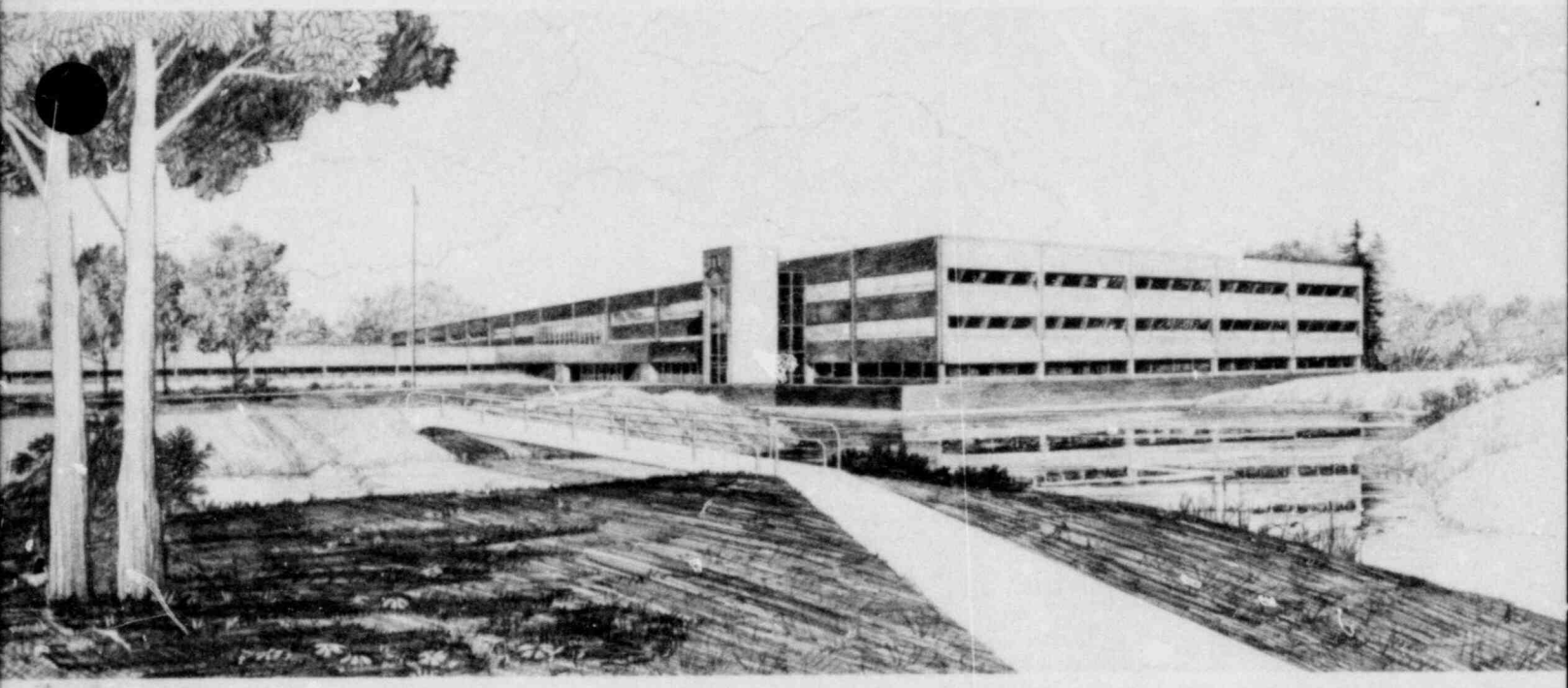
EGG-WRR-5426
April 1981

MONTHLY REPORT FOR THE WATER REACTOR RESEARCH TEST FACILITIES, 2D/3D, CODE DEVELOPMENT, CODE ASSESSMENT AND APPLICATION DIVISIONS, AND THE THERMAL FUELS BEHAVIOR PROGRAM

J. A. Dearien

NRC Research and Technical Assistance Report

U.S. Department of Energy
Idaho Operations Office • Idaho National Engineering Laboratory



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EG&G Idaho

ACRONYMS

NRC Research and Technica
Assistance Report

AMB	Applied Mechanics Branch
ANL	Argonne National Laboratory
ANS	American Nuclear Society
ACRS	Advisory Committee on Reactor Safety
ASME	American Society of Mechanical Engineers
BD/ECC	Blowdown/Emergency Core Coolant
BWR	Boiling Water Reactor
CA&AD	Code Assessment and Application Division
CAM	Constant Air Monitor
CC	Component Checkout
CCB	Change Control Board
CCTF	Cylindrical Core Test Facility
CDD	Code Development Division
CDUM	Code Description and User's Manual
CE	Combustion Engineering
CHF	Critical Heat Flux
CLLMS	Conductivity Liquid Level Measurement System
CM	Corrective Maintenance
CPM	Critical Path Method
CSNI	Committee on Safety for Nuclear Installation
DAPS	Data Acquisition and Processing System
DARS	Data Acquisition and Reduction System
DAS	Data Acquisition System
DDAPS	Digital Data Acquisition and Processing System
DE	Division of Engineering
DER	Data Evaluation Report
DL	Division of Licensing
DOE	Department of Energy
DP	Differential Pressure
DSI	Division of Systems Integration
DSRR	Division of Systems and Reliability Research
DST	Division of Safety Technology
EI	Energy Incorporated
EICS	Electrical Instrumentation and Control System
EDF	Engineering Design File
EDR	Experimental Data Report
ENICO	Exxon Nuclear Idaho Company, Incorporated
EOS	Experiment Operating Specifications
EP&A	Experimental Planning and Analysis
EPRI	Electric Power Research Institute
EQDB	Equipment Qualification Data Base

ACRONYMS (Continued)

FCF	Facility Change Form
FDG	Fluid Distribution Grid
FIST	Full Integral Simulation Test
FMEA	Failure Mode Effects Analysis
FRG	Federal Republic of Germany
FSAR	Final Safety Analysis Report
GE	General Electric
GRS	Gesellschaft fur Reaktorsicherheit
HDR	Heiss Dampf Reaktor
HLS	Hot Leg Spool Piece
IFA	Instrumented Fuel Assemblies
IGSCC	Intergranular Stress Corrosion Cracking
ILSG	Intact Loop Steam Generator
INEL	Idaho National Engineering Laboratory
IOER	Integrated Operational Experience Reporting System
IPT	In Pile Tube
IREP	Interim Reliability Evaluation Program
ISDMS	Idaho National Engineering Laboratory Scientific Data Management System
ISP	International Standard Problem
IST	Inservice Testing
JAERI	Japan Atomic Energy Research Institute
KfK	Kernforschungszentrum Karlsruhe
LER	Licensee Event Report
LLD	Liquid Level Detector
LOC	Loss of Coolant
LOCA	Loss of Coolant Accident
LOFT	Loss of Fluid Test
LTSF	LOFT Test Support Facility
LVDT	Linear Variable Differential Transformer
LWR	Light Water Reactor
MFD	Master Facility Drawing
MIT	Massachusetts Institute of Technology
NESC	National Energy Software Center
NPRDS	Nuclear Plant Reliability Data System
NPSH	Net Positive Suction Head
NTOL	Near-Term Operating License
OPTRAN	Operational Transient
OR	Operating Reactors
ORNL	Oakridge National Laboratory

P&IA	Plant and Instrument Air
P&ID	Process and Instrument Diagram
PAS	Probabilistic Analysis Staff
PBF	Power Burst Facility
PCM	Power Cooling Mismatch
PIE	Postirradiation Examination
PKL	Primary Coolant Loop
PM	Preventive Maintenance
PMIS	Performance Management Information System
PNL	Pacific Northwest Laboratory
PORV	Power Operated Relief Valve
PPS	Plant Protection System
PR	Combination of PCM/RIA
PRAC	Power Reactors Advisory Committee
PWR	Pressurized Water Reactor
QA	Quality Assurance
QDR	Quality Discrepancy Report
QLR	Quick Look Report
QPP	Quality Program Plan
RCCS	Reactor and Canal Cleanup System
RFQ	Request for Quotes
RIA	Reactivity Initiated Accident
RSB	Reactor Systems Branch
SAI	Scientific Applications Incorporated
SASA	Severe Accident Sequence Analysis
SBE	Small Break Experiment
SCDAP	Severe Core Damage Analysis Package
SCTF	Slab Core Test Facility
SDD	System Design Description
SEP	Systematic Evaluation Program
SER	Safety Evaluation Report
SHB	Single Heated Bundle
SO	Systems Operations
SOW	Statement of Work
SPERT	Special Power Excursion Reactor Test
SQRT	Seismic Qualification Review Team
SRV	Safety Relief Valve
SSTF	Steam Sector Facility
SWR	Site Work Release
TAN	Test Area North
TC	Thermocouple
TER	Technical Evaluation Report
TFBP	Thermal Fuels Behavior Program
TFCF	Transient Flow Calibration Facility

NRC Research and Technical Assistance Report

ACRONYMS (Continued)

TLTA	Two Loop Test Apparatus
TMI	Three Mile Island
TRR	Test Results Report
TVA	Tennessee Valley Authority
UHI	Upper Head Injection
UIC	Unique Identification Code
USSP	United States Standard Problem
UPTF	Upper Plenum Test Facility
WBS	Work Breakdown Structure
WRRD	Water Reactor Research Department
WRRTF	Water Reactor Research Test Facilities

MONTHLY REPORT FOR

APRIL 1981

NRC Research and Technical Assistance Report

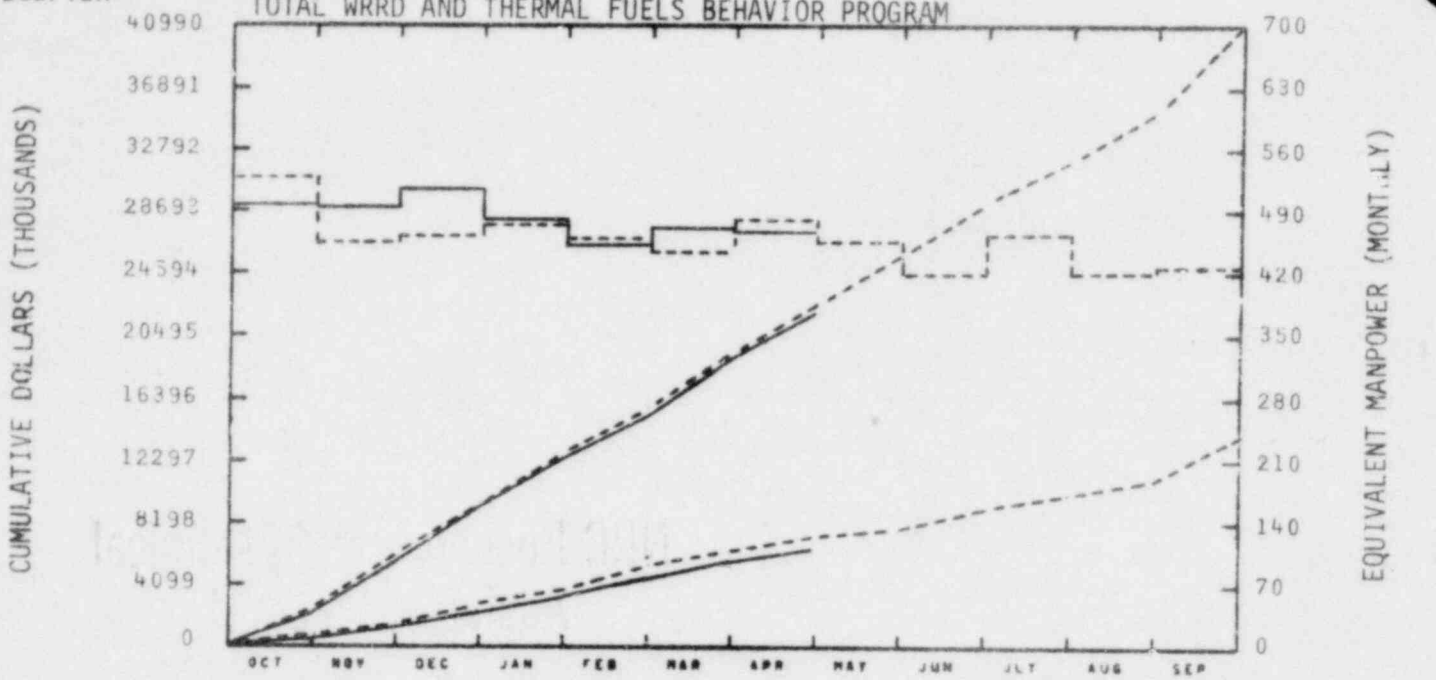
J. A. Dearien, Department Manager

B. E. Williams
Planning & Budgets Branch

RESPONSIBLE
MANAGER
J A Dearien

EG&G IDAHO, INC.

TOTAL WRRD AND THERMAL FUELS BEHAVIOR PROGRAM



TOTAL PROGRAM

BUDGET	2979	6076	9587	12483	15556	19356	22625	25667	29208	31943	35261	40990	
ACTUAL	2614	5955	9555	12421	15184	19286	22119						

MATERIAL

BUDGET	843	1851	3118	3945	4909	6050	7029	7885	8970	9741	10610	14221	
ACTUAL	623	1705	2798	3582	4214	5458	6123						

MANPOWER

BUDGET	528	453	459	472	454	446	475	453	417	458	417	423	
ACTUAL	495	494	513	475	450	469	462						

BUDGET
ACTUAL

YTD VARIANCE: 506 (2%)

Individual cost graphs will give individual explanations.

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

MONTHLY REPORT FOR

APRIL 1981

WATER REACTOR RESEARCH TEST FACILITIES DIVISION

Paul North

P. North, Manager

John P. Crouch

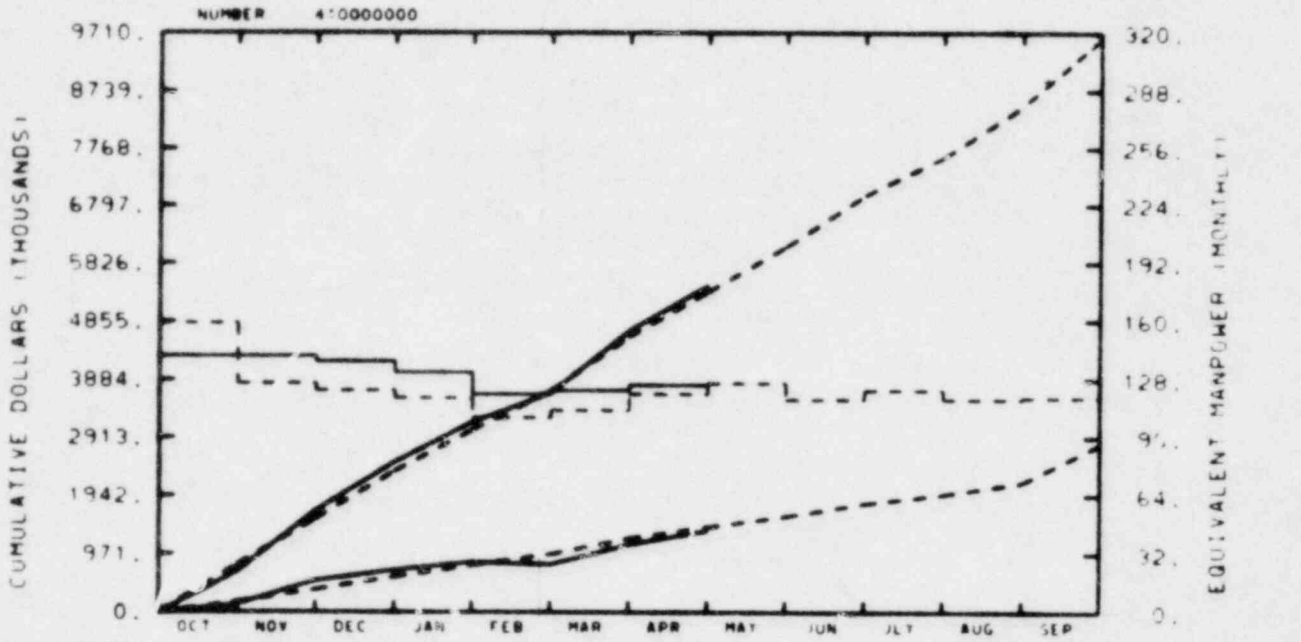
J. P. Crouch
Planning & Budgets Representative

RESPONSIBLE MANAGER
P NORTH

EG&G IDAHO INC.

WATER REACTOR RESEARCH TEST FAC

NUMBER 4:0000000



TOTAL PROGRAM

BUDGET	793	1560	2346	3036	3700	4601	5343	6100	6969	7822	8681	9675
ACTUAL	677	1690	2498	3172	3665	4697	5446					

MATERIAL

BUDGET	174	381	592	785	968	1230	1416	1595	1806	1959	2154	2798
ACTUAL	136	531	[illegible]	839	802	1131	1356					

MANPOWER

BUDGET	159	126	122	118	[illegible]	[illegible]	120	126	117	122	117	118
ACTUAL	141	141	138	132	120	122	125					

BUDGET

ACTUAL

YTD VARIANCE: <103> (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.

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

The Semiscale small break UHI experiments were completed approximately one month ahead of schedule. Work on the natural circulation modifications was started.

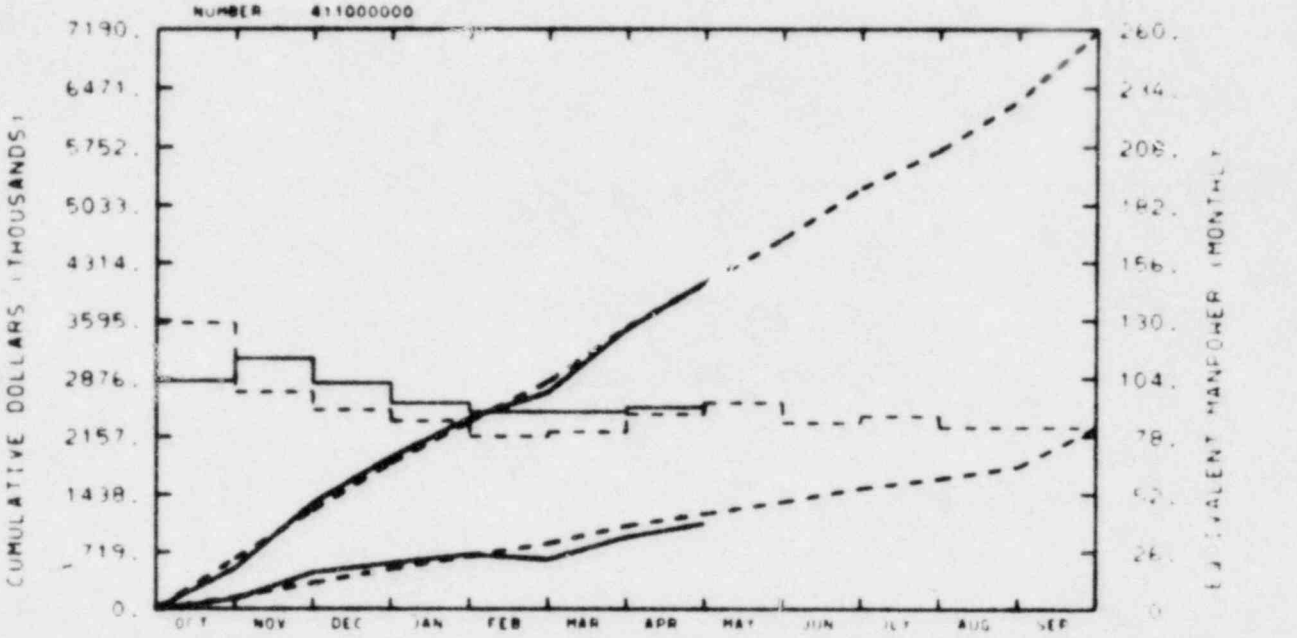
In the LOFT Test Support Facility, the calibration of LOFT and Semiscale critical flow orifices was completed as scheduled.

RESPONSIBLE MANAGER
P. NORTH

EG&C IDAHO INC.

SEMISCALE

NUMBER 411000000



TOTAL PROGRAM

BUDGET	618	1241	1831	2342	2816	3507	4054	4614	5243	5710	6309	7160
ACTUAL	514	1328	1903	2384	2708	3490	4065					

MATERIAL

BUDGET	147	327	505	667	822	1045	1197	1342	1512	1631	1781	2265
ACTUAL	128	459	579	690	625	905	1076					

MANPOWER

BUDGET	129	98	90	85	78	80	87	93	84	87	82	92
ACTUAL	103	113	102	93	89	89	91					

BUDGET

ACTUAL

A6038

YTD VARIANCE: <11>

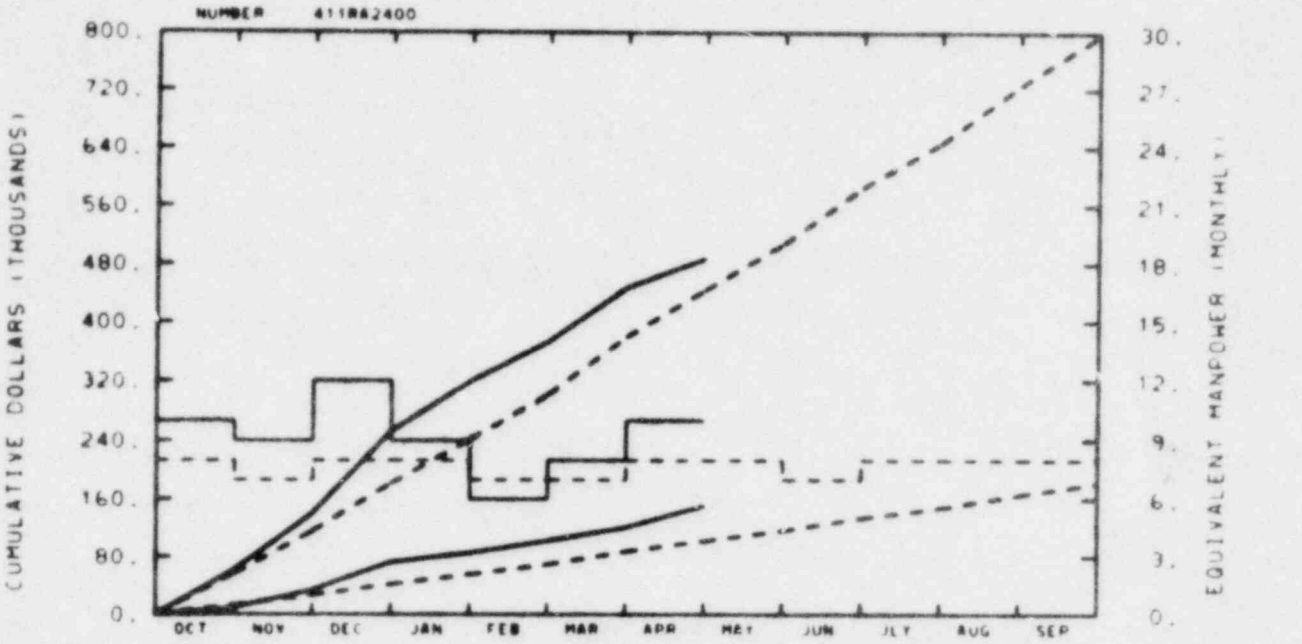
The change in total program budget spread from last month to this month is due to CCB's SS 81-05 through SS 81-24 data being integrated into the budget.

RESPONSIBLE MANAGER
F. AGUILAR

EG&G IDAHO INC.

RELAP5

NUMBER 411BA2400



TOTAL PROGRAM

BUDGET	56	116	182	241	301	380	444	508	585	646	727	798
ACTUAL	62	141	253	319	373	448	487					

MATERIAL

BUDGET	13	27	42	56	70	88	102	117	134	148	166	182
ACTUAL	10	34	73	86	103	121	151					

MANPOWER

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

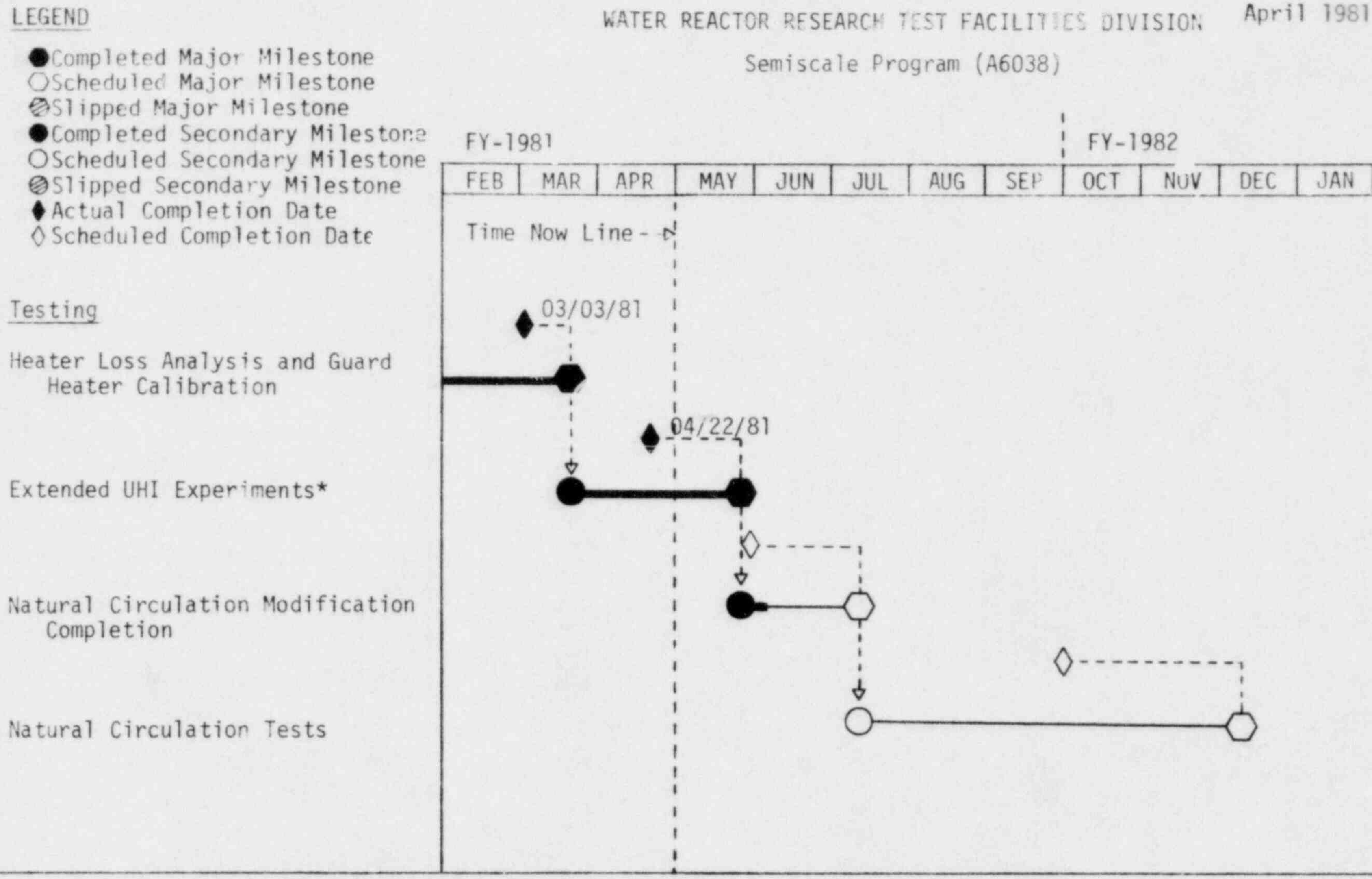
BUDGET

ACTUAL

A6038

YTD VARIANCE: <43> (10%)

The overexpenditure for the first quarter was for the NRC sponsored RELAP5 workshop. A working plan has been initiated to bring the expenditures in line with the budget.



NOTES: * This schedule chart reflects addition of S-UT-6 and S-UT-7 per NRC direction and DOE approval. Appropriate CCB actions are now approved.

1. 189a A6038 - Water Reactor Research Test Facility Division

2. Scheduled Milestones for April 1981

Node	Description	Due Date	Date Completed
N/A	Completion of UT Test Series	May 25, 1981	April 22, 1981

3. Summary of Work Performed in April 1981

A. 41DA00 - Measurement Engineering

1. 41DA2100

a. All hardware for use in the "pant leg" conversion effort has been trial fitted and corrective action initiated as required.

b. Instrumentation hardware received in the conversion includes a 2-1/2 in. low range turbine. The optical probes for viewing in the "pant leg" and steam generator lower plenum have been shipped.

2. 9D0810400 - Intact Loop Pump Test

The pump test plan was formalized and issued for comments and approval. The site work release (SWR) was written and the test should be conducted during the Natural Circulation (NC) Modification shutdown.

3. 9D080500 - FLECHT Test and SAW Loop Upgrade

The FLECHT experiment testing is continuing and is 65% complete at this time.

B. 411HM00 - Hardware Mods

1. 411HM1100

a. Small Break Tests

Intact loop piping was modifed to accept the new 3 in., drag screen washers. The washers were installed and data was obtained during the small break experiments.

3. Summary of Work Performed in April 1981 (continued)

The 5% break orifice was fabricated and installed in the system. The condensing system was upgraded to handle the 5% tests. Due to schedule restraints, this design, procurement and installation required expediting and close cooperation among the various branches and support groups. The job was completed satisfactorily and on time.

The progress of several projects required for the natural circulation test series is reported below.

b. Hot Leg Inclination

A computer analysis was made to ensure compliance with code when cold springing hot leg pipe for proper high temperature inclinations. Cold springing will be about 3/8 in. A system for measuring inclination using linear variable displacement transformer (LVDT) was conceived, and material ordered. The analysis was documented in an engineering design file (EDF).

c. Intact Loop Piping Spools

The fabrication of the replacement spool is 85% complete. Fabrication of the pump bypass spool is 50% complete and the bypass spool pipe support was completed.

d. Lower Plenum Drain System

Installation drawings are approximately 75% complete. The drawings will be completed and the installation SWR will be issued in early May.

e. Reflux Measuring System

Completed drawings of the reflux tanks and issued the bid package. This job will require expediting to meet the schedule requirements.

Installation drawings are approximately 25% complete, and will be completed in May.

All long lead material was ordered.

3. Summary of Work Performed in April 1981 (continued)

f. Vessel External Heaters

A Change Control Board (CCB) authorizing this additional work scope was prepared. The task involves equipping the vessel with heat tape to solve the heat loss problem. The installation will utilize the existing 54 kW dc power supply (for heat tapes) since this power supply will no longer be needed for the primary piping external heaters. The task is planned to be completed during the Natural Circulation Modification shutdown.

g. Primary Piping External Heaters

An informal design review resulted in a significant simplification of the external heater system. Basically, we plan to reduce the five present circuits to four and utilize heat tape instead of band heaters for the steam generator "pant legs" and other new spool pieces. This power supply/heater control redistribution and use of heat tapes will result in an estimated annualized $25,000 cost savings (power supply material cost, heat tape versus band heater costs, eliminating the need for additional distribution panels, crafts hours for installation and maintenance).

Issued SWRs to install heat tape on the primary piping.

h. Non Condensible Gas Injection (Steam Generators)

The conceptual design was completed and long lead material was ordered. We are presently working on a test scheme to verify the concept and to determine which gas (Helium or Nitrogen) to use.

i. Steam Generator Steam Flow

A preliminary engineering analysis of the existing system indicates that addition of small orifices to the bypass loops around the main valves will provide the necessary control. Of course, this is contingent upon the 2 in., (main) steam valves being leak tight. The plan is to relap the valve seats and add the orifice plates as indicated.

C. 411LE00 - Semiscale Operations

1. 411LE1100

The major work, efforts for April have been the performance of Tests S-UT-4, S-UT-5, S-UT-6, and S-UT-7.

3. Summary of Work Performed in April 1981 (continued)

Test S-UT-4, a 2-1/2% break test with band heaters, was performed on April 1, 1981. The test was successful from an operational and data measurements point of view. The corrected tape was delivered to analysis personnel April 6, 1981.

Test S-UT-5, a 2-1/2% break test with upper head injection and band heaters was performed on April 8, 1981. The test was successful from an operational and data measurements point of view. The corrected tape was delivered to analysis personnel April 10, 1981.

Test S-UT-6, a 5% break test with band heaters was performed April 16, 1981. This test, delayed one day to accommodate LOFT's test schedule, was successful from an operational and data measurements point of view. The corrected tape was delivered to analysis personnel April 20, 1981.

Test S-UT-7, a 5% break test, with upper head injection and band heaters, was performed April 22, 1981. Based on preliminary data review held April 23, 1981, the test was successful. The corrected tape is scheduled tentatively for completion by Monday, April 27, 1981.

The experiment data report (EDR) for S-UT-1 and 2 is not going to meet the committment date of May 13, 1981. The delay is due to having to incorporate uncertainty information on each plot, and to rewrite part of the text to reflect Semiscale's uncertainty analysis. A new committment date will be presented by May 1, 1981.

Experimental data was recorded and processed for Tests S-UT-4, S-UT-5, S-UT-6, and S-UT-7. No significant instrumentation problems were encountered. The drag screens for the intact loop were installed and calibrated.

Thirty-five different transducers were evaluated as to calibration and linearity. Thirty-three of these were used in the Semiscale UT Series.

The Westinghouse reactor water level system was set up for four tests this month; Test S-UT-4, 5, 6, and 7. The system was in the standard configuration (upper-head reference) for the non-upper-head injection tests; Test S-UT-4 and 6 and operated as expected. The system was placed in the upper head injection configuration (hot leg reference) for the upper head injection Tests S-UT-5 and 7. The system operated as expected for Test S-UT-7. During Test S-UT-5

3. Summary of Work Performed in April 1981 (continued)

the Westinghouse system did not behave as expected. After drain following the test it was observed that valve V2 was not in the normal open position, but hard against the stop at the open position. In consulting with Autoclave Engineers Inc., it was determined that the handle would be in that condition when the valve was stuck closed.

The Westinghouse water level system characterization test was completed April 14, 1981. A system calibration, end to end, was performed, and data was analyzed for uncertainty. A write up for the system description and installation was completed this month.

On April 22, 1981, the Oak Ridge National Laboratory (ORNL) heated thermocouple liquid level system arrived at the central facility warehouse. After examination, it was determined that the upper head must be removed to install the probe. An additional week on the conversion schedule will be required to ensure installation for the natural circulation test series.

2. 411LE2100 Analysis personnel provided support for the UT test series Test S-UT-4, 5, 6 and 7. The quick look report (QLR) for Test S-UT-4 was transmitted on April 23, 1981. QLR's for Tests S-UT-5, 6 and 7 were begun and are scheduled for completion 3 weeks after their respective test dates.

Pretest prediction RELAP5 calculations were documented for Tests S-UT-5 (PN-37-81), S-UT-6 (PN-40-81), and S-UT-7 (PN-41-81).

Three RELAP5 calculations were performed in support of the Tests S-UT-3 and S-UT-4 Posttest Analysis Report. These calculations show the relative thermal-hydraulic trends as calculated by RELAP5 for Tests S-UT-3, S-UT-4, and with the assumption of adiabatic system boundaries imposed on Test S-UT-3.

3. 411LE23000 Four members of the Experiment Planning and Analysis Branch attended the RELAP5 International Workshop held March 30 through April 3, 1981. Two members of the branch gave presentations on the use of RELAP5 for Semiscale experiment analysis.

3. Summary of Work Performed in April 1981 (continued)

A paper for the American Nuclear Society (ANS) specialists meeting on small break loss-of-coolant analyses in light water reactors (LWR's) was written. The paper presents a comparison of results from the LOFT and Semiscale small break pumps on/pumps off tests. The paper was sent to composition on April 23, and will be forwarded to ANS by May 15.

4. 411LE2400 Analysis of the Westinghouse reactor vessel liquid level and associated Semiscale measurements for Test S-UT-3 was completed. The first report rough draft covering installation, checkout, in place calibration and Test S-UT-3 results was completed for review. Arrangements have been made to put Westinghouse and liquid level selected Semiscale data in a restricted-access file in the data bank for limited data review use by ORNL and Westinghouse.

A letter was written which documents the performance of the reflux meter to be used for the natural circulation test series. Results of air-water testing show that the efficiency of the meter is a smoothly continuous function of the reflux rate. Countercurrent air flow had no effect over the expected range.

The natural circulation test series experiment operation specification (EOS) was submitted for final management review.

5. 411LE2500 Standard practice revision work was completed. Implementation of the new branch work process requirements was started, including development of advanced planning documentation and of FY-82 test series requirements.

6. 411LE3100 - Engineering Level of Effort

As a result of operating experience with drag transducers, the leak rate and frequency was considered abnormal. An investigation of the problem revealed that the specified torque requirements to produce a leak tight seat were too low. The torque requirements will be revised.

Standard Practices for design reviews, engineering design files, test procedures, and SWR's were revised and issued.

Prepared work packages and CCB information for the vessel heat tape project.

3. Summary of Work Performed in April 1981 (continued)

Results were received and documented in an EDF of the insulation tests from Dynatech Laboratory in Cambridge, Mass. The insulation proves to be very close to calculated and published conductivity values.

A "universal" hydrotest fixture for testing instrument washers of all sizes, including density, drag screens, and optical probes was designed and is presently in drafting.

A comprehensive program for piping analysis per ANSI B31.1 was developed for use on the HP41C calculator. This will be located in the EDF file and should be very useful for future projects.

D. 411M200 - Mod-2A Conversion

1. 411M23400 The letter report detailing the results of the Heat Loss Characterization test series for the Mod-2A system was submitted for final management review. The report contains information on the heat loss rate fom the system from various sources.

2. 411M24100 - Hot Water Makeup System

The design requirements for this system were reviewed, and a simplified design approach was developed which will meet Experiment Planning and Analysis (EP&A) requirements for the first six natural circulation tests and reduce costs. Elimination of heat tape and several other minor design changes will result in an estimated $20 K cost savings. This system will be installed during the Natural Circulation Modification shutdown.

The high pressure pump was flow tested and the SWR to wire the vessel heaters was issued.

3. 411M24200 - Instrumentation Development

Drawings of the optical probes and light sources for the new plenums and measurement spools (pant legs) were completed and the procurement package initiated.

A new Dewar by ORTEC was received enabling a trial fit up of the prototype bracket. Minor modifications were needed and were made to the bracket. A make-buy decision for the remaining brackets will be made in May.

3. Summary of Work Performed in April 1981 (continued)

A lot of clean up work on bracketry, probes, camera mounts, washers, spool pieces was completed to fit everything together as more manufacturing data became available. Overall fit up of instrumented spool hardware looks really good.

Issued SWR's to (a) fabricate optical probe camera support brackets and (b) steam generator plenum water cooled pressure probes.

Fabrication of the dummy turbine meter sleeves is 50% complete, and will be completed in early May.

The water cooled pressure probe braze qualification samples successfully passed metallographic examination. The drawings were released and an SWR issued to manufacture the pressure probes for the steam generator pantlegs and plenums.

The hardware for vessel turbo probes is complete at Measurements, Inc. Tentatively, they plan to test the turbine seals in early May and we should have results by May 8, 1981.

4. 411M25200 - Primary Loop Upgrade

Plenums and pipe received from Rocky Mountain Nuclear, Salt Lake City, Utah, were trial fit and leak checked. Some minor fitup problems have been fixed. This will result in a much smoother installation in the system next month. One spool piece was returned to the supplier for rework because the wrong size hub was installed. The rework will be completed by April 30, 1981 at the vendor's expense.

4. 411NC00 - Natural Circulation Test Series

1. 411RA1700 The sensitivity of the partial derivatives (used in the modified convective heat transfer algorithm for RELAP5) to fluid and heat structure conditions was determined. This was accomplished by making 3-dimensional plots of the derivatives with equilibrium quality and wall super heat as independent variables and by evaluating the derivatives in a small RELAP5 calculation. It was noted that the properties returned from the RELAP5 steam table programs were slightly different when the tables were entered with pressure and fluid temperature than when entered with the corresponding pressure and internal energy. As a result, the partial derivatives were reformulated in terms or pressure and internal energy, instead of pressure, fluid temperature, and quality. The 3-dimensional plotting routine is being modified to allow pressure or mass flux to be used as an independent variable instead of quality.

3. Summary of Work Performed in April 1981 (continued)

F. 411T1X200 - External Heaters

1. 411TC1500 Posttest data review of Tests S-UT-3, S-UT-4 for heater band effectiveness was completed. The lack of broken loop accumulator injection in Test S-UT-3 precluded acomplishing a significant part of the Tests S-UT-3/S-SB-2 (i.e., Mod-2A/Mod-3) comparison.

2. 411TC1600 The EOS for Tests S-UT-6 and 7 were completed and transmitted one week prior to Test S-UT-6.

3. 411TC1700 Work was completed with the Design Branch to get the 5% break effluent condensing system in for Test S-UT-6. The system appeared to have worked well. Posttest analysis of Test S-UT-6 was started (test conducted April 16, principal corrected test data received April 20). Preliminary data review indicated the test was successful although the leakage rate was high (0.35 gpm prior to start of test). Scope and budget of this package was increased to include LTSF "calibration" of the 5% break orifice plate.

G. 411T710 - Test Series 7

1. 411T7X500 The Series 7 topical report on facilities comparison has received first level management review and the comments have been incorporated. The document will be ready for branch manager review following retyping. A parallel effort on the graphics for the topical report is nearly completed.

The paper on Transition Boiling has been submitted to Nuclear Technology journal for review.

4. Scheduled Milestones for May 1981

Node	Description	Date
N/A	Completion of S-UT-1 and 2 EDR	June 13, 1981

5. Summary of Work to be Performed in May 1981

A. 411DA20 - Measurement Engineering

1. 411DA2100 - Measurement Engineering

A. Support "pant leg" modification.

2. 9D0810400 - Pump Test

Will be conducted in the broken loop if things go well during conversion.

3. 9D080500 - FLECHT Test and SAW Loop

Continued FLECHT experiment testing with planned completion in May.

B. 411HM00 - Hardware Mods

1. 411HM1100

a. Small Breaks

As-built drawings of the small break condensing system will be completed as time permits.

Fabrication of the intact loop pump bypass spool and hot leg replacement spools will be completed. The spools will be installed. Heat tapes will be installed on the piping and wiring will be completed.

Installation of the lower plenum drain system and reflux measuring system will be started.

Component Checkout (CC) and System Operational (SO) test procedures will be written.

The SWR to install vessel heat tapes will be issued and the installation work will begin.

The steam generator pantlegs will be installed and the hot leg inclination measured.

Design of the gas injection system will continue as time permits.

5. Summary of Work to be Performed in May 1981 (continued)

C. 411LE00 - Semiscale Operations

1. 411LE1100

The major work effort for May will be the system modifications for the Natural Circulation Tests, and the S-UT-1 and 2 EDR.

Advance planning for the Natural Circulation Test Series shall continue.

2. 411LE2100 The QLR for Test S-UT-5 and S-UT-7 will be completed by April 29 and May 13, resepctively.

The pretest prediction calculations for Tests S-NC-1, S-NC-2, S-NC-3, and S-NC-4 will be completed and the draft pretest prediction letter report will be initiated. Also, trial XELAP5 (experiment version of RELAP5) calculations will be made using the non-condensible gas capabilities in an attempt to discover any problem areas before these options are used to perform pretest prediction calculations for Tests S-NC-6 and S-NC-7.

3. 411LE2300 The paper describing pumps on/pumps off in LOFT and Semiscale paper will be forwarded to ANS.

4. 411LE2400 Review comments on the Westinghouse reactor vessel liquid level first report will be received, incorporated and report published. Posttest analysis of subsequent UT tests will be started.

The Natural Circulation test series EOS will be completed and released on May 22, 1981.

Analysis personnel will provide analytical support to the Operations and Design Branches for activities in preparation of the Mod-2A system for the natural circulation test series.

5. 411LE2500 FY-82 test series requirements planning and work package preparations will be started.

6. 411LE3100 - Engineering Level of Effort

Drafting work on the universal hydrotest fixture will be started after the higher priority drawings associated with the Natural Circulation Modification shutdown are completed.

5. Summary of Work to be Performed in May 1981 (continued)

Design of a new intact loop hot leg spool piece which incorporates penetrations for a laser velocitometer will be started.

Complete design and installation package for the pump suction remote operated drain valves. This will be worked on a non-interference basis with higher priority work.

7. 411LE4100 - DAS Operation

a. Continue to process data from the UT tests.

b. Support "pant leg" modification.

D. 411M200 - Mod-2A Conversion

1. 411M23400 The letter report on the Heat Loss Characterization test series will be completed and released on May 15, 1981.

2. 411M24100 - Hot Water Makeup System

Final system design will be completed and installation started. The vessel heater (SCRs) will be installed.

CC and SO test procedures will be initiated.

Long lead material will be received.

3. 411M24200 - Instrumentation Development

Issue purchase order or SWR and expedite delivery of optical probes.

Issue purchase order or SWR to manufacture the brackets for the new Dewar ORTEC detector.

Complete fabrication of the dummy turbine meter sleeves.

Begin fabrication of the water cooled pressure probes.

Postive results from Measurement Inc. on the turbo probes prototype will enable starting on the real device for the vessel. Measurements Inc., has tentatively agreed that test results should be available by May 8, 1981.

5. Summary of Work to be Performed in May 1981 (continued)

4. 411M25200 - Primary Loop Upgrade

The reworked spool piece (intact loop) will be returned.

The intact loop steam generator pantlegs and plenum will be fit up to the generator, the hot leg inclination measured, and the steam generator shimmed, if necessary.

E. 411SB00 - Small Break Test Series

a. 411TCX300 Work will be completed on the posttest RELAP5 analyses of Tests S-UT-1 and S-UT-2.

b. 411TC1500 Preparation of a rough draft of the Test S-UT-3/S-UT-4 letter report on heater band effectiveness will be completed.

c. 411TC1700 Preparation of the QLR for Test S-UT-6 will be completed. Review of the data for a standard (non-UHI) plant (small) break spectrum results paper will be started.

F. 411T700 - Test Series 7

411T7X500 The facilities comparison topical will be submitted for final management review.

6. Problems and Potential Problems

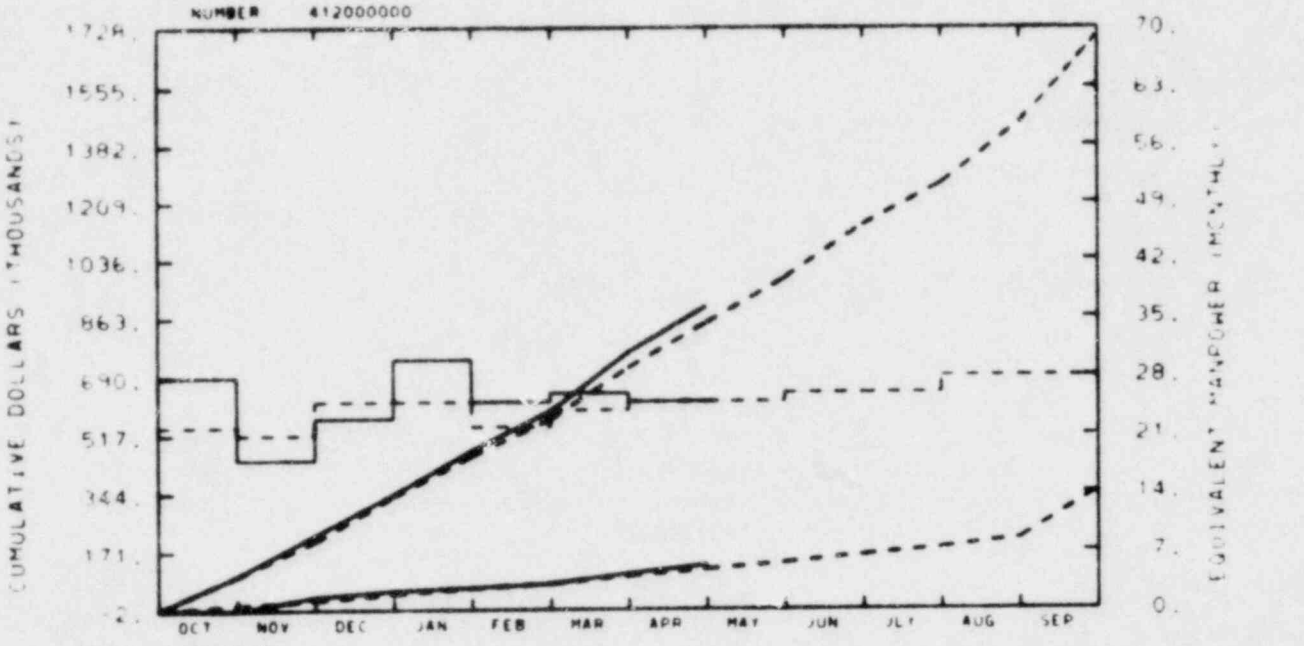
1. The current working schedule for the Natural Circulation Modifications is about two weeks behind original plans in the electrical area and has no slack in the optical probe area. Management attention will be paid to both areas to avoid ultimate schedule impact.

RESPONSIBLE
MANAGER
NORTH

EG&G IDAHO INC.

LOFT TEST SUPPORT FACILITY

NUMBER 412000000



TOTAL PROGRAM

BUDGET	99	203	333	451	563	715	845	978	1140	1265	1447	1718
ACTUAL	101	221	341	470	588	759	894					

MATERIAL

BUDGET	14	27	45	62	76	97	117	136	159	180	207	350
ACTUAL	1	38	59	64	75	105	129					

MANPOWER

BUDGET	22	21	25	28	22	24	28	25	26	26	28	28
ACTUAL	28	18	23	30	25	26	25					

BUDGET
ACTUAL

A6043 (LOFT Test Support Facility Portion)

YTD VARIANCE: <49> (6%)

Variance is due primarily to overspending in 2D/3D testing and hardware for L9-1 testing. Spending will be brought into line by respread of budget due to changing work scope. Budget spread change from last month is due to labor rate change adjustments.

1. 189a A6043 - LOFT Test Support Facility

None.

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

1. 412A901 The FY-81 LTSF test schedule was reviewed with LOFT, and scope of work for remaining FY-81 was developed. The schedule reflects subcooled critical flow testing for nozzle calibration during April, 9-Rod Bundle Quench Testing during June and July, L5-1 Instrument Performance Testing during August, and completion of 9-Rod Quench Testing, or set up for post critical heat flux testing in September.

   LTSF budget was reviewed, and original FY-81 work packages were modified to reflect organization changes and network modifications. Projections for cost to complete were reviewed in order to investigate availability of funds for two-phase loop restoration in preparation for August 1981 use.

   Scope of work required to support FY-82 LOFT needs, and for Nuclear Regulatory Commission (NRC) program consideration were reviewed with LOFT, Department of Energy (DOE), and NRC representatives. Development of the work breakdown structure for FY-82 tasks was initiated.

   The EDR for the JAERI Slab Core Test Facility Hot Leg Spool Piece Performance Tests was presented to management for review. The report will be transmitted by May 30. The EDR for the associated SCTF Condensation Experiments was reviewed by first level supervision and comments are being incorporated in order to allow submittal for management review by May 30, 1981.

2. 412AA01 Tasks associated with Blowdown Facility modification required to support 9 Rod Bundle Quench Testing were reviewed with Operations and Measurements personnel.

   A detailed schedule was prepared and transmitted. Work continued at EXXON on Rebeka rod fabrication tasks and delivery is expected on May 8, 1981. Loop modifications are scheduled to begin April 27, 1981, with loop modifications and instrumentation schedule for completion on June 15. The Experiment Operating Procedure (EOP) was transmitted to the operations supervisor for review.

3. Summary of work Performed in April 1981 (continued)

3. 412AF01 Scope of work, associated cost estimate, and schedule were developed for restoration of the two-phase loop in order to support LOFT L5-1 Instrument Testing in August. The associated work package is being prepared and will replace the two-phase loop performance test work package, and associated scope of work. Activities associated with hardware, design, procurement, and Davis-Bacon rulings on fabrication and installation were initiated.

4. 412AH01 Data integrity review and qualification status assignment for data taken during LOFT L9-1 power operated relief valve and instrument performance testing were completed on April 20. A draft of the EDR was reviewed by EP&A Section Supervisor, and is scheduled for transmittal for management review on May 6.

5. 412AP01 Detailed test requirements for LOFT L5-1 Instrument Performance Testing were solicited from LOFT, and meetings were held to develop those requirements. Existing two-phase loop capabilities were provided in order to define additional tasks required to support the instrument testing. Final requirements are expected by May 15 in order to allow adequate time for EOS preparation, and additional hardware specification, design, procurement, fabrication, and installation as appropriate.

6. 412CF01 The test plan and EOP for subcooled critical flow testing in the blowdown facility for LOFT and Semiscale were completed and checkout testing was initiated on April 9. Data for the Semiscale 2-1/2% and 5% break nozzles, and a scaled version of the LOFT L5-1 nozzle were acquired, and data processing on the Cyber 176 was initiated.

7. 412F11310 - LTSF Data Systems Support

   a. DAS design description (LOFT Test Report LTR 10-59) revision is ninety five percent complete. Awaiting drawing changes.

   b. Densitometer detector cask leakage problem has been solved. Eight PVC tubes are still to be fabricated prior to the L5-1 test.

   c. Completed operation of data system in support of Critical Flow Tests for Semiscale 2.5 and 5% orifices.

   d. Heater Rod Quenching Tests (9-Rod).

      a. Cable buildup - 50% complete.

      b. Thermocouple buildup - 60% complete.

3. Summary of Work Performed in April 1981 (continued)

8. 12F11510 - LTSF Control Systems Support

A. Commenced writing operational checkout procedres for the controls system. Project is twenty percent complete.

B. Two Variac power supplies removed from the blowdown facility control system. New microprocessor controllable supplies have been installed.

C. The blowdown facility control system drawing update has been started. Project is proceeding smoothly and is on schedule.

D. Control system microprocessor operator entry procedures were modified and used in support of the critical flow testing.

E. Preliminary plan for utilizing microprocessor control throughout the heater rod quenching tests has been completed. Pretest verification testing is in progress.

F. All wiring and instruments on the two-phase flow loop control system have been checked out and are operational. The graphics display terminal has been received and checked out.

G. The two-phase flow loop control system drawings are being red lined. Drawing updating will commence when funds are available.

9. 412F11700 and 412F21600 - LOFT Test Support

Prepared cost estimate and began planning to modify the two-phase flow loop (TPFL) exhaust stack and to resolve the steam separator manway flange leak problem.

Began engineering drawings and material purchasing for the blowdown facility display blowdown.

Issued the TPFL master facility drawing list.

Provided engineering documentation for the L9-1 flow tests, primarily in the form of as-built drawings.

3. Summary of Work Performed in April 1981 (continued)

10. Foreign Funded Activities

1. 5F8C311 - Advanced DTT

No activity was performed on this task. Data generated during testing in late FY-80 have been summarized in a preliminary data report which is awaiting supervisory review. Conflicts due to work on critical flow testing, L9-1 EDR preparation, and FY-81 and 82 planning have precluded completion of this task, and it has been rescheduled for completion by May 30.

2. 5F8C411 - Post-CHF Heat Transfer Test

Work on completing required drawings was continued, toward scheduled transmittal to checking on May 15. Fabrication of the support structure for the test section has begun. A brazing procedure for attachment of the copper hot patches to the test tube has been developed. Fabrication of the tube wall thermocouples has been completed. Design of the needle valve actuators and mounting brackets has been completed. Final modifications to the EOS have been incorporated. Schedule for this test has been revised due to priority for 9-Rod Bundle Quench and LOFT L5-1 Instrument Testing, and will be neogotiated with LOFT and NRC for completion in FY-82.

3. 5F8C41201 - Post CHF

A possible schedule change by LOFT precipitated a flurry of activity to ready this hardware by June 20, 1981. Weekly meetings were set up to get all involved people together. Responsibilities were defined on hardware procurement, braze qualification and insulation.

The braze prototype is being done at ARA-3. The first prototype braze was completed with minor problems. A new attempt will be made using slightly higher temperature. Overall, it looks feasible for the real test piece.

