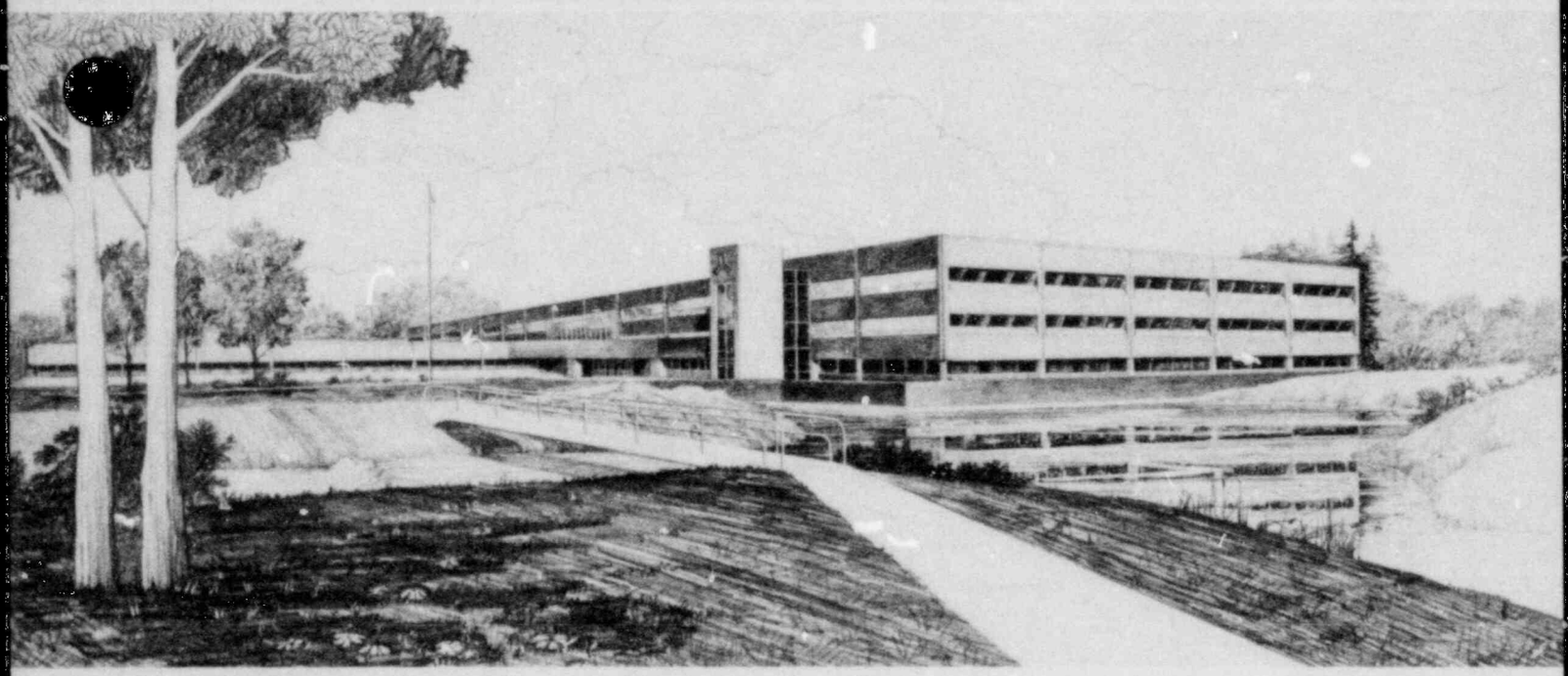
EGG-WRR-5453
May 1981

POR

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

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



Prepared for the
U.S. Nuclear Regulatory Commission
Under DOE Contract No. DE-AC07-76ID01570

EG&G Idaho

ACRONYMS

A/E	Architect Engineer
ACRS	Advisory Committee on Reactor Safety
AECL	Atomic Energy of Canada Limited
AMB	Applied Mechanics Branch
ANL	Argonne National Laboratory
ANS	American Nuclear Society
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ATWS	Anticipated Transient Without Scram
B&W	Babcock and Wilcox
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
CDC	Control Data Corporation
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
EM	Energy Measurements
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
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
HPIS	High Pressure Injection System
HSST	Heavy Section Steel Technology
I&C	Instrumentation and Controls
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
ISI	In-Service Inspection
ISP	International Standard Problem
IST	In-Service Testing
JAERI	Japan Atomic Energy Research Institute
KfK	Kernforschungszentrum Karlsruhe
LANSL	Los Alamos National Scientific Laboratory
LER	Licensee Event Report
LLD	Liquid Level Detection
LLL	Lawrence Livermore Laboratory
LOC	Loss-of-Coolant
LOCA	Loss-of-Coolant Accident
LOFT	Loss-of-Fluid Test
LPIS	Low Pressure Injection System
LTSF	LOFT Test Support Facility
LVDT	Linear Variable Differential Transformer
LWR	Light Water Reactor
MFD	Master Facility Drawing
MIT	Massachusetts Institute of Technology
MSLB	Main Steam Line Break

NESC	National Energy Software Center
NPRDS	Nuclear Plant Reliability Data System
NPSH	Net Positive Suction Head
NRL	Naval Radiation Laboratory
NRR	Nuclear Reactor Regulation
NSRDC	Naval Ship Research and Development Center
NSSS	Nuclear Steam Supply System
NTOL	Near-Term Operating License
OPTRAN	Operational Transient
OR	Operating Reactor
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
PCP	Primary Coolant Pump
PCS	Primary Cooling System
PIE	Postirradiation Examination
PKL	Primary Coolant Loop
PM	Preventive Maintenance
PMG	Program Management Group
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
RCG	Radioactivity Concentration Guide
RES	Office of Nuclear Regulatory Research
RFQ	Request for Quotes
RIA	Reactivity Initiated Accident
RIL	Research Information Letter
ROSA	Rig of Safety Assessment
RPG	Radiation Protection Guide
RSB	Reactor Systems Branch
RSR	Reactor Safety Research
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
SRP	Standard Review Plan
SRV	Safety Relief Valve
SSE	Safe Shutdown Earthquake
SSRT	Senior Seismic Research Team
SSTF	Steam Sector Test Facility
STP	Standard Temperature and Pressure
SWR	Site Work Release
TAN	Test Area North
TC	Thermocouple
TDP	Technical Development Program
TER	Technical Evaluation Report
TFBP	Thermal Fuels Behavior Program
TFCF	Transient Flow Calibration Facility
THTF	Thermal Hydraulic Test Facility
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

MAY 1981

Paul North for.

J. A. Dearien, Manager

NRC Research and Technical Assistance Report

B. E. Williams

B. E. Williams
Planning & Budgets Branch

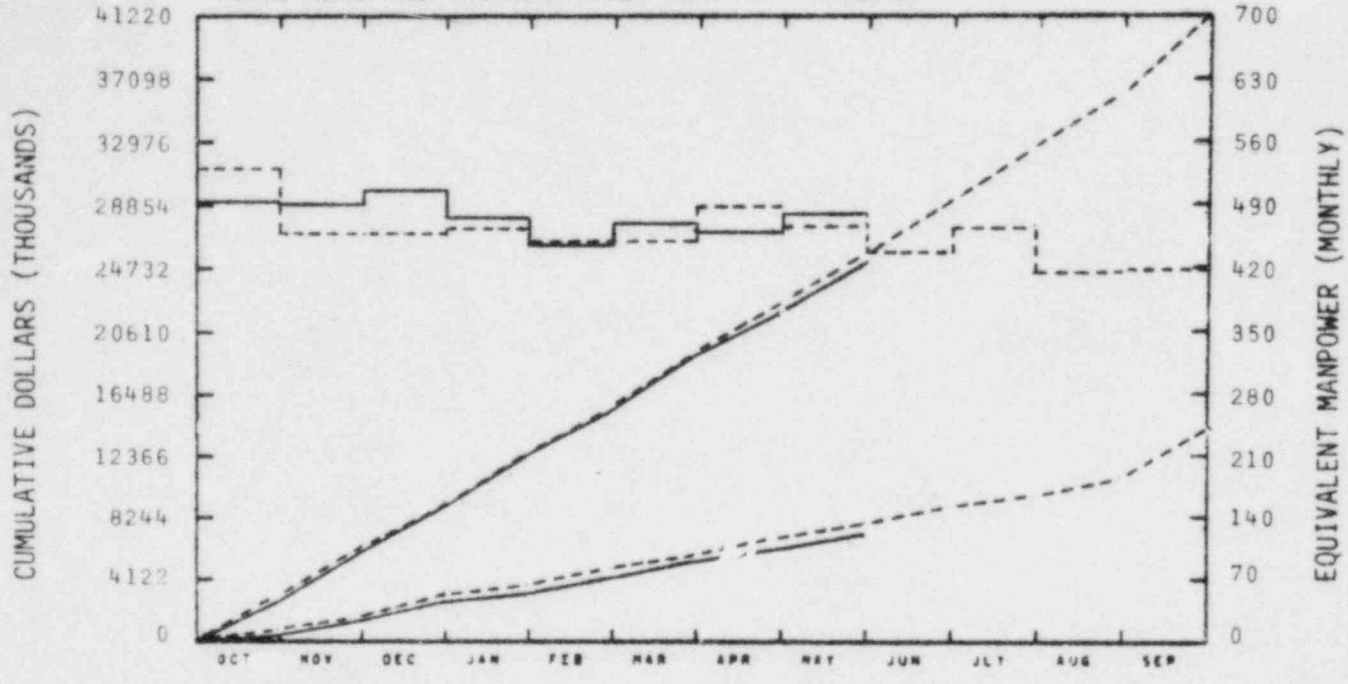
RESPONSIBLE

MANAGER

J A Dearien

EG&G IDAHO, INC.

TOTAL WRRD AND THERMAL FUELS BEHAVIOR PROGRAM



TOTAL PROGRAM

BUDGET	3000	6117	9624	12473	15524	19363	22733	25843	29466	32248	35671	41216
ACTUAL	2613	5997	9597	12432	15184	19286	22119	25367				

MATERIAL

BUDGET	853	1863	3136	3955	4907	6049	7052	7904	8972	9756	10746	14171
ACTUAL	623	1753	2846	3582	4214	5458	6123	7053				

BUDGET

ACTUAL

MANPOWER

BUDGET	532	457	457	464	453	453	490	468	436	467	415	418
ACTUAL	495	493	513	475	451	469	462	480				

YTD VARIANCE: 476 (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.

NRC Research and Technical
Assistance Report

MONTHLY REPORT FOR

MAY 1981

WATER REACTOR RESEARCH TEST FACILITIES DIVISION

Paul North

P. North, Manager

John P. Crouch

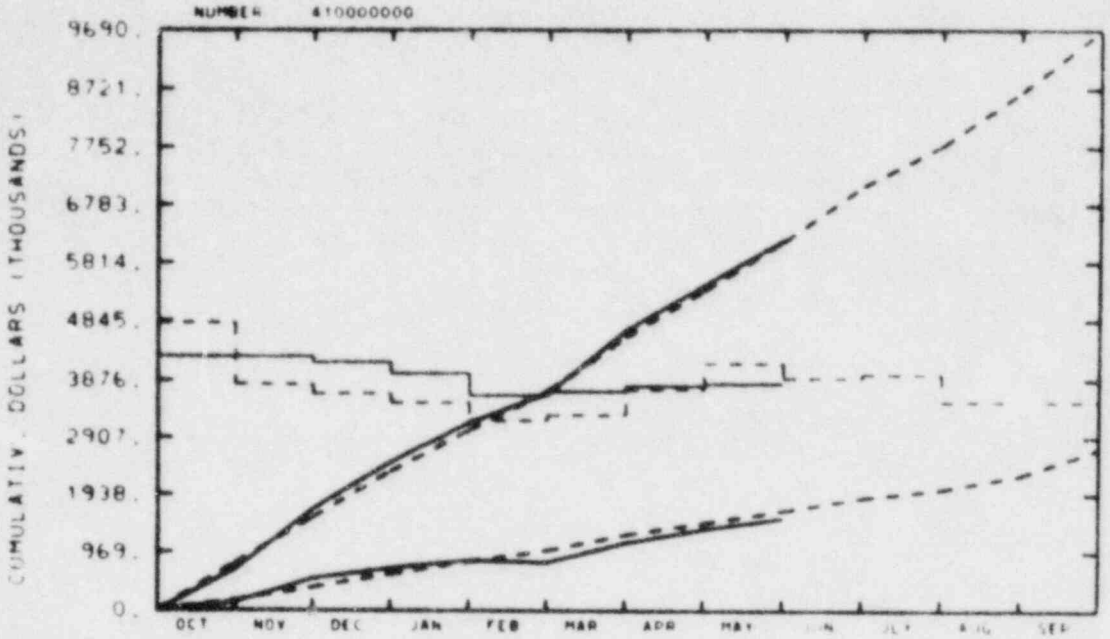
J. P. Crouch
Planning & Budgets Representative

RESPONSIBLE MANAGER
P. NORTH

EG&G IDAHO INC.

WATER REACTOR RESEARCH TEST FA

NUMBER 410000000



CUMULATIV. DOLLARS (THOUSANDS)

TOTAL PROGRAM

BUDGET	786	1550	2342	3038	3698	4588	5351	6176	7108	7785	8676	9687
ACTUAL	677	1570	2498	3172	3665	4697	5446	6202				

MATERIAL

BUDGET	175	185	609	814	1000	1266	1462	1662	1883	2029	2267	2710
ACTUAL	136	431	707	839	802	1131	1356	1438				

MANPOWER

BUDGET	159	126	121	116	106	109	121	137	129	137	126	116
ACTUAL	141	141	138	132	120	122	125	126				

YTD VARIANCE: <26>

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

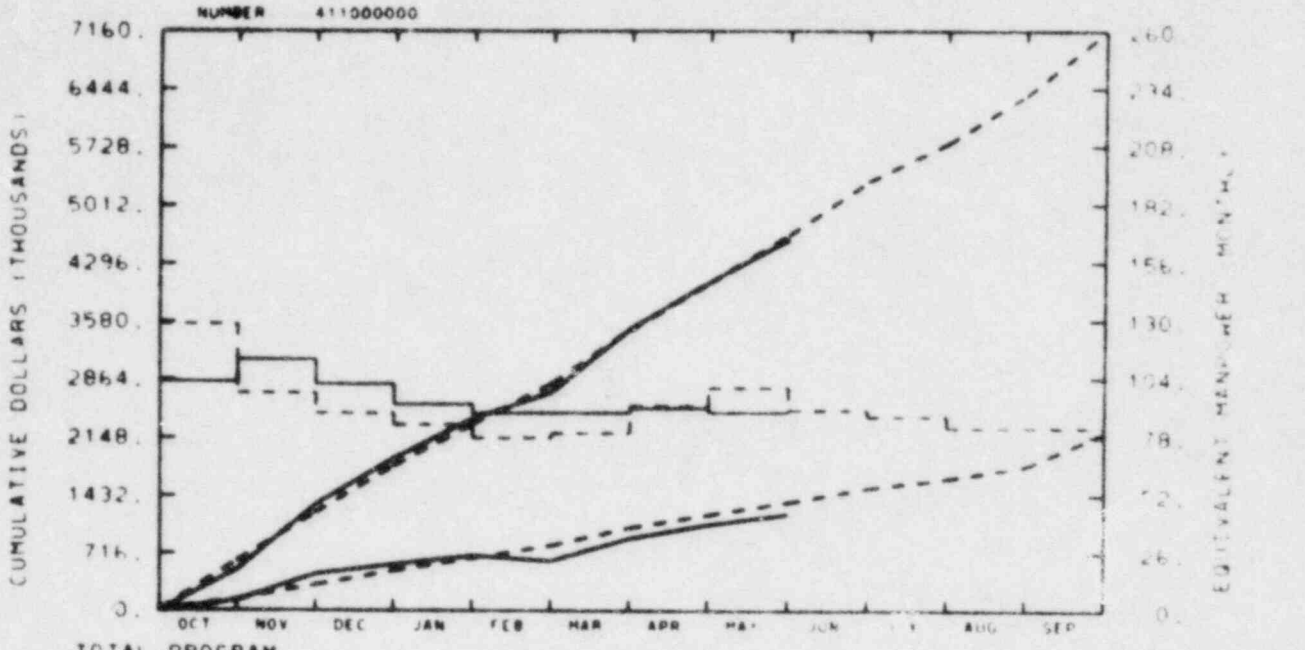
Semiscale modifications in support of the planned natural circulation experiments are proceeding ahead of schedule. The final EOS for the experiment series was released. Preparation of the blowdown loop for the Nine-Rod Bundle quench experiments is nearing completion and will support June testing.

RESPONSIBLE MANAGER
P. NORTH

EG&G IDAHO INC.

SEMISCALE

NUMBER 411000000



TOTAL PROGRAM

BUDGET	628	1226	1810	2318	2810	3478	4050	4645	5304	5768	636	7159
ACTUAL	514	1328	903	2384	2704	3490	4065	4586				

MATERIAL

BUDGET	145	324	499	660	815	1039	1199	1352	1524	1640	1796	2197
ACTUAL	128	459	579	690	625	905	1076	1204				

MANPOWER

BUDGET	124	98	89	84	78	80	92	100	95	87	81	82
ACTUAL	103	113	102	93	89	89	91	89				

BUDGET

ACTUAL

A6038

YTD VARIANCE: 59 (1%)

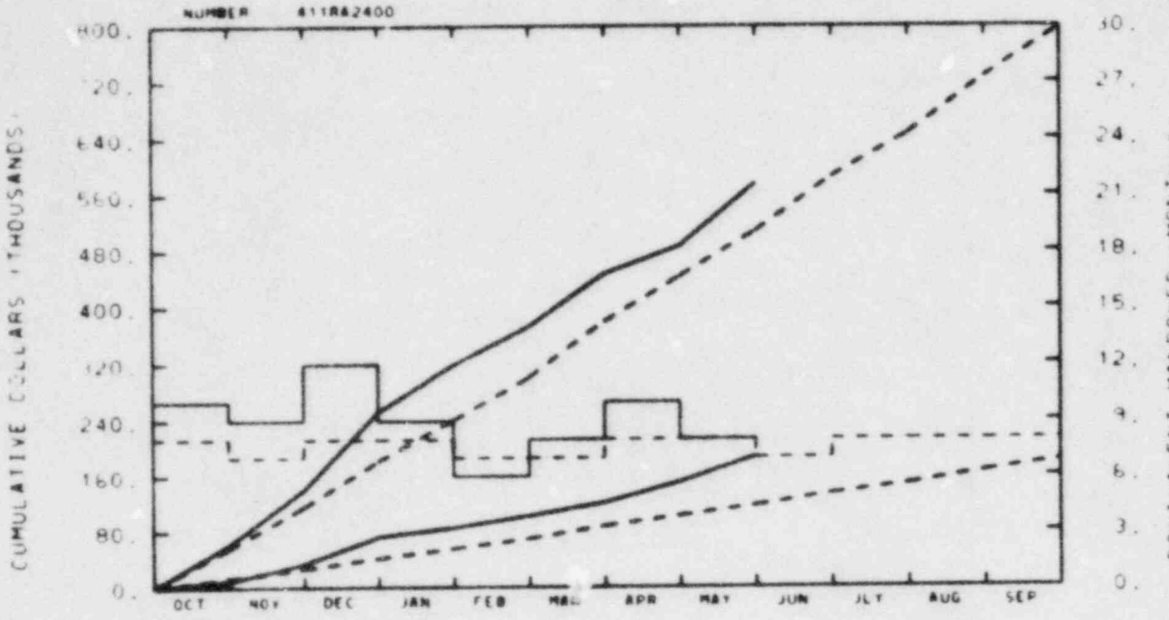
The year-to-date variance is due to outstanding commitment of $52 K. The change in total program budget spread from last month is due to CCB's SS 81-25 through SS 81-28 data being integrated into the budget.

