TT
TEST
LOOP CLEANUP
PCM-7
TC-2
LOC-6
LOC-7
LF-201
LOOP PERFORMANCE MOD
OPT1-1
VB-201
R1A1-3
RD-210
OPT1-2
VC-201
OPT1-3
RJ-220
R1A1-6
RF-220
R1A1-7
OPT1-4
OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL


GEMENT SUMMARY SCHEDULE
FY-1981
FY-1982
AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG 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
1-4 TRR
PCM-7 TRR
TEST
TC-2 TRR
TT
TEST
LOC-6 TRR
TT
TEST
LOC-7 TRR
TT
TEST
OPT1-1 TRR WITH OPT1-3
TT
TEST
RIA1-3 TRR
TT
TEST
OPT1-2 TRR WITH OPT1-4
TT
TEST
OPT1-3 TRR
TT
TEST
RIA1-6 TRR
TT
TEST
RIA1-7 TRR
VD 201
TT
TEST
OPT1-4 TRR
VE 230
TT
TEST
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

## SUMMARY AND HIGHLIGHTS

Preparations are nearly complete for the performance of the final test of the Power-Cooling-Mismatch (PCM) Test Series (Test PCM-7) in the Power Burst Facility. The objectives of Test PCM-7, the second nine-rod cluster test in the series, are to (a) evaluate the behavior of a central fuel rod in high temperature film-boiling surrounded by other rods also in film-boiling; (b) determine the integral cluster behavior during high temperature film-boiling operation; (c) provide replication of Test PCM-5 (the first nine-rod cluster test) results by evaluating the potential for departure from nucleate boiling and rod failure propagation; (d) provide a direct comparison of fuel rod behavior in a small cluster geometry with previously obtained single-rod PCM data; and (e) evaluate the rewet characteristics of the Test PCM-7 cluster. The assembly of the test train has been completed and performance of the test is planned during the next reporting period.

Assembly of the test trains for the next series of thermocouple effects tests (TC-2) and for Loss-of-Coolant Test 6 is continuing.

The Quick Look Report for Reactivity Initiated Accident Test 1-4 (completed during the last reporting period) was issued. The test train has been de-fueled, the fuel sent to the Auxiliary Reactor Area hot cells, and the post-irradiation examination begun. All nine fuel rods failed as predicted, but the extent of the failure appears to be less than expected.

The equipment and procedures required to support the Test Area North hot cell operation for packaging loop cleanup column resins for disposal have been completed. One batch of resin has been removed from its column and transported to the hot cells.

1. 189a A6401 - TFBP Experiment Design and Analysis

2. Scheduled Milestones for May 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| #5, Line 2 | RIA 1-4 Test | 05-08-80T | 04-16-80C |
| #4, Line 3 | RIA 1-4 Quick Look Report | 05-19-80T | 05-02-80C |

3. Summary of Work Performed in May

a. Power-Cooling-Mismatch Test Series

Preparation for Test PCM-7 continued. Data analysis for Test PR-1 continued and the postirradiation examination results were compiled for use in the Fuel Rod Materials Behavior Report. Editing and composition of the Test PCM-5 Fuel Rod Materials Behavior Report was completed and the report issued. Efforts on the power-cooling-mismatch single-rod fuel rod behavior report (PCM 8-1RS, 8-1RF, and Critical Heat Flux Tests) continued.

b. Operational Transient Test Series

Efforts continued on the OPTRAN 1-1 Experiment Operating Specifications and the first draft of the document was completed. The OPTRAN 1-1, 1-3 Experiment Predictions Document is nearing completion, and revisions to the OPTRAN 1-1 and OPTRAN 1-2 Experiment Specification Documents were issued. The design of the OPTRAN 1-2 hardware continued. Conversion and plotting of FRAP pretest predictions for OPTRAN 1-1 were completed.

c. Loss-of-Coolant Accident Test Series

The Test TC-2 Experiment Operating Specification was completed for review. Results from Tests LOC-3 and LOC-5 were drafted for the Committee on the Safety of Nuclear Installations, and preparation of 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.

d. Reactivity Initiated Accident Test Series

The initial review of the Test RIA 1-1 Fuel Behavior Report was completed and incorporation of review comments was initiated. Preparation of the Test RIA 1-2 Fuel Rod Behavior Report continued. The RIA 1-4 Quick Look Report was issued and the postirradiation examination was initiated. All nine of the fuel rods failed as a result of the RIA 1-4 power burst, but to a lesser degree then expected. The Test RIA 1-7 Experiment Specifications

Document was issued. The reactor physics calculations were continued and the void fraction calculations were initiated for the Capsule Driver Core. Component parts fabrication for Test RIA 1-3 were completed and the design of the RIA 1-6 test train assembly continued.

e. Reactivity Initiated Accident - Scoping Test Topical Report

Analyses of the pressure pulse in Test RIA-ST-4 and the effect of pressure on vapor explosion phenomena continued.

f. Power-Cooling-Mismatch Topical Report

Comparison of various critical heat flux correlations continued, and multivariate regression analysis on departure from nucleate boiling/quench data was completed.

g. Halden Program

Analysis of the Fission Gas Release Test-1 data continued; a draft of a report on Xe/He fill gas effects was completed. The report titled "Cracking and Relocation of $UO_2$ Fuel During Initial Irradiation" was published and distributed.

4. Scheduled Milestones for June 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| #3, Line 3 | IFA-430 Fuel Relocation & Thermal Performance (Formal Report) | 06-01-80T2 | 05-23-80C |
| #3, Line 6 | RIA 1-1 Test Results Report/Fuel Rod Materials Behavior Report | 06-16-80T1 | |
| #6, Line 1 | PCM-7 Test Train | 06-17-80T | 04-30-80C |

5. Summary of Work to be Performed in June 1980

a. Power-Cooling-Mismatch Test Series

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

b. Operational Transient Test Series

The OPTRAN 1-1 Experiment Operating Specifications and the OPTRAN 1-1, 1-3 Experiment Predictions Document will be completed. The OPTRAN 1-2 Experiment Predictions Document and Experiment Operating Specifications will be initiated.

c. Loss-of-Coolant Accident Test Series

The Test TC-2 Experiment Operating Specifications will be issued, the Test LOC-6 Experiment Predictions Document will be drafted, and efforts on the Tests LOC-3 and LOC-5 Fuel Rod Behavior and Fuel Rod Materials Behavior Reports will continue. Assembly of the LOC-6 test train and fabrication of the Test LOC-7 machined parts and instruments will continue.

d. Reactivity Initiated Accident Test Series

Management review comments will be incorporated and a draft of the Test RIA 1-1 Fuel Behavior Report transmitted to the Documentation Office for review. A draft of the Test RIA 1-2 Fuel Behavior Report will be completed for management review and preparation of the Test RIA 1-3 Experiment Predictions Document will be initiated. The Test RIA 1-4 postirradiation examination will continue. Post analysis of Test RIA 1-4 will be initiated. Reactor physics and thermal-hydraulic calculations for the Capsule Driver Core will continue. The design of the RIA 1-6 test train assembly will continue.

e. Reactivity Initiated Accident - Scoping Test Topical Report

Results from the examination of the fuel particles will be incorporated into the analysis.

f. Power-Cooling-Mismatch Topical Report

The draft of the topical report discussing the thermal-hydraulic behavior observed during the power-cooling-mismatch tests will be initiated.

g. Halden Program

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

6. Problems and Potential Problems

None.

1. 189a A6044 - PBF Design Engineering

2. Scheduled Milestones for May 1980

None.

3. Summary of Work Performed in May 1980

a. Red Mike Evacuation System Expansion

The SPERT II Red Mike expansion installation was completed. The reactor building all-area evacuation modification was 40% completed.

b. Ground Fault Indication Modification

Design was started to add detection and alarm for a ground fault on the 3-phase power distribution system.

c. Resin Cleanout

The equipment and procedures were completed to support the Test Area North hot cell operations for packaging loop cleanup column resins for disposal. One load of resin was sluiced from its column and transported to the hot cells.

d. $SO_2$ System Modification

The $SO_2$ system was relocated to reduce potential personnel hazards.

e. Inspection of Loop Components

The loop pressurizer and acoustic filters were inspected for the presence of debris from the destructive testing that has been performed. The purpose of this inspection was to ensure that no fuel ($^{235}U$) is present in the loop and to thereby guarantee that an unanticipated secondary criticality cannot occur in the loop.

Following the removal of debris from these components, the inspection showed that the pressurizer was clean and that two acoustic filters contained less than 2 g of $^{235}U$.

f. Warm Waste Discharge Valve Administrative Control Modification

A keyswitch circuit was added to the warm waste discharge valve to provide improved administrative control of the handling of warm waste.

4. Scheduled Milestones for June 1980

None.

5. Summary of Work to be Performed in June 1980

a. Red Mike Evacuation System Expansion

The remaining installation of the reactor building all-area evacuation modification will be completed.

b. Resin Cleanout

The remaining resin in the loop cleanup columns will be removed from PBF and transported to Test Area North. Packaging for disposal should be completed. New resin will be sluiced into the cleanup columns.

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

Installation of the upgraded LOCA utilities cooling hoses will be completed, provided that such work does not interfer with preparations for the next test.

d. Inspection of Loop Components

The loop strainer will be inspected to assure that no $^{235}U$ is present. Any debris will be removed.

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

Design of a modification will be started to provide an emergency backup ($N_2$) to the air operator on the reactor vessel raw water fill valve and to the canal gate seal. Both of these depend on plant air, which would be lost during a lengthy period without commercial power.

f. Ground Fault Indication Modification

The design of the ground fault indication circuits will be completed and parts ordered.

6. Problems and Potential Problems

None.

1. 189a A6057 - PBF Operations

2. Scheduled Milestones for May 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| | Chamber Calibration Test (RE-1) | 05-02-80 | 03-21-80C |
| #5, Line 2 | Test RIA 1-4 | 05-08-80 | 04-16-80C |

3. Summary of Work Performed in May 1980

a. PBF Oprations

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

Defueling of the Reactivity Initiated Accident (RIA) 1-4 test train was completed and the fuel was shipped to the Auxiliary Reactor Area (ARA) hot cells. The first Test TC-2 rod was shipped to the Test Reactor Area (TRA) hot cells for pretest assembly; three rods remain to be shipped. Inspection and cleaning of the in-pile tube, flow tube, acoustic filter, and loop pressurizer in support of the secondary criticality analysis was completed. The first batch of resin was shipped to Test Area North (TAN) for packaging and disposal; three batches of resin remain to be shipped.

b. PBF Operations Support

Preventive maintenance (PM) examinations for April, May, and June were completed and planning was started on the July PM examinations. In-service inspection examinations that were scheduled through June were completed. The diesel engine overhaul and air inlet modification was completed and installation work started on the exhaust and diesel drain pit modifications. Design efforts on other facility improvement modifications have started, including the canal tool storage, canal tie rail, canal barrier entry, constant air monitor (CAM) cable relocation, resin column relocation, and the warm waste sample tank modifications. The design work was completed on the canal barrier outlet installation and is scheduled to be performed during the next shutdown period.

Corrective maintenance (CM) efforts for this reporting period include the completion of the low pressure spool installation and the change-out of the thermal swell accumulator (TSA) rupture disks. Other CM efforts include the correction of various plant deficiencies, plant

improvement tasks, and supporting the loop resin changeout/fuel inspection work.

Data qualification for the Chamber Calibration Test (RE-1) was completed. Corrections are being applied to the Tests PR-1 and RIA 1-4 data in accordance with the data reduction schedule.

The Power Burst Facility uncertainty implementation plan was developed, program approvals received, and copies distributed for comments from other programs. The intent being that all EG&G Idaho programs could adopt a similar and common approach to determining and reporting uncertainties.

The PBF data system signal conditioning modification was completed.

4. Scheduled Milestones for June 1980

None.

5. Summary of Work to be Performed in June 1980

a. Perform Test PCM-7.

b. Complete the diesel engine modification.

6. Problems and Potential Problems

None.

1. 189a A6095 - Major Modifications

2. Scheduled Milestones for May 1980

   None.

3. Summary of Work Performed in May 1980

   Welder qualification was completed for all welding operations. Starting of the actual welding repair on the in-pile tube nozzles was delayed due to an injury sustained by the only welder qualified to perform the repair. He is now back on the job.

   The vendor provided a revised estimate of the cost to complete the in-pile tube following the repair.

4. Scheduled Milestones for June 1980

   None.

5. Summary of Work to be Performed in June 1980

   The buildup on the nozzle and in-pile tube and the machining of weld preparations should be completed in June.

6. Problems and Potential Problems

   None.

1 189a A6274 - PBF Cooperative Research - Austria

2. Scheduled Milestones for May 1980

None.

3. Summary of Work Performed in May 1980

The acceptance tests and calibration of the Power Burst Facility Internal Linear Variable Differential Transformer (LVDT) has been completed. A Quality Discrepancy Report (QDR) was written against the instrument because the pre- and post-autoclave output checks do not agree within the specified ±1.0%, but are within ±3%.

4. Scheduled Milestones for June 1980

None.

5. Summary of Work to be Performed in June 1980

Some additional tests will be conducted at elevated temperature for comparison in order to resolve the existing QDR against the Internal LVDT. The data package on the acceptance tests and calibration will be assembled and the QDR resolved to complete the task.

6. Problems and Potential Problems

None.

1. 189a A6275 - Electrical Heater Rod Evaluation Studies

2. Scheduled Milestones for May 1980

None.

3. Summary of Work Performed in May 1980

a. Electrical Heater Rod Performance Review

INVERT calculations were performed on the LOFT Test Support Facility (LTSF) quench test MOD1 electrical heater rod in order to compute inner cladding heat fluxes so that a comparison can be made with the FRAP-T calculations for the nuclear rod in the L2-3 experiment. In particular, electric versus nuclear rod similarities and differences were studied.

The calculations indicated the heat flux to the inside cladding surface was conservatively high for the electric rod tests. Therefore, the quench test results suggest selective cooling of the surface thermocouples during the quench period which may indicate that similar results could occur during in-reactor tests.

Halden Instrumented Fuel Assembly-511 data were reviewed and movies were made showing the relative thermocouple response vs axial position for all rods. The data suggest the inlet cooling conditions are different than most reflood tests and may not be consistent from test to test. Further evaluation of the data will continue.

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

A visit was made to the Halden reactor for discussions with the Halden Project staff and to participate in the IFA-511-II tests. The planned tests with the IFA-511-II test assembly were completed during the visit. The nuclear fuel test assembly was removed and replaced by the IFA-511-III electrically heated test assembly. Subsequent tests with IFA-511-III revealed that three of the seven heater rods (those most extensively instrumented with internal cladding thermocouples) did not work. Testing with the IFA-511-III continued with the four functioning heater rods.

The FASTSCAN data tape for the May series of IFA-511-II tests has been received and processing of the data has begun.

The TRAC vessel model has been checked out for steady state operation.

c. COSIMA Testing

A visit was made to Kernforschungszentrum Karlsruhe (KfK) to discuss results of the tests with the COSIMA heater with and without LOFT-type external thermocouples. Since the tests of this heater rod in January-February 1980, with results which were not as expected, extensive testing of additional COSIMA rods has been carried out at KfK. Analysis of these tests is continuing, but it appears that KfK has demonstrated repeatability of results from rod to rod for rods that are similarly fabricated and tested, and a consistent variation of measured temperatures has been shown as repeated tests are made with the same rod.

d. Swiss Reflood Tests

Efforts continued on the LOFT-NEPTUN test program. Thermocouple material was received and fabrication of the thermocouples was initiated.

Comments on the LOFT-NEPTUN program were received and will be reviewed during June.

4. Scheduled Milestones for June 1980

None.

5. Summary of Work to be Performed in June 1980

a. Electrical Heater Rod Performance Review

IFA-511 test data will be evaluated. A study of REBEKA vs FLECHT test responses will continue.

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

The Halden reactor will be shutdown for the entire month. Analysis of the data from the May series of IFA-511-II tests will begin. Preliminary results of the IFA-511-III tests with four of seven heater rods operational should be available. Consideration should be given to the procurement of additional heater rods and a new IFA-511-III type assembly.

The external piping will be added to the TRAC model, and checkout for transient operation begun.

c. COSIMA Testing

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

d. Swiss Reflood Tests

Thermocouples are to be fabricated for the Swiss NEPTUN tests.

6. Problems and Potential Problems

The loss of the heaters raises questions about the value of the data from the IFA-511-III tests. More will be known after data from the first 15 IFA-511-III tests are analyzed.

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 Measruement | 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 |

< > Return to Management Reserve

## CHANGE CONTROL BOARD STATUS

| Cost Account | CCB # | Description | Status | Date |
|---|---|---|---|---|
| 4218F46 | 80-35 | RIA 1-4 Data Qualification | Approved | 05/30/80 |
| 423XXXX | 80-39 | Spare PBF Silver Zeolite | Approved | 05/30/80 |
| 42M1112 | 80-43 | Discretionary Reserve | Approved | 05/30/80 |
| 4216F26 | 80-44 | LOC-6 Test Train | Approved | 05/30/80 |
| 4221C11 | 80-48 | In Pile Tube | Approved | 05/30/80 |
| 4233B11 | 80-47 | Spare Parts | Pending | 05/30/80 |
| 4242B14 | 80-58 | Loop Performance Mod | Pending | 05/30/80 |
| 4216D52 | 80-59 | LOC-3 Fuel and Instrument Evaluation | Pending | 05/30/80 |
| 4213F63 | 80-60 | PCM-5 PIER | Pending | 05/30/80 |
| 421AB52 | 80-61 | PR-1 PIE | Pending | 05/30/80 |
| 4218C64 | 80-62 | RIA 1-1 Fuel Behavior Report | Pending | 05/30/80 |
| 4215XXX | 80-63 | GAPCON PIE | Pending | 05/30/80 |
| 4212C53 | 80-65 | Out-of-pile Leakage | Pending | 05/30/80 |

FY-1980 BUDGET STATUS REPORT

| 189a Number | New 189a Total |
|---|---|
| A6041 | 7,107 |
| A6044 | 2,026 |
| A6057 | 4,375 |
| A6095 | 177 |
| A6274 | 19 |
| A6281 | 29 |
| TOTAL | 13,773 |
| Management Reserve | 745 |
| Discretionary Reserve | 11 |
| | 14,489 |

WRRD MONTHLY REPORT FOR

MAY 1980

2D/3D PROGRAM

R. A. DaBell
Plans & Budgets Representative

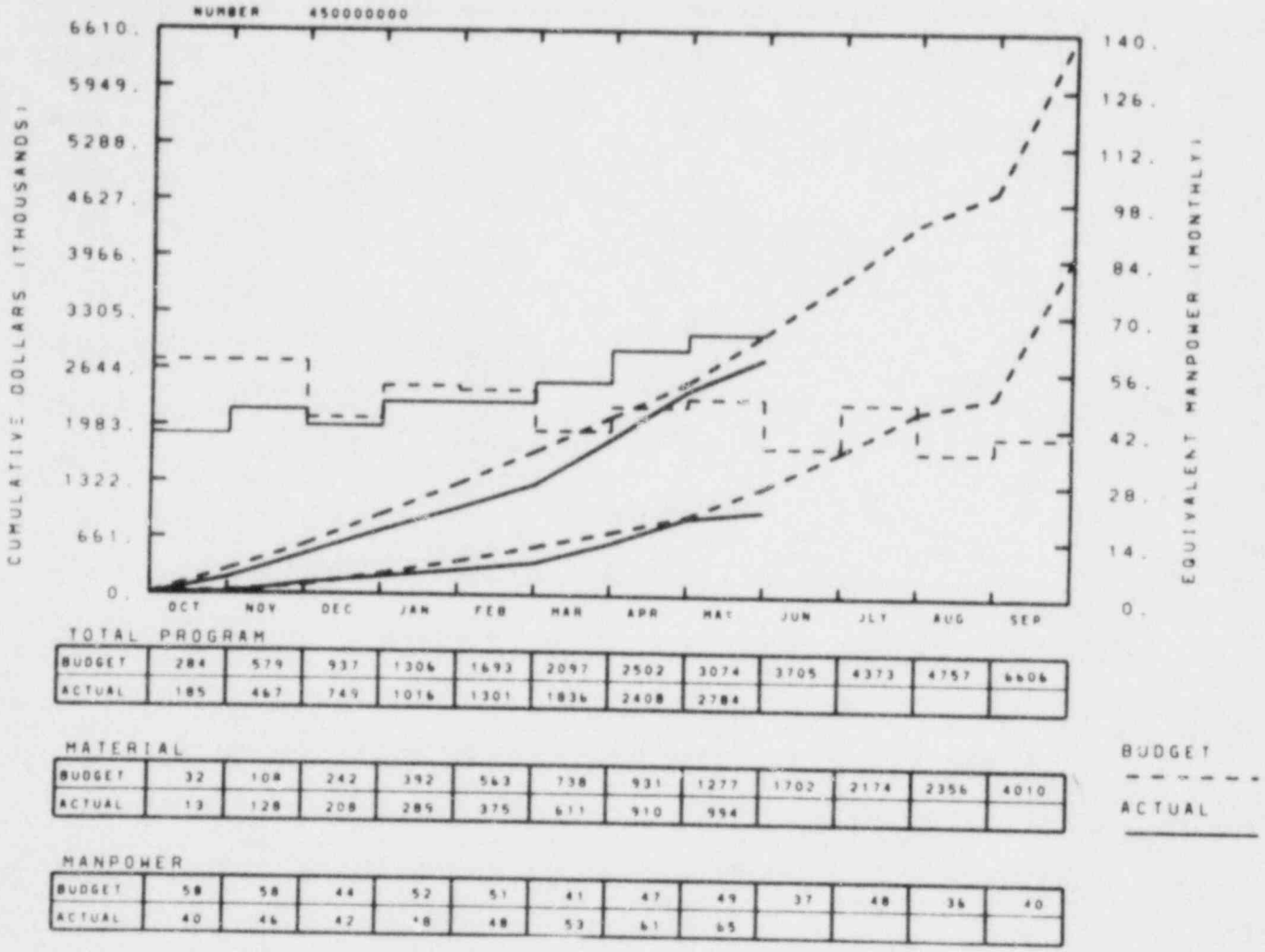
R. E. Rice, Manager
2D/3D Program

2D/3D

COST SUMMARY & COMMENTS

EG&G IDAHO INC.

3-D PROGRAM




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 284 | 579 | 937 | 1306 | 1693 | 2097 | 2502 | 3074 | 3705 | 4373 | 4757 | 6606 |
| ACTUAL | 185 | 467 | 749 | 1016 | 1301 | 1836 | 2408 | 2784 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 32 | 108 | 242 | 392 | 563 | 738 | 931 | 1277 | 1702 | 2174 | 2356 | 4010 |
| ACTUAL | 13 | 128 | 208 | 289 | 375 | 611 | 910 | 994 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 58 | 58 | 44 | 52 | 51 | 41 | 47 | 49 | 37 | 48 | 36 | 40 |
| ACTUAL | 40 | 46 | 42 | 48 | 48 | 53 | 61 | 65 | | | | |

YTD VARIANCE: 290 (9%)

Individual cost graphs will give individual explanations.

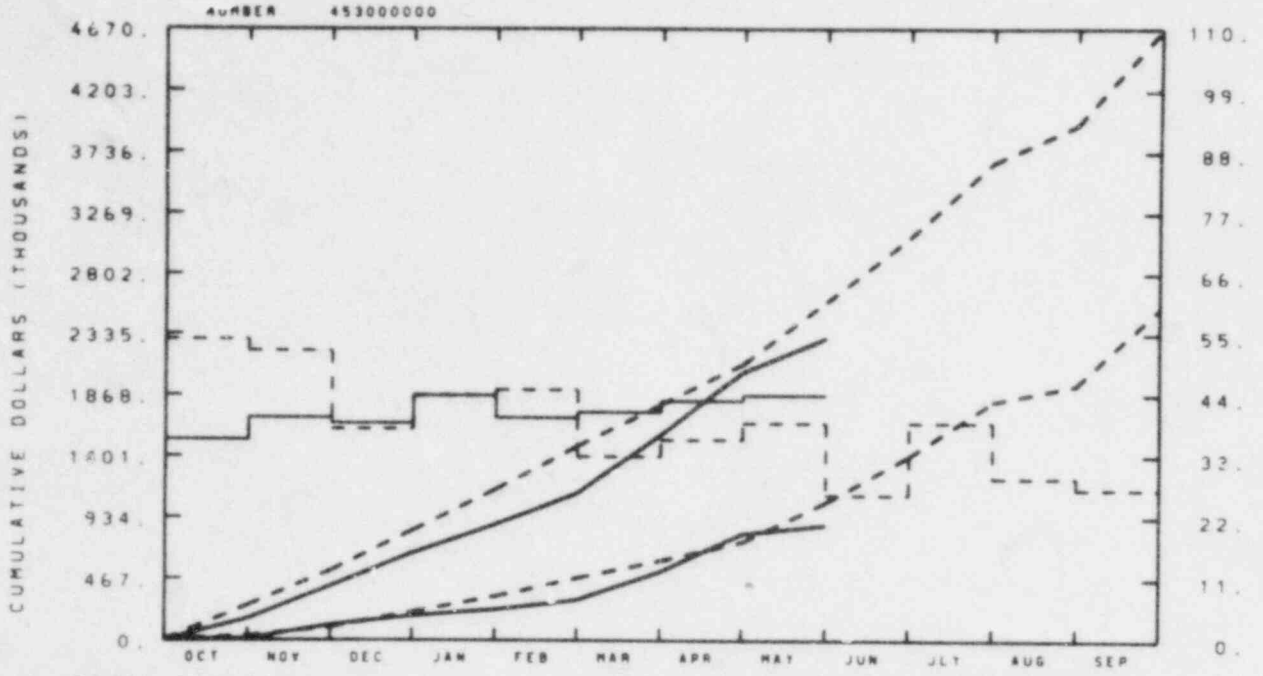
Explanations for major 189a's will be made if the variance exceeds $25 K. Minor 189a graphs will explain variance of over $10 K.

Any change on the 2D/3D Program overall cost graph is due to changes noted on the cost graphs for A6100, A6282, and A6289.

RESPONSIBLE MANAGER
R E RICE

EG&G IDAHO INC.

3-D EXPERIMENT PROJECT - A6100




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 266 | 532 | 837 | 1147 | 1481 | 1799 | 2108 | 2586 | 3085 | 3659 | 3945 | 4653 |
| ACTUAL | 164 | 415 | 665 | 883 | 1120 | 1568 | 2044 | 2306 | | | | |

MATERIAL

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

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 54 | | 38 | 44 | 45 | 33 | 36 | 39 | 26 | 29 | 29 | 27 |
| ACTUAL | 36 | 40 | 39 | 44 | 40 | 41 | 43 | 44 | | | | |

BUDGET - - - - -

ACTUAL ———

A6100

YTD VARIANCE: 280 (11%)

Work on all of the UPTF instrumentation has been delayed at FRG request. The front end engineering on these projects will begin, but the main activities will not be initiated until a firm schedule has been established with FRG. These projects are $210 K underrun, and rebaselining will be done upon receipt of the new schedule.

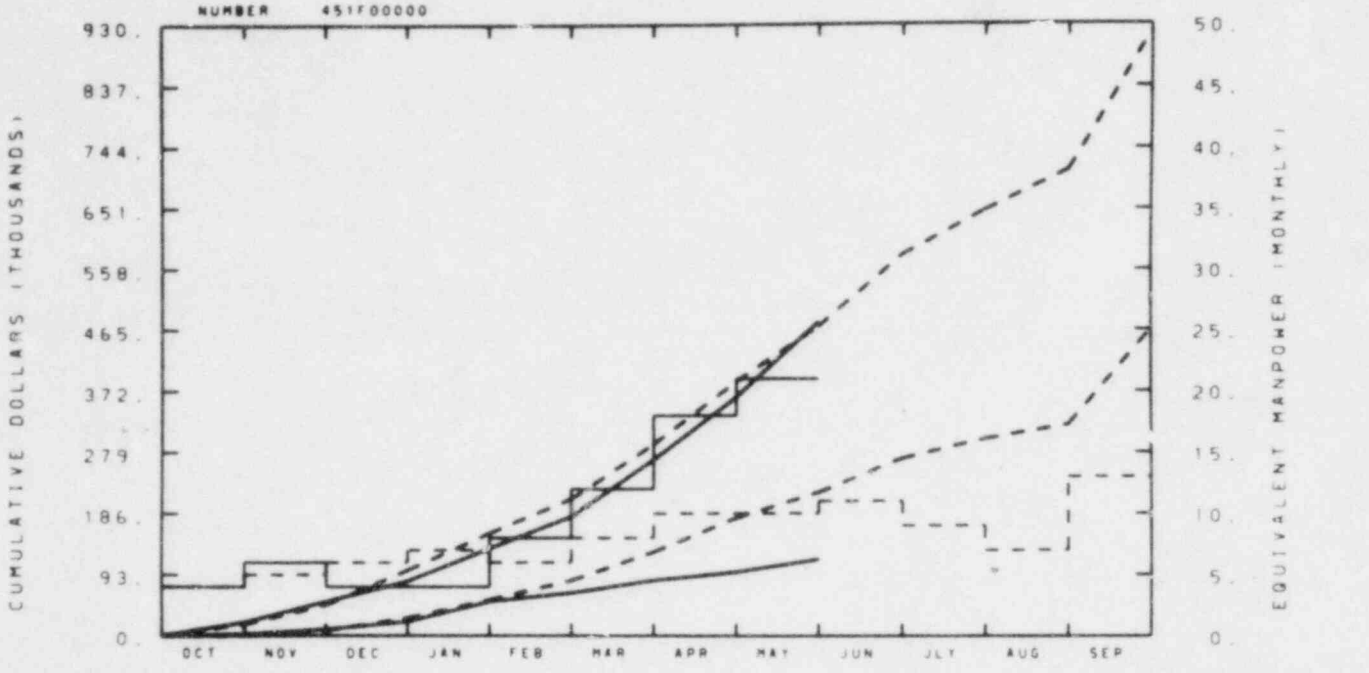
The SCTF instruments and the CCTF II instruments are also running behind schedule by approximately $135 K; Test Results Analysis by $35 K, and PKL instruments by $28 K. The overrun from the CCTF I instruments of $131 K and miscellaneous small underruns and overruns bring the net underrun for A6100 to $290 K. It is still anticipated that there will be a large underrun at fiscal year end ($450 K) comprised mainly of Management Reserve. Additional funding was received and spread over the last five months for a resident engineer in Japan.

RESPONSIBLE MANAGER
R E RICE

EG&G IDAHO INC.

FLUID DISTRIBUTION GRIDS - A6282

NUMBER 451F00000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 18 | 47 | 99 | 155 | 208 | 291 | 386 | 471 | 581 | 649 | 710 | 921 |
| ACTUAL | 20 | 52 | 83 | 133 | 181 | 268 | 363 | 478 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 1 | 8 | 27 | 54 | 84 | 128 | 179 | 218 | 270 | 299 | 321 | 466 |
| ACTUAL | 2 | 10 | 22 | 52 | 65 | 84 | 97 | 116 | | | | |

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6282

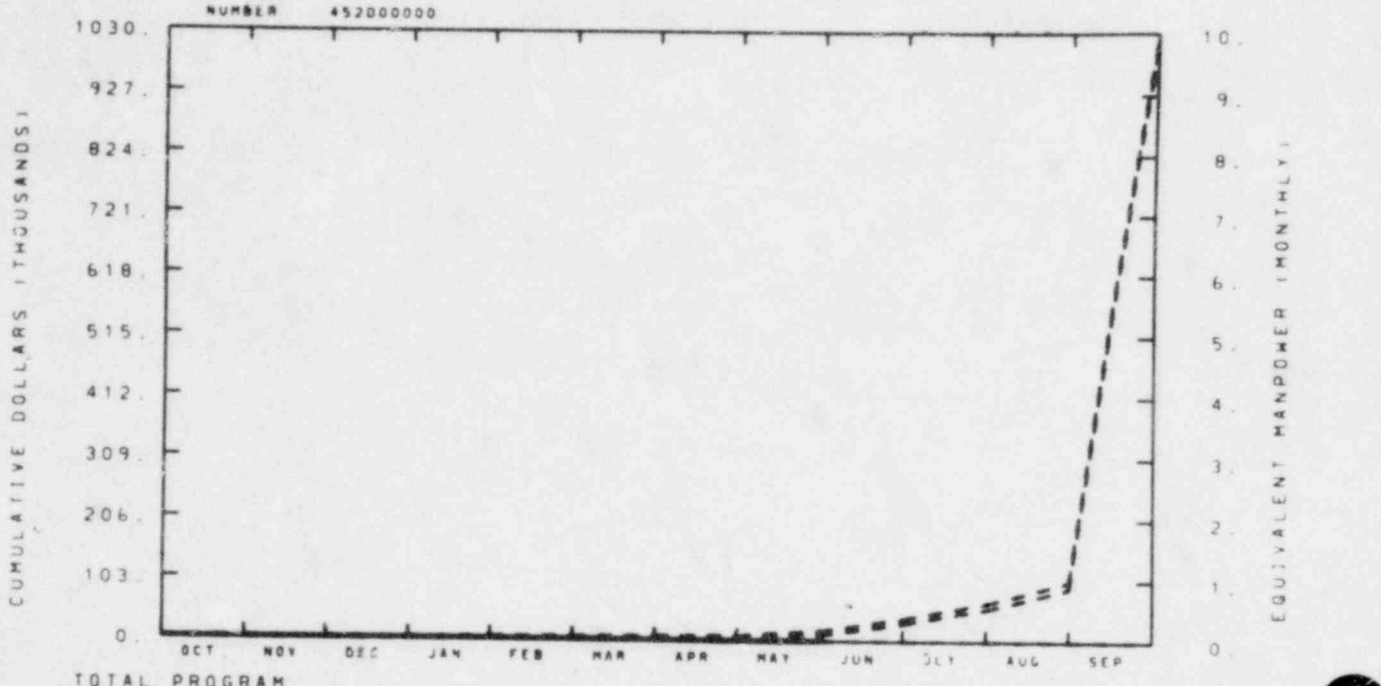
YTD VARIANCE: <7> (1%)

Redistribution of funds is due to the addition of two new work packages: (1) Prototype Engineering and Vendor Qualification, and (2) Prototype Fluid Grid Testing.

RESPONSIBLE
MANAGER
R E RICE

EG&G IDAHO INC.

UPTF DATA SYSTEM - A6289




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 3 | 5 | 6 | 8 | 17 | 39 | 65 | 102 | 1022 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 10 | 30 | 55 | 90 | 1009 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |

BUDGET
ACTUAL

A6289

YTD VARIANCE: 17 (1%)

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, funds from this 189a will carry completely over into the next fiscal year ($1,021 K).