Drawings were completed for the test support assembly and most of the test sections. Some interface problems have prolonged completion of the total assembly but they are workable.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

A. 412TPRJ - LTSF Test Projects

1. 412A901 LTSF schedule and budget will be reviewed and updated work packages generated for revised FY-81 scope of work. Work will continue on FY-81 scope of work. Work will continue on FY-82 program planning, 189 preparation, and WBS development.

2. 412AA01 Rebeka rod work at EXXON and MTR will be completed and the rod assembled and installed in test loop. Loop modifications and hydro test will be completed. The EOP will be issued and a readiness review conducted.

3. 412AF01 Procurement packages will be prepared for the remainder of floor and support material, and steam generator stack. Support design work will be completed. Loop maintenance and modifications in steam supply and main circulating loop will be accomplished. Work will begin on floor and piping installation.

4. 412AH01 The EDR for L9-1 support tests will be completed and transmitted by May 30, 1981.

5. 412AP01 L5-1 calibration testing requirements will be defined, specifications issued for required hardware and measurement additions, and the draft EOS developed for review.

6. 412CF01 Data qualification for the subcooled critical flow tests will be completed and the EDR preparation begun (scheduled for transmittal by June 30).

7. 412F00 - LTSF Operation

a. Preparation of data acquisition systems and control systems for heater rod quench tests will be 75% completed by the end of May 1981.

5. Summary of Work to be Performed in May 1981 (continued)

8. 4111700 and 412F21600 - LTSF

The main engineering effort will be directed towards getting the blowdown display hardware design complete.

Support for the L9-1 tests, 9-rod bundle and installation of post critical heat flux (CHF) will continue as information becomes available.

Details of the steam generator manway repair will be worked out and the SWR written.

Remote control problems on the diesel will be resolved and the task completed.

Comments on the rough draft of SDD for the blowdown loop will be evaluated. The SDD will be reworked and ready for final completion.

B. Foreign Funded Activities

1. 5F8C311 - Advanced DTT

The preliminary data report will be transmitted which will complete this task.

2. 5F8C411 - Post CHF Test

Remaining drawings will be released, test section fabrication completed, and 50 kW power supply and steam probes received.

3 5F8C41201 - Post Critical Heat Flux

There is a good possibility that all drawings can be completed and a final design review held for this experiment. A successful braze on the copper to Inconnel hot patch and available draftsmen will determine the outcome of the final design and date.

6. Problems and Potential Problems

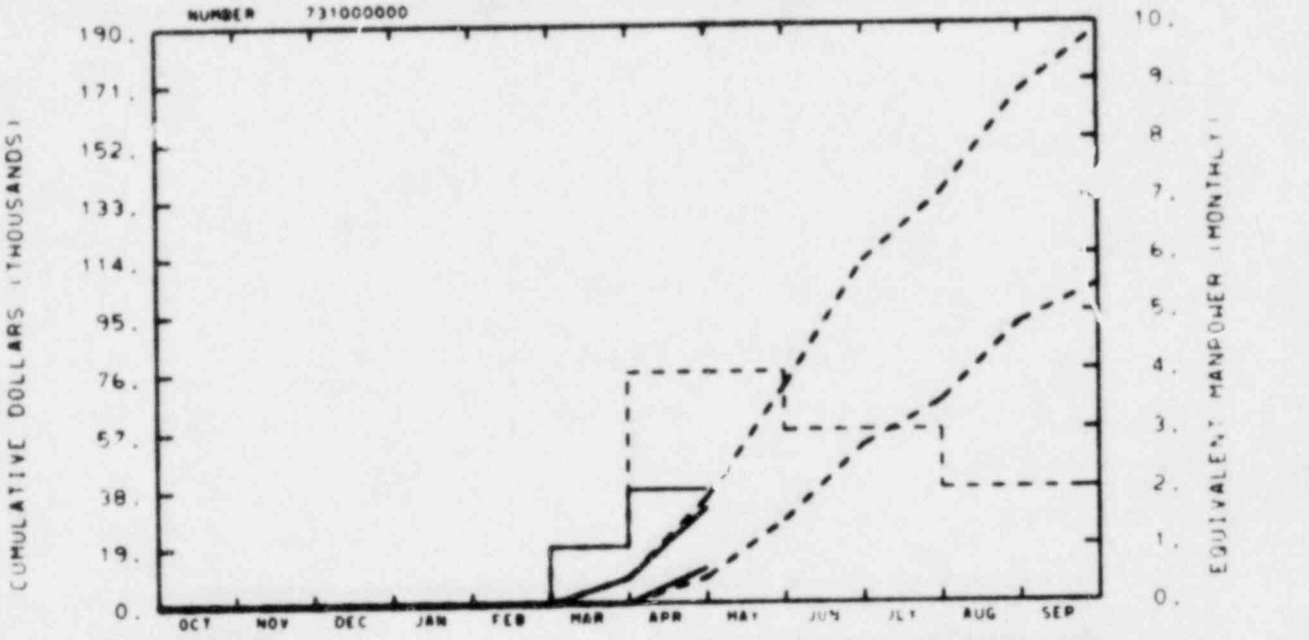
None.

RESPONSIBLE MANAGER
P NORTH

EG&G IDAHO INC.

TECHNICAL SUPPORT TO JAERI

NUMBER 731000000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	8	35	71	112	134	167	187
ACTUAL	0	0	0	0	0	8	32					

MATERIAL

BUDGET	0	0	0	0	0	0	9	27	52	66	91	104
ACTUAL	0	0	0	0	0	0	12					

MANPOWER

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

A6367

YTD VARIANCE: 3 (9%)

1. 189a A6363 - Technical Support to JAERI

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

One of the representatives to JAERI is scheduled to depart for Japan in May, the other in July. During April, both representatives were undergoing training relative to their assignment.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

One representative will depart for Japan to start his assignment, the other will continue in training.

6. Problems and Potential Problems.

None.

MONTHLY REPORT FOR

APRIL 1981

THERMAL FUELS BEHAVIOR PROGRAM

W. A. Spencer, Manager

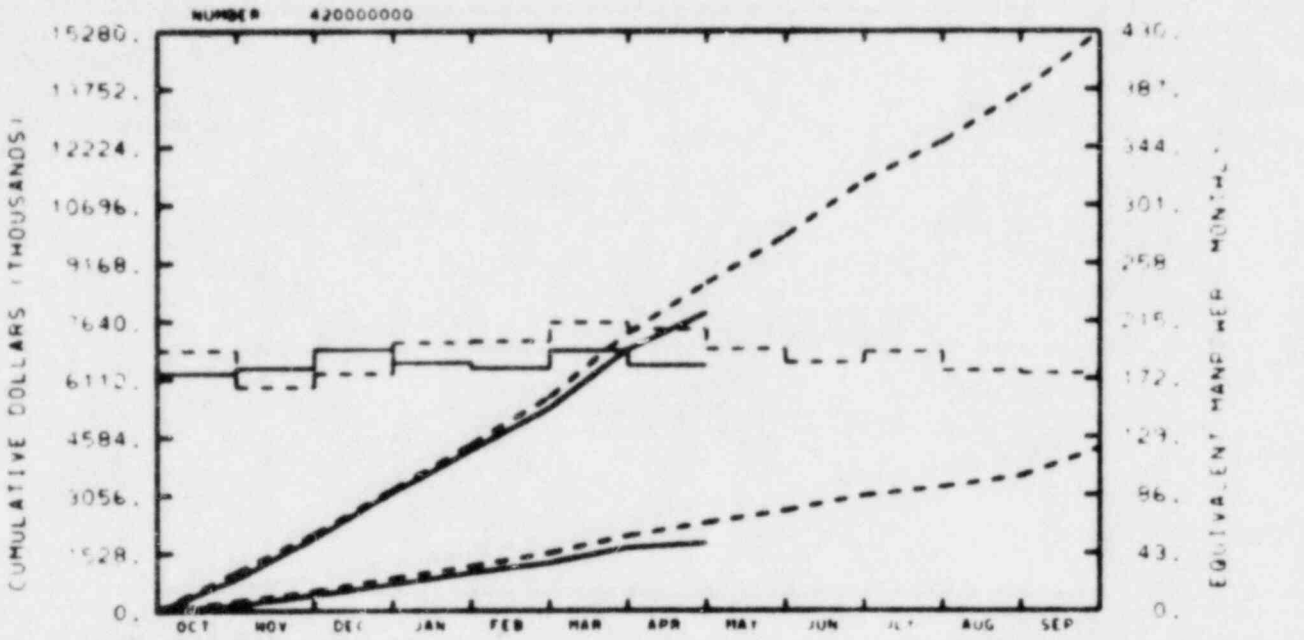
D. Zorn, Jr.
Planning & Budgets Representative

RESPONSIBLE
MANAGER
SPENCER

EG&G IDAHO INC.

TFBP PROGRAM

NUMBER 420000000



TOTAL PROGRAM

BUDGET	1031	2040	3217	4388	5632	7321	8648	9880	11339	12365	13674	15277
ACTUAL	855	1926	3141	4242	5338	6883	7865					

MATERIAL

BUDGET	263	529	871	1194	1535	1984	2324	2638	3036	3259	3568	4284
ACTUAL	158	426	708	1010	1276	1666	1789					

MANPOWER

BUDGET	193	166	176	199	200	214	209	194	184	192	178	176
ACTUAL	176	180	194	184	180	193	182					

YTD VARIANCE: 783 (9%)

Individual cost graphs will give individual explanations.

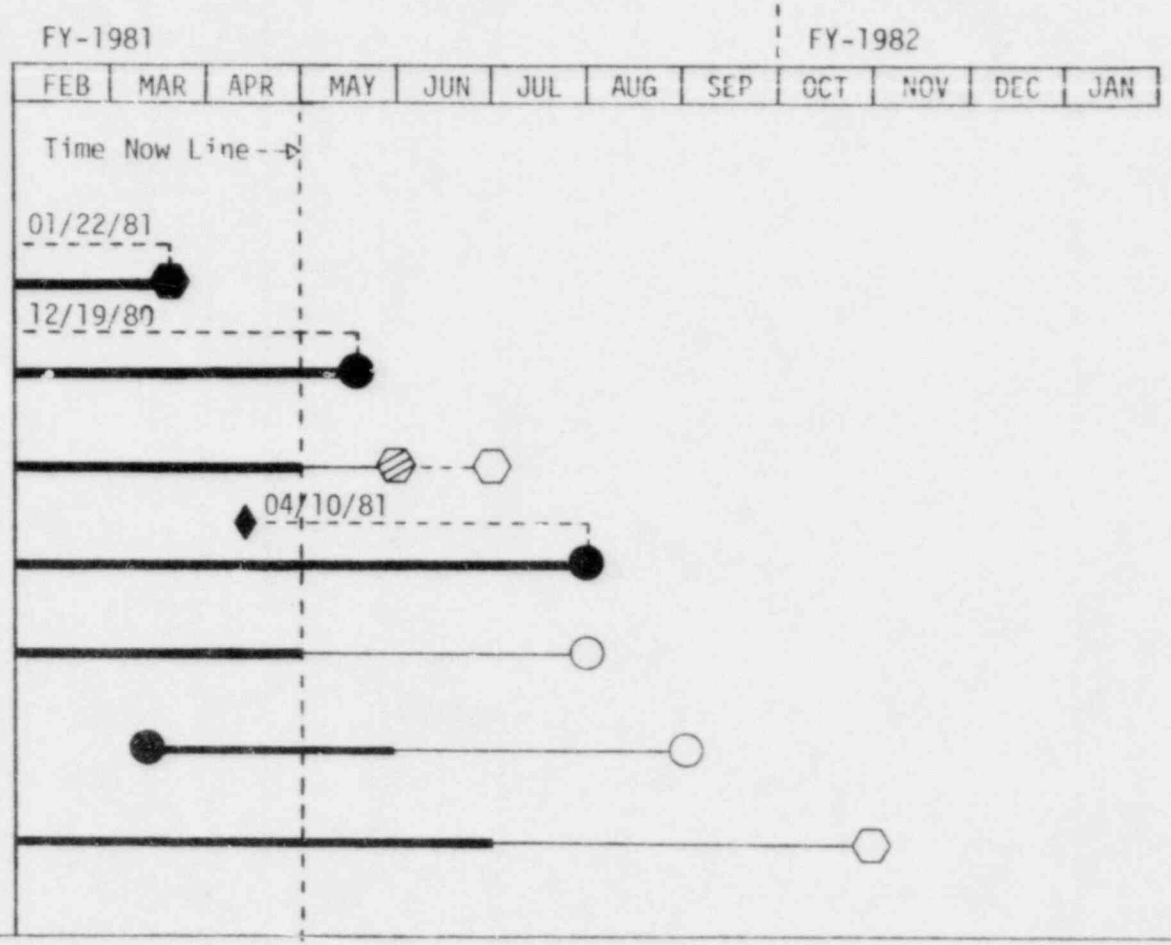
Explanations for major 189a's will be made if the variance exceeds $25 K. Minor 189a graphs will explain variance of over $10 K.

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

April 1981



NOTES:

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

Preparations for Thermocouple Cooling Test 4 (TC-4) continued: however, difficulties encountered in performing the internal thermocouple transition splice and associated work continue to delay receipt of the test rods. The Test TC-4 Experiment Operating Procedure has been approved and issued.

Thermal-hydraulic evaluation of the experiment configuration for Operational Transient (OPTRAN) Test 1-2, using the variable orifice concept, was completed and design of the orifice was finalized. Assembly of the OPTRAN 1-1 test train, and parts fabrication for Test OPTRAN 1-2 continued.

Gas jacket leak testing and all final inspections of the spare in-pile tube were completed and it has been received. It will be stored as a spare, to be used if the present in-pile tube is damaged during future tests.

The two-dimensional core physics calculations were completed for several new core configurations. A configuration was selected that optimizes the radial core peaking with minimal reduction of the in-pile tube figure of merit.

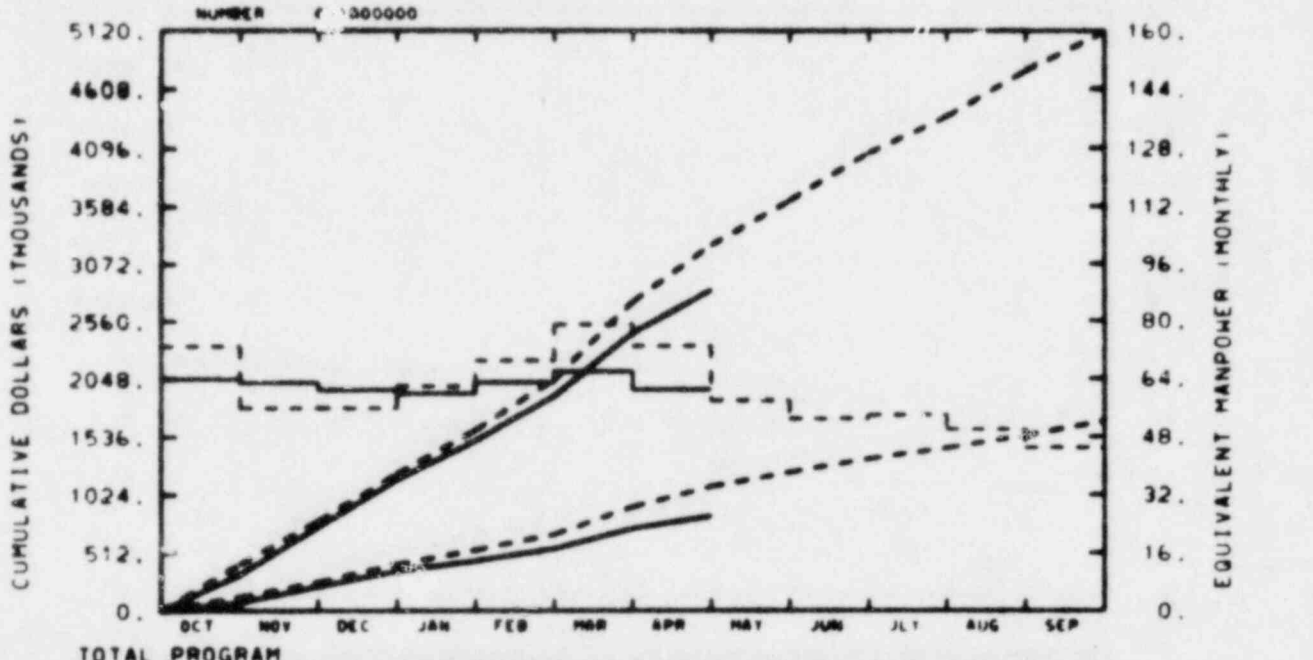
Reactor physics calculations were performed for the Severe Fuel Damage Test Series design. Revisions to the thermal analysis report were completed and the report was issued.

The problem of rod dryout being predicted too early by the RELAP5 computer code has been resolved and the analysis of the Instrumented Fuel Assembly 511.2 and 511.3 experiments is progressing.

RESPONSIBLE MANAGER
E MACDONALD

EG&G IDAHO INC.

TFBP EXPER DESIGN & ANALYSIS



TOTAL PROGRAM

BUDGET	414	792	1211	1596	2040	2731	3344	3639	4058	4370	4762	5112
ACTUAL	321	738	1159	1503	1894	2452	2830					

MATERIAL

BUDGET	126	254	412	537	673	916	1094	1221	1342	1435	1545	1675
ACTUAL	75	216	351	443	548	725	833					

MANPOWER

BUDGET	73	56	56	62	69	79	73	58	53	54	50	45
ACTUAL	64	63	61	60	63	66	61					

BUDGET
ACTUAL

A6041

YTD VARIANCE: 406 (13%)

Fabrication of the two fuel rods, presently being fabricated at Exxon Nuclear in Hanford, Wasington, has been delayed. Delivery is expected to be by mid-May so that TC-4 conduct can be in early July 1981. This delay has impacted the present test schedule of the OPTRAN 1-1 test (August 28, 1981) and OPTRAN 1-2 test (October 16, 1981) to the anticipated schedule of October 23 and December 18, respectively. This situation compounded with limited manpower for the remainder of FY-1981 has caused a considerable underrun. This work scope and funding is anticipated carryover scope for FY-1982.

1. 189a A6041 - TFBP Experiment Design & Analysis

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

a. Power-Cooling-Mismatch Test Series

Technical editing and graphics preparations for the Test PR-1 Fuel Rod Behavior Report were initiated. Special posttest examination of the Test PCM-7 fuel bundle was initiated, as was the draft Fuel Rod Materials Data Report. Evaluation of the Test PCM-7 on-line data was initiated and corrections specified. Reduction of data from the postirradiation examination of the Test PCM-7 fuel bundle began.

b. Operational Transient (OPTRAN) Test Series

A draft of the revised OPTRAN 1-1 Experiment Operating Specification was completed. The draft Experiment Operating Specification report for Test OPTRAN 1-2 was prepared. Calculations for the OPTRAN 1-2 Experiment Prediction report continued. Thermal-hydraulic evaluation of the Test OPTRAN 1-2 Experiment Configuration using the variable orifice concept was completed and the design of the variable orifice was finalized. Reactor physics analyses for the PBF core reshimming continued. The assembly of the OPTRAN 1-1 test train and parts fabrication for Test OPTRAN 1-2 continued.

c. Loss-of-Coolant Accident Test Series

Final review and revision of the Test LOC-3 and LOC-5 Fuel Behavior Report continued. The nondestructive examination of the Test LOC-6 fuel rods was completed and destructive examination began. The assembly of the Test TC-4 fuel rods continued.

d. Reactivity Initiated Accident (RIA) Test Series

Preparation of the Test RIA 1-4 Fuel Rod Behavior Report continued. Calculations of the peak fuel enthalpy for eight of the Capsule Driver Core tests were initiated.

e. Zircaloy Oxidation Embrittlement Topical Report

Comparisons and evaluation of the in- and out-of-pile data continued. Portions of the report were written.

3. Summary of Work Performed in April 1981 (Continued)

f. Power-Cooling-Mismatch Fuel Behavior Report

Review and revision of the rough draft continued.

g. Fission Product Behavior Research

Specifications for the on-line hydrogen monitor were compiled and reviewed. Analysis of Tests RIA 1-4 and PCM-7 continued. Analysis of Test PR-1 is 90% complete; a gap in the power history was identified and included in the final inventory calculation. The sample injection system design progressed.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

a. Power-Cooling-Mismatch Test Series

Technical editing, graphics, and review of the Test PR-1 Fuel Rod Behavior Report will be completed. Draft preparation of the Test PCM-7 Fuel Rod Materials Data Report will continue, and preparation of the Fuel Rod Behavior Report will be initiated. The Test PCM-7 data qualification efforts will continue.

b. Operational Transient (OPTRAN) Test Series

The OPTRAN 1-1 Experiment Operating Specification will be reviewed and issued. The draft Experiment Operating Specification for Test OPTRAN 1-2 will be completed and review initiated. Calculations and draft report preparations for the OPTRAN 1-2 Experiment Prediction Report will continue. Efforts on the PBF core reshimming, including reactor physics calculations and evaluation, will continue. The OPTRAN 1-1 test train assembly will be completed (if the Test TC-4 assembly work is not delayed) and the OPTRAN 1-2 test train assembly will be initiated.

c. Loss-of-Coolant Accident Test Series

Final review and revision of the Test LOC-3 and LOC-5 Fuel Behavior Report will be completed and the report transmitted to Documentation Control for review. The destructive examination of the Test LOC-6 fuel rods will continue. The TC-4 test train assembly will be completed subject to delivery of the fuel rods from EXXON by 5-8-81.

5. Summary of Work to be Performed in May 1981 (Continued)

d. Reactivity Initiated Accident (RIA) Test Series

Preparation of the Test RIA 1-4 Fuel Rod Behavior Report will continue. FRAP-T calculations of the peak fuel enthalpy for eight of the Capsule Driver Core tests will be completed.

e. Zircaloy Oxidation Embrittlement Topical Report

Figures and tables for the report will be drafted. Typing of the first draft will be completed.

f. Power-Cooling-Mismatch Fuel Behavior Report

The reviewed draft will be revised and submitted to the Documentation Control Office for review.

g. Fission Product Behavior Research

Data for Test PR-1 will be received and reviewed. Analysis of Tests RIA 1-4 and PCM-7 will continue. Design review for the sample injection system will be held.

6. Problems and Potential Problems

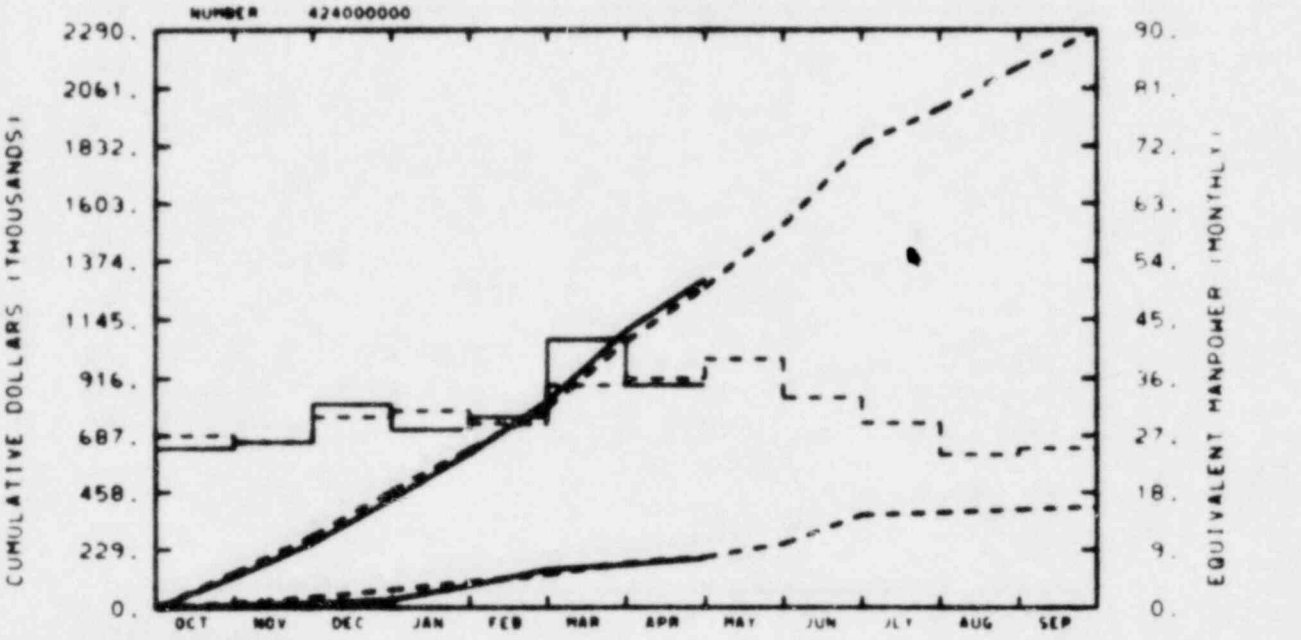
Further delay in receipt of the Test TC-4 fuel rods continues to delay completion of the test train and test performance. Difficulties experienced in performing the internal thermocouple transition splice and associated work continues to delay fabrication.

RESPONSIBLE MANAGER
JP KESTER

EG&G IDAHO INC.

PBF ENGINEERING

NUMBER 424000000



TOTAL PROGRAM

BUDGET	137	283	464	632	800	1060	1269	1516	1839	1981	2144	2289
ACTUAL	121	257	430	617	827	1102	1301					

MATERIAL

BUDGET	20	41	71	101	131	175	199	252	367	377	389	400
ACTUAL	11	19	31	88	151	170	195					

MANPOWER

BUDGET	27	26	30	31	29	35	36	39	33	29	24	25
ACTUAL	25	26	32	28	30	42	35					

BUDGET

ACTUAL

A6044

YTD VARIANCE: <32> (3%)

The variance is not significant and has again reduced from last month in both dollar value and percentage. An analysis shows that costing anomalies in the IPT and the core reshim accounts have occurred because of the time-phasing factors used in the budget. These are being reviewed to determine the appropriate action. No significant problems have been identified.

1. 189a A6044 - PBF Design Engineering

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

a. Presentations to the PBF Technical Response Team

Lectures covering the Operational Instrumentation System and the Loop Coolant System were presented to the PBF Technical Response Team.

b. PBF Spare In-pile Tube (IPT) Manufacture

Gas jacket leak testing and all final inspections were completed and the IPT has been received. It will be stored as a spare and used if the present IPT is damaged during future tests.

c. Plant and Instrument Air (P&IA) Compressor Installation

The defective cooling water control valve was replaced, and the new compressor is fully operational.

d. Replacement of the PBF Waste Gas Stack Monitor

The design of the new stack gas monitor system was reviewed, and final details are being incorporated in the system drawings.

e. PBF Core Reshim

The two-dimensional core physics calculations were completed for several new core reshim configurations, and a configuration was selected which optimized the radial core peaking with minimal reduction in the in-pile tube figure of merit (FOM). Approval of this reshim configuration was obtained from the responsible Thermal Fuels Behavior Program branches. Efforts were initiated on (1) the three-dimensional core physics analysis for the reshimmed core, (2) the Experiment Operating Specification for the core physics testing, and (3) the Facility Change Form for the change in the core configuration.

f. TC-4 Experiment Safety Analysis (ESA)

A Document Revision Request was prepared and approved to update the ESA to correspond with the Experiment Operating Procedure and the Experiment Operating Specification.

3. Summary of Work Performed in April 1981 (continued)

g. Operational Transient (OPTRAN) Safety Assessment

The drafts of two Engineering Design File reports on (1) in-pile tube thermal analysis and (2) PBF core thermal analysis were completed and distributed for internal review.

A presentation was given to the Department of Energy-ID (DOE-ID) on the preliminary results of the OPTRAN scoping safety assessment analysis.

h. Three Mile Island (TMI) Lessons Learned

Tables 1 and 2 of the Company's TMI Executive Summary for PBF were reviewed with DOE-ID and their comments were incorporated. The PBF/TMI Status Report was updated to incorporate the DOE-ID comments on Tables 1 and 2 of the Executive Summary. The PBF/TMI Status Report was completed and distributed to all interested groups.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

a. Presentations to the PBF Technical Response Team

Lectures covering the Reactor Vessel and Core; and the Vent, Drain, and Pressure Suppression System will be presented to the PBF Technical Response Team.

b. Plant Protective System (PPS) Modifications for OPTRAN Testing

A final design review will be conducted to cover modifications to the PPS and reactor control system required in support of the OPTRAN tests. Fabrication and checkout of some of the components will be completed. Development of the installation and checkout documentation will be started.

5. Summary of Work to be Performed in May 1981 (continued)

c. Sample Injection Addition to the Fission Product Detection System (FPDS)

The design review scheduled for April has been rescheduled for early May. Fabrication of some components will be started.

d. Remote Sampling of Reactor Primary Coolant

A feasibility study of a system to provide a remote sampling capability for the reactor primary coolant will be completed and a conceptual cost estimate will be made. This system, if determined to be effective, would be used to provide information relative to the source term resulting from an accident at the reactor building.

e. PBF Core Reshim

The Facility Change Form describing the configuration of reshimmed core will be approved. The Experiment Operating Specification for the core physics testing will be approved and distributed for preparation of the Experiment Operating Procedure.

f. OPTRAN Safety Assessment

The RELAP4/MOD5 PBF core model will be updated for OPTRAN safety analysis use.

g. Three Mile Island (TMI) Lessons Learned

A request for data to update the TMI Status Report will be initiated during the last week in May. This will be used for the next bi-monthly report.

6. Problems and Potential Problems

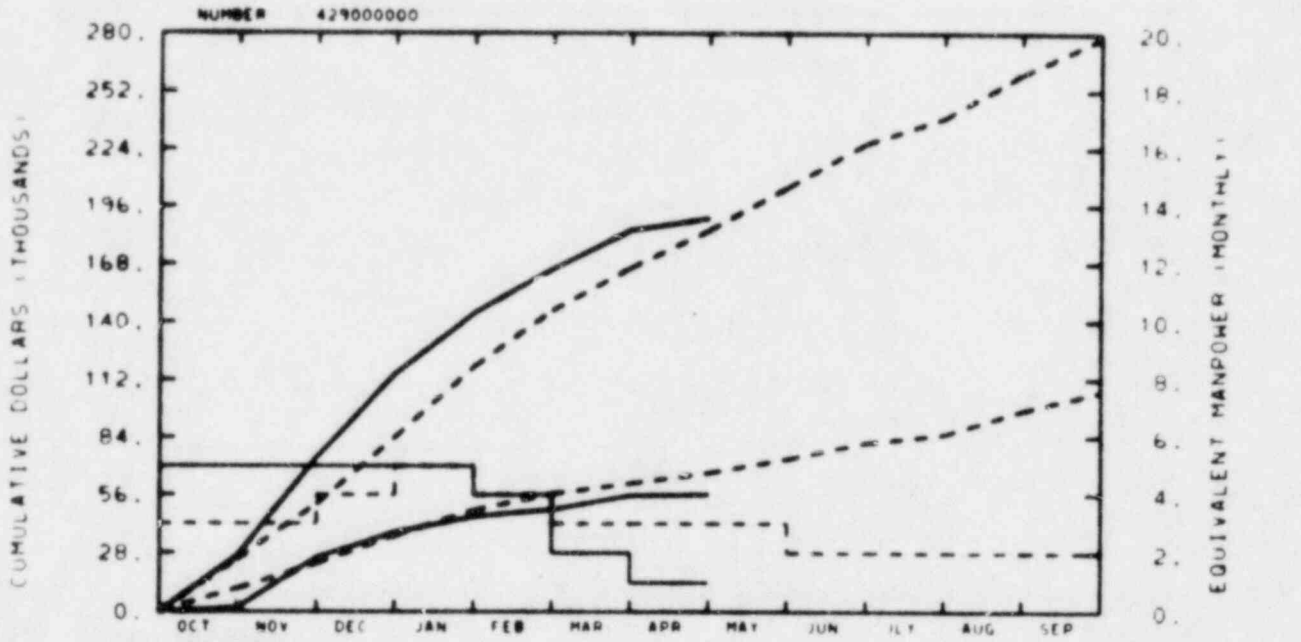
None.

RESPONSIBLE
MANAGER
PE MACDONALD

EG&G IDAHO INC.

ELECTRIC HEATER ROD

NUMBER 429000000



TOTAL PROGRAM

BUDGET	25	52	84	118	145	166	184	205	227	239	260	278
ACTUAL	27	74	115	144	165	184	190					

MATERIAL

BUDGET	11	23	36	48	56	62	67	73	81	85	97	106
ACTUAL	2	26	38	45	49	56	56					

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

A6048 (This is LOFT Funding and is not Included in the Overall Total)

YTD VARIANCE: <6> (3%)

1. 189a A6048 - Electrical Heater Rod Evaluation Studies

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

a. Electrical Heater Rod Performance Review

There was no effort on this task, since the funds have been expended.

b. Instrumented Fuel Assemblies - IFA-511 and 541

The instrumented fuel assembly - 541 (IFA-541) scoping analysis is complete. The report is being reviewed by Thermal Analysis Management.

The problem of rod dryout being predicted too early by RELAP5 has been resolved and the analysis of the IFA -511.2 and IFA-511.3 experiments is again progressing.

The draft of the comparative ballooning and rupture behavior of nuclear and electrically heated rods is 80% complete.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

a. Electrical Heater Rod Performance Review

No efforts will be expended until a Change Control Board Action has been approved for additional funds.

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

The RELAP5 analysis of the IFA-511.2 and IFA-511.3 experiments will be completed.

5.b Summary of Work to be Performed in May 1981 (Continued)

The draft of the comparative ballooning and rupture behavior of nuclear and electrically heated rods will be completed.

6. Problems and Potential Problems

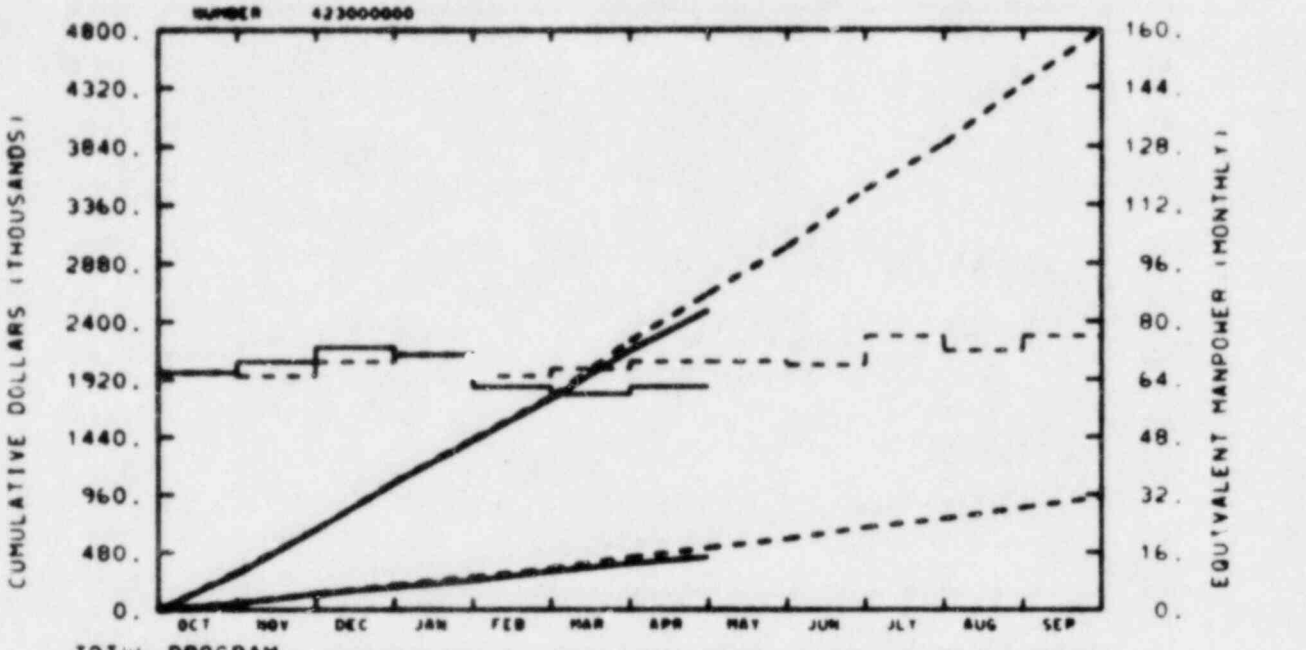
None.

RESPONSIBLE MANAGER: CO DOUCETTE

EG&G IDAHO INC.

PBF OPERATIONS

NUMBER 423000000



TOTAL PROGRAM

BUDGET	319	670	1064	1423	1775	2241	2631	3018	3484	3861	4352	4799
ACTUAL	303	669	1058	1411	1761	2162	2492					

MATERIAL

BUDGET	62	130	206	275	344	430	516	592	685	758	852	941
ACTUAL	57	134	188	246	321	386	440					

MANPOWER

BUDGET	66	69	69	71	65	67	69	69	68	76	72	76
ACTUAL	66	69	73	71	62	60	62					

BUDGET

ACTUAL

A6057

YTD VARIANCE: 139 (5%)

The variance of $139 K represents an effort to keep the expenditure of funds in every work package to a minimum. During non-operating periods, it is expected that the underrun would increase. When operating the plant for the performance of TC-4 and OPT 1-1, it is expected that those added costs will decrease the underrun.

1. 189a A6057 - PBF Operations

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

a. PBF Plant Operations

The work performed during this reporting period was primarily directed toward plant maintenance and preparations for the upcoming Thermocouple Coolant Test 4 (TC-4).

System operational cold flow testing for the Loop Performance Modification was completed and additional flow testing at test temperatures and pressures is continuing. Final checkout and system operational testing for the new Plant and Instrument Air Compressor was completed.

The Instrument and Data Section completed test preparations for acceptance of the TC-4 test train, data reduction for the Reactivity-Initiated-Accident Test 1-4 (RIA 1-4) and Power-Cooling-Mismatch/Reactivity Initiated Accident Test 1 (PR-1), and continued preliminary electronic assembly work for the upcoming Operational Transient tests and Event Sequence and Monitoring System (ESMS) modifications.

b. PBF Operations Support

Preventive Maintenance examinations for March were completed, April examinations are 90% complete, and May examinations are 20% complete.

Corrective Maintenance efforts for this reporting period include plant deficiency corrections, the completion of the Semiannual Nuclear Materials Inventory Verification, the replacement of drive couplings and correction of oil leaks on the 5/15-ton reactor building crane, the Amercoat painting of the reactor building main floor, and support work for Test TC-4. In addition, the in-service inspection examination on the loop snubbers and the loop hydrostatic testing was completed. The reclaiming of silver from the old, poisoned, Power Burst Facility (PBF) silver zeolite was started by an outside subcontractor.

3. Summary of Work Performed in April 1981 (Continued)

b. Efforts are continuing on the development of a Data Acquisition Reduction System (DARS) directory that will provide the uncertainty information with each qualified data tape. A meeting was held to review the directory format, and DARS interface software development was initiated. The Power-Cooling-Mismatch Test 7 (PCM-7) data tapes will be the first to use the new uncertainty directory. A Data Integrity Review Committee meeting was held to review Test PCM-7 data. Problems noted with data reduction and autocalibration are being corrected. Similarly, the Loss-of-Coolant Test 6 (LOC-6) and Test TC-3 data qualification are continuing.

The Plant Operating Manual rewrite is nearly complete. Chapter 28, "Operational Instrumentation System", was approved this month and Chapter 19 is currently in the approval cycle.

The Test TC-4 Experiment Operating Procedure has been approved and was issued.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

a. Complete April and May Preventive Maintenance examinations and start the June examinations.

b. Complete the silver extraction from the old silver zeolite.

c. Complete the radioactive mark waste, outside fenced storage area.

d. Complete preparations for Test TC-4.

6. Problems and Potential Problems

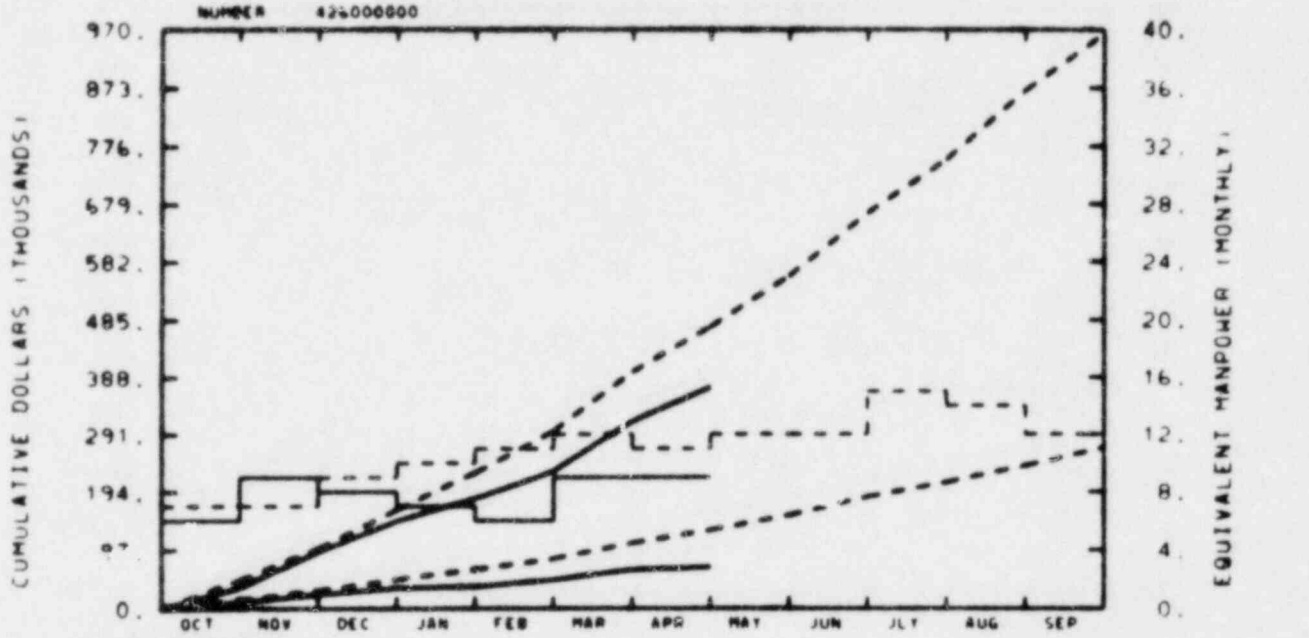
None.

RESPONSIBLE MANAGER
B. BUESCHER

EG&G IDAHO INC.

SEVERE FUEL DAMAGE

NUMBER 426000000



TOTAL PROGRAM

BUDGET	47	100	164	226	296	397	474	558	665	755	870	963
ACTUAL	35	94	145	183	229	313	371					

MATERIAL

BUDGET	15	30	49	65	83	108	129	155	185	210	238	
ACTUAL	11	24	34	37	48	65	69					

MANPOWER

BUDGET	7	7	9	10	11	12	11	12	12	15	14	12
ACTUAL	6	9	8	7	6	9	9					

BUDGET - - - - - -

ACTUAL ———

A6305

YTD VARIANCE: 103 (22%)

The present underrun in the Severe Fuel Damage Project is due primarily to the delays in the Pacific Northwest Laboratory test train design effort. As the Pacific Northwest Laboratory design effort is nearly complete, EG&G Idaho activities will increase reducing the current underrun.

1. 189a A6305 - TFBP Severe Fuel Damage Studies

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

a. Severe Fuel Damage Test Series

Reactor physics calculations were performed for the new shroud design. The revisions to the thermal analysis report were completed and the report was issued. The draft design specifications for the experiment cooling modifications was issued.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

a. Severe Fuel Damage Test Series

The physics effort on the new shroud design will continue. The draft design specification for the experiment cooling line will be reviewed and efforts to resolve comments will continue. A meeting has been scheduled with Pacific Northwest Laboratories to review progress made on the test train design. Efforts are being initiated on the TRAC calculations for the Experiment Prediction Report.

6. Problems and Potential Problems

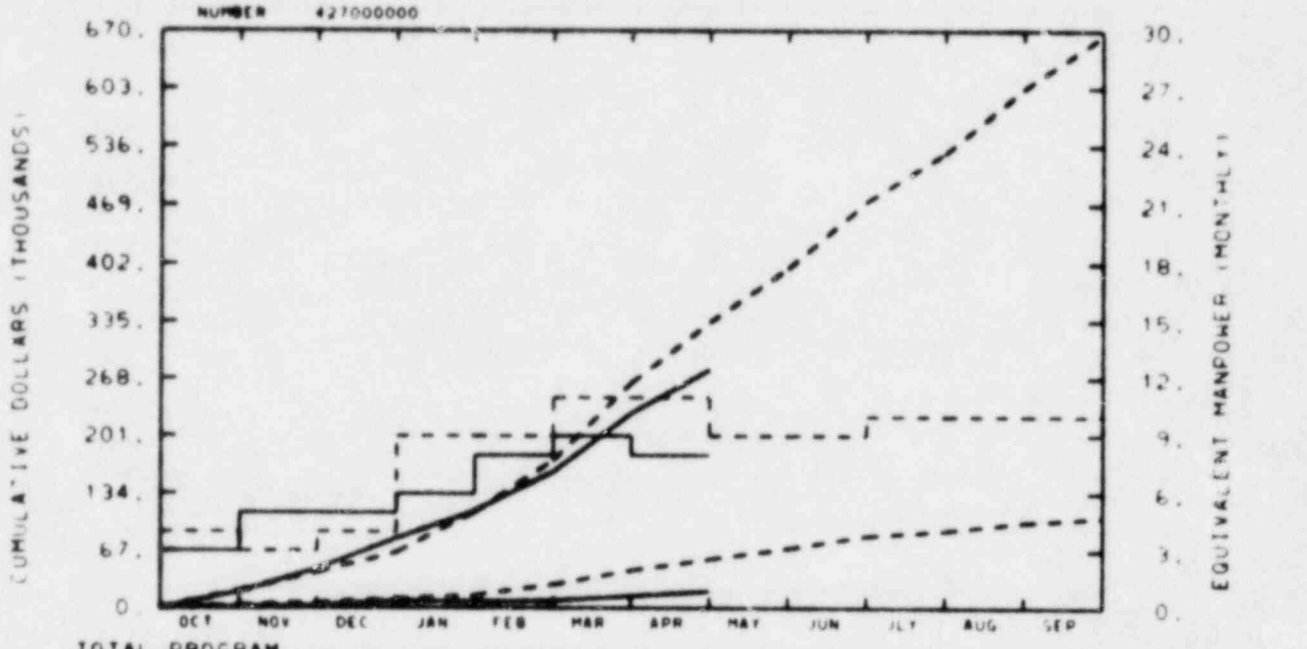
None.

RESPONSIBLE MANAGER SPENCER

EG&G IDAHO INC.

CORE MELT MITIGATION SYSTEM

NUMBER 427000000



TOTAL PROGRAM

BUDGET	20	41	65	113	173	263	334	397	473	528	603	665
ACTUAL	19	46	81	114	160	227	278					

MATERIAL

BUDGET	1	7	11	15	28	44	57	70	85	91	101	106
ACTUAL	1	1	9	8	9	14	20					

MANPOWER

BUDGET	4	3	4	9	9	11	11	9	9	10	10	10
ACTUAL	3	5	4	6	8	9	8					

BUDGET

ACTUAL

A635?

YTD VARIANCE: 56 (17%)

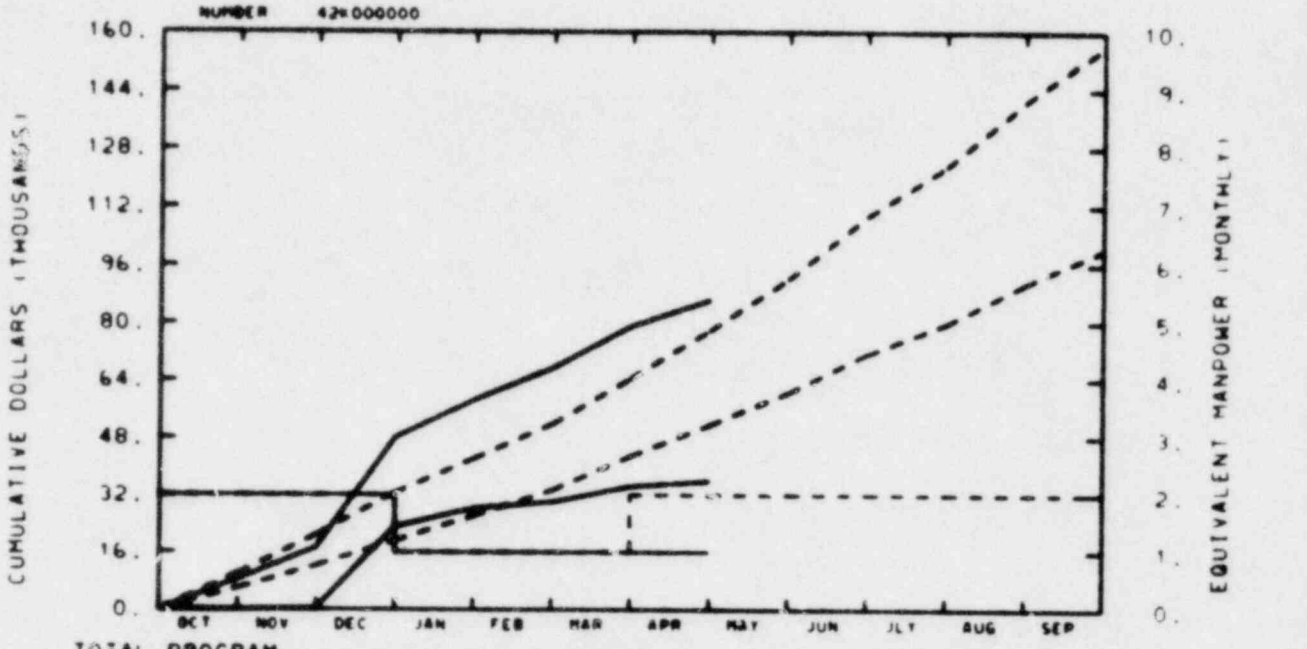
EG&G personnel have been unable to obtain details on Sequoyah as-built design, including final FSAR, drawings, procedures, etc. As a result, it has not been possible to update fault trees for Sequoyah as planned. Uncer[illegible]inties on plant design have held back start on design tasks while other possible alternate plants such as McGuire were considered. Those delays have been reported in meetings and other correspondence with NRC and DOE-ID. A change in scope of work may be required if plant design details cannot be obtained. Work is proceeding on an ad hoc schedule...completion of final system Design Requirements is expected about September 30, 1981; completion of final report January 31, 1982.

RESPONSIBLE MANAGER
P E MACDONALD

EG&G IDAHO INC.

NRC REP TO KFK

NUMBER 42=000000



TOTAL PROGRAM

BUDGET	10	21	33	42	52	64	78	92	109	123	141	156
ACTUAL	8	17	48	58	67	79	86					

MATERIAL

BUDGET	5	12	19	26	33	43	52	60	71	80	91	100
ACTUAL	0	0	23	28	30	34	36					

MANPOWER

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

BUDGET

ACTUAL

A6352

YTD VARIANCE: <8> (10%)

1. 189a A6352 - NRC Representative to KfK

2. Scheduled Milestones for April 1981

   None.

3. Summary of Work Performed in April 1981

   This task is reported separately in bi-monthly reports prepared by the NRC Representative to KfK and are transmitted under separate cover.

4. Scheduled Milestones for May 1981

   None.

5. Summary of Work to be Performed in May 1981

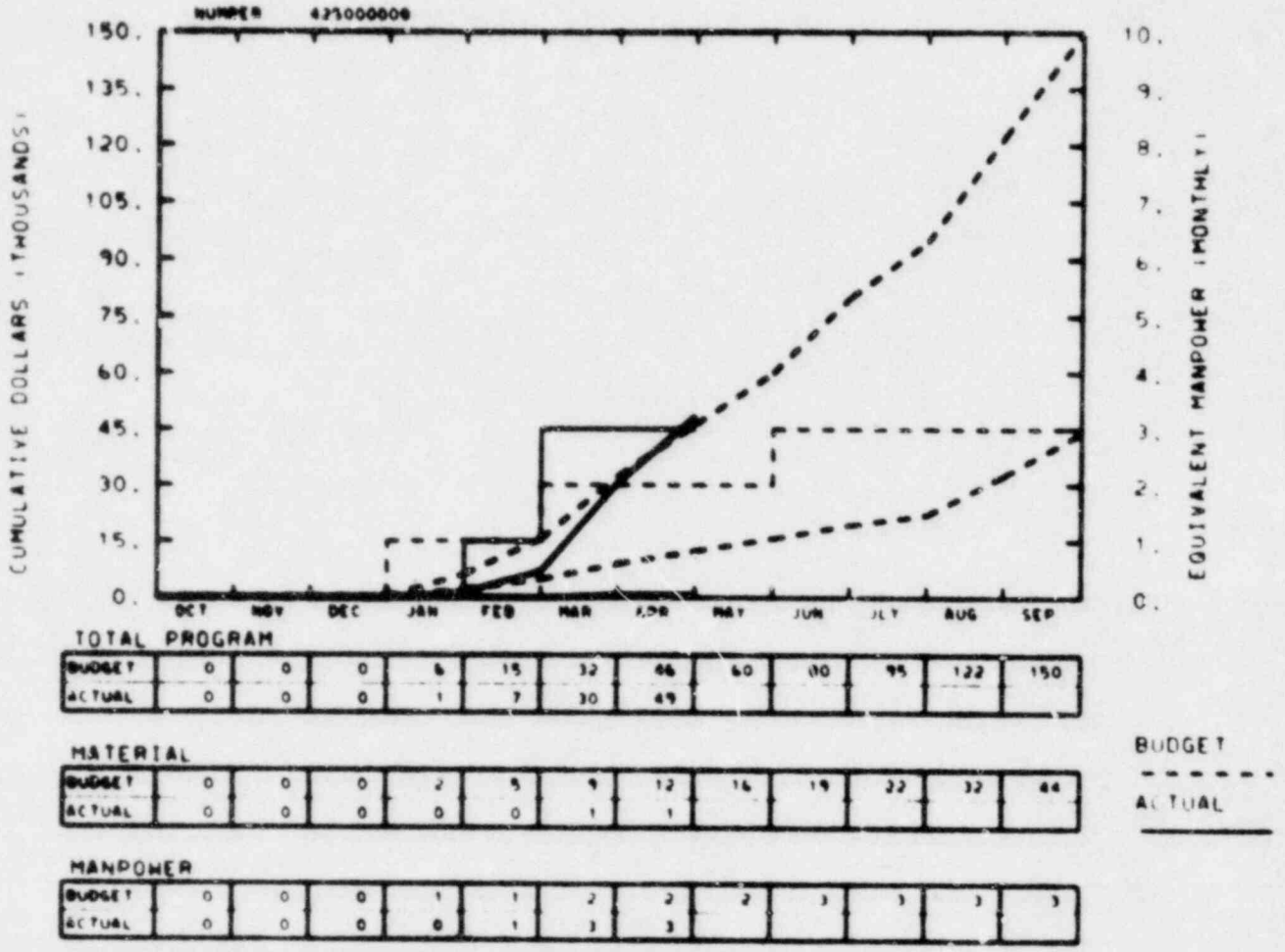
6. Problems and Potential Problems

   None.

RESPONSIBLE
MANAGER
SPENCER

EG&G IDAHO INC.