RESPONSIBLE MANAGER
F. AGUILAR

EG&G IDAHO INC.

RELAP5

NUMBER 411RA2400



TOTAL PROGRAM

BUDGET	56	116	182	241	301	380	444	508	585	646	727	798
ACTUAL	62	141	253	319	373	448	487	576				

MATERIAL

BUDGET	13	27	42	56	70	88	102	117	134	148	166	182
ACTUAL	10	14	73	86	103	121	151	188				

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

A6038

YTD VARIANCE: <68> (13%)

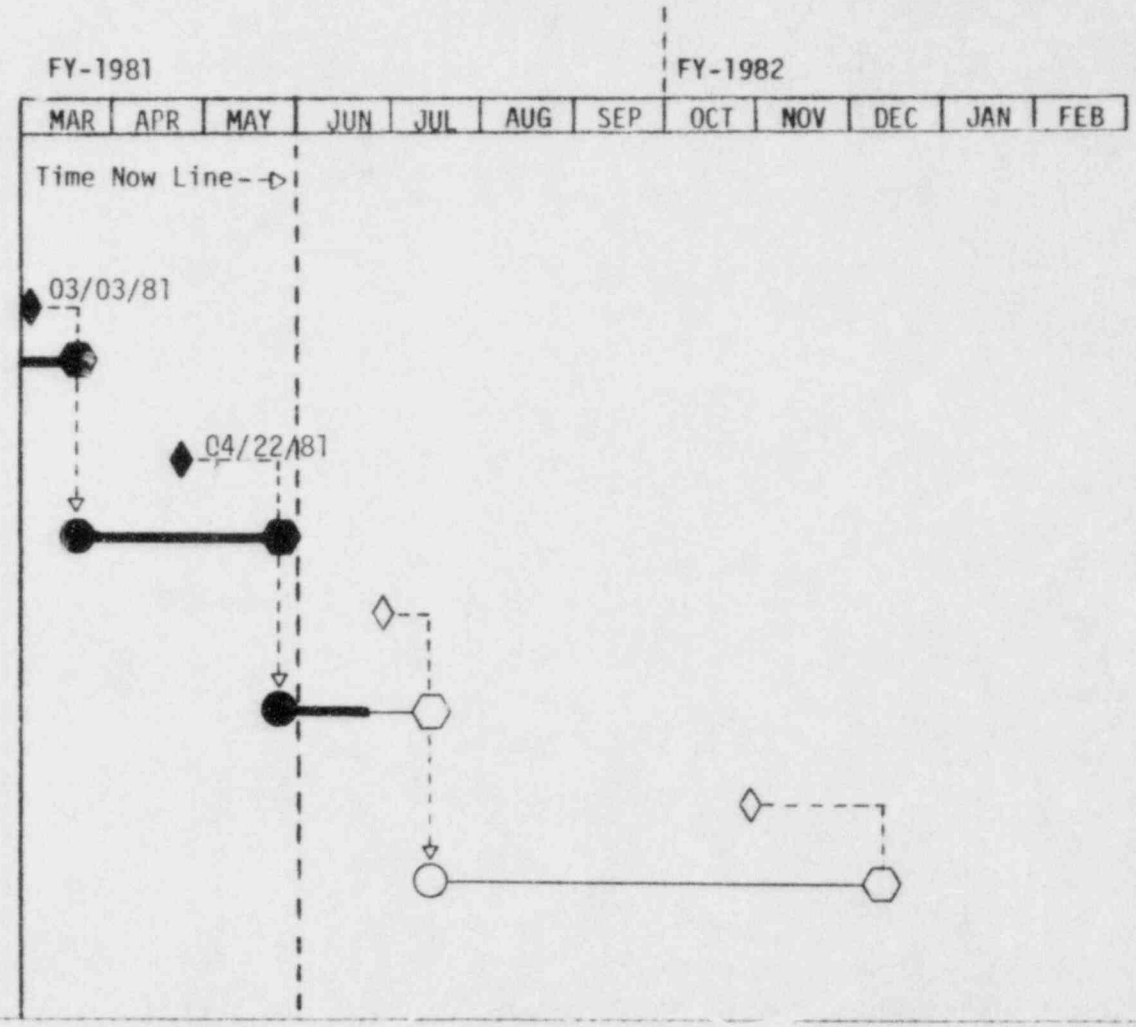
The variance is due to the NRC-sponsored workshop held in December. The workshop was originally to be paid by funds supplied by NRR. This did not come about; NRC authorized the use of RELAP5 development funds; and the RELAP5 work scope has been changed accordingly. Manpower will be diverted from RELAP5 during the last four months of the fiscal year. This action, combined with reduced labor charges because of summer vacations, will cause the program to close within budget.

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

WATER REACTOP RESEARCH TEST FACILITIES DIVISION May 1981

Semiscale Program (A6038)



NOTES:

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

2. Scheduled Milestones for May 1981

Node	Description	Due Date	Date Completed
N/A	Completion of S-UT-1 and S-UT-2 EDR	05-27-81	07-24-81

3. Summary of Work Performed in May 1981

A. 41DA00A

1. 41DA2100 - Measurement Engineering

The Bore Scope and support TV equipment has been received.

2. 9D0810400 - Pump Test

The pump test plan was issued.

The new intact loop pump was installed in the Semiscale broken loop. The test was started, but terminated when problems with the broken loop pump motor dc power supply developed. The problem has been diagnosed as electrical impedence mismatch. Planning is being prepared to temporarily wire the new intact loop pump power supply and use it to perform the pump test.

Began preparing a bid package for a spare high speed intact loop pump. The bid package will be completed next month.

3. 9D080500 - FLECHT Test and SAW Loop Upgrade

a. The FLECHT experiment testing is complete at this time.

B. 411HM00

1. 411HM1100 - Hardware Modifications

Completed as-built drawings of the small break condensing system.

Completed fabrication and installation of the intact loop pump bypass spool and the hot leg replacement spool.

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

Installed the intact loop steam generator pantlegs and adjusted the steam generator elevation to obtain the correct hot leg inclination.

Installation of the lower plenum drain system and reflux measuring system is approximately 50% complete, and will be finished next month.

Component Checkout (CC) and System Operational (SO) test procedures for the lower plenum and reflux systems have been written and will be issued in early June.

Heat tapes were installed on the intact loop piping and pantlegs and are presently being wired.

Heat tapes were installed on the vessel and final wiring completed.

Completed design of steam line orifices to obtain the low steam flows required for the natural circulation tests.

C. 411LE00 - Semiscale Operations

1. 411LE1100 Modifications for the natural circulation tests have involved the following:

a. Installation of the intact loop steam generator pantleg assembly and the intact loop piping with the pump bypass.

b. The upper head of the vessel was removed and the short cap assembly was installed in its place. Heat tape was installed on the vessel and on the new intact loop piping. Insulation is also being installed on the vessel and intact loop piping.

c. A steam quality test was conducted on the pressure suppression system.

Work on the reflux meter system is approximately 80% complete and the lower plenum drain system is approximately 70% complete.

The EDR for S-UT-1 and 2 is progressing on the new schedule and will include the uncertainty information for each plot.

Work was started on EDRs for Test S-UT-4, 5, 6 and 7.

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

2. A draft of the appendix for the Engineering Data Report (EDR) for Tests S-UT-1 and S-UT-2 detailing uncertainty values was completed.

3. The ORNL heated thermocouple liquid level system will not be installed for the natural circulation test series but will be returned to Oak Ridge National Laboratory (ORNL) to be modified for later installation into the upper head assembly.

4. 411LE2100 The quick look report (QLR) for Test S-UT-5 was transmitted April 29. The quick look report (EGG-SEMI-5446), for Test S-UT-6 was completed and transmitted to DOE on May 13, 1981. The QLR for Test S-UT-7 was transmitted May 14. Test S-UT-7 was the final test in the UT test series.

5. 411LE2300 The paper describing the LOFT and Semiscale pumps on/pumps off test results was forwarded to ANS.

6. 411LE2400 The natural circulation test series experiment operating specification was completed on May 27. Necessary information is already being used for the planning of test operation and instrumentation.

   Analysis personnel have provided much analytical support to the Operations and Design branches for activities in preparation of the Mod-2A system for the NC test series.

   Numerous short activities are in progress to analyze data from the UT test series. Several presentations on these results are being prepared.

   The draft of the installation and first test report on the Westinghouse reactor vessel liquid indicating system was completed and transmitted to NRC, DOE and Westinghouse for their review and comments. Posttest analysis of S-UT-6 and S-UT-7 Westinghouse data was started. The S-UT-3 Westinghouse data was put in a restricted access file in the data bank.

7. 411LE2500 The FY-82 Preliminary Research Design document Revision D, was completed and approved. Subsequent efforts in this area were directed at coordination with the other branches in determining tentative FY-82 test schedule and facility modification down times and costs. This provides the first pass at the 189 and FY-82 work packages. Work was started on the Preliminary Design Requirements document.

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

8. 411LE3100 Prepared and issued an engineering design file documenting the results of the laboratory thermal conductivity tests on the Semiscale primary loop insulation.

A new P&ID drawing of the pressure suppression and blowdown system was completed and issued.

Drawings of a universal hydrotest fixture were completed and will be issued next month.

Design of the new intact loop hot leg spool, which incorporates a laser velocitometer, did not start due to interference with higher priority work. The design will start in June.

D. 411M200 - Mod-2A Conversion

1. 411M23400 The report "Summary Report for Semiscale Mod-2A Heat Loss Characterization Test Series" was completed on May 14. Results from the study are being used to model heat losses in the system and for planning for heat loss compensation for the NC test series.

2. 411M241 - Hot Water Makeup System

Conducted the final design review. All installation SWRs were issued and the installation work is approximately 80% complete.

CC and SO tests have been written and will be released in early June.

3. 411M24200 - Instrumentation Development

Fabrication of the dummy turbine meter sleeves was completed.

SWRs to manufacture optical probes, light sources and water cooled pressure probes were issued. Fabrication is in progress and will be completed in June.

Fabrication of the optical probe hydrotest fixture was completed.

Issued an SWR to fabricate the optical probe camera support brackets.

Completed assembly drawings showing the installation of all bracketry on the steam generator pantlegs.

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

The completed prototype Dewar bracket will be used for the first six natural circulation tests. After fitup of the one new Dewar (densitometer detector), the remaining brackets will be fabricated.

Two probe types and a fixture for leak testing were fabricated. The original V-seal design exhibited leakages only around the piston rings (due to shuttle warpage). The M.I. design exhibited less overall leakage and substantially less fabrication problems and cost. Additionally, the M.I. design allows a wider tolerance band-less change of rejected parts. A formal report from M.I. is due before June 1, 1981.

4. 411M25200 - Primary Loop Upgrade

The reworked intact loop spool piece was returned from the vendor and installed in Semiscale.

Design of the remaining 2-1/2 in. intact loop piping (hot leg, cold leg and pump suction) was started. This piping adapts to the new intact loop pump.

D. 411NC00 - Natural Circulation Test Series

1. 411RA1700 The Taylor series approximation for the convective heat flux was programmed into RELAP5 and some initial checkout runs were made. These runs used a preliminary criterion for updating the heat flux and derivatives, which is currently being improved. Initially, the derivatives were formulated assuming equilibrium conditions existed. This scheme has now been refined to allow non-equilibrium conditions.

2. 411RA4000 A RELAP5 sensitivity study of a 2-1/2% cold leg break was performed to determine the calculated differences of defining an adiabatic boundary inside or outside of the vessel/downcomer and piping structures as an approximation of an LPWR's response with heat losses to the environment. With the exception of slightly different depressurization rates, no significant differences in the results (excluding those effects attributed to unphysical code phenomena) were calculated. Results of this study have been documented in a letter.

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

E. 411T1X200 - External Heaters

1. 411TC1500 The draft of the S-UT-3/S-UT-4 letter report on band heater effectivenss is 95% complete and will be ready for management review by June 4.

2. 411TC1700 The calibration of the 5% break orifice plate was completed, data analyzed and a report 50% completed. Plans were made to incorporate the non-UHI break spectrum analysis into the UT series Test Results Report (TRR).

3. 411TCX300 Posttest RELAP5 calculations of Tests S-UT-1, S-UT-2, S-UT-4, S-UT-6, and S-UT-7 were completed. Very good agreement with data was obtained. These calculations will be documented in a RELAP5 Analysis Report of the S-UT Test Series scheduled for August.

4. Scheduled Milestones for June 1981

Node	Description	Date
N/A	Completion of EDR for S-UT-1 and S-UT-2	07-24-81

5. Summary of Work to be Performed in June 1981

A. 411DA20

411DA2100 - Measurement Engineering

1. Support "pantleg" modification.

2. 9D0810400 - Pump Test

The intact loop pump dc power supply will be wired and the pump test will be completed provided it does not interfere with conducting the Semiscale SO testing.

The bid package for a spare high speed intact loop pump will be completed and issued by June 30.

3. 9D080500 - FLECHT Test and SAW Loop

Complete data report on FLECHT tests.

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

B. 411HM00

1. 411HM1100 - Hardware Modifications

The broken loop piping and steam generator pantlegs will be installed.

The intact loop will be leak tested and the heat tapes will be CC and SO tested.

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

Vessel heat tapes will be CC and SO tested.

Planning to prepare for a steam generator gas injection test will be completed. This test will determine the feasibility of injecting helium into the intact loop steam generator U-tubes, and is a prerequisite to final design of the gas injection system.

Fabricate and install the steam line orifices.

SWRs to install and wire heat tape on the broken loop piping and pantlegs will be issued.

C. 411LE00 - Semiscale Operations

1. 411LE1100 The major work effort for June will be to complete system modifications for the Natural Circulation Tests. Prepare test plans, test procedures, and conduct the first test in the Natural Circulation Test Series.

Complete the EDR for S-UT-1 and 2 and prepare for publication. Continue work on EDRs for S-UT-4 and 5 and S-UT-6 and 7.

Complete new intact loop pump testing.

Advance planning will continue for the Natural Circulation Tests.

2. 411LE2100 The pretest prediction calculations for Tests S-NC-1 and S-NC-2 will be completed and documented in letter/reports.

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

3. 411LE2400 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.

Numerous short duration analyses will continue on UT test series data.

Conversion of the Semiscale Mod-3 MAPPER graphics model to the Mod-2A configuration was completed. Work will be initiated to use this model and Test S-UT-7 data to construct a movie which depicts the thermal-hydraulic response of this test.

Review comments from Westinghouse and NRC should be received and upon receipt will be incorporated into the report and the report published. Analysis of S-UT-6 and S-UT-7 Westinghouse data will be completed and a data report prepared.

4. 411LE2500 Presentation will be made to NRC personnel on the UT-3/UT-4 and Westinghouse test results. First pas FY-82 work packages will be prepared.

6. Issue drawings of the universal hydrotest fixture by June 30.

Start design of the new spool piece which incorporates a laser velocitometer measurement station.

Issue drawings and installation package for the pump suction remote drain valves.

7. 411LE4100 - DAS Operation

1. Continue to process data from the UT tests.

2. Support "pantleg" modification.

D. 411M200 - Mod-2A Conversion

1. 411M24100 - Hot Water Makeup System

Complete installation, CC and SO testing of this system.

2. 411M24200 - Instrumentation Development

Complete fabrication and hydrotesting of optical probes, light sources and water cooled pressure probes.

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

Complete fabrication of the optical probe camera support brackets for steam generator plenum and pantlegs.

Release the SWR to fabricate the remaining Dewar support brackets.

The formal report on the turbo probe prototype test will be evaluated, and further activities (e.g., preparation of modification drawings, or further testing) will be planned.

3. 411M25200 - Primary Loop Upgrade

Continue with design of the 2-1/2 in. intact loop piping to replace the existing 3-in. piping. This design must be completed by August so that the long lead piping materials may be ordered in preparation for installation prior to the PL test series.

E. 411SB00 - Small Break Test Series

1. 411SX500 Final figure preparation for the TRRs will be completed.

F. 411T700 - Test Series 7

1. An outline for the UT test series topical report will be developed and approved by June 19.

2. 411TC1500 The S-UT-3/S-UT-4 letter report will be completed for management review, reviewed and comments incorporated.

3. 411TC1700 The test report of the 5% break orifice calibration will be completed.

6. Problems and Potential Problems

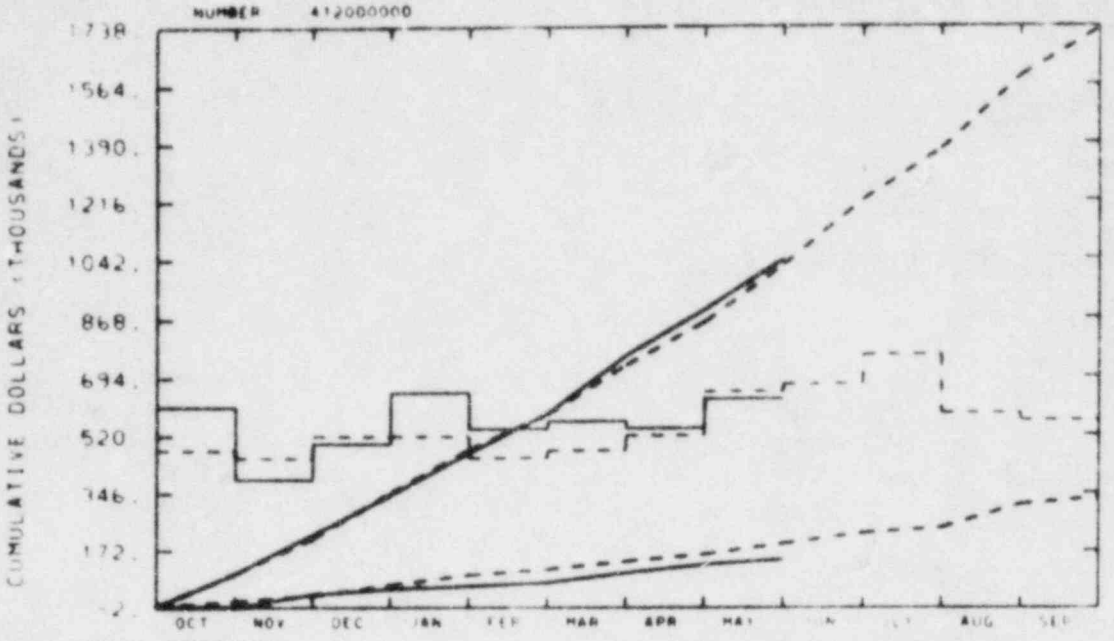
None.

RESPONSIBLE MANAGER
NORTH

EG&G IDAHO INC.

LOFT TEST SUPPORT FACILITY

NUMBER 412000000



TOTAL PROGRAM

BUDGET	102	208	350	479	[illegible]	730	857	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ACTUAL	101	221	341	470	[illegible]	759	894	1040					

MATERIAL

BUDGET	17	34	67	98	[illegible]	40	161	194	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ACTUAL	-1	19	55	64	[illegible]	105	129	145					

MANPOWER

BUDGET	22	21	24	24	[illegible]	22	24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ACTUAL	28	18	23	10	[illegible]	26	29	29					

A6043 (LOFT Test Support Facility Portion)

YTD VARIANCE: <17> (2%)

The total budget increase from last month is due to LOFT CCB 81-164 for $13 K being integrated into the budget.