2D/3D

CURRENT WORKING SCHEDULE

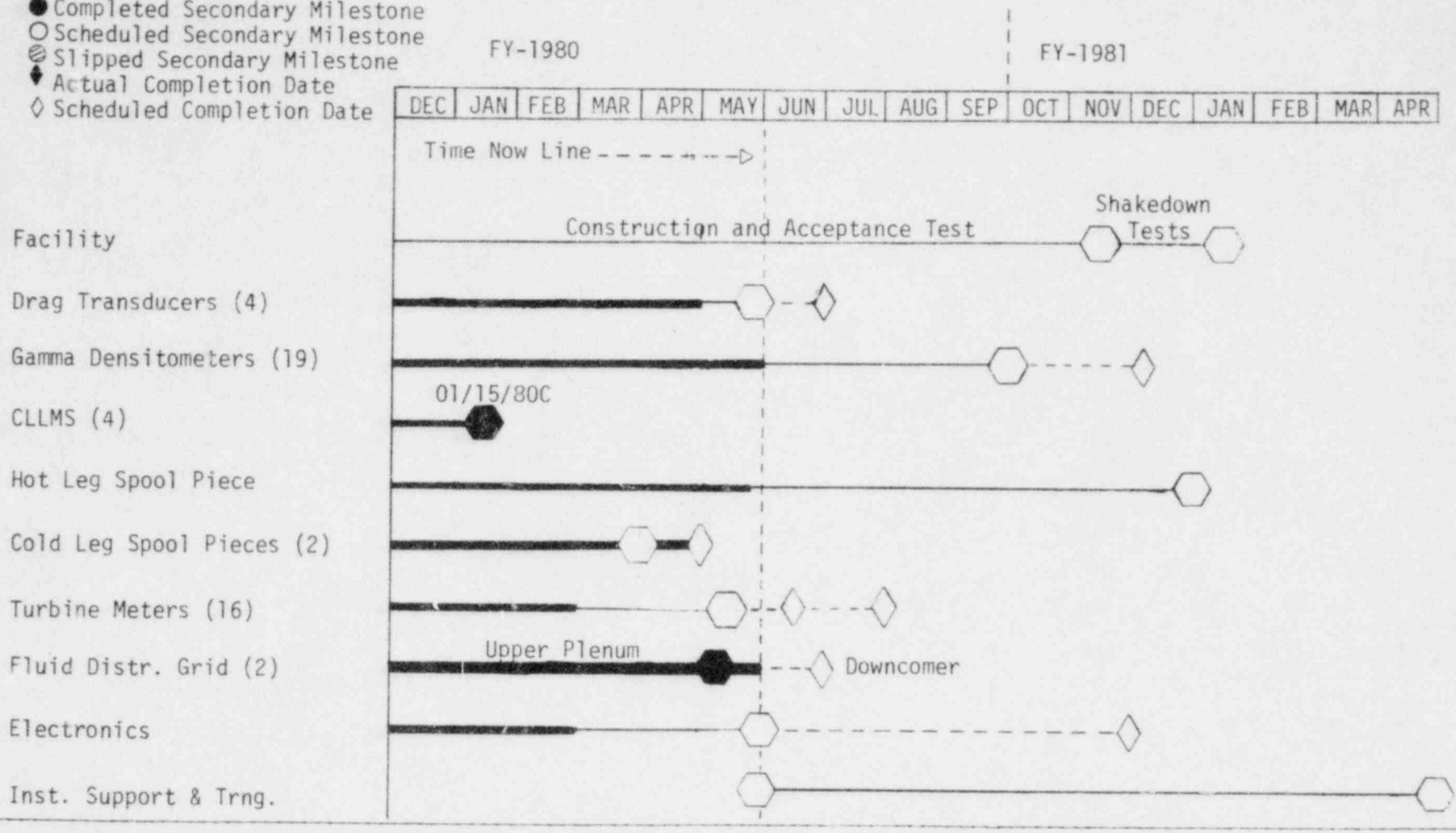
LEGEND

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

# 2D/3D EXPERIMENT PROGRAM

## SCTF Projects

May 1980




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

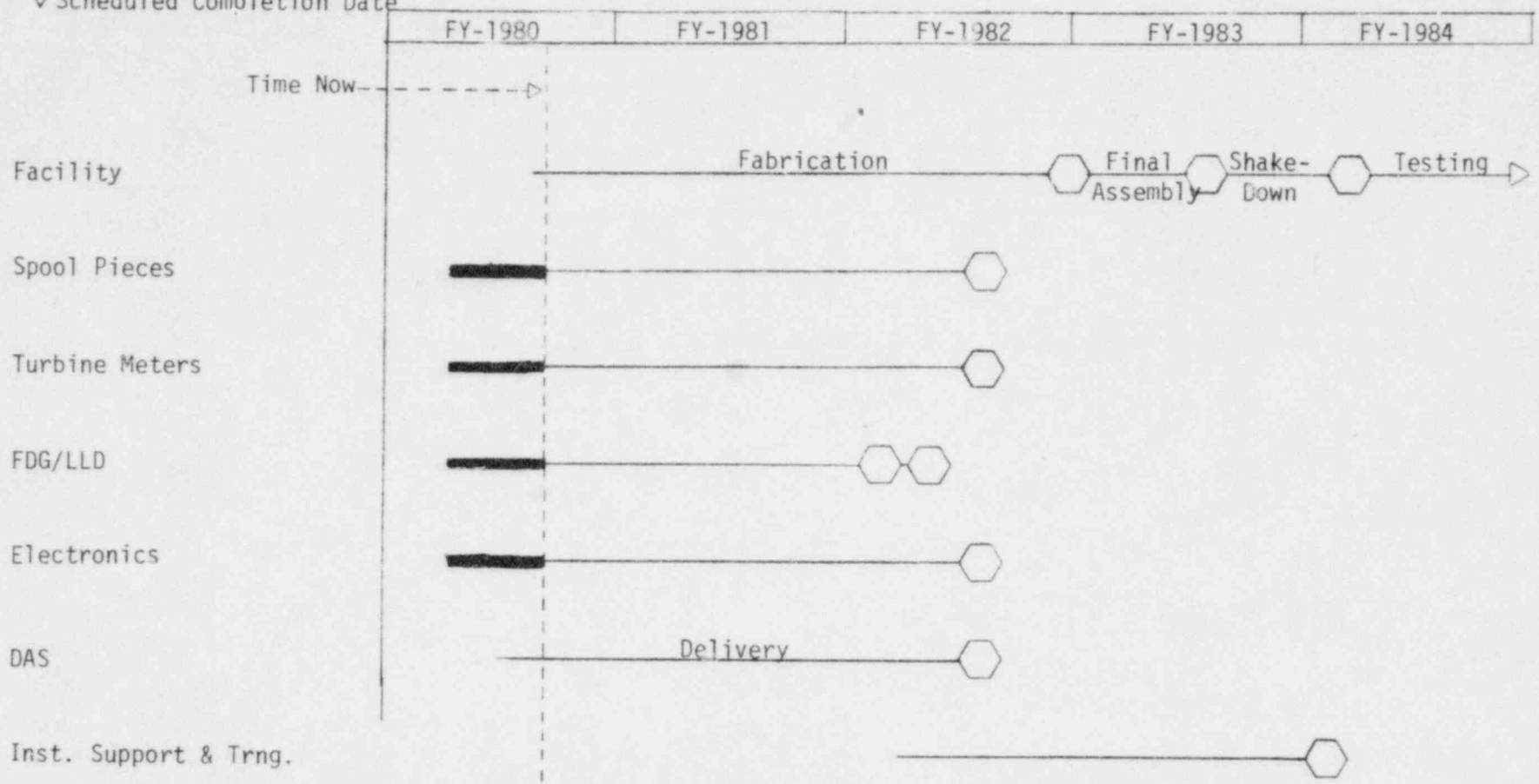
LEGEND

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

# 2D/3D EXPERIMENT PROGRAM

## UPTF Projects

May 1980




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

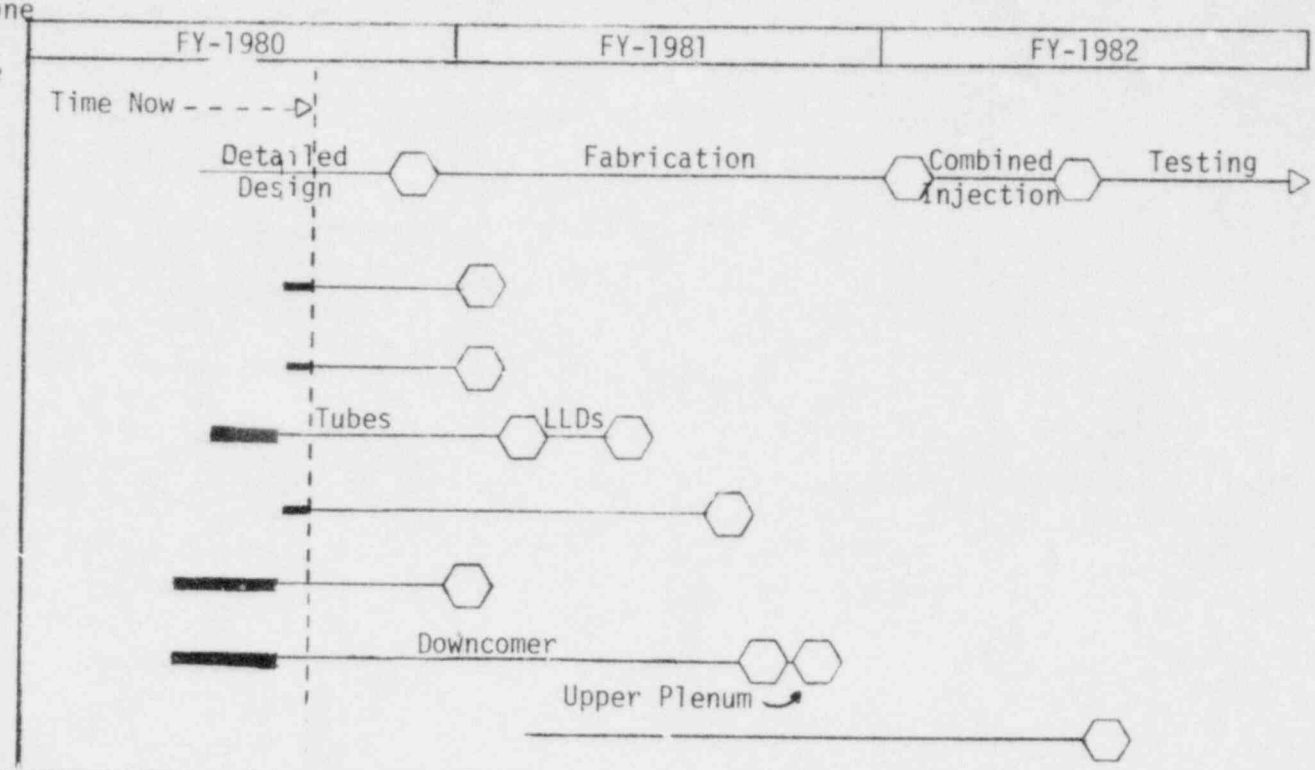
LEGEND

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

# 2D/3D EXPERIMENT PROGRAM

## CCTF-II Projects

May 1980




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

Preliminary schedule - revised in May 1980 to correspond with latest JAERI schedule.

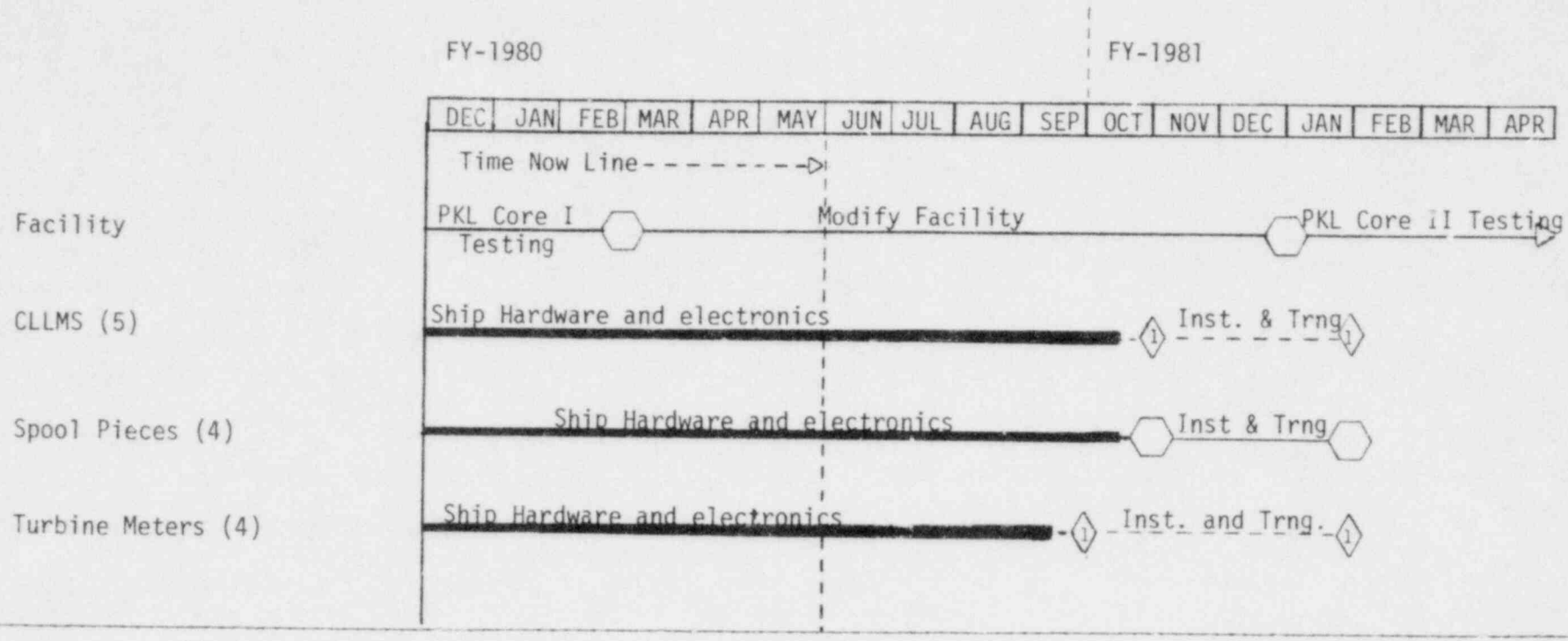
LEGEND

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

# 2D/3D EXPERIMENT PROGRAM

PKL Projects

May 1980




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

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

2D/3D

TECHNICAL REVIEW & SUMMARY

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

Japan Atomic Energy Research Institute (JAERI) Slab Core Test Facility in-core liquid level detectors were successfully installed. Final design reviews were held on the Slab Core Test Facility hot leg spool piece, densitometers and turbine meters.

JAERI Slab Core Test Facility densitometer proposals were reviewed and subcontract (K-1882) was awarded to Gemcor, Inc., to fabricate the mechanical components.

The Upper Plenum Test Facility Oak Ridge National Laboratory turbine meters were installed into the air/water and steam/water test loops. Operation of the turbines was not satisfactory. The turbine system in the air/water loop was returned for design modifications.

During the Cylindrical Core Test Facility and Slab Core Test Facility Core I Instrumentation Meeting in Japan, May 12-15, 1980, discussions were held on the heated thermocouple velocimeter interface requirements for the Cylindrical Core Test Facility II, cost analysis of the conductivity liquid level detector refurbishment, and conceptual design of the turbine probe.

1. A6100 - 3D Technical Support and Instrumentation

2. Scheduled Milestones for May 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| Page 1-93 | Slab Core Test Facility Final Design Review for Hot Leg Spool Piece | 3DP-6-80 5-19-80E | 5-19-80C |
| Page 1-93 | Slab Core Test Facility Final Design Review for Turbine Flowmeters | 3DP-12-80 5-26-80E | 5-22-80C |

3. Summary of Work Performed in May 1980

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

1. Spool Pieces - The primary coolant loop spool pieces are complete.

2. Conductivity Liquid Level Measurement System - Functional testing of the electronics system was continued. Firmware checkout was 90% complete. Hardware installation was completed and hardware functional checkout was 90% completed. The rough draft of the acceptance test procedure for the digital interface was completed. The rough draft of the acceptance procedure for the entire electronics system is in progress.

3. Turbine Meters - No activity due to work being directed toward the Oak Ridge National Laboratory and Slab Core Test Facility turbines.

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

1. Conductivity Liquid Level Measurement System - In-core liquid level detectors were successfully installed. Draft technical manual sections were about 80% complete. All materials required for installation support were received. In-common switching circuitry was completely assembled except for relays which were delayed by the supplier (T-Bar) due to defective material. In-common circuitry acceptance test procedures were signed off.

2. Fluid Distribution Grid - All downcomer assemblies are assembled and are in final functional check. Hardware shipping invoices were forwarded May 23 for JAERI approval. Electronic interface fabrication and assembly was completed except for installation of relays which were delayed by the supplier (T-Bar) but are now shipped (May 30). Functional software specifications were drafted and reviewed. Draft technical manual sections are about 80% complete.

3. Densitometers - The Final Design Review for the mechanical design of the densitometers was held. Proposals were reviewed and a subcontract (K-1882) was awarded to Gemcor, Inc., to fabricate the mechanical components for the densitometers. Gemcor, Inc., located near Pittsburg, Pennsylvania, is a minority small business in a disadvantaged area. Gemcor is able to meet the required delivery dates. A breadboard detector/preamplifier assembly was connected to production electronics for a test of one densitometer channel. The geometry of the vessel was simulated and the test results were good. Production detector assembly fabrication has commenced.

4. Hot Leg Spool Piece - A formal final design review on the hot leg spool piece was held. Comments are being resolved and drawings are being revised to reflect the additions requested. An information design review was held on the Slab Core Test Facility simulator. Comments were incorporated and drawings were released. A cost estimate for fabricating this mockup have been prepared. A hot leg spool piece support stand and blind flanges have been designed and fabrication has started. Long-lead materials for the Slab Core Test Facility simulator has been ordered. The density calibration procedure has been rough drafted.

5. Turbine Meters - Final design review of the turbine design was completed on May 22, 1980.

6. Cold Leg & Vent Line Spool Piece - Spool pieces were received by JAERI In Japan. JAERI has requested installation of the spool pieces to occur on June 9-13. Work is progressing on the operation manual for the Slab Core Test Facility spool pieces.

7. Drag Disks - The downcomer drag transducer nozzle sleeves and flanges were received from the vendor. The fabrication of the calibration test spool piece was completed. Assembly of drag transducers is in progress. A sample drag transducer beam and target was completed and will be used for thermal shock testing. Test and evaluation began on velocity profile of the calibration test spool piece.

c. Upper Plenum Test Facility Instruments

1. Drag Disks - No activity.

2 Gamma Densitometers - No activity.

3. Turbine Meters - Work performed in May included a review of project documentation including the MPR specification, a review of the conceptual design sketches and construction of a preliminary schedule and work package layout for the project. An interface was also established with procurement personnel to facilitate a vendor search for candidate bidders on forthcoming project contracts.

4. Oak Ridge National Laboratory Turbine Meters - The turbines were installed into Oak Ridge National Laboratory's air/water and steam/water test loops. Operation of the turbines was not satisfactory. The turbine system in the air/water loop was returned for design modifications.

5. Spool Pieces - Work is progressing on a preliminary test specification for Upper Plenum Test Facility spool pieces.

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

e. Cylindrical Core Test Facility Core II Projects

1. Turbine Meters - Conceptual design of the turbine probe was presented in the International Meetings in Japan. These concepts and the required facility interfaces were discussed in detail with IHI personnel and actions generated for both IHI and EG&G to produce fi design requirements.

2. Fluid Grid - A preliminary work package was completed based on currently available information.

3. Heated Thermocouple Velocimeter - Conceptual designs have been initiated. Interface requirements with the Cylindrical Core Test Facility II were discussed in the International Meetings in Japan.

4. Spool Piece and Drag Disk Refurbishment - Project planning was continued. A detailed list of activities was prepared and labor estimates established for each activity. A list of materials, components and associated costs required for each activity is in progress. A decision analysis was initiated to determine the optimum approaches for refurbishing mechanical and electrical components.

5. Conductivity Liquid Level Measurement System Refurbishment - The cost analysis of the conductivity liquid level detector refurbishment was continued based on agreements made with JAERI in the May 1980 Interface Meeting.

6. Prototype Development and Vendor Qualification - Planning for the prototype development and vendor qualification task was completed and a work package submitted to DOE/NRC. Vendor components were received and evaluated for technical qualification. Electronic design options were developed and work on prototypes initiated. Prototype test plans were prepared for the various subassemblies and integrated system.

4. Scheduled Milestones for June 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| Page 1-93 | Slab Core Test Facility - Ship Electronics for Conductivity Liquid Level Measurement System | 3DP-14-80<br>6-30-80E | |
| Page 1-91 | Slab Core Test Facility - Ship Downcomer for Fluid Distribution Grid System | 3DP-13-80<br>6-15-80E | |
| Page 1-91 | Slab Core Test Facility Ship Electronic Interface for Fluid Distribution Grid System | 3DP-13-80<br>6-30-80E | |

4. Scheduled Milestones for June 1980 (cont'd)

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| Page 1-93 | Slab Core Test Facility - Final Design Review for Gamma Densitometers | 3DP-9-80<br>6-04-80E | 5-19-80C |
| Page 1-93 | Slab Core Test Facility - Installation Support on Cold Leg & Vent Line Spool Piece | 3DP-15-80<br>6-18-80E | |

5. Summary of Work to be Performed in June 1980

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

1. Spool Pieces - The spool pieces are in storage until shipment to Germany in late 1980.

2. Conductivity Liquid Level Measurement System - The documentation of off-the-shelf components will be completed. The firmware documentation and checkout will be completed. The hardware functional testing will be completed. Work on the technical manual will be started.

3. Turbine Meters - Fabrication will continue as time permits.

b. JAERI Slab Core Test Facility Instruments

1. Conductivity Liquid Level Measurement System - Slab Core Test Facility/Cylindrical Core Test Facility conductivity liquid level measurement system in-common switching circuitry is scheduled for shipment around June 25.

2. Fluid Distribution Grid - Downcomer fluid distribution grid assemblies are on schedule to be shipped by June 15, 1980, along with spare grid assemblies. Slab Core Test Facility/ Cylindrical Core Test Facility conductivity liquid level measurement system in-common switching circuitry and all installation support equipment is on schedule for shipment approximately June 25, 1980.

3. Gamma Densitometers - The design and documentation of the test fixtures and tools necessary to assemble, test, and maintain the densitometers will be completed. The planning for prototype and acceptance testing of densitometers will be completed. Gemcor, Inc., will be assisted with any problems to insure that delivery dates for the mechanical components are met.

4. Hot Leg Spool Piece - The project plans to begin fabrication of the hot leg spool piece instrument flanges and the Slab Core Test Facility simulator. Work will continue on the test plan and test procedures.

5. Turbine Meters - Action items from the design review will be addressed. Fabrication of the production units will be initiated.

6. Cold Leg & Vent Line Spool Piece - Spool pieces will be installed in Slab Core Test Facility at JAERI in Japan by EG&G personnel.

7. Drag Disks - All remaining work on the drag transducers will be completed. All remaining activities on the drag transducers are planned for completion up to the point of shipment to Japan. These activities include: completion of thermal shock tests on the drag transducer beam and target; completion of velocity profile and calibration tests on the test spool piece; final assembly and calibration of the drag transducers.

c. Upper Plenum Test Facility Instruments

1. Drag Disks - No activity.

2. Gamma Densitometers - No activity.

3. Turbine Meters - The work package for the turbines will be completed and milestone nodes established. Preliminary design and engineering specification work will be initiated.

4. ORNL Turbine Meters - The air/water turbine assembly will be returned to ORNL, installed and retested in the air/water loop. The turbine in the steam/water loop will be removed when the loop is shut down and returned to the subcontractor for rework.

4. Spool Pieces - A draft of a preliminary test specification for the spool pieces will be completed.

d. Upper Plenum Test Facility Data System - The schedule has again been slipped by the Germans and the kick-off meeting scheduled for August at San Ramon has been postponed until further notice.

e. Cylindrical Core Test Facility Core II Projects

1. Turbine Meters - Actions generated at the May Interface Meeting will be resolved and the agreements incorporated into the turbine probe design.

2. Fluid Distribution Grid - An engineering drawing of the optical liquid level detector probe subassembly will be drafted. Inputs from the Cylindrical Core Test Facility II Interface Meeting will be incorporated into the work package.

3. Heated Thermocouple Velocimeter - The design will continue with agreements reached during the International Meeting in Japan. These agreements will be incorporated into the design.

4. Spool Piece and Drag Disk Refurbishment - The cost estimates for each activity and the decision analysis for the optimum approaches to refurbish mechanical and electrical components will be completed, based on the results of installation support at JAERI in June 1980. Continued efforts will be applied to the work package

5. Conductivity Liquid Level Measurement System Refurbishment - Planning and scheduling of the Conductivity liquid level detector refurbishment tasks will be initiated and long-lead items will be ordered. Cost estimates will be completed and efforts continued on the work package.

6. Prototype Development and Vendor Qualification - Electronic designs will be evaluated and a production design chosen. Mechanical design will be completed and testing of production subassemblies begun. Design of all components will be fixed and drawings prepared. Testing of prototype systems will be initiated and a prototype design review held.

6. Problems and Potential Problems - None

WRRD MONTHLY REPORT FOR

MAY 1980

CODE DEVELOPMENT & ANALYSIS PROGRAM

S. F. Tuck
Plans & Budget Representative

P. North, Manager

CODE DEVELOPMENT & ANALYSIS PROGRAM

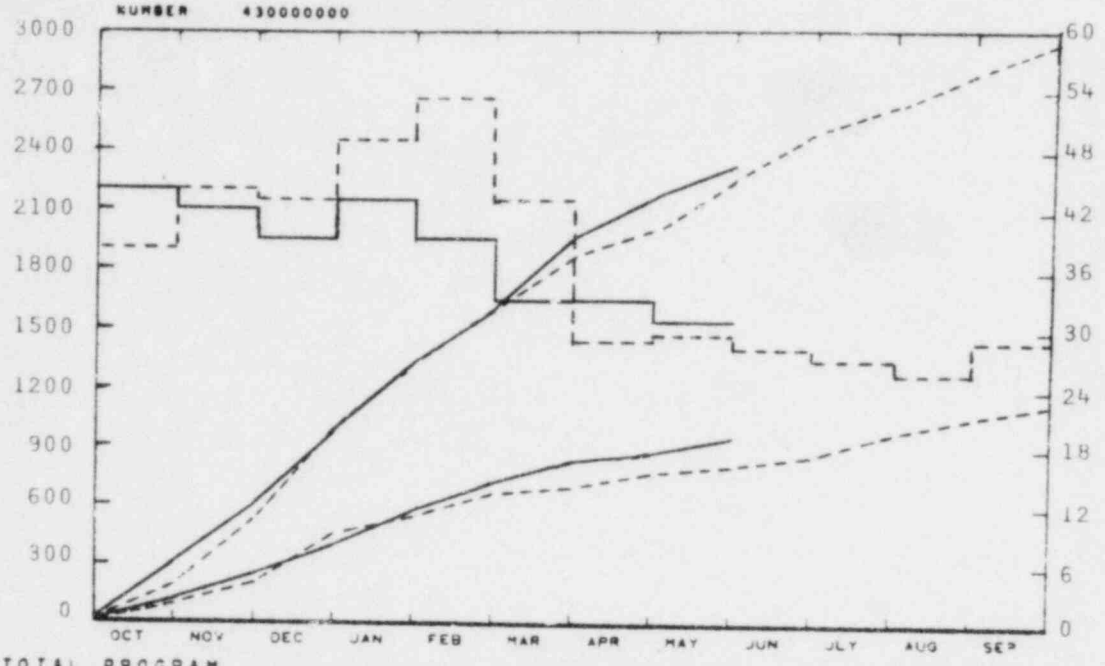
COST SUMMARY & COMMENTS

[redacted]SIBLE
MANAGER
P NORTH

EG&G IDAHO INC.

CODE DEVELOPMENT & ANALYSIS PROG

NUMBER 430000000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 274 | 567 | 1019 | 1314 | 1600 | 1824 | 2062 | 2268 | 2463 | 2626 | 2801 | 2975 |
| ACTUAL | 302 | 599 | 1009 | 1315 | 1598 | 1960 | 2164 | 2349 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 95 | 213 | 441 | 531 | 613 | 671 | 749 | 817 | 879 | 933 | 986 | 1028 |
| ACTUAL | 104 | 232 | 428 | 537 | 643 | 801 | 885 | 935 | | | | |

BUDGET - - - - -

ACTUAL ———

MANPOWER

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

YTD VARIANCE: <81> (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.

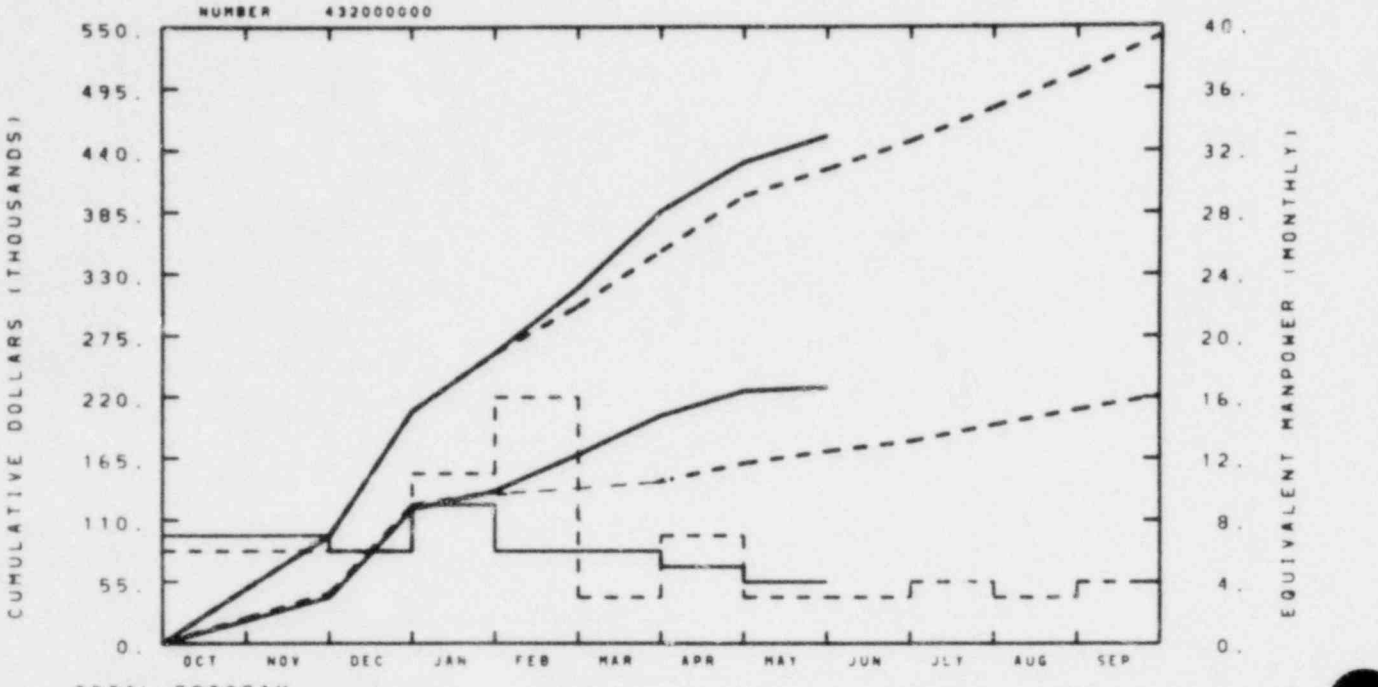
Any change on the Code Development & Analysis Program overall cost graph is due to changes noted on the cost graphs for A6042 and A6050.

RESPONSIBLE MANAGER
P. NORTH

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 | 430 | 453 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 23 | 45 | 123 | 135 | 140 | 145 | 160 | 171 | 180 | 195 | 208 | 222 |
| ACTUAL | 20 | 41 | 120 | 136 | 168 | 203 | 226 | 229 | | | | |

BUDGET - - - - - -

ACTUAL ———

MANPOWER

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

A6042

YTD VARIANCE: <29> (7%)

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. The additional $70 K agreed with the Nuclear Regulatory Commission had not been placed in the 189a as of May 30, 1980. Some check calculations will not be completed in FY-1980 and a study of the interphase drag related stability problems is being conducted instead.

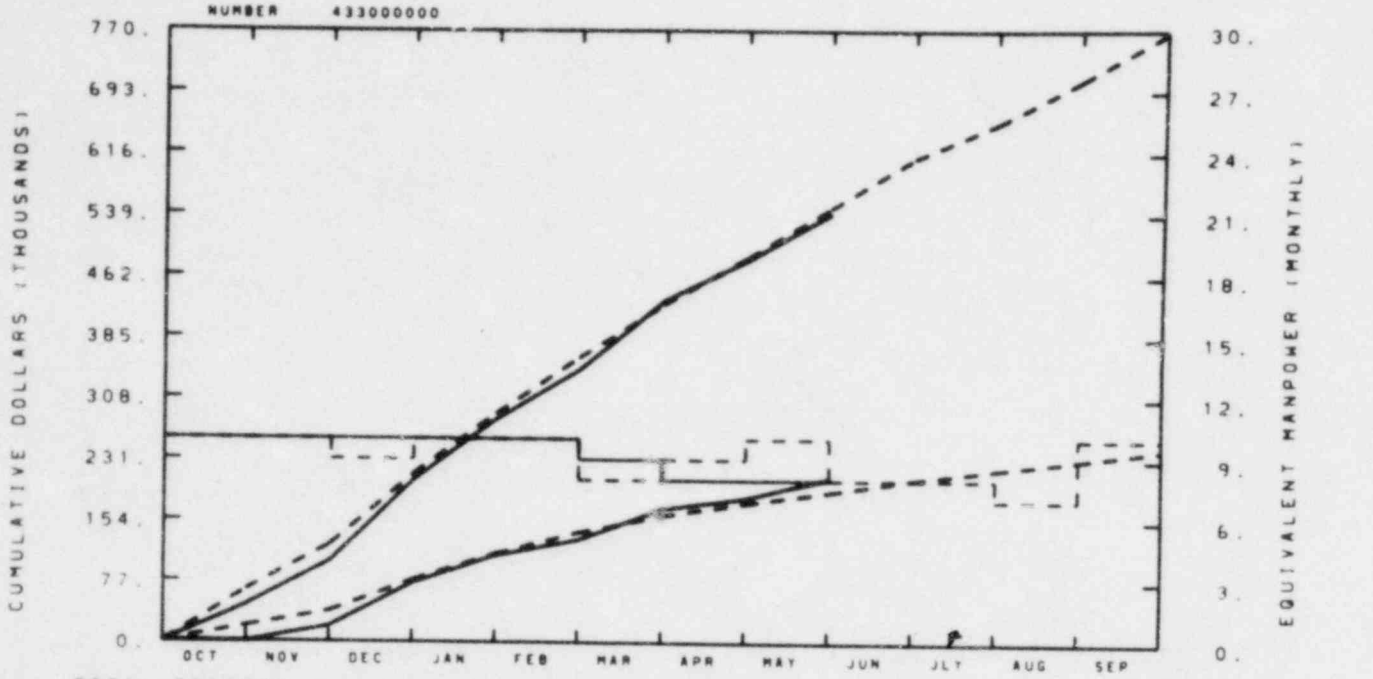
Anticipated additional funding was not received. Therefore, a budget reevaluation was necessary. This reevaluation is reflected in the May cost graph.

[redacted]IBLE
MA[redacted]ER
P 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 | 483 | 541 | | | | |

MATERIAL

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

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 10 | 10 | 9 | 10 | 10 | 8 | 9 | 10 | 8 | 8 | 7 | 10 |
| ACTUAL | 10 | 10 | 10 | 10 | 10 | 9 | 8 | 8 | | | | |

BUDGET - - - - - -

ACTUAL ———

A6050

YTD VARIANCE: 7 (1%)

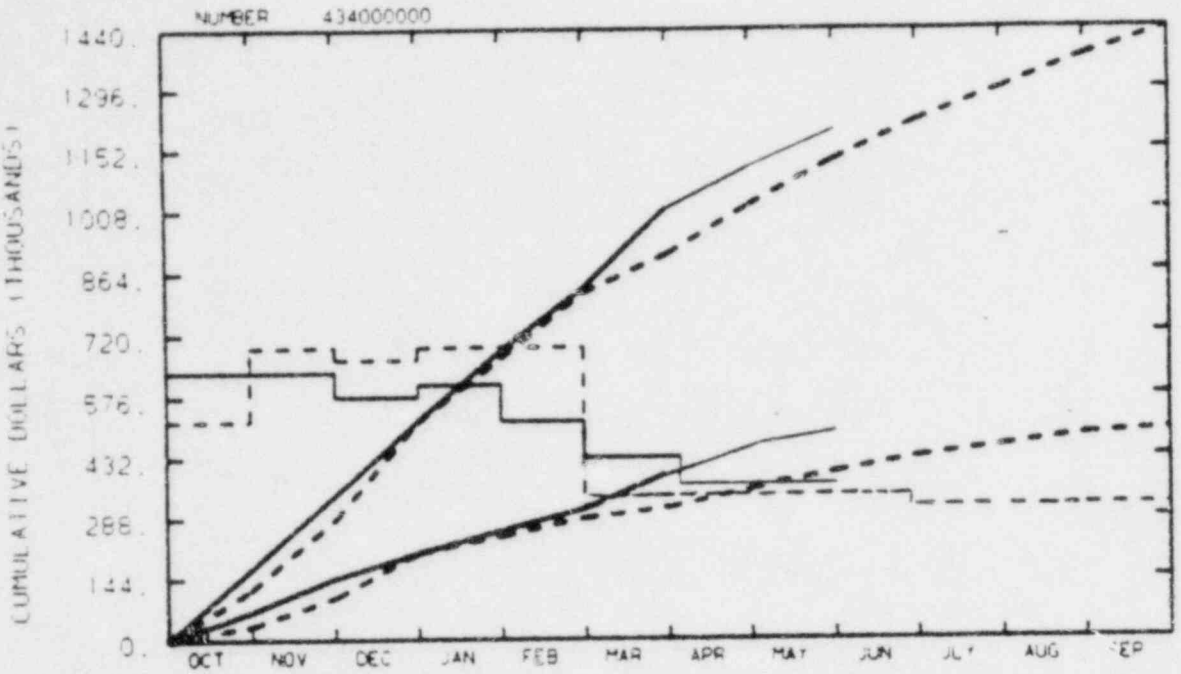
The budget for a work package under this 189a had been input to the system incorrectly. This was corrected and is reflected in the May cost graph.

RESPONSIBLE MANAGER
F NORTH

EG&G IDAHO INC.

LOSS OF COOLANT ACCIDENT ANALY

NUMBER 434000000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 119 | 286 | 518 | 665 | 817 | 905 | 1019 | 1125 | 1219 | 1295 | 1373 | 1439 |
| ACTUAL | 168 | 344 | 520 | 684 | 827 | 1016 | 1112 | 1203 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 33 | 100 | 206 | 245 | 288 | 312 | 354 | 395 | 431 | 455 | 481 | 494 |
| ACTUAL | 67 | 147 | 205 | 259 | 311 | 394 | 439 | 461 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 18 | 24 | 23 | 24 | 24 | 12 | 12 | 12 | 12 | 11 | 11 | 11 |
| ACTUAL | 22 | 22 | 20 | 2 | 18 | 15 | 13 | 13 | | | | |

BUDGET

ACTUAL

A6052

YTD VARIANCE: <78> (7%)

The overrun is due to extension of the RELAP4/MOD7 checkout. The checkout is now complete. The $300 K supplemental funding agreed with the Nuclear Regulatory Commission and DOE-ID for A6052 will cover the overrun. If the supplemental funds are not made available by June 1, 1980, adjustments will be made in the TRAC scheduling to provide a cost recovery.

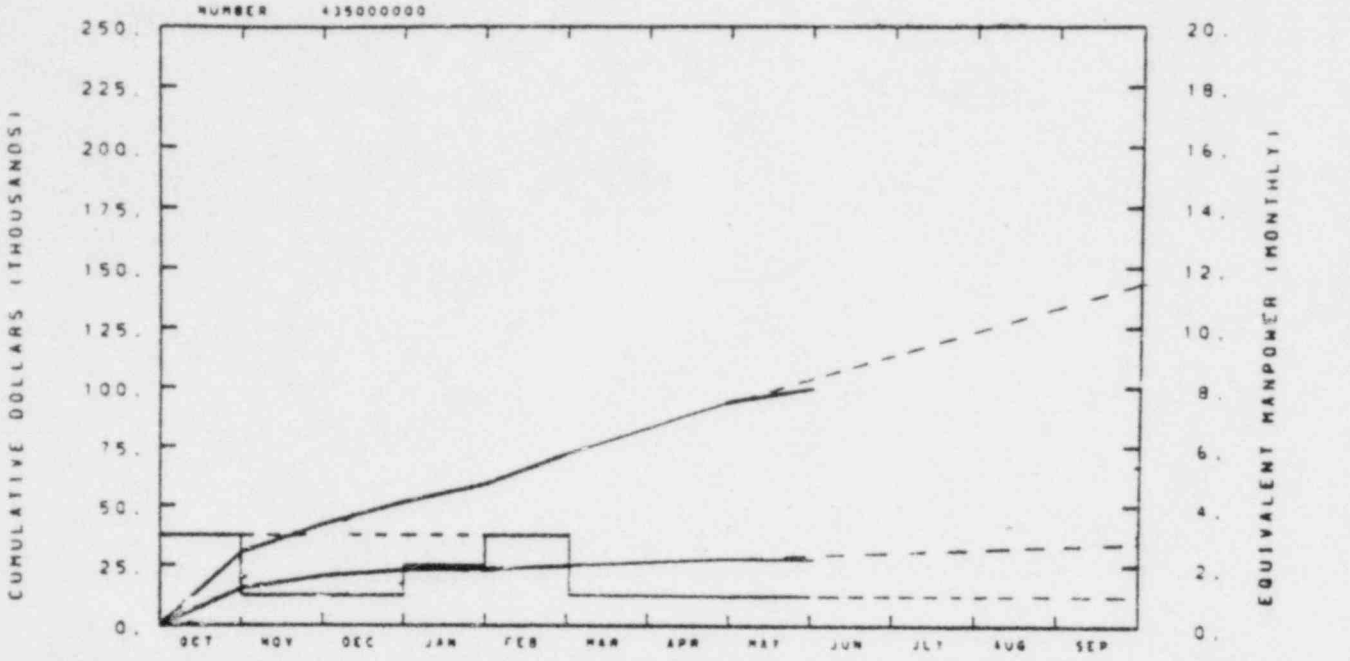
A $270 K credit has been made to this account per NRC/DOE instruction. As final distribution of these funds has not been made, the credit is not reflected on this graph.