FISSION PRODUCT SIGNATURE ANAL



TOTAL PROGRAM

BUDGET	0	0	0	6	15	32	46	60	80	95	122	150
ACTUAL	0	0	0	1	7	30	49					

MATERIAL

BUDGET	0	0	0	2	5	9	12	16	19	22	32	44
ACTUAL	0	0	0	0	0	1	1					

MANPOWER

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

A6355

YTD VARIANCE: <3> (7%)

1. 189a A6355 - Fission Product Signature Analysis

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

a. Literature Review

The initial list of references selected from the literature search was distributed for review of completeness and suggestions for additions.

b. Industry Review

Review of relevant instrumentation being developed throughout the industry has identified an outstanding need for development of the fuel condition monitor, which would provide information useful for operator action during both normal and accident situations.

c. Definition of Scaling Parameters

With one exception, scaling parameters were found to be straightforward. The complex effect of primary coolant cleanup systems was identified as needing further study to assess its impact on signatures during normal operation. The effect is expected to be insignificant under severe accident conditions.

d. Conversion of PBF Release Signatures

Work on format conversion routines continued.

e. Definition of Analytical Relationships

The signature of the 142-decay chain was modeled using simple routines, and evaluation of the CINDER code for signature calculations was initiated

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

a. Literature Review

The references will be revised to include comments and additions and will be reviewed for a final draft.

b. Industry Review

Visits and discussions with industry contacts will be planned, with emphasis on operator actions that could be initiated by the fuel condition monitor.

c. Definition of Scaling Parameters

The effects of primary coolant system side loops on signatures will be investigated.

d. Conversion of PBF Release Signatures

Development of format conversion routines will continue.

e. Definition of Analytical Relationships

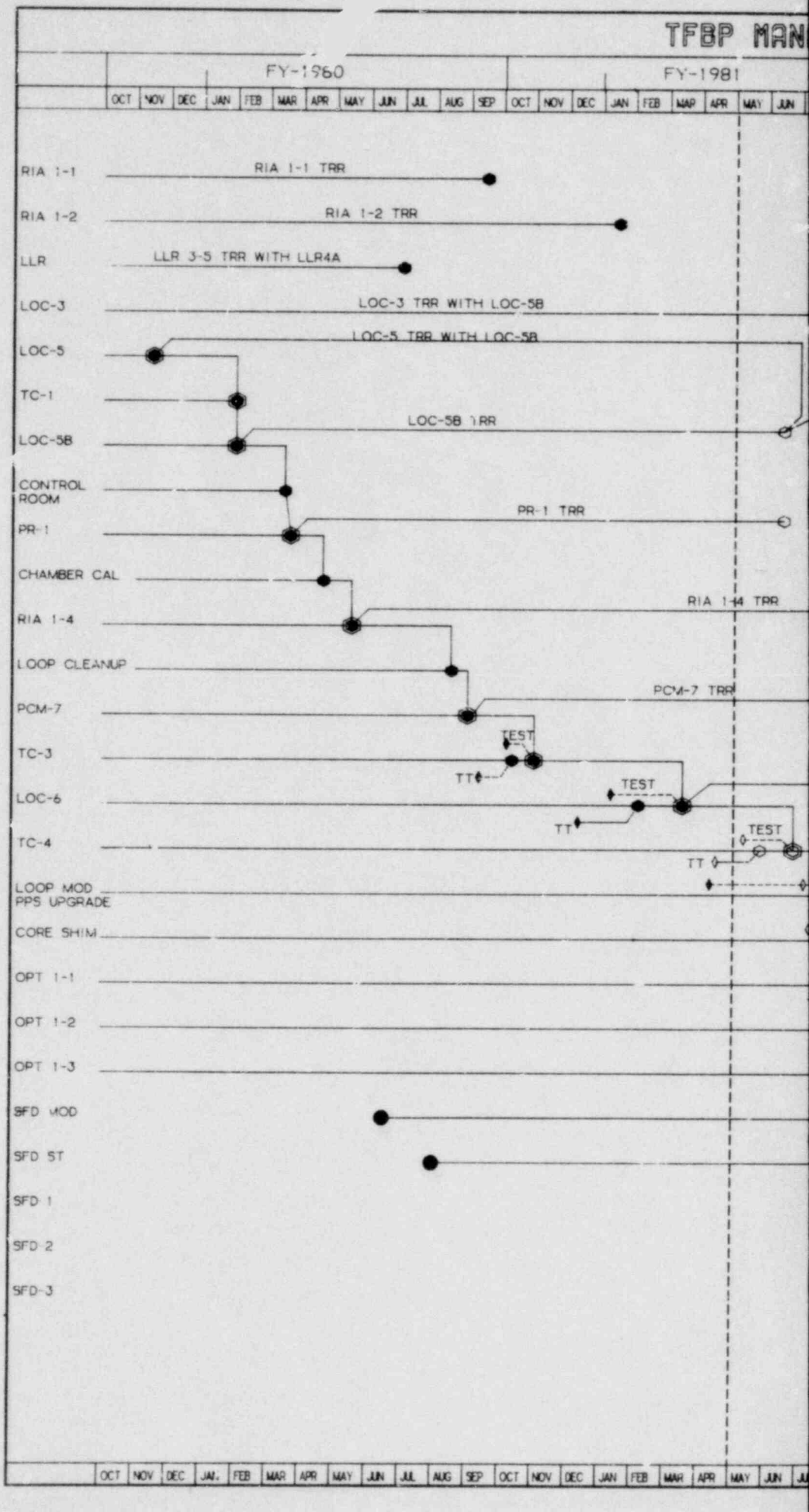
Usefulness of the CINDER code will receive more detailed evaluation.

6. Problems and Potential Problems

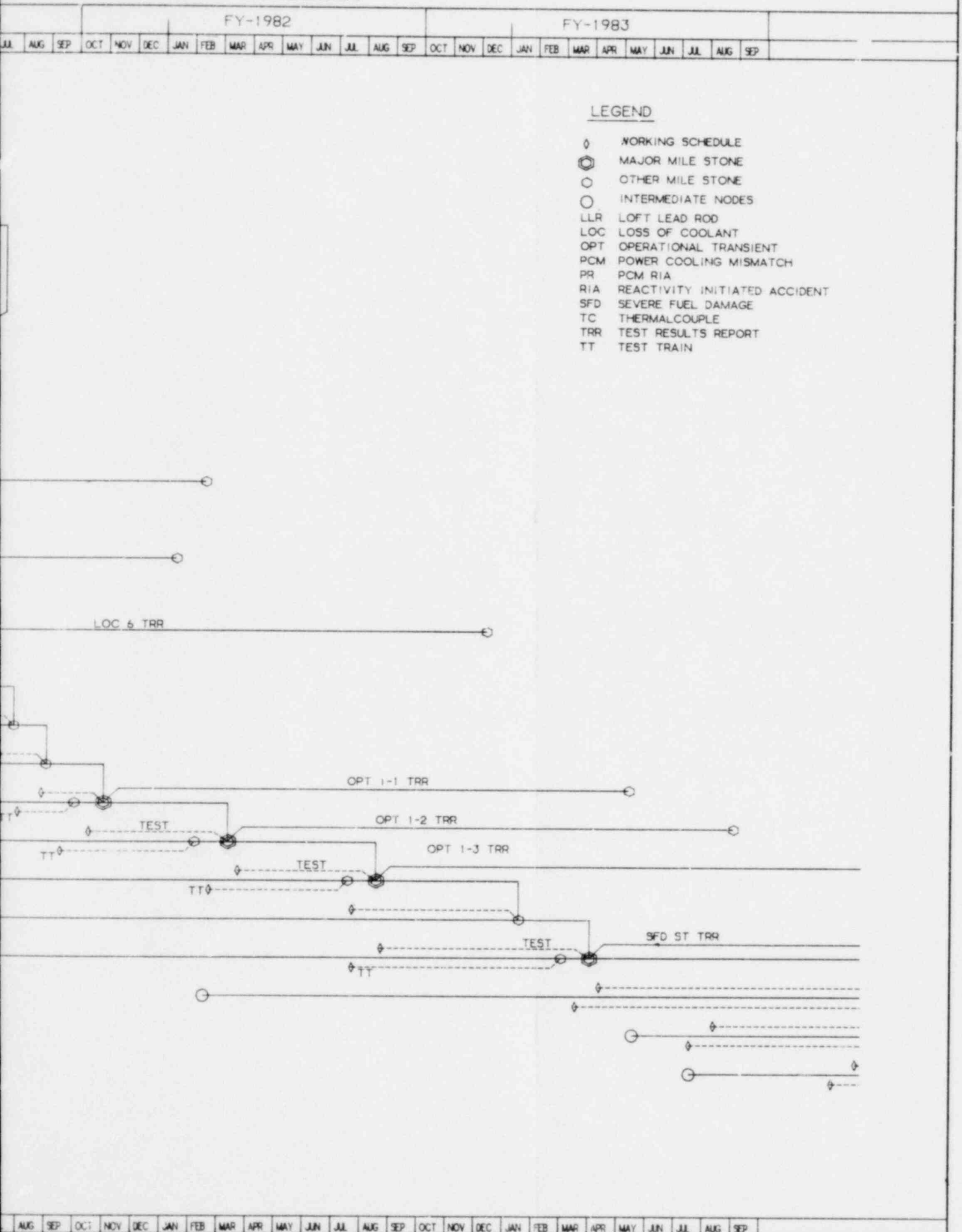
None.

THERMAL FUELS BEHAVIOR PROGRAM

TEST SUMMARY SCHEDULE


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

RGEMENT SUMMARY SCHEDULE



THERMAL FUELS BEHAVIOR PROGRAM

CHANGE CONTROL BOARD ACTIONS

CHANGE CONTROL BOARD STATUS

Cost Account	CCB #	Description	Status	Date
4245D53	81-28	PPS Upgrade	Approved	04/26/81
4262210	81-30	SFD System Analysis	Approved	04/26/81
4242B14	81-31	Loop Performance Mod	Pending	04/26/81
4213H64	81-32	PCM-7 TRR	Pending	04/26/81
4219XXX	81-33	OPTRAN 1-3/1-4 Test Closeout	Pending	04/26/81
4219B32	81-34	OPTRAN 1-1 ESA	Pending	04/26/81
4244B20	81-35	Technical Training Coordinator	Pending	04/26/81

CHANGE CONTROL BOARD ACTION

($000)

CCB Number	Description	FY-1981	FY-1982	FY-1983/Beyond	Total Approved Action
81-00	FY-1981 Thermal Fuels Behavior Program Baseline #1	14,089.4			14,089.4
81-02	Loop and In-Pile Tube Nupipe Model	3.0			3.0
81-03	LOC-6 Post Irradiation Exam (PIE)	15.0			15.0
81-09	LOC-6 Linear Variable Differential Transformer Replacement	13.7			13.7
81-10	LOC-6 Test Train Assembly	18.7			18.7
81-11	Cask/Paddle Mods	19.2			19.2
81-12	Establish Discretionary Reserve	22.0			22.0
81-13	Thermal Fuels Administration	10.0			10.0
81-14	Karlsruhe	26.0			26.0
81-15	In-Pile Tube	0.0			0.0
81-16	OPTRAN 1-2 Test Train and EPR	67.5			67.5
81-18	Fission Product Signature Analysis	150.0			150.0
81-20	LOC-7 Change of Scope	<79.6>			<79.6>
81-21	Severe Fuel Damage ESD	51.1			51.1
81-22	OPTRAN Test Series	<105.3>	15.0		<90.3>
81-23	Core Reshimming Analysis	128.0			128.0
81-24	Facility Operations - Core Reshim	54.8			54.8
81-25	Operations Support - Core Reshim	35.6			35.6
81-26	TFBP Administration	<20.0>			<20.0>
81-28	PPS Upgrade for OPTRAN	31.6			31.6
81-29	TC-4 Commitment Schedule Slip	0.0			0.0
81-30	Severe Fuel Damage System Analysis	9.4			9.4

< > Return to Management Reserve

FY-1981 BUDGET STATUS REPORT

189a Number	New 189a Total
A6041	5,733.8
A6044	2,331.3
A6057	4,799.3
A6095	3.0
A6305	962.7
A6352	156.0
A6355	150.0
TOTAL	14,136.1
Management Reserve	81.3
Discretionary Reserve	22.0
	14,239.4

MONTHLY REPORT FOR

APRIL 1981

2D/3D PROGRAM

R E Rice

R. E. Rice, Manager

R. A. DaBell

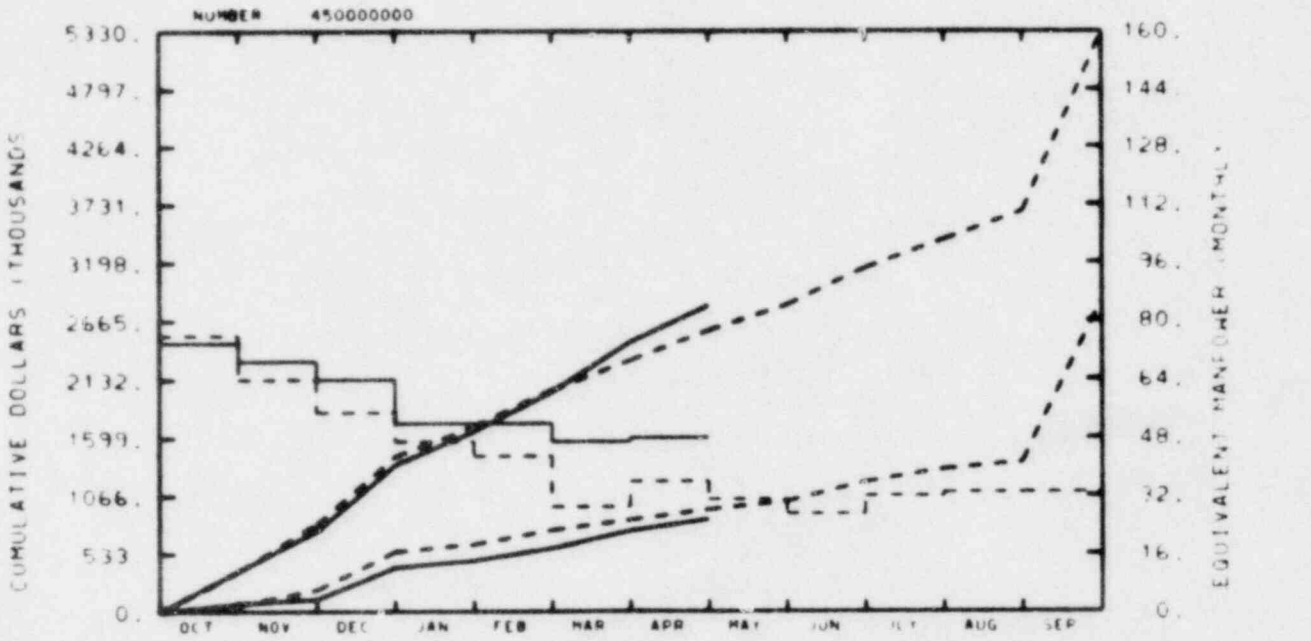
R. A. DaBell
Planning & Budgets Representative

RESPONSIBLE
MANAGER
R E RICE

EG&G IDAHO INC.

TOTAL 2D/3D PROGRAM

NUMBER 450000000



TOTAL PROGRAM

BUDGET	374	807	1427	1704	2036	2305	2575	2805	3148	1407	3669	5327
ACTUAL	379	741	1350	1656	2021	2469	2801					

MATERIAL

BUDGET	67	203	552	622	752	846	938	1013	1191	1309	1377	2856
ACTUAL	76	118	408	471	585	747	849					

MANPOWER

BUDGET	76	64	55	47	43	29	36	31	27	12	33	33
ACTUAL	74	69	64	52	52	47	48					

BUDGET - - - - - -

ACTUAL ———

YTD VARIANCE: <226> (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.

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

The sources were installed in the Slab Core Test Facility densitometers which completes the installation of all EG&G instruments in this facility.

Final checkout, acceptance testing and first-test operational support was completed for all EG&G instruments on the Slab Core Test Facility. The Japanese Atomic Energy Research Institute has formally accepted responsibility for their operation.

The Cylindrical Core Test Facility dummy turbines and velocimeter probes were shipped to Japan.

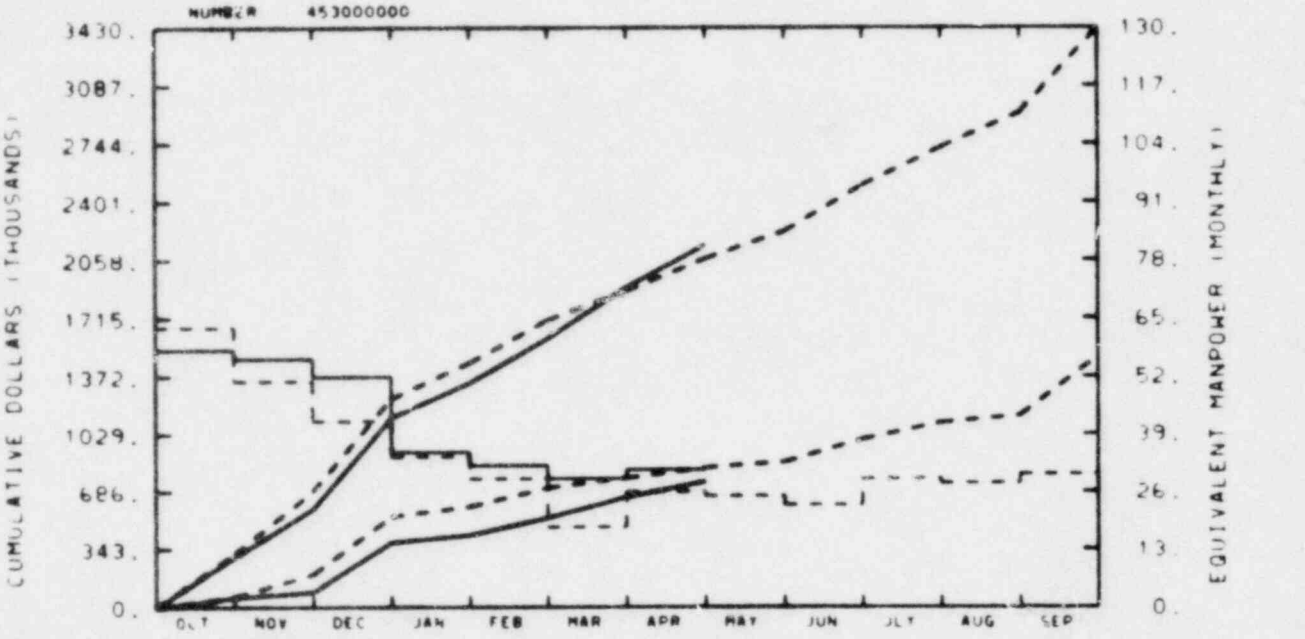
The Cylindrical Core Test Facility Core I Data Analysis Report has been completed and issued.

RESPONSIBLE MANAGER
R E RICE

EG&G IDAHO INC.

A6100-20/30 TECH SUPT & INSTR

NUMBER 453000000



TOTAL PROGRAM

BUDGET	317	689	1242	1454	1703	1873	2065	2225	2497	2722	2926	3430
ACTUAL	295	583	1128	1334	1595	1894	2145					

MATERIAL

BUDGET	63	195	538	598	708	768	830	863	997	1097	1139	1488
ACTUAL	58	90	383	427	530	652	746					

MANPOWER

BUDGET	63	51	42	34	29	18	26	25	2	29	28	30
ACTUAL	58	56	52	35	32	29	31					

A6100

YTD VARIANCE: <80> (4%)

The principal reason for this overrun is the cost ($37 K) against the new CCTF-II Video Probe activity. The budget for this activity is not reflected in the year-to-date cumulative, but will be shown in the May reports. The balance of the overrun is mainly due to the Velocimeter Project. The overrun there will require application of Management Reserve through a CCB action.

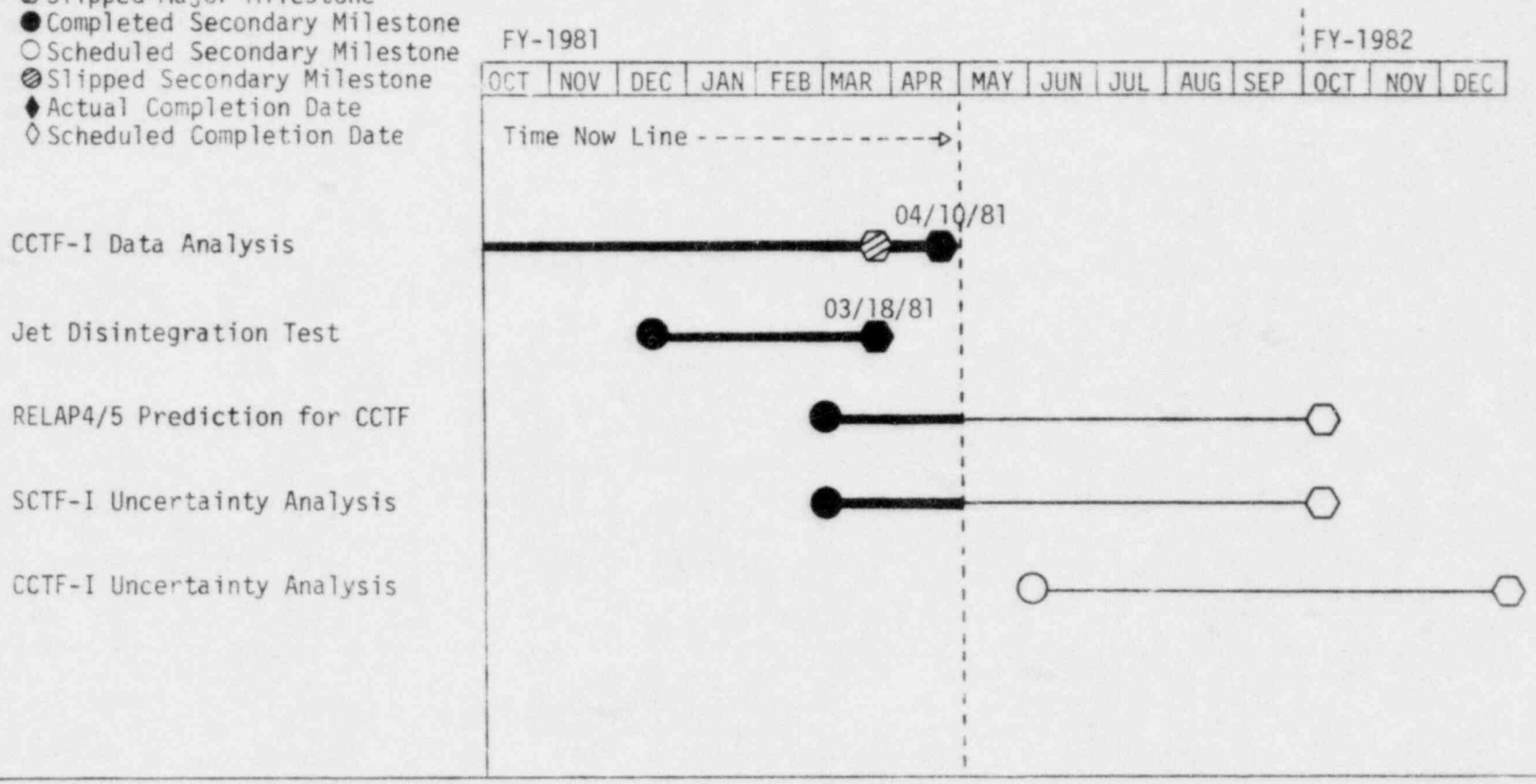
LEGEND

- ● 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

Test Results Analysis

April 1981



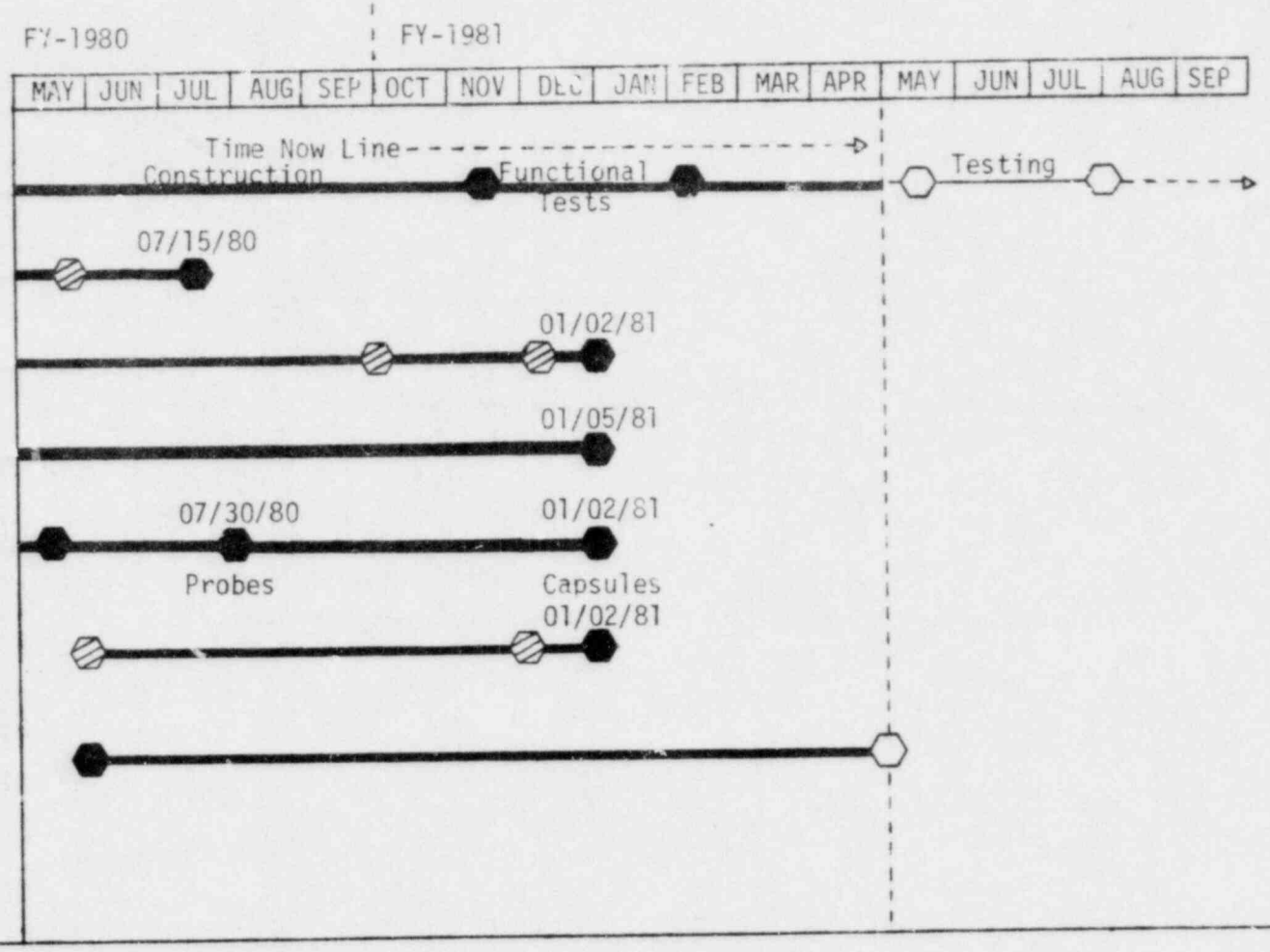
2D/3D EXPERIMENT PROGRAM

SCTF Projects

April 1981

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

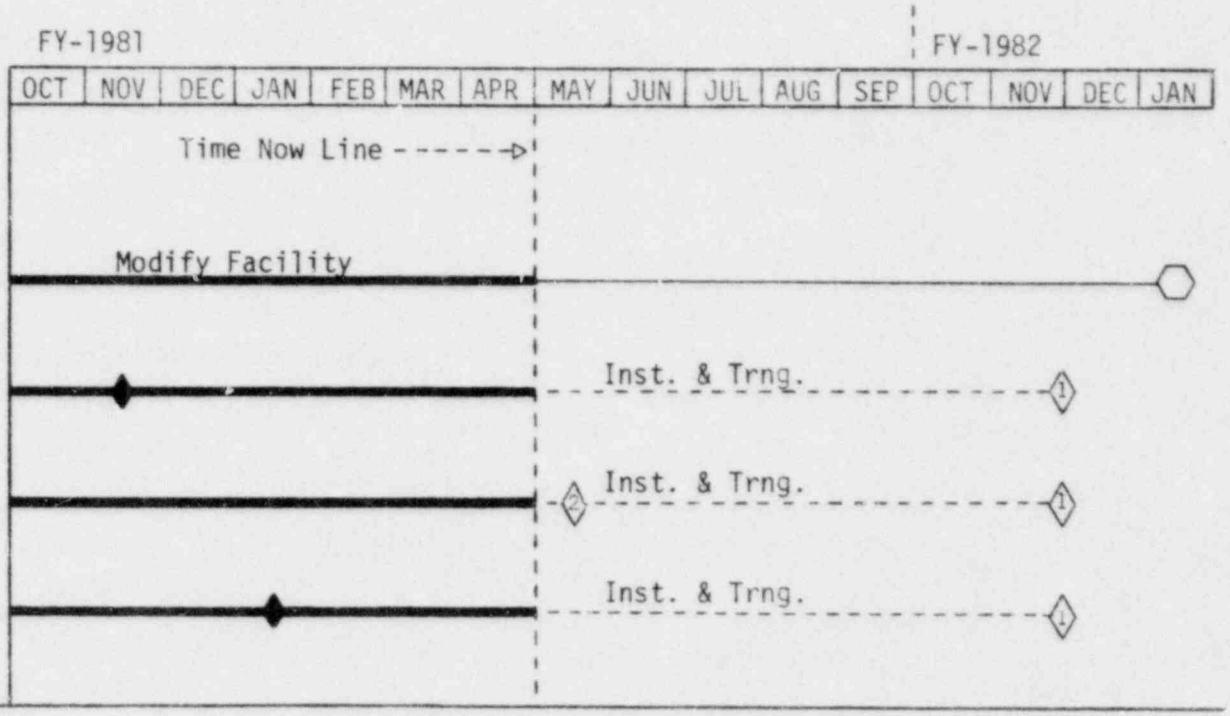
LEGEND

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

2D/3D EXPERIMENT PROGRAM

PKL Projects

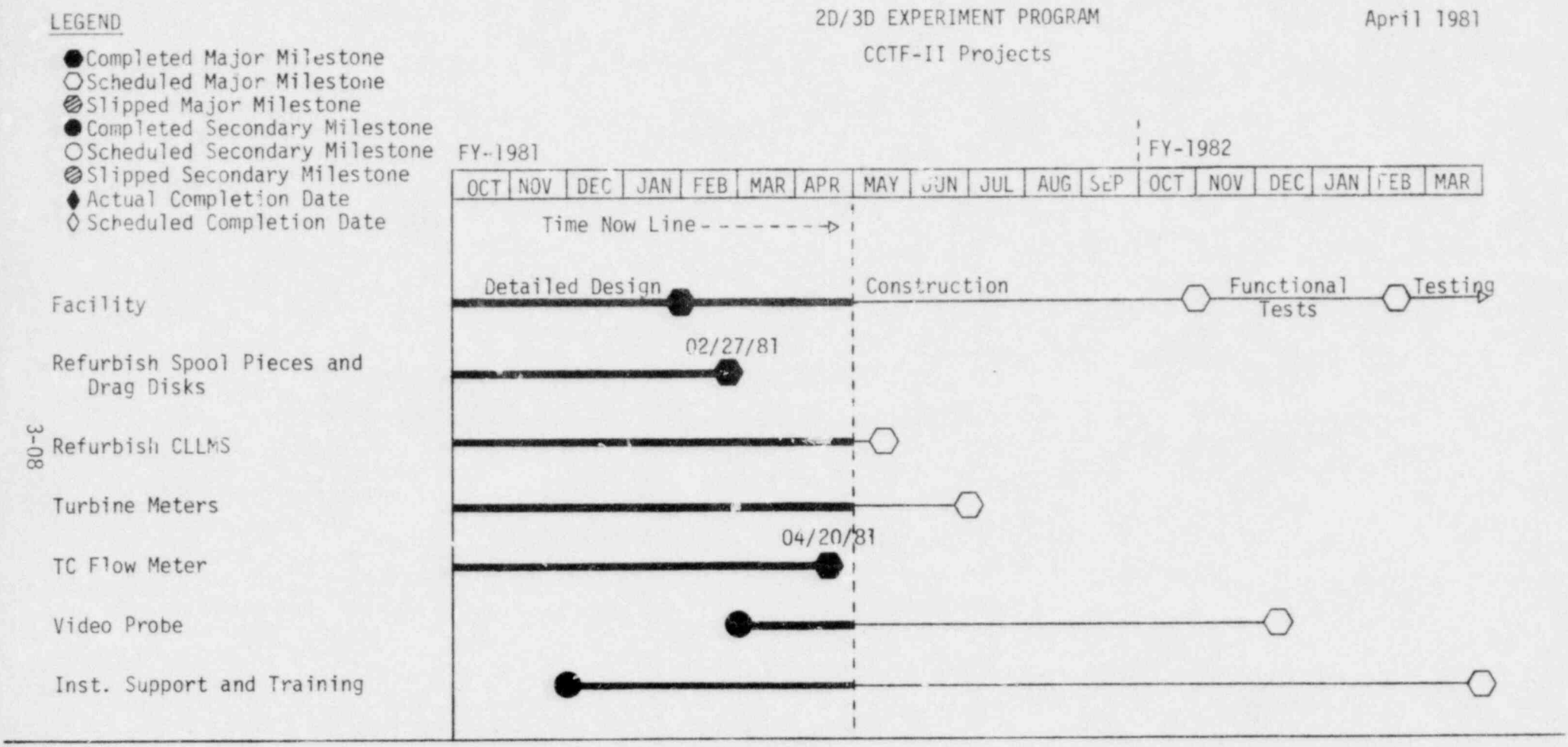
April 1981



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.

(2) Shipment of spools is pending update of schedule information from PKL.



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

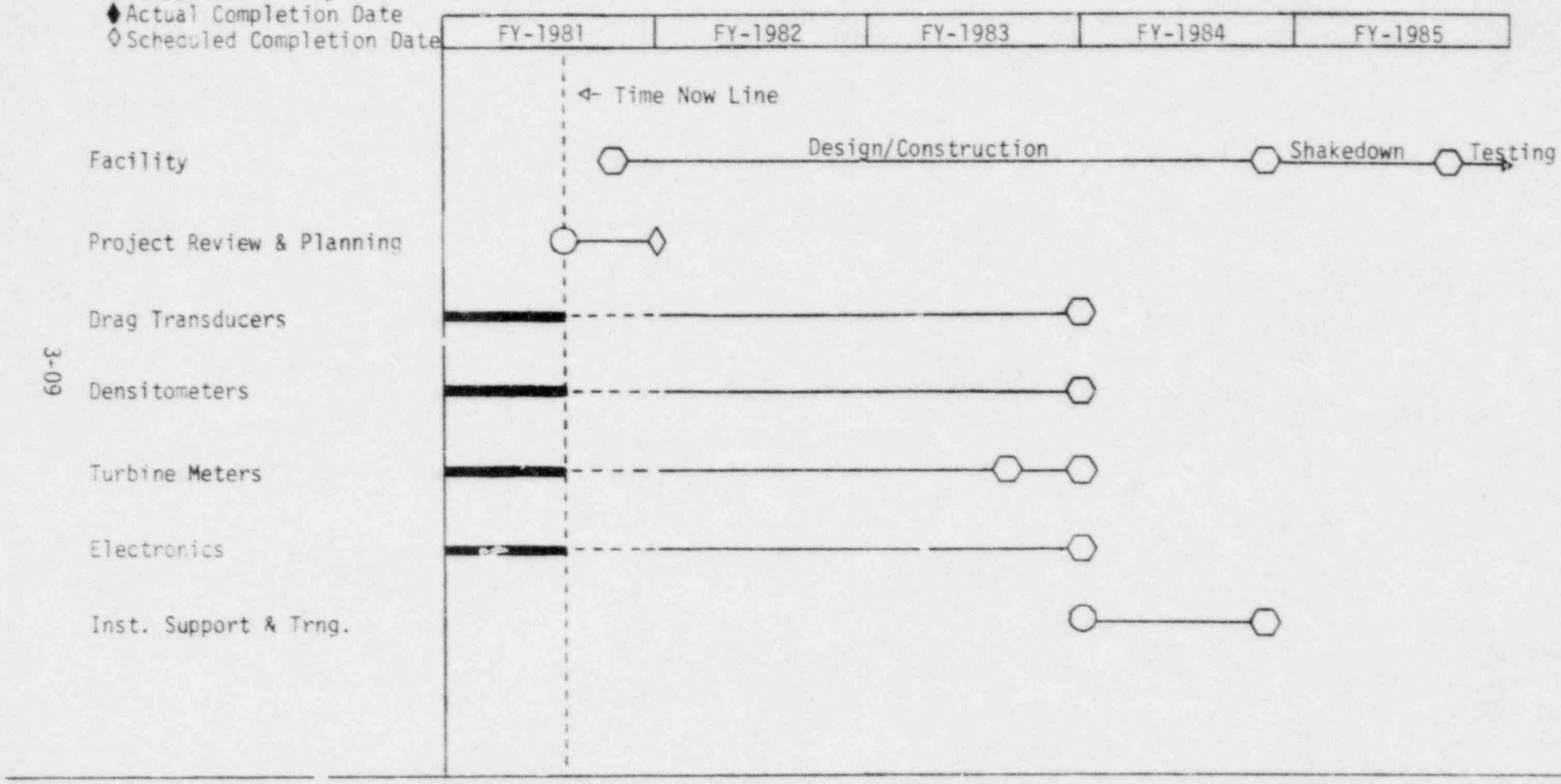
LEGEND

- 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

April 1981



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

189a A6100

1. 189a A6100 - 3D Technical Support and Instrumentation

2. Scheduled Milestones for April 1981

Node	Description	Due Date	Actual Date
--	Cylindrical Core Test Facility Core I Data Analysis	4-10-81	4-10-81
--	Ship Cylindrical Core Test Facility Core II Thermocouple Flowmeters	4-10-81	4-20-81
--	Slab Core Test Facility Installation Support & Training	4-30-81	4-30-81

3. Summary of Work Performed in April 1981

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

1. Spool Pieces

No activity.

2. Conductivity Liquid Level Measurement System

No activity.

3. Turbine Meters

A draft of supplement material to vendor-supplied operation and maintenance manual was initiated.

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

1. Densitometers

The densitometer sources were installed in the instruments on the Slab Core Test Facility, end-to-end checkouts were completed, and each instrument had an in-place calibration this month. All pressure boundaries were hydrotested and the instruments were used on two Slab Core Test Facility tests, the last of which was the JAERI acceptance for these instruments. The instruments performed well and JAERI has accepted them.

2. Hot Leg Spool Piece

Final checkout and acceptance was performed at JAERI in Japan. The data analysis report on the two phase flow testing performed at the LOFT Test Support Facility was published and distributed.

3.b Summary of Work Performed in April 1981 (Continued)

4. Turbine Meters

Additional training was provided to the Japanese on the operation of the turbine system prior to and during the first test series.

5. Cold Leg and Vent Line Spool Piece

Final checkout and acceptance of the spool piece system was performed at JAERI in Japan. The cold leg turbine was changed to a higher velocity range turbine. New springs for cold leg spool piece drag transducers were made and sent to Japan for installation.

6. Drag Disk

Final checkout and acceptance of the drag transducer system was performed at JAERI in Japan.

c. Upper Plenum Test Facility Instruments

1. Turbine Meters

No activity.

2. Drag Disks

No activity.

3. Gamma Densitometers

No activity.

d. Cylindrical Core Test Facility Core II Instruments

1. Turbine Meters

The dummy turbines and support structure were shipped to Japan on April 15, 1981. Fabrication of the production turbine flowmeter systems was initiated.

3.d Summary of Work Performed in April 1981 (Continued)

2. Thermocouple Velocimeter

Calibration and assembly of velocimeter probes were completed and shipped to Japan on April 15, 1981. The final design of the electronics has been initiated. Assembly of an additional velocimeter probe has been completed for characterization tests.

3. Spool Piece and Drag Disk Refurbishment

The specification for the refurbishment of the CCTF I software was completed and distributed.

4. Conductivity Liquid Level Measurement System Refurbishment

The modification and installation procedure for conductivity liquid level detectors was written and given to word processing.

5. Video Probe

The preliminary design of the video probes was initiated. Concepts were established and lighting tests were conducted in the laboratory to establish design feasibility. Drawings were started for the preliminary assembly configurations.

e. Analysis Support

The Cylindrical Core Test Facility-I data analysis report has been completed and issued. The data uncertainty analysis and the RELAP5 modeling for the Cylindrical Core Test Facility System are in progress. The cost estimate for the spool piece data reduction has been started.

4. Scheduled Milestones for May 1981

Node	Description	Due Date	Actual Date
--	Refurbish conductivity liquid level measurement system on the Cylindrical Core Test Facility	5-20-81	

5. Summary of Work to be Performed in May 1981

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

1. Spool Pieces

No activity.

5.a Summary of Work to be Performed in May 1981

2. Conductivity Liquid Level Measurement System

No activity planned. Installation support is pending receipt of a firm PKL schedule.

3. Turbine Meters

Work will continue on supplement to vendor-supplied operation and maintenance manual.

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

1. Gamma Densitometers

All outstanding action items, necessary reports and other paperwork will be completed. It is anticipated that this will complete the project.

2. Hot Leg Spool Piece

Final paperwork will be completed to close out the project.

3. Turbine Meters

Final paperwork will be completed to close out the project.

4. Cold Leg and Vent Line Spool Piece

Final paperwork will be completed to close out the project.

5. Drag Disks

Final paperwork will be completed to close out the project.

c. Upper Plenum Test Facility

1. Turbine Meters

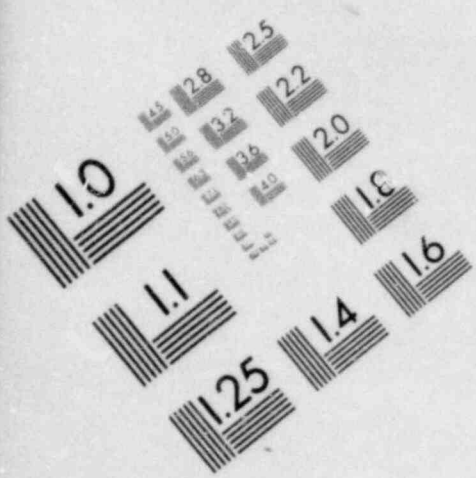
No activity.

2. Drag Disks

No activity.

3. Gamma Densitometers

No activity.



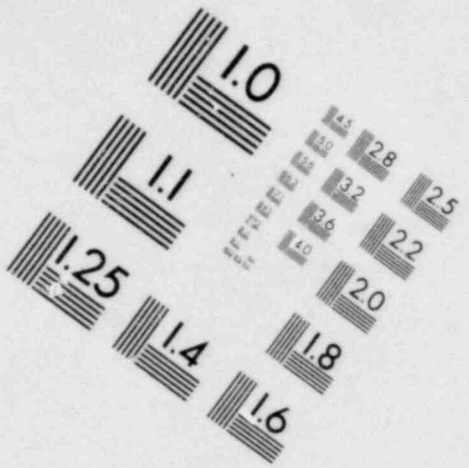
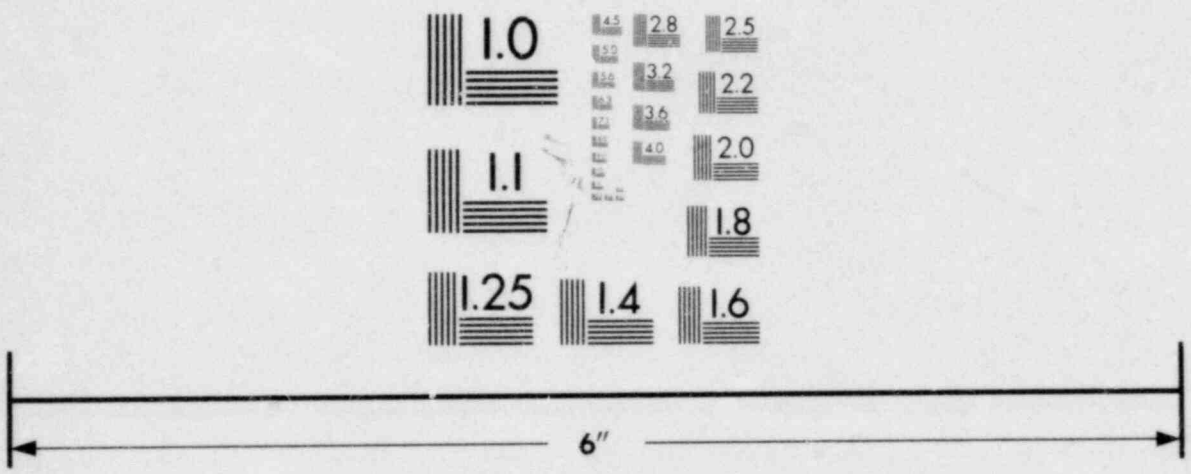
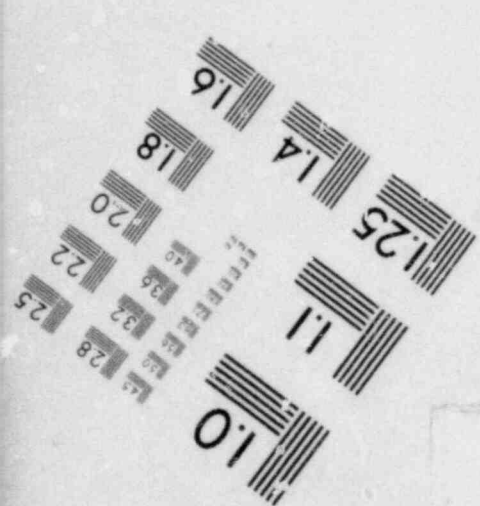
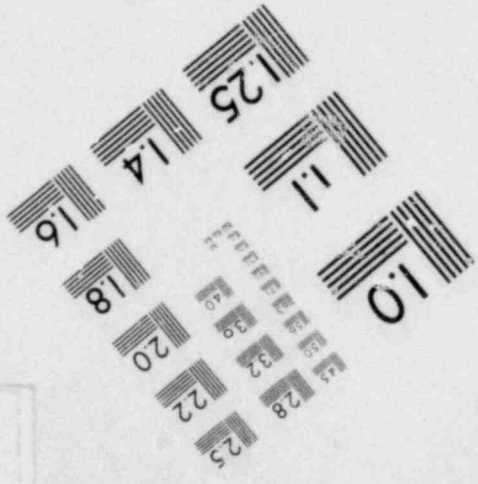
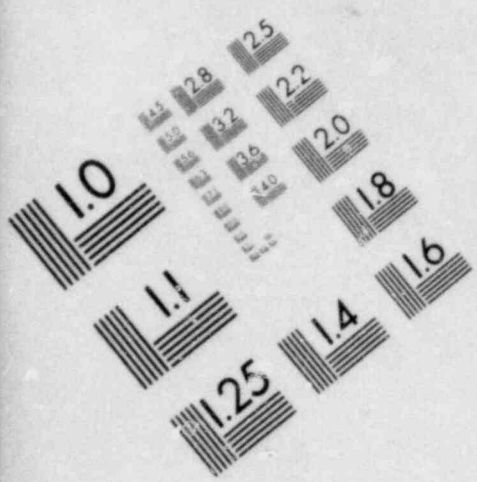


IMAGE EVALUATION
TEST TARGET (MT-3)









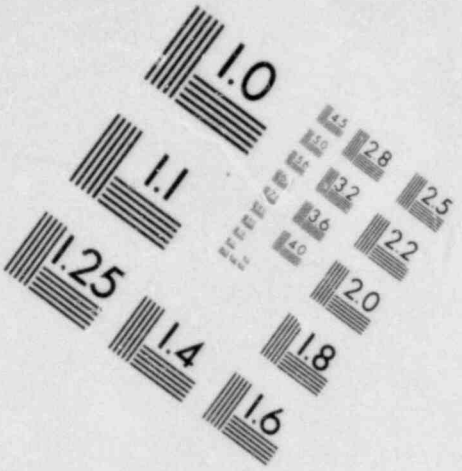
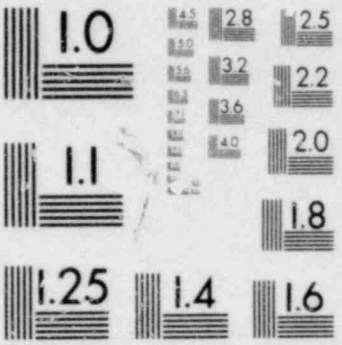
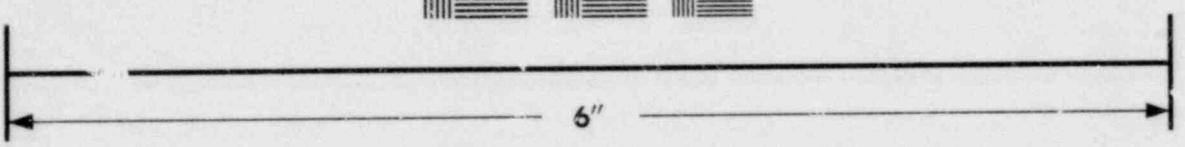
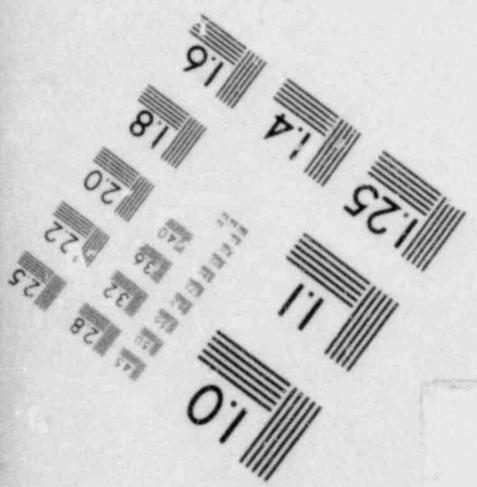
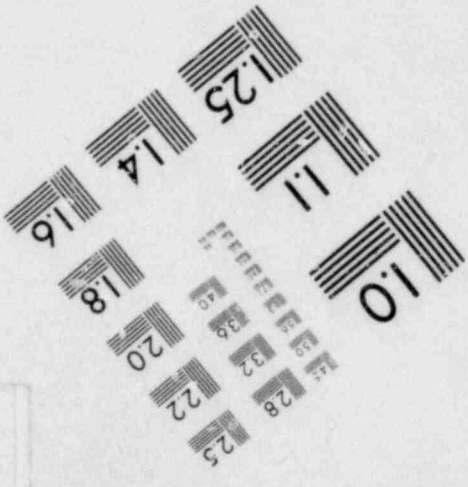


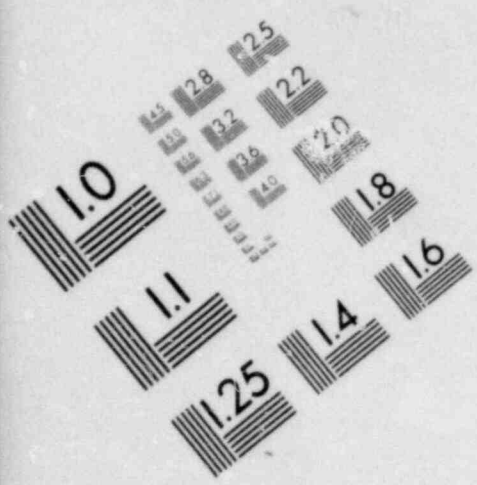
IMAGE EVALUATION TEST TARGET (MT-3)











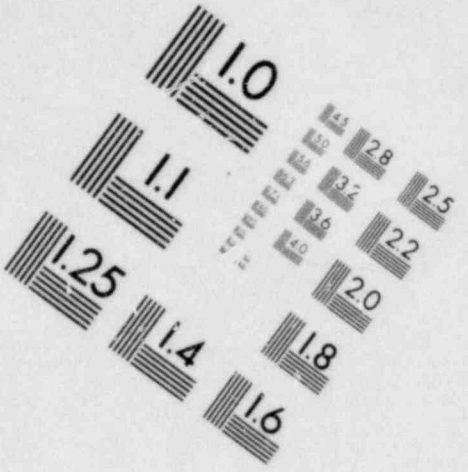
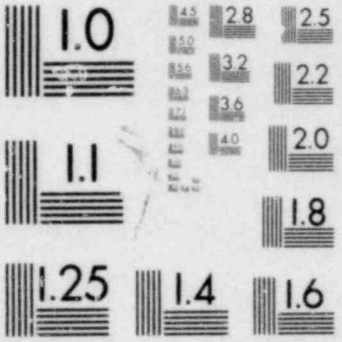
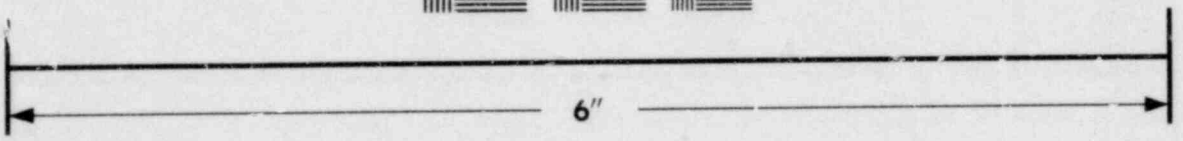
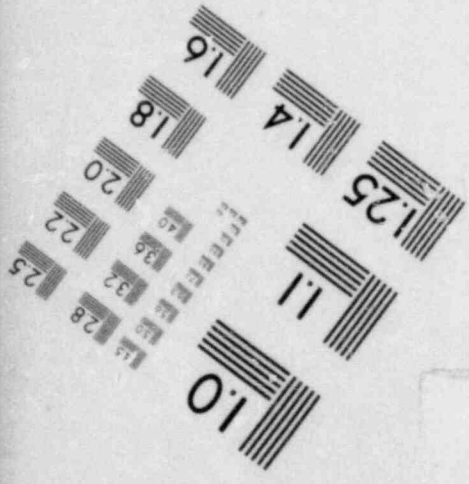
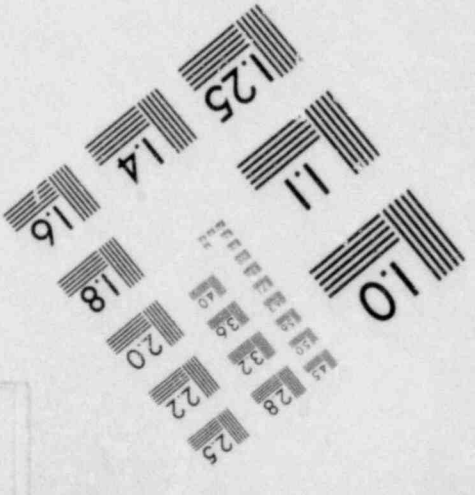


IMAGE EVALUATION TEST TARGET (MT-3)









5. Summary of Work to be Performed in May 1981 (Continued)

d. Cylindrical Core Test Facility II Instruments

1. Turbine Meters

Fabrication of the production turbine flowmeter systems will continue. Design of a rack for the turbines and velocimeters has been initiated.

2. Thermocouple Velocimeter

Characterization tests of the velocimeter probe will be completed and software routines for the velocimeters will be determined.

3. Spool Piece and Drag Disk Refurbishment

Work will continue on the refurbishment of the software to update it for Cylindrical Core Test Facility II.

4. Conductivity Liquid Level Measurement System Refurbishment

Refurbishment of two in-core and two lower plenum conductivity level detectors will be performed in Japan. Installation of four new in-core and one lower plenum conductivity liquid level detectors will be performed in Japan.

5. Video Probe

The preliminary design of the video probes will continue to completion including analysis to determine cooling air requirements. A preliminary design review will be held and procurement of long lead items will be initiated.

e. Analysis Support

The RELAP5 modeling will be finished and code run will be started. Data uncertainty analysis will continue.