1. 189a A6043 - LOFT Test Support Facility

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

A. 412TPRJ - LTSF Test Projects

1. 412A901 Planning estimates for FY-82 test programs were developed in support of 189 preparation. Work packages were developed and were 80% complete at month end with completion scheduled for June 5. The FY-82 WBS was developed and 189 input delivered to LOFT on May 22. Technical support was provided for conceptual planning for separate effects research programs which could be supported at LTSF.

The FY-81 budget was reviewed, and CCFs submitted and processed to bring scope, schedule, and budget in line with required revisions.

FY-81 and FY-82 LTSF Test Program scope and schedule were summarized for use by management at a review meeting scheduled June 4.

The Experiment Data Report (EDR) for the JAERI SCTF Hot Leg Spool Piece Performance Tests was returned from review with comments, and work to incorporate response to comments by June 15 was initiated.

Standard Practice 1.12 concerning EDR preparation was reviewed, and revision for use for reporting LTSF experimental data was initiated, with completion expected by June 3.

2. 412AA01 Installation of hardware and instrumentation required to support the 9-rod bundle quench experiments was initiated on May 4. Delay in delivery of the Rebeka rods from EXXON justified modification of plans with current schedule reflecting tests with nine FEBA rods to be conducted prior to any tests with the Rebeka rods. The FEBA rod bundle was assembled and installed in the test vessel and loop. Instrumentation and Data Acqusition System preparation was 80% complete by month end.

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

Installation and checkout of control systems was 80% complete at month end. The EOS was revised to incorporate minor changes, and the EOP was issued for review. Testing is scheduled to begin on June 15.

The Rebeka rods are scheduled for shipment from EXXON on May 29. A cladding embedded thermocouple failed on Rod 1, so that final assembly is proceeding only on the backup rod.

3. 412AF01 A work package was developed for the two phase loop restoration, and CCFs written to provide required budget for the tasks. A detailed schedule was developed, and SWRs were prepared for appropriate tasks. The steam system drainage pond expansion was completed, and work was initiated on installation of the remainder of the deck in the test cell. Design and drawing of piping supports, manway cover modification, diesel start/stop system, steam generator stack, and sampling system were completed and procurement for required materials continued with delivery expected during June. Steam generator preventive maintenance requirements were developed. All tasks required for restoration are scheduled for completion by July 1 in order to allow final LS-1 test specific hardware, instrumentation, and control system installation and system checkout prior to August 3.

4. 412AH01 The EDR for the LOFT L9-1 PORV and DSTM Performance tests was reviewed and returned for incorporation of required changes. Current schedule calls for transmittal to management for review by June 15. Hardware for this test was removed in order to provide for reconfiguration for the Nine-Rod Bundle Quench Experiments.

5. 412AP01 Final requirements for testing the LOFT L5-1 break flow instrumentation (drag disk rake) were received from LOFT. A revised work package was developed, and a CCB was submitted to LOFT to provide budget for this task. Scope of work increased significantly from the original work package due to requirements for hardware, control system, and reference instrumentation upgrades in order to satisfy test objectives. Design and drafting support for a new six inch liquid metering section, modified bypass line, test spool insert, and traversing pitot tube were initiated. Identification of materials and controls required was complete, but procurement has been delayed until LOFT approval of the CCB has been made. Current schedule calls for checkout testing to begin on August 3, with delivery of

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

the LOFT rake to LTSF on August 10. Testing will span 4 weeks with return of the rake scheduled for September 4. This schedule is contingent upon final system mod completion by August 3 and will be delayed if CCB approval is not made by May 29. Preparation of the EOS was initiated and is scheduled for review on June 12.

6. 412CF01 Tests for providing subcooled critical flow data for calibration of the Semiscale 2-1/2%, 5%, and a scaled LOFT L5-1 nozzle were completed. Data processing in support of Cyber file generation for storage of test data was completed. Data qualification was completed and EDR preparation initiated. A first draft of the EDR is scheduled for review starting June 15, with final transmittal scheduled for June 29. Detailed analysis of the catch tank weight measurement system was completed and a report draft submitted for review. This analysis will provide the basis for the reference mass flow measurement uncertainty analysis.

7. 412F11310 - LTSF Data Systems Support

   a. DAS design description (LOFT Test Report ltr 10-59) revision is 95% complete. Awaiting drafting support for drawing changes.

   b. Six-beam densitometer system has been set up in Building 641 in preparation for a thorough checkout prior to LOFT Test L5-1. Work will proceed on a manpower available basis.

   c. Heater Rod Quenching Tests (Nine-Rod)

      a. Data acquisition configuration complete.

      b. Cable and thermocouple buildup complete.

      c. Final transducer installation and system checkout will proceed when test vessel is reinstalled in blowdown loop. Scheduled readiness date is June 1, 1981.

   d. Critical Flow Tests (BF-CF-1, BF-CF-1A, BF-CF-1B) were completed on May 1, 1981. The preliminary data report was forwarded to the Technical Support Building on May 4, 1981.

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

8. 412F11510 - LTSF Controls Systems Support

a. Commenced control system hardware installation for heater rod quenching tests. Scheduled completion is June 1, 1981.

b. Software was written, debugged and used to conduct an experiment demonstrating the microprocessor controller's ability to control the heatup rate of the Rebeka and Feba rods (simulation) for the upcoming heater rod quenching tests. Prior to the demonstration the Hewlett-Packard 10 kW power supply was repaired and made usable for the test.

c. Software required to allow the microprocessor to control the sequence of events during blowdown for the heater rod quenching tests is 20% complete. Scheduled completion is June 1, 1981

d. The blowdown facility control system drawing update is proceeding smoothly. The as-built drawings are finished and presently in various stages of checking and releasing. Work has started on control channel end-to-end drawings. Scheduled completion for this work is July 17, 1981.

e. The writing of operational setup and checkout procedures for the blowdown loop control system is 30% complete. No scheduled completion date has been set due to manpower limitations.

f. No effort was expended on the two-phase flow loop graphics display system except to return the Eptak CPU card to the manufacturer for repair. As mini-systems division support becomes available, an assessment will be made on the work required to bring the graphics display system on-line.

9. 412F11700 and 412F21600 - LTSF

Drawings, SWR and material orders were prepared for the display blowdown installation. Material will be delivered in early June, and the installation work package will be issued by June 5.

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

Status of the two-phase loop upgrade project is reported below:

a. Drawings were prepared and released for the steam separator manway modification and the diesel engine remote stop control.

b. Conducted a design review on the piping supports.

c. Began drafting on modifications to the mixing tee (rotating tee and adding bosses).

d. Ordered materials for the boiler smoke stack modification and prepared red lined modification drawings.

e. Began engineering work on the 6-in. metering section for the L5-1 test.

10. Foreign Funded Activities

a. 5F8C311 - Advanced DTT No activity was performed on this task. Review and final transmittal of the data report has been rescheduled several times due to conflicts with higher priority LOFT tasks, and will be rescheduled for transmittal by June 30.

b. 5F8C411 - Post CHF Heat Transfer Test All drawings except the installation and assembly drawings have been sent to checking for release, expected by June 15. The installation and assembly drawings are being reviewed by the project engineer, and should be available for checking by June 15. Qualification of the copper hot patch braze is awaiting receipt of required copper bar connectors expected in early June. The power supply and steam probes are expected to arrive by June 15. Fabrication of the test section support structure was completed.

C. 5F8C41201 - Post Critical Heat Flux

Estimates for the phase two tasks for testing and data analysis were prepared in order to submit a request for use of LOFT Foreign Funds. Preliminary approval has been granted, and final CCB will be submitted in June.

All detailed drawings have been issued.

A hot patch braze technique was developed and a sample successfully brazed.

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

Installation drawings were prepared and will be released next month.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June

A. 412TPRJ - LTSF Test Projects

1. 412A901 Budget and schedule for FY-81 tasks will be reviewed. The work packages for FY-82 tasks will be submitted to Plans and Budgets for review and baseline development by June 5. Standard Practice 1.12 will be revised to incorporate LTSF data presentation and reporting guidelines by June 3. The EDR for the JAERI Hot Leg Spool Tests will be revised and submitted for review by June 15. Support will be provided for conceptual planning and definition of capabilties for future LTSF experimental programs.

2. 412AA01 Hardware, instrumentation, and control system installation and checkout in support of Nine-Rod Bundle Quench Experiments will be completed. Integrated system checkout testing will be completed. Tests with nine Feba rods will be completed. Final assembly of the Rebeka rod will be performed at MTR provided EXXON meets on June 15 delivery of the rods. Data qualification and analysis will be initiated.

3. 412AF01 Tasks associated with two-phase loop restoration are scheduled for completion by July 1. Project Engineering support will be provided in order to assess schedule and budget integrity, and for technical assistance as required.

4. 412AH01 The EDR for the LOFT L9-1 PORV and DSTM Tests will be transmitted by July 1.

5. 412AP01 Requirements for hardware, instrumentation, and control systems for the LOFT L5-1 Break Flow Instrument Testing will be finalized. Design and drafting will be continued with completion scheduled for July 7. The EOS will be reviewed by June 12 and provided to Operations and Measurements staff for EOP preparation. Procurement of materials will be initiated upon LOFT approval of CCB for funding.

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

6. 412CF01 The EDR for the Subcooled Critical Flow Nozzle Calibration Tests will be distributed by July 1.

7. 412MISC The three remaining EDRs for the Transient Flow Calibration Experiments conducted at WYLE labs in late FY-79 and early FY-80 will be reviewed, and appropriate revisions incorporated in order to distribute by August 1.

8. 412F00 - LTSF Operation

1. Support operation tests for Nine-Rod Heater Rod Quench Tests.

A. 412F11700 and 412F21600 - LTSF

Complete the blowdown loop SDD.

Receive material and issue work package for the display blowdown installation.

Issue SWRs to (a) install the diesel engine remote stop control and (b) modify the steam separator manway flanges.

Complete drawings of the mixing tee modifications.

Order material and complete installation drawings for the 6-in. metering section for the L5-1 test.

Receive material for the boiler smokestack modification.

B. Foreign Funded Activities

1. 5F8C311 - Advanced DTT Review and distribution of the data report for tests performed in late FY-80 is scheduled for completion by June 30.

2. 5F8C411 - Post CHF Heat Transfer Tests

Qualification of braze procedure for attachment of copper hot patches to the Inconnel test tube will be completed. All drawings will be released. The power supply and steam probes are scheduled for delivery on June 15.

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

The test section fabrication and attachment of wall thermocouples will be completed. The CCB for funding for testing and data analysis and reporting will be completed and transmitted to LOFT.

3. 5F8C41201 - Post Critical Heat Flux

Installation drawings will be released.

The hot patch braze qualification will be completed.

6. Problems and Potential Problems

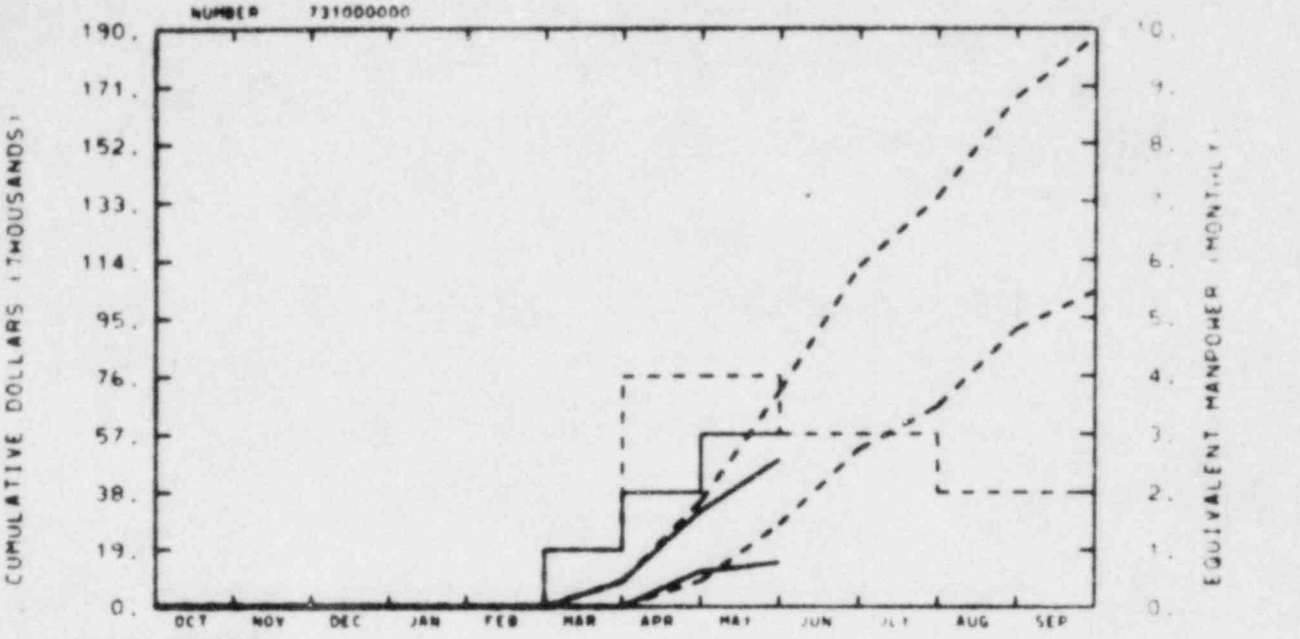
None.

RESPONSIBLE MANAGER
P. NORTH

EG&G IDAHO INC.

TECHNICAL SUPPORT TO JAERI A6363

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	49				

MATERIAL

BUDGET	0	0	0	0	0	0	9	27	52	66	91	104
ACTUAL	0	0	0	0	0	0	12	15				

MANPOWER

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

BUDGET

ACTUAL

A6363

YTD VARIANCE: 22 (31%)

This variance is due to a schedule slip in the departure of one of the representatives, caused by a delay in receiving his visa. Spending in June should be increased markedly.

1. 189a A6363 - Technical Support to JAERI

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

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

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

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

6. Problems and Potential Problems

Delays in receiving a visa has caused C. F. Fineman's departure date to slip. The visa is now expected to be received in the latter part of June 1981.

MONTHLY REPORT FOR

MAY 1981

THERMAL FUELS BEHAVIOR PROGRAM

for W. A. Spencer, Manager

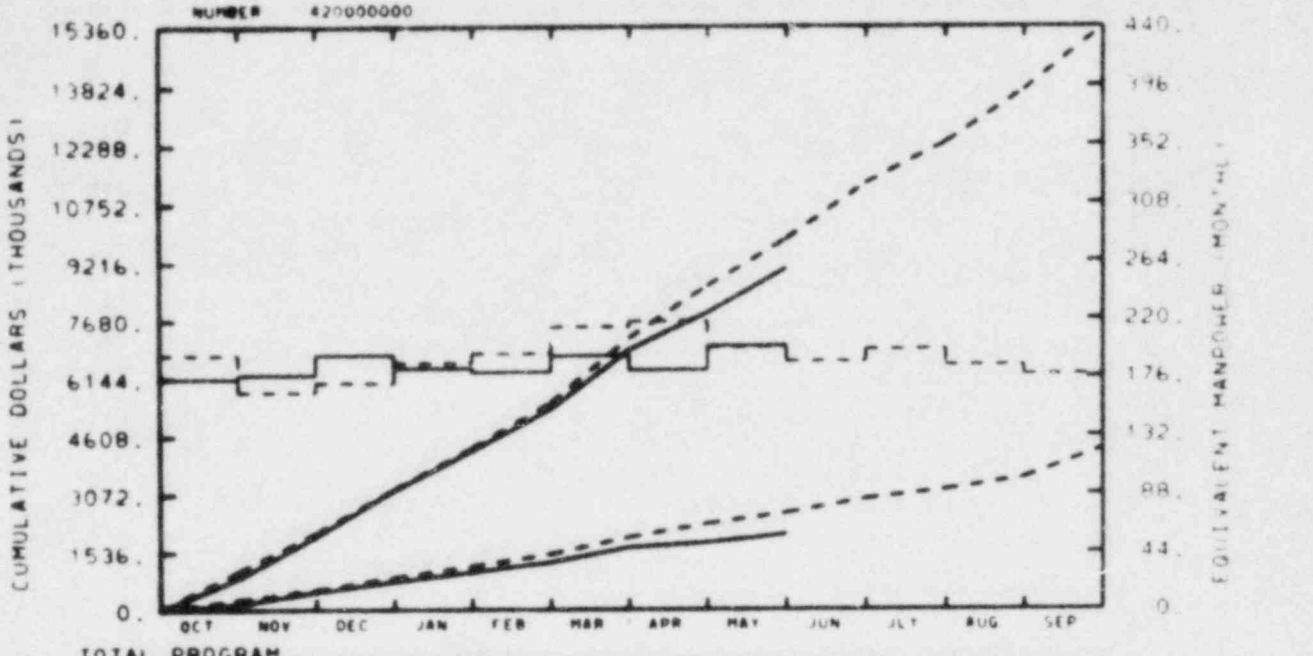
D. Zorn, Jr.
Planning & Budgets Representative

RESPONSIBLE
MANAGER
SPENCER

EG&G IDAHO INC.

TFBP PROGRAM

NUMBER 420000000



TOTAL PROGRAM

BUDGET	1044	2056	3207	4304	5508	7199	8582	9812	11265	12332	13706	15352
ACTUAL	854	1968	3183	4235	5338	6883	7865	9042				

MATERIAL

BUDGET	271	536	868	1171	1498	1935	2284	2569	2934	3173	3486	4253
ACTUAL	158	474	756	1010	1276	1666	1789	2004				

MANPOWER

BUDGET	194	164	173	188	195	215	219	199	188	197	185	178
ACTUAL	176	179	194	184	181	193	182	200				

BUDGET

ACTUAL

YTD VARIANCE: 770 (8%)

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 two Thermocouple Effects Test 4 (TC-4) fuel rods fabricated by Exxon Nuclear Co., were received and are being installed in the test train. The TC tests are being performed to determine the effects of external cladding thermocouples on the behavior of test fuel rods during a simulated loss-of-coolant accident (LOCA). These effects are being partially determined by a comparison of the response of external and internal cladding thermocouples. Test TC-4 offers an opportunity to compare the external thermocouple response with that of the new design Loss-of-Fluid Test (LOFT) internal thermocouples. The test is scheduled to be performed during the next reporting period.

The final design review was conducted covering the modifications to the Plant Protective System required in support of the Operational Transient tests. Fabrication and checkout of some of the components were completed.

Fabrication was started on a new instrumented spool that will be installed in the loop between the inlet thermal swell accumulator and the in-pile tube. The new spool will be used during non-LOCA testing and will functionally replace the initial condition spool currently used during LOCA tests.