SPONSIBLE
NAGER
NORTH

EG&G IDAHO INC.

CORRELATION VERIFICATION

NUMBER 435000000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 30 | 42 | 51 | 59 | 72 | 81 | 90 | 101 | 112 | 123 | 134 | 146 |
| ACTUAL | 30 | 42 | 51 | 59 | 72 | 81 | 90 | 97 | | | | |

MATERIAL

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

BUDGET - - - - -

ACTUAL ———

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| ACTUAL | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | | | | |

A6278

YTD VARIANCE: 4 (4%)

CODE DEVELOPMENT & ANALYSIS PROGRAM

CURRENT WORKING SCHEDULE

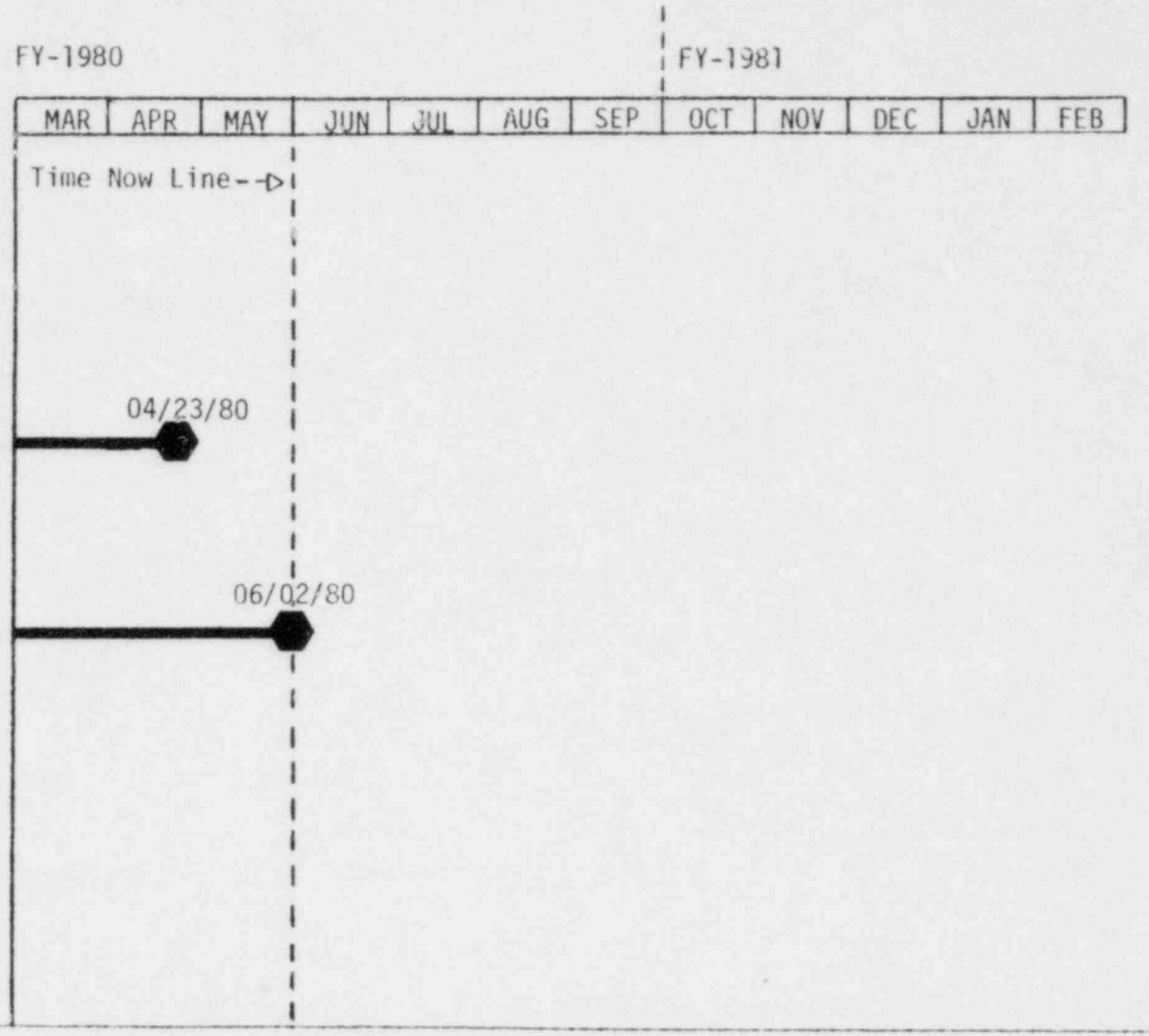
LEGEND

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

CODE DEVELOPMENT AND ANALYSIS PROGRAM

BEACON Code Development (A6042)

May 1980




NOTES:

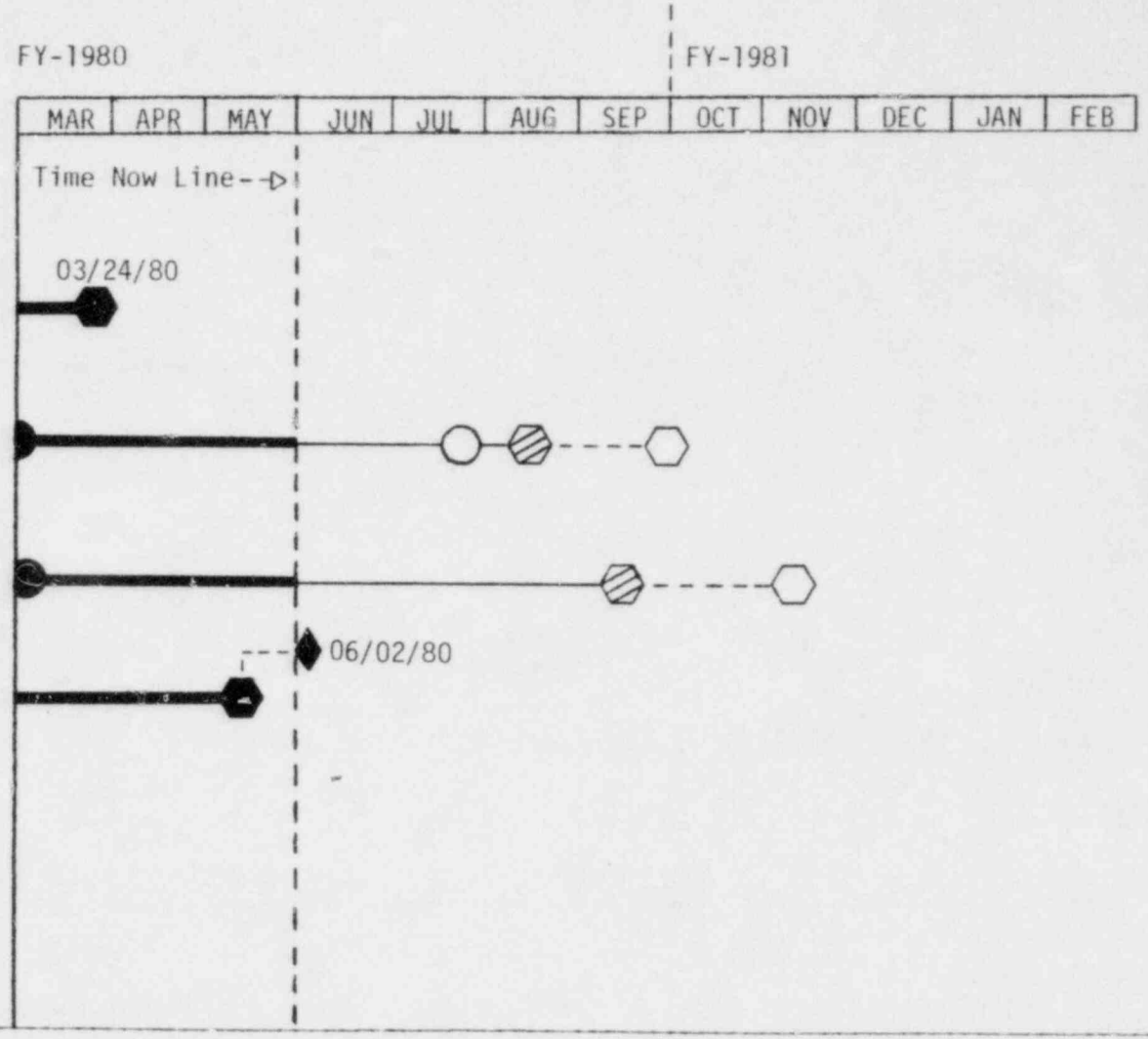
CODE DEVELOPMENT AND ANALYSIS PROGRAM

May 1980

FRAPCON Development (A6050)

LEGEND

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




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

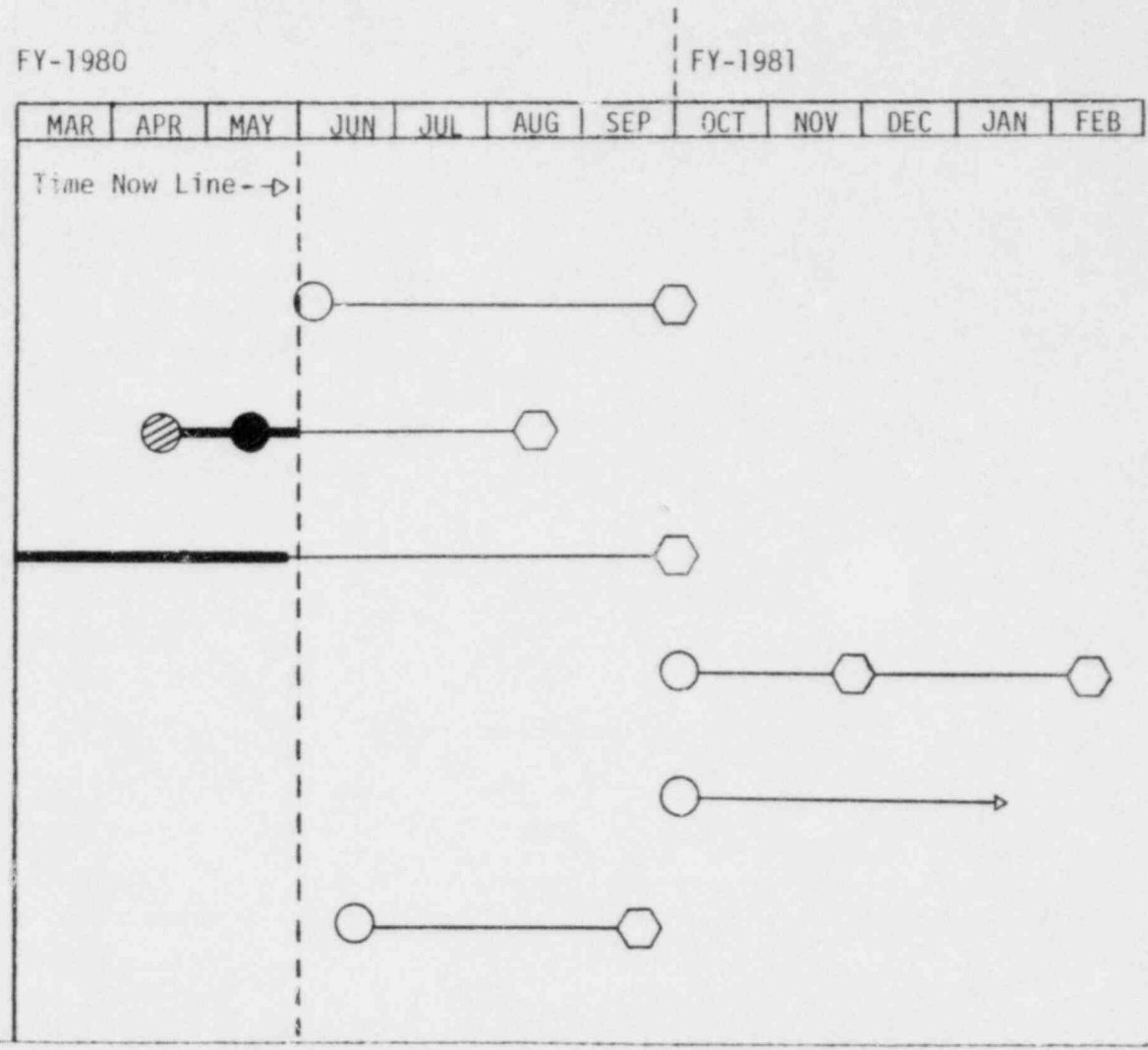
LEGEND

- 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

May 1980

FRAP-T Development (A6050)



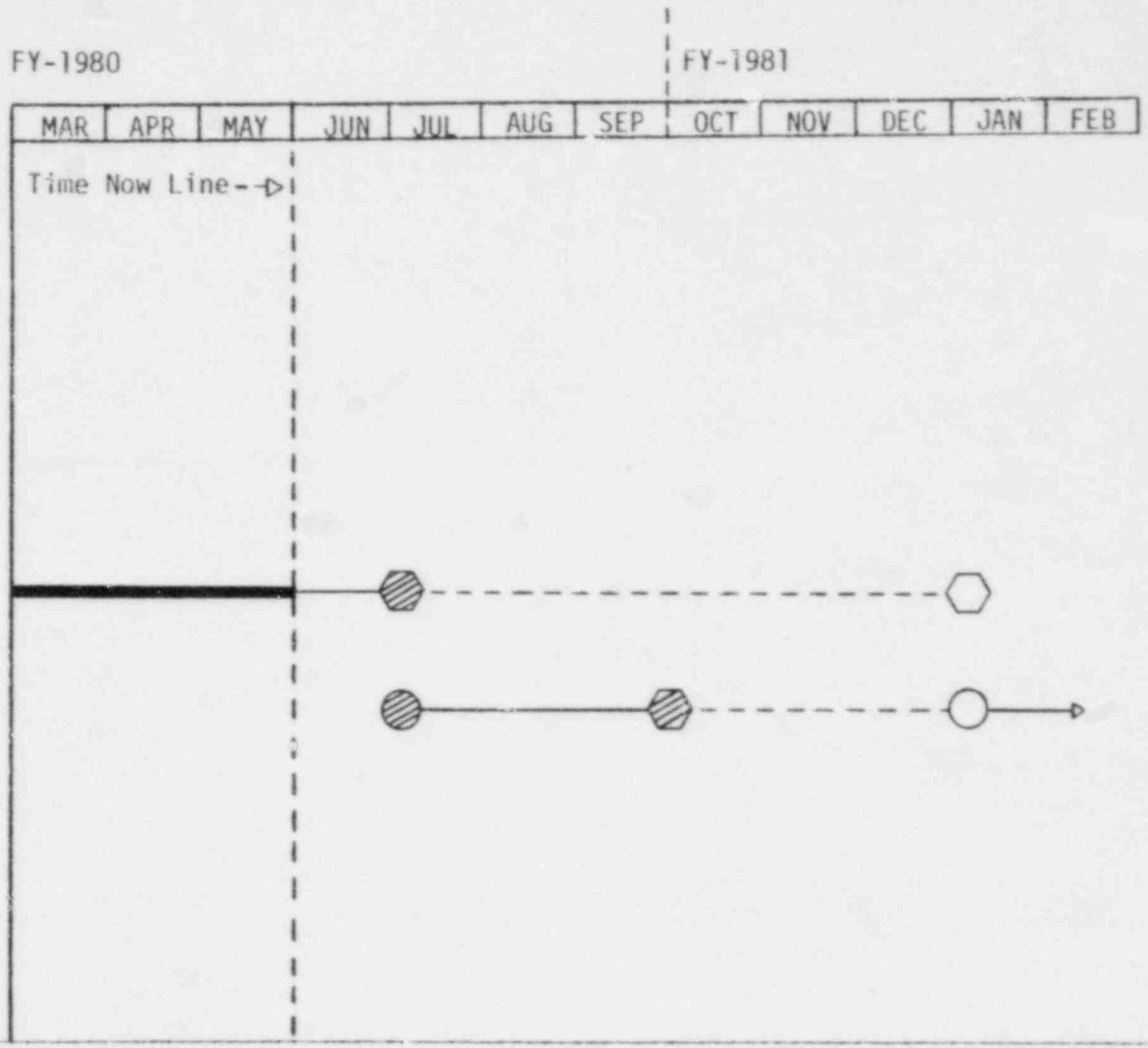

NOTES:

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 May 1980

MATPRO Development (A6050)




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

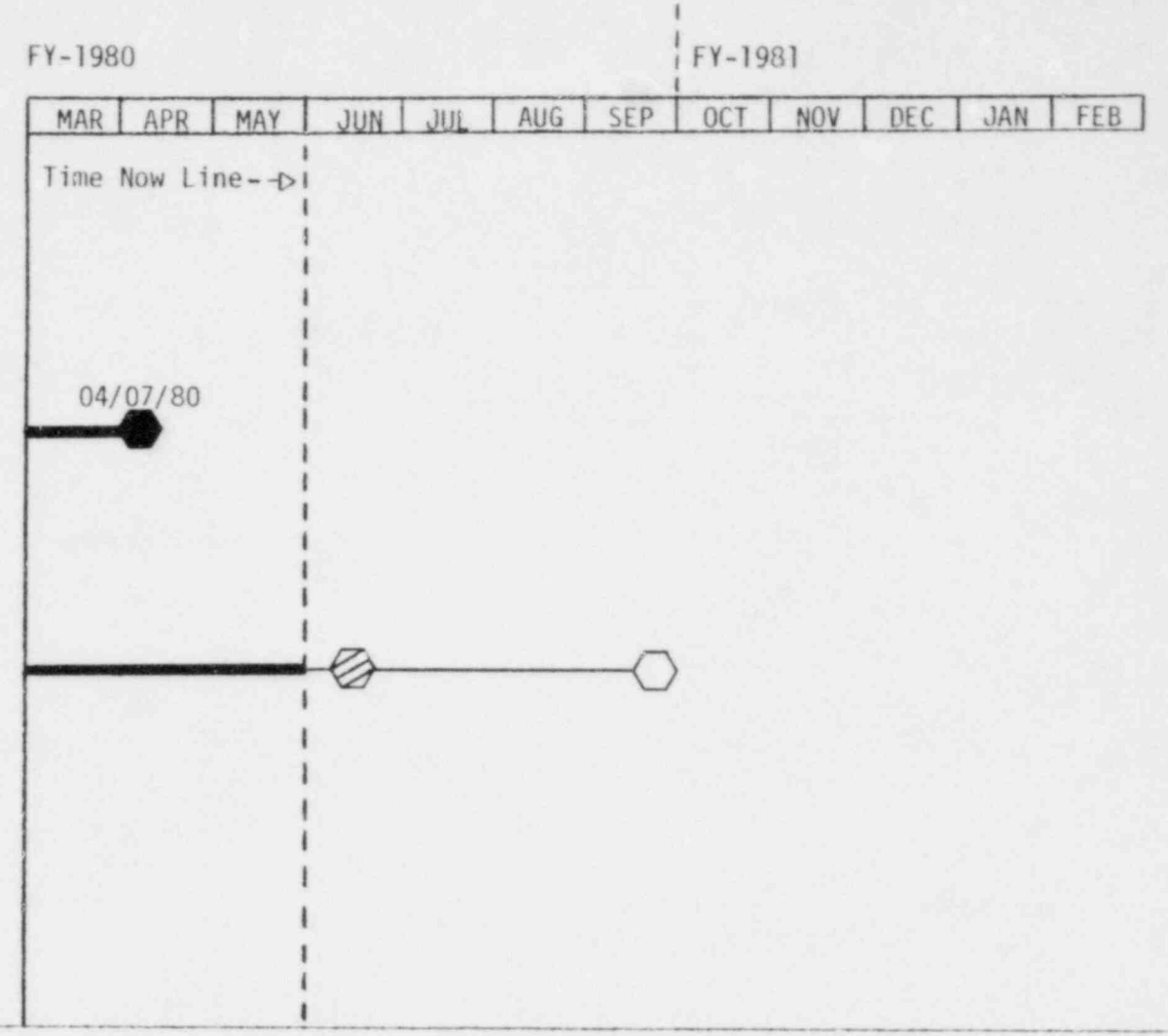
LEGEND

- 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

May 1980

RELAP4/MOD7 Integral Code Development and Checkout (A6052)




NOTES:

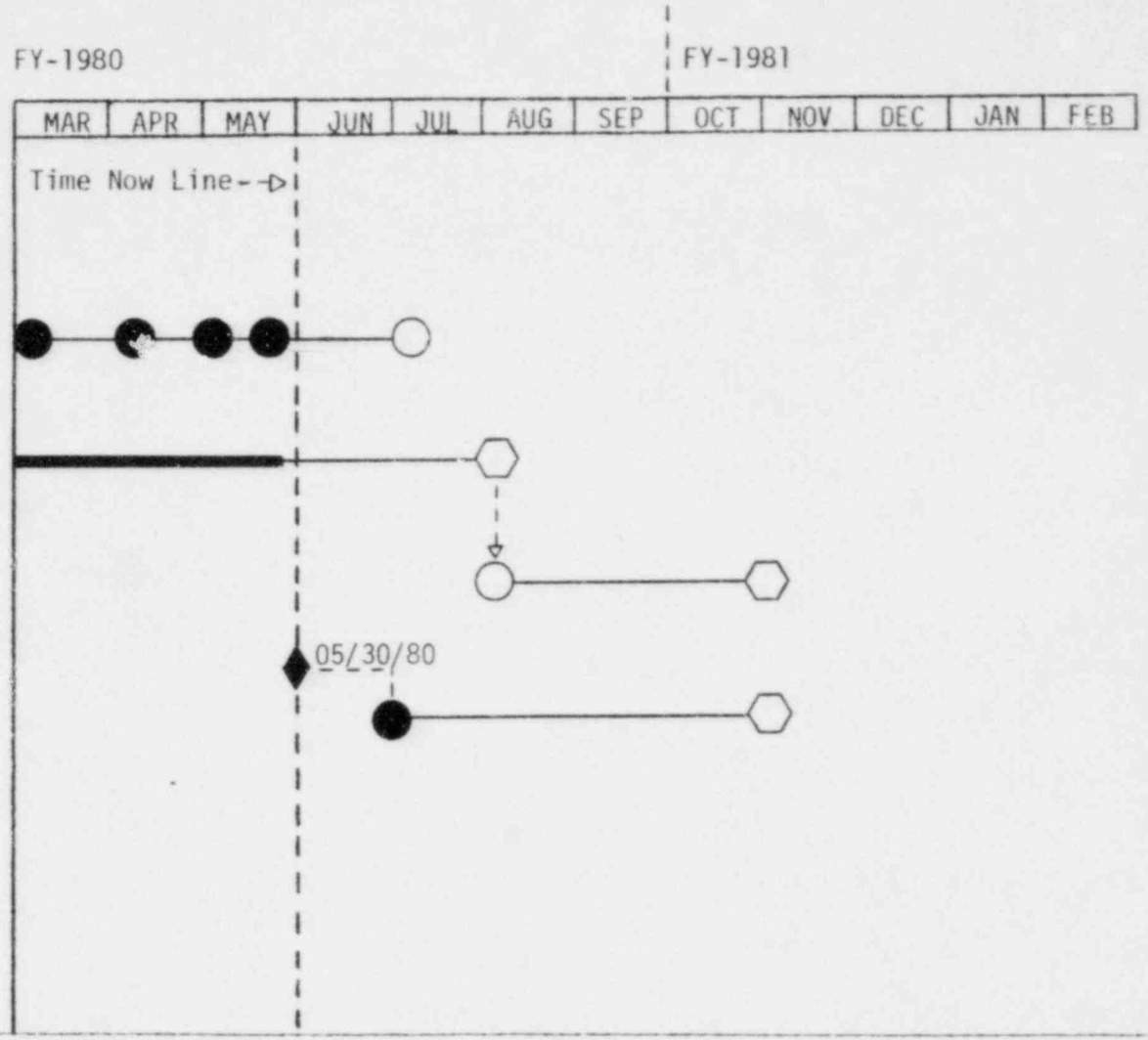
LEGEND

- 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

May 1980

TRAC-B Development (A6052)




NOTES:

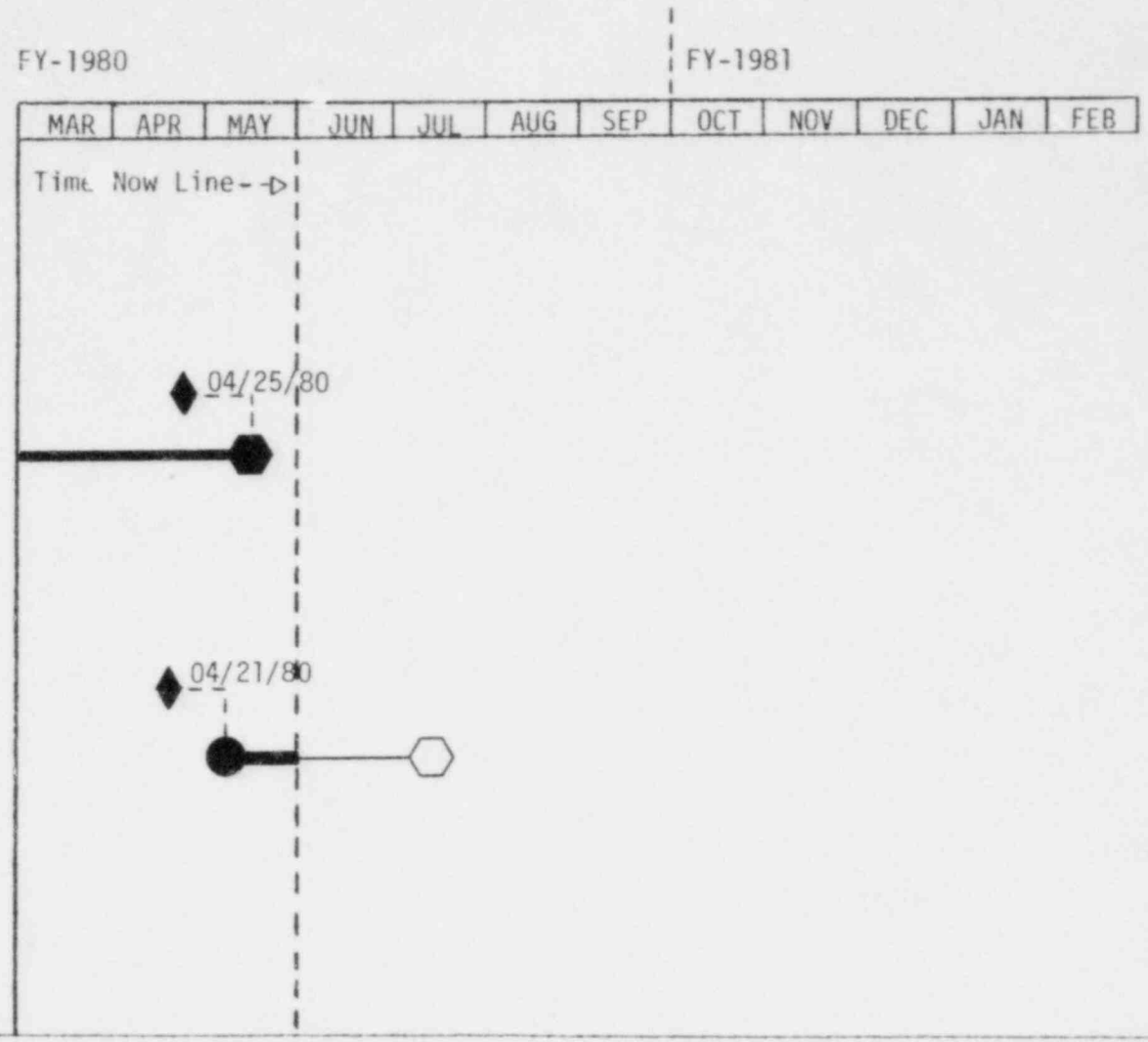
LEGEND

- 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

Heat Transfer (A6278)

May 1980




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

CODE DEVELOPMENT & ANALYSIS PROGRAM

TECHNICAL REVIEW & SUMMARY

## PROGRAM MANAGER'S

## SUMMARY AND HIGHLIGHTS

The development of TRAC-BD1 took a major step forward in May with the creation of a two-fluid version of the code containing several of the new models (Official Version 3). The development of the remaining models is proceeding well with two exceptions, those being updates relating to CCFL and updates relating to a multiple source connection. Additional resources are being applied to these problem areas.

The Code Development and Analysis Program is approaching a critical point in the FY 80 budget. Supplemental funding of $300K to cover items related to TRAC and RELAP4/MOD7 was originally agreed with NRC, as was an additional $70K for BEACON checkout. Unless the additional funds are received within the next month, schedule impacts will be involved, particularly with regard to TRAC development (Reference PN-55-80).

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

2. Scheduled Milestones for May 1980

   No scheduled milestones for May.

3. Summary of Work Performed in May 1980

   RELAP4/MOD7

   Formal documentation of RELAP4/MOD7 continued.

   TRAC-BD1

   The problems incurred with the implementation of the critical flow model were solved. The model now executes the complete set of acceptance test cases satisfactorily. Development of the following models is complete: EXTRACT (restart capability), plot format, jet pump, decay heat, double-sided heat slab, generalized pipe conduction, downcomer water-level trip, and critical flow. The writing of task completion reports on the above models is in progress. Official versions 2 and 3 were created in conformance with the new quality control and code development procedures. Work began on the remaining tasks: assessing the updates provided by General Electric Company relating to CCFL and correcting an error in the multiple-source update.

4. Scheduled Milestones for June 1980

   No scheduled milestones for June.

5. Summary of Work to be Performed in June 1980

   RELAP4/MOD7

   Formal documentation of RELAP4/MOD7 will continue.

   TRAC-BD1

   The completion reports on finished tasks will be submitted. Official version 4 will be created to incorporate the new models. Work will continue on the CCFL and multiple source tasks.

   A visit to LASL has been arranged on June 25 to obtain help with the multiple-source problem if required.

6. Problems and Potential Problems

   Work on the checkout of TRAC-BD1 during the last quarter of FY-80 is dependent on obtaining the $300K supplemental funding for A6052. The supplemental funding is also required to cover the RELAP4/MOD7 checkout overrun.

1. 189a A5278 - Heat Transfer Correlation Development and Assessment

2. Scheduled Milestones for May 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| L8, N2<br>Page 1-37 | RNB Thermal Resistance Calculation Report | 5-2-80 | 4-29-80C |

3. Summary of Work Performed in May 1980

Information has been gathered to support the writing of the transient CHF Research Information Letter. The sources are Semiscale, THTF, and Argonne (Leung Thesis). Review of the sources has begun.

4. Scheduled Milestones for June 1980

No scheduled milestones for June.

5. Summary of Work to be Performed in June 1980

Writing will begin for the Research Information Letter on transient CHF capability.

6. Problems and Potential Problems

None

1. 189a A6042 - Containment Analysis Development

2. Scheduled Milestones for May 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| New | Developmental Assessment Report | 5-30-80E | 6-2-80C |

3. Summary of Work Performed in May 1980

The BEACON/MOD3 Development Assessment Report was completed. Work on the remaining assessment problems has been halted pending receipt of additional computing funds. Emphasis has been placed on improving the interphasic drag calculation in the code instead, along with time-step and other miscellaneous features.

4. Scheduled Milestones for June 1980

No scheduled milestones for June.

5. Summary of Work to be Performed in June 1980

Tasks will be performed to improve known deficiencies in the code.

6. Problems and Potential Problems

The $70K additional funding for assessment computing has not yet been received in A6042. As a result the assessment task has been postponed and an investigation of the interphase drag problem is being conducted. If the $70K does not become available then the assessment computing will not be undertaken until FY-81.

1. 189a A6050 - Fuel Behavior Model Development

2. Scheduled Milestones for May 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| L8, N2<br>Page 2-11 | FASTGRASS Link with FRAPCON-2 | 5-19-80E | 6-2-80C |

3. Summary of Work Performed in May 1980

a. FRAPCON-2

FRAPCON-2 was linked with FAST/GRASS and AXISYM. Limited effort was spent on dynamically dimensioning FRACAS-II because of problems encountered on FAST/GRASS. The FRAPCON-1 EM models were incorporated in FRAPCON-2. Several errors were corrected and input decks were setup and debugged.

b. FRAP-T6

Incorporation of FAST/GRASS in FRAP-T6 was initiated. The R-θ heat conduction model was dynamically dimensioned. Checkout of the the capability for θ-varying surface heat transfer boundary conditions was completed. A nonuniform gap size model was developed. This model and the GAPCON-THERMAL-2 gap conductance model were incorporated in FRAP-T6 and checked out. Linking FRAP-T6 and MATPRO-11, Revision 1 was initiated.

c. Special Projects

Cladding shapes at burst for the MRBT Test SR-37 were compared with BALOON-2 calculated shapes. The comparisons were incorporated in a presentation for the June information eschange in Germany. A letter report describing the FRAPCON-1-EM code version was released.

4. Scheduled Milestones for June 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| 36108<br>Page 2-11 | FRAPCON-2 Development Assessment | 6-16-80 | 7-21-80 |

5. Summary of Work to be Performed in June 1980

a. FRAPCON-2

Developmental assessment will continue in cooperation with Pacific Northwest Laboratory (PNL). A preliminary code version will be established which incorporates all final updates from PNL. All

5. Summary of Work to be Performed in June 1980 (Contd.)

a. FRAPCON-2 (Contd.)

developmental assessment cases will be checked out and running of the final developmental assessment cases will begin.

b. FRAP-T6

Work will continue on incorporating FAST/GRASS in FRAP-T6. Documentation of the θ-varying surface heat transfer boundary conditions model will be prepared. The dynamically-dimensioned FRACAS-II subcode will begin to be incorporated in FRAP-T6. Updates will be included to allow for PCMI above 1600K. After completion of the MATPRO, Revision 1 link, work will begin to include a transient coolant enthalpy rise model.

c. Special Projects

Preparation of a Code Development and Analysis Program (CDAP) report describing AXISYM will begin. A CDAP report describing FRIDA will be released. Work will continue on coding the BALOON-2 model for incorporation in FRAP-T6. The FRAPCON-1 EGG report will be essentially completed.

6. Problems and Potential Problems

The developmental assessment and documentation completion dates were rescheduled to reflect greater than expected coding problems and delays due to interfacing with PNL. This has resulted in a projected five week slip in completion of the FRAPCON-2 developmental assessment.

WRRD MONTHLY REPORT FOR

MAY 1980

CODE ASSESSMENT & APPLICATIONS PROGRAM

E. L. Pierson
Plans & Budget Representative

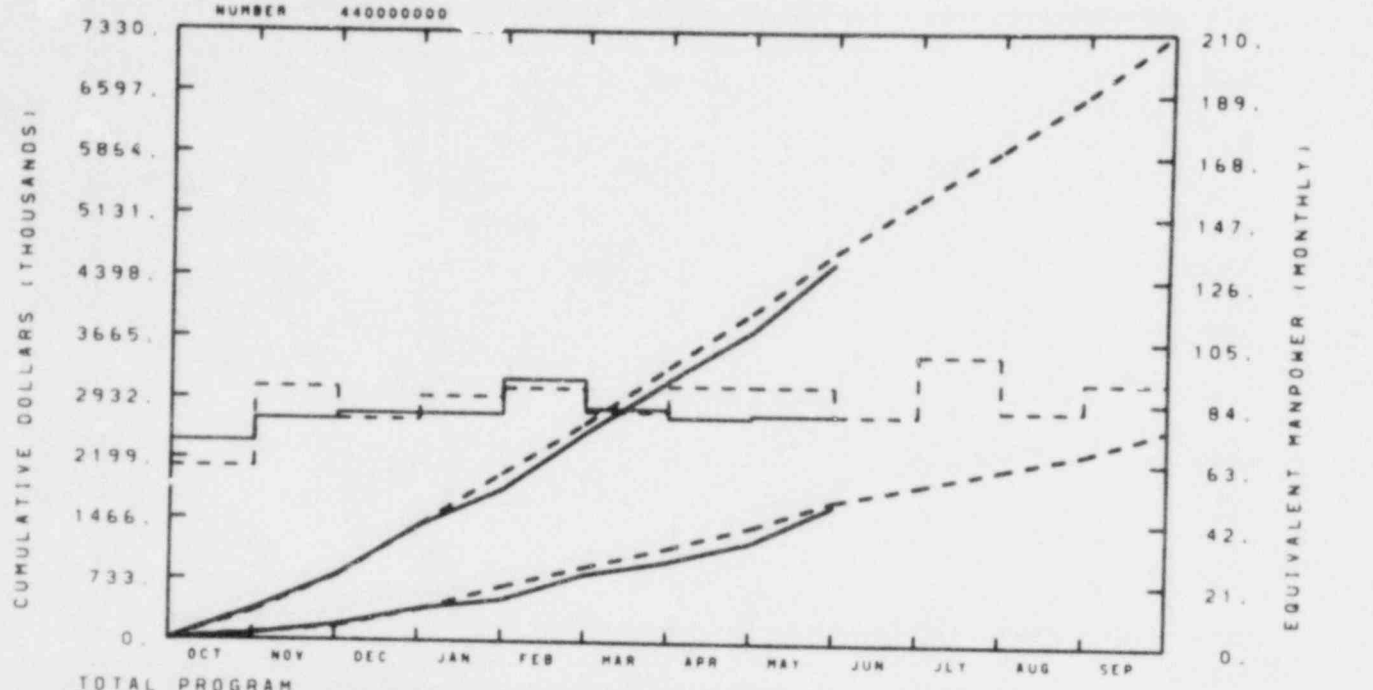
C. O. Buchanan for
J. A. Dearien, Manager

CODE ASSESSMENT & APPLICATIONS PROGRAM

COST SUMMARY & COMMENTS

EG&G IDAHO INC.