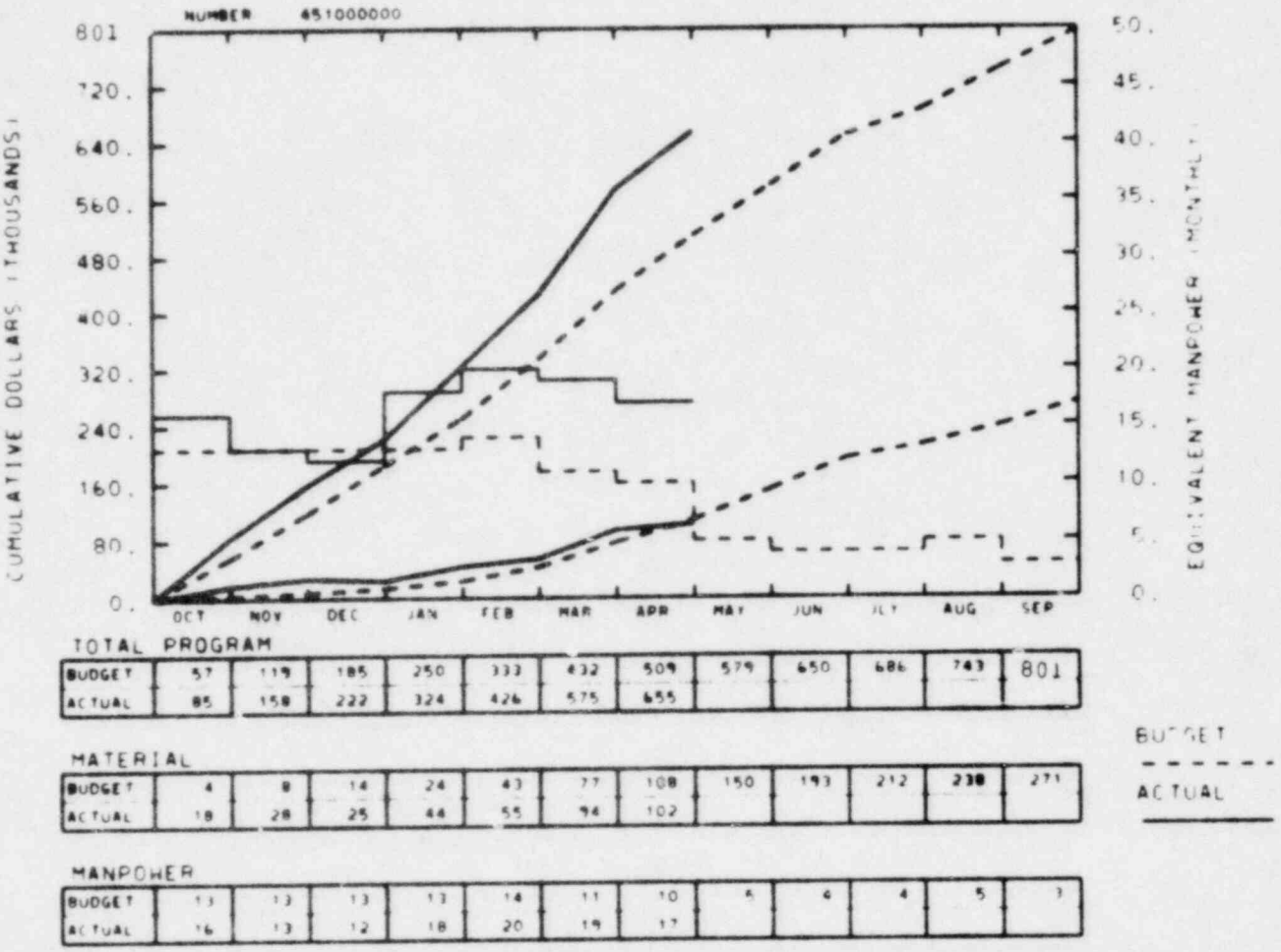
6. Problems and Potential Problems

Budget overruns have occurred on the Slab Core Test Facility and additional overruns are predicted for the Cylindrical Core Test Facility Core II projects to be completed next year. These projected overruns have been discussed with DOE-ID and with the NRC at the Midyear Review. A recovery plan is being developed which involves a series of austerity steps (minimum travel, management, staff reduction) plus a cost reduction program for Upper Plenum Test Facility instruments. The cost reduction program will include a simplication of instrument designs, evaluation of alternate technical approaches and evaluation of make or buy alternatives. All work on Upper Plenum Test Facility projects has been stopped pending completion of the cost reduction program, scheduled for September 1981.

RESPONSIBLE MANAGER
R. E. RICE

EG&G IDAHO INC.

A6282-FLUID DISTRIBUTION GRIDS



TOTAL PROGRAM

BUDGET	57	119	185	250	333	432	509	579	650	686	743	801
ACTUAL	85	158	222	324	426	575	655					

MATERIAL

BUDGET	4	8	14	24	43	77	108	150	193	212	238	271
ACTUAL	18	28	25	44	55	94	102					

MANPOWER

BUDGET	13	13	13	13	14	11	10	6	4	4	5	3
ACTUAL	16	13	12	18	20	19	17					

A6282

YTD VARIANCE: <146> (29%)

The SCTF-I FDG and the Optical Liquid Level Detectors (OLLD) Development tasks are overrun due to unexpected difficulties encountered in scheduling SCTF installation, and in the development phase of prototype testing. The $125 K held in reserve at fiscal year beginning has been received, and will be reflected in the May budget. This will alleviate the current overrun situation.

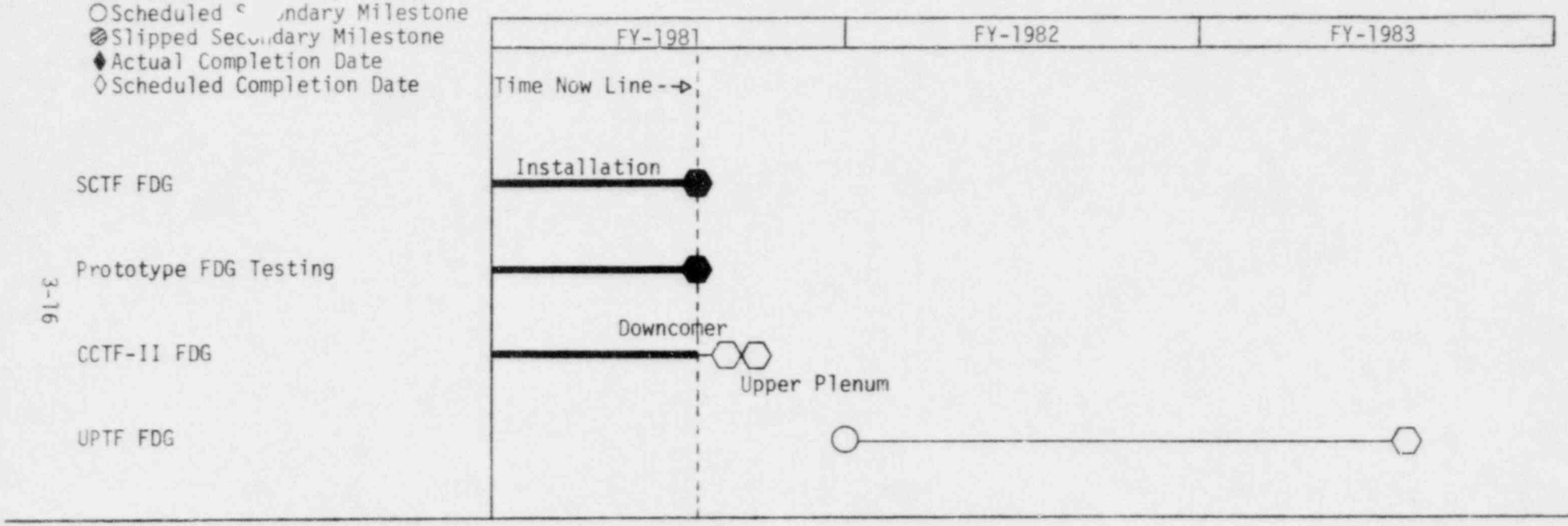
LEGEND

- 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

Fluid Distribution Grids

April 1981



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

1. 189a A6282 - Fluid Distribution Grid Systems for 3D Program Facilities

2. Scheduled Milestones for April 1981

Node	Description	Due Date	Actual Date
--	Deliver Cylindrical Core Test Facility Core II Fluid Distribution Grid Dummy Upper Plenum Rods	4-15-81	

3. Summary of Work Performed in April 1981

   a. Japan Atomic Energy Research Institute (JAERI) Slab Core Test Facility Fluid Distribution Grid Systems

      Grafoil seals were investigated and the decision was made to apply silicone grease and zinc powder to the leads in the conax grafoil seal area. Material for the maintenance manual was compiled.

   b. Cylindrical Core Test Facility Core II Fluid Distribution Grid Systems

      Optical liquid level probes (162) were assembled. Six downcomer fluid distribution grid assemblies were complete except for final throughput checks. Fabrication of probes and parts for upper plenum fluid distribution grids commenced. Both upper plenum and downcomer fluid distribution grid signal conditioning crates were 95% fabricated, assembled and checked out. Electronics drawings were approximately 70% completed. Shipping containers for fluid distribution grids were fabricated.

4. Scheduled Milestones for May 1981

Node	Description	Due Date	Actual Date
--	Final Electronics Signal Conditioning Design Review will be held	5-29-81	

5. Summary of Work to be Performed in May 1981

a. Japan Atomic Energy Research Institute (JAERI) Slab Core Test Facility Fluid Distribution Grid Systems

The rough draft on the operation manual will be submitted to word processing.

b. Cylindrical Core Test Facility Core II Fluid Distribution Grid Systems

All downcomer fluid distribution grid assemblies are scheduled to be completed and ready for shipment. Upper plenum probes (110) are scheduled to be completed. Upper plenum fluid distribution grid assemblies should be approximately 70% complete. A final design review of the signal conditioning electronics is planned. Fabrication and inspection of the electronics signal conditioning should be complete. All drawings should be completed.

6. Problems and Potential Problems

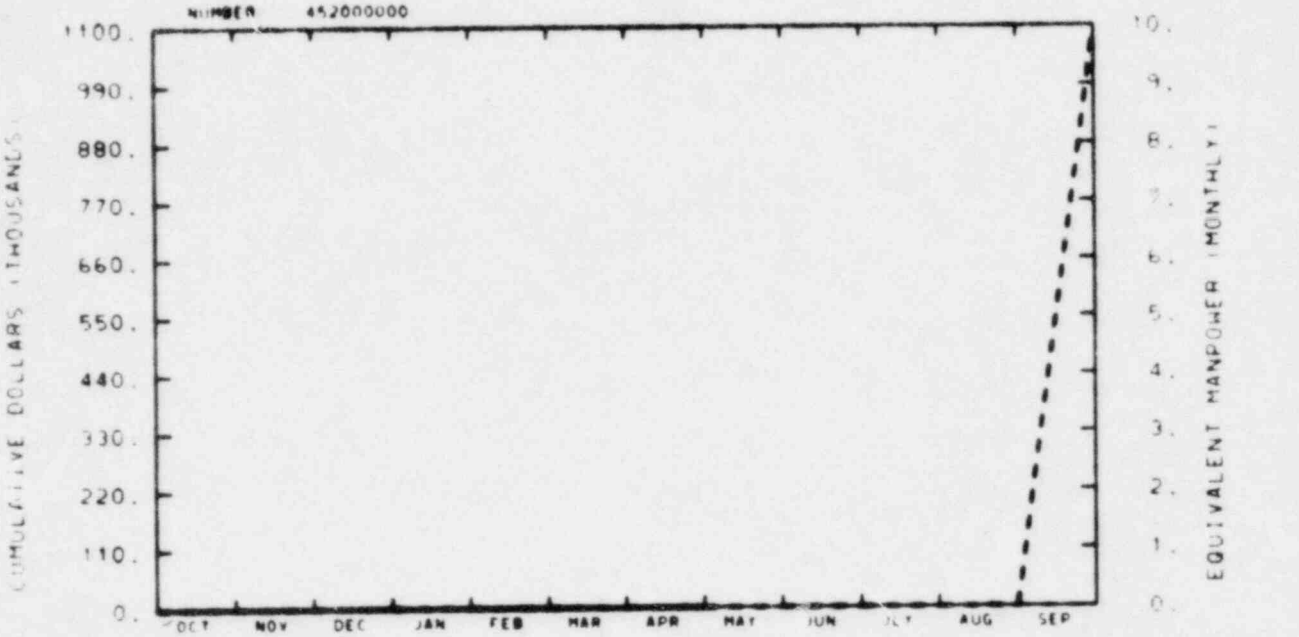
Budget overruns have occurred on the Slab Core Test Facility and additional overruns are predicted for the Cylindrical Core Test Facility Core II projects to be completed next year. These projected overruns have been discussed with DOE-ID and with the NRC at the Midyear Review. A recovery plan is being developed which involves a series of austerity steps (minimum travel, management, staff reduction) plus a cost reduction program for Upper Plenum Test Facility instruments. The cost reduction program will include a simplification of instrument designs, evaluation of alternate technical approaches and evaluation of make or buy alternatives. All work on Upper Plenum Test Facility projects has been stopped pending completion of the cost reduction program, scheduled for September 1981.

RESPONSIBLE MANAGER
J. E. RICE

EG&G IDAHO INC.

A6289 UPTF DAS

NUMBER 452000000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	0	0	0	0	0	1096
ACTUAL	0	0	0	0	0	0	0					

MATERIAL

BUDGET	0	0	0	0	0	0	0	0	0	0	0	1096
ACTUAL	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					

BUDGET

ACTUAL

A6289

YTD VARIANCE: 0

MONTHLY REPORT FOR

APRIL 1981

CODE DEVELOPMENT DIVISION

F. Aguilar, Manager

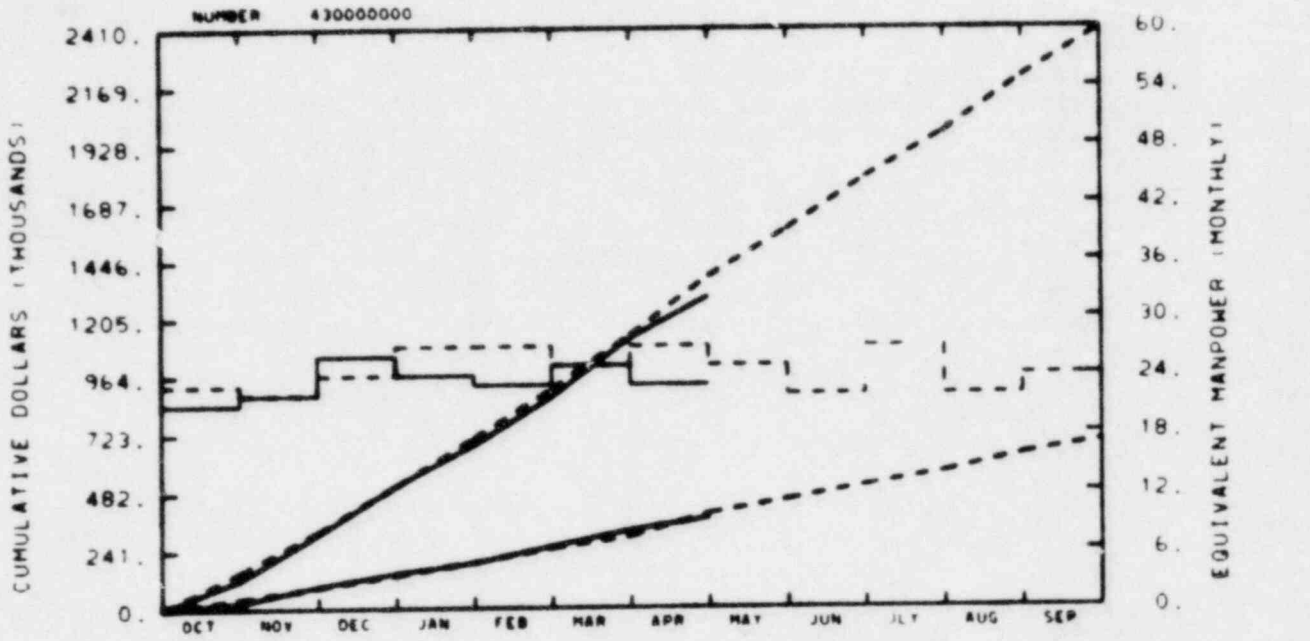
S. F. Tuck
Planning & Budgets Representative

RESPONSIBLE MANAGER
F AGUILAR

EG&G IDAHO INC.

CODE DEVELOPMENT & ANALYSIS PROG

NUMBER 430000000



TOTAL PROGRAM

BUDGET	156	324	510	705	907	1141	1383	1576	1789	1978	2206	2410
ACTUAL	125	312	511	679	874	1118	1293					

MATERIAL

BUDGET	44	90	139	193	250	298	392	448	507	562	634	687
ACTUAL	27	95	148	191	258	325	374					

MANPOWER

BUDGET	23	22	24	27	27	25	27	25	22	27	22	24
ACTUAL	21	22	26	24	22	25	23					

YTD VARIANCE: 90 (7%)

Individual cost graphs will give individual explanations.

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

Note: 189a's A6009 and A6434, Containment Analysis, both of which are funded out of Nuclear Reactor Regulation (NRR), are included in the above budgetary and actual data as they fall under the work scope of the Code Development Division. Individual cost graphs and narrative associated with these 189a's can be found in the Code Development Division, Code Assessment and Application Division NRR section.

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

The FRAP-T6 Code Description and User's Manual was transmitted to the National Energy Software Center as scheduled. The SCDAP planning document was also issued as scheduled. The FRAP-T6 developmental assessment report is proceeding satisfactorily toward its scheduled release in May.

A plan for TRAC-BD1/MOD1 development was discussed with the NRC project manager during his visit here. The results of the discussion, which defined the long range objective of TRAC-BD1/MOD1 and specific modeling requirements, will be incorporated into a final plan early in June. Work progressed satisfactorily toward the June 30, 1981 interim goal of providing a partial ATWS capability for TRAC-BD1. Preparation of the TRAC-BD1 Code Description and User's Manual is on schedule for delivery to the Documentation Office on May 20, 1981.

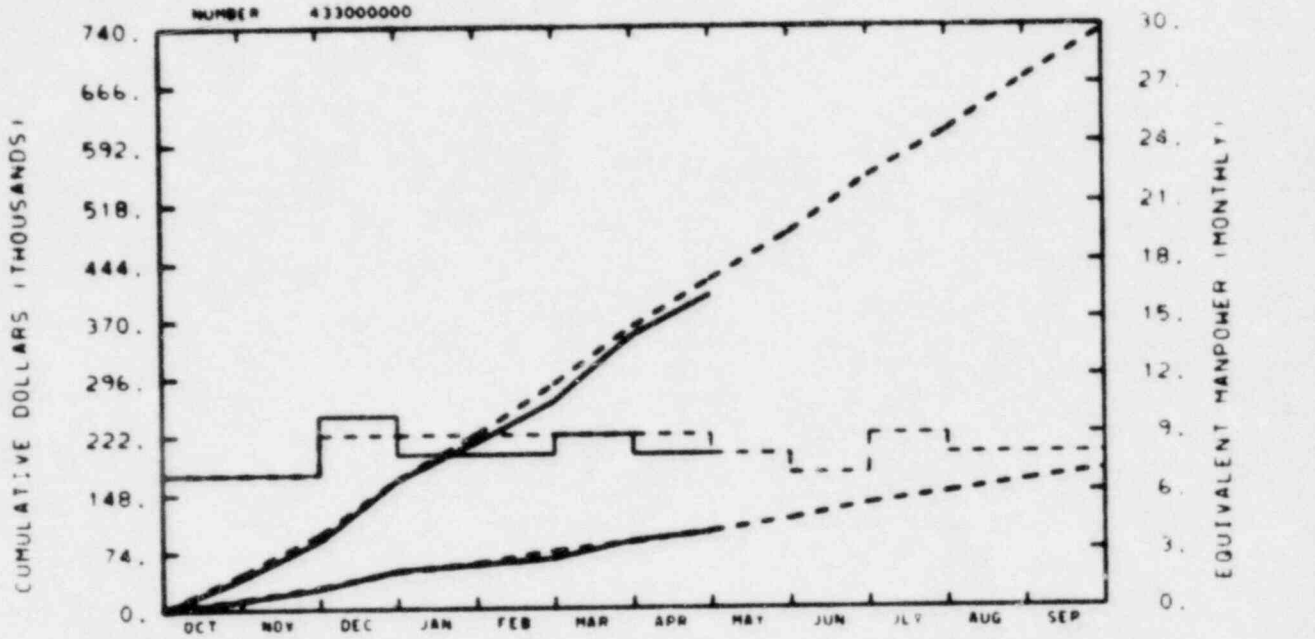
The multi-node secondary steam generator initialization task was not completed satisfactorily. Further development and model debug has been halted. A report describing the technical approach and summarizing the task status and results has been written by the cognizant engineer. A review is underway to determine the alternate approaches for task resolution. A letter providing NRC with the results of this review, task status, and options for resolution will be prepared in May.

RESPONSIBLE MANAGER
F AGUILAR

EG&G IDAHO INC.

FUEL BEHAVIOR MOD DEVELOPMENT

NUMBER 433000000



TOTAL PROGRAM

BUDGET	46	97	166	222	287	361	421	481	551	607	673	733
ACTUAL	40	88	165	213	265	350	402					

MATERIAL

BUDGET	13	29	48	58	74	85	99	114	134	147	162	176
ACTUAL	12	26	50	57	65	87	98					

MANPOWER

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

BUDGET

ACTUAL

A6050

YTD VARIANCE: 19 (5%)

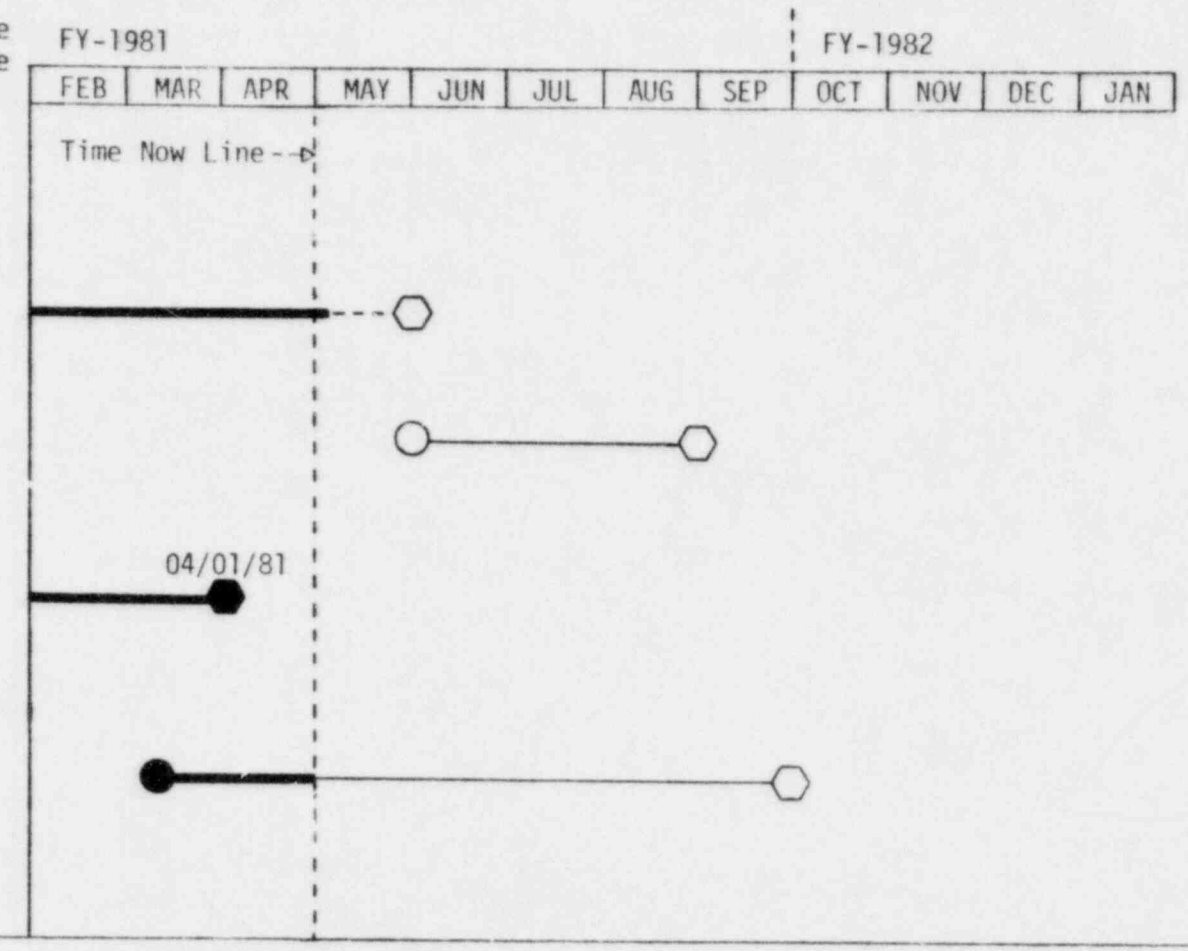
LEGEND

- 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 DIVISION

MATPRO Development (A6050)

April 1981



NOTES: MATPRO-11 represents the last version in the development of the MATPRO subcode. Newsletters will be supplied to reflect maintenance. During FY-1981, MATPRO maintenance consists of development of a new fuel hot pressing model.

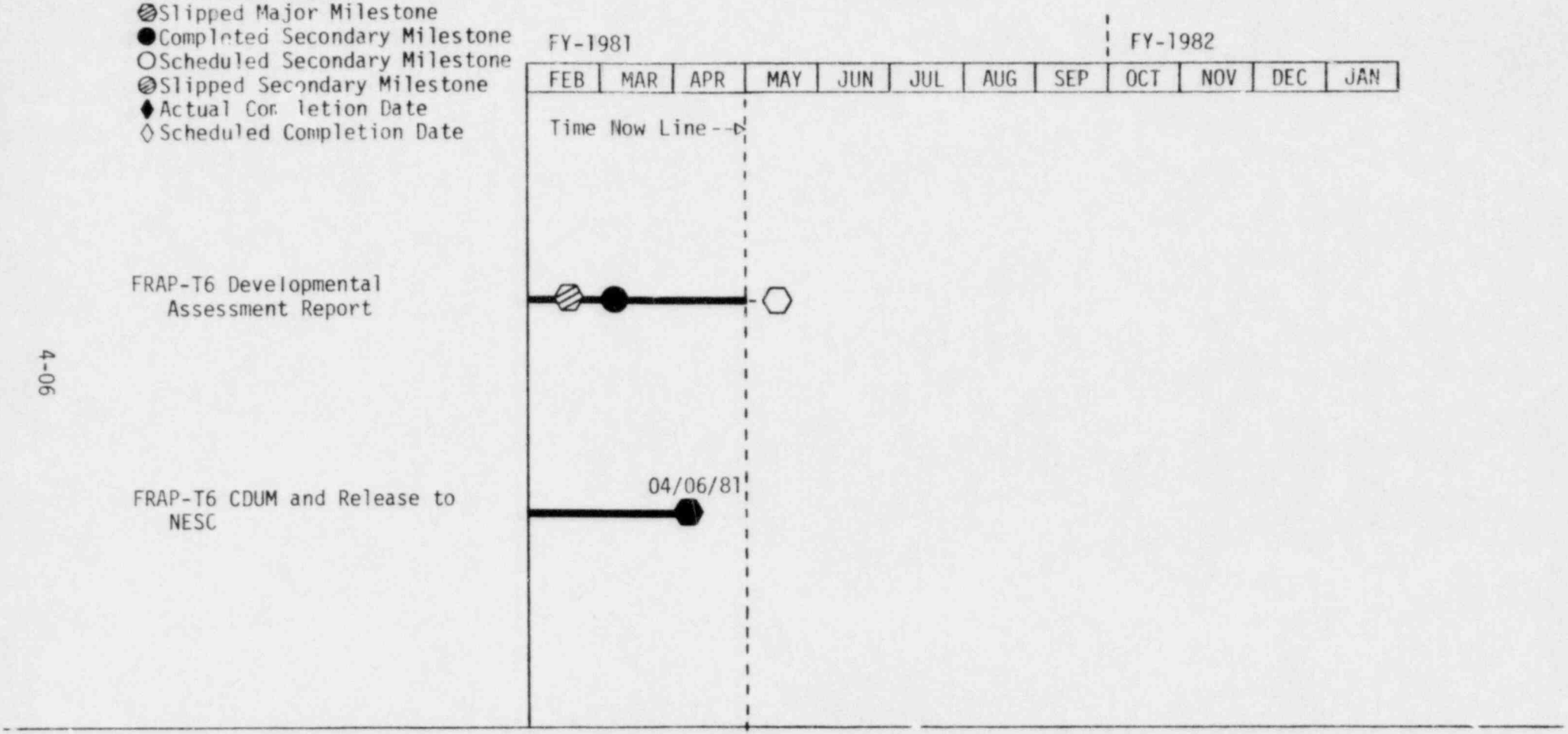
LEGEND

- ●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 DIVISION

FRAP-T Development (A6050)

April 1981



NOTES: The start and completion dates for the FRAP-T6 Developmental Assessment Report, the completion date for the FRAP-T6 CDUM and release of FRAP-T6 to NESC were rescheduled on January 26, 1981. These reschedulings are discussed in detail in FA-01-81.

1. 189a A6050 - Fuel Behavior Model Development

2. Scheduled Milestones for April 1981

Node	Description	Due Date	Actual Date
FA-01-81	FRAP-T6 CDUM and Release to NESC	04/06/81	04/06/81 FA-26-81
--	SCDAP Planning Document	04/01/81	04/01/81 FA-24-81

3. Summary of Work Performed in April 1981

a. FRAP-T6

The FRAP-T6 Code Description and User's Manual was issued and the code was transmitted to the National Energy Software Center. The BALLOON-2 updates were incorporated in FRAP-T6 and a developmental assessment of the cladding ballooning model was performed. Due to problems encountered with the updates, the code was not provided to independent assessment personnel during the month. However, transmittal is expected during the first week in May as the problems have been resolved. The FRAP-T6 developmental assessment report was reviewed and incorporation of comments is in progress. Issuance of the report is expected on May 11, 1981 as scheduled.

b. MATPRO

Comments on the new fuel hot pressing model were incorporated in the report and final review of the changes is in process. The report will be issued ahead of the scheduled June 1, 1981 date.

c. SCDAP

The SCDAP planning document was issued on April 1, 1981 as scheduled. Specification of functional and data requirements and preliminary driver logic for SCDAP/MODO were completed. Literature reviews for the debris formation and behavior models and the liquefaction and solidification models were in progress and will be completed in May and June, respectively. A presentation describing the concept of the SCDAP computer code was prepared and will be given at the German-American-Japanese fuel behavior information meeting in May.

d. Special Projects

The FRACAS-II developmental assessment report was not issued during April as planned due to typing delays and resolution of management comments. The report will be issued on May 4, 1981. Due to the

3.d Summary of Work Performed in April 1981 (Continued)

delays in incorporating the BALLOON-2 model updates in FRAP-T6, no work was performed on the BALLOON-2 description report or the flow area restriction model development effort. Work will proceed on the BALLOON-2 description report during May and the report will be issued late in May. The flow area restriction model development effort will also proceed in May. A presentation describing the BALLOON-2 model was prepared and will be given at the German-American-Japanese fuel behavior information meeting in May.

4. Scheduled Milestones for May 1981

Node	Description	Due Date	Actual Date
FA-1-81	FRAP-T6 Developmental Assessment Delivered to NRC	05/11/81	05/11/81E

5. Summary of Work to be Performed in May 1981

a. FRAP-T6

The FRAP-T6 developmental assessment report will be completed and issued on May 11, 1981 as scheduled. As part of the continuing FRAP-T6 maintenance effort, several updates will be incorporated in FRAP-T6 to correct recently discovered minor code errors. The FRAP-T6 code version with the BALLOON-2 updates will be delivered to independent assessment during the first week of May.

b. MATPRO

Final review of the new hot pressing model will be completed and the report will be issued ahead of the scheduled June 1, 1981 date. Preparation of the MATPRO-11 newsletter will begin. All of the new model description reports and detected errors in existing models will be assembled. The approach to be used to relay this information to MATPRO code users will be determined.

c. SCDAP

The functional and data requirements and driver logic for SCDAP/MODO will be reviewed for consistency by the code development participants. The literature review for the debris formation and behavior models will be completed in late May at which time development of the debris models will begin. The literature review

5.c Summary of Work to be Performed in May 1981 (Continued)

for the liquefaction and solidification models will continue during May and will be completed in early June. Model development for the bundle thermal-hydraulic behavior will start in early May. The data structure and driver logic for this model will be established. A presentation describing the SCDAP code concept will be given at the German-American-Japanese fuel behavior information meeting in Japan.

d. Special Projects

A FRAP newsletter will be issued that will describe the status of the development of the FRAP code series and of MATPRO. The FRAPCON-1 Code Description and User's Manual will be released as a NUREG report. The BALLOON-2 model description report will be reviewed and issued as an interim report. The model will be described at the German-American-Japanese fuel behavior information exchange meeting during the week of May 18. A model will be developed to convert the distribution of input parameters to a distribution of cladding shapes for the flow area restriction model.

6. Problems and Potential Problems

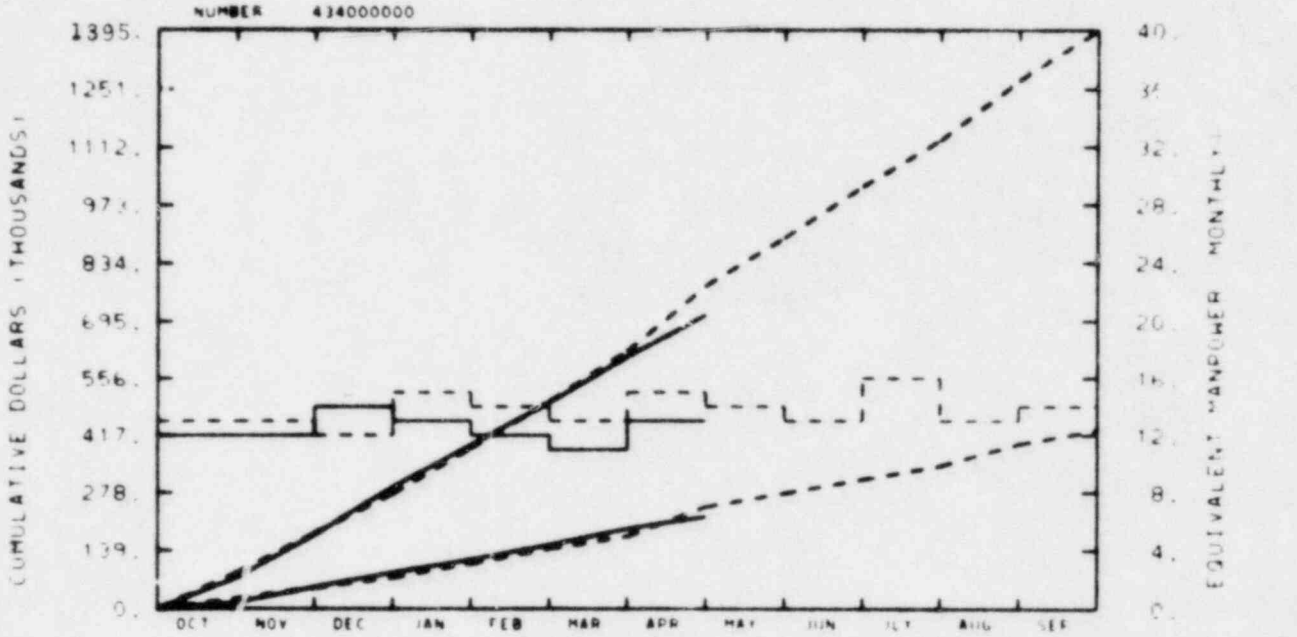
None.

RESPONSIBLE MANAGER
F AGUILAR

EG&G IDAHO INC.

LOCA ANALYSIS

NUMBER 434000000



TOTAL PROGRAM

BUDGET	86	180	275	385	499	623	780	[illegible]	[illegible]	[illegible]	[illegible]	1395
ACTUAL	74	176	291	393	496	609	711					

MATERIAL

BUDGET	[illegible]	50	74	108	144	173	243	[illegible]	[illegible]	343	396	[illegible]
ACTUAL	15	52	87	[illegible]	152	191	22[illegible]					

MANPOWER

BUDGET	[illegible]	13	12	[illegible]	14	[illegible]	[illegible]	[illegible]	[illegible]	16	[illegible]	[illegible]
ACTUAL	12	12	14	[illegible]	12	[illegible]	[illegible]					

A6052

YTD VARIANCE: 69 (3%)

Publication costs (~40 K) for the RELAP4/MOD7 manual have been deferred from April until July.

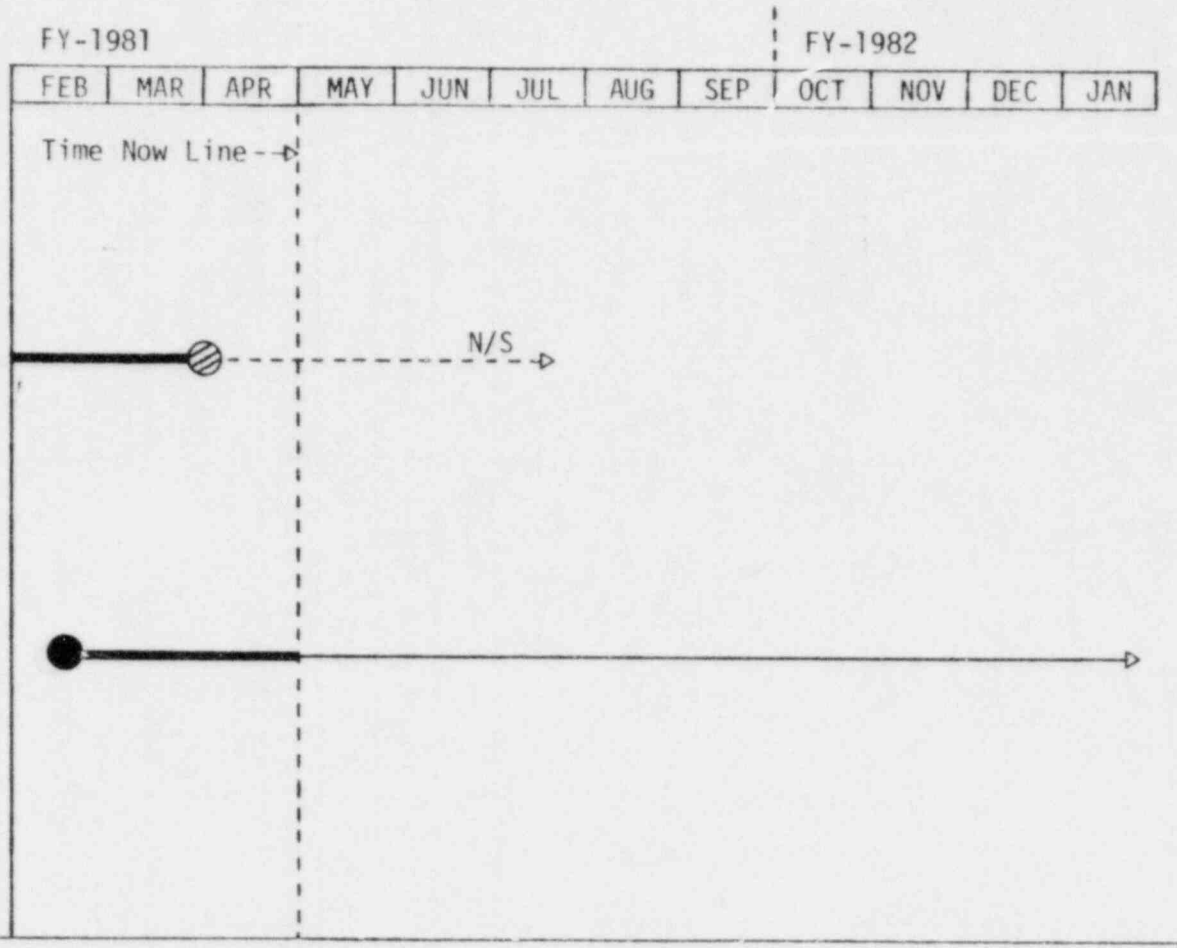
LEGEND

- ●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 DIVISION

April 1981

RELAP4/MOD7 Integral Code Development and Checkout (A6052)

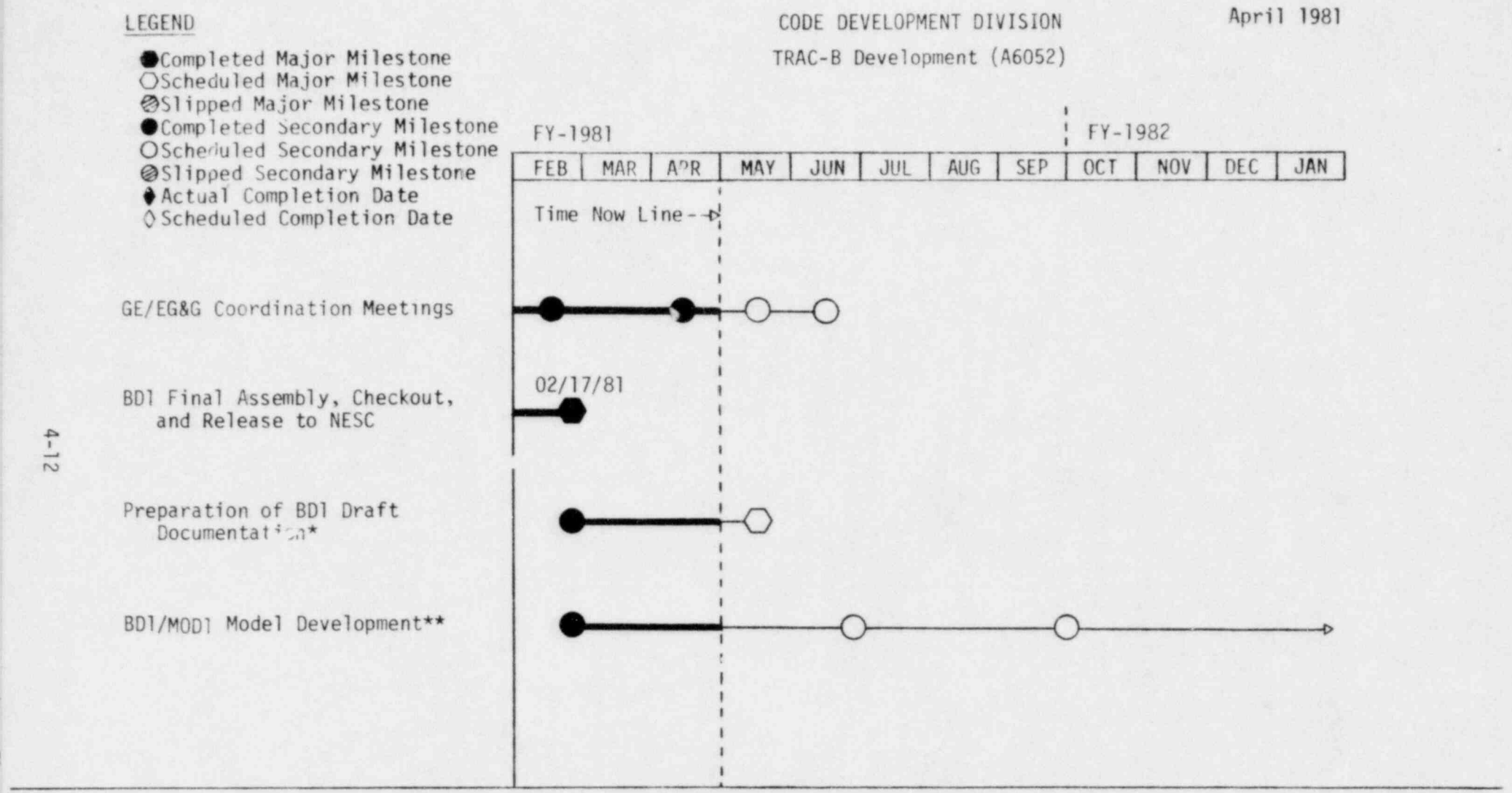


NOTES: * Fundamental problems have been identified that are preventing a satisfactory completion of the multinode steam generator secondary self-initialization task. Further development and debug have been halted. The task status is being reviewed. The status and options for resolution will be provided by May 8, 1981 to NRC for disposition.

CODE DEVELOPMENT DIVISION

April 1981

TRAC-B Development (A6052)



NOTES: * Completion of this task consists of delivery of an approved draft manual to the Documentation Office for subsequent publication as a formal EGG report.

** Interim versions of TRAC-BD1/MOD1 have been identified. A basic ATWS capability will be completed on June 30, 1981.

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

2. Scheduled Milestones for April 1981

None

3. Summary of Work Performed in April 1981

a. Code Maintenance and Enhancement

The multi-node secondary steam generator initialization task for RELAP4/MOD7 has not been completed satisfactorily. The algorithm does provide initial values for steam generator models without recirculation. It does not successfully initialize models including recirculation. For these models in which initialization is achieved, a perfect steady state is not maintained during a "null" transient. Further development and model debug has been halted. A report summarizing the task status and results has been written by the cognizant engineers. A review is underway to determine alternate approaches for task resolution. A letter providing NRC with the results of this review, the task status, and options for resolution will be prepared in May. Meanwhile, integration of existing updates (corrections and boron tracking) into RELAP4/MOD7 has begun.

b. Boiling Water Reactor (BWR) TRAC Development

Preparation of the TRAC-BD1 User's Manual progressed satisfactorily. Volumes 2, 3, and 4 (User's Guide, Programmer's Guide, and Developmental Assessment) have been written and typed and are under management review. Volume 1 (Theory) fell slightly behind schedule, but action has been taken to assure the scheduled delivery to the documentation office on May 20, 1981.

The boron tracking, Anderson-Ishii interfacial shear model, and reactivity feedback model are progressing on schedule toward the June 30 completion date requested by NRC. The control system model development is progressing satisfactorily.

A TRAC BD1/MOD1 development plan was formulated. Plans for MOD1 and future work were discussed with GE at the monthly GE/INEL coordination meeting. The MOD1 development plans were discussed with F. Odar during his visit to INEL on April 29. The MOD1 plans are being reworked to incorporate the results of the planning discussion.

3.b Summary of Work Performed in April 1981

A nonexecutable version of TRAC-PF1 was received from LASL with the two-step and noncondensible field. A review of the updates has begun. TRAC-PD2 updates were received from BNL. The updates were reviewed and determined to either have been already incorporated or will be addressed in planned work.

4. Scheduled Milestones for May 1981

None

5. Summary of Work to be Performed in May 1981

a. Code Maintenance and Enhancement

A letter will be prepared for NRC reviewing the problems encountered in the multinode steam generatory secondary task that are preventing the satisfactory completion. Alternative solutions, required resources, and the impact on current work will be identified.

b. Boiling Water Reactor (BWR) TRAC Development

The TRAC-BD1 User's Manual will be completed, reviewed, and delivered to the Documentation office. Model development will proceed on the boron tracking, reactivity feedback, interfacial shear, and controls tasks.

6. Problems and Potential Problems

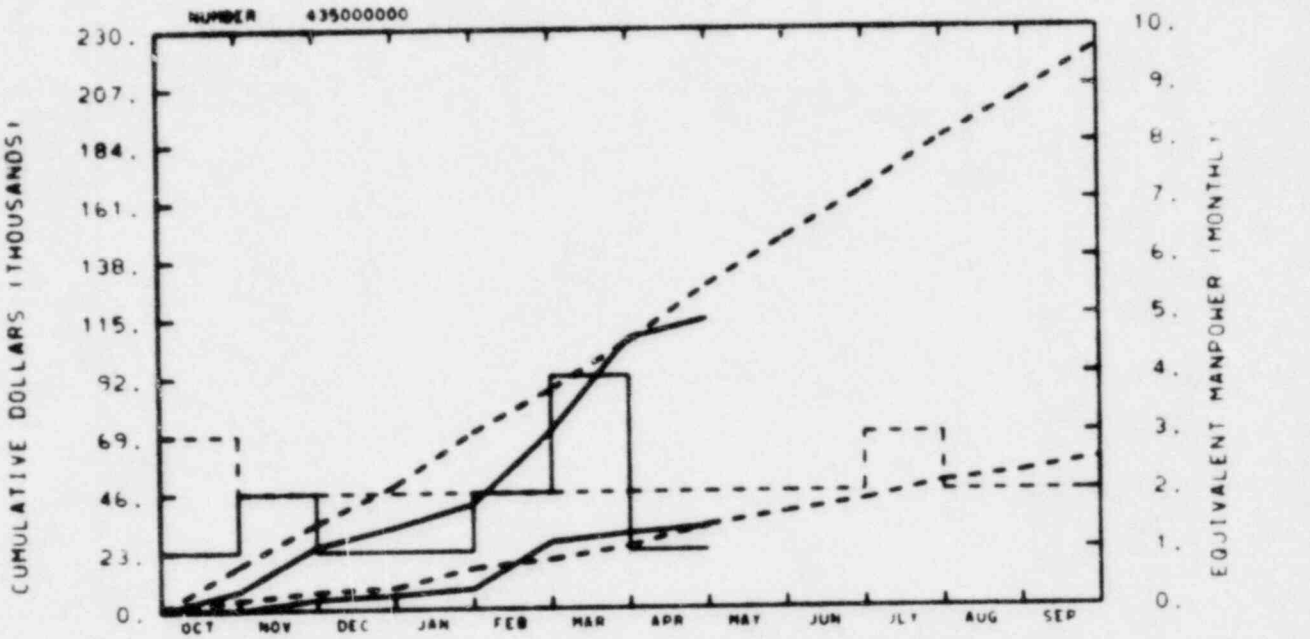
Depending on how the RELAP4/MOD7 multi-node secondary-side steam generator initialization task is to be resolved, the TRAC-BD1 development plans now being finalized may be significantly impacted. The only available technical resource is the TRAC-BD1 team and management.

RESPONSIBLE MANAGER
F AGUILAR

EG&G IDAHO INC.

TRAC LWR HEAT TRANSFER

NUMBER 435000000



TOTAL PROGRAM

BUDGET	18	34	49	70	87	105	127	146	165	186	203	222
ACTUAL	8	25	33	42	70	107	114					

MATERIAL

BUDGET	4	7	9	14	19	25	33	38	42	49	53	58
ACTUAL	0	4	6	8	26	30	32					

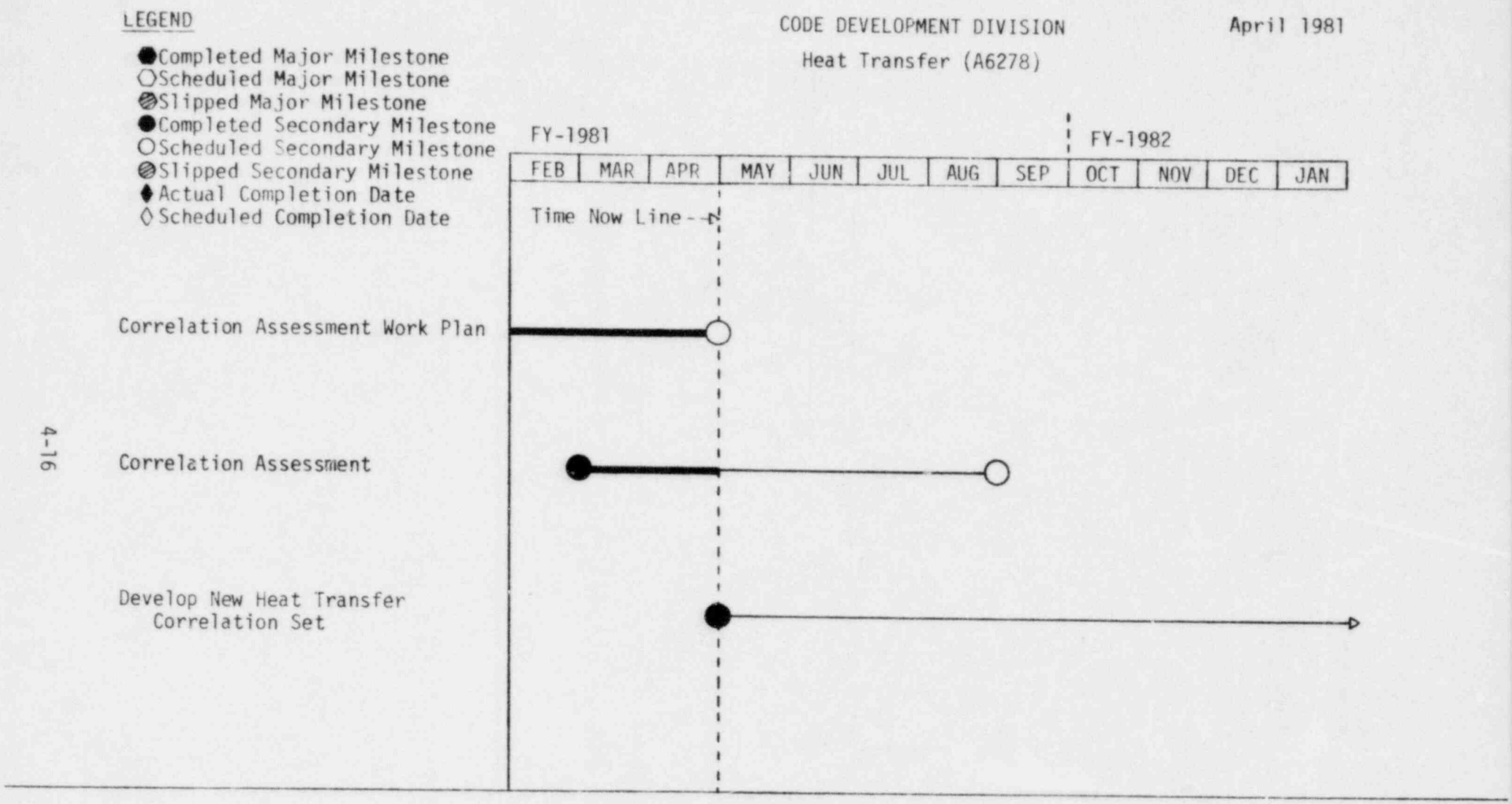
MANPOWER

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

A6278

YTD VARIANCE: 13 (10%)

Manpower was diverted to assist TRAC Documentation. No impact on work scope is anticipated.



NOTES: The TRAC BWR Heat Transfer milestone chart is adapted from FA-32-80.

189a A6278

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

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 198[illegible]

The Lahey mechanistic subcooled boiling model has been programmed and implemented into TRAC-BD1. Debugging is in progress. Preliminary comparison between code calculations and Chri ensen's experimental void vs. elevation data indicates good agreement. The results clearly indicate the need for a subcooled boiling model to predict the correct void.

The heat transfer correlation assessment has been written incorporating correlation evaluation procedures suggested during the Midyear Review. The plan reflects an increased emphasis on assessment and related sensitivity studies. The assessment report has been reveiwed by management, and comments are being incorporated. Transmittal is planned for May 8, 1981.

4. Scheduled Milestones for May 1981

Node	Description	Due Date	Actual Date
FA-32-80	Assessment Plan to NRC	05/01/81	05/08/81E

5. Summary of Work to be Performed in May 1981

Work will begin on modularizing the individual heat transfer correlation in the TRAC-BD1 package so as to facilitate checkout and/or replacement of various models. Input multipliers will be included to enable sensitivity studies to be easily performed. Work will continue in order to develop TRAC models for the separate effect experiments. Additional sensitivity studies will be performed using BWR/6 models. The heat transfer correlation assessment plan will be transmitted by May 8, 1981, one week behind schedule.