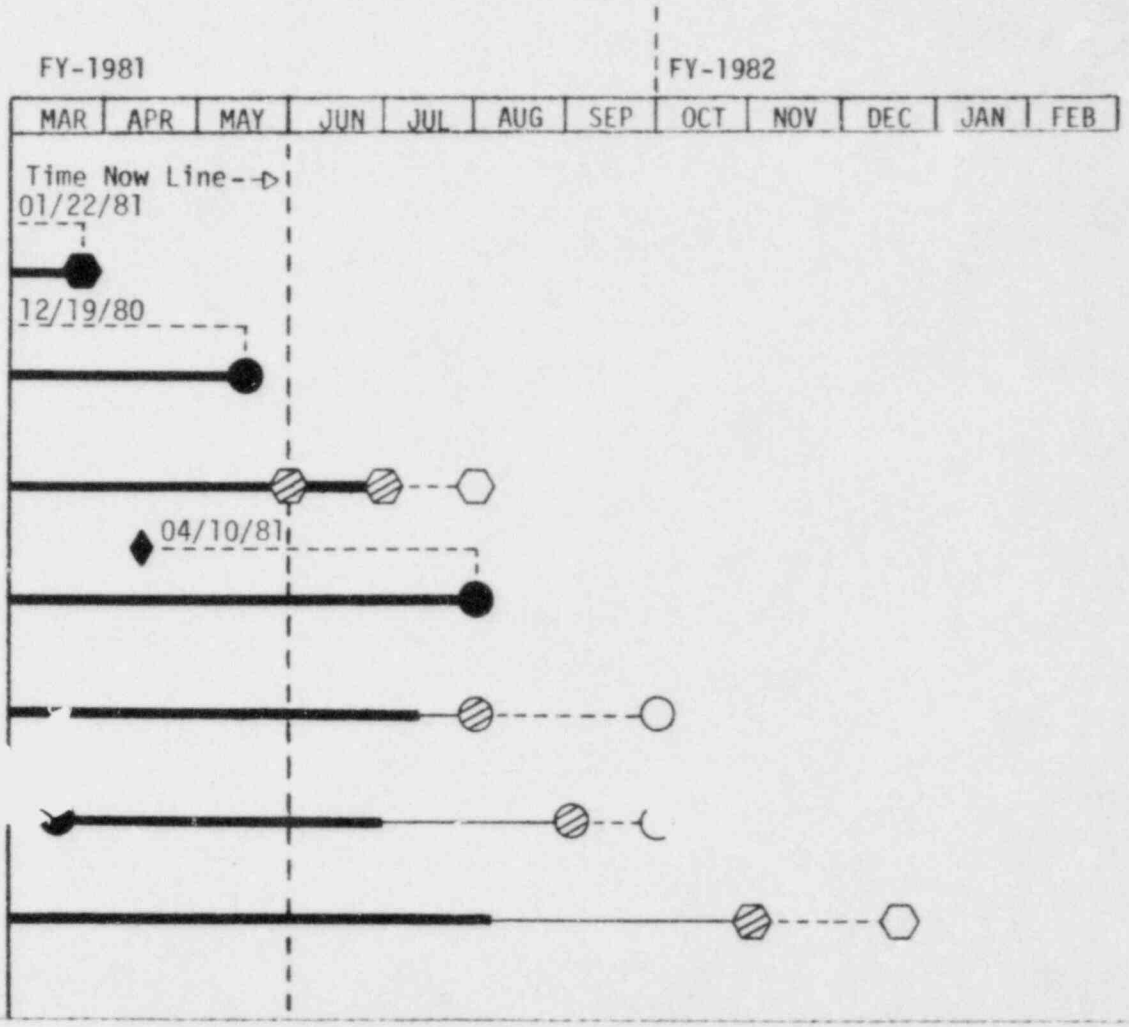
The three-dimensional core physics calculations for the PBF core reshim effort were completed ahead of schedule. These calculations will provide new transient and control rod worth curves as well as a three-dimensional power profile, with the associated axial and radial core peaking factors. The necessary documentation is nearing completion.

LEGEND

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

THERMAL FUELS BEHAVIOR PROGRAM

May 1981



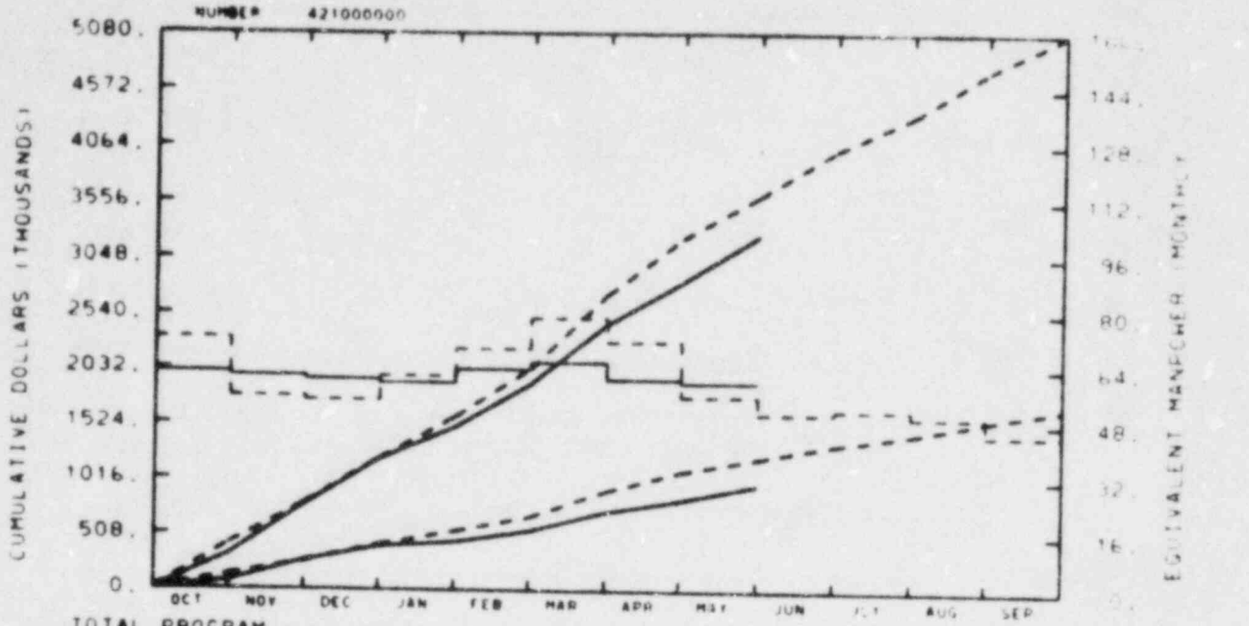
NOTES: TC-4 test commitment has been slipped to July 31, 1981. PPS Upgrade commitment has been slipped to September 30, 1981. Core Shim Commitment has been slipped to September 30, 1981. OPT 1-1 test commitment has been slipped to December 18, 1981.

RESPONSIBLE MANAGER
MACDONALD

EG&G IDAHO INC.

TFBP EXPER DESIGN & ANALYSIS

NUMBER 421000000



TOTAL PROGRAM

BUDGET	421	795	1209	1593	2037	2724	3210	3612	4024	4334	4746	5077
ACTUAL	319	780	201	1497	1894	2452	2838	3256				

MATERIAL

BUDGET	133	260	416	541	675	914	1092	1213	1336	1432	1561	1673
ACTUAL	75	264	400	443	548	725	833	972				

MANPOWER

BUDGET	73	56	55	62	70	79	72	56	51	52	50	45
ACTUAL	63	62	61	60	64	66	61	60				

A6041

YTD VARIANCE: 356 (10%)

Fabrication of two fuel rods at Exxon Nuclear in Hanford, Washington was delayed. Delivery of the rods was in late May so the TC-4 test could not begin until mid-June. 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.

189a A6041

1. 189a A6041 - TFBP Experiment Design & Analysis

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

a. Power-Cooling-Mismatch Test Series

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

b. Operational Transient (OPTRAN) Test Series

The OPTRAN 1-1 Experiment Operating Specification was completed and transmitted for signoff. The draft Experiment Operating Specification for Test OPTRAN 1-2 was completed, and calculations and draft report preparations for the Experiment Prediction document continued. Efforts on the PBF core reshimming, including reactor physics calculations and evaluation, continued. The assembly of the OPTRAN 1-1 test train continued and assembly of the OPTRAN 1-2 test train was initiated.

c. Loss-of-Coolant Accident Test Series

Final review and revision of the Tests LOC-3 and LOC-5 Fuel Rod Behavior Report was completed and the report transmitted to technical editing. The destructive examination of the Test LOC-6 fuel rods continued. The Test TC-4 fuel rods were received and are being installed in the test train.

d. Reactivity Initiated Accident (RIA) Test Series

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

e. Zircaloy Oxidation Embrittlement Topical Report

Figures and tables for the report were drafted, prepared, and typing of the first draft was completed.

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

f. Power-Cooling-Mismatch Fuel Rod Behavior Report

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

g. Fission Product Behavior Research

Final analysis of the Test PR-1 data was completed, and analysis of Tests RIA 1-4 and PCM-7 continued. A complete set of release fraction and concentration histories for Test RIA 1-1 was received. Design review for the sample injection system was held.

4. Scheduled Milestones for June 1981

Node	Description	Due Date	Actual Date
N/A	TC-4 Test	07-31-81T	07-02-81E

5. Summary of Work to be Performed in June 1981

a. Power-Cooling-Mismatch Test Series

The Test PR-1 Fuel Rod Behavior Report will be issued. Efforts on the drafts of the Test PCM-7 Fuel Rod Materials Behavior and Fuel Rod Behavior Reports will continue. Data corrections for Test PCM-7 will be completed and data qualification efforts finalized.

b. Operational Transient (OPTRAN) Test Series

The Experiment Operating Specification for Test OPTRAN 1-1 will be issued, and a draft of the Test OPTRAN 1-2 Experiment Operating Specification will be transmitted for review. Primary calculations for inclusion in the Test OPTRAN 1-2 Experiment Prediction document will be identified and initiated. Efforts on the PBF core reshimming will continue. Assembly of the OPTRAN 1-1 and OPTRAN 1-2 test trains will continue.

c. Loss-of-Coolant Accident Test Series

The Tests LOC-3 and LOC-5 Fuel Rod Behavior Report will be issued. The destructive examination of the Test LOC-6 fuel rods will continue. Test train assembly for TC-4 will be completed and the test initiated. Test TC-4 may be completed during June, depending on the actual initiation date.

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

d. Reactivity Initiated Accident (RIA) Test Series

Preparation of the Test RIA 1-4 Fuel Rod Behavior Report will continue. Calculations for and preparation of the Capsule Driver Core Fuel Enthalpy Report will continue.

e. Zircaloy Oxidation Embrittlement Topical Report

The draft report will be revised and submitted to management for review.

f. Power-Cooling-Mismatch Fuel Behavior Report

The Documentation Office will submit the report for publication.

g. Fission Product Behavior Research

Release fraction and concentration histories for Tests PR-1 and RIA 1-4 will be received and reviewed to determine equilibrium release fractions. Analysis of Test PCM-7 will continue. Design review will be held for the Test OPTRAN 1-1 shroud coolant sipping task.

6. Problems and Potential Problems

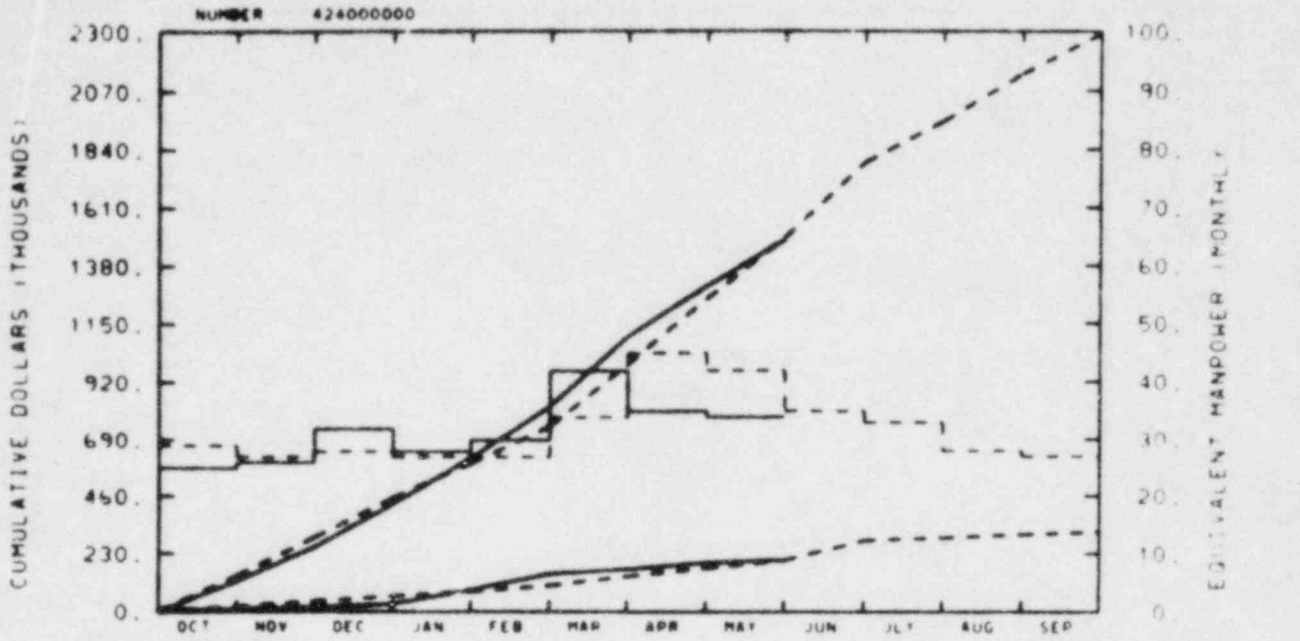
None.

RESPONSIBLE MANAGER
JP KESTER

EG&G IDAHO INC.

PBF ENGINEERING

NUMBER 424000000



TOTAL PROGRAM

BUDGET	143	296	456	594	746	992	1251	1494	1790	1952	2137	2291
ACTUAL	121	257	430	617	827	1102	1301	1486				

MATERIAL

BUDGET	21	43	63	81	105	14	173	204	282	293	306	317
ACTUAL	11	19	31	89	151	170	195	204				

MANPOWER

BUDGET	29	27	28	27	27	34	45	42	35	33	28	27
ACTUAL	25	26	32	28	30	42	35	34				

A6044

YTD VARIANCE: 8 (1%)

1. 189a A6044 - PBF Design & Systems Engineering

2. Scheduled Milestones for May 1981

None.

3. Summary of Work 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 were presented to the PBF Technical Response Team.

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

A final design review was 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 were completed. Development of the installation and checkout documentation was started.

c. Sample Injection Addition to the Fission Product Detection System

A final design review was held for the new sample injection system. Resolution of several minor deficiencies is underway and fabrication of some parts was started.

d. Remote Sampling of Reactor Coolant

Conceptual designs and cost estimates were developed for primary coolant and reactor building atmosphere sampling. The designs include both on-line fission product monitoring and manual grab sample capabilities for laboratory analysis. The design descriptions and cost estimates were documented in an Engineering Design File.

e. Experiment Loop Instrumented Spool

Fabrication was started on a new instrumented spool that will be installed in the loop between the inlet thermal swell accumulator and the in-pile tube. The new spool will be used during non-LOCA testing and will functionally replace the initial condition spool currently used during LOCA tests.

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

f. PBF Core Reshim

The three-dimensional core physics calculations were completed ahead of schedule. These calculations will provide new transient and control rod worth curves as well as a three-dimensional power profile, with the associated axial and radial core peaking factors. The Experiment Operating Specification has been drafted, distributed for review, and the document approval sheet has been routed for document approval. The Experiment Safety Analysis report has been drafted and distributed for review. The Facility Change Form required to change the core to the new shim configuration has been approved and transmitted to the Power Reactor Advisory Committee for independent safety assessment.

g. Operational Tranisent (OPTRAN) Safety Assessment

The calculated three-dimensional power profiles for the reshimmed core have been put into the RELAP4/MOD 5 model of the PBF core. The RELAP4/MOD 5 model will be used to calculate the peak core fuel temperatures during the OPTRAN transients.

h. Three Mile Island (TMI) Lessons Learned

A draft of the PBF/TMI Report bimonthly update was completed and distributed for review.

i. Loop Criticality Safety Evaluation

The DOE-ID comments on the Loop Criticality Safety Evaluation were received. These comments were resolved and the proposed document changes were resubmitted to DOE-ID for approval.

j. In-pile Tube (IPT) Flux Limit

It is projected that the current IPT integrated flux limit stated in the Technical Specification will be exceeded during the OPTRAN tests. Preliminary analysis indicates the IPT exposure is not close to any damage threshold. Additional analysis effort was initiated to evaluate the potential of increasing the current integrated flux limit.

4. Scheduled Milestones for June 1981

Node	Description	Due Date	Actual Date
	Spare in-pile tube receipt	06-30-81	04-21-81

5. Summary of Work to be Performed in June 1981

a. Presentations to the PBF Technical Response Team

Lectures covering the PBF Technical Specifications, the In-pile Tube System, and the Loop Cleanup and Decontamination System will be presented to the PBF Technical Response Team.

b. Sample Injection Addition to the Fission Product Detection System

Fabrication of parts that can be made outside of the reactor building will be completed in preparation for installation following Test TC-4.

c. Experiment Loop Instrumented Spool

Fabrication of the new temperature, pressure, and flow measuring spool will be completed. It will be installed prior to Test OPTRAN 1-1.

d. PBF Core Reshim

The Experiment Operating Specification for the core physics testing will be approved and distributed for use. Approval of the Experiment Safety Analysis (ESA) will be obtained and it will be transmitted to the Power Reactor Advisory Committee (PRAC) for review. The PRAC comments on the core reshim Facility Change Form will be resolved.

e. Three Mile Island (TMI) Lessons Learned

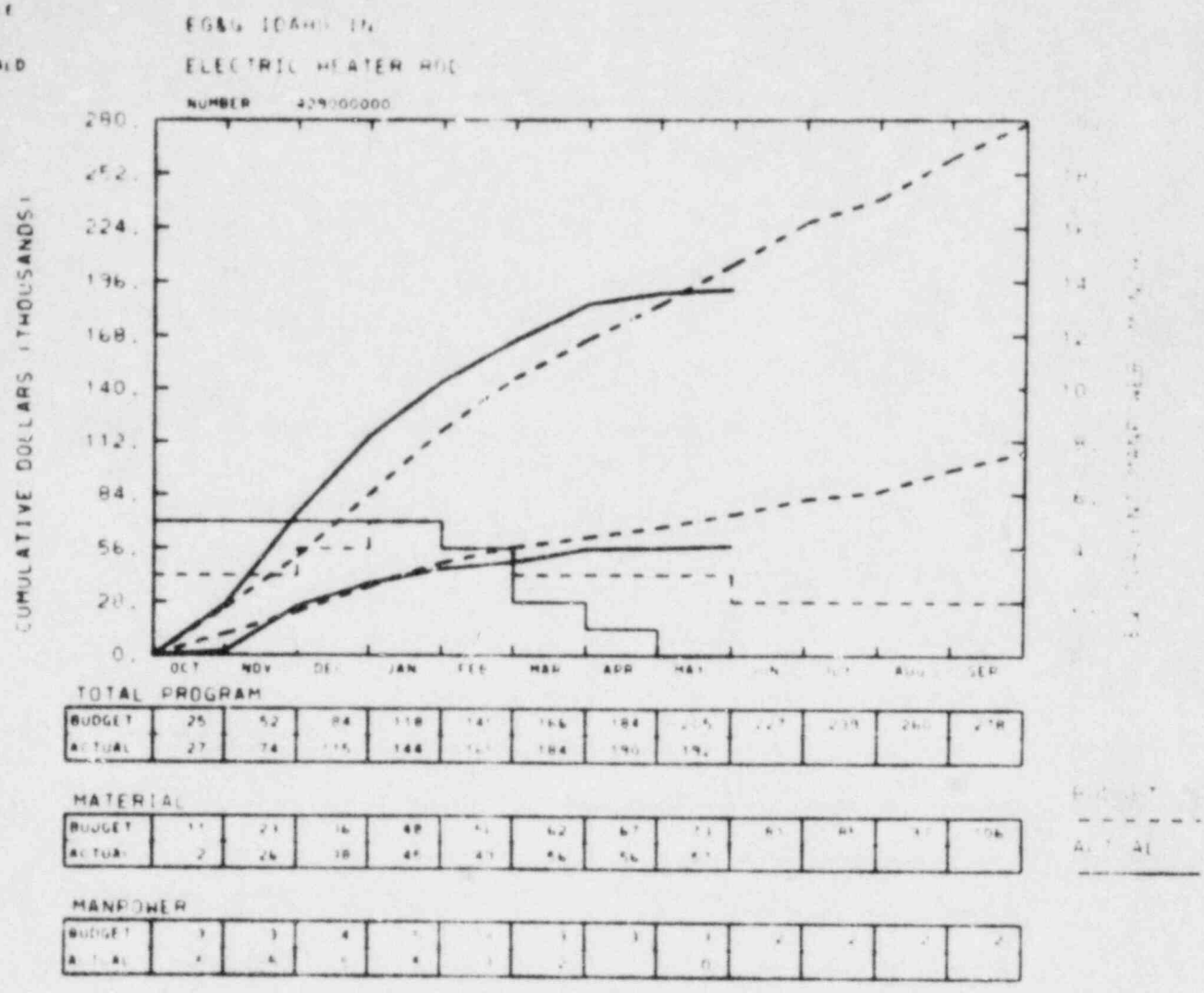
The bimonthly update of the TMI/PBF Status Report will be completed.

f. Operational Transient (OPTRAN) Safety Assessment

The three-dimensional core physics data will be input to the PBF core model in the RELAP4/MOD 5 computer code. The updated core model will be checked out and the OPTRAN Safety Assessment analysis will be started.