CODE ASSESSMENT & APPLICATIONS




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 342 | 777 | 1387 | 2029 | 2643 | 3333 | 4022 | 4757 | 5423 | 6028 | 6678 | 7402 |
| ACTUAL | 371 | 784 | 1391 | 1832 | 2527 | 3170 | 3766 | 4664 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 81 | 167 | 375 | 661 | 904 | 1143 | 1399 | 1717 | 1912 | 2113 | 2314 | 2620 |
| ACTUAL | 71 | 187 | 389 | 504 | 814 | 980 | 1215 | 1663 | | | | |

BUDGET - - - - -

ACTUAL ———

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 60 | 88 | 77 | 85 | 88 | 80 | 89 | 89 | 79 | 100 | 81 | 91 |
| ACTUAL | 69 | 77 | 79 | 79 | 91 | 81 | 78 | 79 | | | | |

YTD VARIANCE: 93 (2%)

Individual cost graphs will give individual explanations.

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

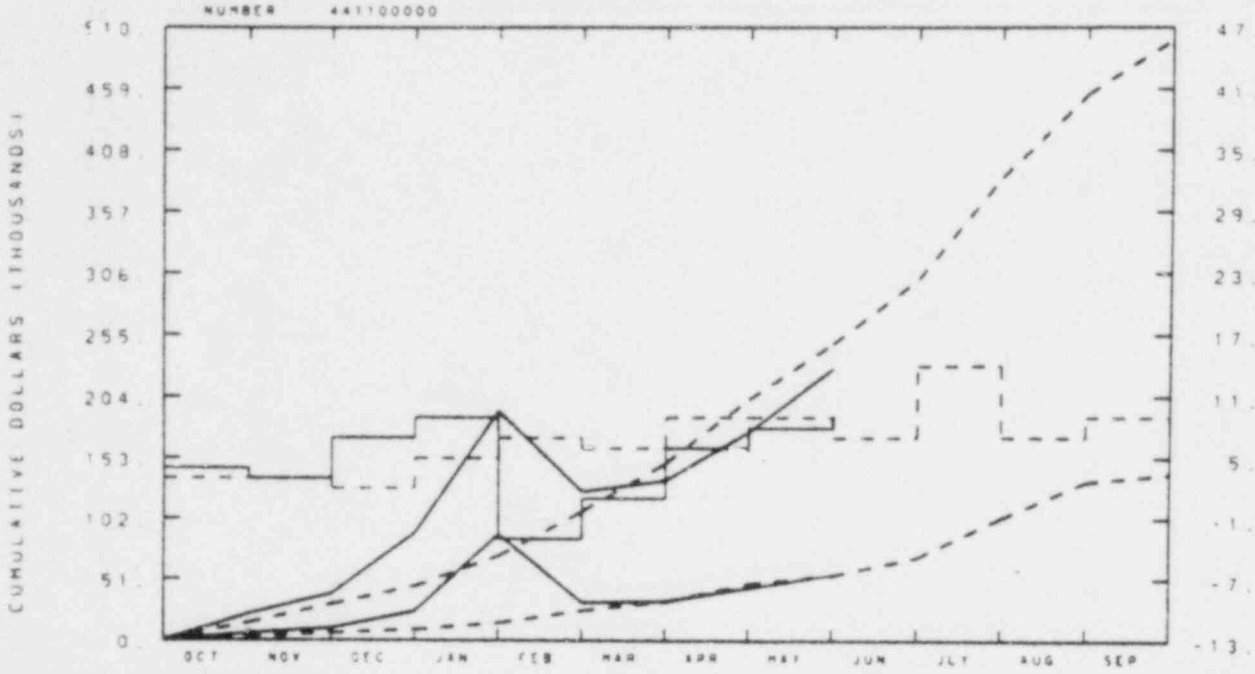
Any change on the Code Assessment & Applications Program overall cost graph is due to changes noted on the cost graphs for A6157, A6209, and A6269.

ESPONSIBLE
ANAGER
A DEARIEN

EG&G IDAHO INC

TECH SUR FOR NRC/INDUST COOP PRO

NUMBER 441100000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 15 | 30 | 45 | 71 | 108 | 149 | 202 | 248 | 301 | 384 | 455 | 500 |
| ACTUAL | 22 | 35 | 90 | 192 | 125 | 134 | 175 | 224 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 3 | 6 | 9 | 15 | 25 | 33 | 48 | 54 | 69 | 102 | 123 | 139 |
| ACTUAL | 6 | 10 | 24 | 89 | 32 | 33 | 44 | 55 | | | | |

MANPOWER

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

BUDGET

ACTUAL

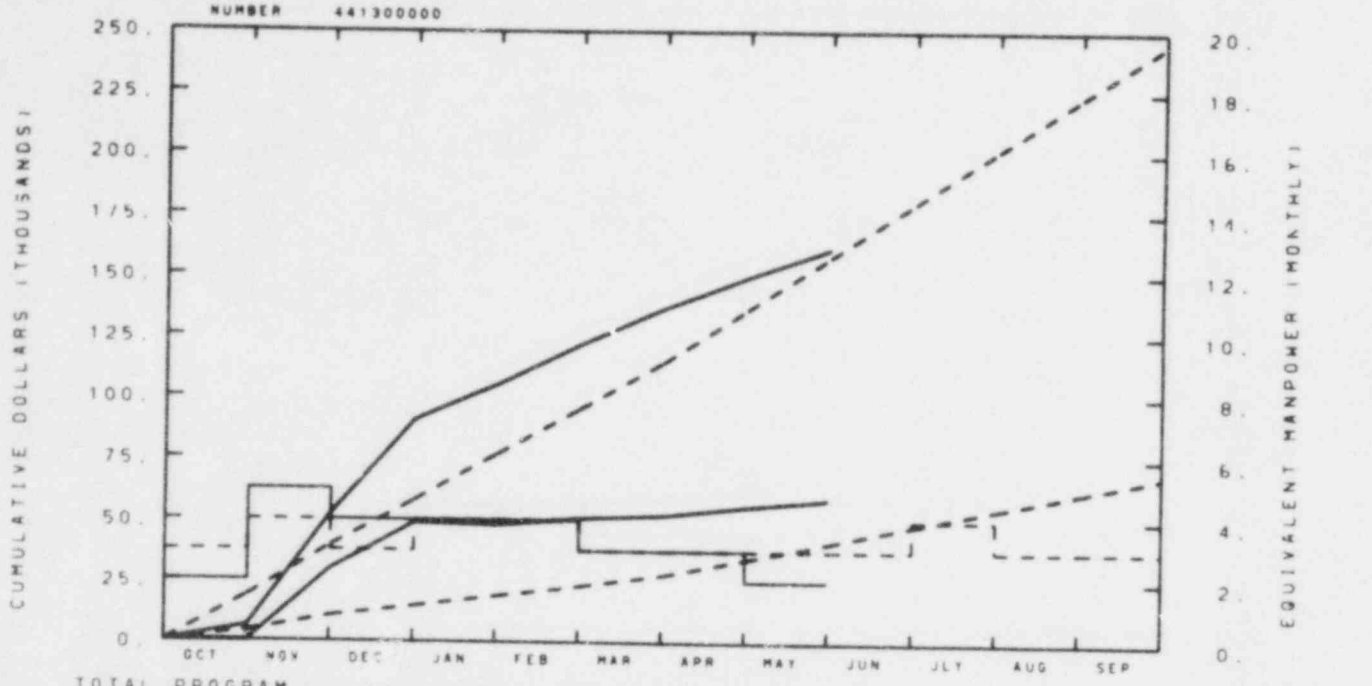
A6039

YTD VARIANCE: 24 (10%)

RESPONSIBLE
MANAGER
J A DEARIEN

EG&G IDAHO INC.

FUEL CODE ASSESSMENT A6046




TOTAL PROGRAM

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

MATERIAL

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

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 3 | 4 | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 3 | 3 |
| ACTUAL | 2 | 5 | 4 | 4 | 4 | 3 | 3 | 2 | | | | |

BUDGET - - - - -

ACTUAL ———

A6046

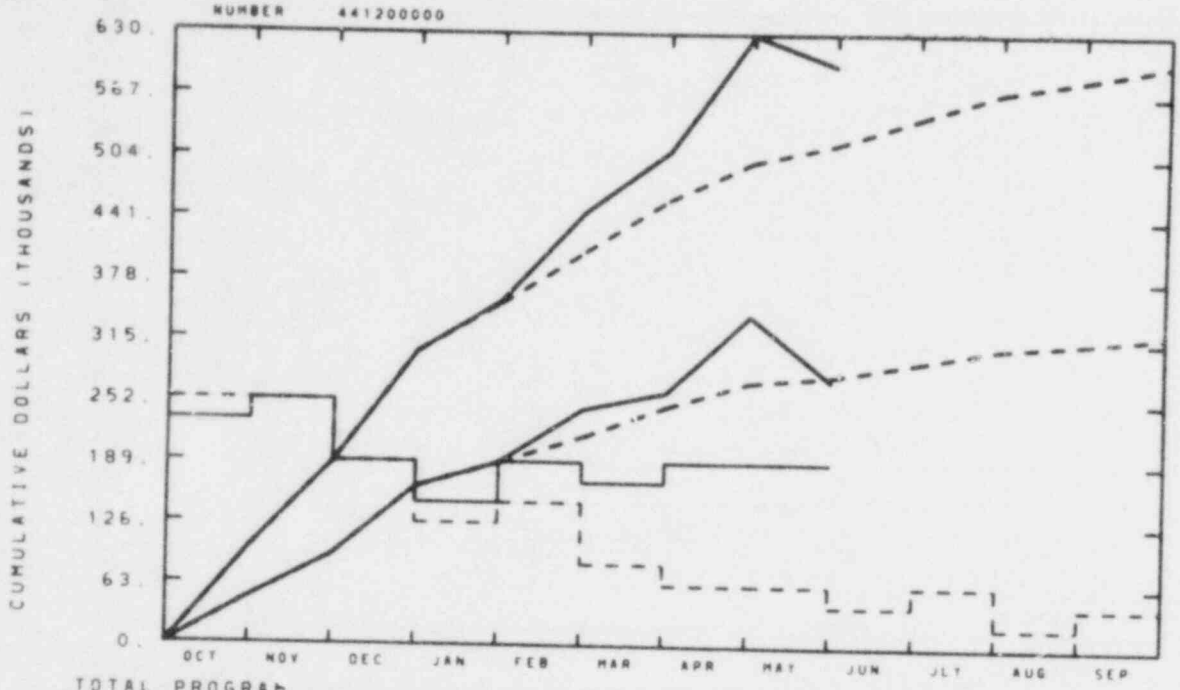
YTD VARIANCE: <3> (2%)

RESPONSIBLE MANAGER
J A DEARIEN

EG&G IDAHO INC.

THERMAL HYDRAULIC CODE AS A6047

NUMBER 441200000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 99 | 188 | 302 | 353 | 406 | 460 | 499 | 518 | 545 | 572 | 585 | 600 |
| ACTUAL | 99 | 188 | 302 | 355 | 448 | 510 | 629 | 598 | | | | |

MATERIAL

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

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6047

YTD VARIANCE: <80> (15%)

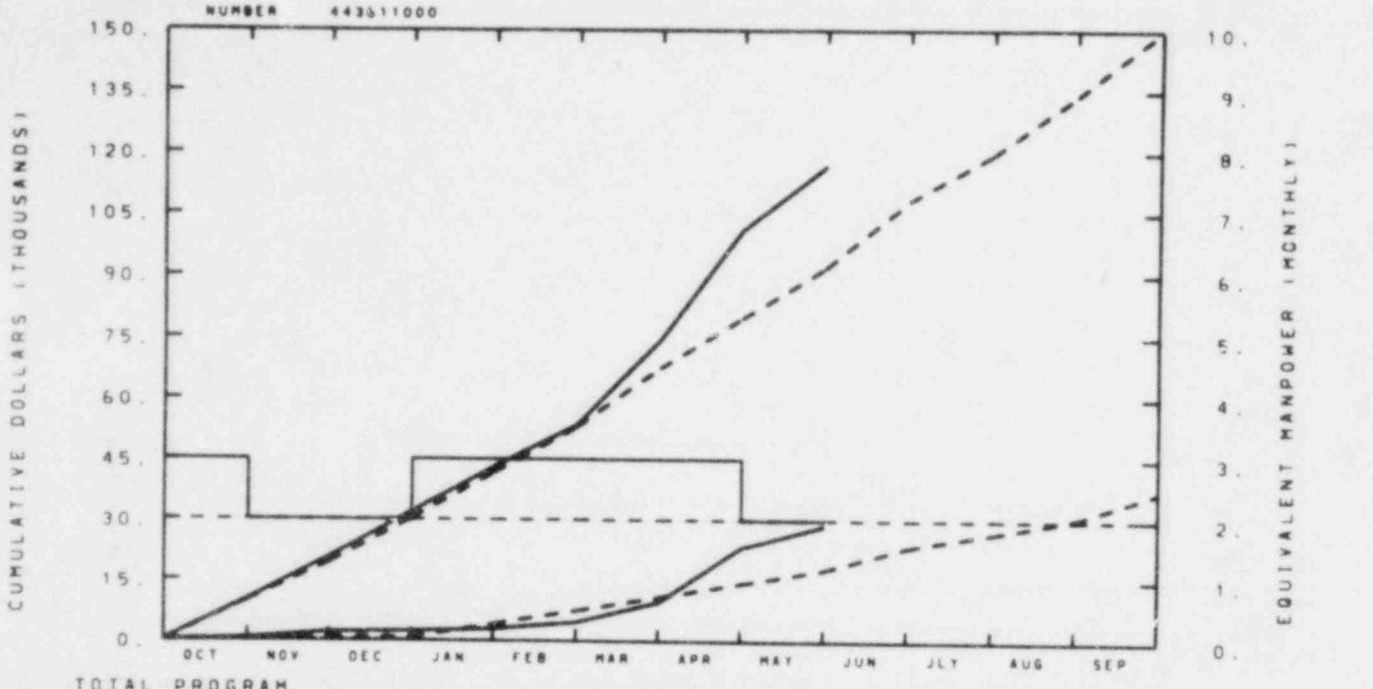
An additional funding transfer for this task is still anticipated. The scope of this task will be decreased until an additional funding transfer has been completed.

RESPONSIBLE MANAGER
J. A. GARRIEN

EG&G IDAHO INC.

STAND PROB ANALY & HEAT A6048B

NUMBER 443611000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 10 | 19 | 30 | 42 | 53 | 68 | 80 | 92 | 108 | 120 | 134 | 150 |
| ACTUAL | 10 | 21 | 32 | 43 | 54 | 74 | 101 | 113 | | | | |

MATERIAL

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

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| ACTUAL | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 2 | | | | |

BUDGET - - - - -

ACTUAL ———

A6048B

YTD VARIANCE: <25> (27%)

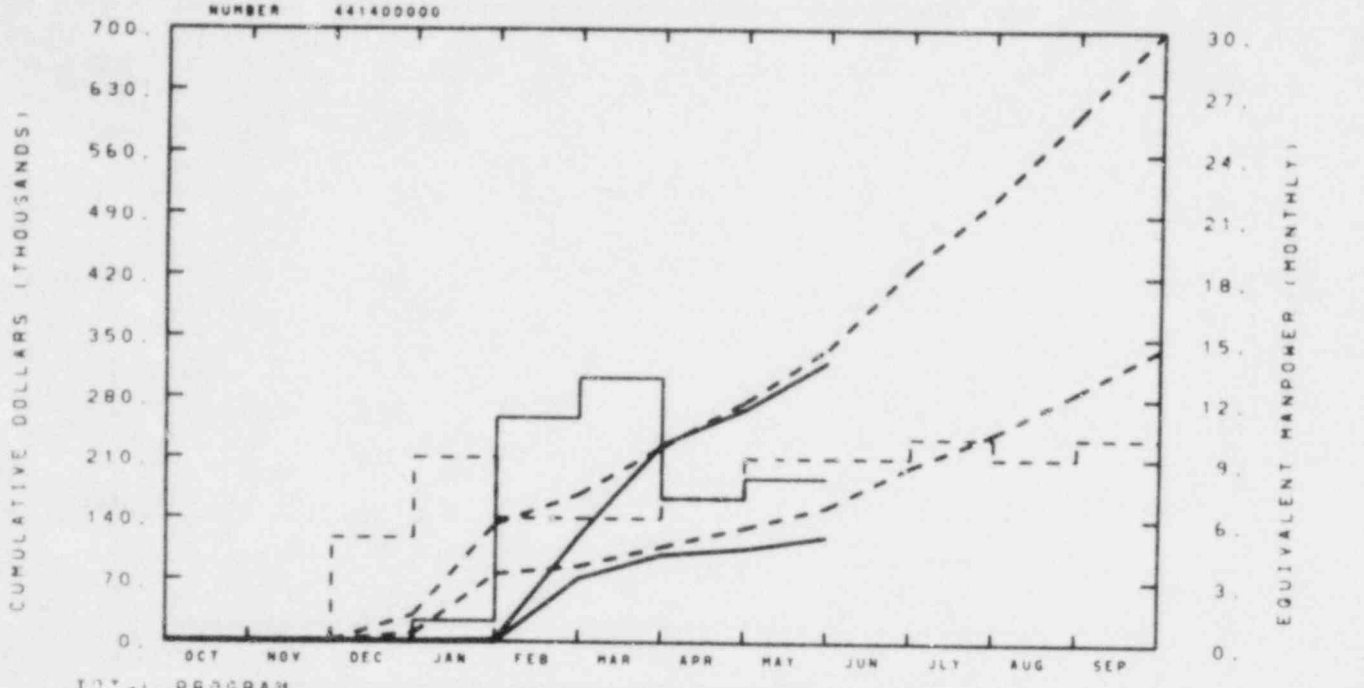
The increase in manpower and material costs reflect efforts on tasks whose schedules were dependent on the receipt of information from the Nuclear Regulatory Commission. The effort will be above budget for the next three months and below budgeted costs for the duration of FY-1980.

RESPONSIBLE
MANAGER
J A DEARIEN

EG&G IDAHO INC.

BWR/PWR TASK FORCE 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 | 267 | 322 | | | | |

MATERIAL

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

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6048C

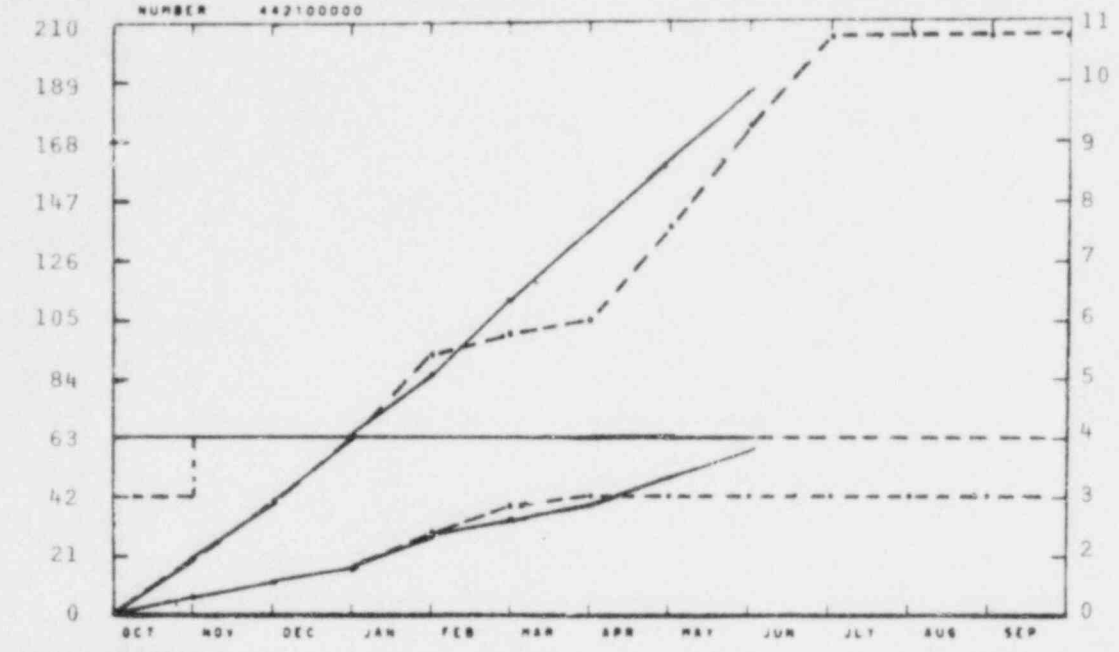
YTD VARIANCE: 15 (4%)

RESPONSIBLE MANAGER
J A DEARIEN

EG&G IDAHO INC.

NRC/RSR DATA BANK & HEAT TRANS

NUMBER 442100000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 21 | 35 | 64 | 90 | 116 | 109 | 138 | 171 | 205 | 205 | 205 | 205 |
| ACTUAL | 21 | 38 | 63 | 85 | 110 | 135 | 159 | 185 | | | | |

MATERIAL

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

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| ACTUAL | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | | | | |

BUDGET - - - - - -

ACTUAL ———

A6102

YTD VARIANCE: <14> (8%)

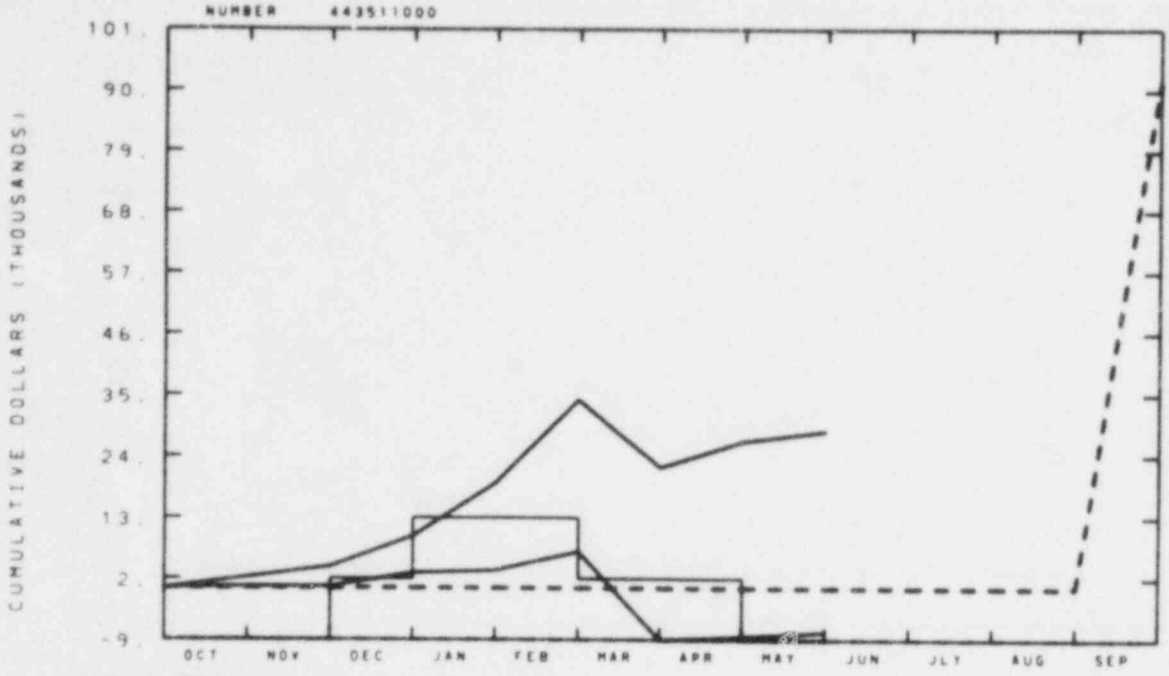
It is anticipated that present funding for this task will be utilized by mid-June. If anticipated additional funding is not received, work scope will be adjusted accordingly.

RESPONSIBLE
MANAGER
J A DEARIEN

EG&G IDAHO INC.

PREP OF DOC FOR TAP-A1 A6279

NUMBER 443511000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 91 |
| ACTUAL | 2 | 4 | 9 | 19 | 34 | 22 | 26 | 28 | | | | |

MATERIAL

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

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ACTUAL | 0 | 0 | 1 | 2 | 2 | 1 | 1 | 0 | | | | |

A6279

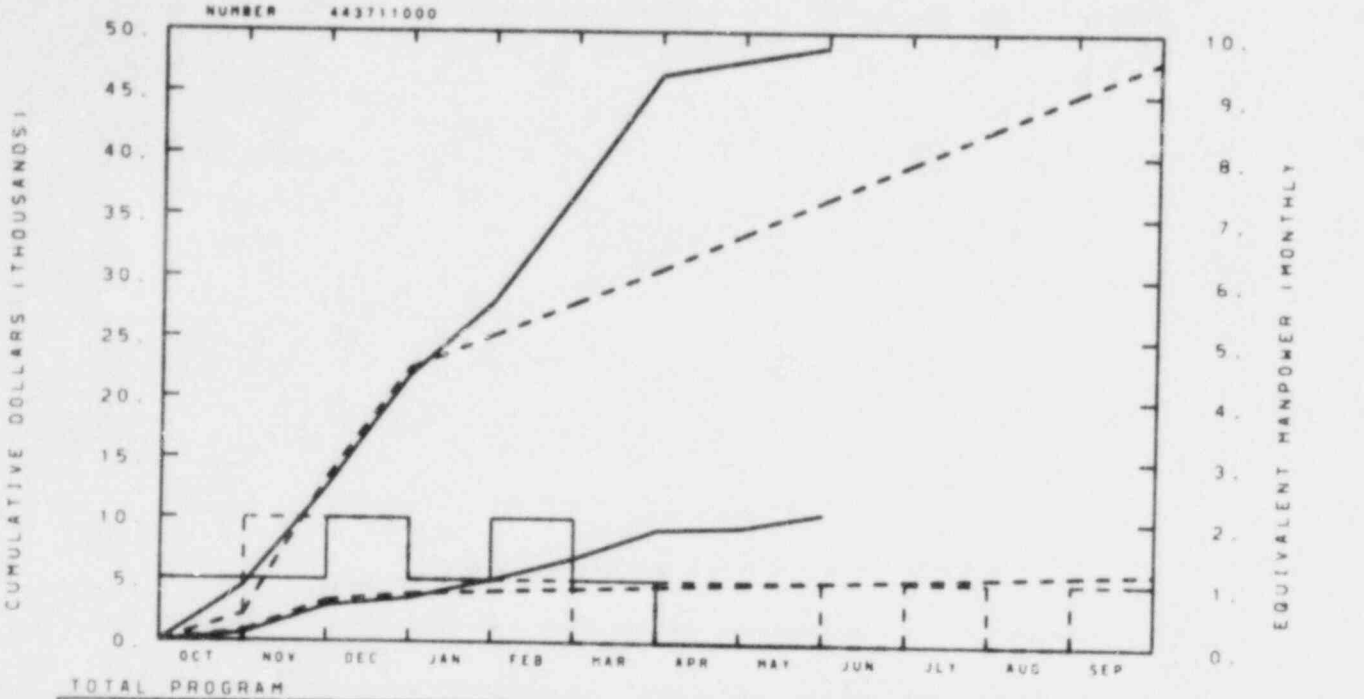
YTD VARIANCE: <28>

Funding has now been authorized under FIN A6304 and $11.2 K costs have been transferred from this FIN to A6304. Work on this task will continue to be conducted on an "as requested" basis until a definite work scope is defined.

SIBLE
MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

HDR COMP RESPONSE ANALYSIS A6285




TOTAL PROGRAM

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

MATERIAL

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

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 2 | 2 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 |
| ACTUAL | 1 | 1 | 2 | 1 | 2 | 1 | 0 | 0 | | | | |

BUDGET - - - - - -

ACTUAL ———

A6285

YTD VARIANCE: <13> (36%)

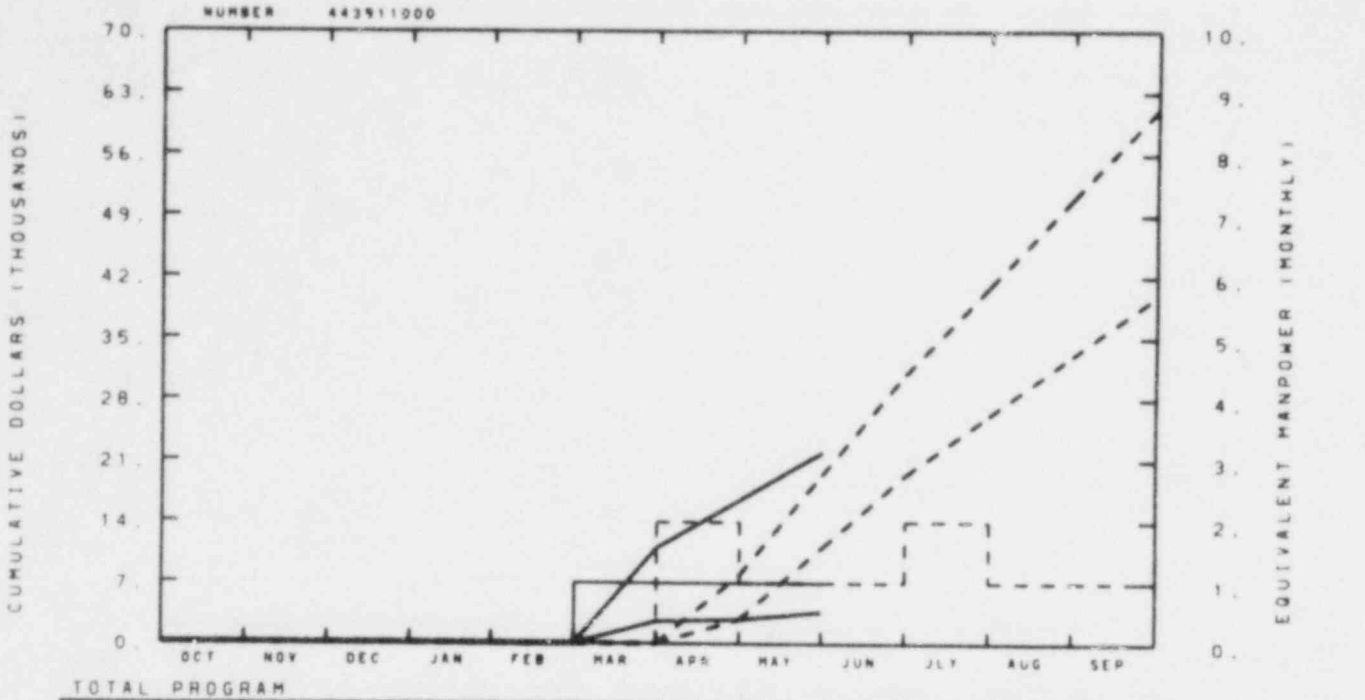
This task has been completed ahead of schedule. A draft report has been prepared.

RESPONSIBLE
MANAGER
J A DEARIEN

EG&G IDAHO INC.

RESIDENT ENGINEER GERMANY A6304

NUMBER 443911000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 19 | 31 | 41 | 51 | 61 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 11 | 17 | 22 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11 | 19 | 26 | 33 | 40 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 4 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 2 | 1 | 1 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | | | | |

A6304

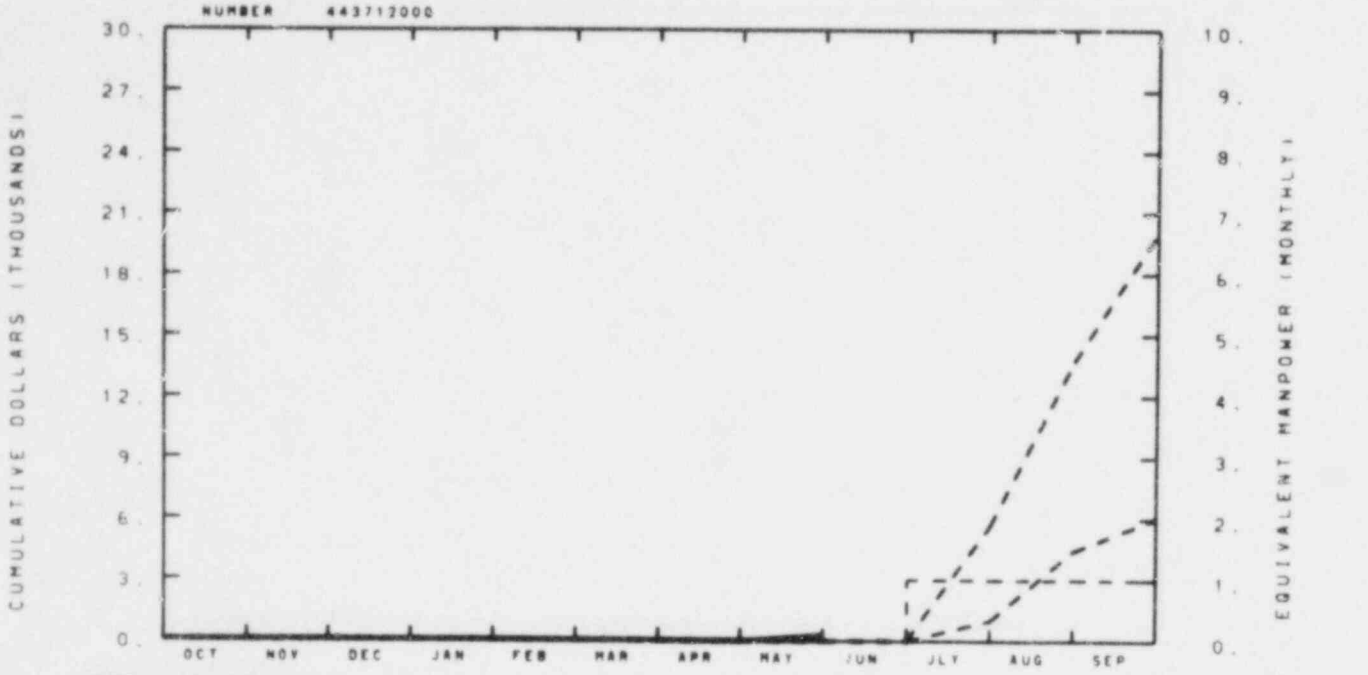
YTD VARIANCE: <3> (16%)

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 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 6 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6306

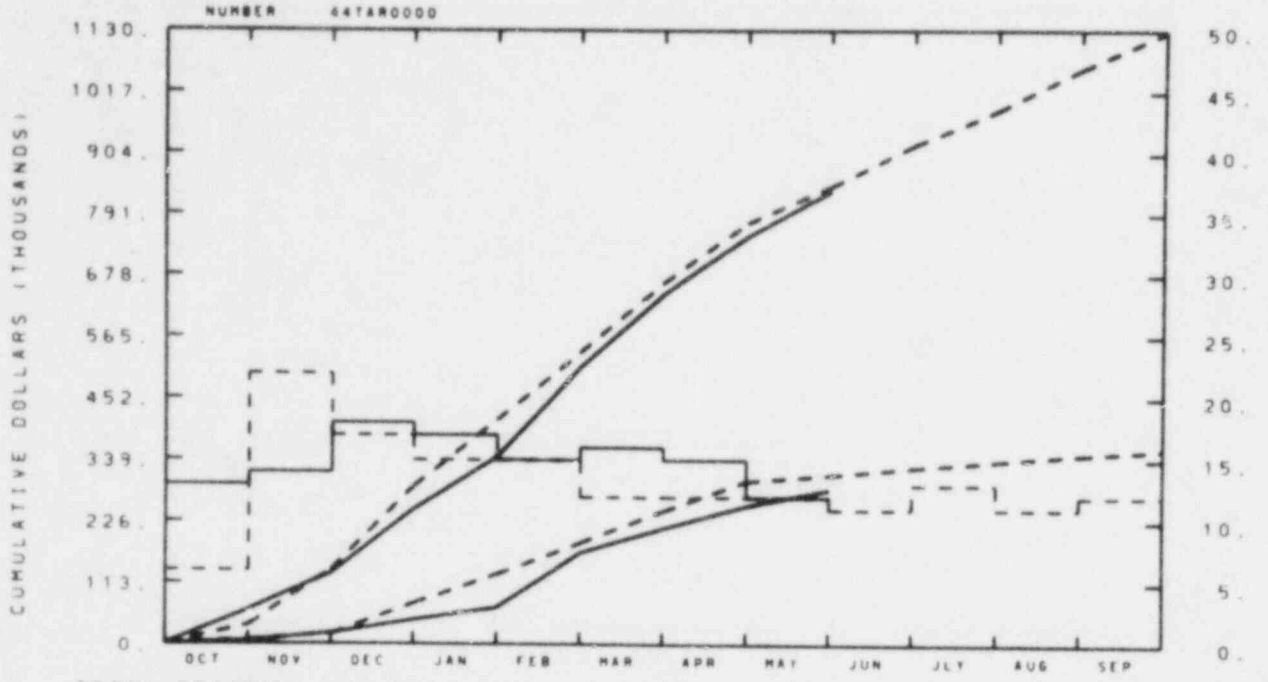
YTD VARIANCE: 0

RESPONSIBLE MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

NRR/PAS TECHNICAL SUPPORT

NUMBER 64TAR0000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 35 | 137 | 291 | 413 | 537 | 665 | 776 | 844 | 921 | 985 | 1060 | 1121 |
| ACTUAL | 63 | 131 | 249 | 335 | 510 | 644 | 751 | 835 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 8 | 19 | 35 | 129 | 187 | 246 | 301 | 312 | 326 | 337 | 349 | 358 |
| ACTUAL | 6 | 20 | 45 | 68 | 149 | 214 | 256 | 285 | | | | |