6. Problems and Potential Problems

None

MONTHLY REPORT FOR

APRIL 1987

CODE ASSESSMENT AND APPLICATION DIVISION

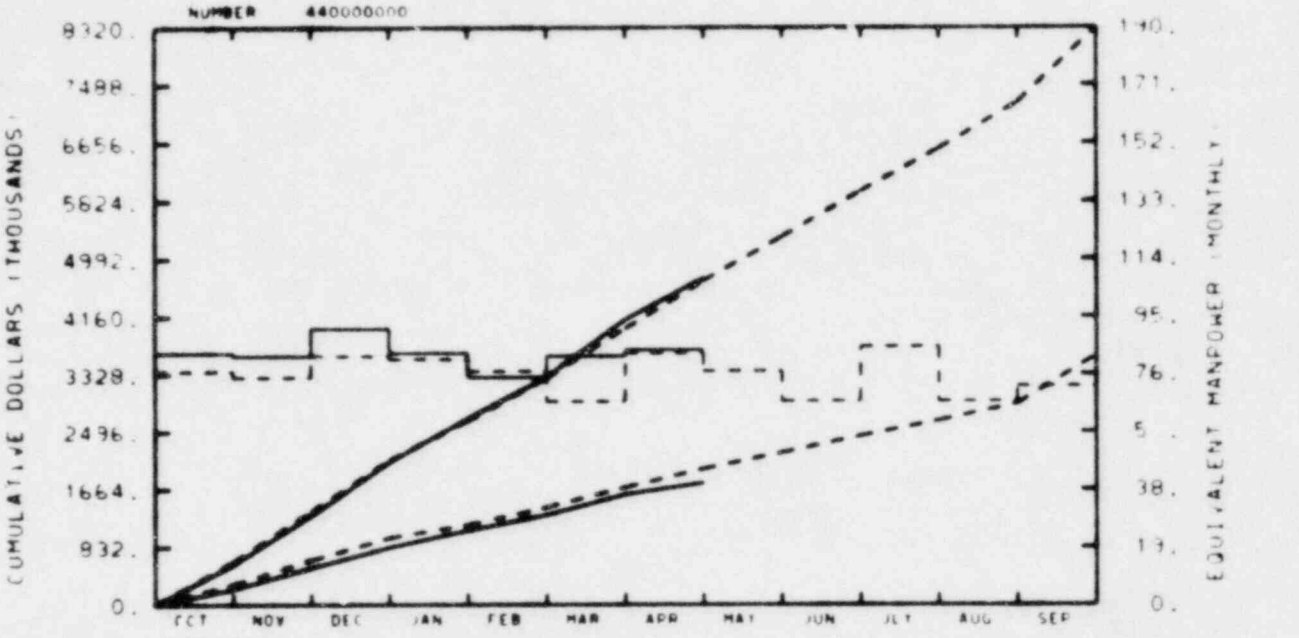
B. F. Saffell, Manager

E. L. Pierson
Planning & Budgets Representative

RESPONSIBLE MANAGER
B. F. SAFFELL

EG&G IDAHO INC.

COST ASSESSMENT & APPLICATIONS



TOTAL PROGRAM

BUDGET	625	1345	2087	2650	3281	3988	4676	5306	5963	6571	7229	8311
ACTUAL	578	1286	2053	2688	3286	4119	4714					

MATERIAL

BUDGET	295	648	964	1151	1404	1692	1959	2191	2430	2652	2897	3596
ACTUAL	226	535	827	1071	1293	1589	1755					

MANPOWER #

BUDGET	77	75	82	81	77	67	83	77	67	84	67	72
ACTUAL	83	82	91	83	75	82	84					

BUDGET - - - - -
ACTUAL ———

YTD VARIANCE: <38> (1%)

Individual cost graphs will give individual explanations.

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

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

The FRAP-T6 code assessment, relative to commercial rod and onset of critical heat flux, is nearing completion. The initial draft of the International Standard Problem 9 comparison report was completed. The calculations of an overcooling transient for the Oconee plant were initiated.

The Instrumentation and Controls Quick Look Report was completed and transmitted to NRC (A6291).

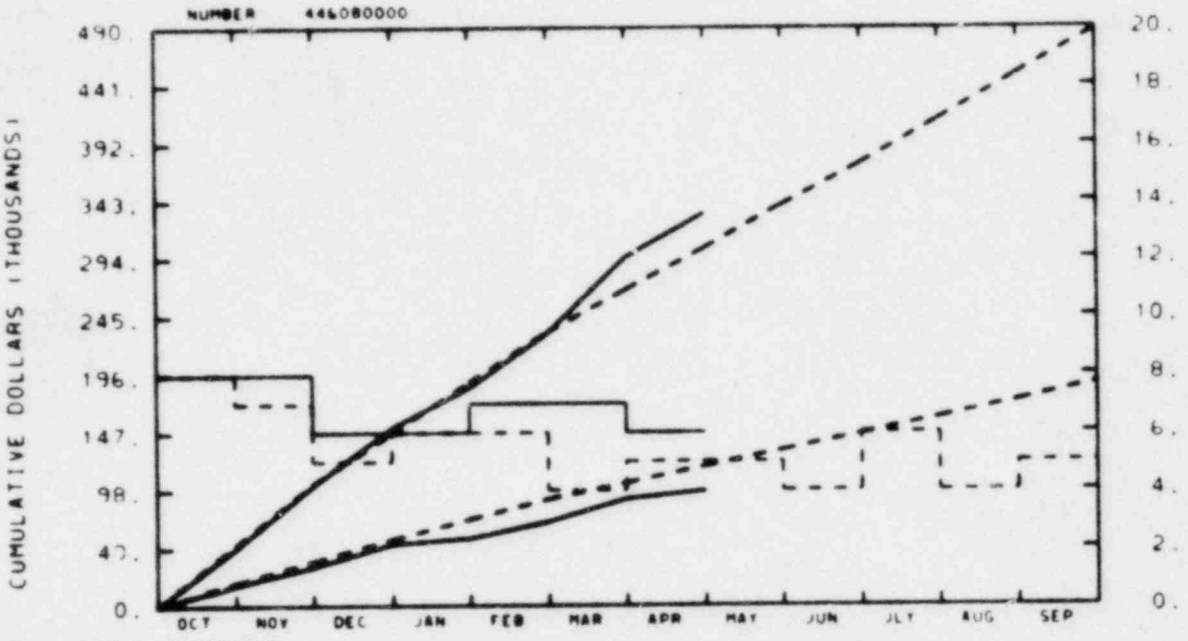
A draft Research Information Letter was completed and submitted to NRC (A6294).

RESPONSIBLE MANAGER
B. F. SAFFELL

EG&G IDAHO INC.

TECHNICAL SURVEILLANCE A6039

NUMBER 446080000



TOTAL PROGRAM

BUDGET	52	103	147	189	232	267	302	339	375	412	450	488
ACTUAL	49	102	152	185	231	294	332					

MATERIAL

BUDGET	20	39	57	74	90	104	118	132	146	159	173	188
ACTUAL	18	34	53	57	71	91	97					

MANPOWER

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

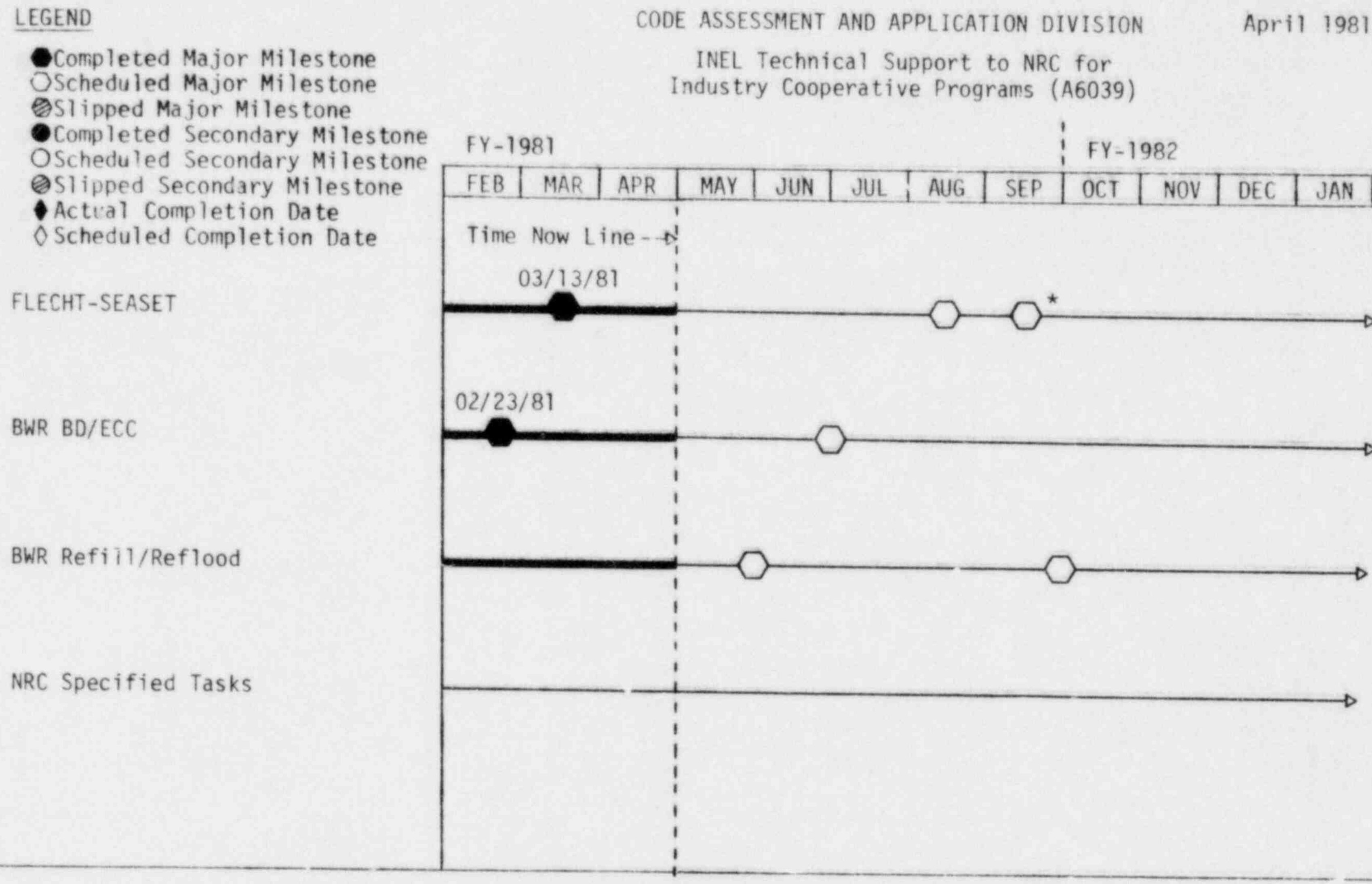
BUDGET - - - - - -

ACTUAL ———

A6039

YTD VARIANCE: <30> (10%)

Above average actuals were experienced in March because expenditures for travel (three trips), documentation, increased computer and a long month (five weeks) occurred simultaneously. Several of these items are budgeted on a linear basis and do not reflect peaks which occasionally occur. Expected expenditures in remaining FY-1981 will compensate to assure no overrun at year end.



NOTES: * NRC directed a termination of the reflood system evaluation study (April milestone) and an initiation of a natural circulation system evaluation study. The April milestone is being rescheduled as shown and is now a milestone for the natural circulation evaluation study.

189a A6039

1. 189a A6039 - INEL Technical Support to NRC for Industry Cooperative Programs

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 198

Data tapes, compatible with the data bank, were received for single heated bundle (SHB) tests 1400, 1800 and 3900. Therefore, the SHB program evaluation study has been reactivated. However, General Electric (GE) has stated that they cannot furnish additional data tapes nor verify selected data channels; thus, the study scope will be reduced accordingly.

The BWR blowdown study, with and without emergency core cooling (ECC) continued.

The FLECHT-SEASET natural circulation evaluation study continued. THe RELAP5 model was run in the single phase mode and perfomed very well. It is now being checked in the two phase and reflux condensation modes. Analysis of liquid bypass for the FLECHT-SEASET blockage configurations is continuing. A one-dimensional anlaysis was performed for both single and two phase. This analysis will be compared with COBRA/TRAC and COBRA-IV-I calculations.

The effort to implement COBRA/TRAC on the CDC system is continuing.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

The SHB program evaluation and BWR blowdown, with and without ECC, studies will continue.

Evaluation of the natural circulation system will continue. The RELAP5 model will be used to simulate some single phase tests. The checkout of the RELAP5 model in the two-phase and reflux condensation modes will continue.

Development of COBRA/TRAC models for the FLECHT-SEASET blockage facilities will be initiated.

6. Problems and Potential Problems

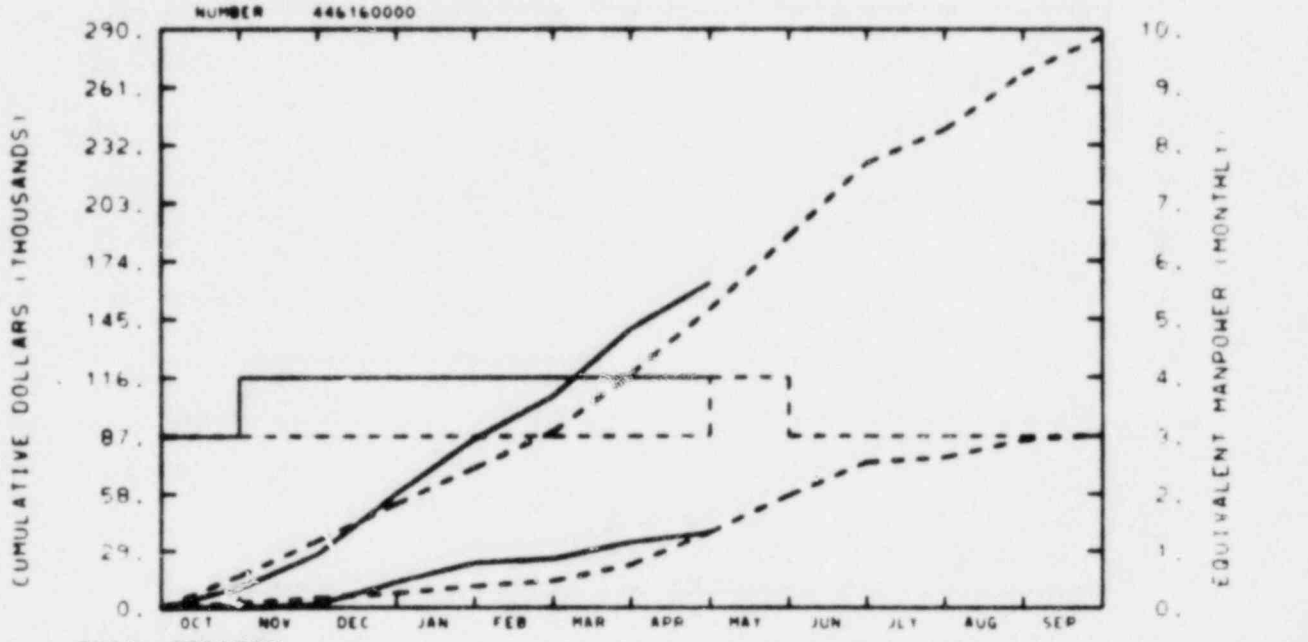
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

FUEL BEHAVIOR ANALYSIS A6046

NUMBER 446160000



TOTAL PROGRAM

BUDGET	16	34	52	71	89	117	150	186	223	240	268	286
ACTUAL	10	27	58	86	107	140	163					

MATERIAL

BUDGET	3	5	8	11	14	22	39	57	74	77	85	88
ACTUAL	0	2	13	23	25	33	38					

MANPOWER

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

BUDGET

ACTUAL

A6046

YTD VARIANCE: <13> (9%)

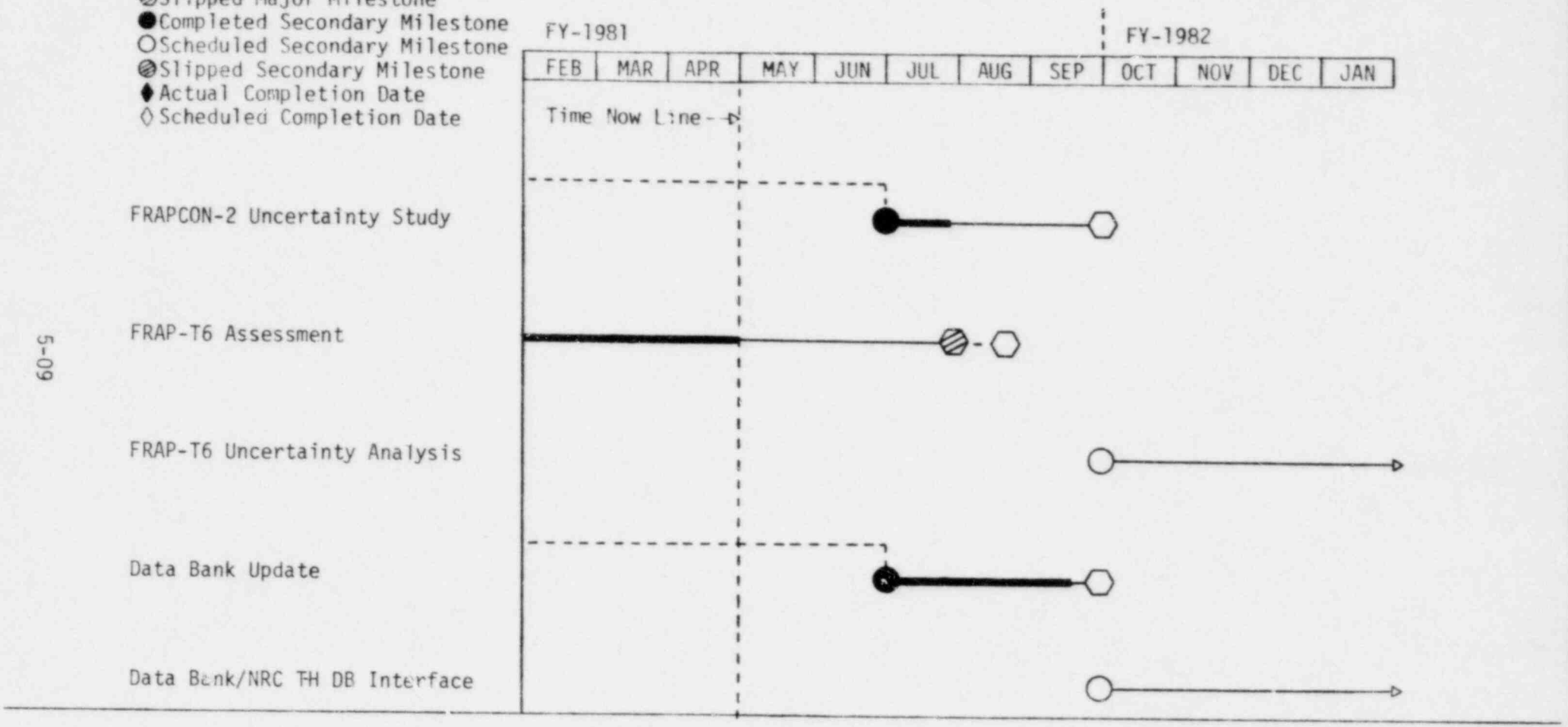
Of the three tasks in progress, two tasks are a total of three man-months ahead of schedule. Expected expenditures in the remainder of FY-1981 will ensure no overrun at year end.

CODE ASSESSMENT AND APPLICATION DIVISION April 1981

Fuel Code Assessment (A6046)

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:

189a A6046

1. 189a A6046 - Fuel Behavior Analysis Assessment

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

The FRAP-T6 code assessment continued. The commercial rod studies were essentially completed and a draft of results is being written. Large inconsistencies between the FRAP-T6 and FRAPCON-2 rod internal pressure calculations have been noted, and are attributed to modeling differences of the Fuel crack volume and the fuel thermal expansion. Studies investigating onset of critical heat flux (CHF) are progressing rapidly. The computer runs have been completed and analysis of results is underway. Preparation of the FRAP-T6 and FRAPCON-2 input decks for transient gas release and the overpower ramp categories is nearing completion. Sample cases will be run shortly. Experimental data and input requirements have been consolidated for about 240 new rods from out-of-pile cladding burst tests. Input coding for these new runs, and conversion of the FRAP-T5 decks to FRAP-T6 format, will commence when the special version of FRAP-T6 is received. This version allows assessment of the cladding ballooning and rupture models, exclusively.

The updating of the Idaho National Engineering Laboratory (INEL) fuel data bank is complete and final documentation is being drafted.

A draft of introductory material for the FRAPCON-2 uncertainty study was completed.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

Assessment of FRAP-T6 will continue. The commercial rod and onset of CHF studies will be completed and the overpower and transient gas release runs will be performed. Input decks for the out-of-pile burst rods will be converted to FRAP-T6 format.

Work will temporarily cease on the data bank and FRAPCON-2 uncertainty study tasks.

6. Problems and Potential Problems

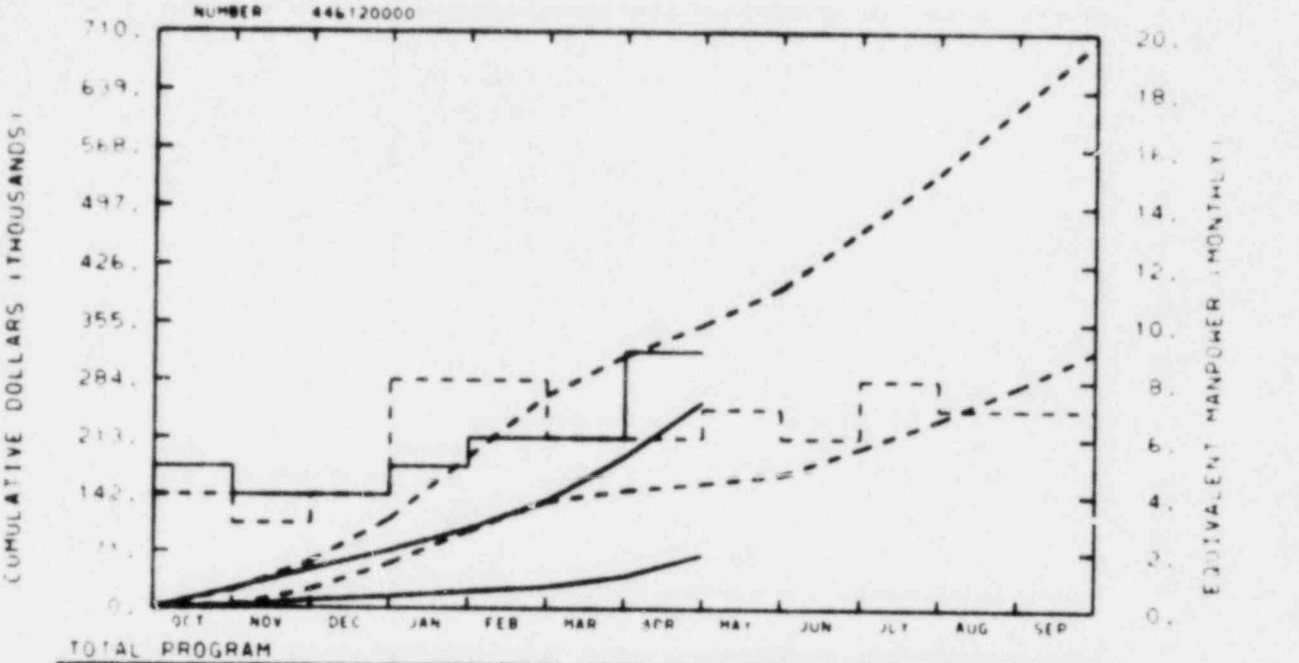
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

LOCA ANALYSIS ASSESSMENT A6047

NUMBER 446120000



TOTAL PROGRAM

BUDGET	22	58	112	189	265	314	353	398	468	538	619	701
ACTUAL	24	49	72	100	134	190	257					

MATERIAL

BUDGET	3	23	56	96	134	148	167	168	201	216	277	322
ACTUAL	3	10	18	21	27	41	68					

MANPOWER

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

BUDGET

ACTUAL

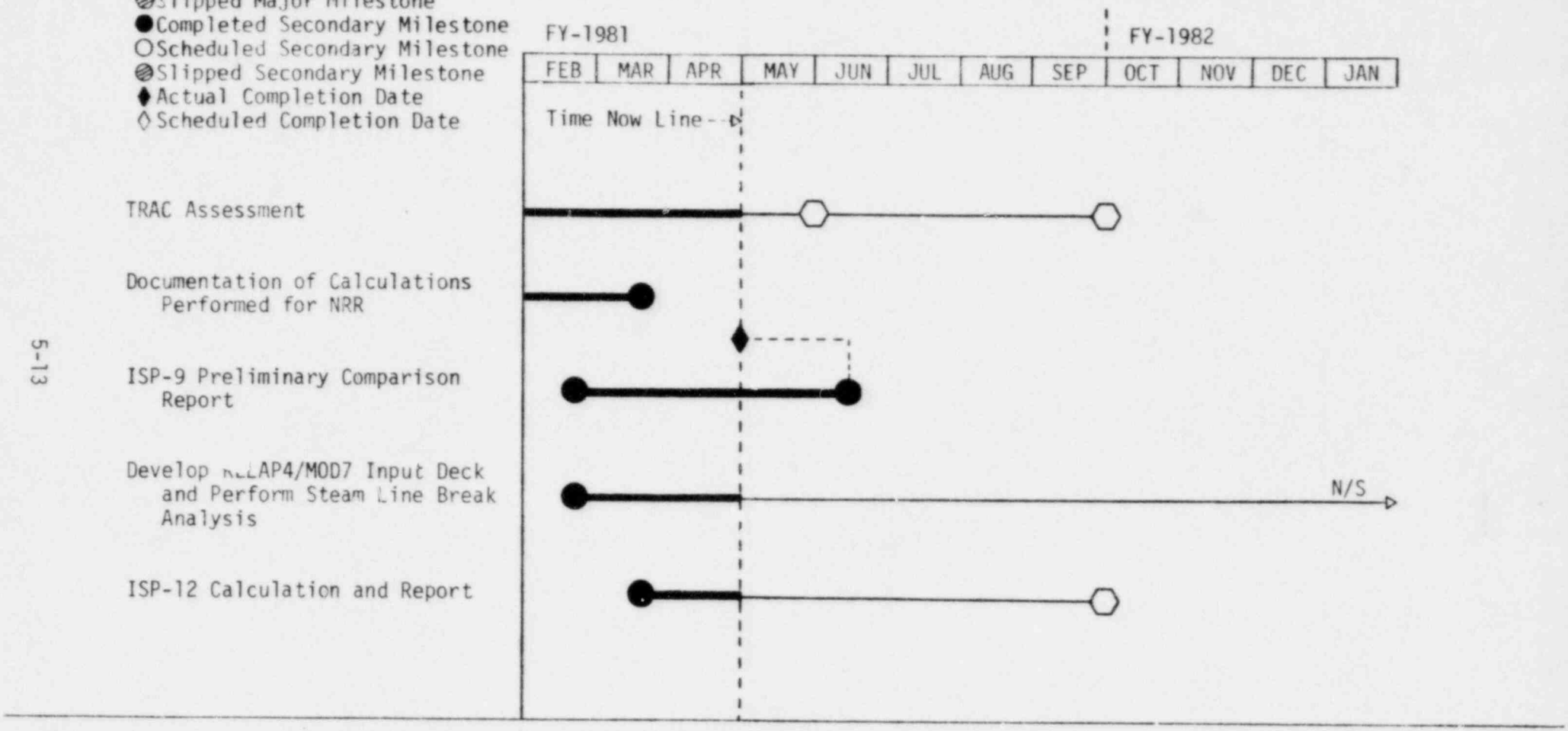
A6047

YTD VARIANCE: 96 (27%)

This variance is primarily a result of a delay in the initiation of TRAC-PD2 assessment due to an error in the initial released version of TRAC-PD2. The scope of TRAC-PD2 assessment has been increased for the second half of the fiscal year. The staff for the increased scope of work has been obtained and should result in a decrease in the year-to-date variance each month; however, a potential $50 K carryover at year end is anticipated.

CODE ASSESSMENT AND APPLICATION DIVISION April 1981

LOCA Analysis Assessment and Applications (A6047)



NOTES:

189a A6047

1. 189a A6047 - LOCA Analysis Assessment and Applications

2. Scheduled Milestones for April 1981

None

3. Summary of Work Performed in April 1981

A preliminary comparison report for International Standard Problem (ISP)-9 was completed.

RELAP5/MOD7 checkout calculations were initiated for an overcooling transient for the Oconee plant.

TRAC-PD2 calculations for Tests S-04-6, S-28-1 and S-07-4 were continued.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

TRAC-PD2 calculations for Tests S-04-6, S-28-1, S-28-20 and S-07-4 will be completed.

6. Problems and Potential Problems

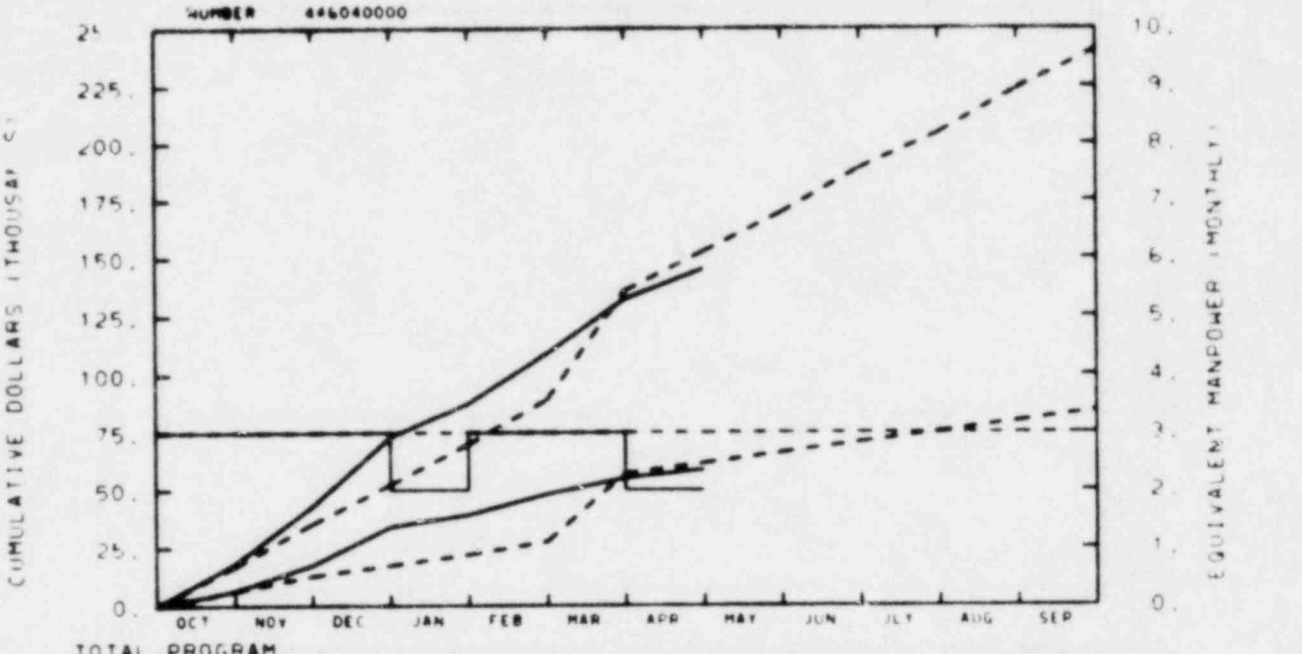
Continued slow turnaround from the computer will result in the TRAC-PD2 calculations not being completed by June 1. Efforts have been initiated in an attempt to expedite these calculations.

RESPONSIBLE
MANAGER
B F SAFFELL

EG&G IDAHO INC.

DATA BANK A6102

NUMBER 446040000



TOTAL PROGRAM

BUDGET	17	35	52	70	89	136	153	169	189	204	224	241
ACTUAL	18	43	73	88	109	132	145					

MATERIAL

BUDGET	6	13	17	22	28	57	62	66	71	75	80	84
ACTUAL	7	17	34	39	48	55	59					

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6102

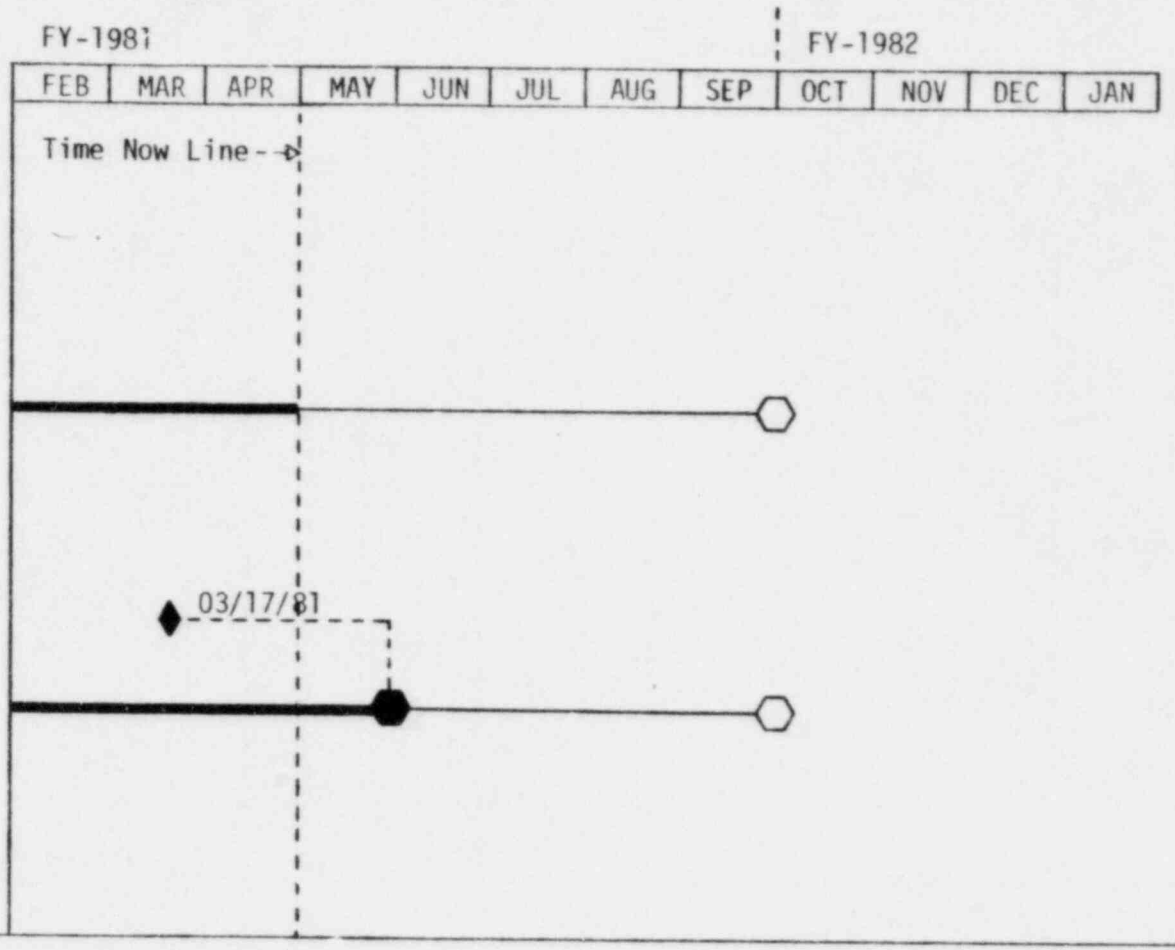
YTD VARIANCE: 8 (5%)

CODE ASSESSMENT AND APPLICATION DIVISION April 1981

Data Bank Processing System (A6102)

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:

189a A6102

1. 189a A6102 - Data Bank Processing System

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

Data Bank information was presented to the RELAP5 International Workshop held this past month at the INEL.

Problems related to obtaining readable GE data tapes for the Single Heated Bundle test series have been resolved and 3 tests were added to the Data Bank.

Receipt of additional funding (25 K) resolved the Data Bank funding variance. This will allow additional tests (above the originally scheduled number) to be added to the Data Bank in FY-81.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

Data entry will continue. A draft of the Data Bank users manual will be distributed for evaluation and comments.

6. Problems and Potential Problems

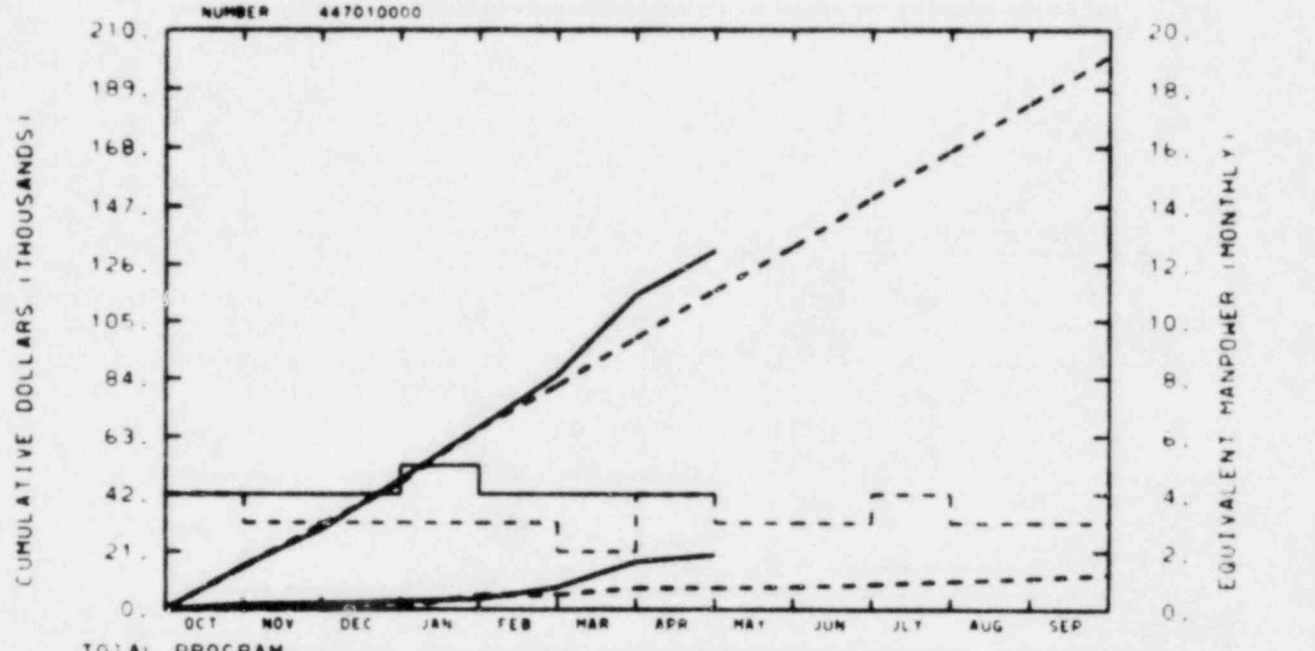
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

LER FAILURE RATE A6276

NUMBER 447010000



TOTAL PROGRAM

BUDGET	15	31	46	64	81	99	116	132	150	167	184	201
ACTUAL	16	29	47	66	85	115	131					

MATERIAL

BUDGET	0	0	1	5	5	8	8	8	9	10	11	13
ACTUAL	2	2	3	4	8	17	20					

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

A6276

YTD VARIANCE: <15> (13%)

One person was removed from this task upon completion of a report pertaining to instrumentation controls in mid-April. Also, a non-recurring additional computer charge of $2.1 K was incurred in doing calculations pertaining to that report. The reduced resources allocated to A6276 should bring the costs back within budget during FY-1981.

1. 189a A6276 - Licensee Event Report (LER) Failure Rate Analysis

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

The draft report for the pump LERs (1972-1978) nears completion. Several minor data summaries need to be put in the report. The data summaries are being verified for accuracy and the text is being reviewed internally. The LERs pertaining to valve events for the time period 1979-1980 are being coded for inclusion into the existing valve data file for the time period 1976-1978.

4. Scheduled Milestones for May 1981

Node	Description	Due Date	Actual Date
K-9	Update report of Pump LERs	5/15/81E	

5. Summary of Work to be Performed in May 1981

Work will continue on coding the valve LERs for the time period 1979-1980.

6. Problems and Potential Problems

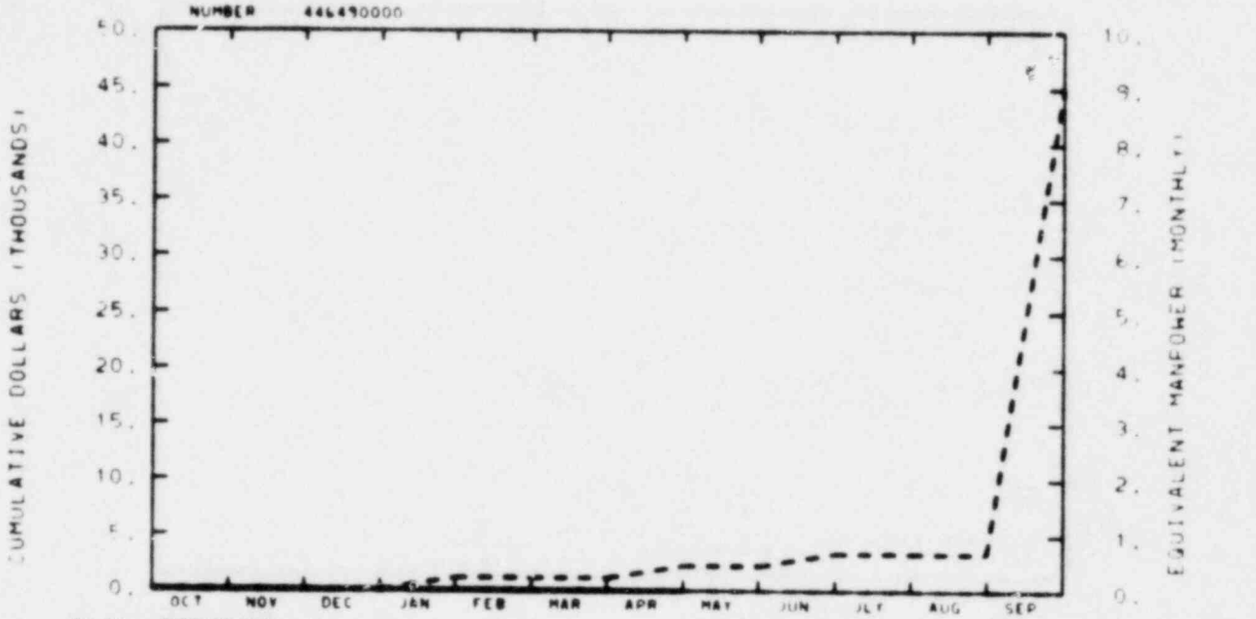
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

PREP OF DOC FOR TAP-A1 A6279

NUMBER 446490000



TOTAL PROGRAM

BUDGET	0	0	0	1	1	1	2	2	3	3	3	45
ACTUAL	0	0	0	0	0	0	0					

MATERIAL

BUDGET	0	0	0	1	1	1	2	2	3	3	3	45
ACTUAL	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					

A6279

YTD VARIANCE: 2 (100%)

189a A6279

1. 189a A6279 - TAP-A1 Documents

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

No activity.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

No activity expected.

6. Problems and Potential Problems

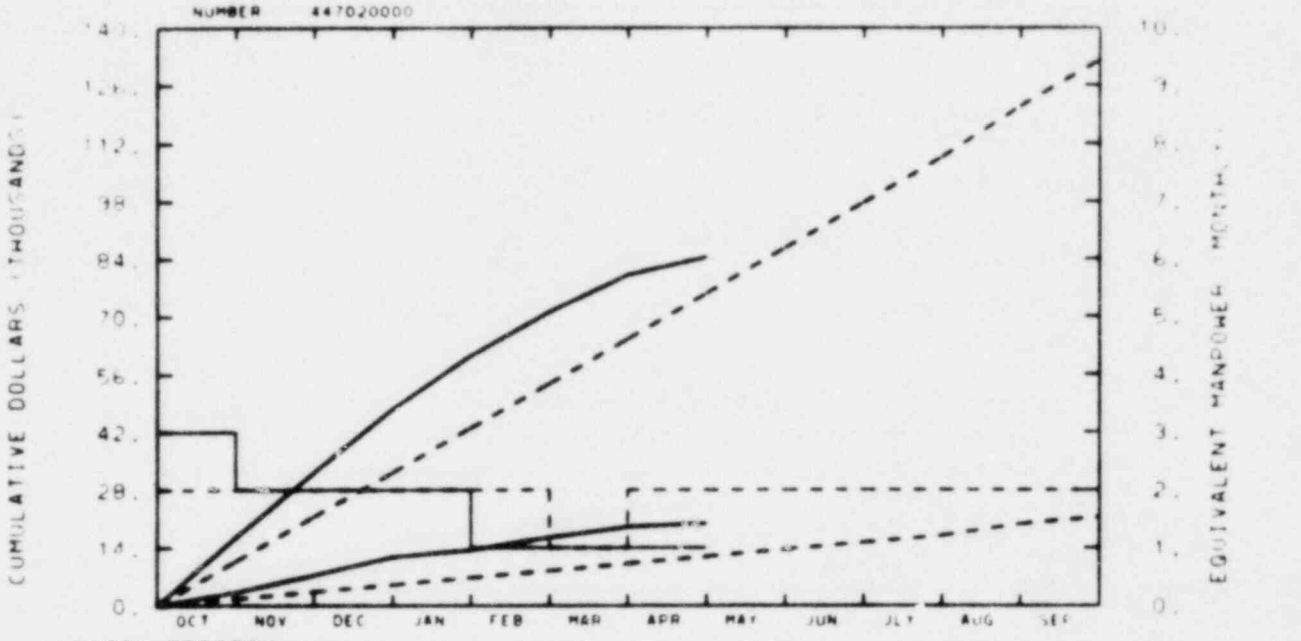
None.

RESPONSIBLE MANAGER
B. [illegible]

EG&G IDAHO INC.

COMMON CAUSE STAT MODELING A6283

NUMBER 447020000



TOTAL PROGRAM

BUDGET	11	22	32	43	54	65	76	87	98	109	121	132
ACTUAL	17	32	48	61	71	[illegible]	84					

MATERIAL

BUDGET	2	3	5	7	8	10	12	14	16	17	20	21
ACTUAL	3	7	12	13	16	19	20					

MANPOWER

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

A6283

YTD VARIANCE: <8> (11%)

1. 189a A6283 - Common Cause Data Analysis

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

Analysis of valve common cause data was continued and is now essentially completed.

Instrumentation and controls licensee event reports (LERs) were reviewed in preparation for common cause analysis and some recoding was also performed.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

Valve common cause analysis will be completed, and a report written. Recoding of instrumentation and controls data will continue, and common cause analysis of data will be initiated.

6. Problems and Potential Problems

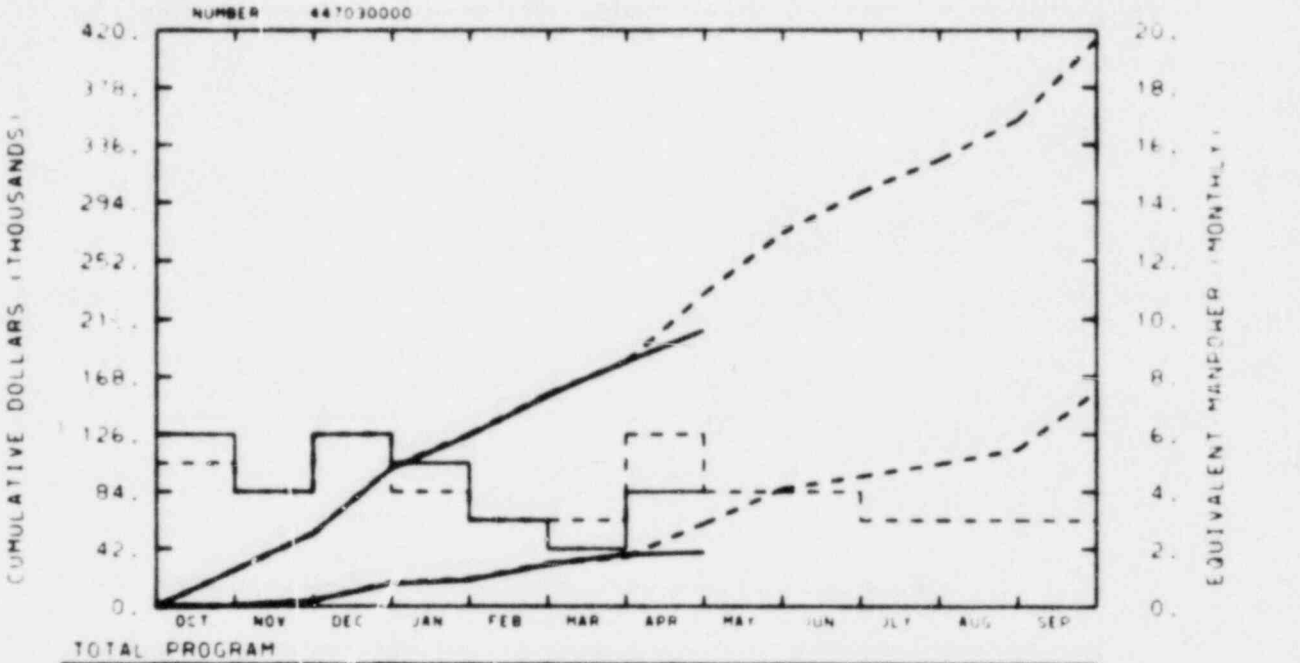
None.

RESPONSIBLE MANAGER
B. F. JAFFEE

EG&G IDAHO INC.

NPRDS DATA ANALYSIS A6290

NUMBER 447030000



TOTAL PROGRAM

BUDGET	27	57	02	126	155	179	228	271	301	325	354	413
ACTUAL	26	53	101	125	154	179	202					

MATERIAL

BUDGET	1	4	7	20	31	36	60	86	95	104	111	157
ACTUAL	1	4	16	19	31	38	39					

MANPOWER

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

BUDGET
ACTUAL

A6290

YTD VARIANCE: 26 (11%)

Two contracts are late in being placed (a Kansas State contract was established late in April; a contract with Southwest Research is still being negotiated). Therefore, no subcontract vouchers have been received against A6290.

1. 189a A6290 - Nuclear Plant Reliability Data System (NPRDS) Data Analysis

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

Three technical communications (a) Search for Data Analysis Methods, (b) Tolerance Limits for Failure Rates Based on Chebychev's Inequality Allowing for Imprecision in Estimated Mean and Standard Deviation, and (c) Estimation of Failure Rate Variance by Nested Analysis of Variance were completed and transmitted.

Completed Monte Carlo simulations of failure rate processes in order to prescribe a single method for bounding failure rates.

Placed a contract at Kansas State University. Continued work to place a subcontract with Southwest Research Institute.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

A letter report concerning the prescription for computing failure rate bounds will be prepared.

A letter report completing Task 1 will be prepared.

A technical communication describing the currently available statistical analysis methods for component failure data will be prepared.

6. Problems and Potential Problems

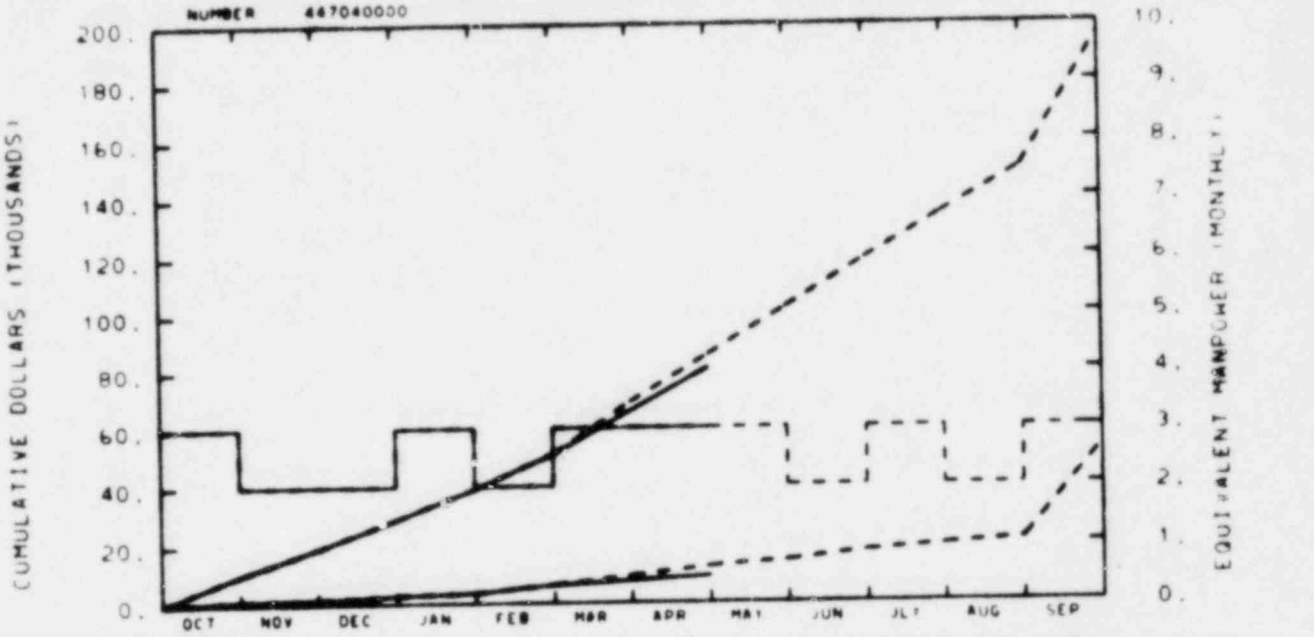
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

LER FLAGGING ANALYSIS A6291

NUMBER 447040000



TOTAL PROGRAM

BUDGET	10	19	29	39	51	69	86	102	119	134	150	196
ACTUAL	10	19	29	39	51	66	81					

MATERIAL

BUDGET	1	2	3	4	6	9	12	14	18	19	21	53
ACTUAL	1	2	3	4	6	8	9					

MANPOWER

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

A6291

YTD VARIANCE: 5 (6%)

189a A6291

1. 189a A6291 - LER Flagging Analysis

2. Scheduled Milestones for April 1981

Node	Description	Due Date	Actual Date
K35	I&C NUREG Asst. QLR	4/17/81E	4/17/81C Saff-92-81

3. Summary of Work Performed in April 1981

The Instrumentation and Control (I&C) report was completed and submitted to NRC. In addition, the I&C Quick Look Report (QLR) was completed (Node K-35, E-date). Software development work (node K32) continued.

4. Scheduled Milestones for May 1981

Node	Description	Due Date	Actual Date
K32	Software Development	5/29/81T	

5. Summary of Work to be Performed in May 1981

The software development task (Node K-32) will be completed. The cross-component QLR (node K37, E-date) will be completed.