6. Problems and Potential Problems

None.



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

YTD VARIANCE: 13 (6%)

Draft reports of two projects were completed and submitted for review. With the completion of the reports, and because of redirection of priorities within the Thermal Fuels Behavior Program, effort was expended elsewhere. This effort will be resumed the last quarter of FY-1981, however, there could be some carryover of funds into FY-1982.

1. 189a A6048 - Electrical Heater Rod Evaluation Studies

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

The Instrumented Fuel Assembly 541 (IFA-541) scoping analysis report was submitted for management review.

The RELAP4 analysis of the IFA-511.2 and IFA-511.3 experiments was completed and a draft of the ANS paper on the subject was submitted for management review.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

The IFA-541 scoping analysis report will be issued and a presentation of the results made at the project review group meeting on June 17, 1981.

The IFA-511.2/511.3 ANS paper will be completed and a presentation prepared.

The enlarged Halden Review Group Meeting will be attended, June 14-19, 1981.

6. Problems and Potential Problems

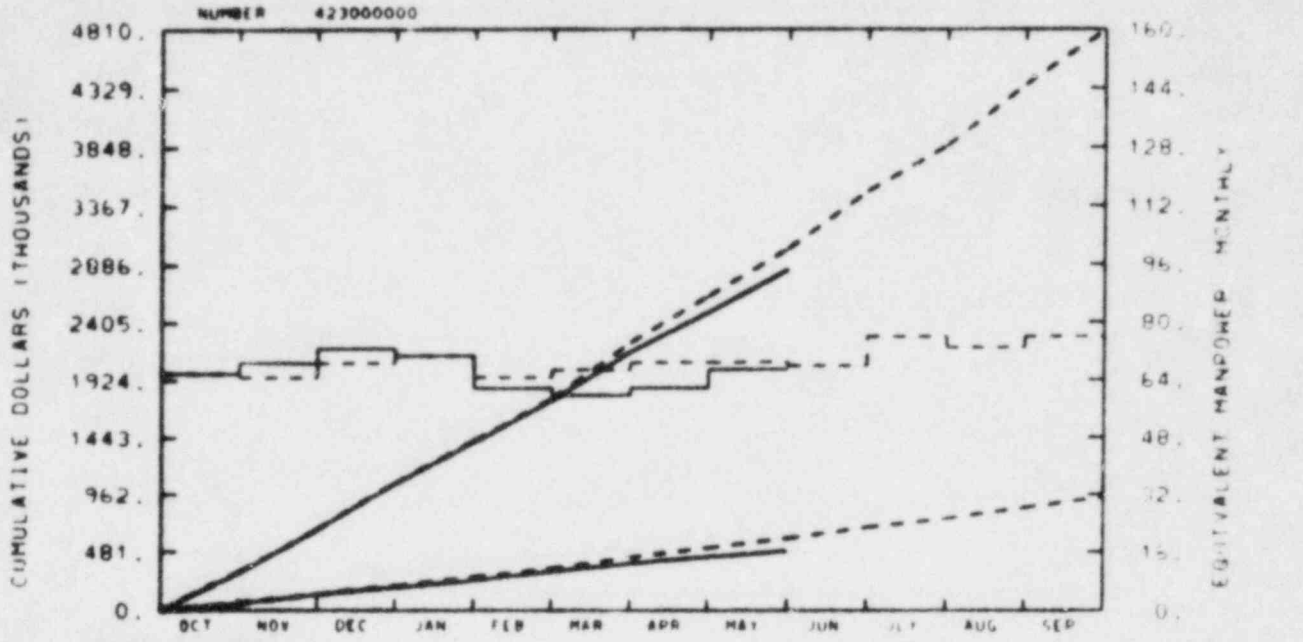
None.

RESPONSIBLE
MANAGER
CO DOUCETTE

EG&G IDAHO INC.

PBF OPERATIONS

NUMBER 423000000



TOTAL PROGRAM

BUDGET	319	670	1064	1423	1775	2241	2631	3018	3486	3866	4359	4804
ACTUAL	303	669	1058	1411	1761	2162	2492	2845				

MATERIAL

BUDGET	62	130	206	275	344	438	516	592	685	759	852	938
ACTUAL	57	134	188	246	321	386	440	487				

MANPOWER

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

A6057

YTD VARIANCE: 173 (6%)

The underrun in this 189a is due to a reduction in manpower, which will not be replaced in anticipation of a reduced budget next fiscal year. A portion of the underrun will be expended in the added use of overtime during up coming operating periods. The material dollars underrun is covered by outstanding requisitions. It is expected that there will be a net underrun at the end of the fiscal year.

1. 189a A6057 - PBF Operations

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

a. PBF Plant Operations

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

Hot functional testing for the Loop Performance Modification and Reactor Operator Simulator Training for Test TC-4 were completed.

The Instrument and Data Section completed repair of the REDCOR Computer, May instrument calibrations, and scheduled preventive maintenance. Preliminary electronic assembly work for the upcoming Operational Transient tests and Event Sequence and Monitoring System modifications is continuing.

b. PBF Operations Support

Preventive Maintenance (PM) examinations for April, May, and June were completed and the July PM work packages are scheduled to be issued following completion of Test TC-4.

Corrective Maintenance efforts for this reporting period include plant deficiency corrections, the completion of the radioactive waste temporary storage area, startup of the prefabrication work for the canal tool storage structure, cleanup of the SPERT II building, and support work for Test TC-4. In addition, the in-service inspection examinations were completed on the reactor vessel drain valves and the reclaiming of poisoned silver zeolite was completed by an outside subcontractor.

Final data tapes for the Power-Cooling-Mismatch Test 7 (PCM-7) with an attached uncertainty directory are being processed. Auto-calibration tests are being run on the Data Acquisition and Reduction System (DARS) to help resolve calibration problems encountered during processing of the Loss-of-Coolant Test 6 (LOC-6) and Thermocouple Coolant Test 3 (TC-3) data. Data corrections for Tests LOC-6 and TC-3 will be completed after the auto-calibration tests. Preparations for Test TC-4 are in progress.

The Plant Operating Manual rewrite was completed this month with the approval and issue of Chapter 19.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

a. Start the July Preventive Maintenance examinations.

b. Perform Test TC-4.

6. Problems and Potential Problems

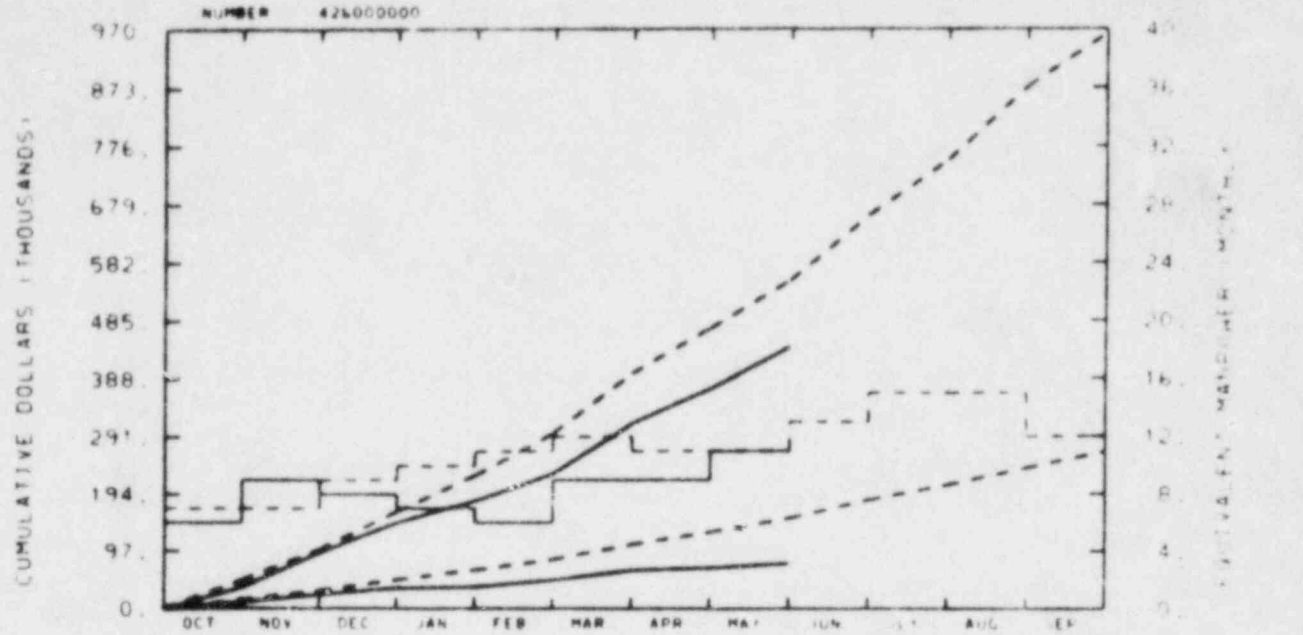
None.

RESPONSIBLE MANAGER
R. [illegible]

EG&G IDAHO INC.

SEVERE FUEL DAMAGE

NUMBER 426000000



TOTAL PROGRAM

BUDGET	47	100	164	226	296	397	473	552	662	754	879	961
ACTUAL	35	94	145	183	229	313	371	441				

MATERIAL

BUDGET	17	30	49	65	83	108	129	153	184	209	239	265
ACTUAL	11	24	34	37	48	65	69	76				

MANPOWER

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

A6305

YTD VARIANCE: 111 (20%)

The current underrun in Severe Fuel Damage has been primarily due to the delay in finalizing the test train design and in a delay in starting the hot cell safety analysis.

189a A6305

1. 189a A6305 - TFBP Severe Fuel Damage Studies

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

The physics effort on the new shroud design continued. TRAC calculations for the Experiment Prediction report were initiated. The first calculations are being performed to establish the water inventory in the test region for use in the final physics calculations. A meeting was held with Pacific Northwest Laboratory personnel to review the test train design work.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

The final physics calculations will be performed, including two cases with an axial distribution of water densities. The TRAC calculations will continue, as will the effort to define minimum power levels and flow requirements for the first test.

6. Problems and Potential Problems

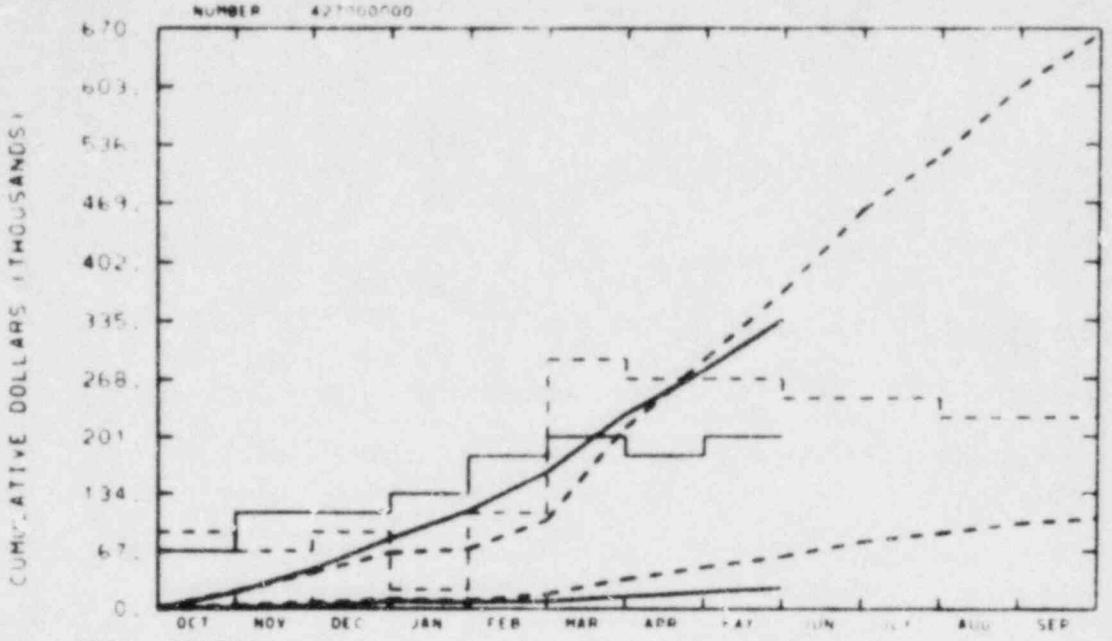
A problem was found in the TRAC metal-water reaction calculation. The model is overpredicting the heat generation rate by 50%. This problem has been discussed and a method for correcting it was found. It was also recommended that Version 8 of TRAC be used for the analysis, in that the version now in use has an error in the radiation calculation. The cost and schedule for this work is being determined.

RESPONSIBILITY
MANAGER
CONTRACTOR

EG&G IDAHO INC.

CORE MELT MITIGATION SYSTEM

NUMBER 427000000



TOTAL PROGRAM

BUDGET	20	41	65	89	103	211	290	368	461	521	601	665
ACTUAL	19	46	81	114	160	227	278	336				

MATERIAL

BUDGET	3	7	11	10	11	15	48	61	78	88	97	105
ACTUAL	1	3	9	8	9	14	20	25				

MAN-POWER

BUDGET	4	7	4	1	1	11	12	12	11	11	1	10
ACTUAL	3	5	4	6	8	9	6	9				

A6351

YTD VARIANCE: 32 (9%)

The underrun year-to-date is primarily due to a delay in obtaining details on the Sequoyah Plant design and systems. Action has been taken to alleviate the problem and, if it is successful, spending should pick up for the remainder of the fiscal year.

189a A6351

1. 189a A6351 - Core Melt Mitigation

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

The S2D accident sequence was run and documented for internal use.

Revision of draft SDR was deferred to a later date (9/30) due to insufficient information at this time to complete the task now.

Engineering Design File (EDF) on In-Vessel Materials and Volumes is in typing.

Letter review of NUREG/CR-1762 published to DOE-ID.

Management Plan updated.

Visited NRC docket file and identified needed Sequoyah FSAR materials.

Published demand schedule for CMMS task.

Started the literature search portion of the Grand Gulf work.

Consultant attended ACRS meeting on MARCH Code for EG&G Idaho.

4. Schedule Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Publish EDFs on core internals, melt compositions, water volumes, boron inventory.

Run analysis cases for design basis scenario.

Publish EDF on core-water reactions.

Publish EDF on gas evolution.

Resolution of the "plant details" problem is expected in June.

Complete the listing of candidate engineering devices for CMMS.

6. Problems and Potential Problems

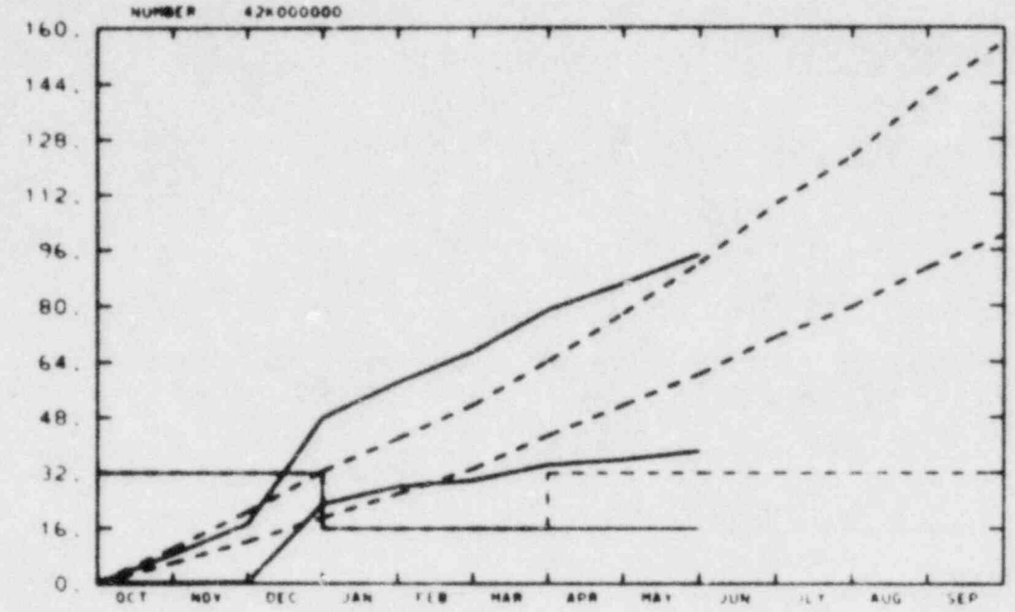
EG&G Idaho has been unable to obtain details on the Sequoyah Plant. NRC (D. Hoatson) arranged for EG&G Idaho to visit the NRC docket file and copy relevant material. Also, NRC is in the process (as of June 2) of sending a letter to TVA requesting their cooperation with EG&G Idaho on one of the ice-condenser plants. If these efforts are successful, the affected portions of the Sequoyah task can go forward.

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	95				

MATERIAL

BUDGET	6	12	19	26	33	43	52	60	71	80	91	100
ACTUAL	0	0	23	28	30	34	36	38				

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6352

YTD VARIANCE: <3> (3%)

1. 189a A6352 - NRC Representative to KfK

2. Scheduled Milestones for May 1981

   None.

3. Summary of Work Performed in May 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 June 1981

   None.