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

YTD VARIANCE: 9 ( 1%)

| | | |
|---|---|---|
| A6276 | 2 | ( 1%) |
| A6283 | 0 | |
| A6290 | <21> | (19%) |
| A6291 | <10> | (12%) |
| A6293 | < 6> | (14%) |
| A6294 | 26 | (17%) |
| A6296 | 18 | (14%) |

CODE ASSESSMENT & APPLICATIONS PROGRAM

CURRENT WORKING SCHEDULE

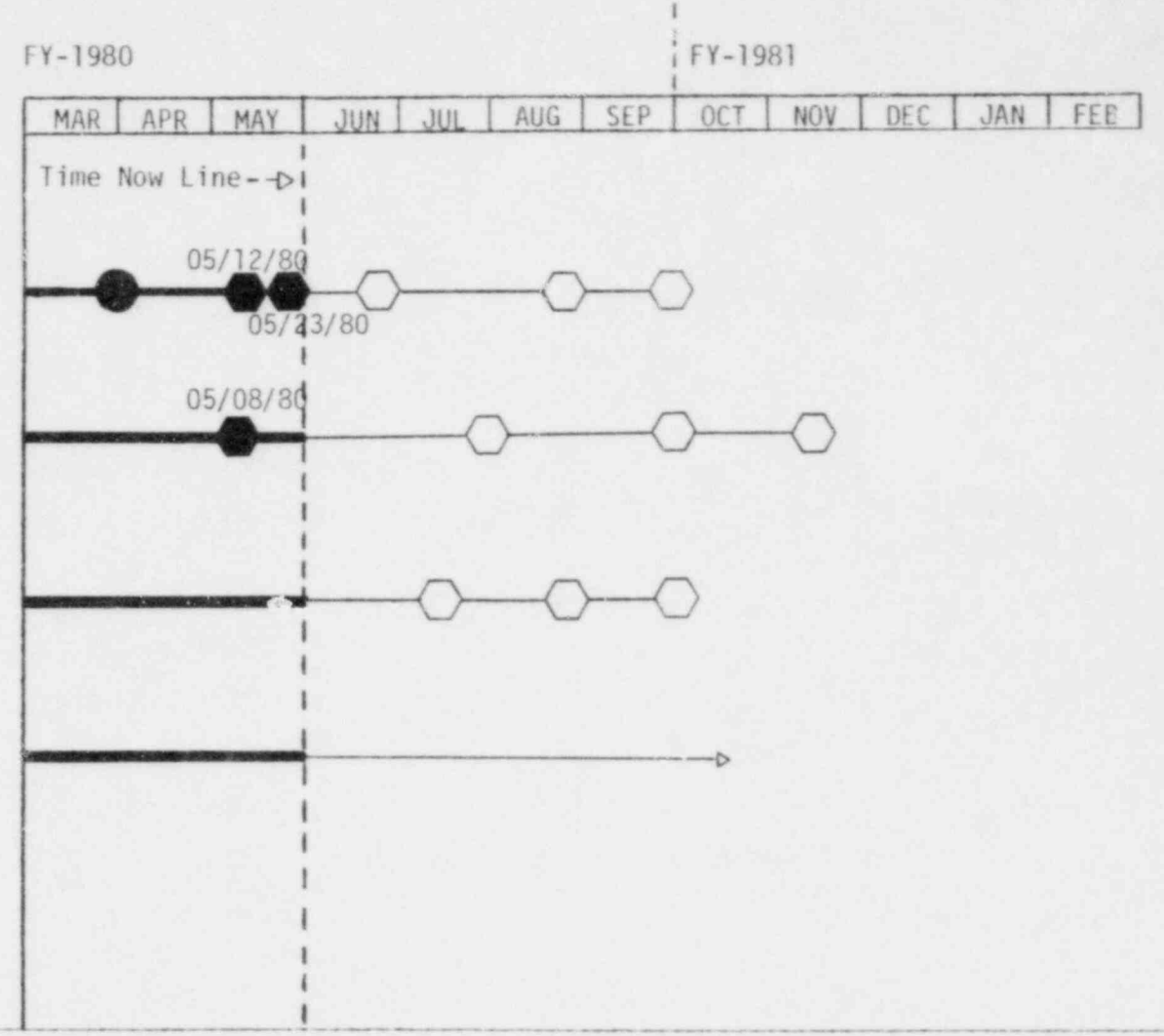
LEGEND

- 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

May 1980

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




NOTES:

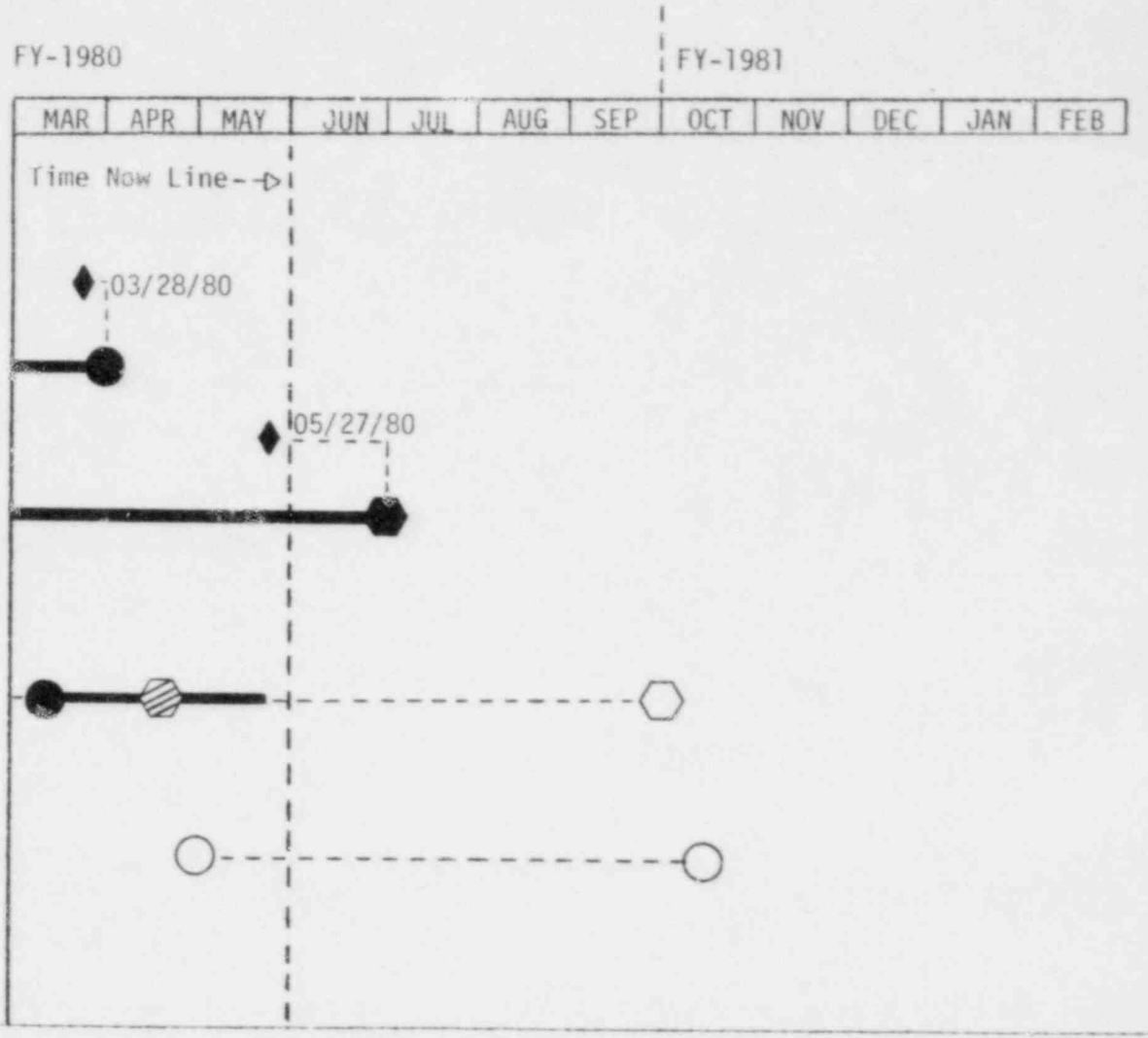
LEGEND

- 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

May 1980

Fuel Code Assessment (A6046)



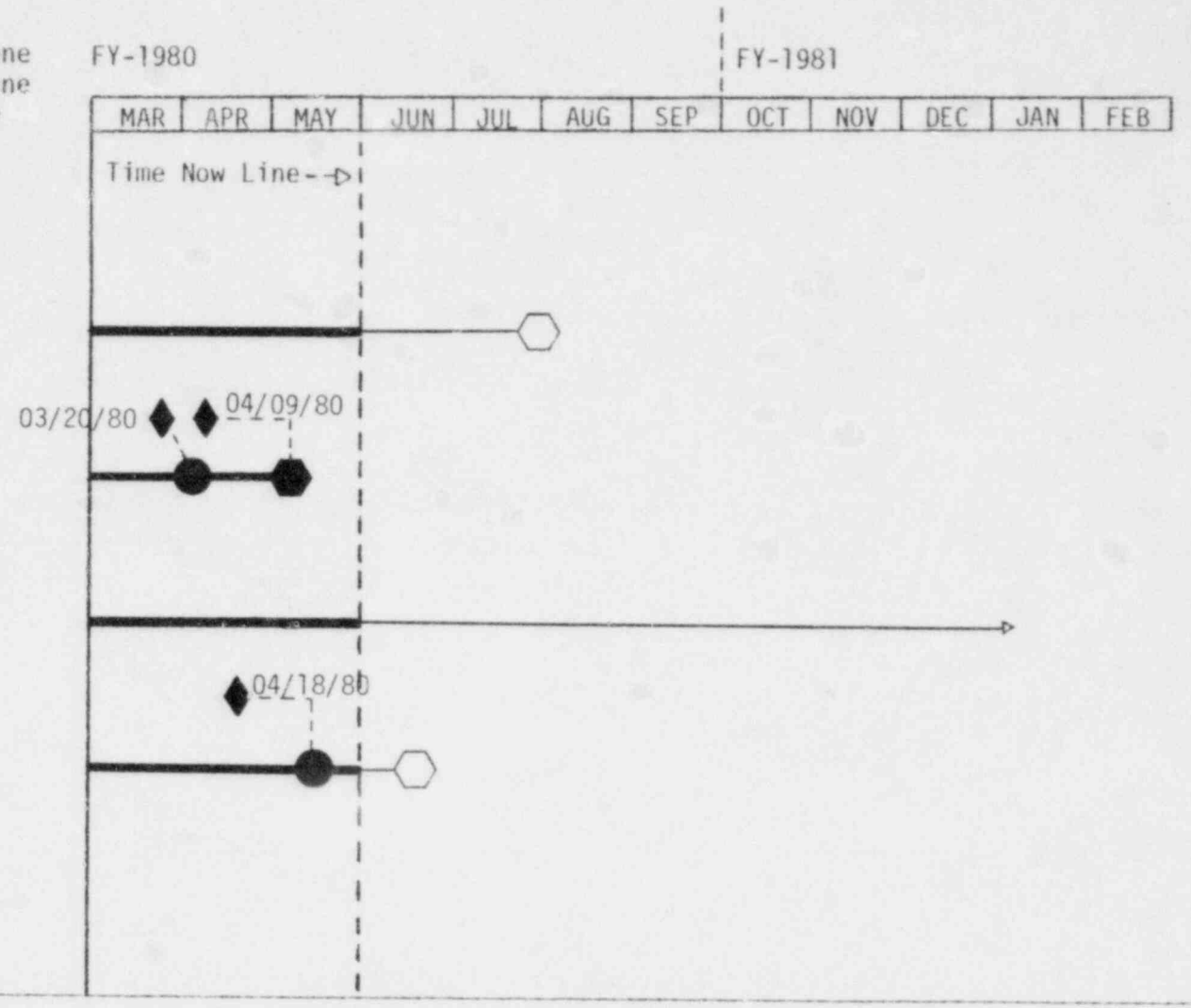

NOTES:

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 May 1980

LOCA Analysis Assessment and Applications (A6047)




NOTES:

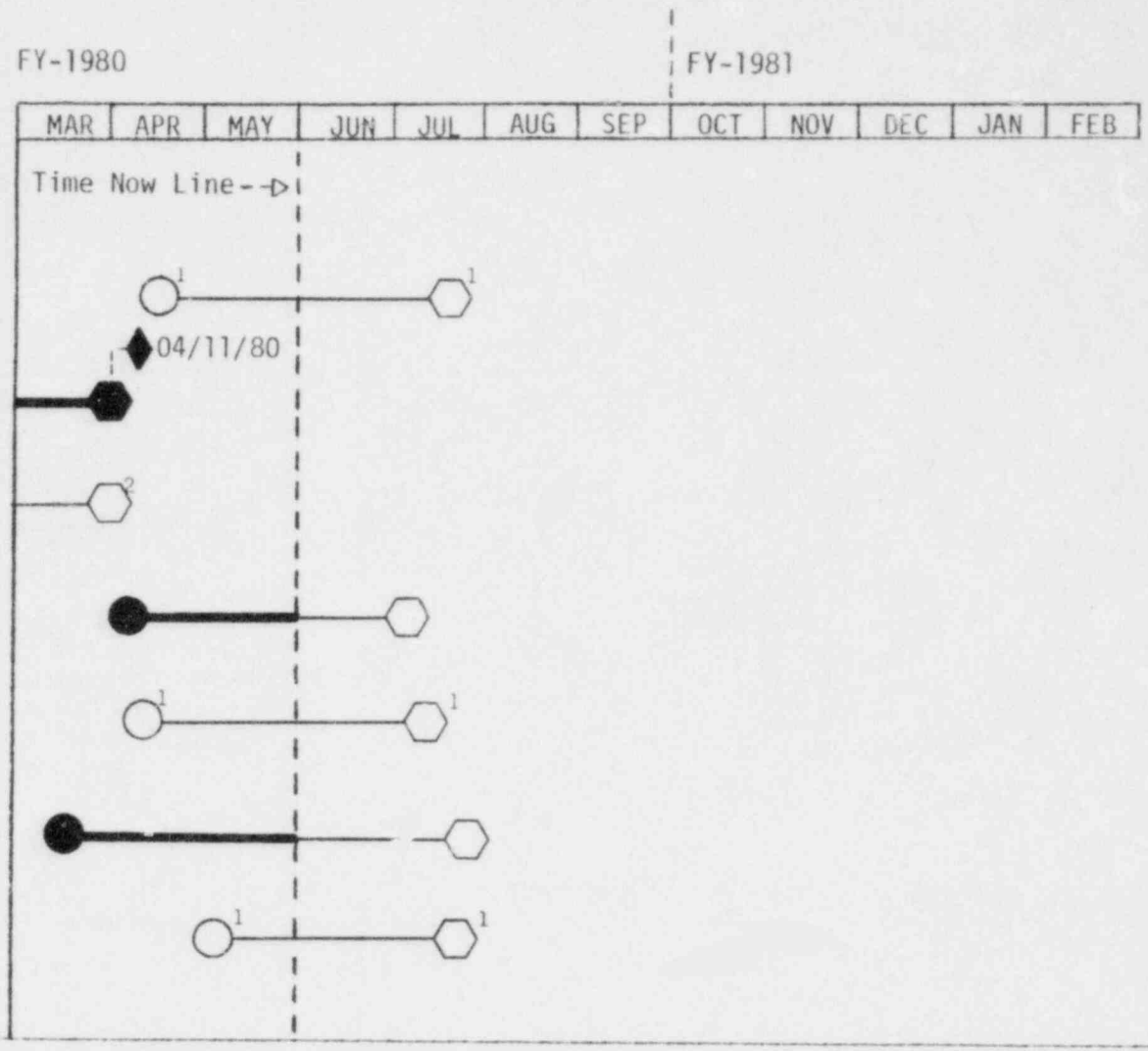
LEGEND

- 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

Standard Problem (A6048B)

May 1980




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.

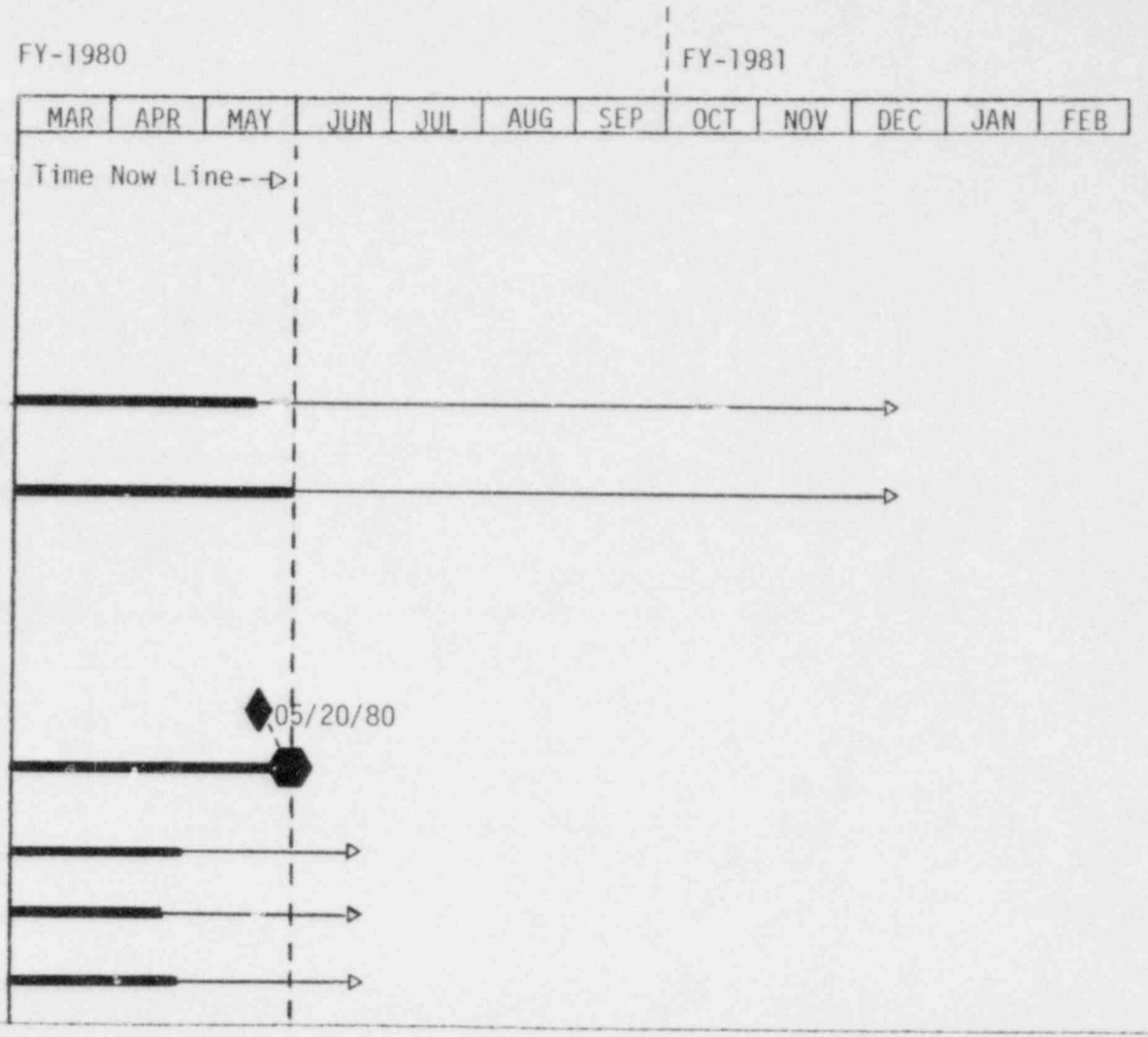
LEGEND

- 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

May 1980

BWR/PWR Task Force (A6048C)



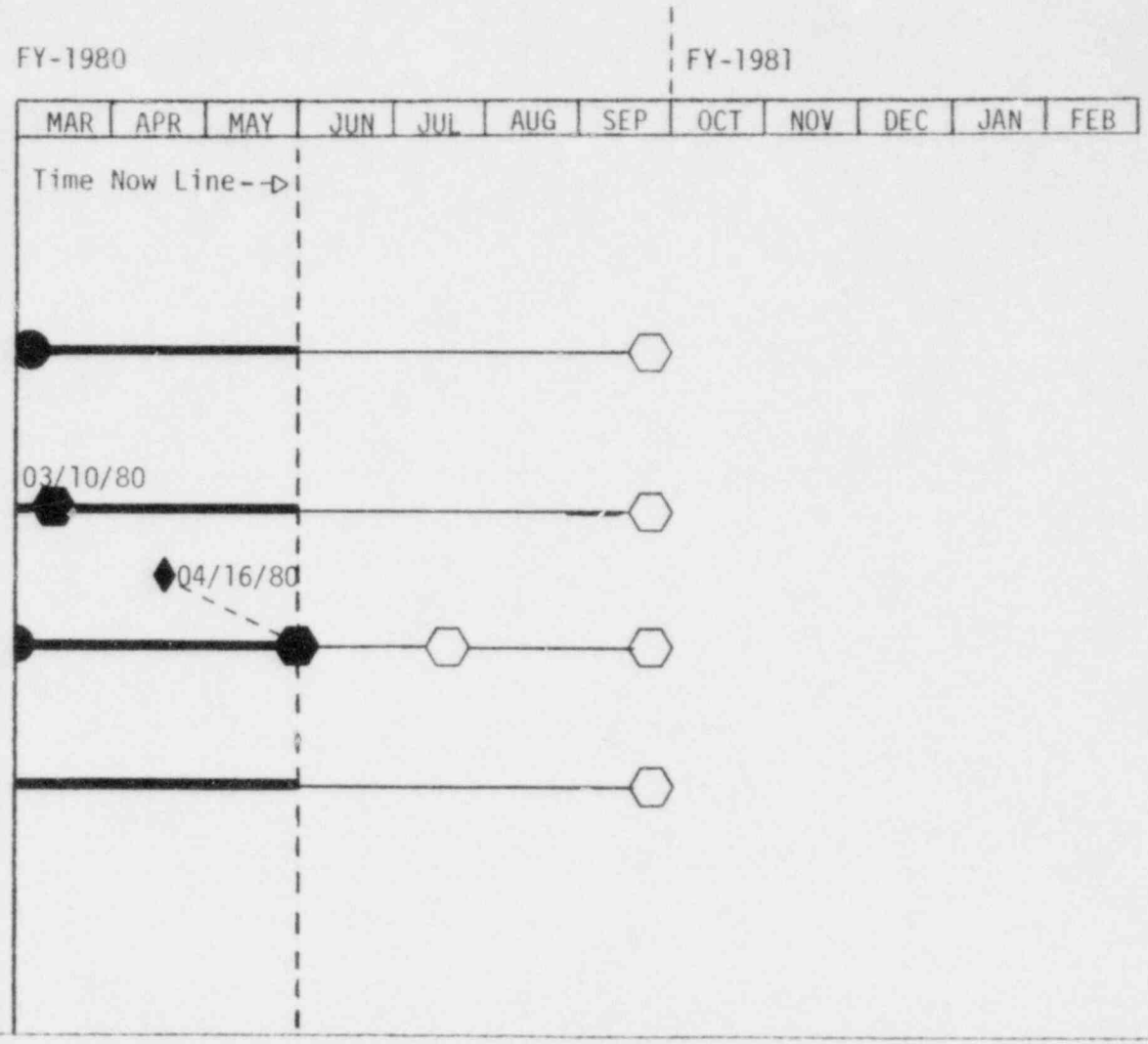

NOTES:

LEGEND

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

CODE ASSESSMENT AND APPLICATIONS PROGRAM May 1980

Data Bank Processing System (A6102)




NOTES: * Dependent on additional funding.

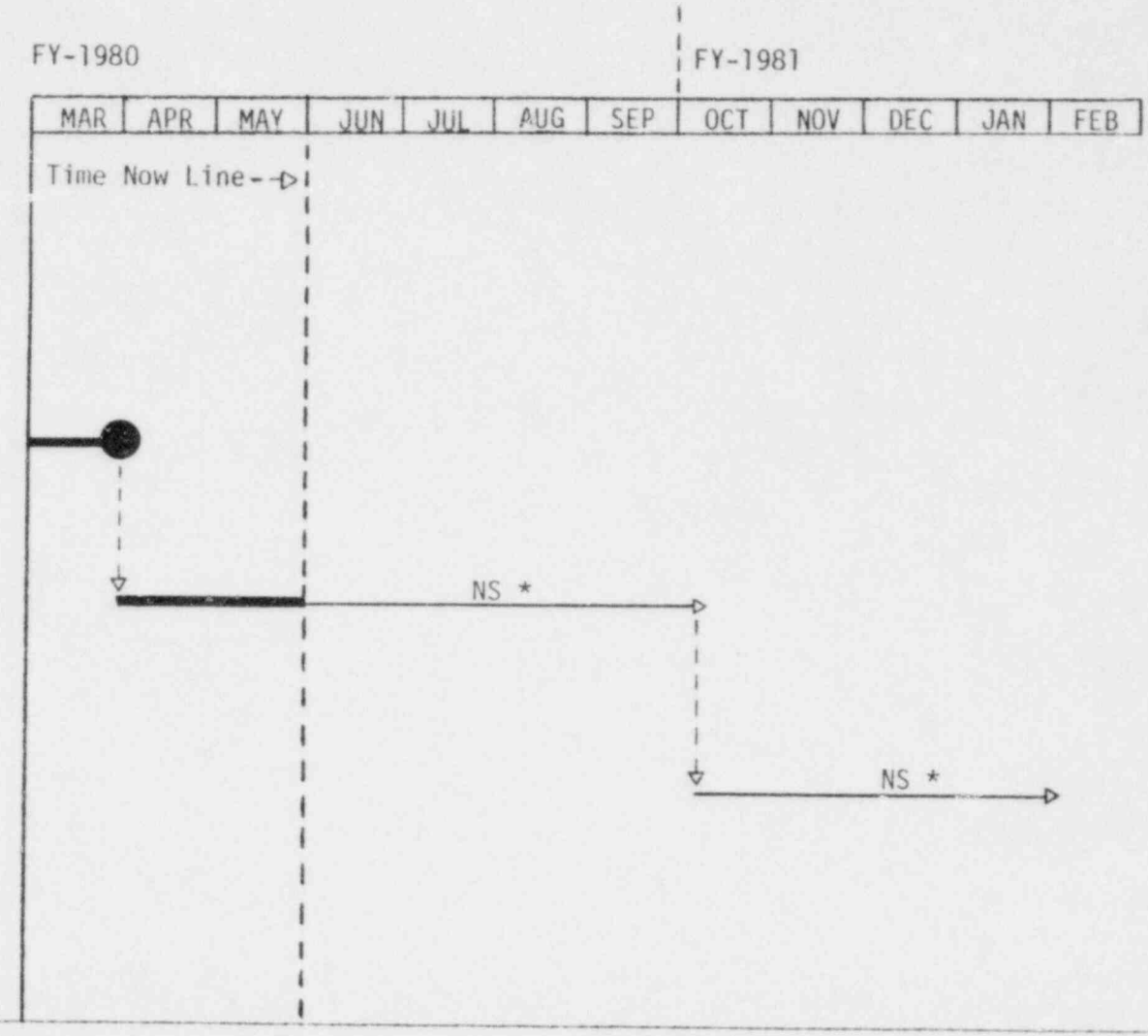
LEGEND

- 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

May 1980

HDR Mechanical Component Response Analysis (A6306 [A6285])




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

CODE ASSESSMENT & APPLICATIONS PROGRAM

TECHNICAL REVIEW & SUMMARY

PROGRAM MANAGER'S
SUMMARY AND HIGHLIGHTS

A camera-ready copy of a report prepared by Science Applications Inc., entitled, "Light Water Reactor Status Monitoring During Accident Conditions" was sent to NRC-PAS for issue as NUREG/CR-1440.

A report describing an analysis of Loss-of-Offsite Power in a PWR was completed. This is the first report which documents Severe Accident Sequence Analysis (SASA) for PWRs. A test prediction for TLTA Small Break Test No. 2 was completed, as well as the two code-data comparisons for FLECHT-SEASET test.

Data from several different facilities is being added to the data bank and it is now expected that over 50 tests will be added this year instead of 35.

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

2. Scheduled Milestones for May 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| | TLTA Small Break Test No. 2 | 5-31-80T | 5-7-80C |
| | FLECHT-SEASET Boil-Off Test | 5-12-80T | 5-12-80C |
| | Data Comparison for FLECHT-SEASET 161 Rod Unblocked Bundle Test No. 4 | 5-27-80T | 5-23-80C |

3. Summary of Work Performed in May 1980

The TLTA (Two Loop Test Apparatus) Test Prediction and FLECHT-SEASET (Full Length Emergency Cooling Heat Transfer-Separate Effects and System Effects Tests) Data Comparisons listed under Item 2 were completed and issued on schedule. Work on the BWR-R/R (Boiling Water Reactor-Refill Reflood) Single Heated Bundle Separate Effects Test Prediction continued. A review of six program documents within the BWR-R/R program was initiated.

4. Scheduled Milestones for June 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|

None scheduled.

5. Summary of Work to be Performed in June 1980

The BWR-R/R Test Prediction described in Item 3 will be continued. The review of the BWR-R/R program documents will be completed. With NRC concurrence, an in-depth natural circulation study for the FLECHT-SEASET System Effects Facility will be initiated.

6. Problems and Potential Problems

None

1. Task A6046 - Fuel Behavior Analysis Assessment

2. Scheduled Milestones for May 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|

None scheduled.

3. Summary of Work Performed in May 1980

The conversion of all steady state input decks to FRAPCON-2 format was initiated. About 15 changes to each deck will be required. As a test case, the BWR commercial rod deck was successfully converted and run using FRAPCON-2. However, problems with FRAPCON-2 results were identified to the code developers, who are investigating the problem.

The subset of code assessment data base runs to be used to evaluate the numerous gas release models in FRAPCON-2 was selected.

The FRAPCON-1 assessment formal report was issued as NUREG/CR-1339. This issuance is one month ahead of schedule.

4. Scheduled Milestones for June 1980

| Node | Description | Due Date | Actual |
|---|---|---|---|

None scheduled.

5. Summary of Work to be Performed in June 1980

All remaining FRAPCON-1 input decks will be converted to FRAPCON-2 format. When FRAPCON-2 is frozen, checkout of the converted decks will begin, as well as a rerunning of the commercial rod decks.

6. Problems and Potential Problems

None

1. A6047 - LOCA Analysis Assessment and Applications

2. Scheduled Milestones for May 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| | RELAP4/MOD6 Calc. for LOBI A1-04C Issue PAR & Tape | 5-1-80T | 4-9-80C |

3. Summary of Work Performed in May 1980

A TRAC-P1A calculation of Semiscale Test S-04-6 was repeated. TRAC-P1A calculations for a 4 inch diameter cold leg break, 10 inch diameter cold leg break and a 200% cold leg break with 60 ruptured steam generator tubes were completed.

TRAC-P1A calculations for Semiscale MOD-1 Test S-06-3 and Semiscale MOD-1 Test S-07-4 were continued.

4. Scheduled Milestones for June 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| | Prepare first draft of Section in CSNI Critical Flow Report | 6-26-80T | 3-18-80C |
| | S-04-6 Data Comparison (PAR) | 6-18-80 | |

5. Summary of Work to be Performed in June 1980

Three PARs documenting the TRAC-P1A calculations for a PWR will be completed.

A PAR on the TRAC-P1A calculation for Test S-04-6 will be completed.

TRAC-P1A calculations for Tests S-04-6 and S-07-4 will continue.

6. Problems and Potential Problems

Extra funding for this activity has been delayed and may require partial or total suspension of work for the remainder of the FY.

1. I-689 Task A6048B - Standard Problem Analysis & Heat Transfer Assistance

2. Scheduled Milestones for May 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|

None scheduled.

3. Summary of Work Performed in May 1980

A draft of a report on LOFT Test L3-1 was completed. A RELAP4/MOD7 calculation for International Standard Problem 10 was nearly completed.

4. Scheduled Milestones for June 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|

None scheduled.

5. Summary of Work to be Performed in June 1980

The PAR on Test L3-1 comparisons will be completed. A draft of a report on the RELAP4/MOD7 calculations for International Standard Problem 10 will be completed.

6. Problems and Potential Problems

None

1. Task A6048C - Severe Accident Sequence Analysis

2. Scheduled Milestones for May 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| | Perform Analysis & Doc. Loss-of-Offsite Power in a PWR | 5-31-80T | 5-20-80C |

3. Summary of Work Performed in May 1980

A report documenting the Loss-of-Offsite Power scenarios for the Westinghouse Zion I Pressurized Water Reactor was issued.

Calculation of a station blackout for a Boiling Water Reactor was initiated.

Began conversion of Hope Creek RELAP4/MOD5-EM input deck to RELAP4/MOD7-BE using Browns Ferry plant specifics.

Continued investigating BWR event trees for the loss of offsite power scenario.

Completed preliminary investigation of the control system features needed in RELAP to model operational transients.

Continued effort to obtain information concerning Browns Ferry from General Electric.

4. Scheduled Milestones for June 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|

None scheduled.

5. Summary of Work to be Performed in June 1980

Additional analysis for plant recovery from a Loss-of-Offsite Power will be performed.

Fault and event tree analysis for PWR and BWR scenarios will be performed.

Calculation of a station blackout in a BWR MARK/6 with RELAP4 will continue.

Hope Creek input deck conversion will be completed.

Will continue probability investigation of offsite power event tree scenarios.

Begin effort to add control system package to RELAP.

6. Problems and Potential Problems

Calculations for plant specific scenarios will continue to be impacted if utilities do not provide assistance in providing detailed plant information.

There is an inability to obtail necessary plant information on Browns Ferry. Discussions with NRC are being held weekly for assistance in obtaining the required information.

1. A6102 - Data Bank Processing System

2. Scheduled Milestones for May 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| | Add 18 Tests to Data Bank | 5-30-80T | 4-16-80C |

3. Summary of Work Performed in May 1980

Additional tests were added to the Data Bank including some from FLECHT-COSINE, FLECHT-SKEWED, Marviken, and LOFT. All of the Marviken tests received by the Data Bank are now in the Data Bank.

Three LOFT data sets were readied for transmittal to Los Alamos.

Guidelines for offsite computer users are still being studied.

4. Scheduled Milestones for June 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|

None scheduled.

5. Summary of Work to be Performed in June 1980

Adding tests to the Data Bank will continue. The remaining LOFT data tapes will be transmitted to Los Alamos.

An on-line information file for Data Bank users will be implemented.

A REFORM program to reformat Studvik BWR simulation data will be written.

6. Problems and Potential Problems

A funding problem is yet to be resolved.

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

2. Scheduled Milestones for May 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|

None scheduled.

3. Summary of Work Performed in May 1980

No activity.

4. Scheduled Milestones for June 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|

None scheduled.

5. Summary of Work to be Performed in June 1980

No activity.

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 Testing

2. Scheduled Milestones for May 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|
| Z10 | Evaluation of Structural Tests of HDR Systems & Components Prepare & Issue Report | 5-13-80T | N/S JAD-116-80 |

3. Summary of Work Performed in May 1980

No activity. EG&G Idaho is awaiting release of experimental measurements which will be compared with predicted data.

4. Scheduled Milestones for June 1980

| Node | Description | Due Date | Actual Date |
|---|---|---|---|

None scheduled.

5. Summary of Work to be Performed in June 1980

Experimental data is expected and when received, work on comparing these data with analytical predictions will commence.

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 | Interim Reliability Evaluation Program |

2. Scheduled Milestones for May 1980

| A Nos. | Node | Description | Due Date | Actual Date |
|---|---|---|---|---|
| A6276 | K5 | Valves Final Report | 5-15-80T | 4-28-80C<br>JAD-104-80 |
| A6283 | None scheduled. | | | |
| A6290 | None scheduled. | | | |
| A6291 | None scheduled. | | | |
| A6293 | None scheduled. | | | |
| A6294 | None scheduled. | | | |
| A6296 | None scheduled. | | | |

3. Summary of Work Performed in May 1980

A6276 - Continued extraction and computer coding of failure information from Licensee Event Reports on Instrumentation & Controls.

A6283 - Continued computations associated with applying the Common Cause Marshall-Olkin model to failure information extracted from Licensee Event Reports.

A6290 - Continued efforts to automate the computation of failure rates and failure rate differences on data contained in the Nuclear Plant Reliability Data System.

A6291 - Continued work on preparing a flagging report on valves.

A6293 - Continued work according to instructions and requests from NRC-PAS.

A6294 - A "camera ready" copy of a report prepared by Science Applications, Inc. (SAI) and entitled "Light Water Reactor Status Monitoring During Accident Conditions" was sent to NRC-PAS for issue as NUREG/CR-1440.

A6296 - Nothing scheduled.

4. Scheduled Milestones for June 1980

| A Nos. | Node | Description | Due Date | Actual Date |
|---|---|---|---|---|
| A6276 | None scheduled. | | | |
| A6283 | None scheduled. | | | |
| A6290 | None scheduled. | | | |
| A6291 | K27 | Valves Data Draft Report | 6-30-80T | |
| A6293 | None scheduled. | | | |
| A6294 | None scheduled. | | | |
| A6296 | None scheduled. | | | |

5. Summary of Work to be Performed in June 1980

A6276 - Will continue as in May.

A6283 - Will continue as in May. Presentation of a paper on theoretical development at a professional meeting.

A6290 - Will continue as in May.

A6291 - Complete draft flagging report on valves and transmit to NRC-PAS.

A6293 - Will continue as in May.

A6294 - A contract will be issued to SAI to continue Plant Status Monitoring work. EG&G will meet also with SAI to define FY-1981 work.

A6296 - EG&G will meet with Energy, Inc., and NRC representatives to define contents of fault-modeling handbook for IREP.