6. Problems and Potential Problems

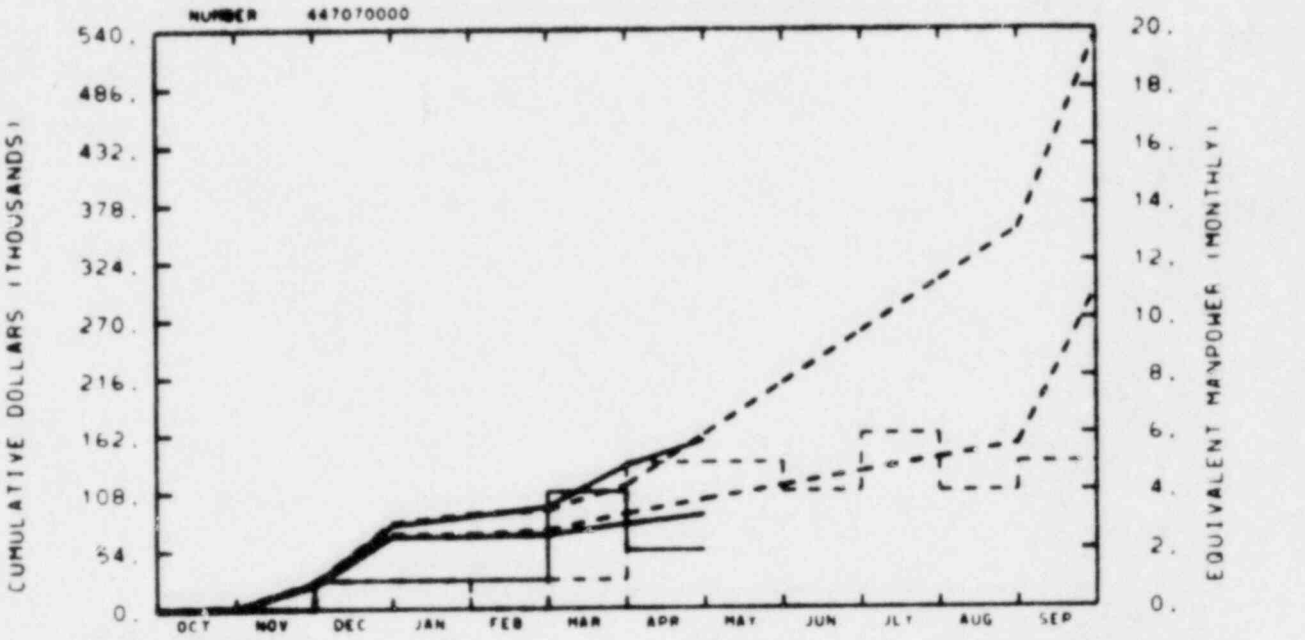
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

PLANT STATUS MONITORING A6294

NUMBER 447070000



TOTAL PROGRAM

BUDGET	1	25	79	88	91	114	162	210	258	306	354	535
ACTUAL	1	24	77	85	94	132	156					

BUDGET

ACTUAL

MATERIAL

BUDGET	1	23	69	69	72	87	100	113	126	139	152	298
ACTUAL	1	22	67	67	68	78	86					

MANPOWER

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

A6294

YTD VARIANCE: 6 (4%)

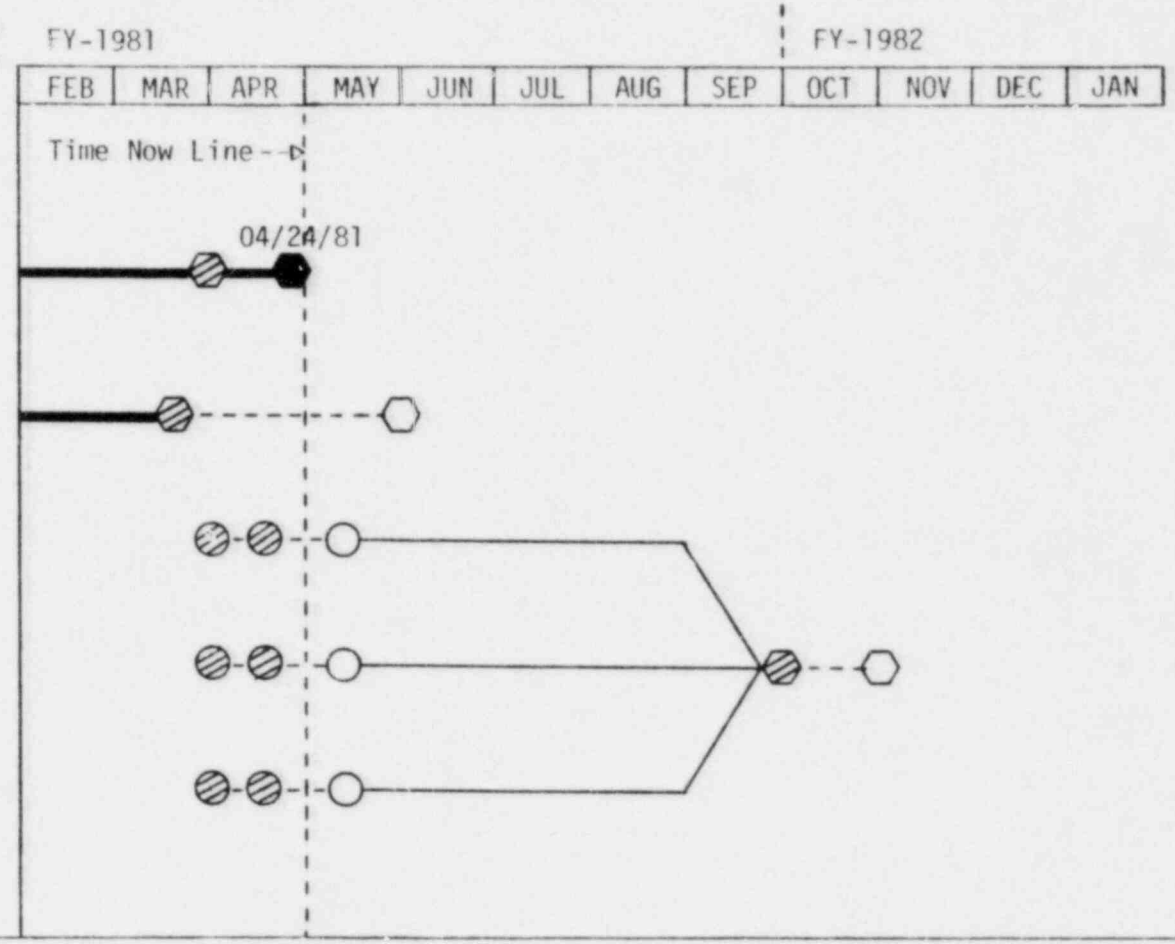
CODE ASSESSMENT AND APPLICATION DIVISION

April 1981

Plant Status Monitoring (A6294)

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:

189a A6294

1. 189a A6294 - Plant Status Monitoring

2. Scheduled Milestones for April 1981

None

3. Summary of Work Performed in April 1981

A draft of a Research Information Letter (RIL) was completed at the request of Dr. R. DeSalvo, NRC-NES. The RIL summarizes the contents of a report, "Boiling Water Reactor Status Monitoring During Accident Conditions," NUREG/CR-2100 which was issued on April 24. This report describes the systematic determination of instrumentation needed to follow the course of five risk dominant accident sequences.

4. Scheduled Milestones for May 1981

Node	Description	Due Date	Actual Date
S12-4	BWR Status Monitoring Rpt	5/1/81T	4/24/81C
S12-2	Engineered Safety Features Status Monitoring Report	5/31/81T	

5. Summary of Work to be Performed in May 1981

A contract will be placed with Wood, Leaver & Associates to commence work on developing operator action event trees suitable for defining accident signature requirements and for reviewing recent Owner' Group emergency procedures.

Peer review comments will be incorporated into a report pertaining to engineered safety features status monitoring. The report will be issued.

6. Problems and Potential Problems

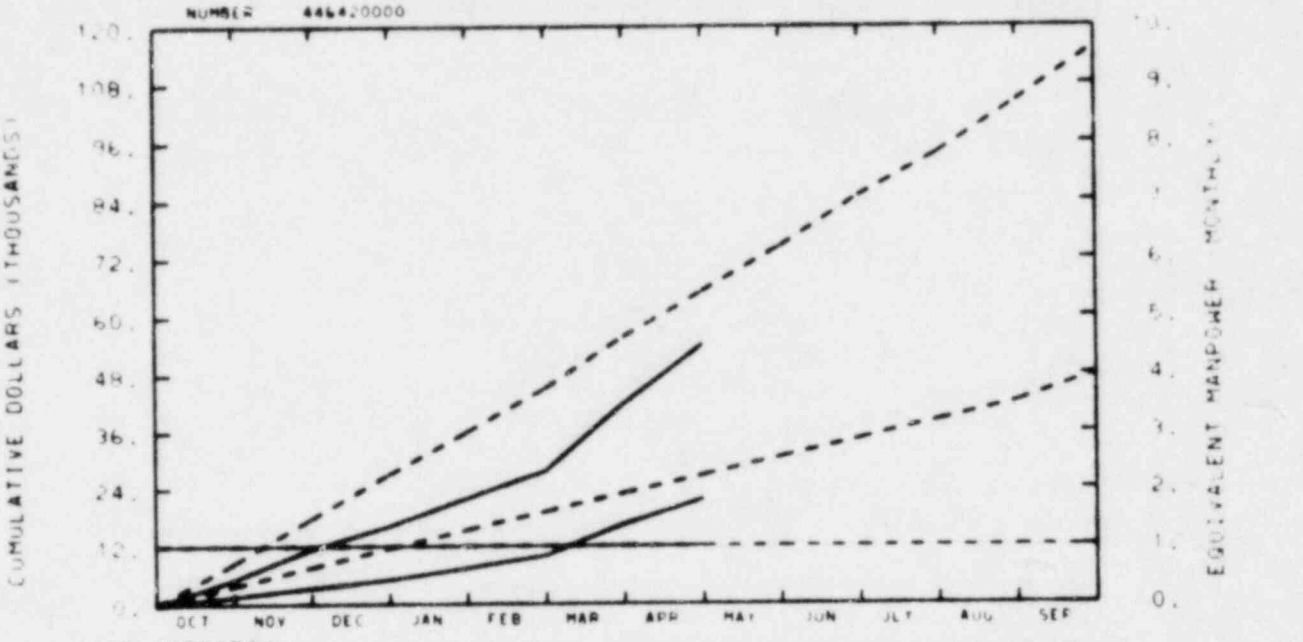
None.

RESPONSIBLE MANAGER
B. F. JAFFEE

EG&G IDAHO INC.

RESIDENT ENGINEER - FRG A6304

NUMBER 4464.20000



TOTAL PROGRAM

BUDGET	9	18	27	36	45	56	67	74	81	94	104	116
ACTUAL	5	11	16	22	28	42	54					

MATERIAL

BUDGET	4	8	12	15	19	23	27	31	35	38	42	48
ACTUAL	2	3	5	7	10	16	22					

MANPOWER

BUDGET	1	1	1	1	1	1	1	1	1	1	1	1
ACTUAL	1	1	1	1	1	1	1					

BUDGET

ACTUAL

A6304

YTD VARIANCE: 11 (17%)

Correction to budget underexpenditure is being made by receipt of late billings and additional labor expenditure on tasks which had been earlier postponed.

1. 189a A6304 - Resident Engineer in Germany

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

The EG&G resident engineer is working with the Germans on various tests at MPA (Materialprufungsanstalt), Stuttgart. Tests he is monitoring include the thermal shock-program, vessel test, and weld monitoring test. He is also working on the dynamic testing of the HDR piping system installed on the test stand at MPA. The monthly report from Germany was received on schedule and should be consulted for further detail on the above.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

Monitoring of the projects summarized in Item 3 will continue and programs reported in the resident engineer's monthly report.

6. Problems and Potential Problems

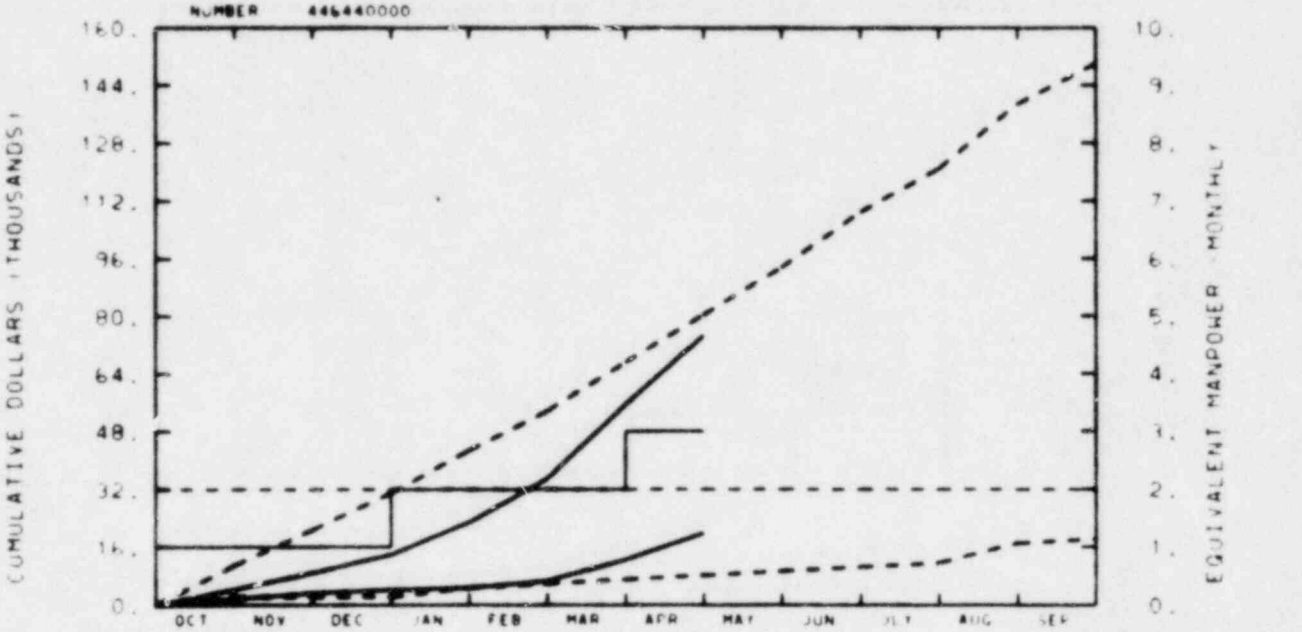
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

HDR EVALUATION A6306

NUMBER 446440000



TOTAL PROGRAM

BUDGET	11	21	31	43	54	67	80	94	109	121	139	150
ACTUAL	4	9	14	23	35	55	75					

MATERIAL

BUDGET	2	2	2	3	6	7	8	9	10	12	17	18
ACTUAL	2	3	4	5	7	12	20					

MANPOWER

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

BUDGET

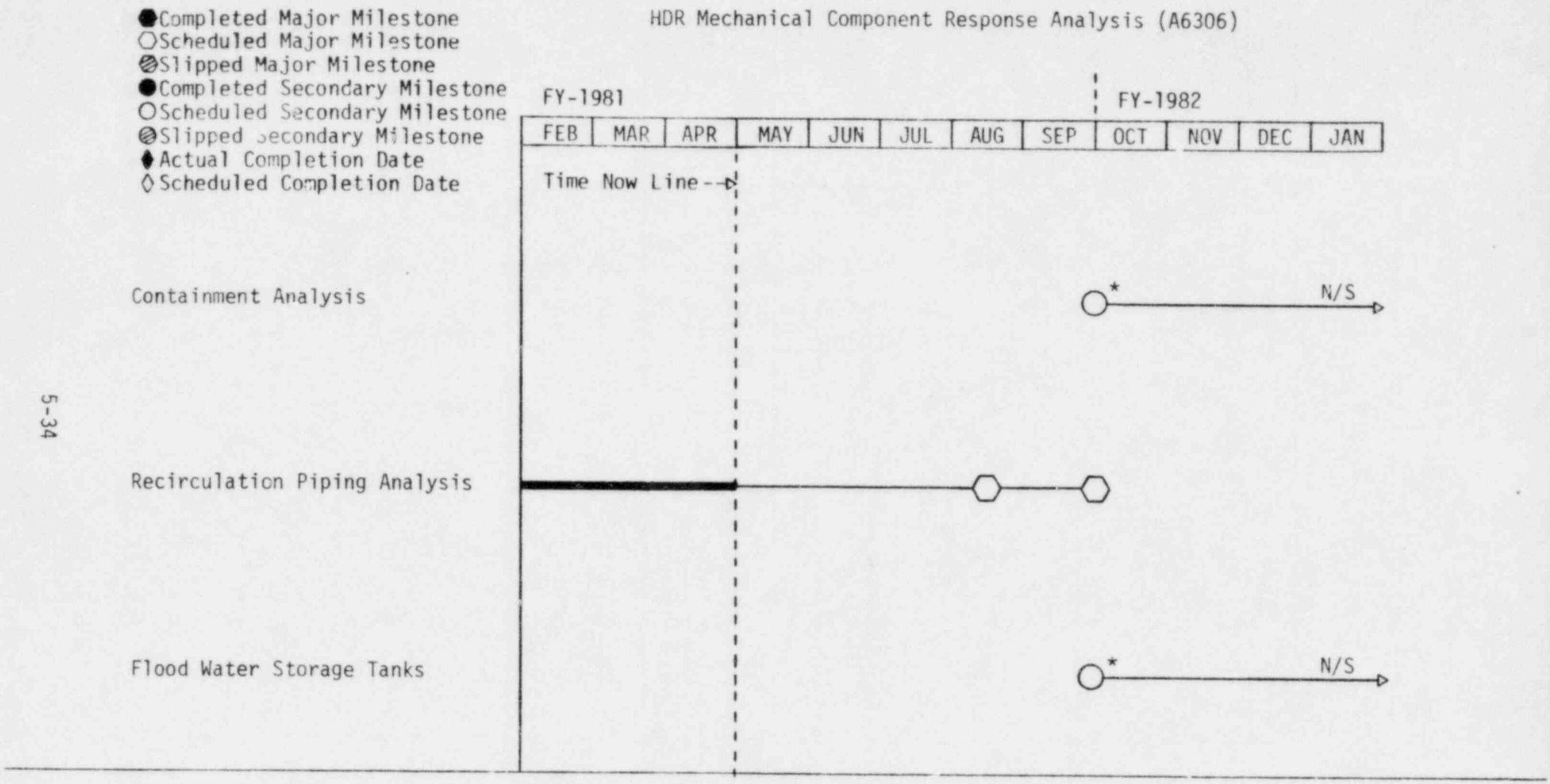
ACTUAL

A6306

YTD VARIANCE: 5 (6%)

CODE ASSESSMENT AND APPLICATION DIVISION April 1981

HDR Mechanical Component Response Analysis (A6306)



NOTES: All nodes are subject to change based on HDR's schedule.

* Nodes have been changed based on verbal direction from NRC's technical monitor.

189a A6306

1. 189a A6306 - Heiss Dampf Reaktor (HDR) Mechanical Component Response Analysis Testing

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

The Umwalzschleife (URL) piping system models (ANSYS and NUPIPE) have been examined and tested for structural modeling correctness. As a result, both models have been updated. At this time, the response runs are being performed and postprocessed for comparison purposes. All this work is being done to resolve the open items delineated in the interim NUREG.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

The effect of smaller time steps in the analysis will be investigated. Further study in model damping, mass refinement, multi-support input, and dynamic support stiffness will be carried on.

6. Problems and Potential Problems

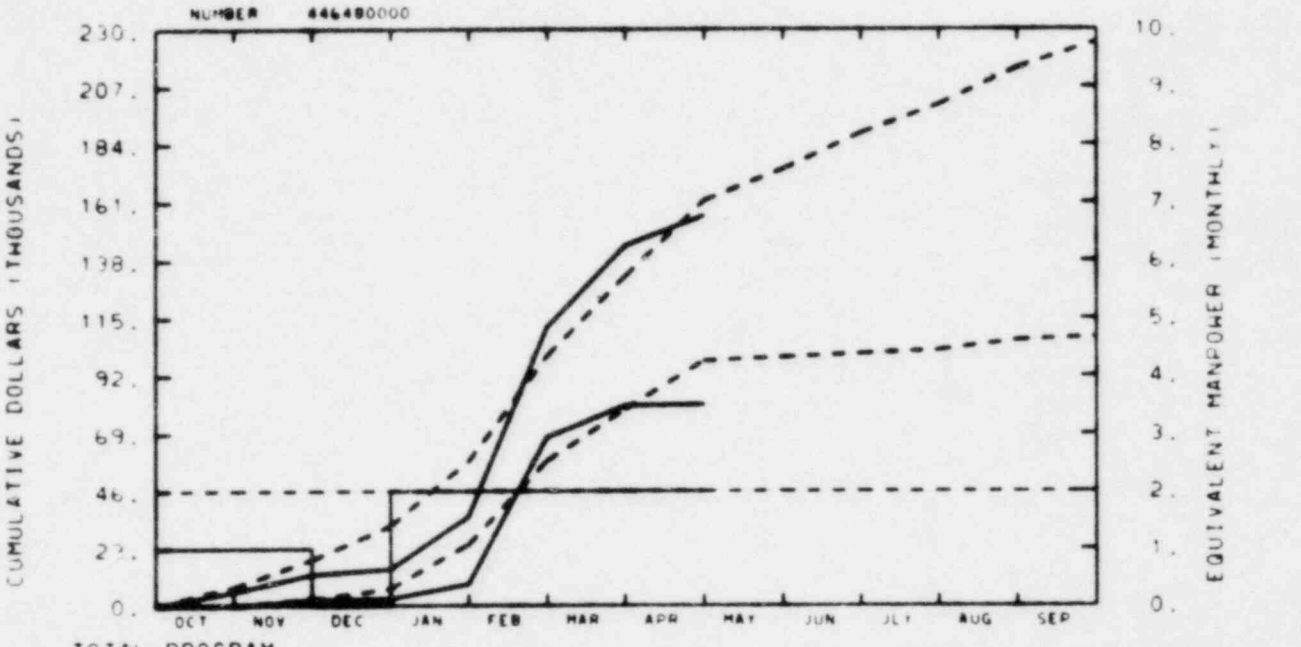
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

KUOSHENG SRV DISCHARGE A6353

NUMBER 446480000



TOTAL PROGRAM

BUDGET	8	19	32	58	100	132	162	174	188	200	215	221
ACTUAL	6	13	15	36	111	144	156					

MATERIAL

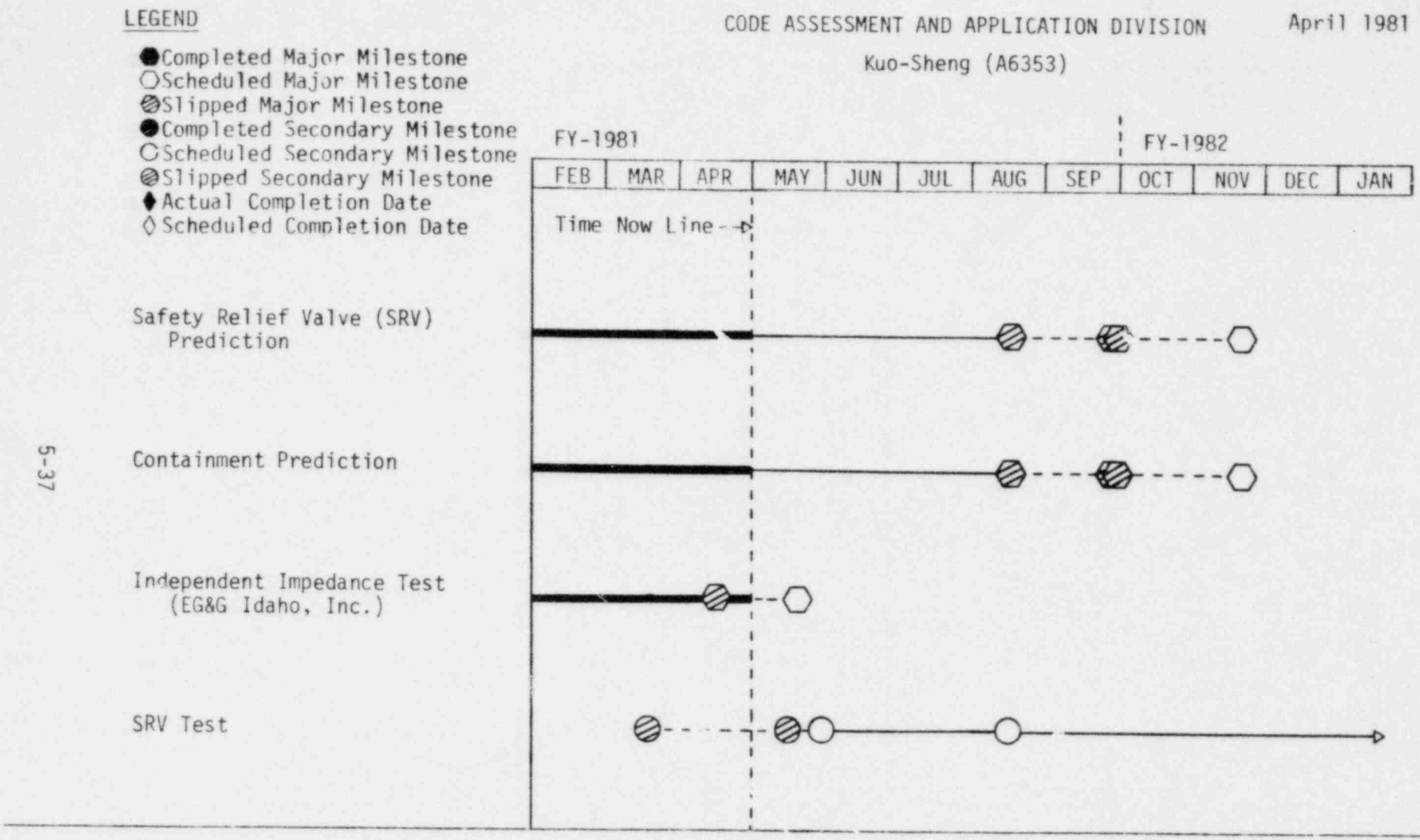
BUDGET	0	2	7	25	58	79	98	99	101	102	106	107
ACTUAL	0	2	3	9	68	80	81					

MANPOWER

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

A6353

YTD VARIANCE: 6 (4%)



NOTES: All nodes are subject to change based on Tai Power's schedule.

189a A6353

1. 189a A6353 - Kuosheng Safety Relief Valve (SRV) Discharge and Piping Vibrational Tests

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

Revision of the Transitek Impedance Test Report was completed. EG&G requested Transitek to provide copies of data disks containing original data collected during the tests and analysis. The Safety Relief Valve (SRV) piping system was deferred in order to review the Transitek report.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

Preparation will be made for travel to Taiwan in mid-June. Geometric modeling of the SRV piping system will be finished.

6. Problems and Potential Problems

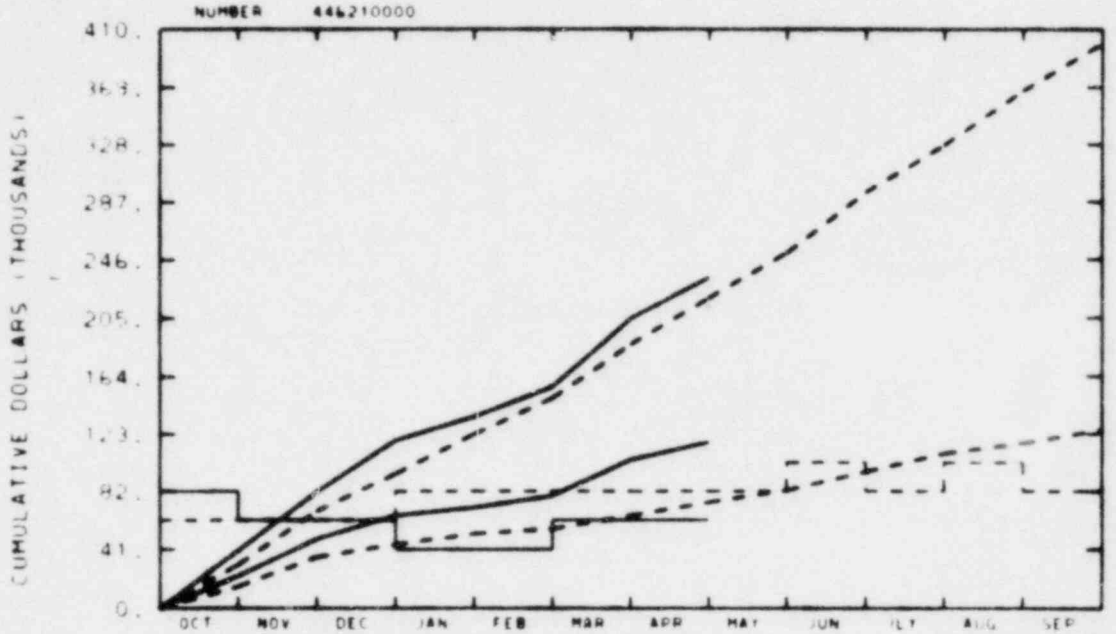
None.

RESPONSIBLE MANAGER
B. F. SAFFELL

EG&G IDAHO INC.

SEVERE ACCIDENT SEQ ANAL A6354

NUMBER 446210000



TOTAL PROGRAM

BUDGET	10	68	94	123	149	187	219	251	294	327	366	400
ACTUAL	40	81	118	135	157	205	231					

MATERIAL

BUDGET	15	36	44	52	55	65	74	83	96	109	116	126
ACTUAL	22	48	65	70	79	105	117					

MANPOWER

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

BUDGET - - - - - -
ACTUAL ———

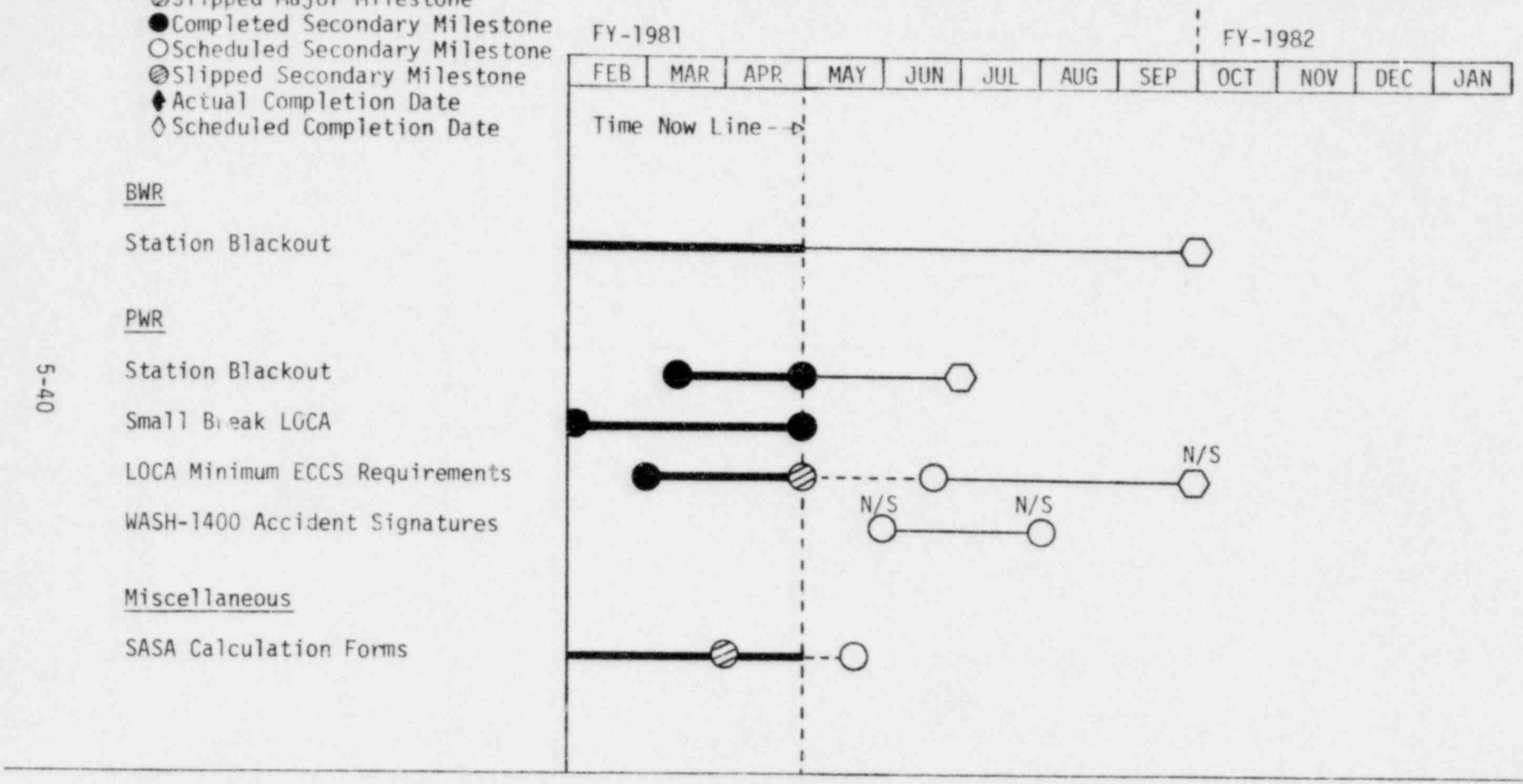
A6354

YTD VARIANCE: <14> (6%)

Additional manpower and higher than anticipated computer costs accounted for a larger than anticipated expenditure during April. Additional manpower was applied to debugging of the Browns Ferry model and computer code modifications required to achieve a Boiling Water Reactor (BWR) plant deck compatible with RELAP5. Pressurized Water Reactor (PWR) computer expenditures were large as Small Break LOCA and additional Station Blackout calculations were being performed. No fiscal impact is expected.

CODE ASSESSMENT AND APPLICATION DIVISION April 1981

Severe Accident Sequence Analysis (A6354)



NOTES: This schedule may be revised in the future to reflect assignments made at the Severe Accident Sequence Analysis (SASA) Program review meetings.

189a A6354

1. 189a A6354 - Severe Accident Sequence Analysis Program (SASA)

2. Scheduled Milestones for April 1981

None

3. Summary of Work Performed in April 1981

A letter was drafted documenting the preliminary results of four additional station blackout calculations. The letter is currently in the review cycle.

A report was issued on April 27, 1981, documenting preliminary calculations of mitigating techniques during a small break accident, with failure of high pressure injection for the Westinghouse Zion I BWR.

The effort to balance and checkout the interim Browns Ferry RELAP5 model was continued.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

A planning meeting will be attended at Sandia National Laboratory (SNL) to discuss future SASA efforts on ANO-1, a B&W plant. During the meeting it is anticipated that the IREP ANO-1 data file will be reviewed for applicability to developing a model of ANO-1, Unit 1. Plans for executing the calculations on ANO-1 will also be discussed.

Preparations for a program review meeting to be held on May 28 and 29 in Silver Springs will be completed.

It is anticipated that calculations of the Browns Ferry station blackout with no emergency core cooling systems or reactor core isolation cooling system will be initiated.

A letter documenting the preliminary results of four additional station blackout calculations will be issued.

Revision of the station blackout report will be initiated.

Work on the small break minimum Engineering Safety Features (ESF) requirements plan will be initiated.

6. Problems and Potential Problems

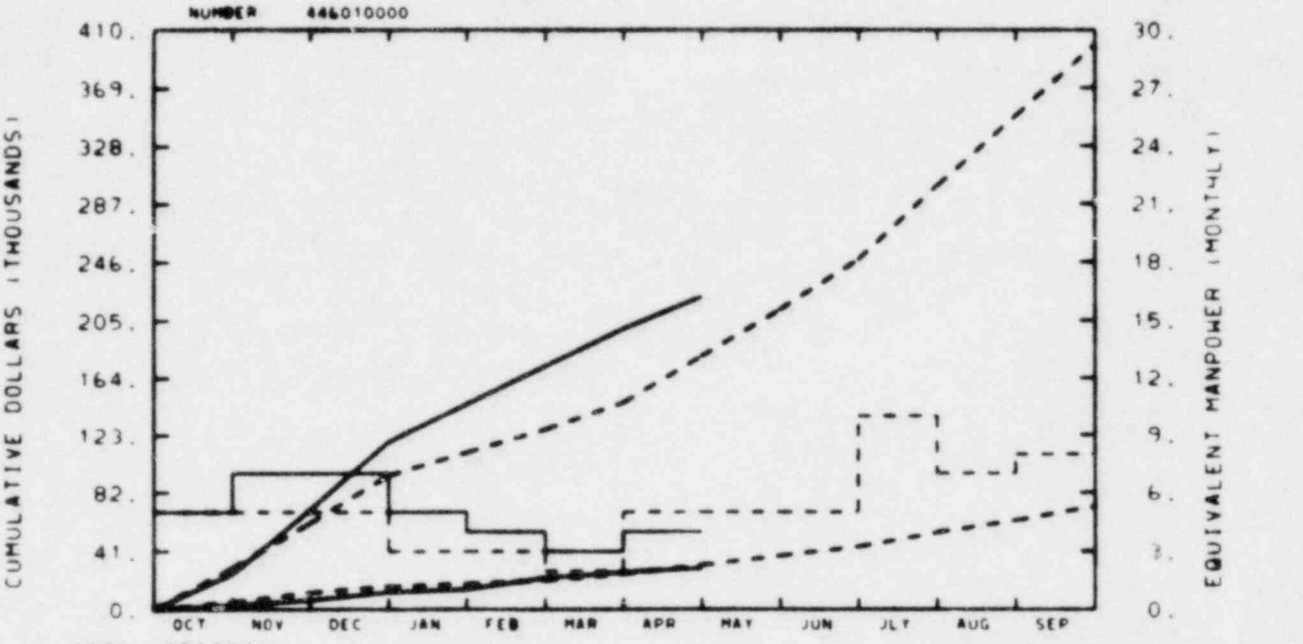
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

NRC RELIEF VALVE PROGRAM A6356

NUMBER 446010000



TOTAL PROGRAM

BUDGET	29	61	94	111	127	146	180	21	248	300	349	400
ACTUAL	25	70	118	145	173	199	222					

MATERIAL

BUDGET	5	12	17	18	21	25	31	38	44	54	63	72
ACTUAL	3	7	12	14	22	26	29					

MANPOWER

BUDGET	5	5	5	3	3	2	5	5	5	10	7	8
ACTUAL	5	7	7	5	4	3	4					

A6356

YTD VARIANCE: <42> (23%)

The accumulated costs are greater than the projected budget for the following reasons: (1) the structural code evaluation work scope expanded due to encountering unanticipated modeling limitations, which required resolution to support assembling an appropriate code package, (2) unanticipated operational problems with the structural and thermal-hydraulic codes required additional resources to resolve, (3) it was necessary to evaluate valve performance deficiencies encountered in the industry test programs. This type of work is budgeted later in the fiscal year. Consequently, the work is being performed earlier than anticipated, and (4) computer costs related to disc storage, tape generation, and data storage were greater than budgeted.

The current budget reflects an anticipated increased spending rate starting in April with a second increase in spending in July. It is anticipated that the increases will be less than budgeted due to anticipated delays in utility PWR submittals to the NRC and to delays in submittal of industry test data to the NRC for code evaluation purposes. Consequently, the anticipated reduced spending rates later in the fiscal year will compensate for the current budget overrun. Rebudgeting will be implemented during May. No fiscal impact is anticipated.

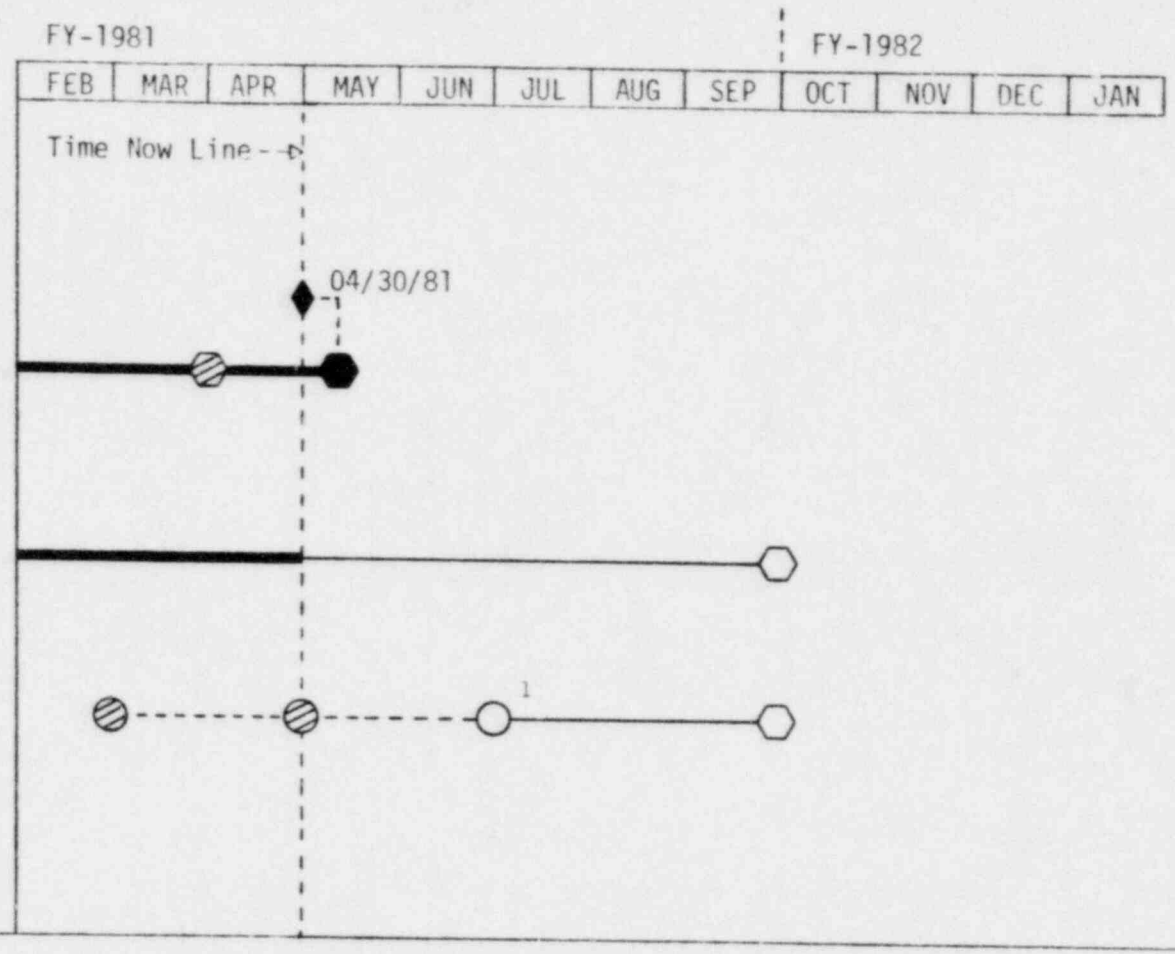
LEGEND

- ●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 APPLICATION DIVISION

NRC Relief Valve Program (A6356)

April 1981

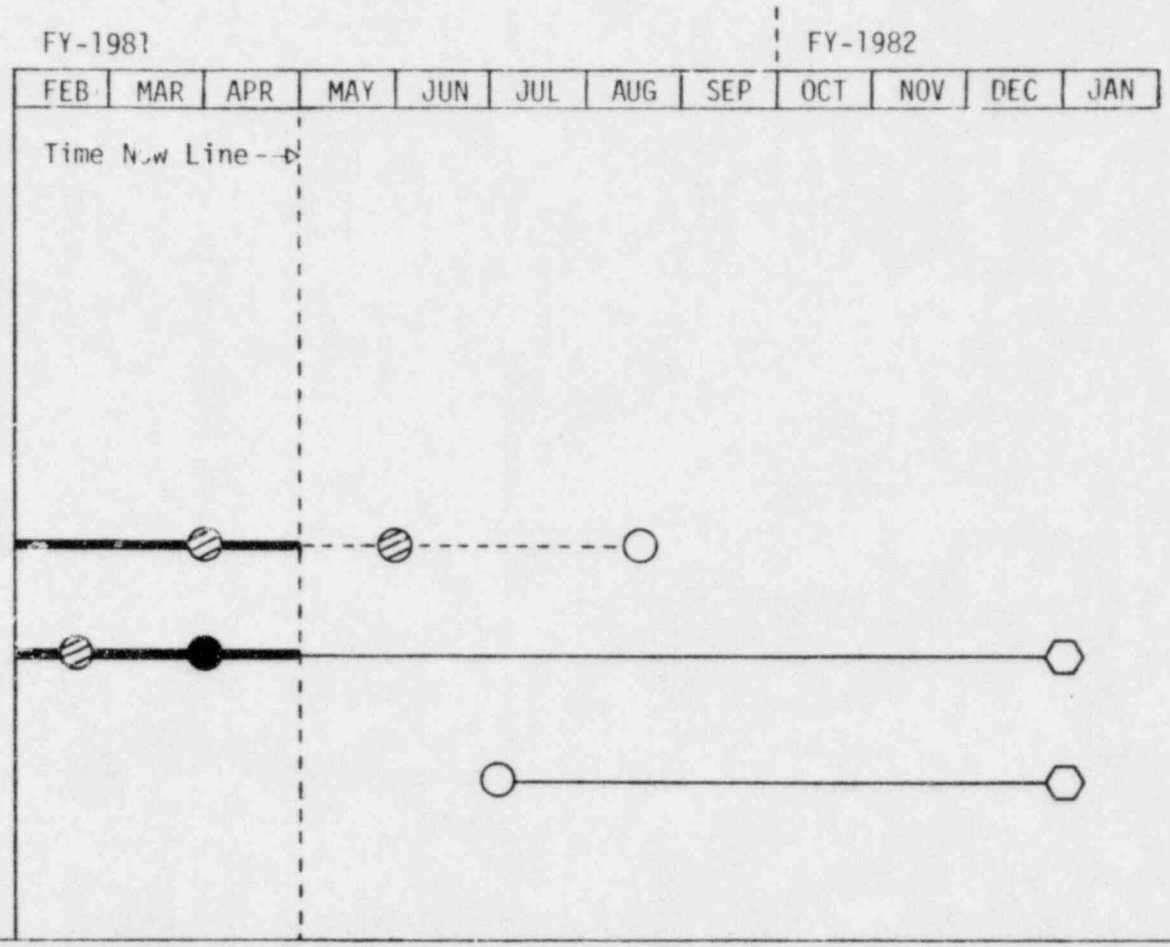


NOTES:

1 Start date will depend upon the date EPRI or GE will transmit the data to NRC/EG&G. The start date has changed since no EPRI or GE test data has been received.

LEGEND

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



NOTES:

1. 189a A6356 - NRC Safety/Relief Valve Program

2. Scheduled Milestones for April 1981

Node	Description	Due Date	Actual Date
GG7	Evaluate New Codes BWR and PWR	4-1-81T	8-15-81T

3. Summary of Work Performed in April 1981

A review meeting of the EPRI/CE test facility was attended in Windsor, CO. This meeting provided insight into the details of the facility capability and into the quality of data it will produce.

A draft report describing the evaluation of RELAP5/MOD1 and TRAC-BD1 was completed. This report will document the evaluation efforts of the codes undertaken to assess the code capabilities to model safety/relief valve system thermal-hydraulic transient and steady state flow phenomena.

A RELAP5/MOD1 model of the safety/relief valve system for the Virgil Summer plant was developed and made operational. Scoping calculations are in progress. This effort will assist in identifying code problems that potentially could be encountered during the performance of plant specific confirmatory calculations.

The response of the BWR Owners' Group to NRC questions on their low pressure test program for BWR safety/relief valves was reviewed. EG&G comments were transmitted to NRC.

A report evaluating the safety/relief valve system modeling capabilities of RELAP4/MOD6, RELAP4/MOD7, RELAP5/MOD0, and TRAC-P1A was revised and prepared for final review and release.

The HDR Standard Problem 4A (piping structural response to a blowdown load) was evaluated. The data from this test will be used to evaluate the capability of RELAP5/MOD1 and/or TRAC-P1A to predict the thermal-hydraulic response of a piping system to a subcooled liquid blowdown. This will be the first opportunity to compare predictions with experimental measurements in a pipe system excited by a valve (check valve in this case) discharge.

An effort continued to modify the method of computing the hydraulic forcing function for input into the structural codes. This modification will provide a more accurate value of the pipe system loading during blowdown transients.

3. Summary of Work Performed in April 1981 (continued)

Additional parametric studies were initiated to evaluate the RELAP5/MOD1 code for safety/relief valve systems. The parameters include inclusion of discharge into a relief tank, pipe wall heat transfer, and air in the downstream discharge piping of a valve.

The completion of the secondary milestone GG7 associated with code evaluation for application to BWR and PWR safety/relief valve systems was changed from April 1 to August 15. This change was necessitated due to the identification of new parameters which require evaluation. The temporary unavailability of support personnel to the code evaluation effort also necessitated extension of the code evaluation activity. Support personnel have now been identified. The new completion date will more than adequately support plant specific evaluations for which the codes will be used.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

A report documenting the thermal-hydraulic evaluation of RELAP5/MOD1 and TRAC-BD1 as applied to loop seal safety/relief valve systems will be completed.

Work will be initiated on HDR Standard Problem 4 and 4A (hydraulic and structural problems respectively). This effort will support the program as described in item 3.

Scoping calculations will be completed with a RELAP5/MOD1 model of the Virgil Summer safety/relief valve system. This effort will support the program as described in item 3.

The evaluation of the capability of RELAP5/MOD1 to model pressure wave propagation in subcooled liquids of various temperatures and vapor will be continued. Such a flow phenomena in a safety/relief valve system could tend to create a peak loading in the system piping.

An effort to modify the method of computing the hydraulic forcing function for input into the structural codes will continue. This modification will provide a more accurate value of the pipe system loading during blowdown transients.

Pretest structural response predictions for the Combustion Engineering test facility will be started.

6. Problems and Potential Problems

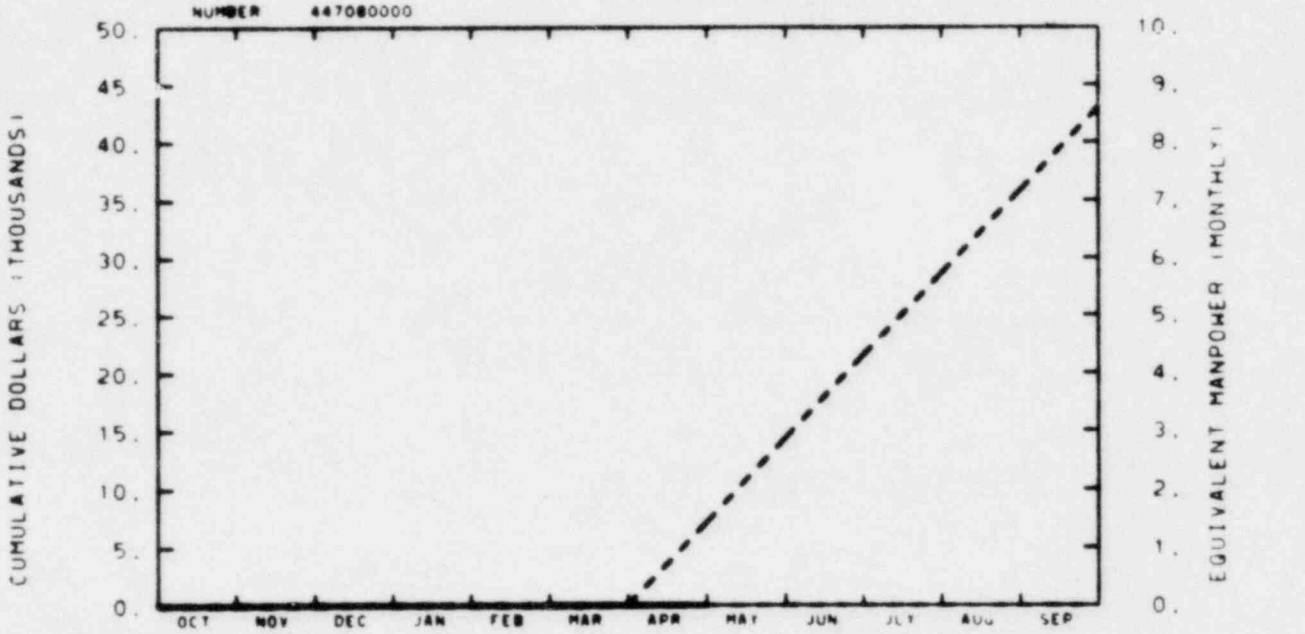
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

APP JAMES STEIN EST A6358

NUMBER 447080000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	7	14	22	29	36	43
ACTUAL	0	0	0	0	0	0	0					

MATERIAL

BUDGET	0	0	0	0	0	0	7	14	22	29	36	43
ACTUAL	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					

BUDGET - - - - - -

ACTUAL ———

A6358

YTD VARIANCE: 7 (100%)

1. 189a A6358 - Applied James-Stein Estimators

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

The placement of a subcontract is still underway with the University of Texas to do research pertaining to James-Stein estimators. The subcontract is scheduled to be in force by June 1, 1981.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

No work is anticipated for the month of May.

6. Problems and Potential Problems

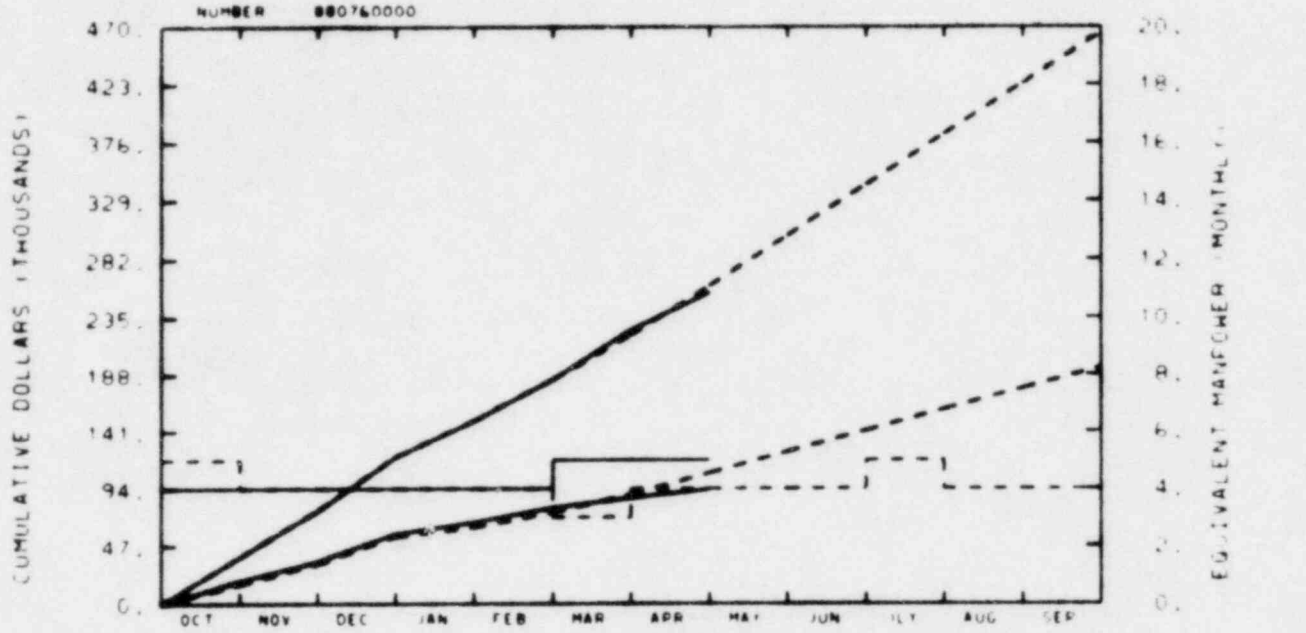
None.

RESPONSIBLE MANAGER
TRAINER

EG&G IDAHO INC.

INTEGRATED RELIABILITY EVAL

NUMBER 880760000



TOTAL PROGRAM

BUDGET	38	76	120	150	184	221	261	101	342	383	424	465
ACTUAL	38	76	120	149	184	225	255					

MATERIAL

BUDGET	16	32	54	62	74	89	107	124	147	159	176	194
ACTUAL	19	34	57	66	78	86	93					

MANPOWER

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

Sandia Purchase Order

YTD VARIANCE: 6 (2%)

1. Sandia Purchase Order - Interim Reliability Evaluation Program (IREP)

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

IREP activities for April included adding test and maintenance unavailablility contributions to the Browns Ferry (BF) fault tree models. The IREP BF team met with the Sandia review team April 14 and 15 and made a conference call to TVA to obtain all comments regarding the BF support systems fault trees. These changes were incorporated in the models, and initial quantification of the support system fault trees was initiated.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

The IREP team will continue to quantify support and front line system fault trees leading to initial screening of the BF event trees to determine candidate dominant accident sequences.

Once initial screening is completed, a draft of the final report will be undertaken.

6. Problems and Potential Problems

Comments from Sandia and TVA were not received until mid-April; these comments made significant changes to our support system fault trees which must be modeled prior to quantification of our front-line system fault trees. Thus, event tree screening will be delayed until these results are obtained, necessitating slippage of the May deadlines.