5. Summary of Work to be Performed in June 1981

6. Problems and Potential Problems

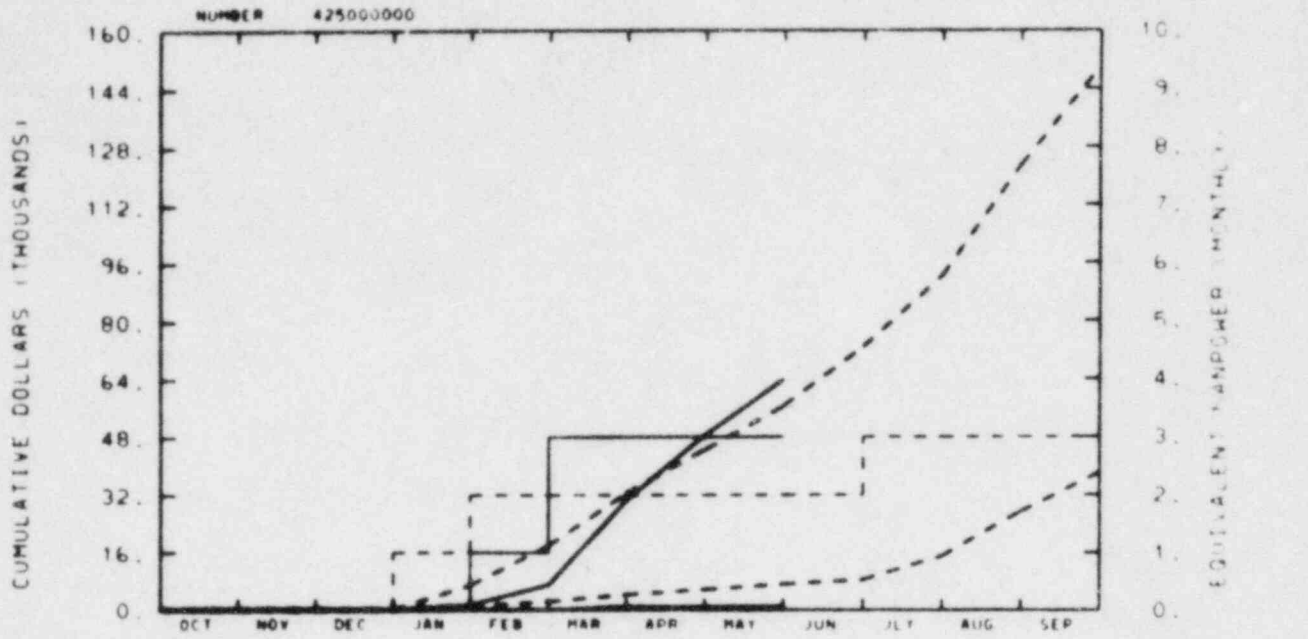
   None.

RESPONSIBLE MANAGER PENCER

EG&G IDAHO INC.

FISSION PRODUCT SIGNATURE ANAL

NUMBER 425000000



TOTAL PROGRAM

BUDGET	0	0	0	7	18	33	45	56	73	92	123	150
ACTUAL	0	0	0	1	7	30	49	64				

MATERIAL

BUDGET	0	0	0	1	2	4	6	7	8	15	27	38
ACTUAL	0	0	0	0	0	1	1	1				

MANPOWER

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

BUDGET

ACTUAL

A6355

YTD VARIANCE: <8> (14%)

1. 189a A6355 - Fission Product Signature Analysis

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

a. Literature Review

Additional reports were added to the bibliography.

b. Industry Review

The Institute for Nuclear Power Operation was contacted about fuel condition monitoring; no useful information was readily identified, but interest was expressed.

c. Definition of Scaling Parameters

ANSI Standard N237 was identified as a useful document for estimating coolant background radiation levels and generic PWR and BWR coolant inventories.

d. Conversion of PBF Release Signatures

Work on format conversion routines continued.

e. Definition of Analytical Relationships

Several decay chains were modeled using the modified CINDER code; excellent agreement was found between the CINDER calculations, previous ORIGEN calculations, and analytical calculations.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

a. Literature Review

Comments and additions will be incorporated into the bibliography and a final draft will be prepared.

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

b. Industry Review

Trip dates will be established if meetings can be coordinated with proposed contacts. A draft copy of the Coolant Monitoring Workshop proceedings will be obtained to assist with discussion planning.

c. Definition of Scaling Parameters

Attention will be directed at coolant volume scaling and background radiation levels.

d. Conversion of PBF Release Signatures

The data base of PBF signatures will be expanded to include PR-1 and RIA 1-4 test data. Development of conversion routines will continue.

e. Definition of Analytical Relationships

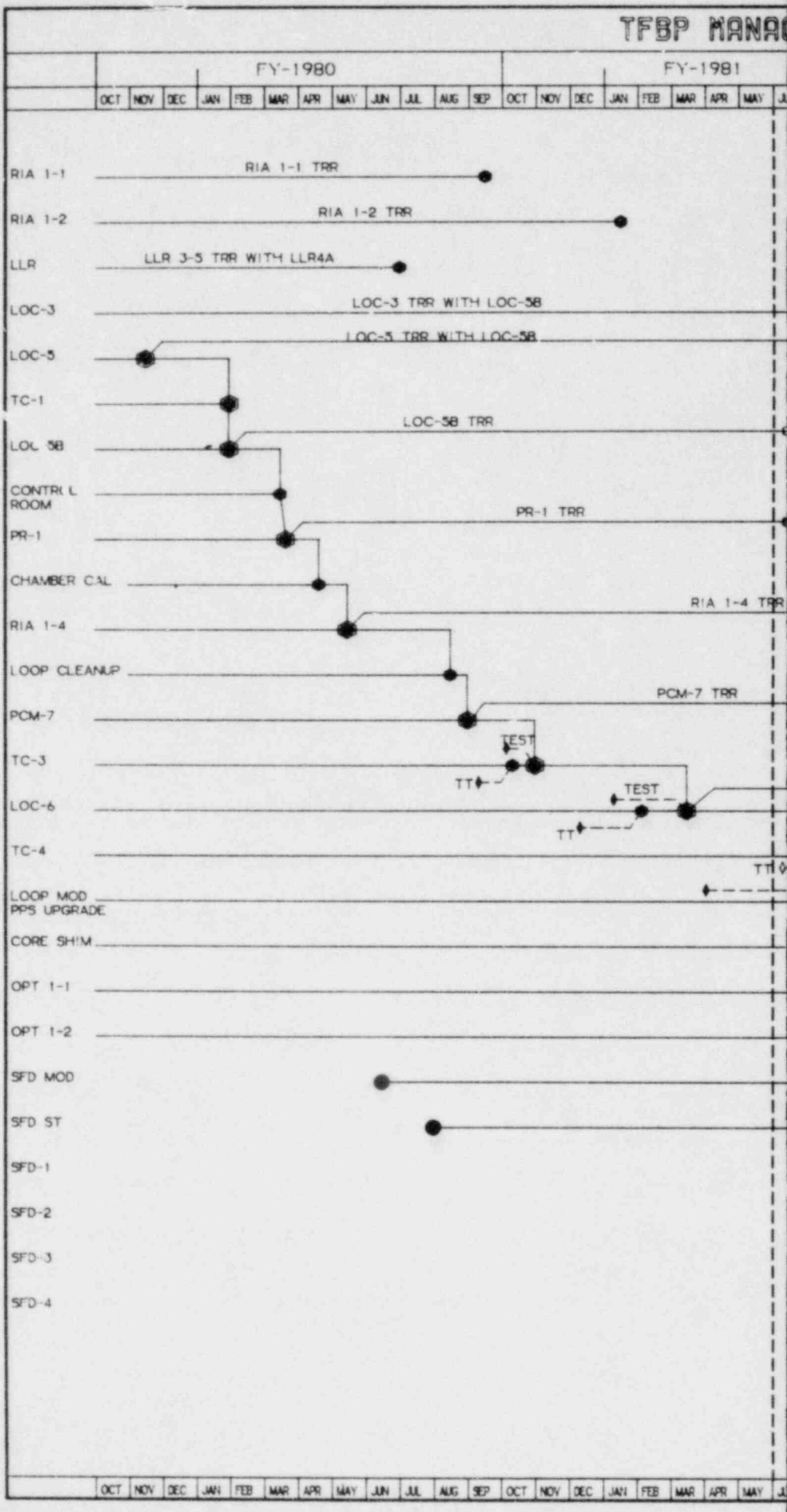
The fission product generation calculations with the CINDER code will be initiated and coupled to the decay and partitioning calculations.

6. Problems and Potential Problems

None.

THERMAL FUELS BEHAVIOR PROGRAM

TEST SUMMARY SCHEDULE


TFBP MANAG
FY-1980
FY-1981
OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY
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
TT
LOOP MOD
PPS UPGRADE
CORE SHIM
OPT 1-1
OPT 1-2
SFD MOD
SFD ST
SFD-1
SFD-2
SFD-3
SFD-4
OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY

GEMENT SUMMARY SCHEDULE

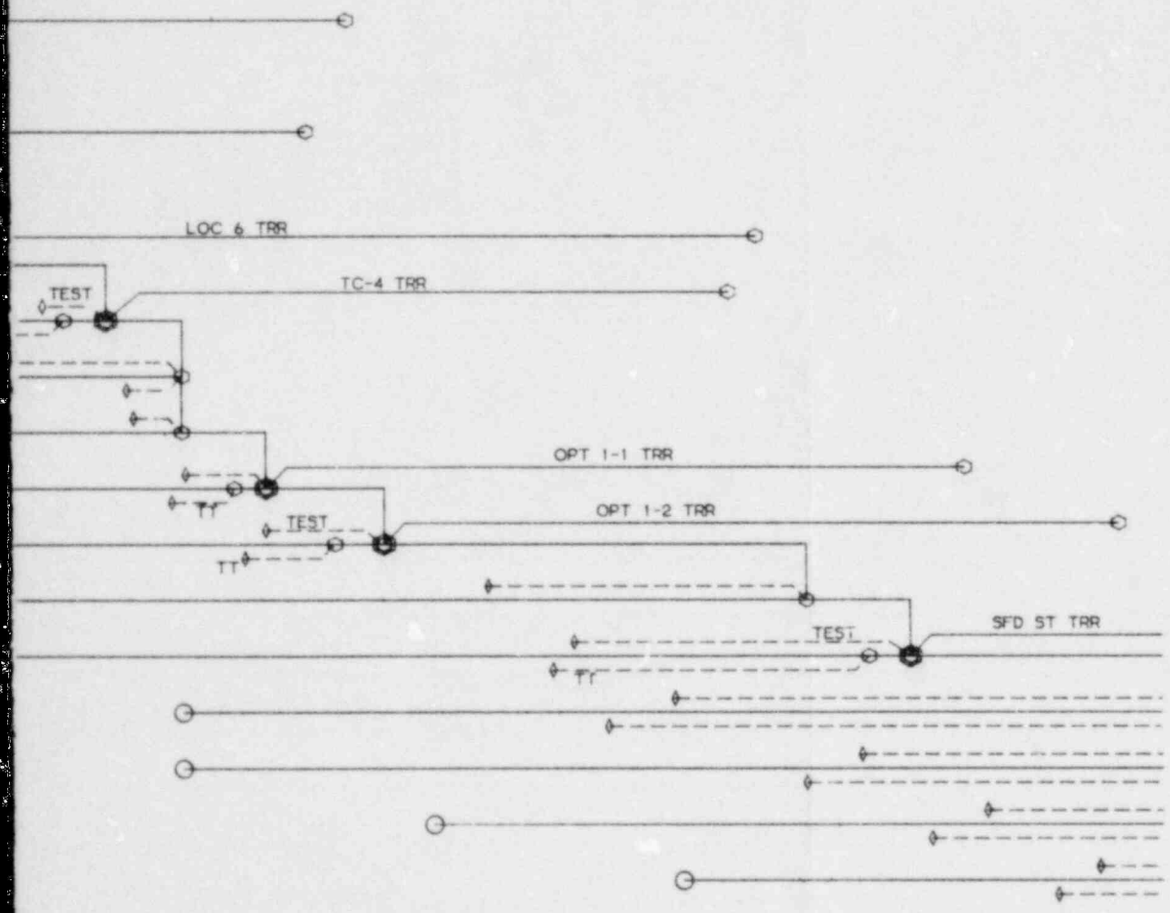
FY-1982 | FY-1983

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

LEGEND

- ◊ WORKING SCHEDULE
- ⬡ MAJOR MILE STONE
- C OTHER MILE STONE
- ○ INTERMEDIATE NODE

LLR LOFT LEAD ROD
LOC LOSS OF COOLANT
OPT OPERATIONAL TRANSIENT
PCM POWER COOLING MISMATCH
PR PCM RIA
RIA REACTIVITY INITIATED ACCIDENT
SFD SEVERE FUEL DAMAGE
TC THERMALCOUPLE
TRR TEST RESULTS REPORT
TT TEST TRAIN



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

THERMAL FUELS BEHAVIOR PROGRAM

CHANGE CONTROL BOARD ACTIONS

CHANGE CONTROL BOARD STATUS

Cost Account	CCB #	Description	Status	Date
4242B14	81-31	Loop Performance Mod	Approved	05/26/81
4213H64	81-32	PCM-7 TRR	Approved	05/26/81
4219XXX	81-33	OPTRAN 1-3/1-4 Test Closeout	Approved	05/26/81
4219B32	81-34	OPTRAN 1-1 ESA	Approved	05/26/81
4244B20	81-35	Technical Training Coordinator	Approved	05/26/81
4233J20	81-36	Severe Fuel Damage Scoping TT Fission Chamber Instrumentation	Approved	05/26/81
421TA15	81-37	Return of Halden Representative	Pending	05/26/81
4219C26	81-38	OPT 1-2 Test Train	Pending	05/26/81
42XXXXX	81-39	TC-4 and OPT 1-1 Commitment Schedule	Pending	05/26/81

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
81-31	Loop Performance Mod	<45.0>			<45.0>
81-32	PCM-7 TRR	<40.0>	40.0		0.0
81-33	OPT 1-3/1-4 Test Closeout	<312.5>			<312.5>
81-34	OPT 1-1 ESA	0.0			0.0
81-35	Technical Training Coordinator	<2.7>			<2.7>
81-36	Severe Fuel Damage Scoping TT Fission Chamber Instrumentation	7.5			7.5

< > Return to Management Reserve

FY-1981 BUDGET STATUS REPORT

189a Number	New 189a Total
A6041	5,377.8
A6044	2,289.7
A6057	4,806.8
A6095	3.0
A6305	962.7
A6352	156.0
A6355	150.0
A6454*	50.0
TOTAL	13,796.0
Management Reserve	474.0
Discretionary Reserve	19.4
	14,289.4

* NRR funding

MONTHLY REPORT FOR

MAY 1981

2D/3D PROGRAM

J. B. Olson for

R. E. Rice, Manager

R. A. DaBell

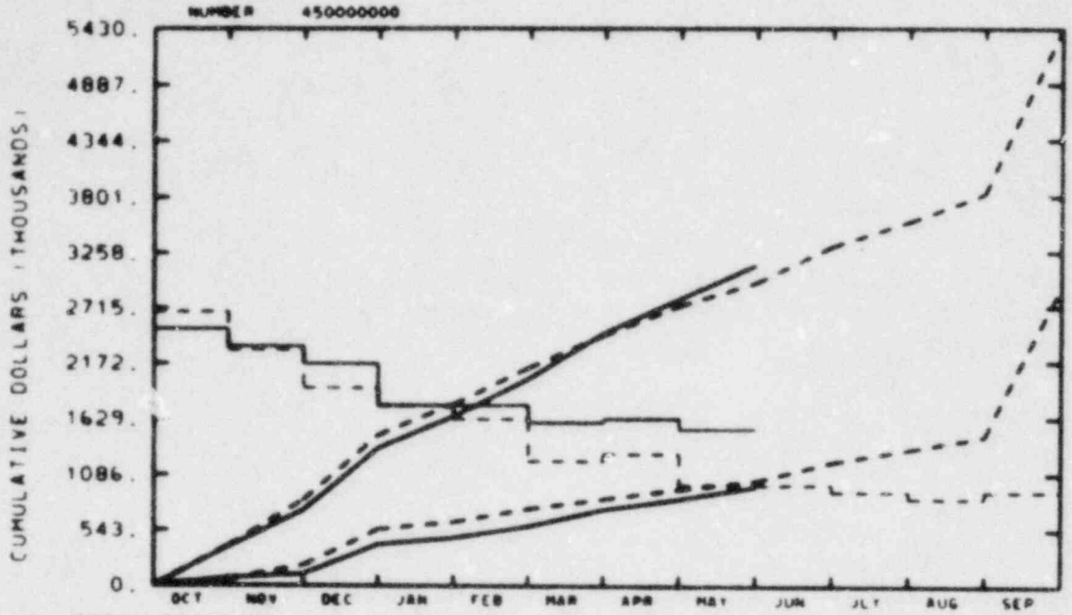
R. A. DaBell
Planning & Budgets Representative

RESPONSIBLE MANAGER
E RICE

EG&G IDAHO INC.

TOTAL 20/30 PROGRAM

NUMBER 450000006



TOTAL PROGRAM

BUDGET	309	842	1478	1776	2130	2446	2733	2957	3317	3557	3829	5429
ACTUAL	379	741	1350	1658	2021	2469	2801	3132				

MATERIAL

BUDGET	68	204	556	626	755	851	946	1024	1207	1330	1453	2914
ACTUAL	76	118	408	471	585	747	849	967				

MANPOWER

BUDGET	79	68	57	52	48	36	38	29	29	27	25	27
ACTUAL	74	69	64	52	52	47	48	45				

BUDGET
ACTUAL

YTD VARIANCE: <175> (6%)

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

All Japan Atomic Energy Research Institute (JAERI) Slab Core Test Facility instrument projects were completed and accepted.

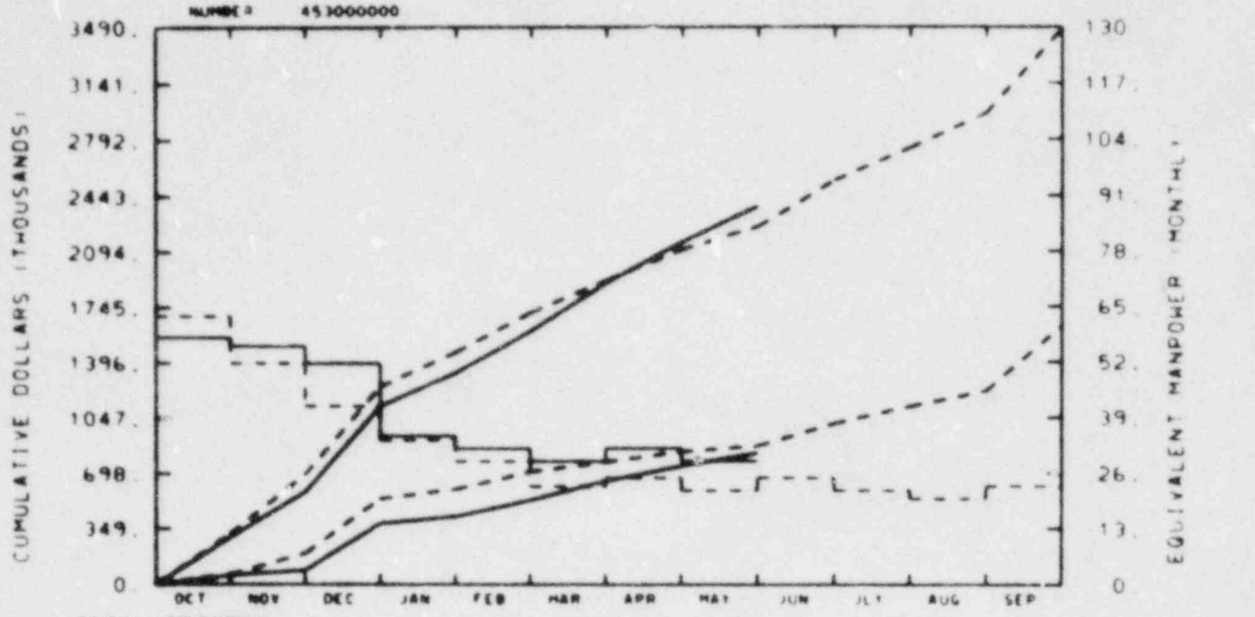
Refurbishment and installation of the Cylindrical Core Test Facility conductivity liquid level detectors was completed for Core II.