6. Problems and Potential Problems

None

WRRD MONTHLY REPORT FOR

MAY 1980

CODE DEVELOPMENT & ANALYSIS PROGRAM

CODE ASSESSMENT & APPLICATIONS PROGRAM

(NRR)

E. L. Pierson
Plans & Budget Representative

P. North, Manager
Code Development & Analysis Program

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

CODE DEVELOPMENT & ANALYSIS PROGRAM

NRR

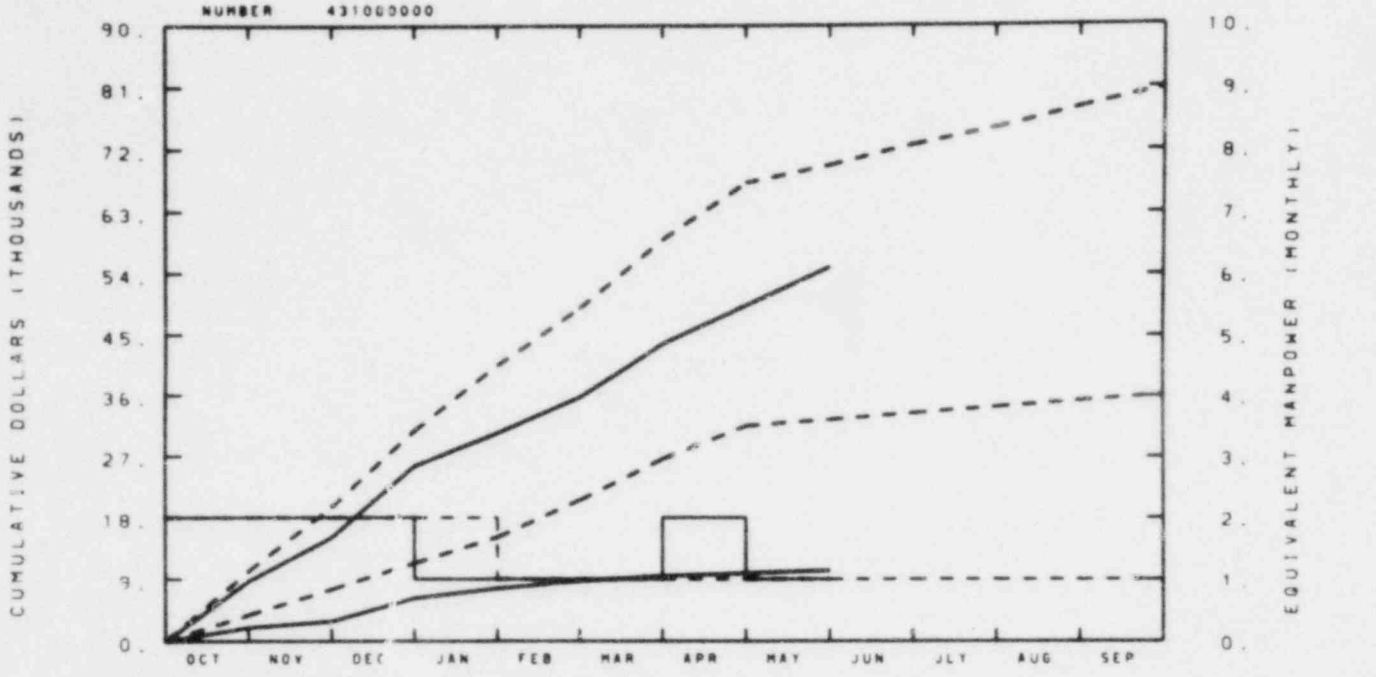
COST SUMMARY & COMMENTS

RESPONSIBLE MANAGER
P NORTH

EG&G IDAHO INC.

CONTAINMENT ANALYSIS

NUMBER 431000000




TOTAL PROGRAM

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

MATERIAL

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

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| ACTUAL | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | | | | |

BUDGET - - - - - -

ACTUAL ———

A6009

YTD VARIANCE: 15 (21%)

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

The CONTEMPT improvements have been planned and scheduled to reflect Nuclear Regulatory Commission (NRC) priorities. Work has begun in anticipation of NRC approval.

1. 189a A6009 - Containment Analysis

2. Scheduled Milestones for May 1980

   No scheduled milestones for May.

3. Summary of Work Performed in May 1980

   Work continued on fixing previously identified problems in CONTEMPT4. A schedule for completing this task was completed and sent to the Nuclear Regulatory Commission.

4. Scheduled Milestones for June 1980

   No scheduled milestones for June.

5. Summary of Work to be Performed in June 1980

   Work will continue on identifying and removing deficiencies in CONTEMPT4 per the previously mentioned schedule.

6. Problems and Potential Problems

   Work on CONTEMPT4 continues pending NRC acceptance of the submitted schedule. If it is rejected, this may cause perturbations in the progress of present tasks.

CODE ASSESSMENT & APPLICATIONS PROGRAM

NRR

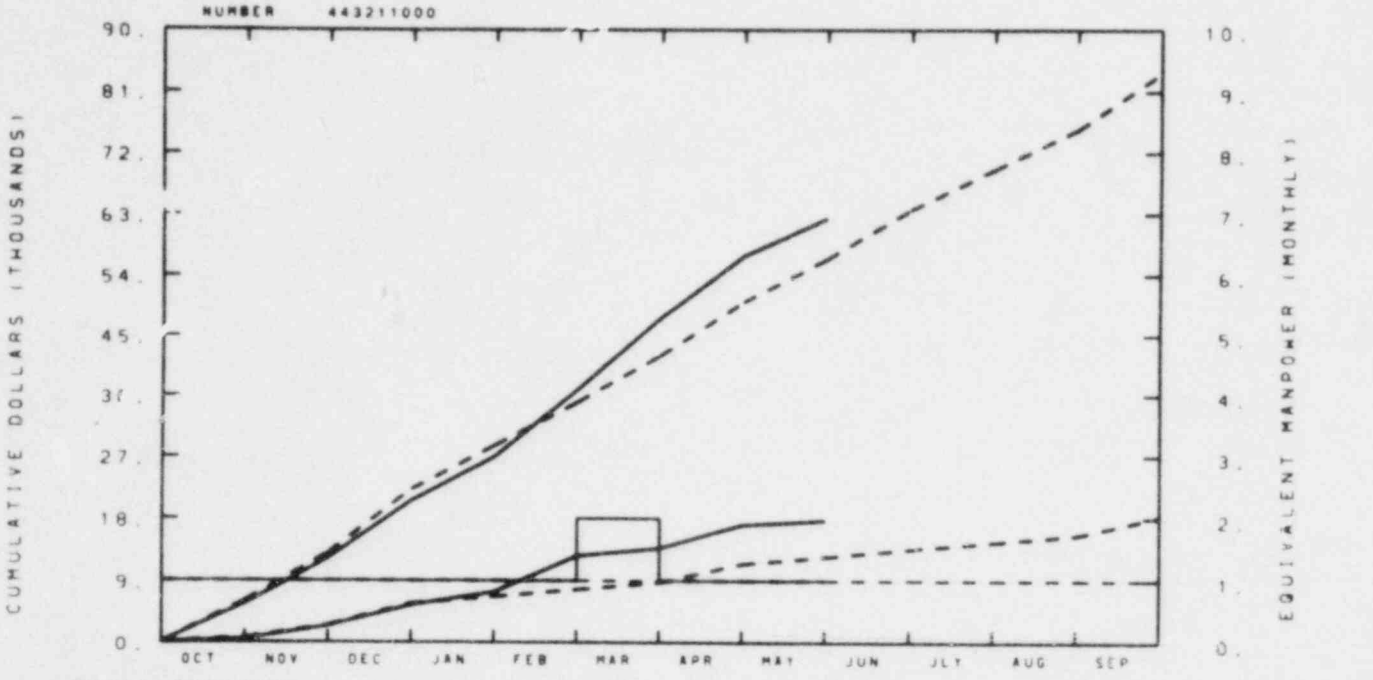
COST SUMMARY & COMMENTS

RESPONSIBLE
MANAGER
J A DEARIEN

EG&G IDAHO INC.

PWR/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 | | | | |

MATERIAL

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

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| ACTUAL | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | | | | |

BUDGET - - - - -

ACTUAL ———

A6152

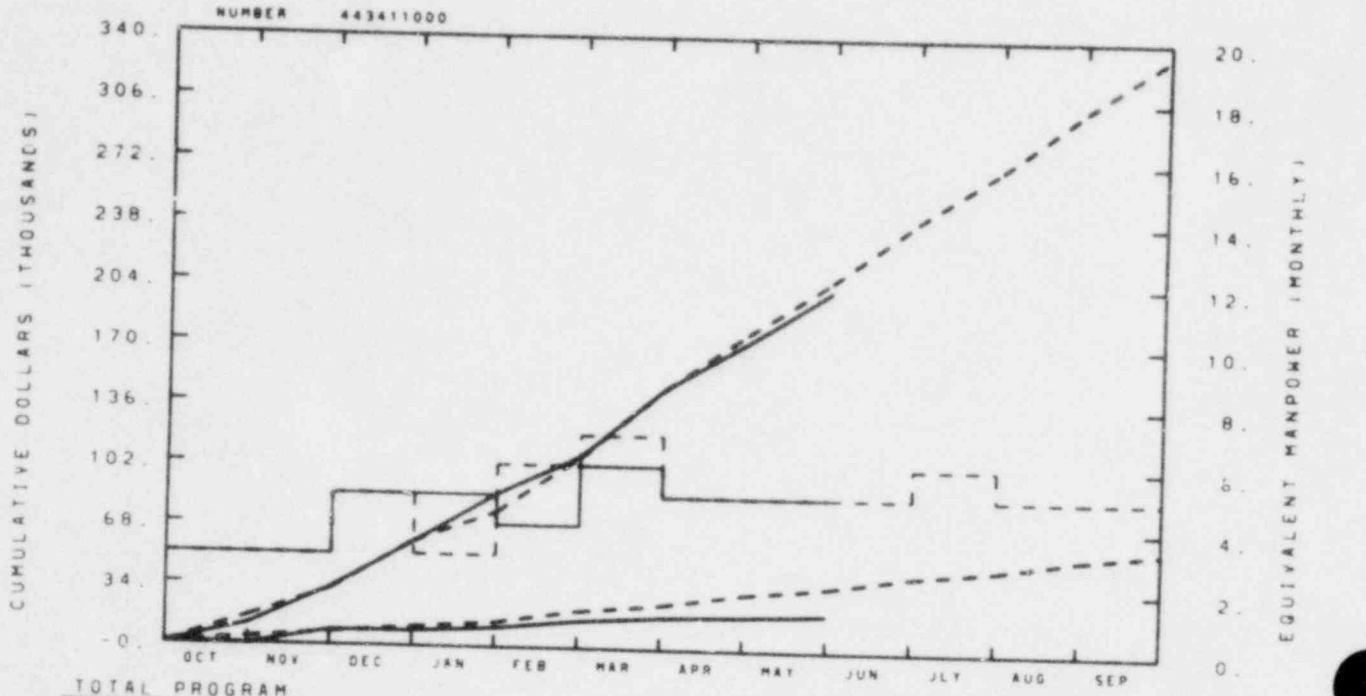
YTD VARIANCE: <6> (11%)

PESPONSIBLE
MANAGER
J A DEARIEN

EG&G IDAHO INC.

TECH ASST ASYMM LOCA LOADS A6156

NUMBER 443411000




BUDGET
ACTUAL

TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 15 | 31 | 59 | 75 | 104 | 145 | 177 | 206 | 240 | 269 | 302 | 332 |
| ACTUAL | 11 | 32 | 58 | 85 | 107 | 145 | 172 | 201 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 4 | 7 | 11 | 14 | 20 | 25 | 31 | 35 | 42 | 46 | 53 | 57 |
| ACTUAL | 0 | 8 | 6 | 11 | 15 | 18 | 19 | 20 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 3 | 3 | 5 | 3 | 6 | 7 | 5 | 5 | 5 | 6 | 5 | 5 |
| ACTUAL | 3 | 3 | 5 | 5 | 4 | 6 | 5 | 5 | | | | |

A6156

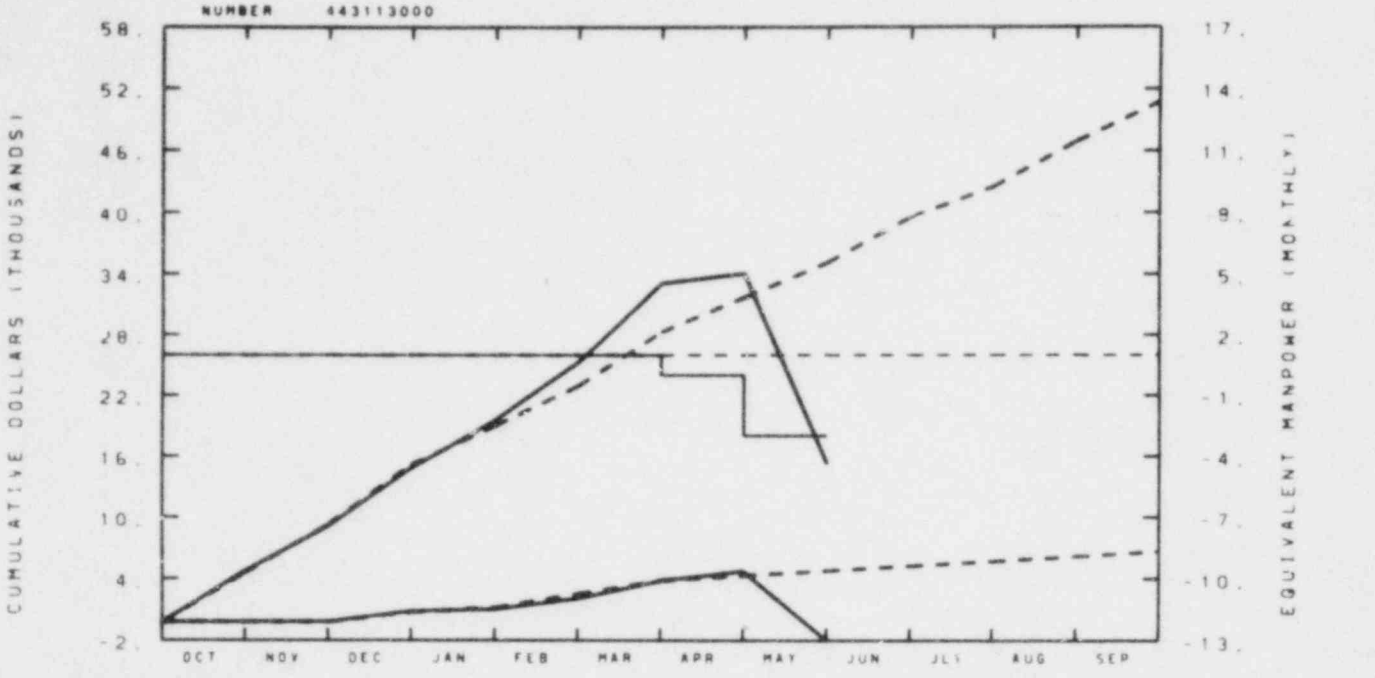
YTD VARIANCE: 5 (2%)

RESPONSIBLE
MANAGER
J A DEARIEN

EG&G IDAHO INC.

FUEL ASSY SEISMIC & LOCA A6157

NUMBER 443113000




TOTAL PROGR

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 5 | | | 19 | 23 | 29 | 32 | 35 | 40 | 43 | 47 | 51 |
| ACTUAL | 5 | 4 | 15 | 20 | 25 | 33 | 34 | 15 | | | | |

MATERIAL

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

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6157

YTD VARIANCE: 20 (57%)

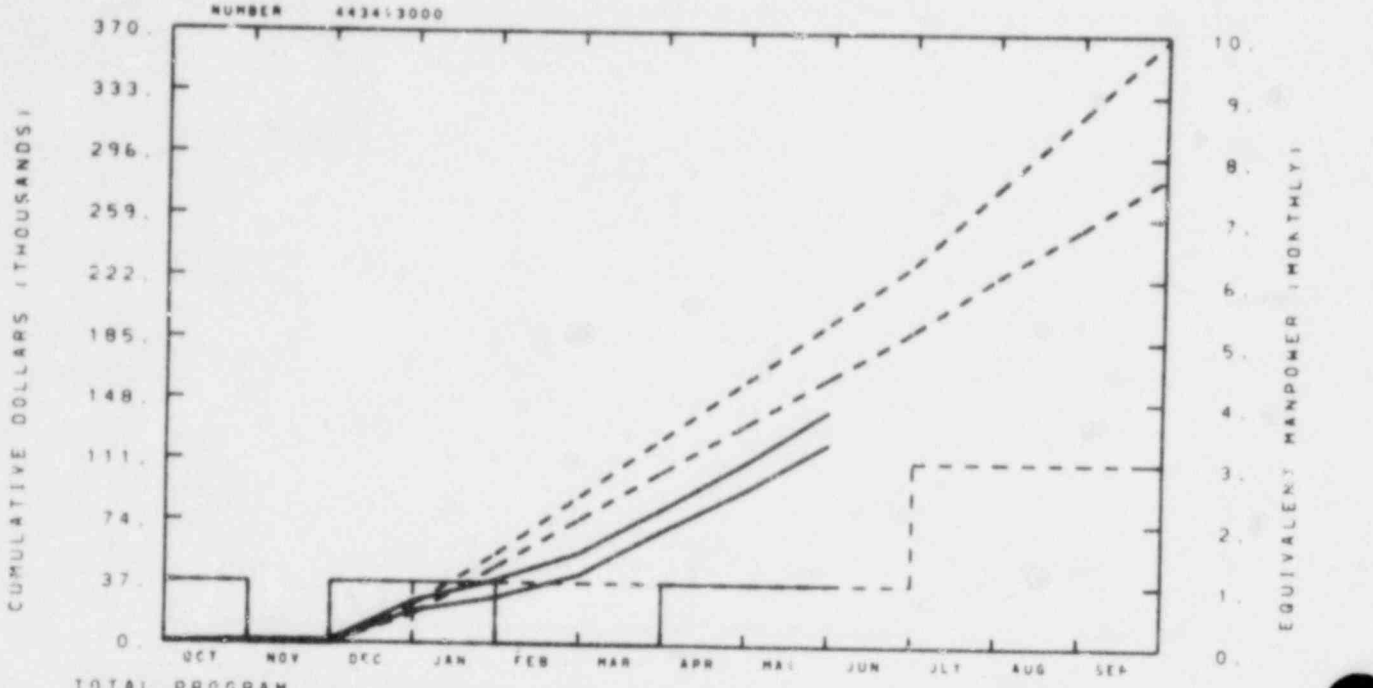
The combustion and Babcock & Wilcox fuel assembly structural analysis submittals have not been received. Hence, funds will be carried over to the next fiscal year. Review of a new Westinghouse submittal is to be performed and charged to this task this fiscal year. Cost originally charged to this task for work performed under A6269 (Post Blowdown LOCA Fuel) have been transferred from this account.

RESPONSIBLE MANAGER
J A DEARIEN

EG&G IDAHO INC.

ON-CALL ASSIST AT OPGR LWRSA6159

NUMBER 44341 3000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 1 | 2 | 24 | 54 | 90 | 125 | 160 | 196 | 231 | 277 | [illegible] | 368 |
| ACTUAL | 1 | 2 | 26 | 39 | 55 | 82 | 110 | 142 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 16 | 47 | 76 | 105 | [illegible] | 163 | 192 | 224 | 253 | 284 |
| ACTUAL | 0 | 0 | 20 | 28 | 42 | 69 | [illegible] | 122 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 1 | 0 | 1 | 0 | 1 | [illegible] | 1 | 1 | 1 | 3 | 3 | 3 |
| ACTUAL | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | | | | |

A6159

YTD VARIANCE: 54 (28%)

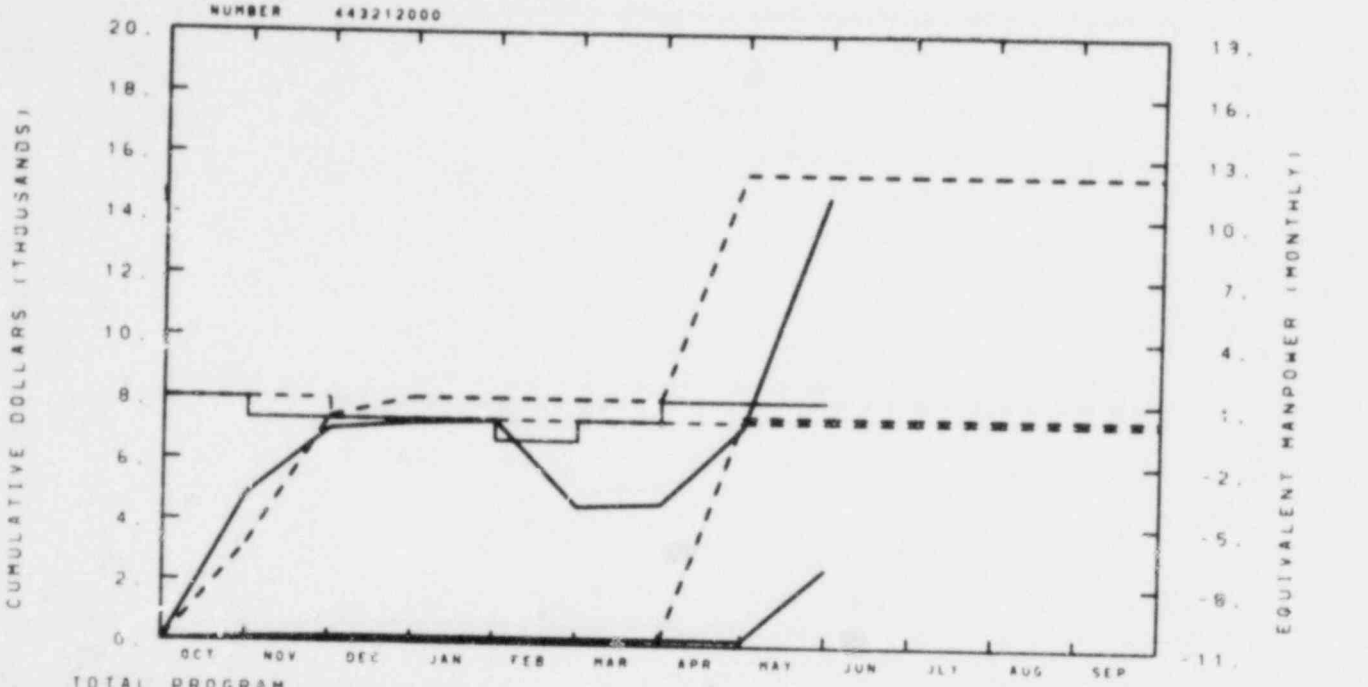
No work has been done in the On-call Technical Assistance subtask for this FIN number, which has created an underrun. In addition, the temporary/mobile radwaste task started about two months later than originally anticipated. It is expected that funds will be carried over into FY-1981 and an estimate will be made in the June monthly report.

RESPONSIBLE MANAGER
J A DEARIEN

EG&G IDAHO INC.

FRACTURE TOUGHNESS CRITER A6166

NUMBER 443212000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 3 | 7 | 8 | 8 | 8 | 8 | 15 | 15 | 15 | 15 | 15 | 15 |
| ACTUAL | 5 | 7 | 7 | 7 | 5 | 5 | 7 | 15 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | 8 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | | | | |

MANPOWER

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

A6166

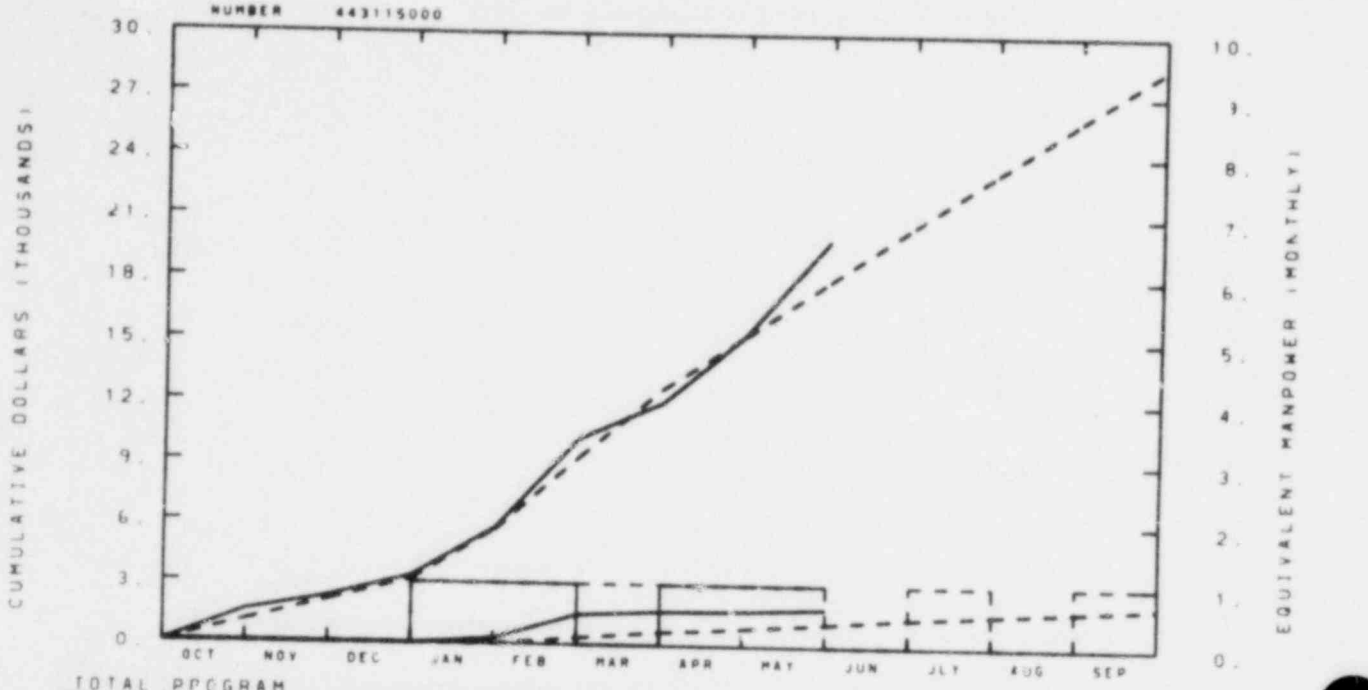
YTD VARIANCE: 0

RESPONSIBLE
MANAGER
J. A. DEARIEN

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 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 2 |
| ACTUAL | 0 | 0 | 0 | 0 | 1 | 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 | | | | |

A6167

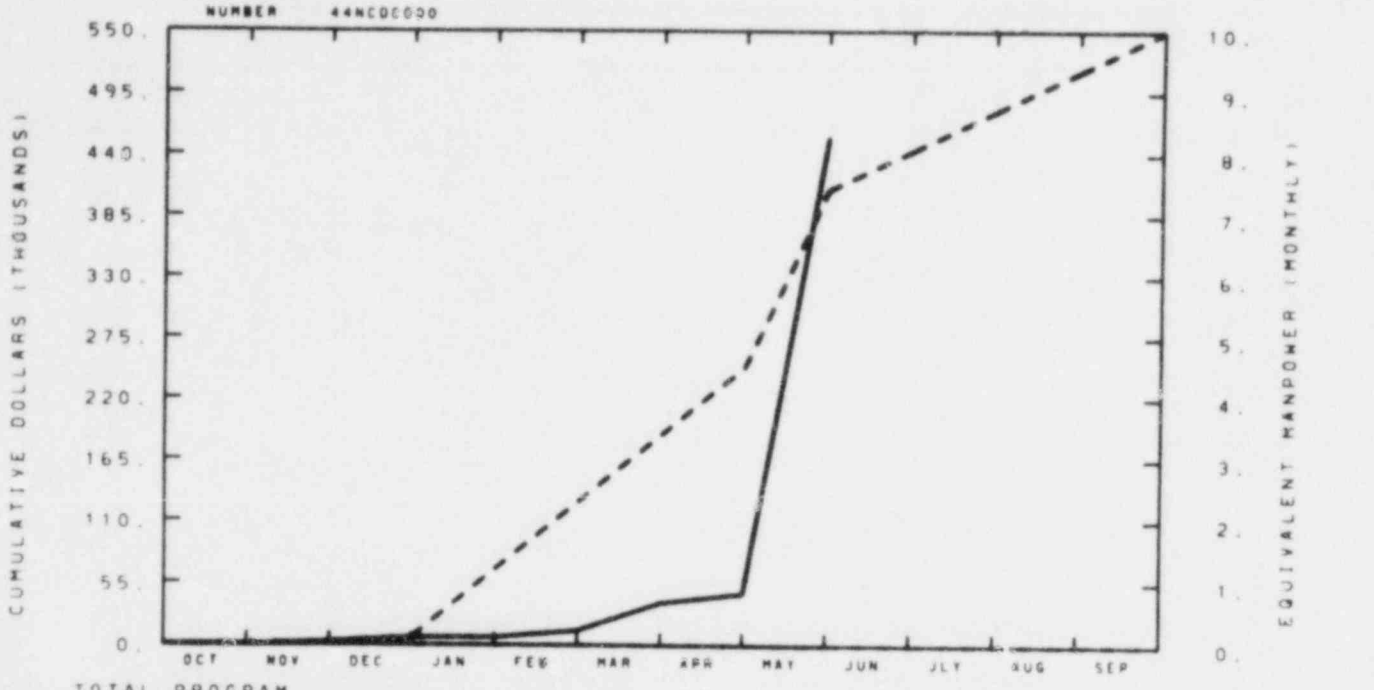
YTD VARIANCE: <2> (11%)

RESPONSIBLE MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

NRC USE OF INEL CDC A6209

NUMBER 44NC0C000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 1 | 2 | 7 | 67 | 127 | 188 | 248 | 408 | 444 | 479 | 514 | 550 |
| ACTUAL | 0 | 3 | 7 | 7 | 13 | 38 | 46 | 456 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 1 | 2 | 7 | 67 | 127 | 188 | 248 | 408 | 444 | 479 | 514 | 550 |
| ACTUAL | 0 | 3 | 7 | 7 | 13 | 38 | 46 | 456 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |

A6209

YTD VARIANCE: <48> (12%)

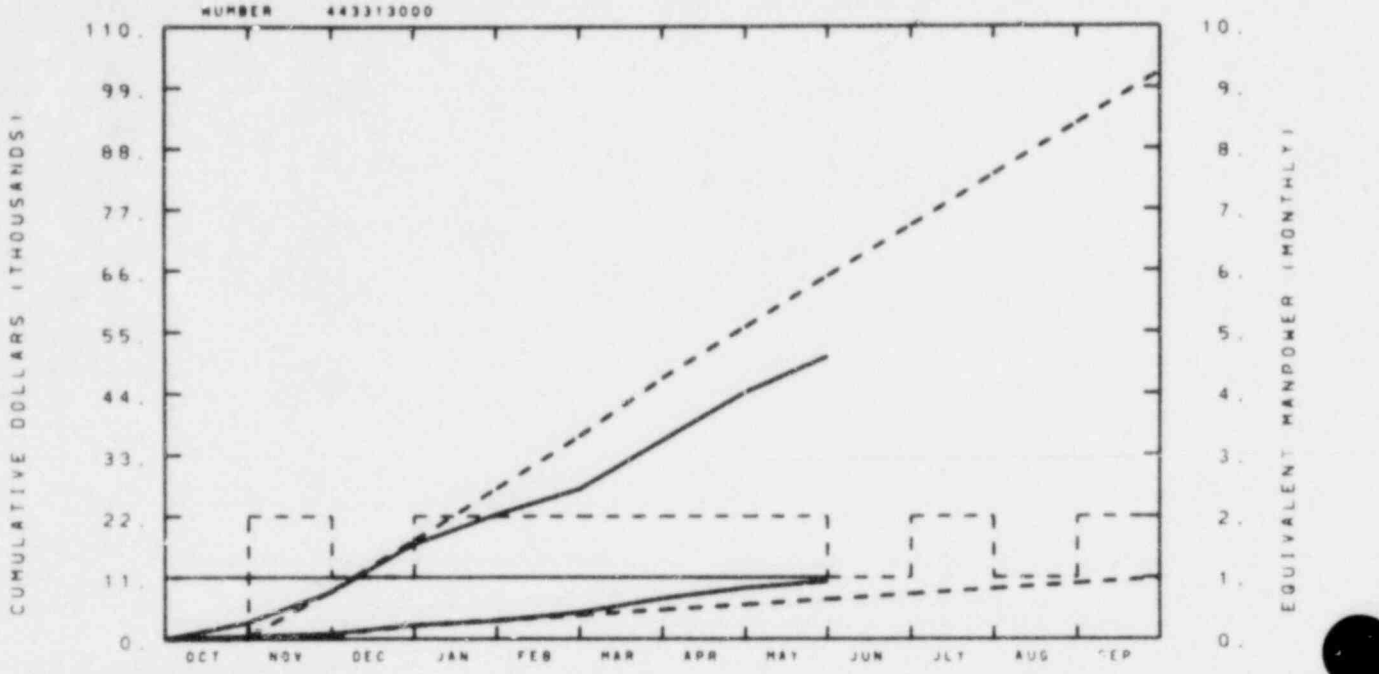
This is a computer fund available on an as-required and justified, but unscheduled basis. Since this funding is not allocated to specifically defined tasks, its expenditure rate cannot be accurately forecast and the present expenditures have no significance. Per NRC direction, $400 K of costs for Three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

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 | | | | |

MATERIAL

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

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 |
| ACTUAL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | |

BUDGET - - - - - -

ACTUAL ———

A6250

YTD VARIANCE: 14 (22%)

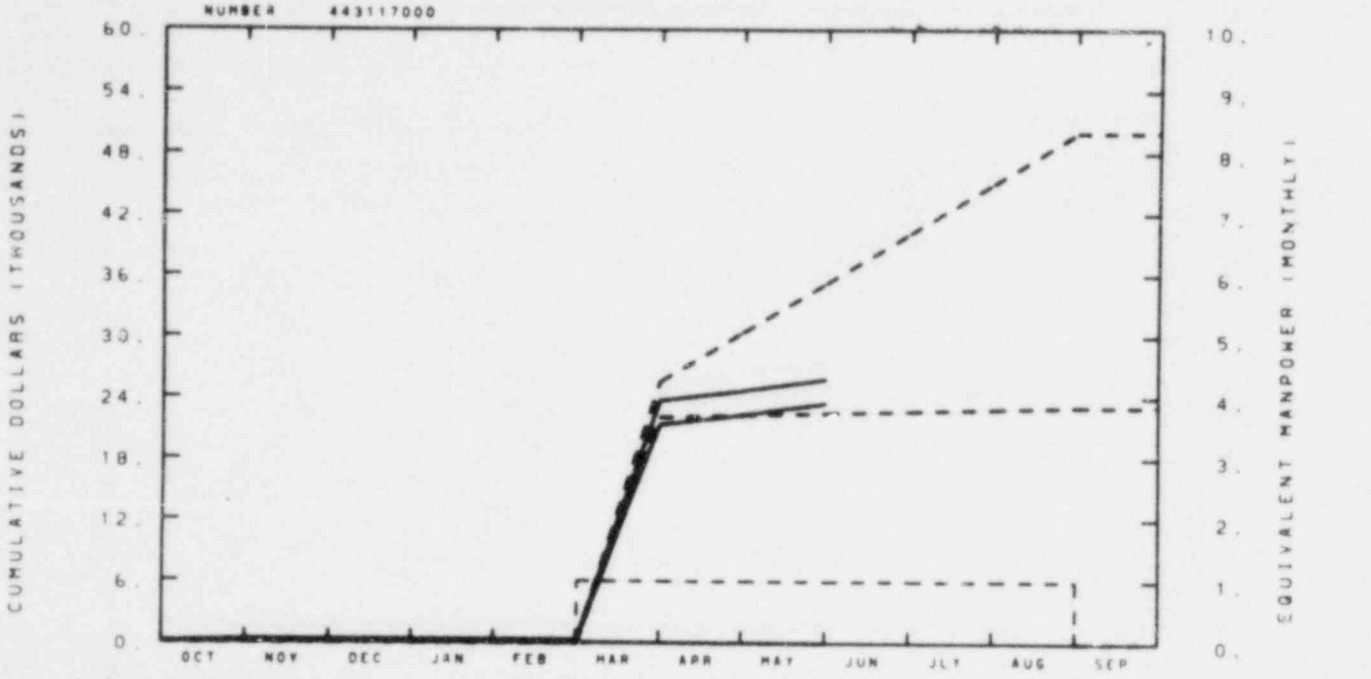
Information being received at slower than expected pace and second engineer has not been applied to this task. Underspending will continue. If information continues to be received slowly, effective utilization of the performing engineer over a period of time could cause a cost impact. This aspect of this task's fiscal status will be reviewed closely.

RESPONSIBLE MANAGER
J A DEARIEN

EG&G IDAHO INC.