MONTHLY REPORT FOR

APRIL 1981

CODE DEVELOPMENT DIVISION

CODE ASSESSMENT AND APPLICATION DIVISION

(NRR)

F. Aguilar, Manager
Code Development Division

B. F. Saffell, Manager
Code Assessment and Application Division

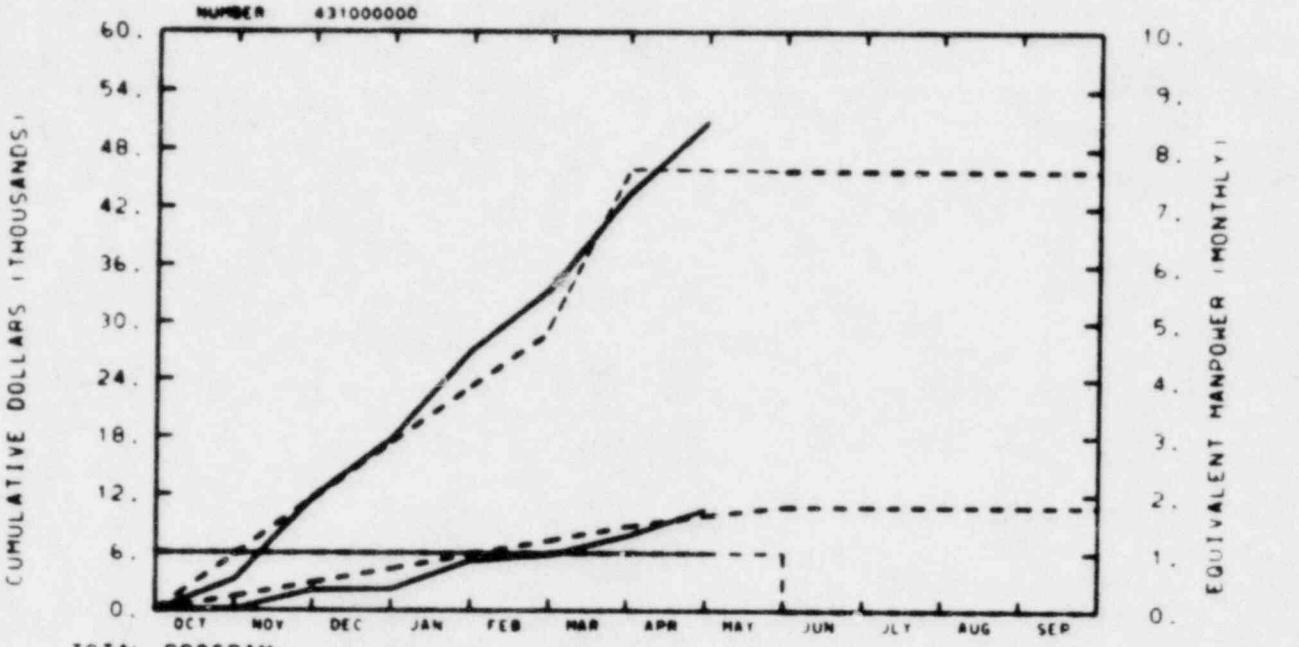
E. L. Pierson
Planning & Budgets Representative

RESPONSIBLE MANAGER
F AGUILAR

EG&G IDAHO INC.

CONTAINMENT ANALYSIS DEVELOPMENT

NUMBER 431000000



TOTAL PROGRAM

BUDGET	6	12	17	23	29	46	46	46	46	46	46	46
ACTUAL	3	12	18	27	34	43	51					

MATERIAL

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

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

A6009

YTD VARIANCE: <5> (11%)

The project was completed on March 7, 1981, and new scope was authorized under 189a A6439. Next month's graph will reflect A6439 costs.

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

A preliminary version of CONTEMPT4/MOD3 has been created that includes all updates and corrections concerning dry containment.

1. 189a A6009/A6439 - Containment Analysis

2. Scheduled Milestones for April 1981

Node	Description	Due Date	Actual Date
--	Preliminary Code Version CONTEMPT4/MOD3	04/17/81	04/17/81

3. Summary of Work Performed in April 1981

A preliminary version of CONTEMPT4/MOD3 was created. This code version included all updates and corrections to the dry containment portion of the code. Updates from T. Cheng and K. Almenas have been included.

Discussions were held with NRR regarding preparation of a transmittal tape. The difference in the computer operating systems NOSBE and SCOPE present problems in creating tapes for NRR. Procedures are being established whereby in the future tapes can be generated in a more timely manner.

Benchmarking of the CONTEMPT4/MOD3 LT containment models has started and comparisons with the North Anna CONTEMPT-LT run look good.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

An EGG-CDD report documenting the improvements to the dry containment portion of CONTEMPT4 will be released. A transmittal tape with the latest updates will be sent to NRR. Benchmarking of CONTEMPT4 against the Midland, Arkansas and D-15 CONTEMPT-LT runs will be completed and documentation initiated.

6. Problems and Potential Problems

None.

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

A6270: Final input on the Waterford Safety Evaluation Report (SER) was transmitted to the Nuclear Regulatory Commission (NRC).

A6415: A letter of resolution for all outstanding items for the San Onofre plant was issued to NRC.

A6422: Reviews of the Limerick and Catawba Safety Analysis Reports (SARs) were completed and resulting questions transmitted to NRC.

A6425: Final draft evaluations were made for the following topics and plants

Topic	Plant
III-1	Haddam Neck
V-11.B	Haddam Neck
VI-4	Palisades
VI-4	Millstone 1
VII-3	Haddam Neck
VIII-3.B	Millstone 1

A6429: The following Technical Evaluation Reports (TERs) were completed and transmitted to NRC:

Project 1: (Degraded Grid A)
TER - Big Rock Point, TAC 10008, Cost = $7,964.
TMI-1, TAC 10055, Cost = $7,157.

Project 2:
TER - Hatch Unit 1, TAC 12831, Cost = $6,154.
Hatch Unit 2, TAC 12832, Cost = $6,154.
Preliminary TER - Palisades, TAC 12780

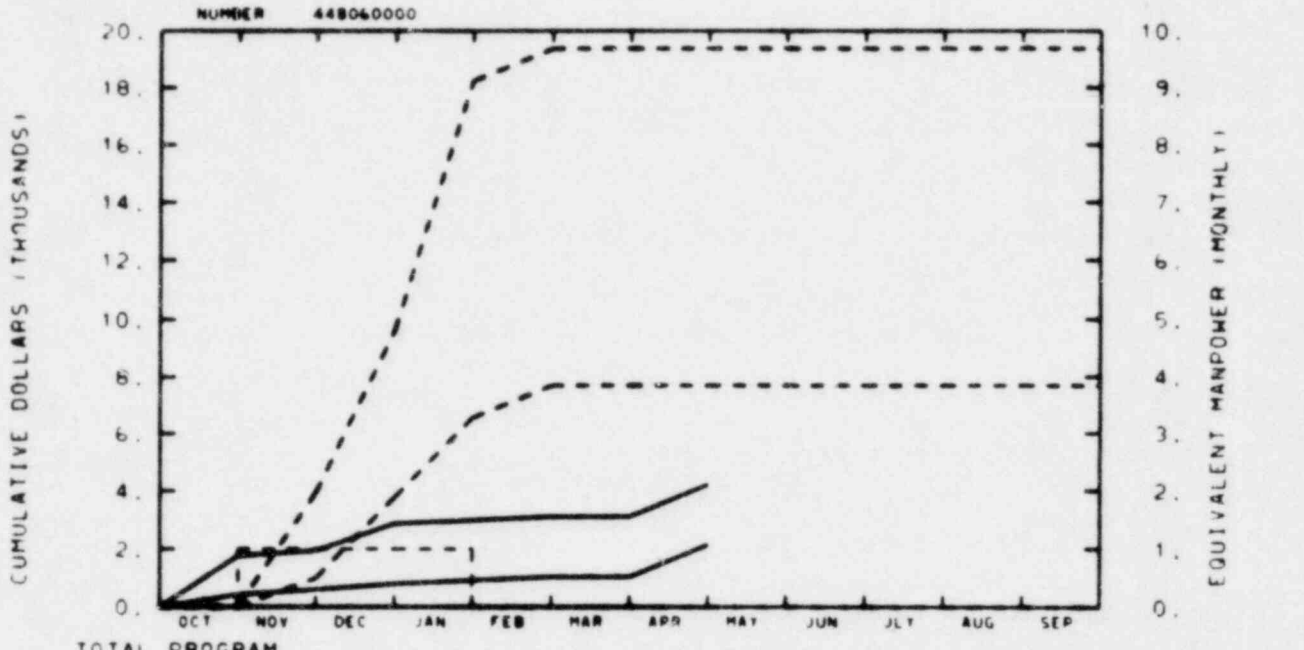
A6436: The input specification table for developing computer models of specific plants was transmitted to NRC.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

REACTOR VESSEL SUPTS A6152

NUMBER 448060000



TOTAL PROGRAM

BUDGET	0	4	10	18	19	19	19	19	19	19	19	19
ACTUAL	2	2	3	3	3	3	4					

MATERIAL

BUDGET	0	1	4	7	8	8	8	8	8	8	8	8
ACTUAL	0	1	1	1	1	1	2					

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6152

YTD VARIANCE: 15 (79%)

This task is underspent because of lack of vendor data from NRC. As soon as a schedule can be agreed upon, this task will be rebudgeted.

1. 189a A6152 - Primary System Loss of Coolant Accident (LOCA) Response

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

A request for the vendor calculated response loads has been made to the NRC. These loads will be used for comparison purposes in the Comanche Peak audit

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

No work is anticipated for this month.

6. Problems and Potential Problems

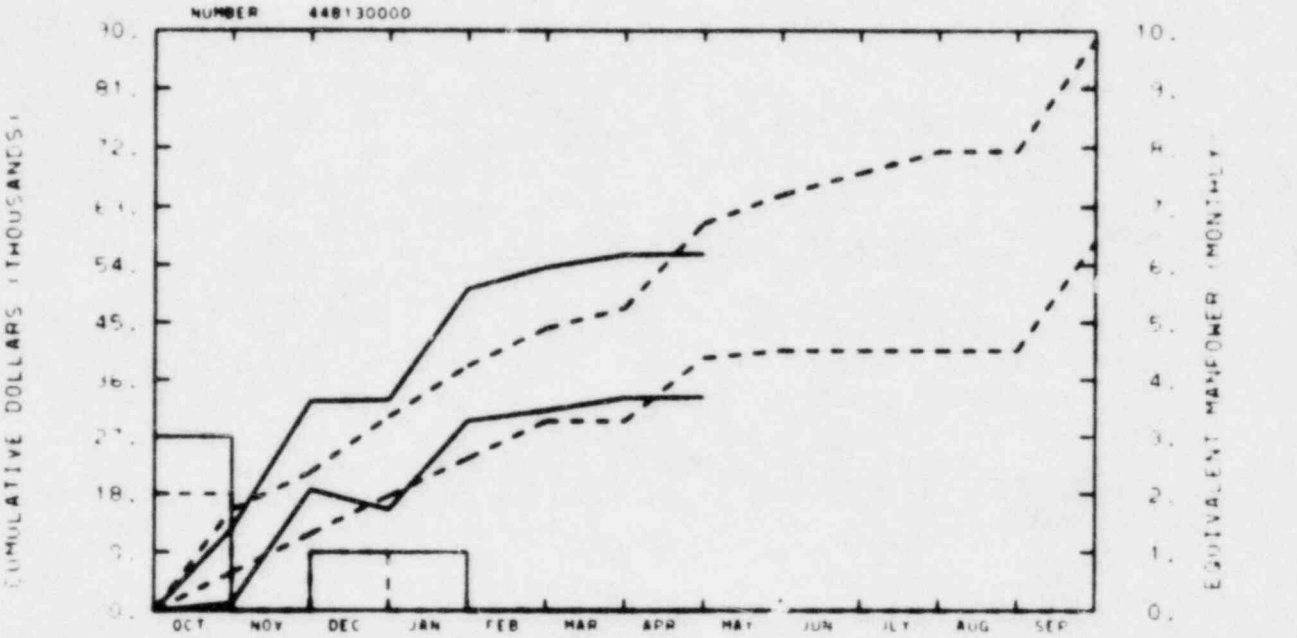
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

FAILED FUEL/OFF GAS A6159

NUMBER 448130000



TOTAL PROGRAM

BUDGET	15	21	30	38	44	47	60	65	68	71	71	89
ACTUAL	13	33	33	50	54	56	56					

MATERIAL

BUDGET	6	12	18	24	29	29	39	41	41	41	41	58
ACTUAL	1	19	16	30	31	33	33					

MANPOWER

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

A6159

YTD VARIANCE: 4 (7%)

189a A6159

1. 189a A6159 - Technical Assistance to Environmental Evaluation Branch

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

Technical Evaluation of Temporary/Mobile Radwaste Management Systems - The subcontractor, Exxon Nuclear Idaho Co. (ENICO) Inc., is in the process of renegotiating a due date for the final report with the NRC Technical Monitor.

Very Low Level Waste (Deminimus Radioactivity Level Task) - The final report on this task is being revised by the subcontractor, EG&G/Santa Barbara.

4. Scheduled Milestones for May 1981

Node	Description	Due Date	Actual Date
L-2	Mobile Radwaste Report	5/29/81T	

5. Summary of Work to be Performed in May 1981

Technical Evaluation of Temporary/Mobile Radwaste Management Systems - ENICO will continue preparation of the final report, currently scheduled for issue to NRC on May 29.

Very Low Level Waste (Deminimus Radioactivity Level Task) - EG&G Santa Barbara will continue revision of the final report for submittal to EG&G Idaho by June 12.

6. Problems and Potential Problems

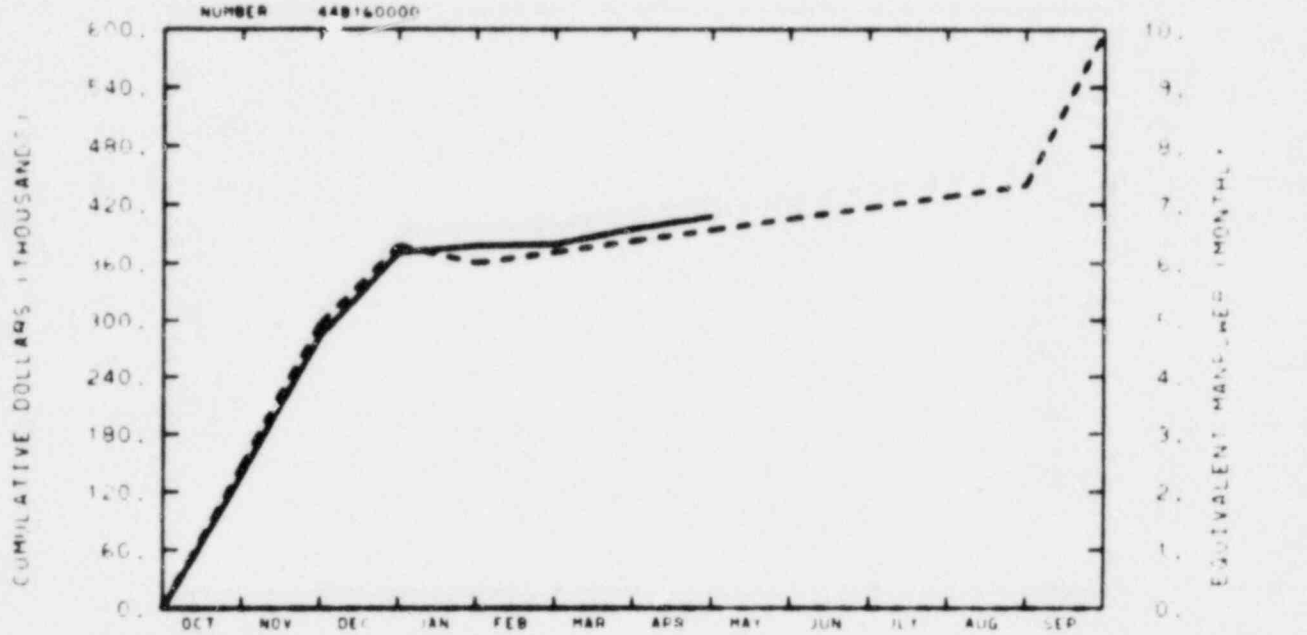
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

NRC USE OF INFL CDC A6209

NUMBER 448160000



TOTAL PROGRAM

BUDGET	146	296	378	360	372	383	394	406	417	428	440	596
ACTUAL	137	293	371	378	380	395	408					

MATERIAL

BUDGET	146	296	378	360	372	383	394	406	417	428	440	596
ACTUAL	137	293	371	378	380	395	408					

MANPOWER

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

BUDGET

ACTUAL

A6209

YTD VARIANCE: <14> (4%)

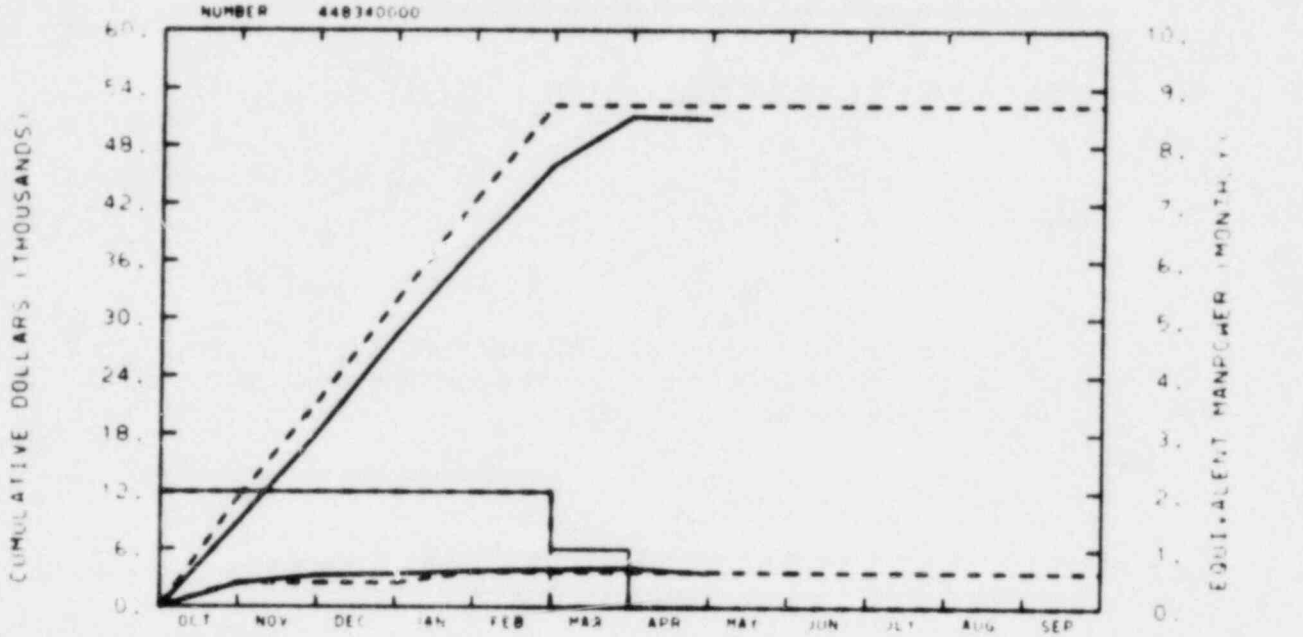
This computer fund is being used by NRC personnel only, and on an unscheduled basis. Therefore, the overexpenditure has no particular significance.

RESPONSIBLE MANAGER
B. F. SAFFELL

EG&G IDAHO INC.

SYSTEM ENG'G SUPPORT A6258

NUMBER 448340000



TOTAL PROGRAM

BUDGET	11	21	32	42	52	52	52	52	52	52	52	52
ACTUAL	9	18	28	37	46	51	51					

MATERIAL

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

MANPOWER

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

A6258

YTD VARIANCE: 1 (2%)

Funding is 98 percent expended.

189a A6258

1. 189a A6258 - System Engineering Support (IST)

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

The final report on the Surry IST program was issued to NRC.

A conference call between EG&G, NRC and Nine Mile Point representatives was held to attempt to clear up outstanding problems on the Nine Mile Point Inservice Testing (IST) program.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

Final reports on the Nine Mile Point and Indian Point IST programs will be issued. Work on Oyster Creek will be dependent on receipt of the utility resubmittal.

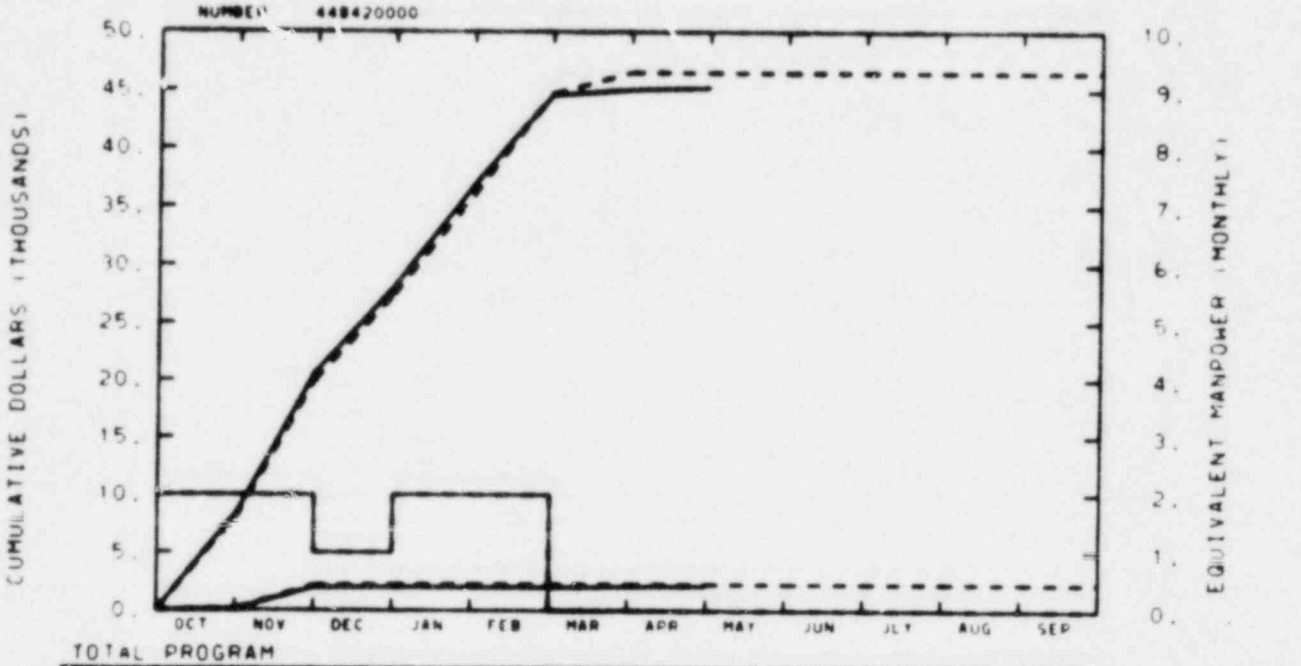
6. Problems and Potential Problems

None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

INSERVICE TESTING - DSS A6265



TOTAL PROGRAM

BUDGET	8	20	27	36	45	47	47	47	47	47	47	47
ACTUAL	8	21	28	37	45	45	45					

MATERIAL

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

MANPOWER

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

A6265

YTD VARIANCE: 2 (4%)

An additional $30 K ($77 K total) was received during the week of April 27. This will be entered into the budget during May.

189a A6265

1. 189a A6265 - Inservice Testing - DSS

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

Preparation of the SER on North Anna was started.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

The North Anna SER will be completed.

6. Problems and Potential Problems

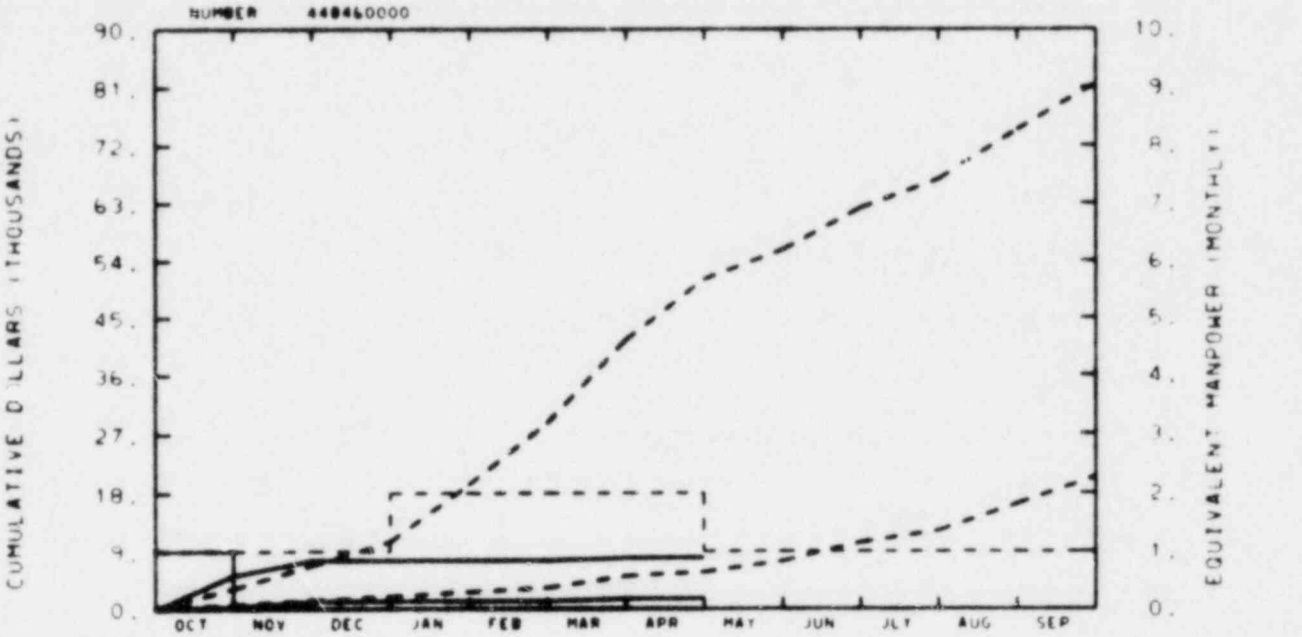
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

FUEL PERF CODE APP PROG II A6268

NUMBER 448460000



TOTAL PROGRAM

BUDGET	3		10	19	29	41	51	56	62	67	74	82
ACTUAL	5	8	8	8	8	8	8					

MATERIAL

BUDGET	1	1	2	3	3	5	6	7	10	12	16	20
ACTUAL	0	1	1	1	1	2	2					

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

A6268

YTD VARIANCE: 43 (84%)

Work on this task is pending the NRC's input regarding direction and overall scope. No work will be performed until direction is received.

189a A6268

1. 189a A6268 - Fuel Performance Code Applications II

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

No work was performed on this task, due to a lack of work scope definition.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

If NRC direction is received, work will commence on this task.

6. Problems and Potential Problems

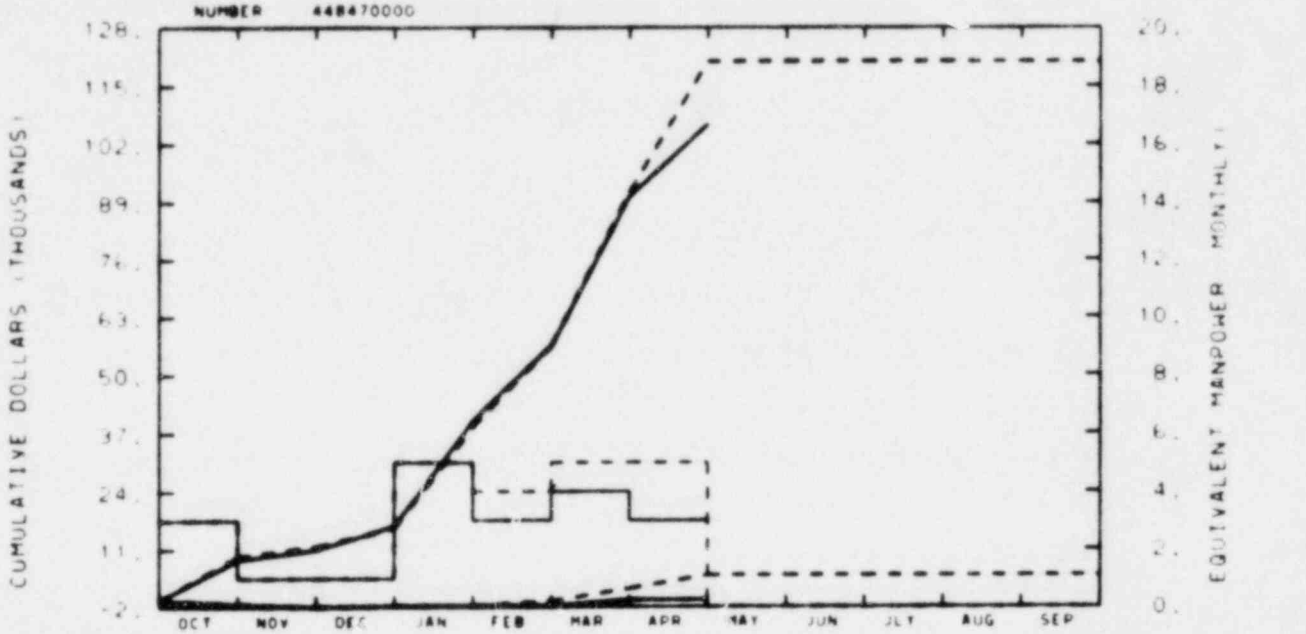
None.

RESPONSIBLE MANAGER
B. J. AFFELL

EG&G IDAHO INC.

REAC SYS CASE RVW III A6270

NUMBER 448470000



TOTAL PROGRAM

BUDGET	10	12	16	39	53	92	121	121	121	121	121	121
ACTUAL	9	11	17	40	57	91	107					

MATERIAL

BUDGET	0	-1	0	0	0	3	6	6	6	6	6	6
ACTUAL	0	-1	0	0	0	0	0					

MANPOWER

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

A6270

YTD VARIANCE: 14 (12%)

Review of the St. Lucie FSAR has not been started per direction from NRC. Funding will be reprogrammed when scope and schedule are firm.

189a A6270

1. 189a A6270 - Pressurized Water Reactor (PWR) Case Reviews

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

Final input on the Waterford SER was completed and transmitted to NRC.

Work continued on the SER for Comanche Peak and draft sections were transmitted to NRC.

Review of applicant responses to first round questions on Byron/Braidwood continued.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

Input for the Comanche Peak SER will be completed.

6. Problems and Potential Problems

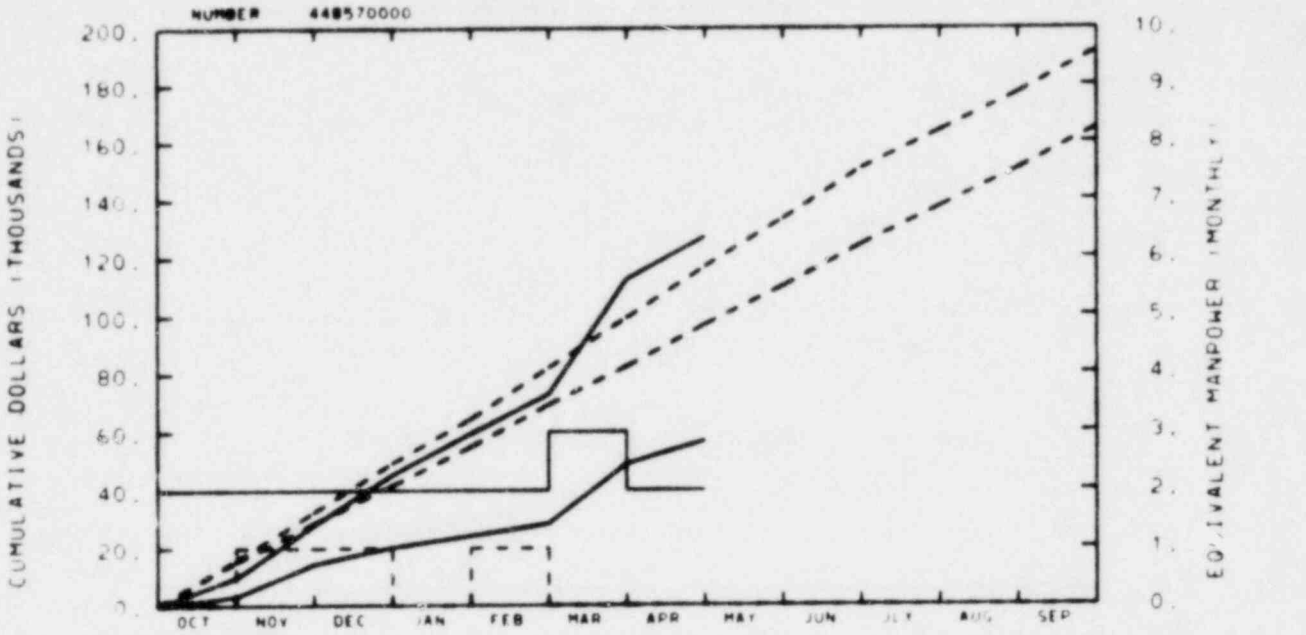
None.

RESPONSIBLE MANAGER
B. SAFFELL

EG&G IDAHO INC.

MAT'L ENG'G CASE RVW I A6401

NUMBER 448570000



TOTAL PROGRAM

BUDGET	16	33	49	64	82	99	117	133	151	164	177	192
ACTUAL	10	28	45	59	73	112	127					

MATERIAL

BUDGET	15	25	42	55	69	82	97	110	124	137	151	165
ACTUAL	3	15	20	24	28	49	57					

MANPOWER

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

A6401

YTD VARIANCE: <10> (9%)

The rate of labor expenditures has been greater than originally anticipated. The reasons for this increased rate has been an NRC requested acceleration in the original schedule for completing plant safety evaluation reports (SER's). Future reduced expenditure rates are expected to bring the budget into balance during the fourth quarter.

189a A6401

1. 189a A6401 - Materials Engineering Case Reviews (I)

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

Palo Verde: The draft SER due date was rescheduled from September 1, 1981 to June 1, 1981; this SER is is in preparation.

Washington Nuclear Power 2: Comments on the WNP-2 preservice inspection plan were submitted to the NRC.

Watts Bar: Additional comments on the preservice inspection plan and relief requests were generated and are in the process of being transmitted to the NRC.

Grand Gulf: The preservice inspection plan was received for review. Comments on the preservice inspection plan for austenitic welds were prepared and submitted to the NRC.

Fracture Mechanics Review

Data have been gathered and given to a statistician to determine if any statistically significant statements can be made regarding the difference in the temperatures at which 50 ft/lb and 35 MLE (mils lateral expansion) are attained in the longitudinal vs transverse directions.

St. Lucie-2

The SER due date was rescheduled from August 1, 1981 to May 4, 1981; this SER is being written.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

Washington Nuclear Power 2: Pending review by the NRC Technical Monitor, comments and revisions, as appropriate, will be discussed.

5. Summary of Work to be Performed in May 1981 (Continued)

Watts Bar: Preservice inspection plan and relief request evaluations will be discussed with the NRC Technical Monitor.

Grand Gulf: A draft version of the preservice inspection plan comments will be completed and submitted to the NRC.

General - The cognizant EG&G engineer will provide assistance at the NRC, Bethesda, MD location for two weeks in late May or early June per the NRC's request.

6. Problems and Potential Problems

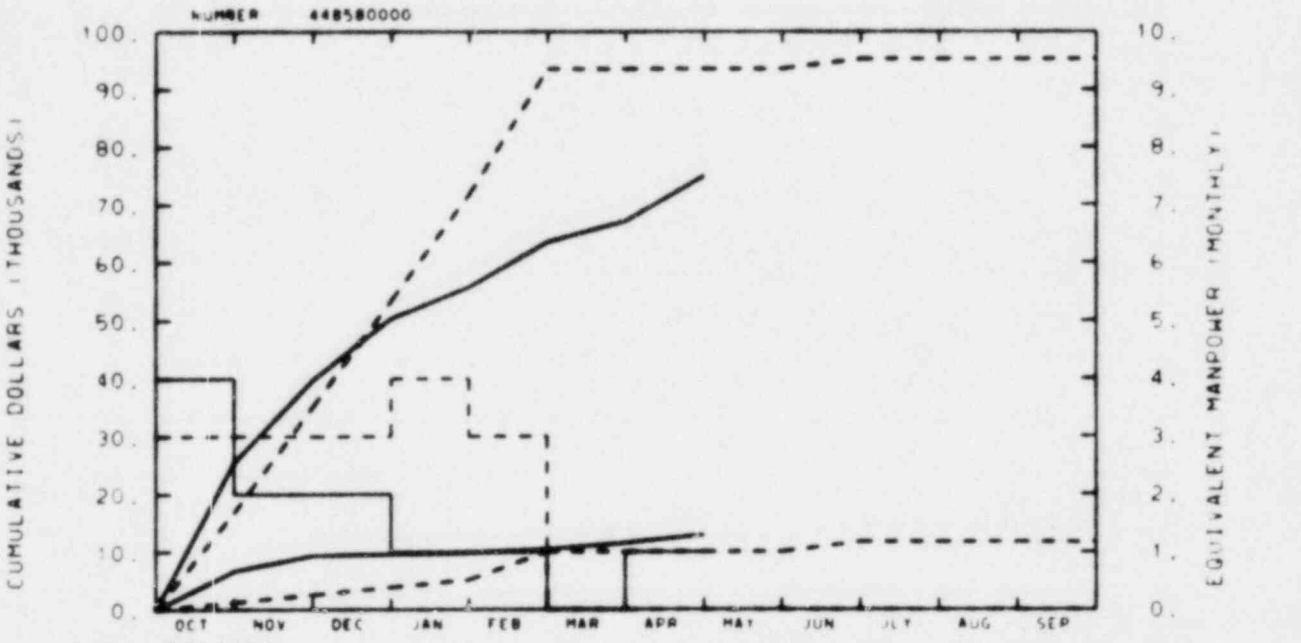
None.

RESPONSIBLE MANAGER
R. F. SAFFELL

EG&G IDAHO INC.

STRUC ENG'G CASE RVW II A6402

NUMBER 448580000



TOTAL PROGRAM

BUDGET	17	35	53	72	94	94	94	94	95	95	95	95
ACTUAL	25	40	50	56	64	67	75					

MATERIAL

BUDGET	1	3	4	5	10	10	10	10	12	12	12	12
ACTUAL	7	9	10	10	10	12	13					

MANPOWER

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

A6402

YTD VARIANCE: 19 (20%)

This task was scheduled and budgeted to be complete by March 1981. However, late vendor submittals for Grand Gulf Nuclear Power Plant plus delays associated with discovery of an error in Bechtel's computer program have necessitated a manpower reduction and hence an under-expenditure. Delay recovery is expected to be complete by the fiscal year third quarter end.

189a A6402

1. 189a A6402 - Structural Engineering Case Reviews(I)

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

A6402 - Grand Gulf: Reanalysis of Grand Gulf for new basemat rotations was begun on April 3, 1981. Reanalysis of the auxiliary building has been completed. Some additional post-processing may still be required. Some of the reruns for the containment have also been completed.

Byron/Braidwood: No activity, pending receipt of information from Sargent and Lundy.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

Grand Gulf - Reanalysis of Grand Gulf for new basemat rotations will be completed for the auxiliary building and containment. The final report documenting this analysis will be completed.

Byron/Braidwood: If the Sargent and Lundy information is received, activity will resume.

6. Problems and Potential Problems

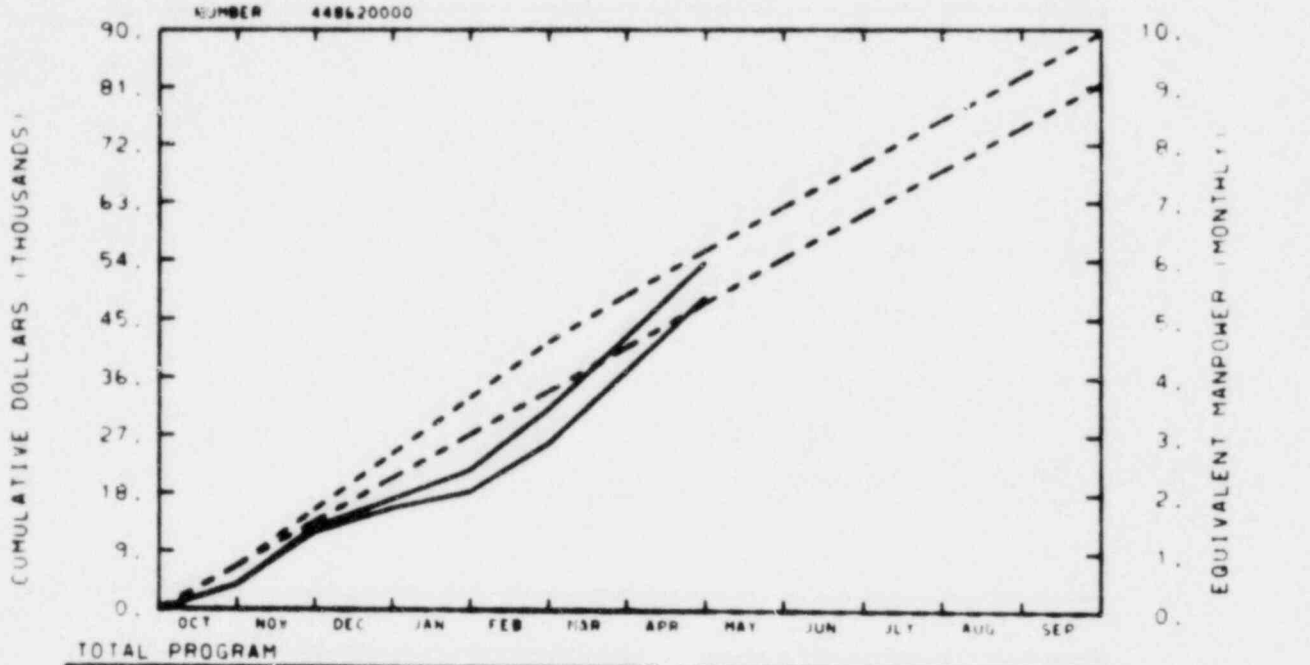
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

INSERVICE INSPECTION A6405

NUMBER 448620000



TOTAL PROGRAM

BUDGET	7	15	24	33	42	49	56	62	69	76	83	90
ACTUAL	4	13	17	22	31	42	54					

MATERIAL

BUDGET	7	14	20	27	34	41	48	54	61	68	75	82
ACTUAL	4	12	16	19	26	37	49					

MANPOWER

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

A6405

YTD VARIANCE: 2 (4%)

189a A6405

1. 189a A6405 - Inservice Inspection

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

An additional ultrasonic test (UT) procedure was received from the NPC. Review of UT procedures submitted by the NRC was continued. A draft of the Regulatory Guide on UT examination of Austenitic Piping was reviewed.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

The review of four UT procedures will be continued.

6. Problems and Potential Problems

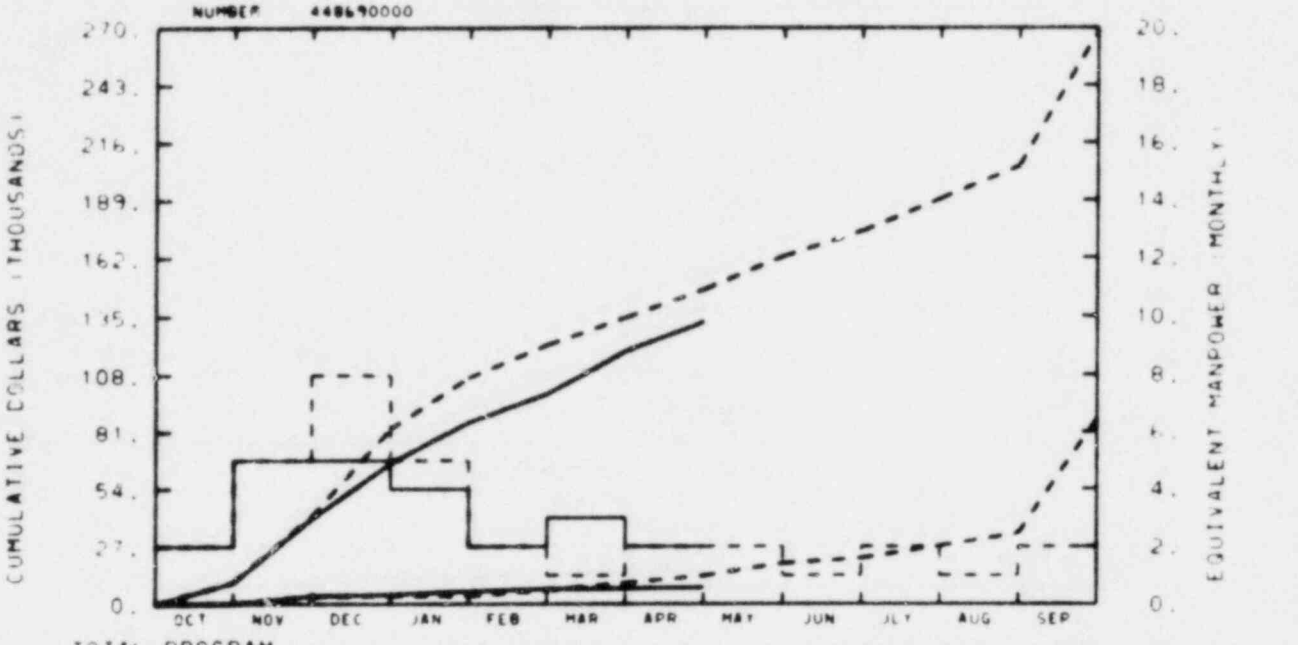
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

DYNAMIC QUAL ELEC & MECH A6415

NUMBER 448690000



TOTAL PROGRAM

BUDGET	10	41	83	107	122	135	147	163	174	190	205	268
ACTUAL	10	40	66	86	99	119	133					

MATERIAL

BUDGET	0	4	4	4	6	10	13	19	21	27	33	87
ACTUAL	0	4	4	6	7	7	8					

MANPOWER

BUDGET	2	5	8	5	2	1	2	2	1	2	1	2
ACTUAL	2	5	5	4	2	3	2					

A6415

YTD VARIANCE: 14 (10%)

Delays in plant audits, as requested by the NRC, may require a portion of the project funding to be carried over to FY-1982 to complete this task.

1. 189a A6415 - Dynamic Qualification of Safety Related Electrical and Mechanical Equipment

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

Another submittal from San Onofre was reviewed, all the unresolved issues for this plant were resolved and a letter of resolution of all outstanding items was issued. Final Safety Analysis Reports (FSARs) for Zimmer and Grand Gulf were also reviewed.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

The final trip report for San Onofre Units 2 and 3 will be issued. Equipment will be selected for Seismic Qualification Review Team (SQRT) site review for Zimmer. It is expected that the site visit to Zimmer will take place during May.

6. Problems and Potential Problems

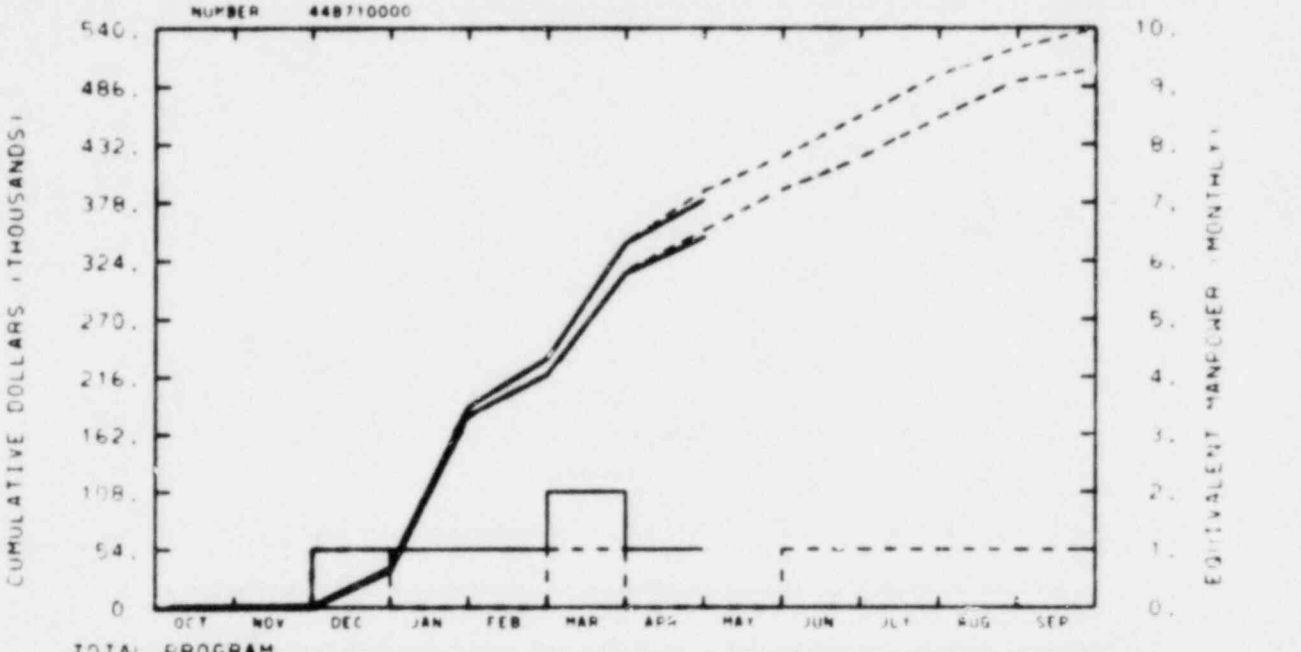
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

ENVIR QUAL ELEC EQUIP A6417

NUMBER 448710000



TOTAL PROGRAM

BUDGET	1	2	37	188	234	340	390	425	460	495	513	530
ACTUAL	1	2	37	188	234	340	381					

MATERIAL

BUDGET	0	0	33	180	218	313	354	389	424	459	489	498
ACTUAL	0	0	33	180	218	313	346					

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

A6417

YTD VARIANCE: 9 (2%)

1. 189a A6417 - Environmental Qualification of Electrical Equipment - Data Bank and Test Report Evaluations

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

Tasks 1 and 2: Preparation is underway to implement computer tapes being transmitted by Franklin Laboratories containing the Equipment Qualification Data Base and Sample Data Files. This information will be transferred to the EG&G computer system and will be accessable in the future by both EG&G and NRC.

Task 3: Revisions to the input for the equipment qualification file have been defined. Currently, 108 test reports covering 233 component items have been reviewed and entered.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

Tasks 1 and 2: Work will continue on converting the 10 tables submittals into a form compatible with the data base format.

Task 3: Work will continue on review of the test reports.

6. Problems and Potential Problems

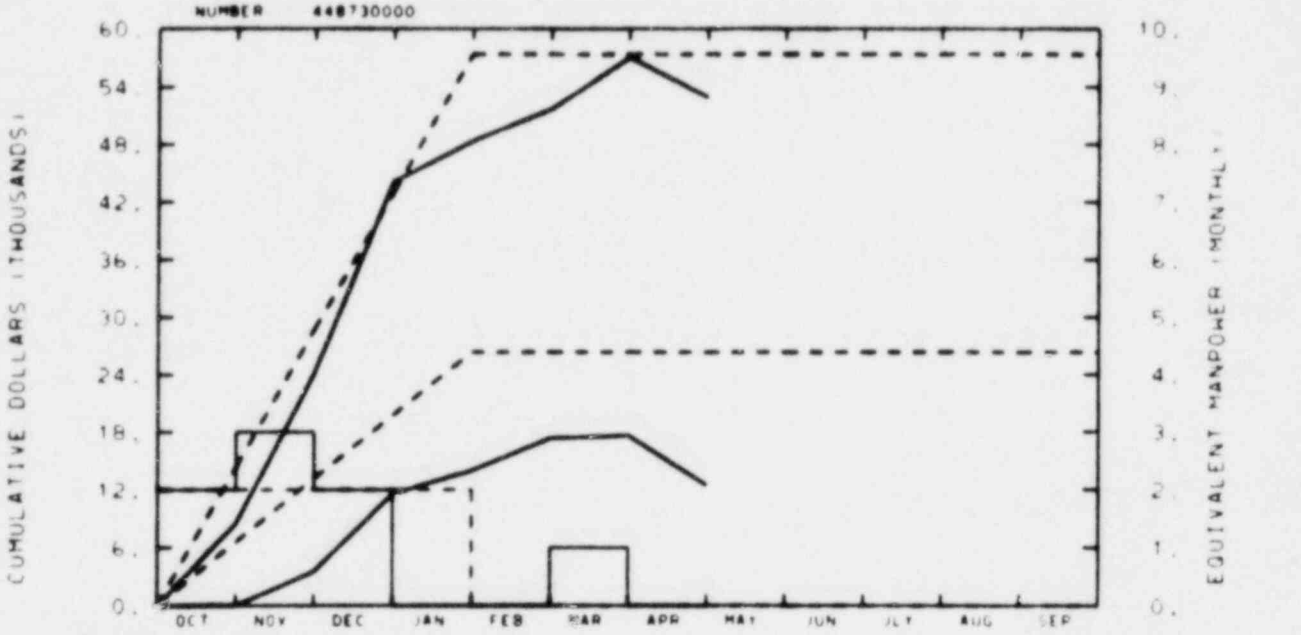
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

FRACTURE MECH EVALUATION A6419

NUMBER 448730000



TOTAL PROGRAM

BUDGET	14	29	43	57	57	57	57	57	57	57	57	57
ACTUAL	8	24	44	48	52	57	53					

MATERIAL

BUDGET	7	13	20	26	26	26	26	26	26	26	26	26
ACTUAL	0	4	12	14	17	18	12					

MANPOWER

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

A6419

YTD VARIANCE: 4 (7%)

An additional $15 K was received in late April bringing the total to $72 K. This will be entered into the budget during May.

189a A6419

1. 189a A6419 - Fracture Mechanics Analysis

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

The draft report submitted earlier to NRC was reviewed and suggestions incorporated which were made by P. Paris. An analysis completed after the draft was submitted was also included, and editorial corrections made. The modified draft was sent to the NRC.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

Upon receipt of Volume 1 of the NUREG document will be reviewed.