RESPONSIBLE MANAGER
R E Wilt

EG&G IDAHO INC.

A6100-2D/3D TECH SUPT & INSTR

NUMBER 453000000



TOTAL PROGRAM

BUDGET	318	694	1250	1464	1713	1914	2107	2322	2540	2739	2954	3480
ACTUAL	295	583	1128	1334	1595	1898	2155	2380				

MATERIAL

BUDGET	63	195	540	600	711	773	838	873	1013	1118	1215	1621
ACTUAL	58	90	383	427	530	652	747	829				

MANPOWER

BUDGET	63	52	42	34	29	23	25	22	25	22	20	23
ACTUAL	58	56	52	35	32	29	32	29				

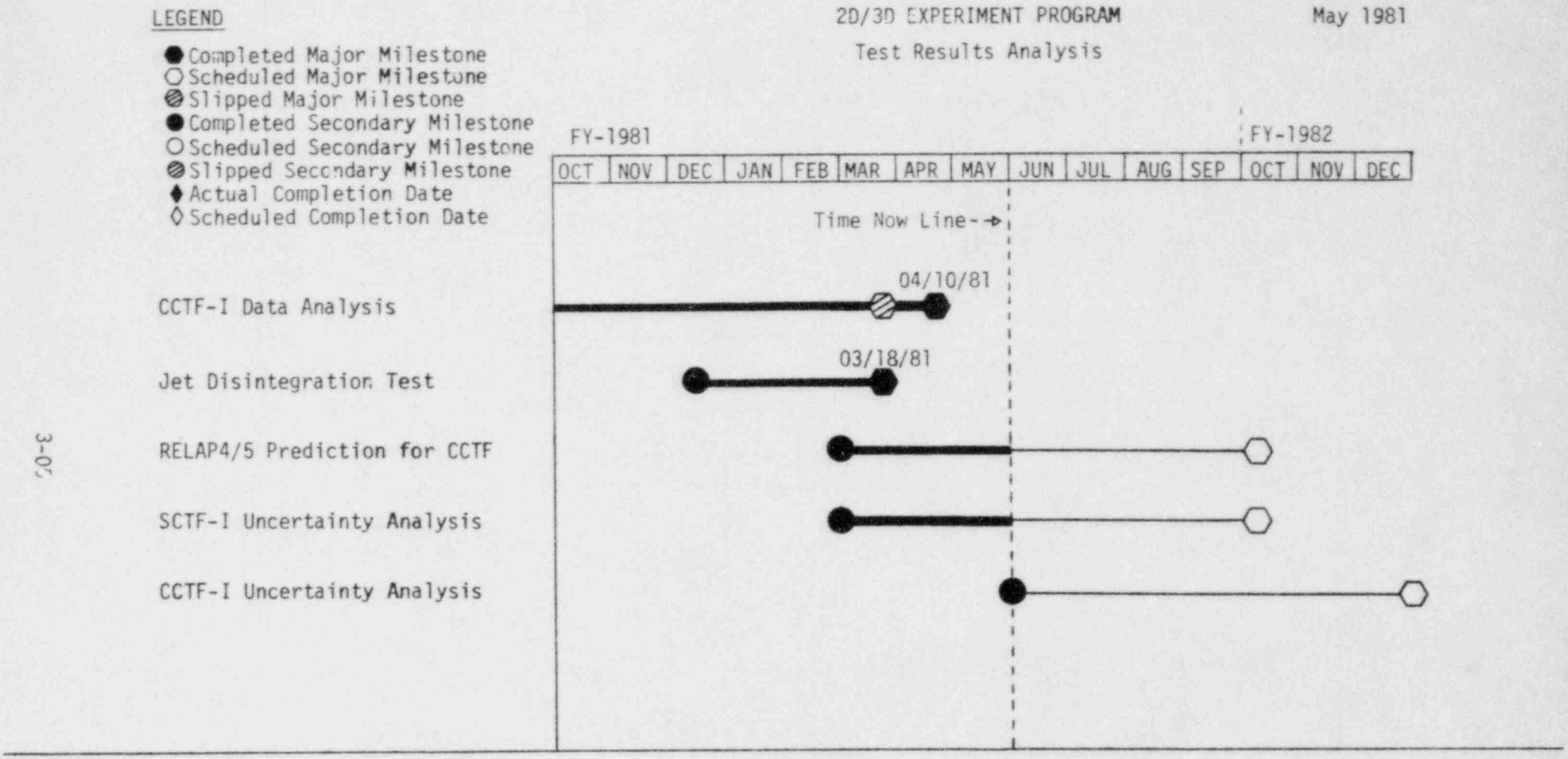
BUDGET - - - - - -

ACTUAL ———

A6100

YTD VARIANCE: <128> (6%)

The principal causes of this overrun are the CCTF-II Turbine Meters and CCTF-II Velocimeter projects. The turbine meter fabrication contract is running ahead of schedule, and will fall into line with its budget in the last quarter. The velocimeter project has encountered problems in the prototype testing and in scheduling the deliveries to JAERI. A CCB action will be initiated in the last quarter for these problem areas.


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
May 1981
FY-1981
FY-1982
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
Time Now Line
04/10/81
03/18/81
CCTF-I Data Analysis
Jet Disintegration Test
RELAP4/5 Prediction for CCTF
SCTF-I Uncertainty Analysis
CCTF-I Uncertainty Analysis

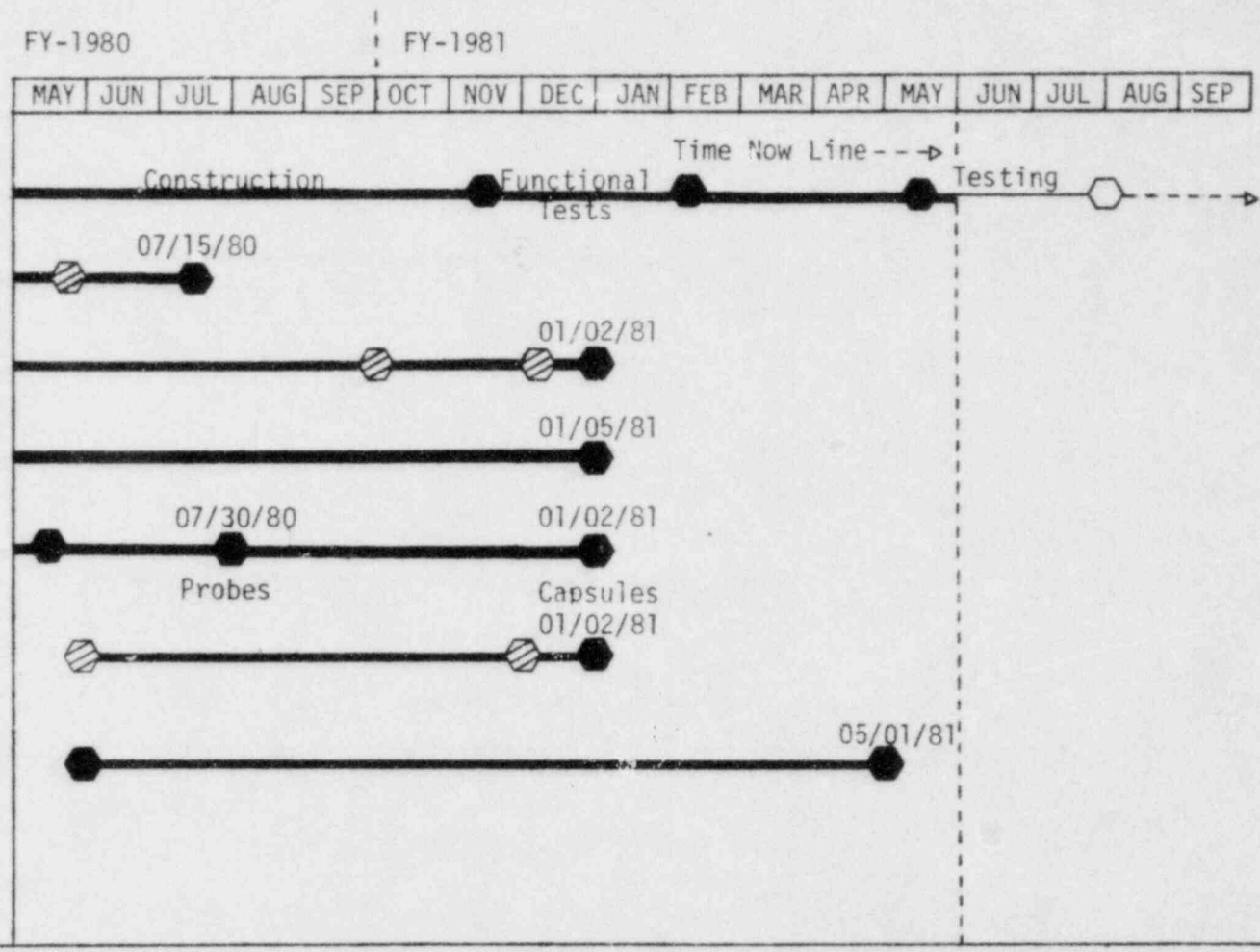
LEGEND

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

2D/3D EXPERIMENT PROGRAM

SCTF Projects

May 1981



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

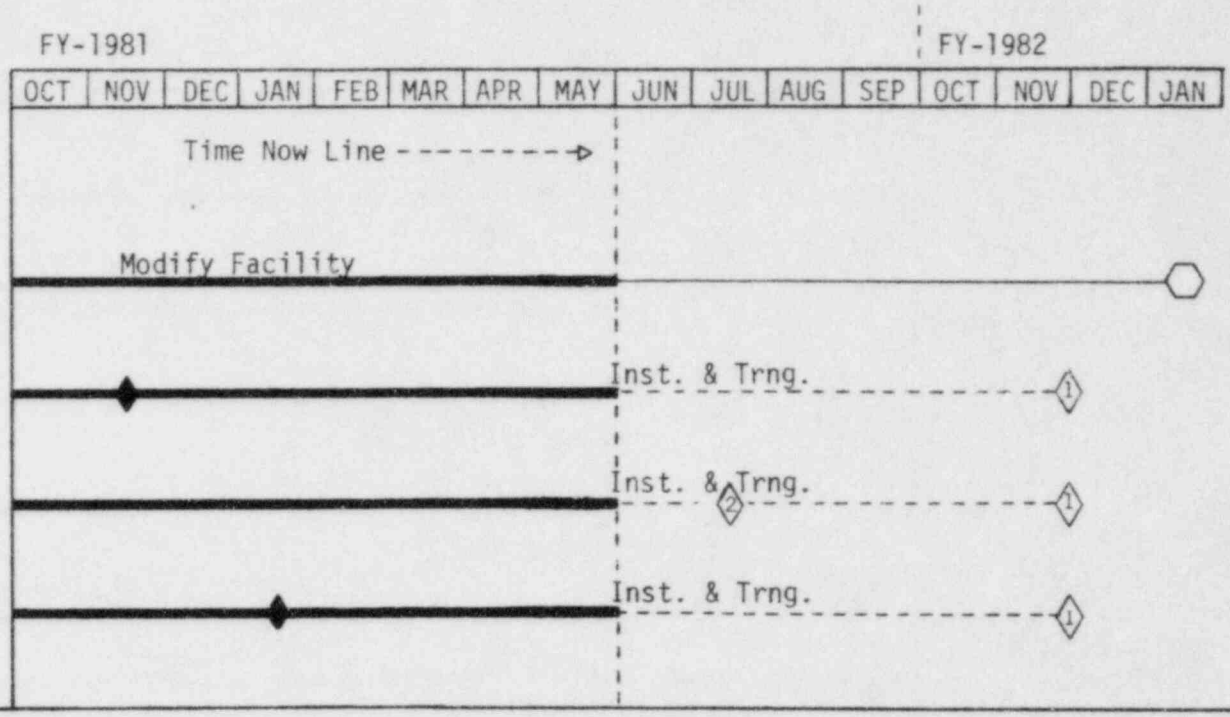
LEGEND

- 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

May 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.

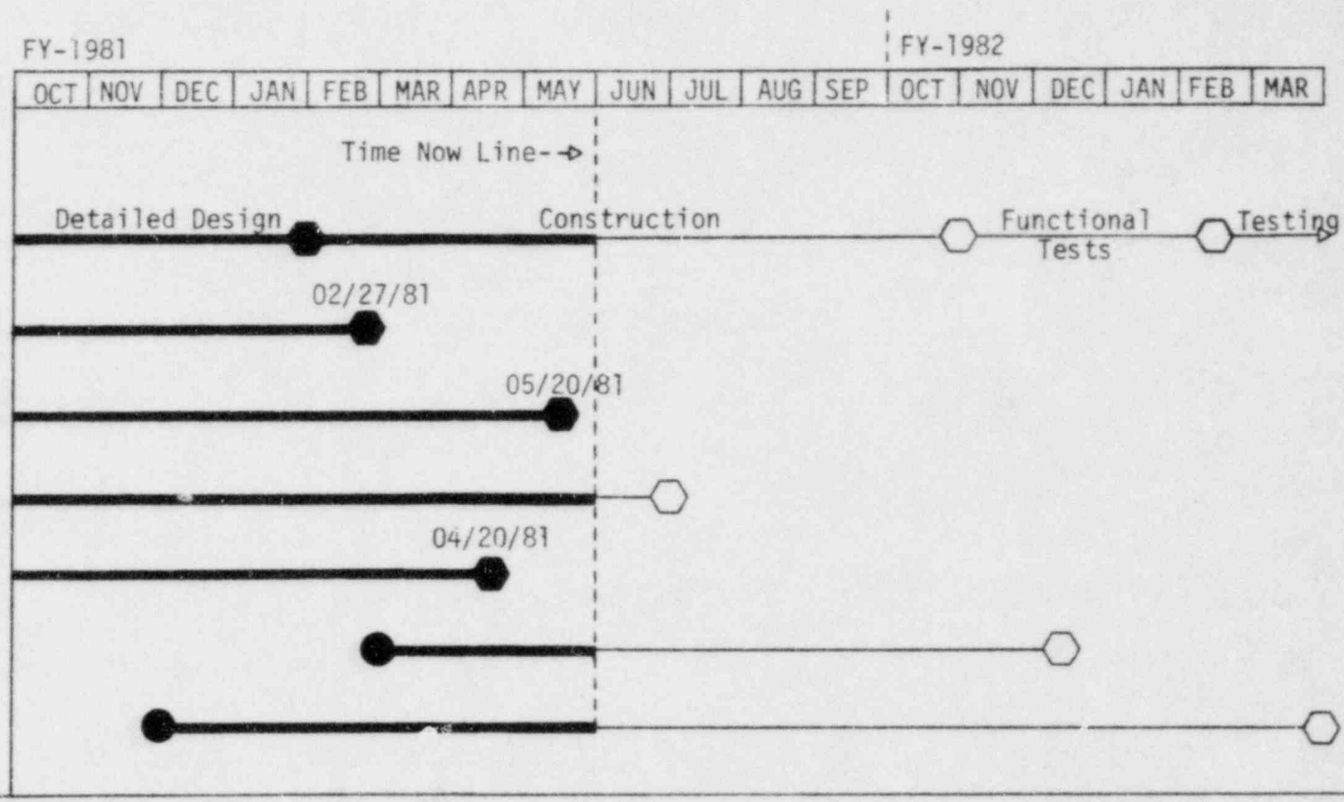
LEGEND

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

2D/3D EXPERIMENT PROGRAM

CCTF-II Projects

May 1981



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

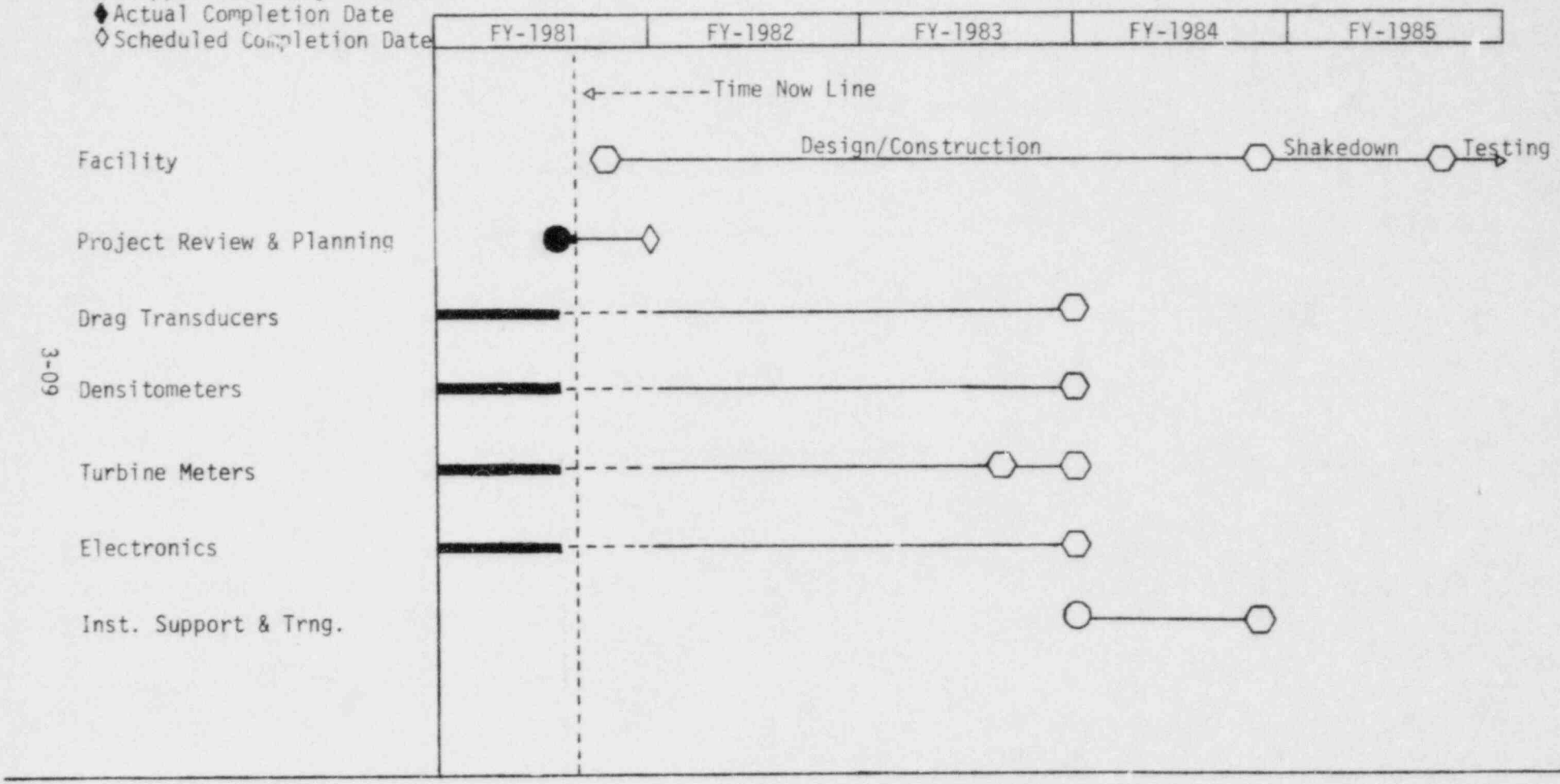
LEGEND

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

2D/3D EXPERIMENT PROGRAM

UPTF Projects

May 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 May 1981

None

3. Summary of Work Performed in May 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

Work continued on the vendor supplement to the Operations and Maintenance Manual.