WATER HAMMER REVIEW & EVAL A6251

NUMBER 443117000




TOTAL PROGRAM

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

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 22 | 22 | 22 | 23 | 23 | 23 | 23 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 21 | 22 | 23 | | | | |

MANPOWER

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

A6251

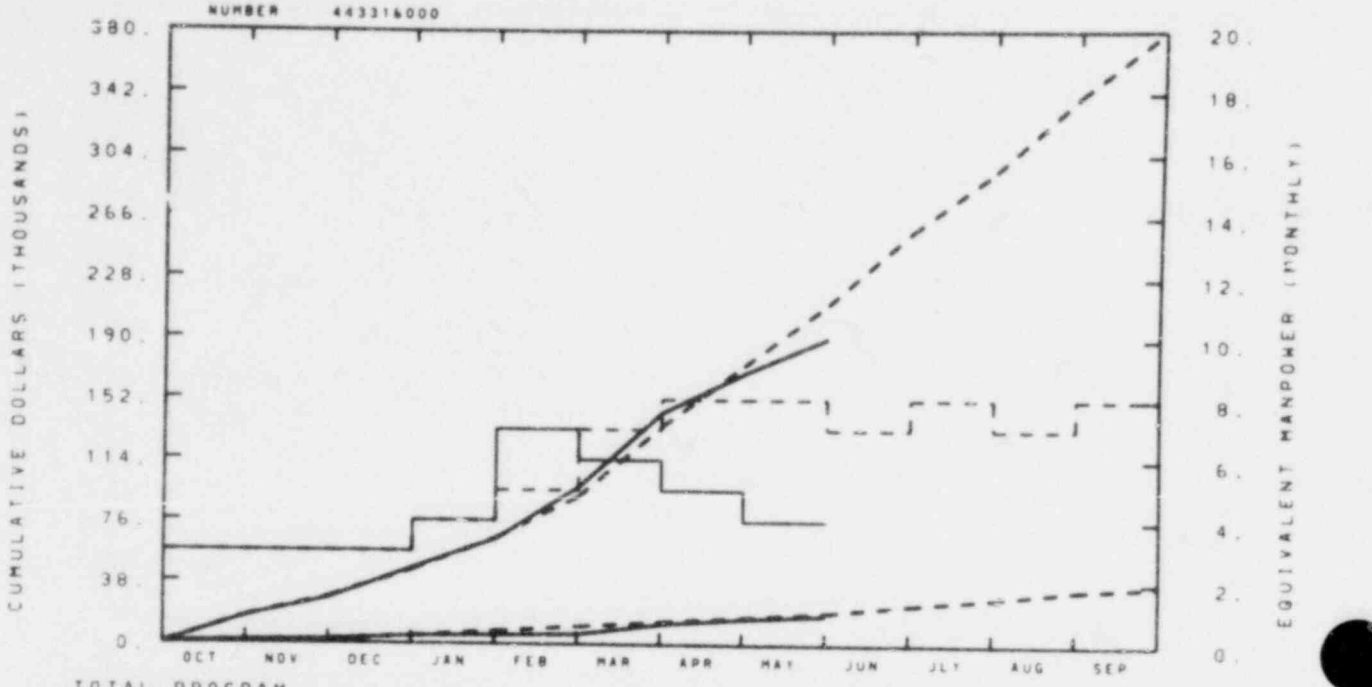
YTD VARIANCE: 9 (26%)

RESPONSIBLE
MANAGER
J A DEAMIEN

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 | 46 | 65 | 97 | 143 | 168 | 191 | | | | |

MATERIAL

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

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6256

YTD VARIANCE: 21 (10%)

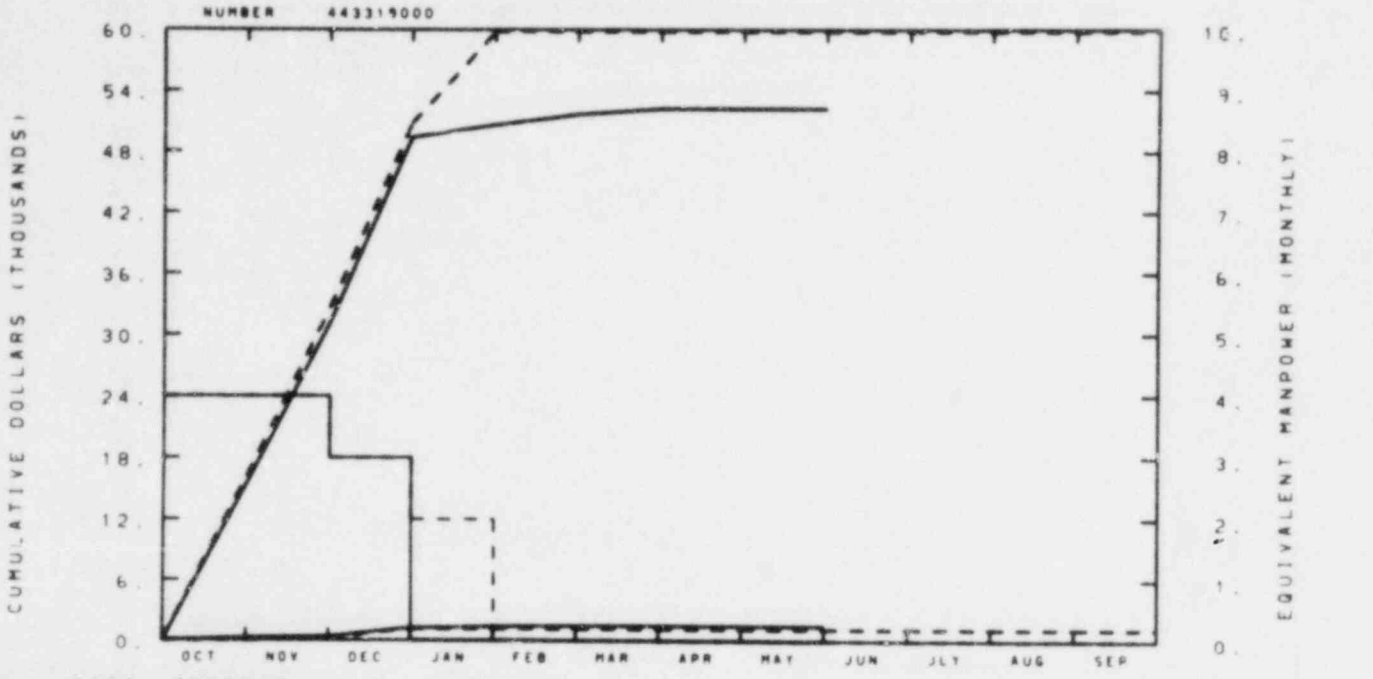
This task is underspent due to lack of complete information from NRC and licensees needed to complete tasks on schedule. Resolution of this problem is being attempted at this time.

RESPONSIBLE MANAGER
J 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 | | | | |

MATERIAL

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

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 4 | 4 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ACTUAL | 4 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | | | | |

BUDGET - - - - -

ACTUAL ———

A6257

YTD VARIANCE: 8 (13%)

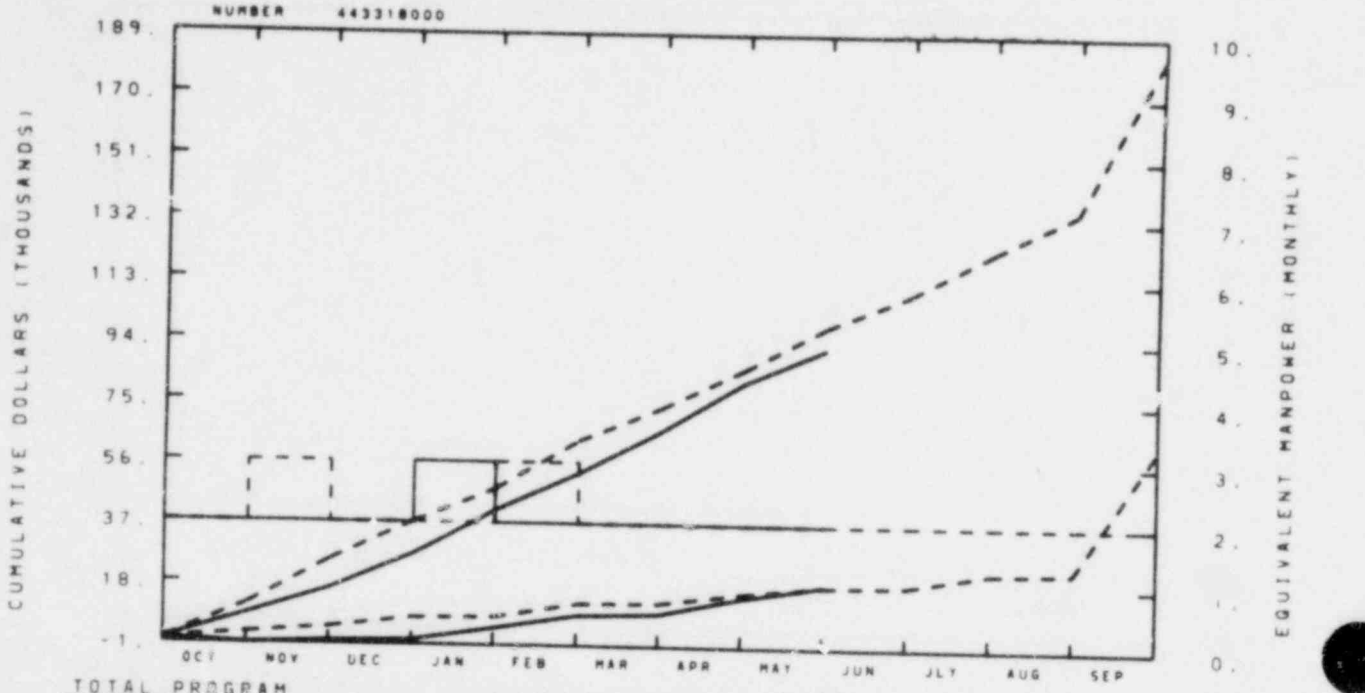
This task has been completed. The $8 K underrun remains for use at the Nuclear Regulatory Commissions discretion.

PESPONSIBLE
MANAGER
J A DEARIEN

EG&G IDAHO INC.

SYSTEM ENGINEERING SUPPORT A6258

NUMBER 443318000




TOTAL PROGRAM

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

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 2 | 4 | 7 | 7 | 12 | 12 | 15 | 18 | 18 | 22 | 23 | 62 |
| ACTUAL | 0 | 0 | 0 | 4 | 8 | 9 | 14 | 18 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| ACTUAL | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | | | | |

BUDGET

ACTUAL

A6258

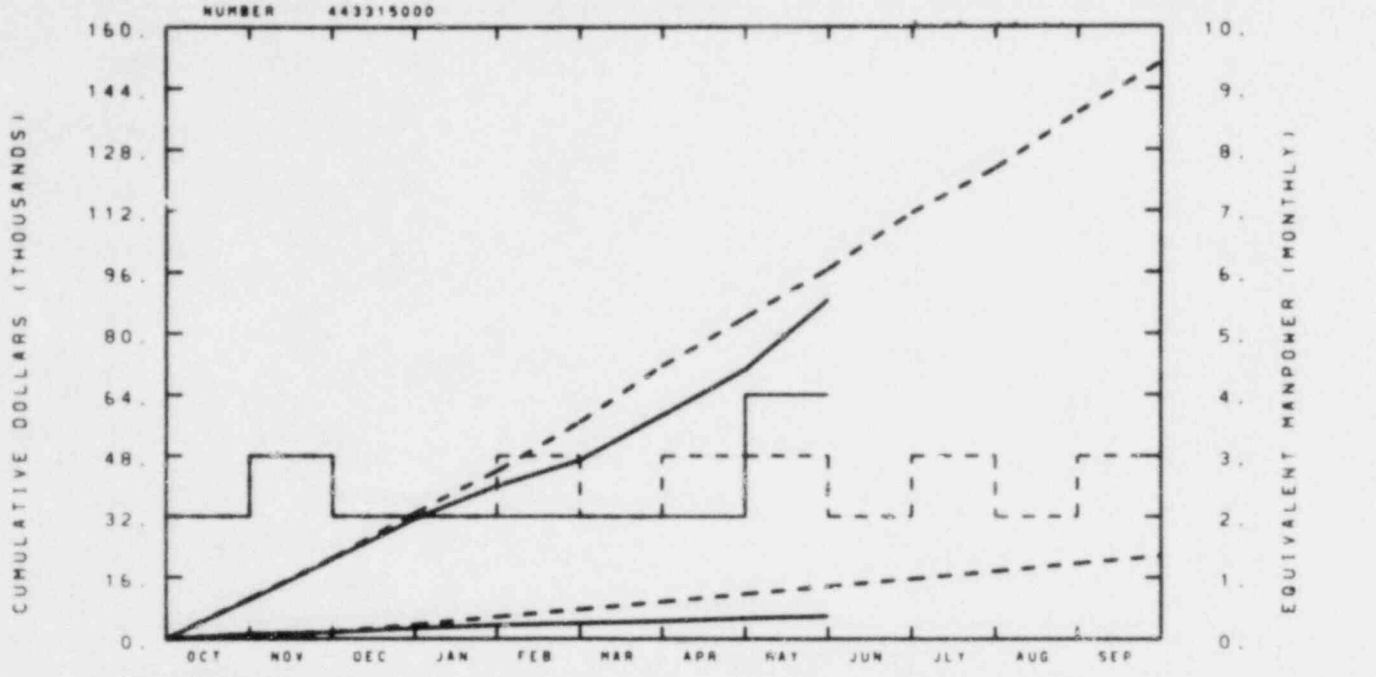
YTD VARIANCE: 7 (7%)

RESPONSIBLE
MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

EICS SUPPORT FOR SEP A6260

NUMBER 443315000




TOTAL PROGRAM

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

MATERIAL

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

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 2 | 3 | 2 | 2 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 3 |
| ACTUAL | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 4 | | | | |

BUDGET - - - - -

ACTUAL ———

A6260

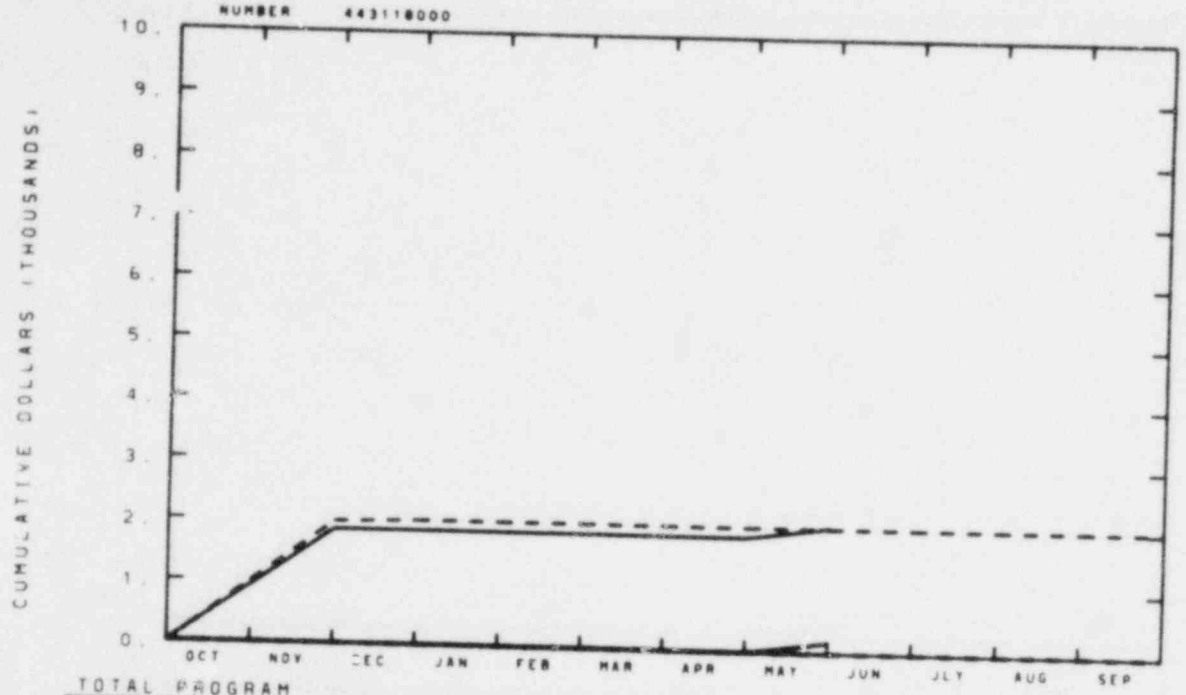
YTD VARIANCE: 8 (8%)

RESPONSIBLE
MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

REACT SYS CASE REVIEW II A6263

NUMBER 443118000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| ACTUAL | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |

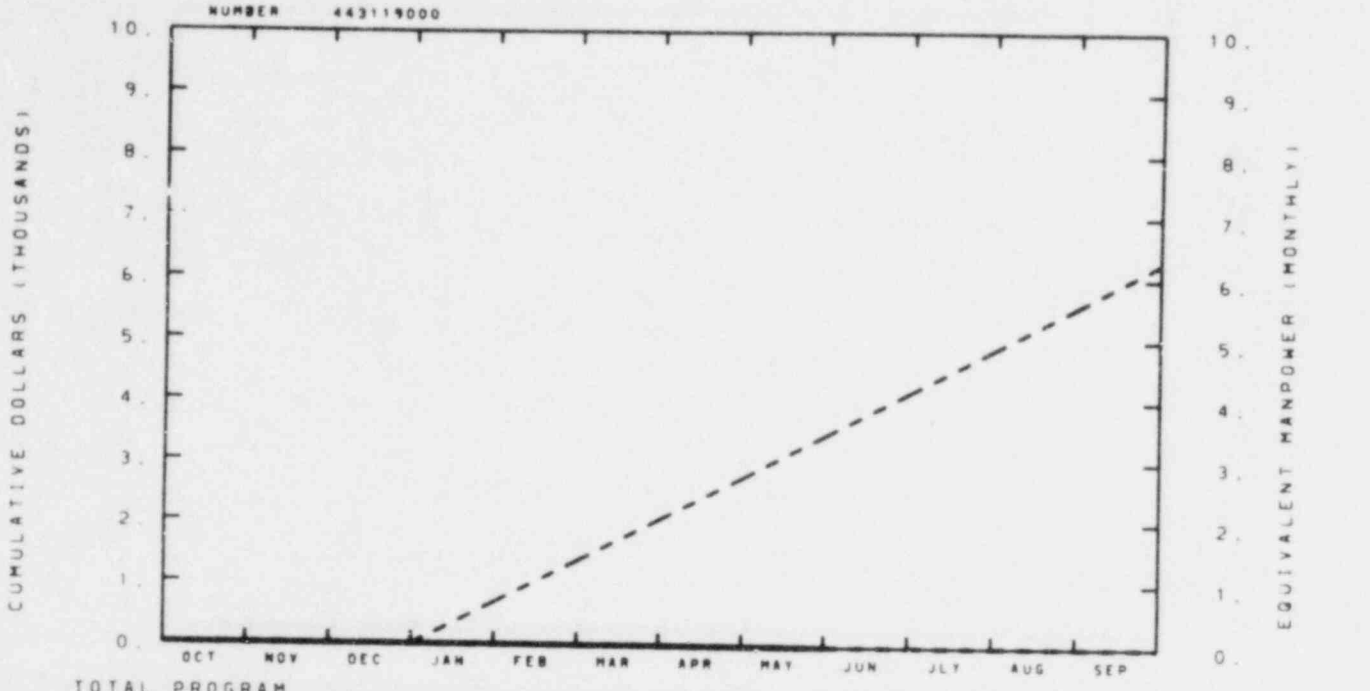
A626J

YTD VARIANCE: 0

RESPONSIBLE
MANAGER
J A DEARIEN

EG&G IDAHO INC.

ECCS UNAVAILABILITY STUDY A6264




TOTAL PROGRAM

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

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |

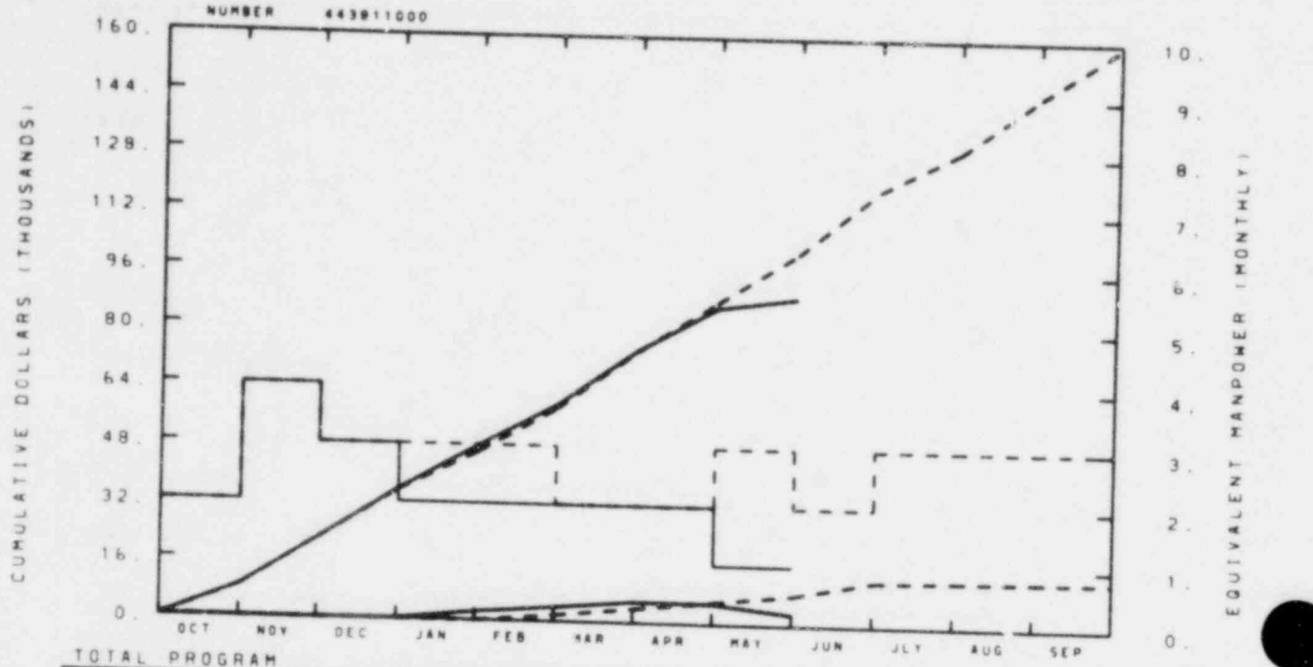
A6264

YTD VARIANCE: 3 (100%)

RESPONSIBLE MANAGER
J A DEARIEN

EG&G IDAHO INC.

INSERVICE TESTING - DSS A6265




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 8 | 22 | 35 | 46 | 58 | 74 | 88 | 101 | 119 | 130 | 145 | 159 |
| ACTUAL | 8 | 22 | 36 | 48 | 59 | 74 | 86 | 89 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 8 | 12 | 13 | 13 | 13 |
| ACTUAL | 0 | 0 | 0 | 2 | 4 | 6 | 6 | 3 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 7 | 4 | 3 | 3 | 3 | 2 | 2 | 3 | 2 | 3 | 3 | 3 |
| ACTUAL | 6 | 4 | 3 | 2 | 2 | 2 | 2 | 1 | | | | |

A6265

YTD VARIANCE: 12 (12%)

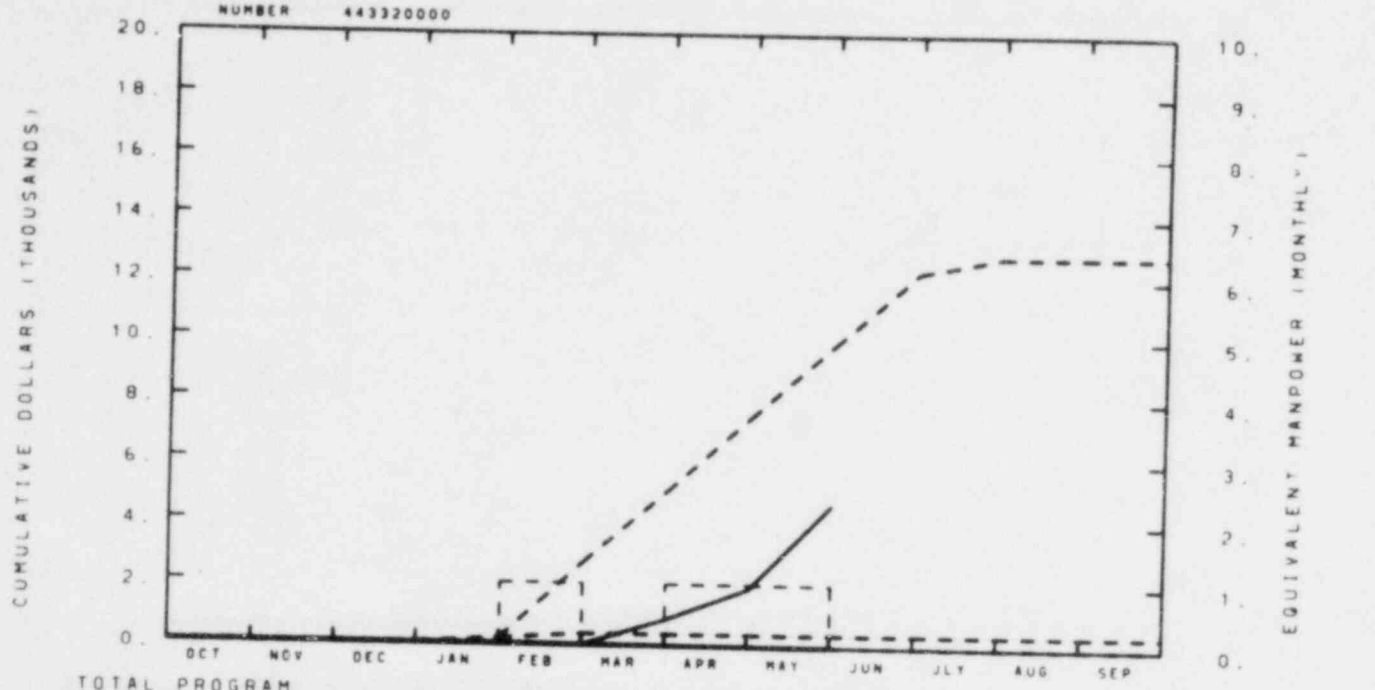
Under expenditure due to temporary reassignment of personnel because of lack of review material for this task. Projected spending rate will be revised by next months report to reflect an anticipated $17 K carryover into FY-1981 and a revised FY-1980 spending rate.

RESPONSIBLE
MANAGER
J A DEARIEN

EG&G IDAHO INC.

N-1 LOOP OP BEAV VAL ZION A6267

NUMBER 443320000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 3 | 5 | 7 | 10 | 12 | 13 | 13 | 13 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 5 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ACTUAL | 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 | | | | |

BUDGET - - - - -

ACTUAL ———

A6267

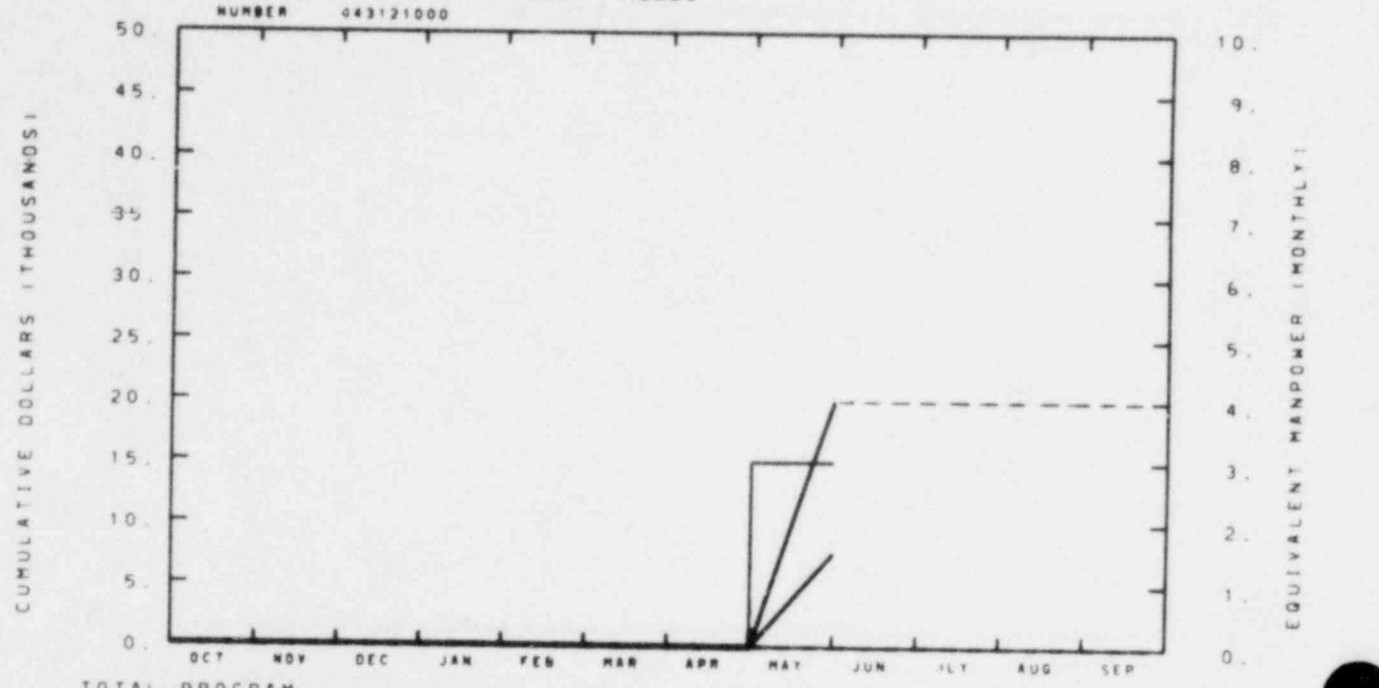
YTD VARIANCE: 5 (50%)

RESPONSIBLE MANAGER
J A DEARIEN

EG&G IDAHO INC.

POST BLOWDOWN LOCA FUEL A6269

NUMBER 043121000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 20 | 20 | 20 | 20 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 20 | 20 | 20 | 20 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | | | | |

A6269

YTD VARIANCE: 0

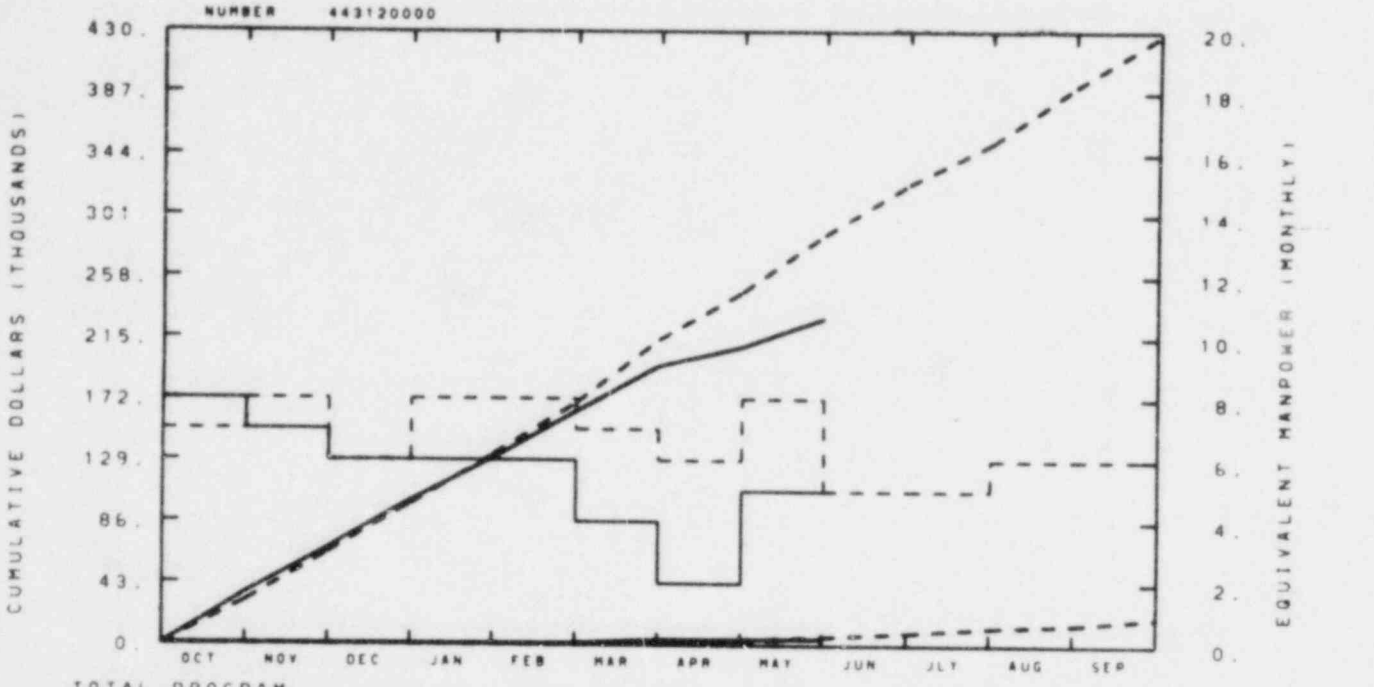
This task was not previously reported in the Monthly Report. Costs were collected in A6157 and transferred when funding arrived. This task is completed.

RESPONSIBLE MANAGER
J A DEARIEN

EG&G IDAHO INC.

REACT SYS CASE REVIEW III A6270

NUMBER 443120000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 30 | 64 | 99 | 133 | 169 | 214 | 248 | 288 | 323 | 352 | 391 | 428 |
| ACTUAL | 36 | 67 | 101 | 130 | 163 | 195 | 209 | 229 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 6 | 9 | 13 | 15 | 19 |
| ACTUAL | 0 | 0 | 0 | 1 | 1 | 4 | 4 | 5 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 7 | 8 | 6 | 8 | 8 | 7 | 6 | 8 | 5 | 5 | 6 | 6 |
| ACTUAL | 8 | 7 | 6 | 6 | 6 | 4 | 2 | 5 | | | | |

BUDGET - - - - -

ACTUAL ———

A6270

YTD VARIANCE: 59 (20%)

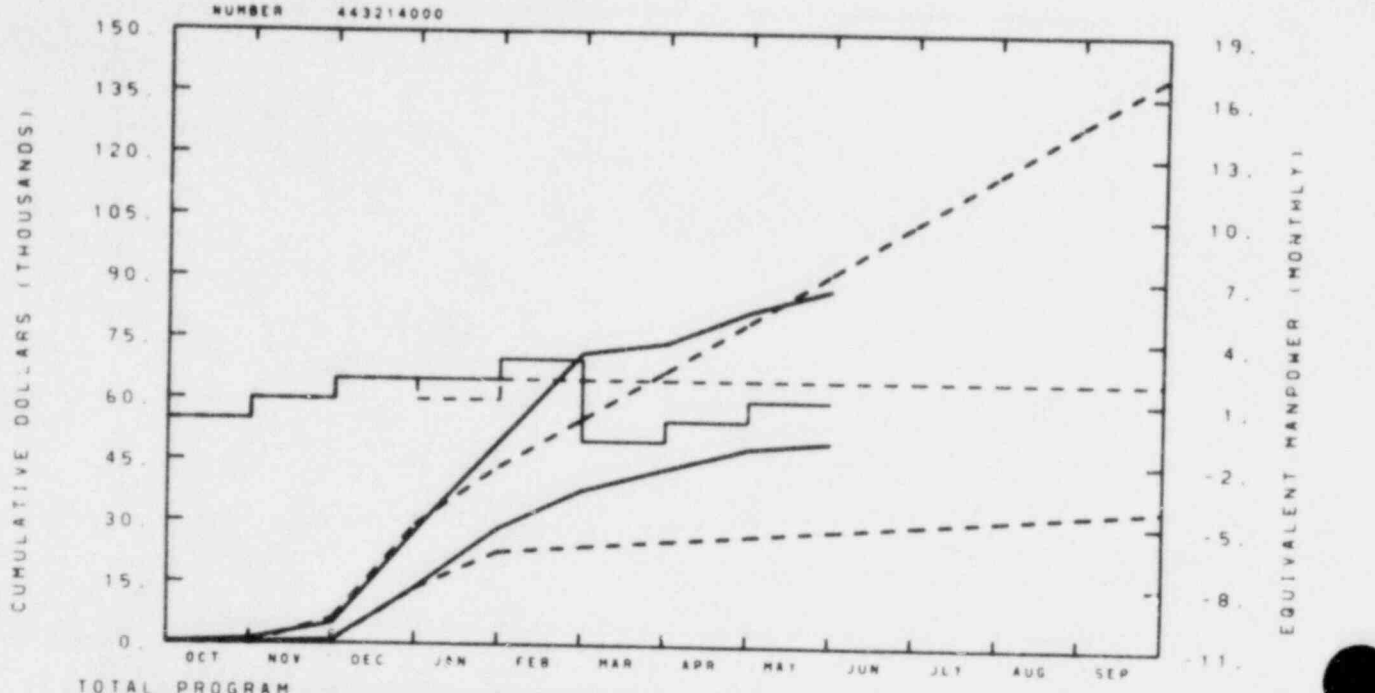
Complete work scope has not been defined. A fiscal year end carryover is anticipated and will be forecast in June.

RESPONSIBLE
MANAGER
J A 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 | 82 | 88 | | | | |

MATERIAL

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

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| ACTUAL | 0 | 1 | 2 | 2 | 3 | -1 | 0 | 1 | | | | |

A6401

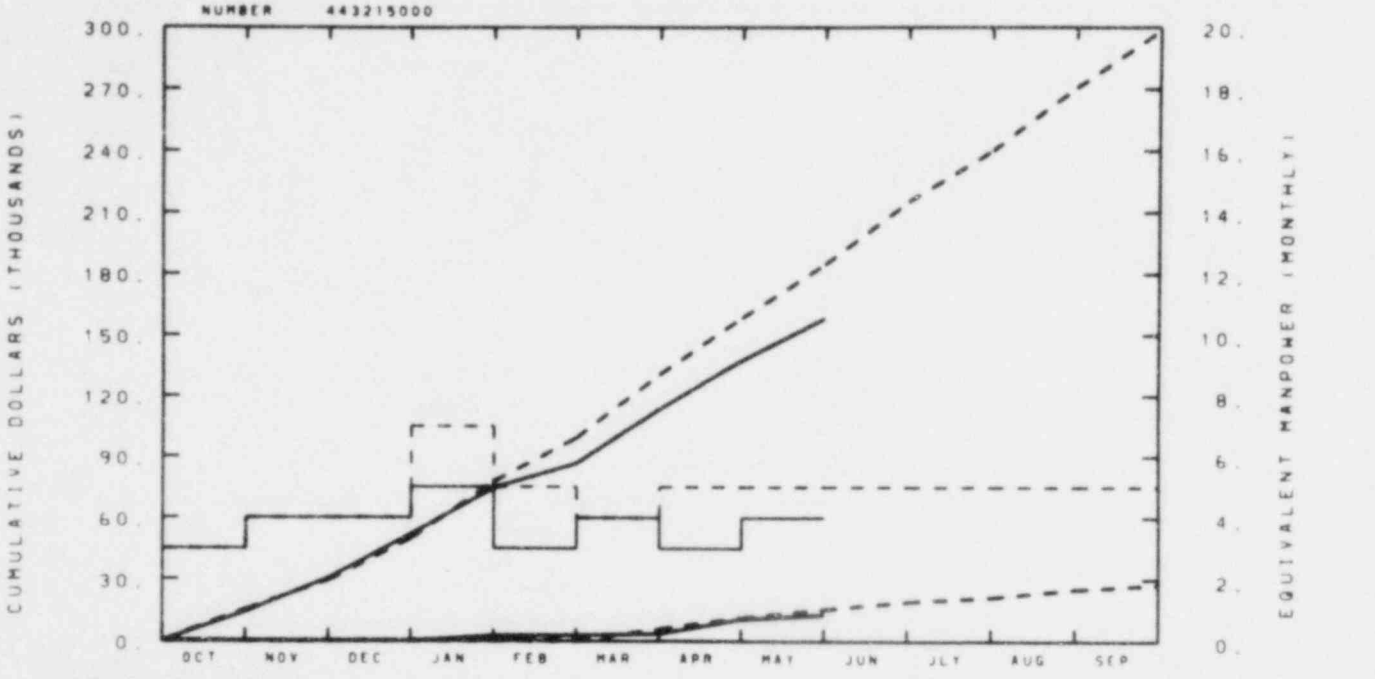
YTD VARIANCE: 3 (3%)

RESPONSIBLE MANAGER
J. A. DEARIEN

EG&G IDAHO INC.