6. Problems and Potential Problems

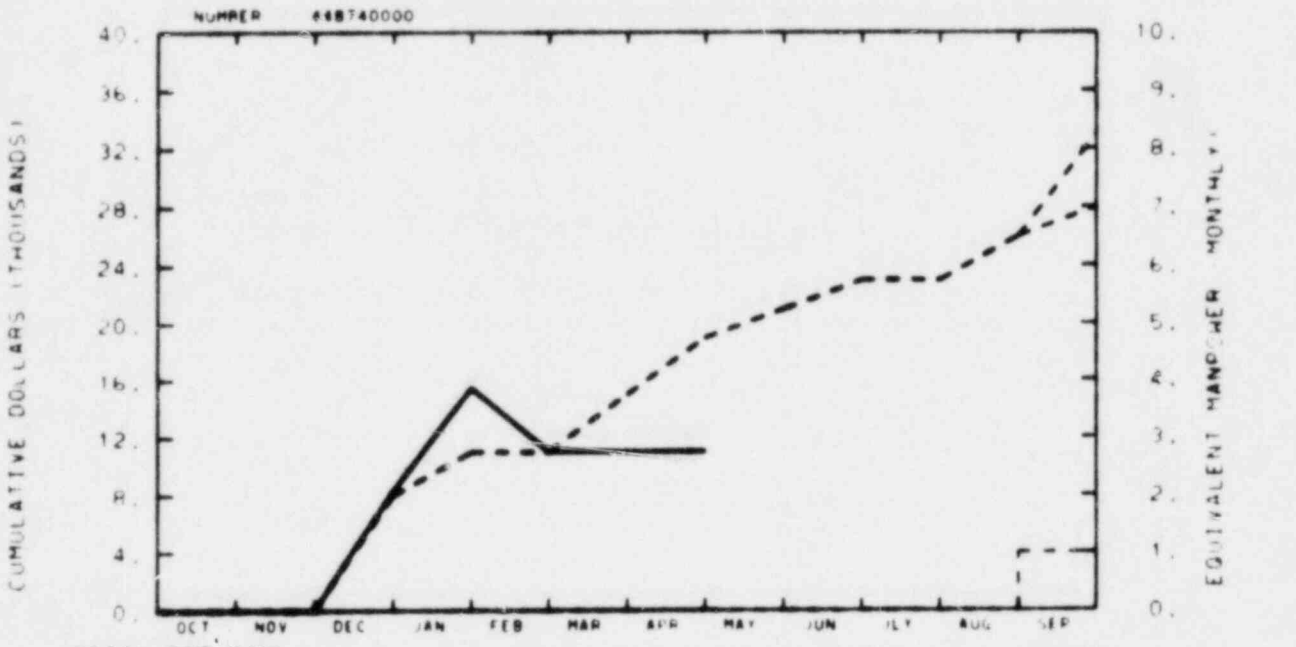
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

PIPE CRACK STUDY GROUP A6420

NUMBER 668740000



TOTAL PROGRAM

BUDGET	0	0	8	11	11	15	19	21	23	23	26	11
ACTUAL	0	0	8	15	11	11	11					

MATERIAL

BUDGET	0	0	8	11	11	15	19	21	23	23	26	28
ACTUAL	0	0	8	15	11	11	11					

MANPOWER

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

A6420

YTD VARIANCE: 8 (42%)

1. 189a A6420 - Pipe Crack Study Group Analysis

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

There was no activity on EG&G Idaho's part on this task; EG&G technical personnel are awaiting input from subcontractor, Dr. P. Paris of Washington University. Dr. P. Paris has committed to complete this task and have the report to EG&G by August 14, 1981.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

No activity is anticipated until after August 14, when subcontractor Dr. P. Paris has committed to send us his portion of the NUREG report

6. Problems and Potential Problems

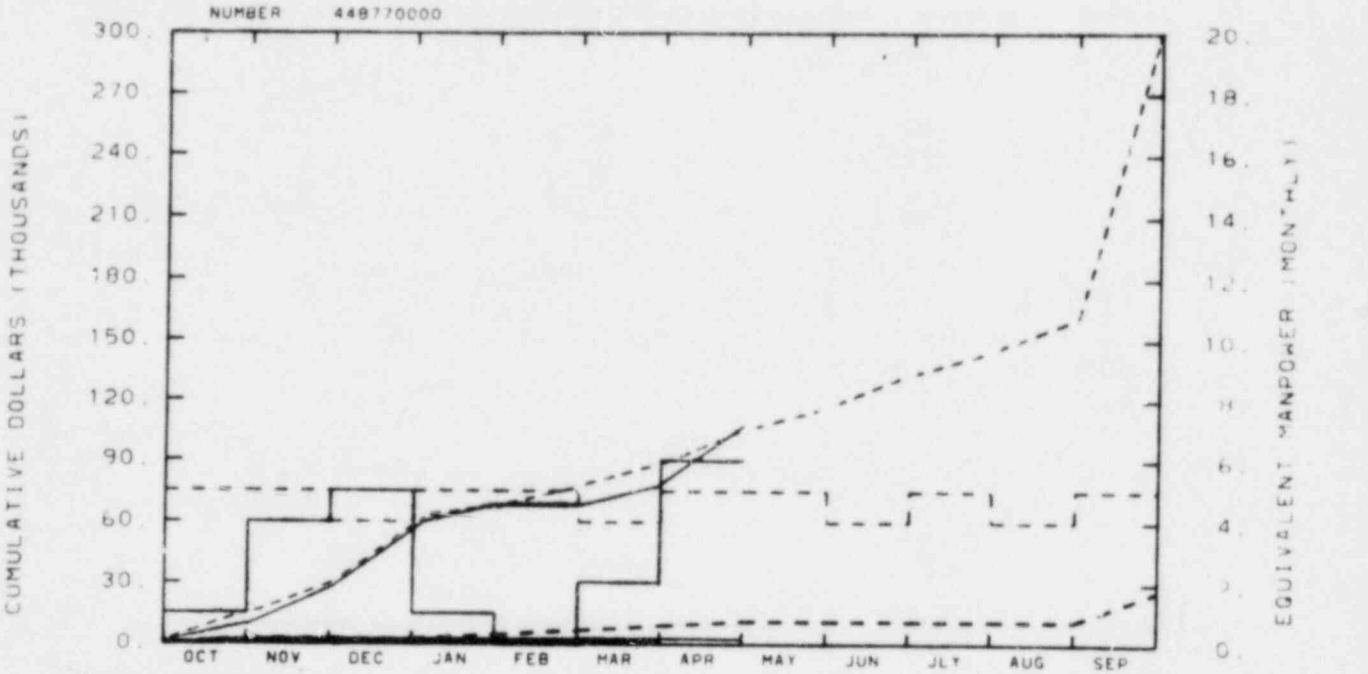
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

OPER LIC FSAR AC RV A6422

NUMBER 448770000



TOTAL PROGRAM

BUDGET	15	30	60	65	73	88	104	117	131	146	160	300
ACTUAL	9	29	59	65	65	76	107					

MATERIAL

BUDGET	2	2	2	5	7	9	11	11	11	11	11	26
ACTUAL	2	2	2	2	2	2	2					

MANPOWER

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

BUDGET

ACTUAL

A6422

YTD VARIANCE: <3> (3%)

189a A6422

1. 189a A6422 - Operating License Final Safety Analysis Report (FSAR) Acceptance Reviews

2. Scheduled Milestones for April 1981

   None.

3. Summary of Work Performed in April 1981

   Reviews of the Limerick and Catawba SARs were completed and resulting questions transmitted to NRC.

4. Scheduled Milestones for May 1981

   None.

5. Summary of Work to be Performed in May 1981

   Review of the River Bend SAR will be completed.

6. Problems and Potential Problems

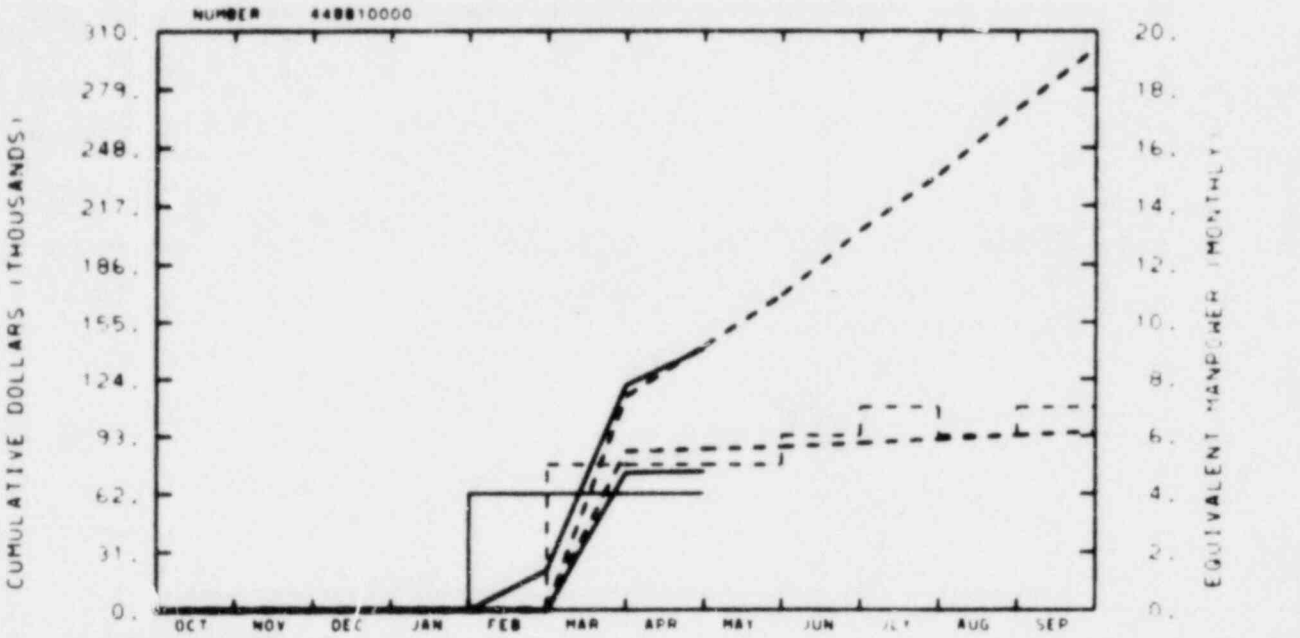
   None.

RESPONSIBLE
MANAGER
B F SAFFELL

EG&G IDAHO INC.

ELECT SYS SUPPORT II A64.5

NUMBER 448810000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	114	142	169	204	234	268	301
ACTUAL	0	0	0	0	21	120	140					

MATERIAL

BUDGET	0	0	0	0	0	85	86	87	89	91	93	95
ACTUAL	0	0	0	0	0	73	74					

MANPOWER

BUDGET	0	0	0	0	0	5	5	5	6	7	6	7
ACTUAL	0	0	0	0	4	4	4					

BUDGET

ACTUAL

A6425

YTD VARIANCE: 2 (1%)

189a A6425

1. 189a A6425 - EICS Support for the Systematic Evaluation Program (SEP)

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

Three initial drafts and two revised drafts were completed. Final draft evaluations were completed for:

Topic	Plant
III-1	Haddam Neck
V-11.B	Haddam Neck
VI-4	Palisades
VI-4	Millstone 1
VII-3	Haddam Neck
VIII-3.B	Millstone 1

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

Three initial drafts, five revised drafts and one final draft are scheduled for completion in May.

6. Problems and Potential Problems

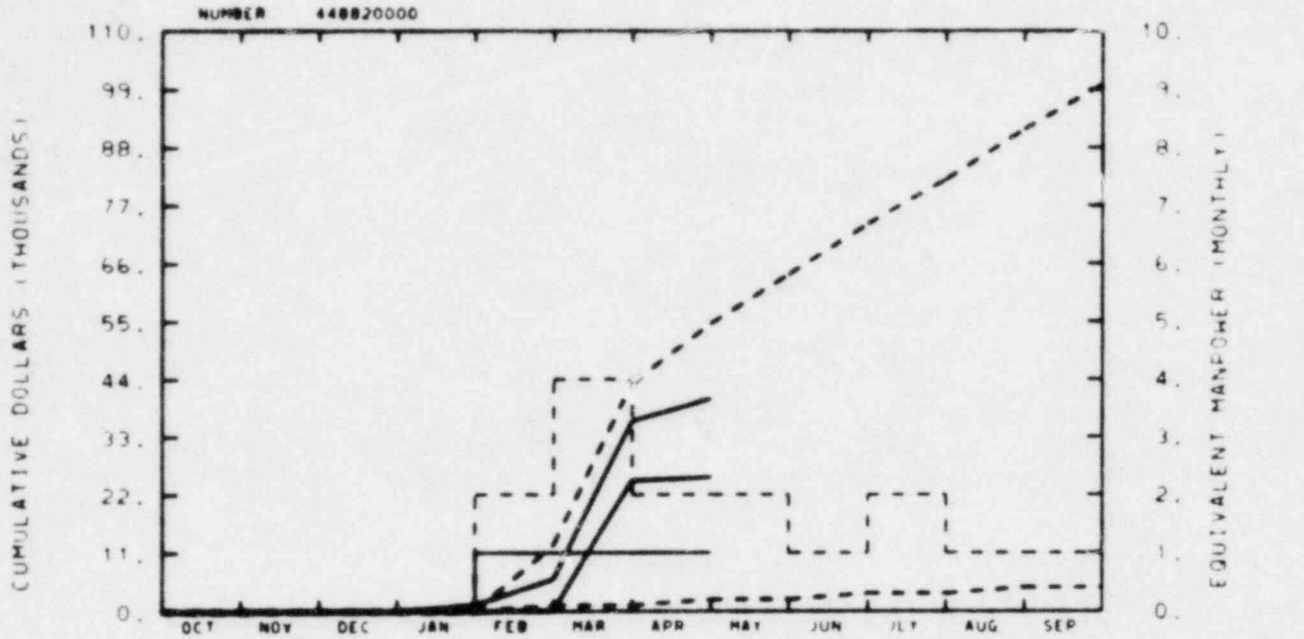
Eight initial drafts are behind schedule because licensee responses to questions have not been received. Three revised drafts are behind schedule because NRC comments have not been received. Seven final drafts are behind schedule because licensee comments have not been received. Six revised or final drafts are overdue because licensee responses to questions for the initial drafts have not been received.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

ENG'G SUPP/PIPING SYS II A6426

NUMBER 448820000



TOTAL PROGRAM

BUDGET	0	0	0	0	12	43	55	64	74	82	92	100
ACTUAL	0	0	0	1	6	36	40					

MATERIAL

BUDGET	0	0	0	0	1	1	2	2	3	3	5	5
ACTUAL	0	0	0	0	0	25	25					

MANPOWER

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

BUDGET

ACTUAL

A6426

YTD VARIANCE: 15 (27%)

Scheduled vacation by the EG&G Project Engineer in charge of this task was the primary reason for the underexpenditure. It is anticipated that the budget and actuals will agree by the end of June.

189a A6426

1. 189a A6426 - Seismic Evaluation/Piping Systems for Systematic Evaluation Program (SEP)

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

A Senior Seismic Review Team (SSRT) meeting to discuss the Millstone analyses was attended. A meeting with the NRC, Consumer's Power Company, (CPCo) and Bechtel representatives was attended to participate in discussions concerning the Palisades analyses (done under A6250). The Millstone piping report was completed and sent to printing; transmittal to the NRC will occur in April.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

The NRC has requested additional analyses of some of the Palisades piping. This effort is a result of the meeting with CPCo and Bechtel described above. The purpose of the additional analysis is to incorporate new information and to explore differences in results. The NRC has also requested analyses for two piping systems from the R. E. Ginna plant. The above efforts will be assessed for schedule impact and work started after schedules are agreed upon.

6. Problems and Potential Problems

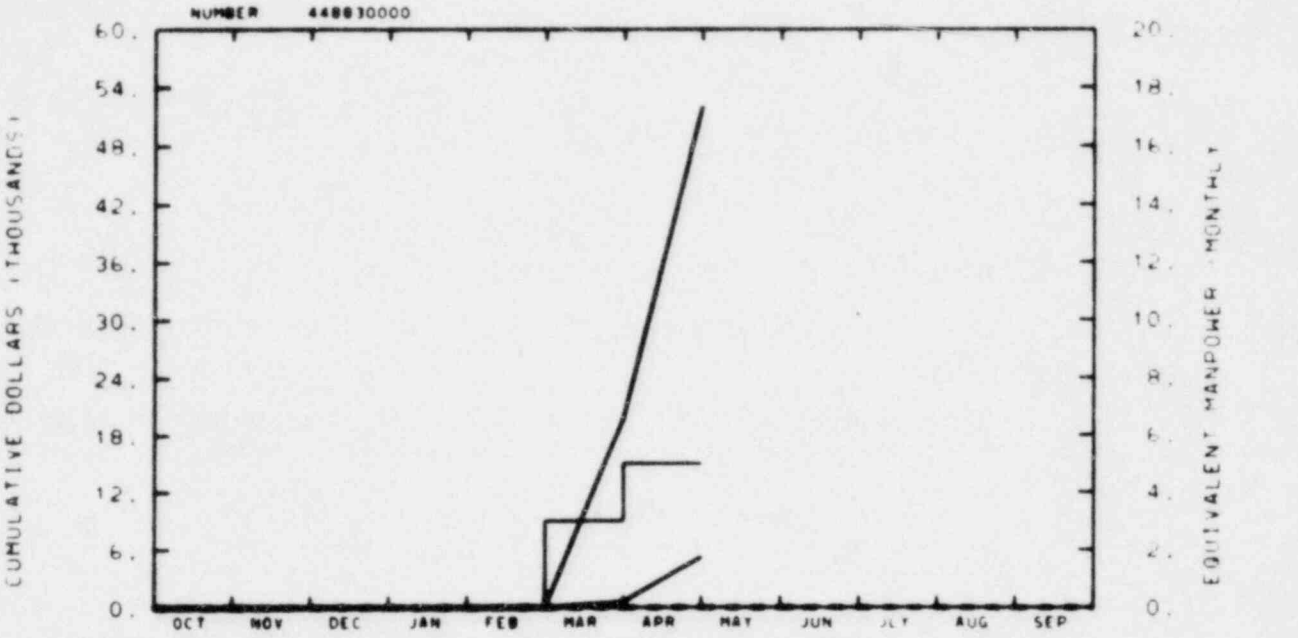
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

TMI LESSONS LEARNED A6427

NUMBER 4488 30000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	20	52					

MATERIAL

BUDGET	0	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	1	5					

MANPOWER

BUDGET	0	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	1	5					

A6427

YTD VARIANCE: <52>

$250 K of an anticipated $485 K has been received to date. Budget will be input during May.

1. 189a A6427 - Operating Reactors - Three Mile Island (TMI) Lessons Learned NUREG-0737 Response Evaluation (Program II)

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

a. Plant Shielding (Topic II.B.2): Technical support items provided to date include:

(1) Results of calculations examining expected dose rates from primary coolant samples following a major release.

(2) Results of calculations examining relative dose rate contributions from the noble gases, the halogens, and the cesium isotopes.

(3) A summary of the information required to allow an independent review of plant shielding modifications.

Work was begun to examine the relative importance of radionuclides contributing to expected dose rates following a major release.

A plant-familiarization visit was made to the Prairie Island facility.

b. Pump Seal Damage (Topic II.K.2.16): A letter, (Saff-85-81) was written to obtain answers to questions formulated during the engineering review. The answers have been received for 2 plants, leaving questions for the remaining four plants and the manufacturer, Babcock and Wilcox (B&W), outstanding.

c. Common Reference Level (Topic II.K.3.27): Reviewed NUREG-0730, "Clarification of TMI Action Plan Requirements," dated November 1980, and "BWR Owners' Group Evaluation of NUREG-0737 II.K.3.37 Common Water Level Reference," dated December 29, 1980. Reviewed the licensee responses forwarded by NRC on April 15, 1981.

d. Manual Depressurization and Small Break LOCA Methods (Topics II.K.3.30 and II.K.3.45): No work was performed in April due to lack of licensee responses to NUREG-0737, items II.K.3.30 and II.K.3.45.

3. Summary of Work Performed in April 1981 (continued)

e. Restart of Core Spray (Topic II.K.3.21): The initial review of the Oyster Creek submittal was started. La Crosse has not provided a submittal to date.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

a. Plant Shielding (Topic II.B.2): Begin assessing available licensee submittals for completeness.

b. Pump Seal Damage (Topic II.K.2.16): Answers to the letter Saff-85-81 will be reviewed as received.

c. Common Reference Level (Topic II.K.3.27): In response to a letter from NRC, dated April 15, 1981, and its enclosed April 6, 1981 letter from NRC to BWR Owners Group, we will continue to review the licensee responses, plus the additional data requested to be submitted by the end of May.

d. Manual Depressurization and Small Break LOCA Methods (Topics II.K.3.30 and II.K.3.45): Work will be initiated on Topic II.K.3.45 based on the transmittal received from NRC on April 27, 1981.

e. Restart of Core Spray (Topic II.K.3.21): Review of the Oyster Creek submittal will be completed. A draft report will be prepared for an inhouse review.

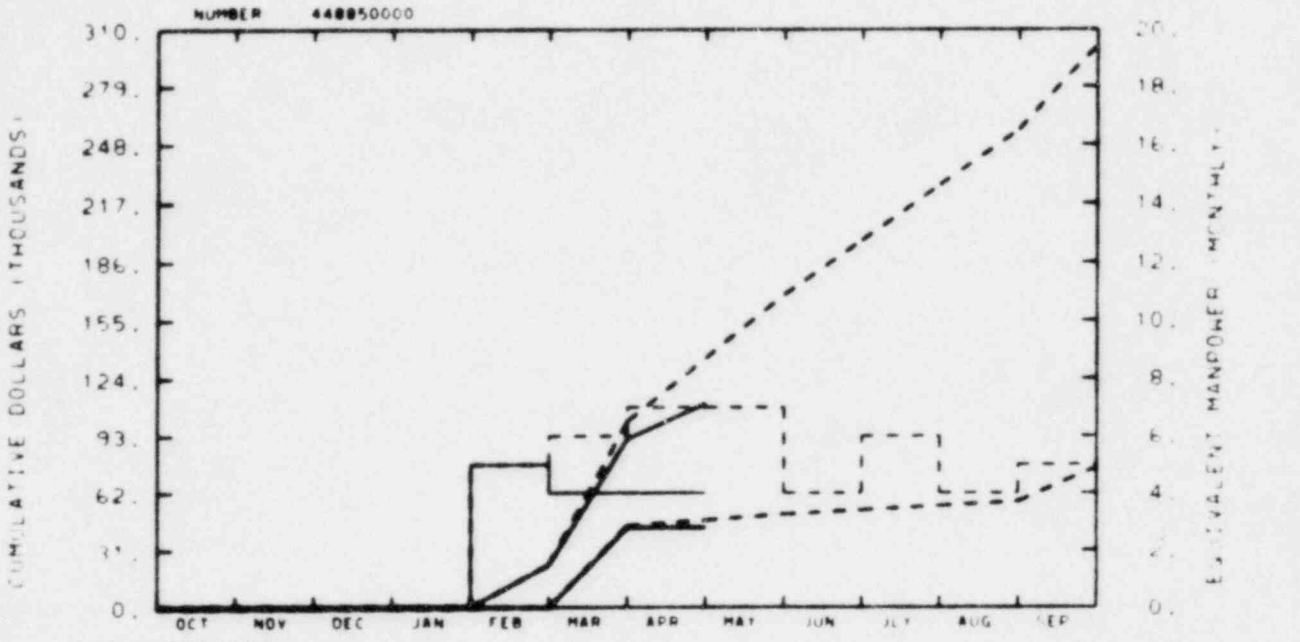
6. Problems and Potential Problems

None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

SELECT ISS I&C & RS II A6429



TOTAL PROGRAM

BUDGET	0	0	0	0	23	101	135	169	198	227	256	301
ACTUAL	0	0	0	0	23	91	110					

MATERIAL

BUDGET	0	0	0	0	0	44	47	50	53	55	57	76
ACTUAL	0	0	0	0	0	43	43					

MANPOWER

BUDGET	0	0	0	0	5	6	[illegible]		4	6	4	[illegible]
ACTUAL	0	0	0	0	5	4	4					

A6429

YTD VARIANCE: 25 (19%)

The underrun in this 189a is due to the lack of manpower (technical output is ahead of schedule). Rebudgeting is required to be done during May.

189a A6429

1. 189a A6429 - Selected Operating Reactors Issues

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

The following were completed:

Project 1: (Degraded Grid A)
TER - Big Rock Point, TAC 10008, Cost = $7,964.
TMI-1, TAC 10055, Cost = $7,157.

Project 2: (Distribution Voltages)
TER - Hatch Unit 1, TAC 12831, Cost = $6,154.
Hatch Unit 2, TAC 12832, Cost = $6,154.
Preliminary TER - Palisades, TAC 12780.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

Work will continue on plant reviews.

6. Problems and Potential Problems

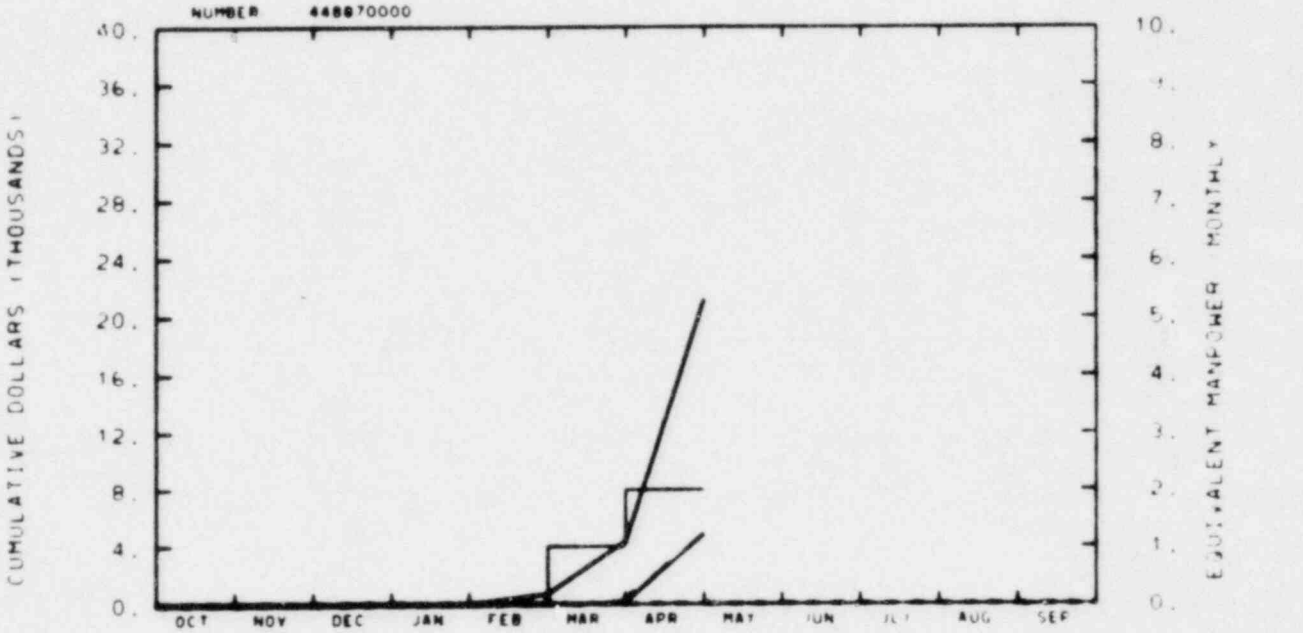
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

ASYM LOCA LOADS A6431

NUMBER 4488?0000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	1	4	21					

MATERIAL

BUDGET	0	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	0	5					

MANPOWER

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

A6431

YTD VARIANCE: <21>

The budget of $30 K will be input during May.

1. 189a A6431 - General Pressurized Water Reactor (PWR) Safety Evaluation Report (SER) for Asymmetric LOCA Loads

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

EG&G technical personnel attended two meetings i. Bethesda. The first meeting with the NRC, B&W and utility representatives was held on April 2 and 3, 1981. The second meeting on April 15, 1981 was with the NRC, Combustion Engineering (CE) and utility representatives. Both meetings emphasized the oral responses to questions asked on owners group submittals. Prior and follow-up work was done for each meeting.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

No work is scheduled for May.

6. Problems and Potential Problems

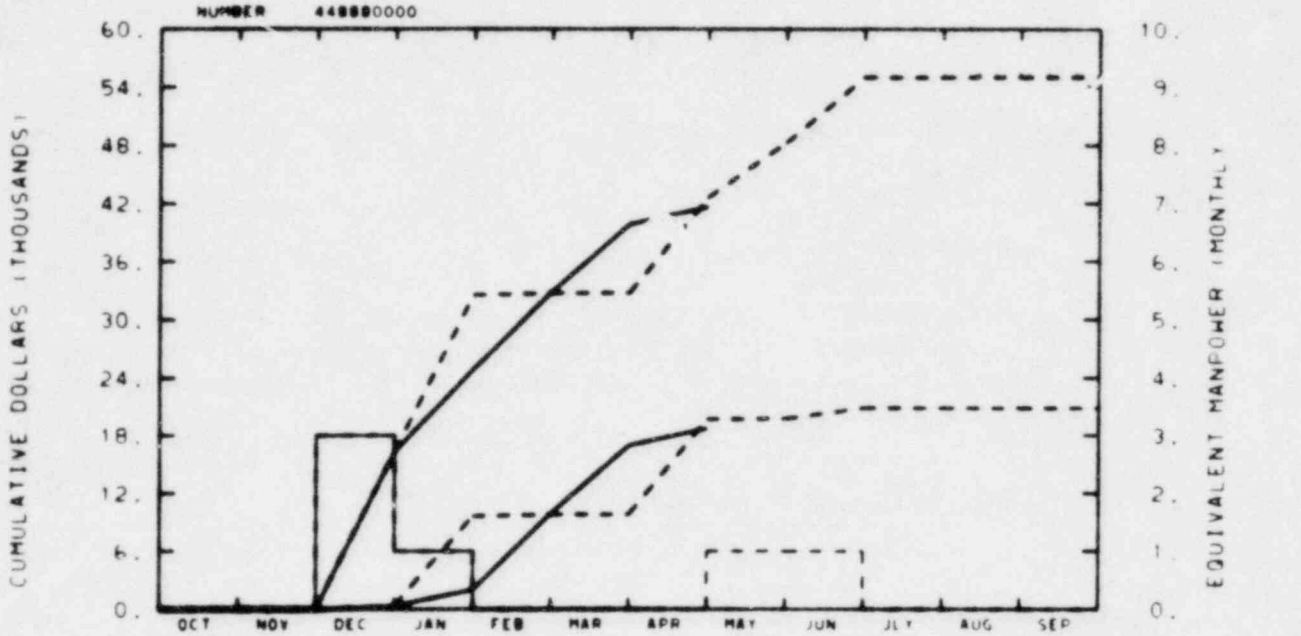
None.

RESPONSIBLE
MANAGER
B F SAFFELL

EG&G IDAHO INC.

COMP INTEGRITY EVALUATION A6432

NUMBER 44888888888



TOTAL PROGRAM

BUDGET	0	0	16	33	33	33	43	48	55	55	55	55
ACTUAL	0	0	16	25	33	40	42					

MATERIAL

BUDGET	0	0	0	10	10	10	20	20	21	21	21	21
ACTUAL	0	0	0	2	10	17	19					

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

A6432

YTD VARIANCE: 1 (2%)

189a A6432

1. 189a A6432 - Component Integrity Evaluation Program

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

Subcontractor Dr. P. Paris has not completed the revisions to his first draft report based upon the review comments supplied to him by the NRC. EG&G technical personnel will commence work on this project upon receipt of input from Dr. P. Paris.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

If input from subcontractor Dr. P. Paris is received, work by EG&G technical personnel will commence.

6. Problems and Potential Problems

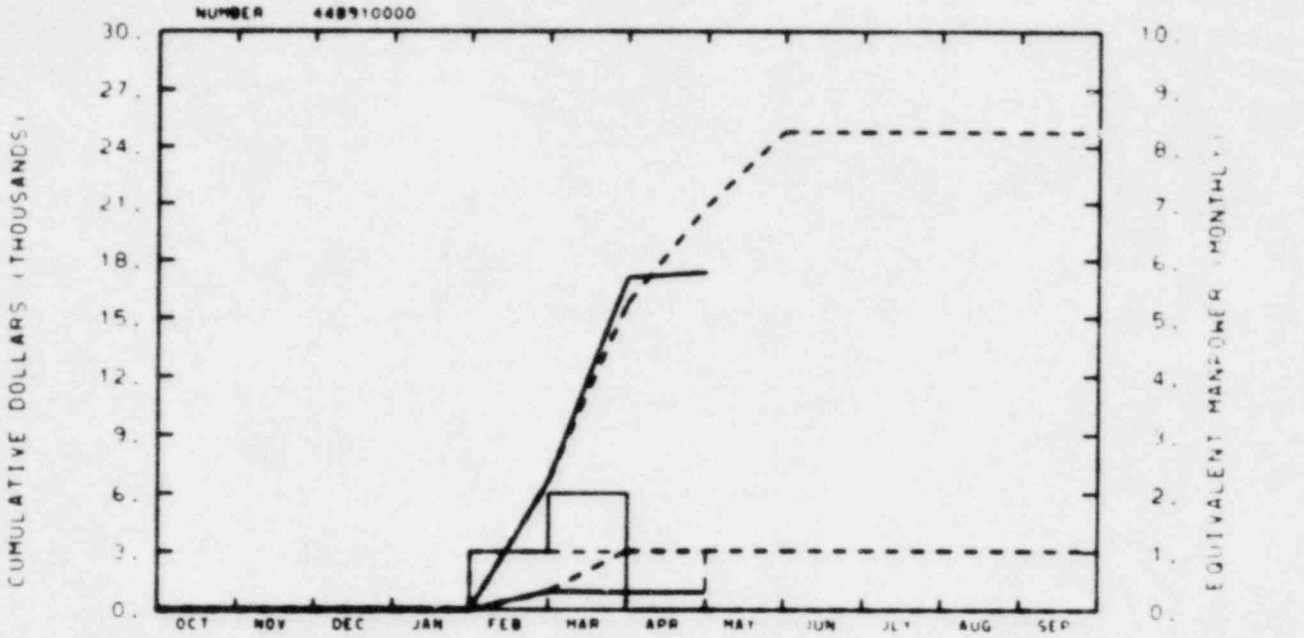
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

PUMP & VALVE OPER A6434

NUMBER 448910000



TOTAL PROGRAM

BUDGET	0	0	0	0	7	16	21	25	25	25	25	25
ACTUAL	0	0	0	0	7	17	17					

MATERIAL

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

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

A6434

YTD VARIANCE: 4 (19%)

1. 189a A6434 - Review of Pump and Valve Operability Assurance Programs

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

No effort was expended on this task due to incomplete review information.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

A meeting will be held in Bethesda to discuss program status and obtain additional information necessary to complete the reviews.

6. Problems and Potential Problems

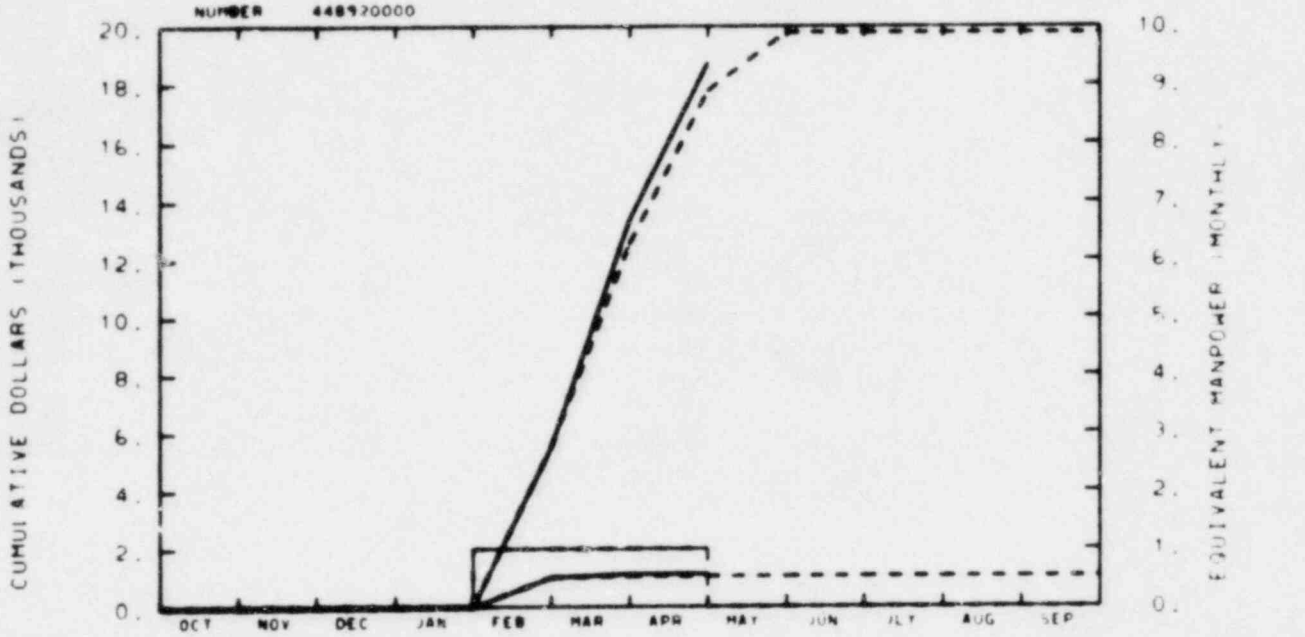
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

SAFETY REL PUMP & VALVE II A6435

NUMBER 448920000



TOTAL PROGRAM

BUDGET	0	0	0	0	5	13	18	20	20	20	20	20
ACTUAL	0	0	0	0	5	13	19					

MATERIAL

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

MANPOWER

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

A6435

YTD VARIANCE: <1> (6%)

The initial $20 K incremental funding is 95 percent expended. An additional $50 K is expected.

1. 189a A6435 - Safety Related Pump and Valve Reliability and Operability

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

A preliminary draft of a report documenting the review of the American Nationals Standard Institute/American Society of Mechanical Engineers (ANSI/ASME) Specification Standard N278.1-1975 was sent to the NRC Technical Monitor for review and comment.

Work was begun on drafting a report documenting the review of proposed ANSI/ASME Specification Standard N551.1 (May 1980).

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

A report documenting the review of N278.1-1975 will be issued pending receipt of review comments from the NRC technical monitor.

A rough draft of a report documenting the review of ANSI/ASME N511.1 (May 1980) is expected to be completed.

The review of other ANSI/ASME specification standards will be continued in similar fashion.

6. Problems and Potential Problems

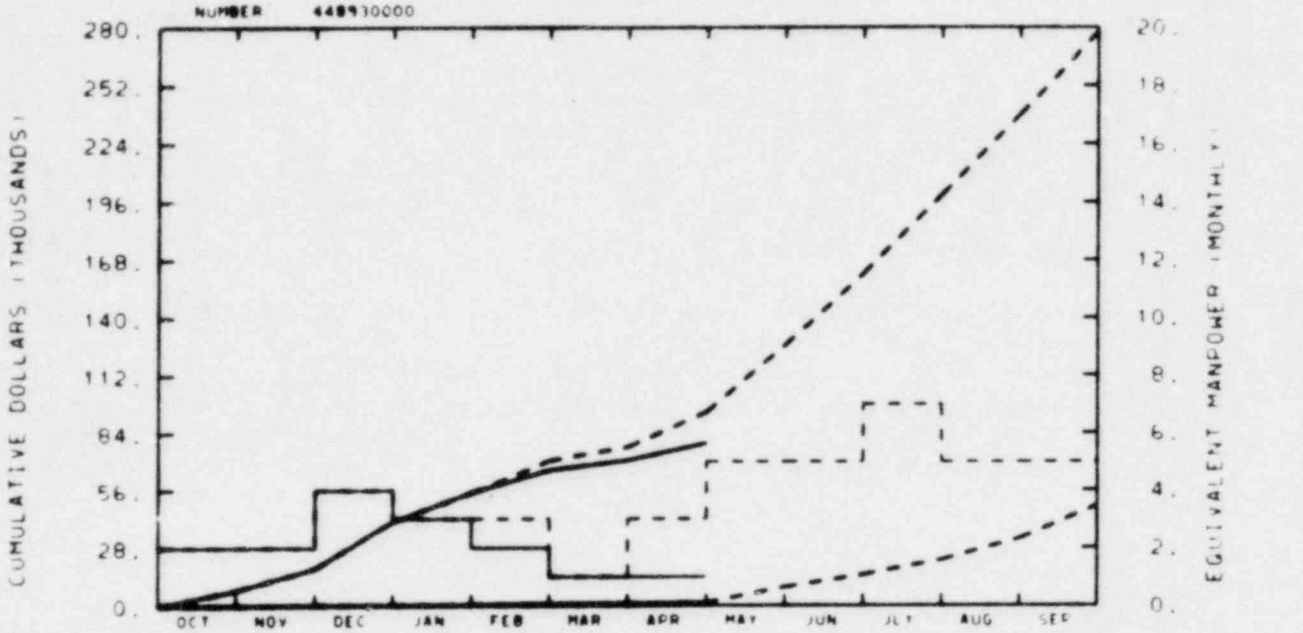
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

RELOADS GUIDELINES OR EVAL A6436

NUMBER 448930000



TOTAL PROGRAM

BUDGET	8	18	41	54	70	77	94	127	161	200	238	278
ACTUAL	8	18	41	55	66	71	79					

MATERIAL

BUDGET	0	0	0	1	1	1	2	9	15	22	32	49
ACTUAL	0	0	0	1	1	1	2					

MANPOWER

BUDGET	2	2	4	1	3	1	3	5	5	7	5	5
ACTUAL	2	2	4	1	2	1	1					

A6436

YTD VARIANCE: 15 (16%)

Less manpower than originally anticipated has been assigned to this task due to a six week delay in the receipt of required geometrical input information for North Anna. This delay will result in a six week slip in the completion of the task.

189a A6436

1. 189a A6436 - Steam Generator Transients & Operating Reactors (OR) Evaluations for Reactor Systems Branch (RSB)

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

The input specification table for developing computer models of specific plants was transmitted to the NRC.

Review of Westinghouse steam generator transient analysis continued.

No effort was expended on Task 4 due to lack of review material from NRC.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

Review of the MARVEL computer code and additional sections of the North Anna II FSAR will be performed.

The NRC has indicated that North Anna II input data will not be available until July 1, 1981. This delay in the receipt of required input data from May 18, 1981 will result in a one-to-one slippage in the task completion date.

Effort on Task 4 will be dependent on receipt of review materials.

6. Problems and Potential Problems

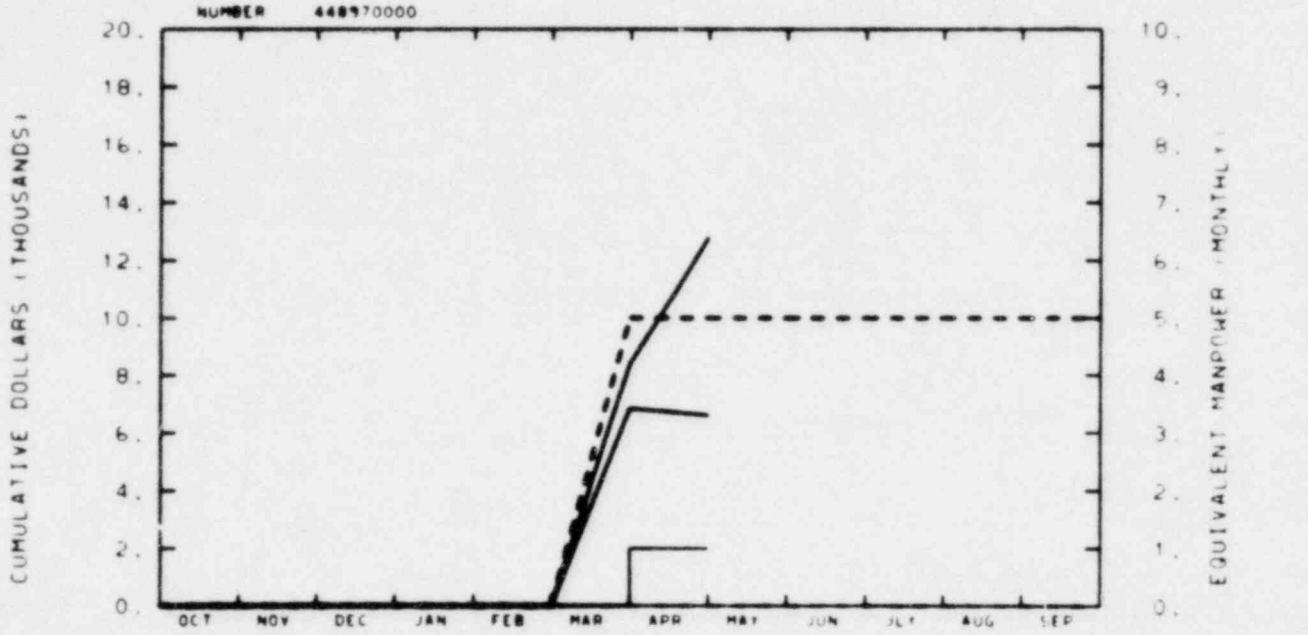
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

FUEL MECH RES EVAL A6440

NUMBER 448970000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	10	10	10	10	10	10	10
ACTUAL	0	0	0	0	0	8	13					

MATERIAL

BUDGET	0	0	0	0	0	10	10	10	10	10	10	10
ACTUAL	0	0	0	0	0	7	7					

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6440

YTD VARIANCE: <3> (30%)

An additional $54 K ($64 K total) was received in April. This will be entered into the budget during May.

189a A6440

1. 189a A6440 - Fuel Assembly Seismic and LOCA Response

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

Work was continued on the axial audit analysis of San Onofre Units 2 and 3 fuel.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

It is expected that the axial audit analysis of San Onofre Units 2 and 3 fuel will be completed and a technical report on the audit analysis issued.

6. Problems and Potential Problems

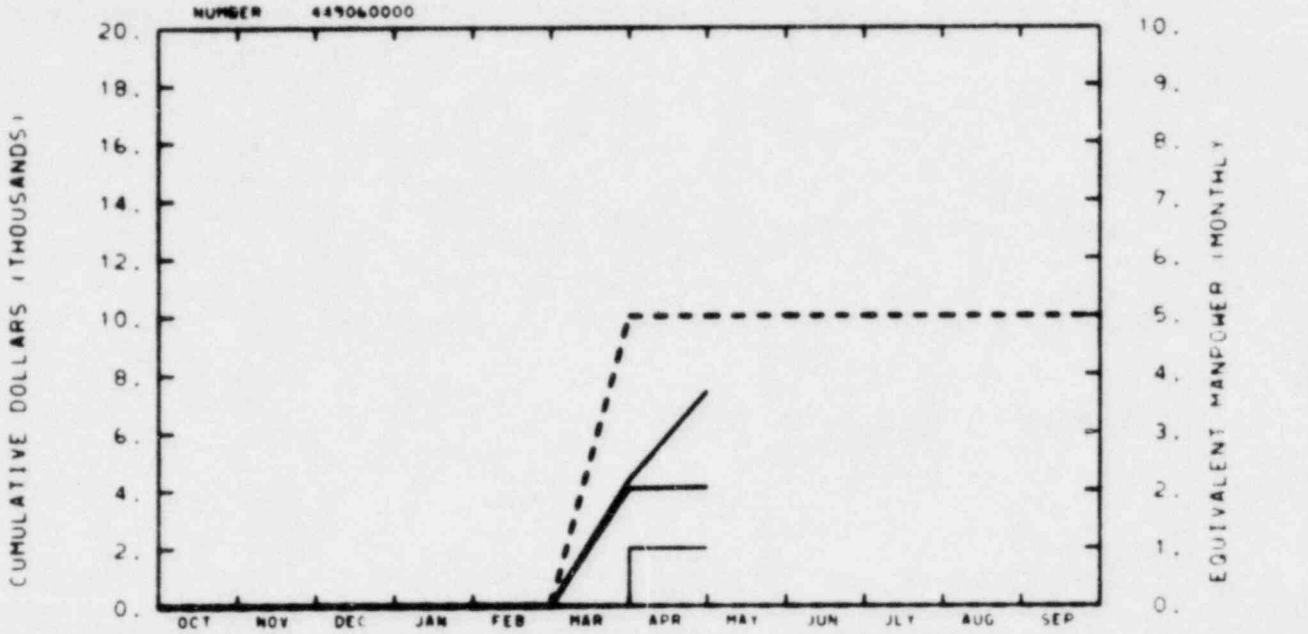
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

FUEL MECH EVAL OP RE A6448

NUMBER 449060000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	10	10	10	10	10	10	10
ACTUAL	0	0	0	0	0	4	7					

MATERIAL

BUDGET	0	0	0	0	0	10	10	10	10	10	10	10
ACTUAL	0	0	0	0	0	4	4					

MANPOWER

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

A6448

YTD VARIANCE: 3 (30%)

1. 189a A6448 - Fuel Mechanical Response Evaluation for Operating Reactors

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

There was no activity on this task during the month; EG&G technical personnel are awaiting NRC and/or vendor submittals.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

The level of effort will depend on NRC and/or vendor input; work will commence when the input data is supplied.

6. Problems and Potential Problems

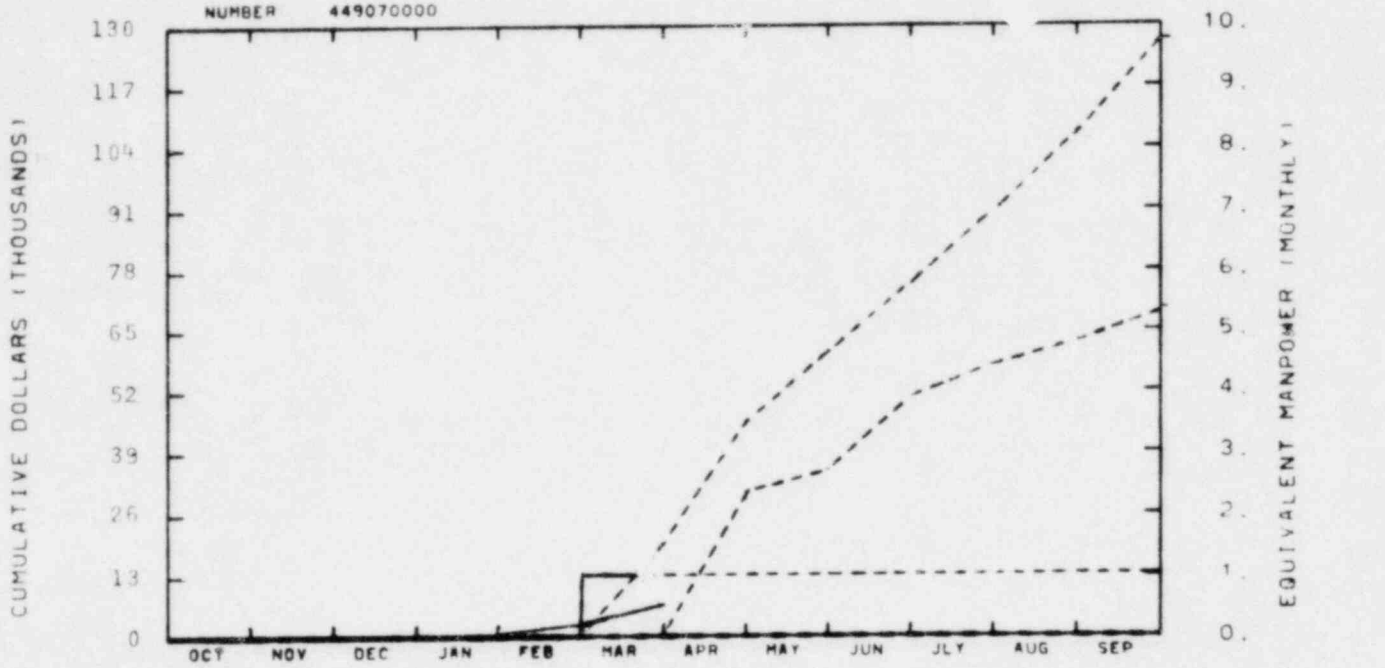
None.

[redacted]NSIBLE
[redacted]ER
[redacted] SAFFELL

EG&G IDAHO INC.

PIPE CRACK STUDY II A6449

NUMBER 449070000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	20	45	60	75	91	107	125
ACTUAL	0	0	0	0	1	5	12					

MATERIAL

BUDGET	0	0	0	0	0	0	30	35	51	59	62	71
ACTUAL	0	0	0	0	0	0	1					

MANPOWER

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

BUDGET

ACTUAL

A6449

YTD VARIANCE: 33 (73%)

The underexpenditure will be compensated for when the subcontract is issued and additional manpower is assigned to this task. We have received to date only $30 K of the expected $125 K. Subcontract cannot be issued until the additional funding is received.

1 189a A6449 - Pipe Crack Study Group Analysis

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

Investigations continued to determine an appropriate numerical method for evaluation of the J-integral for the fracture mechanics of piping geometries.

Parametric studies were also begun to determine the refinement of finite element meshes necessary for accurate J-integral evaluations.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

Implementation of the J-integral evaluation will begin using the ADINA computer code.

6. Problems and Potential Problems

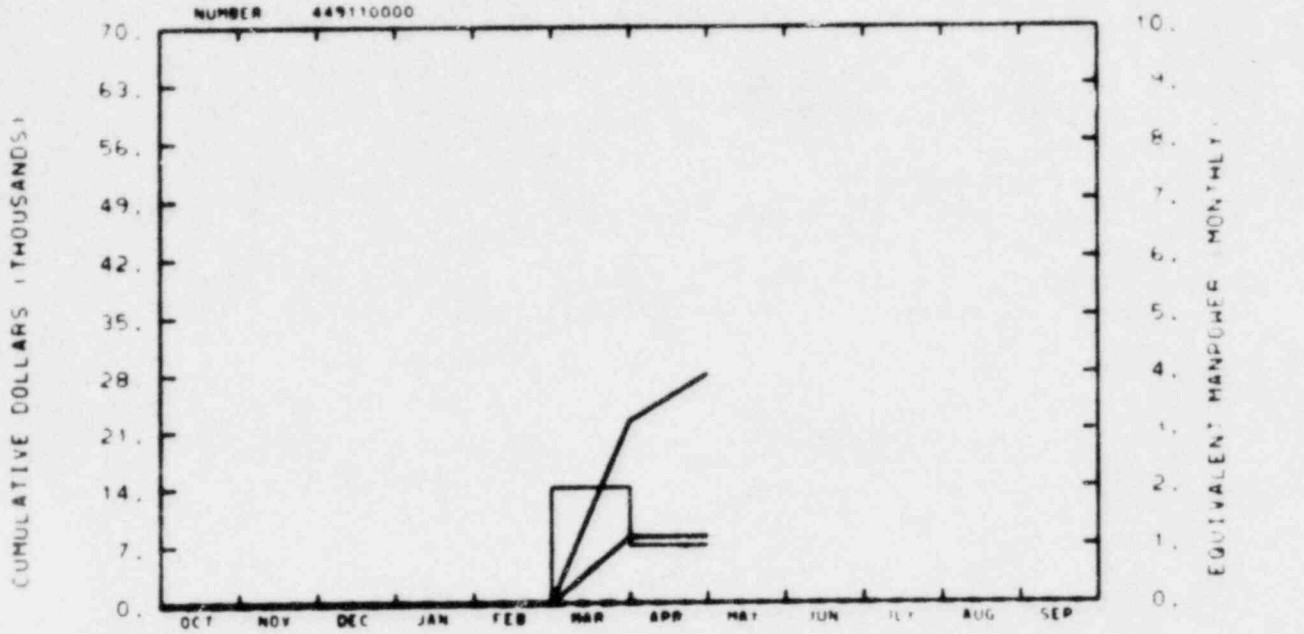
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

EQUIP QUAL CASE REVIEWS A6453

NUMBER 449110000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	0	0	0	0	0	0
ACTUAL	0	0	0	0	0	22	28					

MATERIAL

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

MANPOWER

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

A6453

YTD VARIANCE: <28>

Budget will be input as soon as work scope is established.

189a A6453

1. 189a A6453 - Equipment Qualification (EQ) Case Reviews

2. Scheduled Milestones for April 1981

None.

3. Summary of Work Performed in April 1981

The equipment qualification submittal for San Onofre Units 2 and 3 was received from the NRC. Review was completed by personnel assigned to task.

4. Scheduled Milestones for May 1981

None.

5. Summary of Work to be Performed in May 1981

All three EG&G personnel assigned to project will participate in the site audit of San Onofre Units 2 and 3 equipment qualification. A revised program letter for this work is expected from NRC during May.

6. Problems and Potential Problems

None.

MONTHLY REPORT FOR

APRIL 1981

GPP AND LINE ITEMS

T. L. Rasmussen, Manager
Project Management Division

C. G. Bruch, Construction Program Manager
Planning & Budgets Division

EG&G IDAHO, INC.

GPP ITEM

PROGRAM WATER REACTOR RESEARCH TEST FACILITIES DIVISION

FY-1981

($000)

MANAGER P. North

189a No. A6038

EA No.	Item Description	Original PA Amount	Current Est. Cost	Project To Date Costs
93520	WRRTF Water Well Upgrade	125	125	EG&G $7.0

Task Initiated o
Task Completed Δ

7-02