STRCT ENGR CASE REVIEW II A6402

NUMBER 443215000




TOTAL PROGRAM

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

MATERIAL

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

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 3 | 4 | 4 | 7 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 |
| ACTUAL | 3 | 4 | 4 | 5 | 3 | 4 | 3 | 4 | | | | |

BUDGET - - - - -

ACTUAL ———

A6402

YTD VARIANCE: 26 (14%)

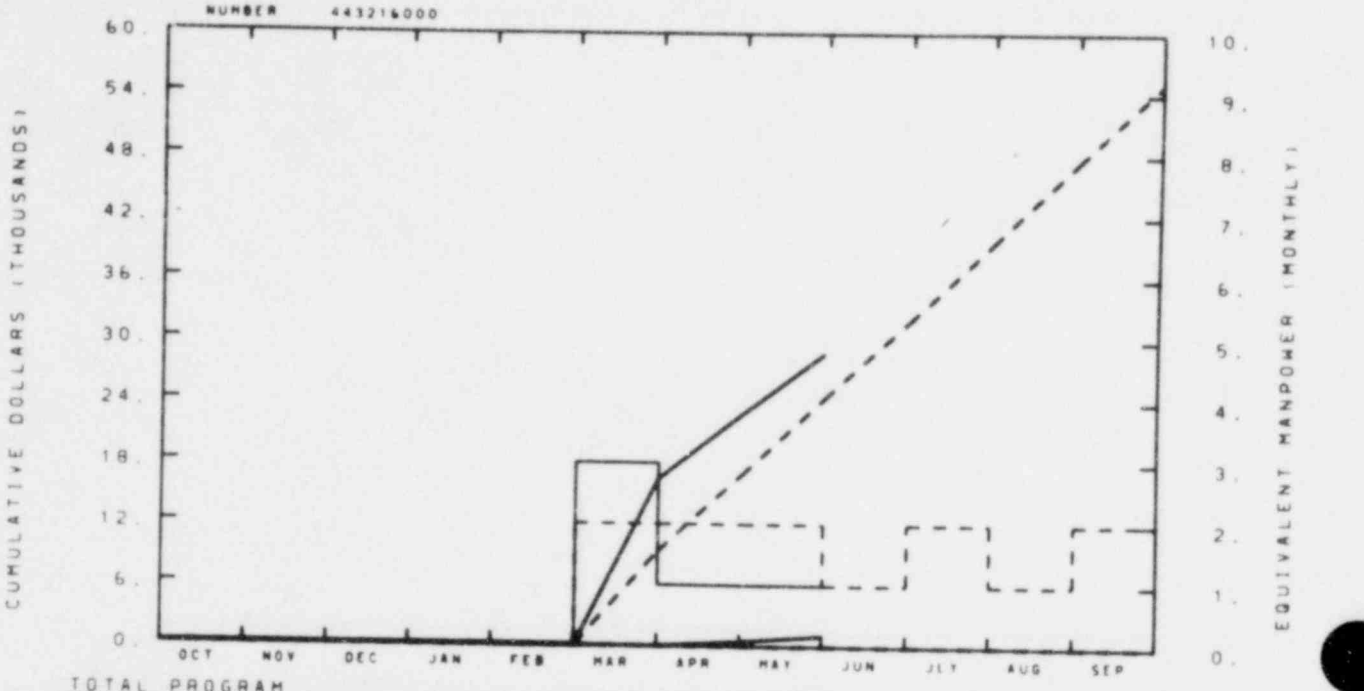
The independent analysis is now proceeding at its expected level. This effort will not be completed this fiscal year and hence, some funds will be carried over to FY-1981. Further delays may be encountered in receiving information. This coupled with the amount of preparation time for the EG&G Idaho audit at the architect engineer's office will require a detailed assessment of this task's fiscal status. This will be accomplished toward the end of June so that information flow problems, if any, can be included in this evaluation.

RESPONSIBLE
MANAGER
J A DEARIEN

EG&G IDAHO INC.

FRACT TOUGHNESS RCB MATL A6404

NUMBER 443216000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 9 | 17 | 24 | 32 | 40 | 47 | 55 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 16 | 23 | 29 | | | | |

MATERIAL

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

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 1 | 2 | 1 | 2 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | | | | |

BUDGET

ACTUAL

A6404

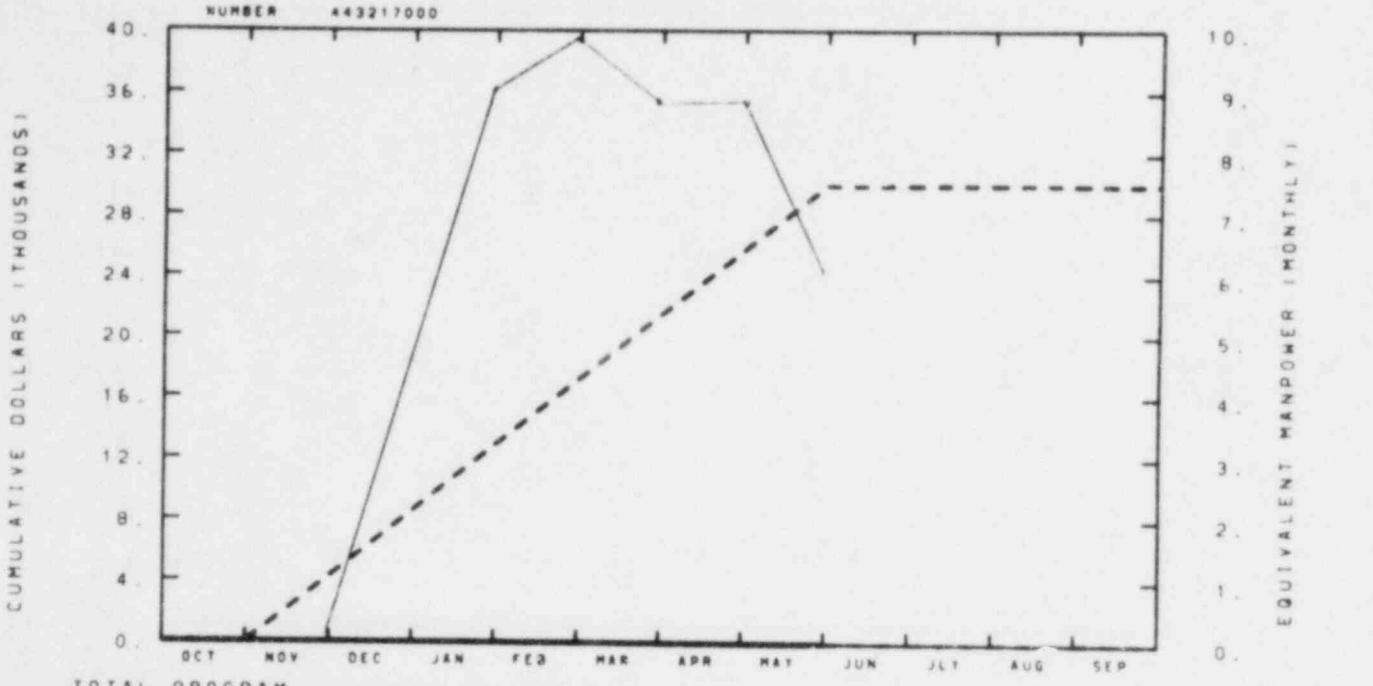
YTD VARIANCE: <5> (21%)

RESPONSIBLE MANAGER
J. A. DERRIEN

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 | 45 | 24 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 4 | 9 | 13 | 17 | 21 | 26 | 30 | 30 | 30 | 30 | 30 |
| ACTUAL | 0 | 0 | 19 | 36 | 39 | 35 | 45 | 24 | | | | |

BUDGET - - - - -

ACTUAL ———

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |

A6405

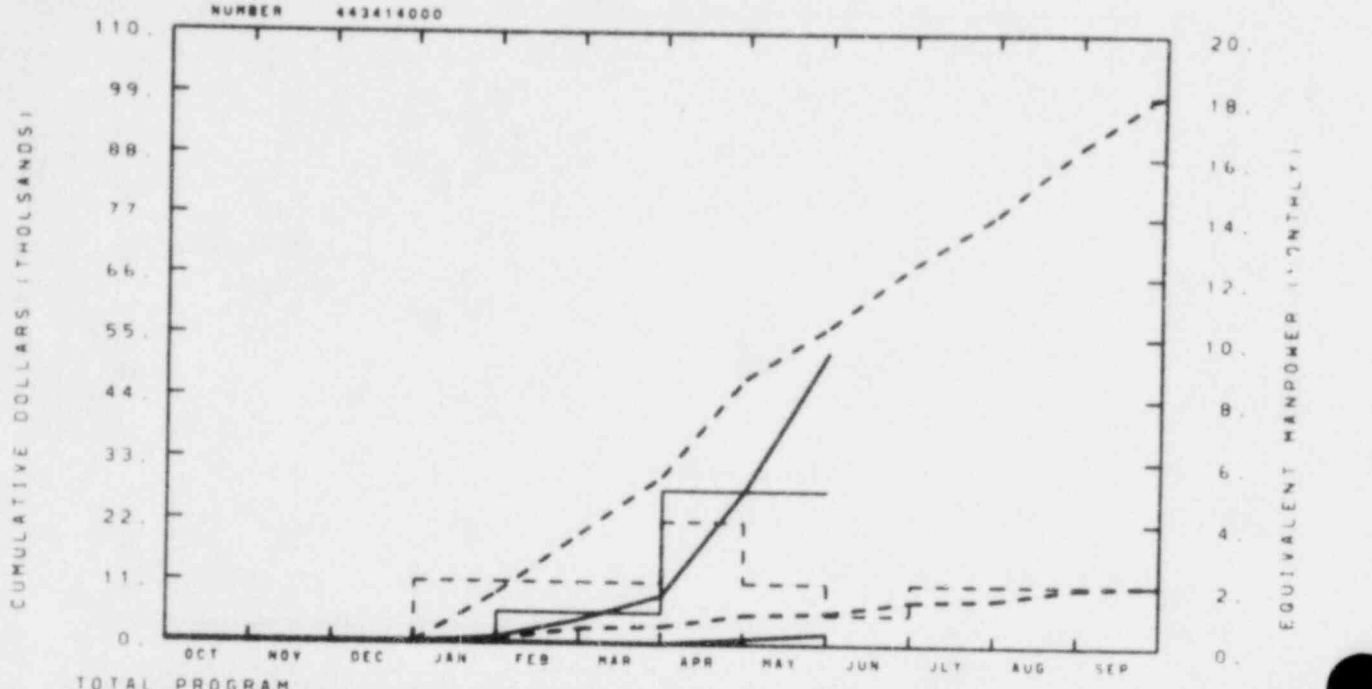
YTD VARIANCE: 6 (20%)

RESPONSIBLE
MANAGER
J. A. 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 | 27 | 52 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 3 | 3 | 5 | 6 | 8 | 8 | 11 | 11 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 4 | 2 | 1 | 2 | 2 | 2 |
| ACTUAL | 0 | 0 | 0 | 0 | 1 | 1 | 5 | 5 | | | | | |

A6407

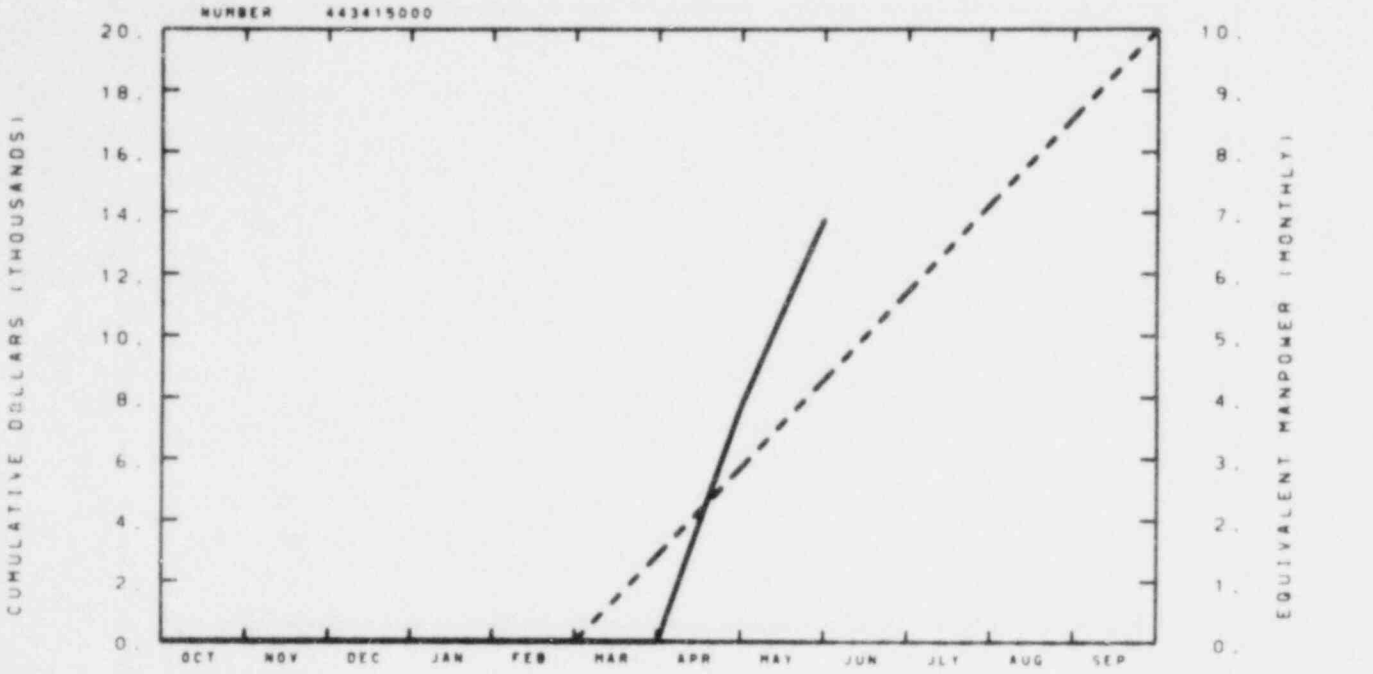
YTD VARIANCE: 5 (9%)

RE[redacted]BLE
MANAGER
J A DEARIEN

EG&G IDAHO INC.

ON-CALL TECH ASST FRAC MEC A6411

NUMBER 443415000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 9 | 11 | 14 | 17 | 20 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 14 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 9 | 11 | 14 | 17 | 20 |
| ACTUAL | 5 | 0 | 0 | 0 | 0 | 3 | 8 | 14 | | | | |

BUDGET - - - - - -

ACTUAL ———

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |

A6411

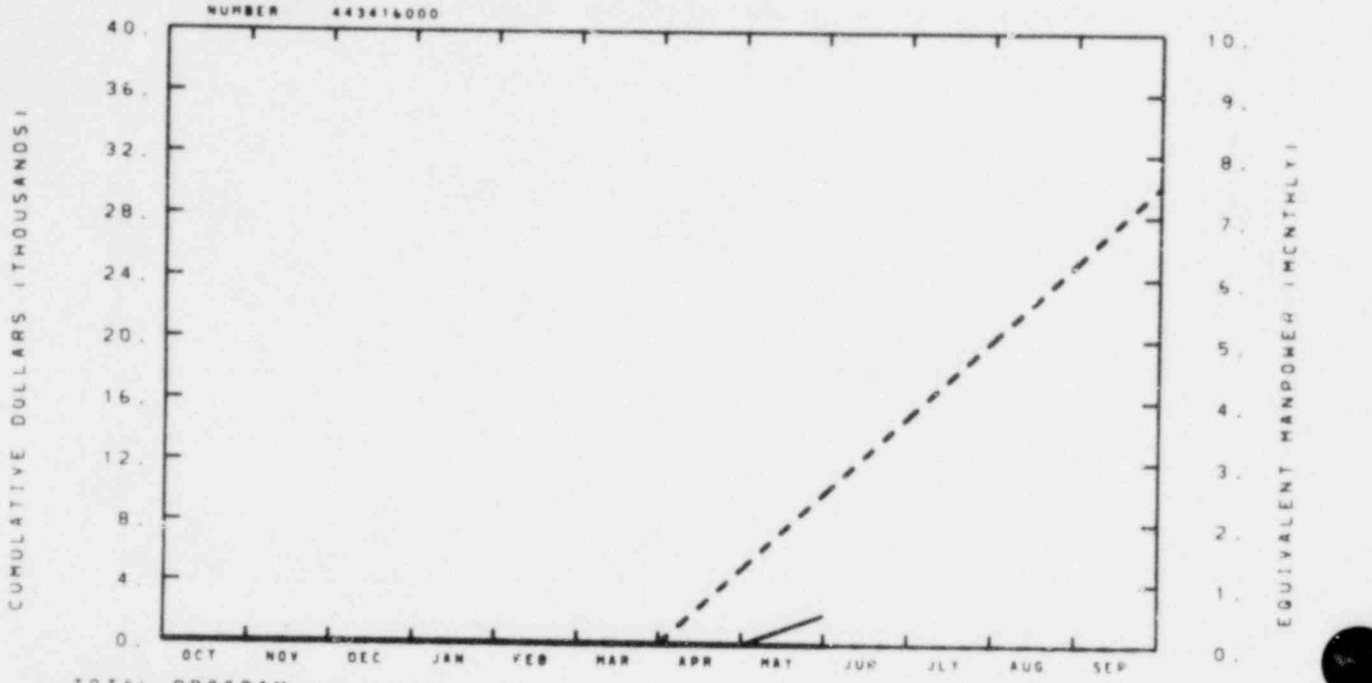
YTD VARIANCE: <5> (56%)

RESPONSIBLE
MANAGER
J A DEARIEN

EG&G IDAHO INC.

PIPE CRACK STUDY GROUP A6412

NUMBER 443416000




TOTAL PROGRAM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 10 | 15 | 20 | 25 | 30 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | | | | |

MATERIAL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 10 | 15 | 20 | 25 | 30 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |

MANPOWER

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ACTUAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |

BUDGET - - - - -

ACTUAL ———

A6412

YTD VARIANCE: 8 (80%)

CODE ASSESSMENT & APPLICATIONS PROGRAM

NRR

TECHNICAL REVIEW & SUMMARY

PROGRAM MANAGER'S
SUMMARY AND HIGHLIGHTS

1. (A6157): The General Electric fuel assembly liftoff report, EGG-EA-5151 was issued to NRC.

2. (A6159): A "camera-ready" copy of the summary report concerning review of operating BWR Off-Gas Systems was prepared for transmittal to NRC. Minor revisions, as suggested by NRC, are included in the "camera-ready" copy.

3. (A6258): Review of the Trojan IST program was completed and the results transmitted to NRC.

   The following problem areas are highlighted:

   (a) (A6152): The performing engineer on this work has been assigned to other work pending receipt of additional data. Also, a letter (JAD-132-80 dated May 28, 1980) identifying a cost impact to this task was transmitted to NRC.

   (b) (A6156): Initial reviews by the three Owners Groups indicate that sufficient information to initiate Safety Evaluation Report (SER) preparation does not exist. Furthermore, supplemental submittals on the fuel analyses will not be available until July. These facts lead to the conclusion that additional funding to complete this effort will be required in FY-1981.

   (c) (A6402): A delay in the Grand Gulf seismic analysis may occur if the difference of opinion between NRC and Bechtel regarding the applicability of Regulatory Guide 1.60 is not resolved in the near future.

   (d) (A6405): Additional funding must be expedited if the FY-1980 work scope is to be completed in FY-1980 (See letter Marx-180-80 dated May 27, 1980).

4. (A6256): The following plant reviews were completed: (1) "Proposed Amendment to Facility Operating License, ΔT Versus Reactor Power Shift Check, Turkey Point Units 3 and 4." - TAC6541 - Cost $1267, (2) "Electrical, Instrument and Control System Aspects of the Low Temperature Overpressure Protection, Oconee Units 1, 2 & 3", - TAC6887 - Cost $3759.

5. (A6256): The milestones for Degraded Grid Part A (P10) and Part B (P18) scheduled for June 1 completion cannot be completed as scheduled since:

I-651 TECHNICAL ASSISTANCE TO REACTOR SAFETY - DSS

TASK

| | |
|---|---|
| A6157 | Fuel Assembly Seismic LOCA Response |
| A6167 | Fuel Performance Code Applications |
| A6251 | Modifications to Water Hammer Review and Evaluation |
| A6268 | Fuel Performance Code Applications II |
| A6270 | Reactor Systems Case Reviews III |

2. Scheduled Milestones for May 1980

| A Nos. | Node | Description | Due Date | Actual Date |
|---|---|---|---|---|
| A6157 | None scheduled. | | | |
| A6167 | None scheduled. | | | |
| A6251 | None scheduled. | | | |
| A6268 | None scheduled. | | | |
| A6270 | None scheduled. | | | |

3. Summary of Work Performed in May 1980

A6157 - The GE fuel assembly liftoff report, EGG-EA-5151 was issued. A "quick look" review of report WCAP-9601 was completed and a cost estimate for a complete review of this document was informally provided NRC.

A6167 - A draft of the documentation and checkout report of the FRAPCON-1 evaluation models was completed. Some finalization of the figures must occur before management review can be initiated.

A6251 - No activity.

A6268 - Eight reports describing FRAP-T5 were transmitted (JAD-120-80) to the NRC Core Performance Branch, thus fulfilling a milestone of this program.

A6270 - Preparation of introductory information for the Byron/Braidwood and Catawba Safety Evaluation Reports continued.

4. Scheduled Milestones for June 1980

| A Nos. | Node | Description | Due Date | Actual Date |
|---|---|---|---|---|
| A6157 | None scheduled. | | | |
| A6167 | None scheduled. | | | |
| A6251 | None scheduled. | | | |
| A6268 | None scheduled. | | | |
| A6270 | None scheduled. | | | |

5. Summary of Work to be Performed in June 1980

A6157 - A complete review of WCAP-9601 will be initiated. Funds originally allocated for a review of a Combustion Engineering submittal will be utilized for this effort.

A6167 - Finalization of the FRAPCON-2 evaluation model documentation and checkout report will commence.

A6251 - Work will begin on preparing a final report. This report is being prepared assuming no additional analysis will be performed.

A6268 - First efforts will be made toward establishing FRAPCON-1 and FRAP-T5 files on the CDC computer for NRC use.

A6270 - Preparation of introductory information for the Byron/Braidwood and Catawba Safety Evaluation Reports will continue.

6. Problems and Potential Problems

None

I-652 TECHNICAL ASSISTANCE TO ENGINEERING - DSS

TASK

| | |
|---|---|
| A6152 | Primary System LOCA Response |
| A6166 | Fracture Toughness Criteria |
| 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 (Formerly under A6162) |

2. Scheduled Milestones for May 1980

| A Nos. | Node | Description | Due Date | Actual Date |
|---|---|---|---|---|
| A6152 | M8 | Formulate Finite Element Structural Model | 5-2-80 | N/S JAD-111-80 |

A6166 None scheduled.
A6265 None scheduled.
A6401 None scheduled.
A6402 None scheduled.
A6404 None scheduled.
A6405 None scheduled.

3. Summary of Work Performed in May 1980

A6152 - Preparation of the Comanche Peak model has been completed to the extent possible. Preparations for a meeting with Westinghouse have been completed. No further work on this task can be performed until additional data is received.

A6166 - Piping stress analyses were performed in support of studies conducted by NRC's Pipe Crack Study Group. Specifically, the stiffnesses at postulated crack locations was calculated for several Beaver Valley piping systems. This information was provided by Dr. Paul Paris of Washington University for use in crack propagation analyses. A draft letter report is being prepared. This effort will expend all the funds remaining in this task.

A6265 - The Salem resubmittal was received and preparation of the Final Safety Evaluation Report was started.

A6401 - Activity on this task consisted of initiating a review of Revision 2 to the Shoreham Preservice Inspection (PSI) plan and preparation of a proposal for additional work in this area. With respect to the latter item, plans for a seminar on Non-Destructive Examination (NDE) and assessment of the correlation between longitudinal and transverse Charpy V-notch data were identified.

A6402 - The Grand Gulf analysis effort continued with the development of a three dimensional half model of the containment shell and dome, and a two dimensional stick model of the containment and drywell. Several "typical" load conditions have been applied to check the models.

The Byron/Braidwood analysis effort continued with completion of a three dimensional shell model of the containment. Formulation of finite element models was initiated for the containment internals (stick model) and the auxiliary building (plane frame model).

A6404 - Two pump and valve materials are being investigated. Efforts on data preparation and presentations are continuing.

A6405 - A response to NRC's request for a proposal was prepared to cover the intergranular stress corrosion cracking (IGSCC) area.

4. Scheduled Milestones for June 1980

| A Nos. | Node | Description | Due Date | Actual Date |
|---|---|---|---|---|
| A6152 | None scheduled. | | | |
| A6166 | None scheduled. | | | |
| A6265 | None scheduled. | | | |
| A6401 | None scheduled. | | | |
| A6402 | None scheduled. | | | |
| A6404 | None scheduled. | | | |
| A6405 | None scheduled. | | | |

5. Summary of Work to be Performed in June 1980

A6152 - The Comanche Peak model will incorporate additional data when it is received from Westinghouse.

A6166 - Issue letter report on work performed for NRC's Pipe Crack Study Group.

A6265 - Preparation of the Salem Safety Evaluation Report will continue. Review of the North Anna Inservice Testing program will start.

A6401 - Complete review of Shoreham PSI plan and discuss comments with NRC and Long Island Lighting Company. Continue work on preparation of NDE seminar and evaluation of Charpy V-notch correlation.

A6402 - Actual loads will be applied to the Grand Gulf models if received from Bechtel. Modeling of the auxiliary building will be initiated for Grand Gulf. Development of the Byron/Braidwood containment and auxiliary building models will continue. Analysis will be initiated provided loads are received from Sargent and Lundy.

A6404 - Preparation of the report on the pump and valve data will continue and investigation of high strength materials will begin.

A6405 - No activity planned unless additional funding is authorized.

6. Problems and Potential Problems

A6152 - Letter (JAD-132-80, dated May 28, 1980) identifying cost impact has been transmitted. Performing engineer has been assigned to other work pending receipt of additional data.

A6402 - A delay in the Grand Gulf seismic analysis may occur if the difference of opinion between NRC and Bechtel regarding the applicability of Regulatory Guide 1.60 is not resolved in the near future.

A6405 - Additional funding must be expedited if the FY-1980 work scope is to be completed this fiscal year.

I-653 TECHNICAL ASSISTANCE TO PROJECTS AND SYSTEMS - DOR

TASK

| | |
|---|---|
| A6250 | Engineering Support for Pipe Break Inside Containment |
| A6256 | Electrical Instrumentation and Control System (EICS) |
| A6258 | System Engineering Support (IST) |
| A6260 | EICS Support for the Systematic Evaluation Program (SEP) |
| A6267 | (N-1) Loop Operation of Beaver Valley and Zion 1 and 2 |

2. Scheduled Milestones for May 1980

| A Nos. | Node | Description | Due Date | Actual Date |
|---|---|---|---|---|
| A6250 | B18 | Oyster Creek Issue Final Report | 5-31-80T<br>8-1-80T<br>JAD-131-80 | |

A6256 None scheduled.
A6258 None scheduled.
A6260 None scheduled.

3. Summary of Work Performed in May 1980

A6250 - Final computer runs for the Oyster Creek piping system seismic analyses were completed. Preliminary results for the control rod drive return line were transmitted to NRC. A draft of the final Oyster Creek report is being prepared.

A6256 - The following plant reviews were completed: (1) "Proposed Amendment to Facility Operating Licensee, ΔT Versus Reactor Power Shift Check, Turkey Point Units 3 and 4." - TAC6541 - Cost $1267, (2) "Electrical, Instrument and Control System Aspects of the Low Temperature Overpressure Protection, Oconee Units 1, 2 & 3", - TAC6887 - Cost $3759.

A6258 - Safety Evaluation Reports for the Millstone and Farley Inservice Testing (IST) programs were completed and are in final review prior to release. Review of the Trojan IST program was completed and the results were transmitted to NRC.

A6260 - Revisions were made to the initial draft evaluations for the following: (1) Palisades Electrical Independence, (2) Ginna Isolation Valves and (3) Dresden Unit 1 DC Bus Monitoring. The revisions incorporated NRC comments on the original drafts.

A6267 - Work continued on a draft report on the Beaver Valley N-1 loop analysis.

4. Scheduled Milestones for June 1980

| A Nos. | Node | Description | Due Date | Actual Date |
|---|---|---|---|---|
| A6250 | B30 | Issue Final Report on Palisades | 6-30-80T N/S JAD-131-80 | |
| A6256 | P3 | Containment Purge 2 TERs | 6-1-80T | |
| | P10 | Degraded Grid Part A Issue 9 TERS | 6-1-80T | |
| | P18 | Degraded Grid Part B Issue 11 TERs | 6-1-80T | |
| | P31 | HPCI & ESAP MODS Dresden I | 5-1-80T | 5-1-80C JAD-105-80 |
| A6258 | None scheduled. | | | |
| A6260 | None scheduled. | | | |
| A6267 | None scheduled. | | | |

5. Summary of Work to be Performed in June 1980

A6250 - A draft of the Oyster Creek report will be completed. It is noted that additional information is required on Palisades and Millstone no later than early July.

A6256 - Continue work on plant reviews.

A6258 - A meeting will be held at Quad Cities to discuss questions resulting from our review of their Inservice Testing (IST) program. Review of the Oyster Creek IST program will be completed and results transmitted to NRC. Safety Evaluation Report (SER) preparation will be started on the Rancho Seco and Beaver Valley IST programs and the Farley and Millstone SERs will be issued.

A6260 - Further revisions of draft evaluations and research on safe shutdown systems for SEP plants.

A6267 - A draft report on the Beaver Valley N-1 loop analysis will be completed.

6. Problems and Potential Problems

A6256 - The milestones for Degraded Grid Part A (P10) and Part B (P18) scheduled for June 1 completion cannot be completed as scheduled since

1) Complete information, including answers to questions is available for no plants for Degraded Grid Part A and for only 4 plants for Part B.

2) Only 5 plants for Part A and 4 plants for Part B have committed to supply required information during June.

Milestones P9 and P17, scheduled for March 31, 1980 completion still have not been completed due to lack of complete information.

I-654 TECHNICAL ASSISTANCE TO PROJECTS AND ENGINEERING - DOR

TASK

| | |
|---|---|
| A6156 | Technical Assistance on Asymmetric LOCA Loads |
| A6159 | Technical Assistance to Environmental Evaluation Branch |
| A6407 | Safety Related Pump and Valve Reliability and Operability |

2. Scheduled Milestones for May 1980

| A Nos. | Node | Description | Due Date | Actual Date |
|---|---|---|---|---|
| A6156 | V2 | Plant Specific Sub. Issue 9 SER's | 5-1-80T | N/S JAD-73-80 |
| | V50 | Issue Informal Independent Analysis Technical Report | 5-1-80T | 4-30-80C JAD-106-80 |

A6159 None scheduled.
A6407 None scheduled.

3. Summary of Work Performed in May 1980

A6156 - No work was performed on the Pressurized Water Reactor (PWR) feedwater pipe crack evaluation due to the efforts in support of the Pipe Crack Study Group (A6166). Work continued on the review of the three Owners Group submittals. The Westinghouse and B&W reviews have been completed. Work on review of the Combustion Engineering submittal has been initiated. Sufficient information to initiate Safety Evaluation Reports (SER) is not contained in the Owners Group submittals.

A6159 - The temporary/mobile radwaste task was continued by contacting all NRC regional offices for information. The plan for completing this task was discussed with NRC's Effluent Treatment Systems Branch personnel who are now responsible for this task.

The Direct Radiation task was redirected at a meeting of EG&G/Santa Barbara personnel with the NRC from calculation of direct radiation due to $^{16}N$ gammas to examination of existing thermoluminescent detectors (TLD). The purpose of the review of licensees TLD data is to evaluate the quality of the reported exposures at the fence line. Work performed to date of the $^{16}N$ gamma radiation has been summarized and work on TLD data evaluation is being pursued. The change from emphasis on $^{16}N$ to TLD data will not cause any significant extra expense; however, the approximately 1 month we have spent on $^{16}N$ could have been spent on TLDs. The result will be a delay in delivery of the preliminary report.

The Deminimus Radioactivity Level task was continued by (a) acquiring pertinent literature, (b) reviewing this literature in detail paying attention to collating pertinent data in an organized and retrievable manner, (c) gathering data from operating reactor licensees, (d) reviewing pathway analysis models, (e) finalizing an annotated bibliography of regulations, literature, and guidances, and (f) preparing an outline of the draft final report.

The final report on the radiological consequences of containment purge has been reviewed by NRC, EG&G, and ENICO management. Final revisions are now being incorporated.

A "camera-ready" copy of the summary report on BWR Off-Gas Systems was prepared for transmittal to the NRC. Minor revisions, as suggested by NRC, are included in the "camera-ready" copy.

A6407 - Compilation of pump data for safety and safety related systems as contained in the Nuclear Plant Reliability Data System has been completed. Tabulation of failure data will complete this effort.

4. Scheduled Milestones for June 1980

| A Nos. | Node | Description | Due Date | Actual Date |
|---|---|---|---|---|
| A6156 | None scheduled. | | | |
| A6159 | None scheduled. | | | |
| A6407 | None scheduled. | | | |

5. Summary of Work to be Performed in June 1980

A6156 - The PWR feedwater pipe crack evaluation will resume by formulating finer nozzle/elbow-thermal and structural models per the direction of NRC. Work on implementaton of Task Action Plan A-2 will continue with review of the CE Owner's Group submittal and a meeting with NRC.

A6159 - The Temporary/Mobile Radwaste task will be continued by visiting reactor sites with operating mobile waste solidification units.

The Direct Radiation task will study the effects of soil moisture and overall background variation in the vicinity of the Dresden site. The purpose of this study is to attempt to correct existing data so that a more accurate exposure rate can be determined.

The Deminimus Radioactivity Level task will continue with completion of the gathering and analysis of data and the pathway analysis review. A trip is planned during the month to discuss this task with the technical monitor.

The final report on the containment purge task will be issued and the "camera-ready" copy of the summary report on the BWR Augmented Off-Gas Systems will be provided NRC.

A6407 - Pump failure data will be obtained and a letter report summarizing all pump data will be prepared and issued. Work on compiling valve data will be initiated.

6. Problems and Potential Problems

A6156 - Initial review of the submittals by the three Owner's Groups indicates that sufficient information to initiate Safety Evaluation Report preparation does not exist. This, coupled with the fact that a supplemental submitted on the fuel analysis will not be available until July, leads to the conclusion that additional funding to complete this effort will be required in FY1981.

WRRD MONTHLY REPORT FOR

MAY 1980

GPP AND LINE ITEMS

M. L. RUCKER, ADMINISTRATIVE SUPERVISOR "B"
PLANNING AND BUDGETS DIVISION

R. H. BEERS, MANAGER
PROJECT MANAGEMENT DIVISION

SEMI SCALE

EG&G IDAHO, INC.

GPP/LINE ITEM

PROGRAM SEMISCALE

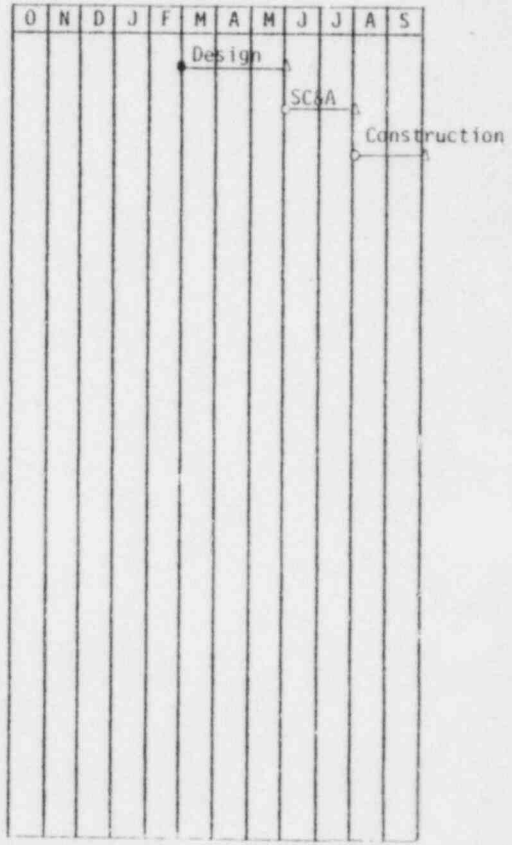
FY-1980

MANAGER L. P. Leach

139a No. A6038

| EA No. | Item Description | Original PA Amount | ($000) Current Est. Cost | Project To Date Costs |
|---|---|---|---|---|
| 934000000 | WRRTF Sanitary Sewer Upgrade | 100 | 60 | $ 11,271 |

Task Initiated o
Task Completed Δ



# THERMAL FUELS BEHAVIOR PROGRAM

EG&G IDAHO, INC.

GPP ITEMS

PROGRAM THERMAL FUELS BEHAVIOR PROGRAM

MANAGER J. P. Kester

189 No. A6044

| EA No. | Item Description | Original PA Amount | ($000) Current Est. Cost | Project To Date Costs |
|---|---|---|---|---|
| 931600000 | PBF Control Room Noise Abatement | 59 | 42 | $ 35,995 2/ |
| 931900000 | PBF Support Building 1/ | 509 | 572 | $229,795 3/ |


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

2/Includes M-K subcontract costs. Work is complete, but costs are still being accumulated.

3/Includes M-K subcontract costs.