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

1. Densitometers

The prototype test report draft for the Slab Core Test Facility densitometers was completed.

2. Hot Leg Spool Piece

The project was completed.

3. Turbine Meters

The project was completed.

4. Cold Leg and Vent Line Spool Piece

The project was completed.

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

5. Drag Disks

The project was completed.

c. Upper Plenum Test Facility Instruments

1. Upper Plenum Test Facility Planning

An outline of planning activities and establishment of a budget breakdown for the remainder for FY 81 was completed. EG&G personnel with measurement and instrument experience were identified to assist the program in determining the lowest cost methods of making measurements.

Desired changes to the instrument environmental limits were identified. If accepted, these changes will reduce cost to the program.

2. Turbine Meters

See 1 above.

3. Drag Disks

See 1 above.

4. Gamma Densitometers

See 1 above.

d. Cylindrical Core Test Facility Core II Instruments

1. Turbine Meters

Fabrication of the production turbine flowmeters has continued. Flow indicators and preamplifiers have been completed. Turbine probe hardware is 90 percent complete and probe assembly has been initiated. Rack assembly for the turbines and velocimeter electronics is 80 percent complete.

2. Thermocouple Velocimeter

Fabrication of the velocimeter production electronics is 80 percent complete and microprocessor programming has been initiated. Velocimeter probe characterization tests have been completed and software routines are being developed. The velocimeter probes were installed.

3. Spool Piece and Drag Disk Refurbishment

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

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

4. Conductivity Liquid Level Measurement System Refurbishment

Refurbishment of two in-core and two lower plenum conductivity level detector assemblies was performed in Japan. These four assemblies along with one new lower plenum and four new in-core conductivity liquid level detector assemblies were installed in Core II.

5. Video Probe

Video probe preliminary design was completed and a design review was held on May 15, 1981. Final design was initiated following the design review.

e. Analysis Support

The RELAP5 model for the Cylindrical Core Test Facility Core I has been checked and a few errors were found. Because of the condensation effect on the time step, the initial conditions for the Cylindrical Core Test Facility System has been modified for the model. A test run was up to 70 seconds. Slab Core Test Facility Core I Uncertainty Analysis was in progress.

4. Scheduled Milestones for June 1981

None

5. Summary of Work to be Performed in June 1981

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

1. Spool Pieces

No activity

2. Conductivity Liquid Level Measurement System

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

3. Turbine Meters

Work will continue on the vendor supplement to the operations and maintenance manual.

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

1. Gamma Densitometers

Revision of the densitometer operations and maintenance manual will begin and the prototype test report will be released.

2. Hot Leg Spool Piece

The project has been completed.

3. Turbine Meters

The project has been completed.

4. Cold Leg and Vent Line Spool Piece

The project has been completed.

5. Drag Disks

The project has been completed.

c. Upper Plenum Test Facility

1. Upper Plenum Test Facility Planning

A meeting will be held to establish a minimum cost measurement scheme for each of the instruments to be delivered. The plan for design, production and delivery of the instruments will be implemented by involving performing organizations in a detailed estimate of the project cost for each instrument .

2. Turbine Meters

See 1 above.

3. Drag Disks

See 1 above.

4. Gamma Densitometers

See 1 above.

d. Cylindrical Core Test Facility II Instruments

1. Turbine Meters

Turbine flowmeter assembly will be completed. Turbines and velocimeter racks will be completed. Calibration acceptance tests on the turbine system will be performed. Turbine system cables will be shipped to Japan.

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

2. Thermocouple Velocimeter

Production and spare electronics fabrication will be completed. Microprocessor programming will continue. Development of the software routines will be completed. Calibration and characterization test documentation will be initiated.

3. Spool Piece and Drag Disk Refurbishment

Refurbishment work will continue on the software to update it for the Cylindrical Core Test Facility Core II.

4. Conductivity Liquid Level Measurement System Refurbishment

No activity.

5. Video Probe

Work will continue on the final design and action items from the preliminary design review. Procurement of long lead items will be initiated.

e. Analysis Support

Work will continue on RELAP4/5 prediction for CCTF I and on CCTF I and SCTF I uncertainty analysis.

6. Problems and Potential Problems

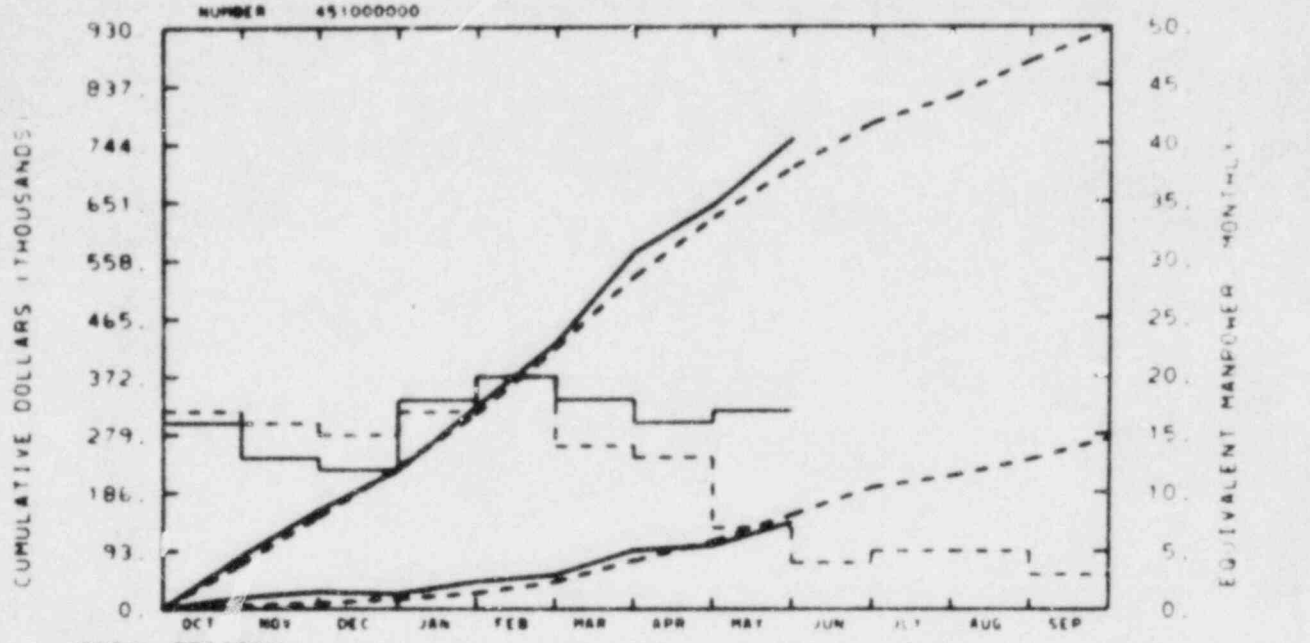
None.

RESPONSIBLE MANAGER
R F RICE

EG&G IDAHO INC.

A6282 FLUID DISTRIBUTION GRIDS

NUMBER 451000000



TOTAL PROGRAM

BUDGET	71	148	228	312	418	532	625	706	777	817	875	928
ACTUAL	85	158	222	324	426	571	646	752				

MATERIAL

BUDGET	4	9	16	26	44	78	108	150	196	212	238	272
ACTUAL	16	28	25	44	55	94	101	139				

MANPOWER

BUDGET	17	16	15	17	20	14	13	7	4	4	4	3
ACTUAL	16	13	12	18	20	18	16	17				

BUDGET - - - - - -

ACTUAL ———

A6282

YTD VARIANCE: <46> (7%)

The SCTF-I Fluid Distribution Grid and the Optical Liquid Level Detector (OLLD) Development tasks are overrun due to unexpected difficulties encountered in scheduling SCTF installation and in the development phase of prototype testing. The CCTF-II FDG is experiencing higher than anticipated production costs.

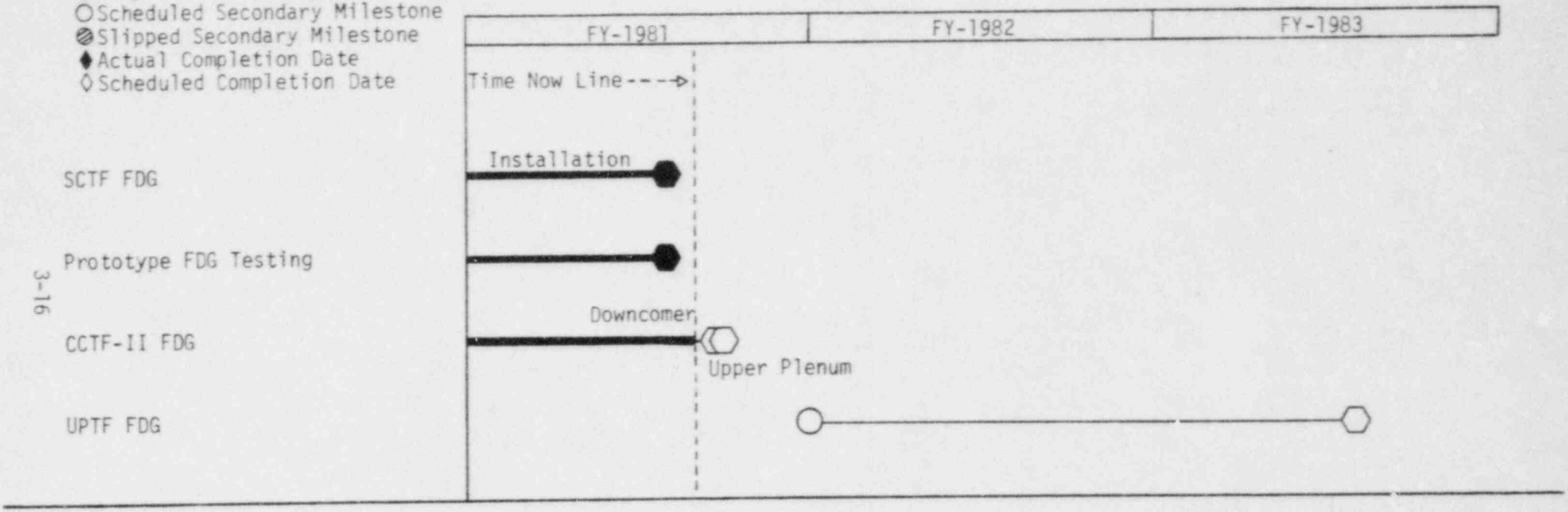
2D/3D EXPERIMENT PROGRAM

Fluid Distribution Grids

May 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 facility requested schedule.

189a A6282

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

2. Scheduled Milestones for May 1981

Node	Description	Due Date	Actual Date
--	Final Electronics Design Review for the Cylindrical Core Test Facility Core II Fluid Distribution Grid	5-29-81	6-5-81

3. Summary of Work Performed in May 1981

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

      Work continued on production of a rough draft to the operation and maintenance manual.

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

      Downcomer fluid distribution grid optical liquid level probes were completed and tested. Downcomer fluid distribution grid assemblies were completed and 75 percent were packed for shipment. Upper plenum fluid distribution grid optical liquid level probes were 50 percent completed. All parts for upper plenum fluid distribution grids were completely fabricated. A system test procedure for the fluid distribution grid signal conditioning was signed off and testing began. Burn-in on the upper plenum and downcomer fluid distribution grid electronics was completed. Fluid distribution grid signal conditioning drawings were completed except for release and distribution.

4. Scheduled Milestones for June 1981

Node	Description	Due Date	Actual Date
--	Cylindrical Core Test Facility Core II Downcomer Fluid Distribution Grid will be shipped.	6-8-81	
	Cylindrical Core Test Facility Core II Upper Plenum Fluid Distribution Grid will be shipped.	6-26-81	

5. Summary of Work to be Performed in June 1981

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

The rough draft of the operation and maintenance manual will be submitted to Word Processing.

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

Signal Conditioning Electronics final design review is scheduled for June 5, 1981. The downcomer fluid distribution grid is on schedule to be shipped June 8, 1981. The upper plenum fluid distribution grid is on schedule to be shipped June 26, 1981.

Problems and Potential Problems

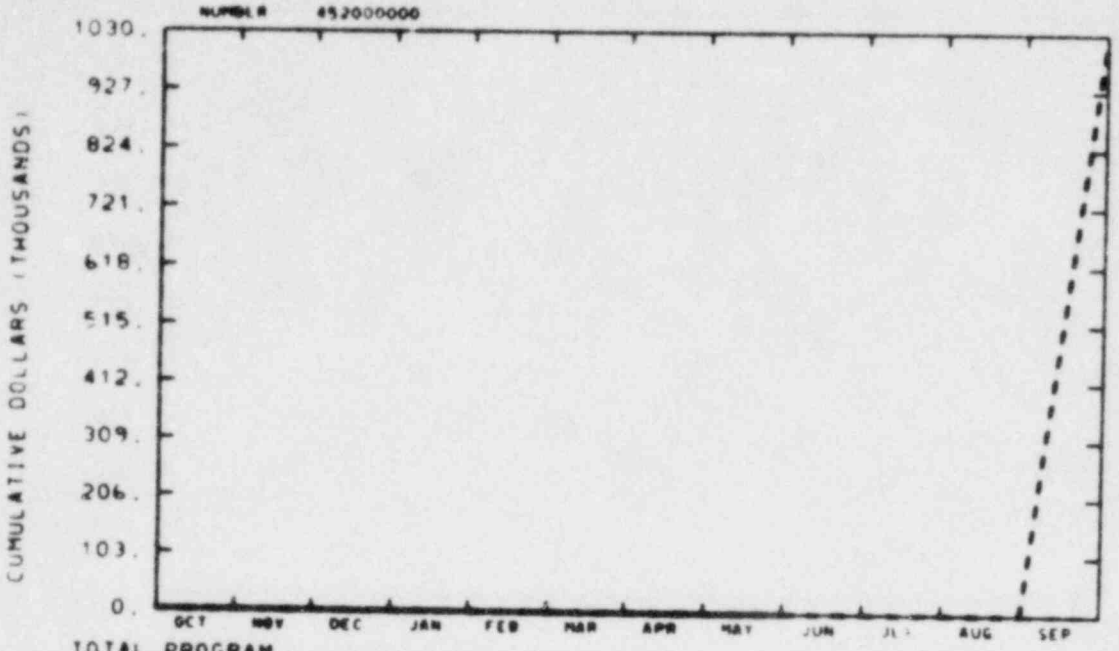
Budget overruns have occurred on the Slab Core Test Facility and additional overruns are predicted for the Cylindrical Core Test Facility Core II projects to be completed next year. These projected overruns have been discussed with DOE-ID and with the NRC at the Midyear Review. A recovery plan is being 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
R 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	1021
ACTUAL	0	0	0	0	0	0	0	0				

MATERIAL

BUDGET	0	0	0	0	0	0	0	0	0	0	0	1021
ACTUAL	0	0	0	0	0	0	0	0				

MANPOWER

BUDGET	0	0	0	0	0	0	0	0	0	~	0	0
ACTUAL	0	0	0	0	0	0	0	0				

BUDGET - - - - -

ACTUAL ———

A6289

YTD VARIANCE: 0

MONTHLY REPORT FOR

MAY 1981

CODE DEVELOPMENT DIVISION

F. Aguilar, Manager

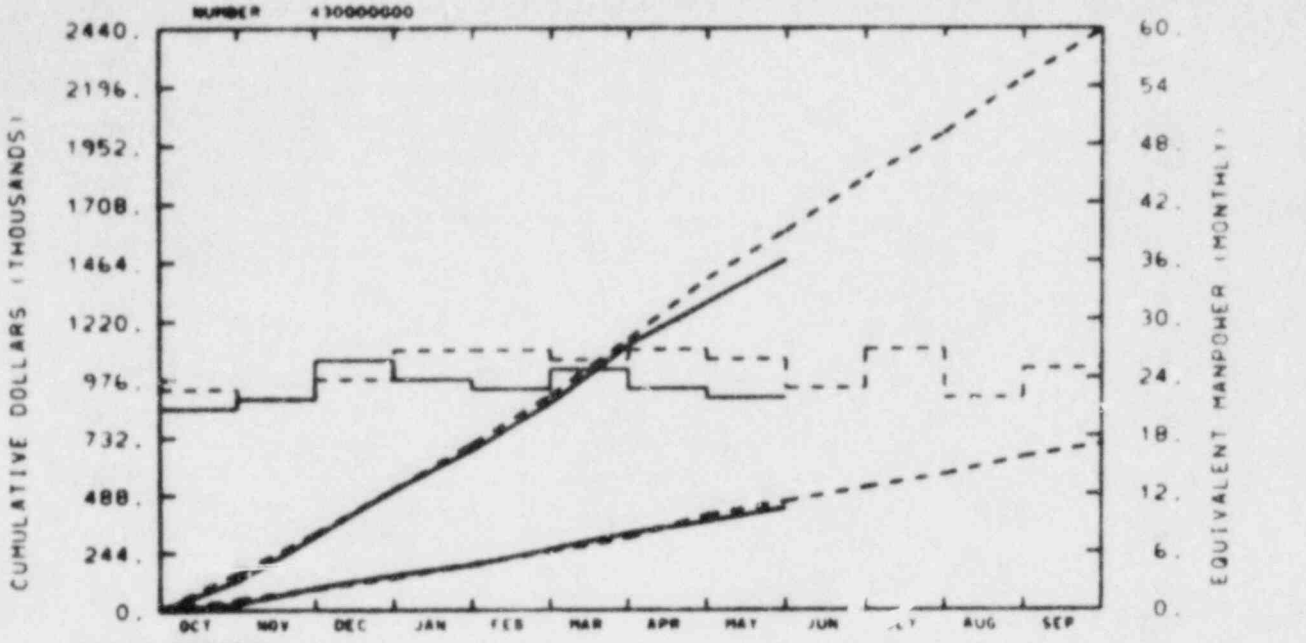
S. F. Tuck
Planning & Budgets Representative

RESPONSIBLE MANAGER
AGUILAR

EG&G IDAHO INC.

CODE DEVELOPMENT & ANALYSIS PROG

NUMBER 430000000



TOTAL PROGRAM

BUDGET	156	324	510	705	907	1142	1391	1592	1813	2003	2231	2435
ACTUAL	125	312	511	679	874	1118	1293	1469				

MATERIAL

BUDGET	44	90	139	193	250	305	401	458	518	572	645	698
ACTUAL	27	99	148	191	258	325	374	430				

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

YTD VARIANCE: 123 (8%)

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

SUMMARY AND HIGHLIGHTS

The TRAC-BD1 Code Description and User Manual was delivered on schedule to the Documentation Office for subsequent publication as a formal EGG report. The manual consists of four volumes: detailed model description, code input and user guidance, programming information, and results of developmental assessment. The completion of such a comprehensive document within three months of the final code checkout and release is a major accomplishment.

Long range planning for TRAC-BD1/MOD1 progressed satisfactorily, and a final plan will be in place by early June as scheduled. These plans incorporate actions to manage the anticipated abrupt reduction in funding in FIN A6052 for FY-82. These include: postponing the release of TRAC-BD1/MOD1 until early FY-83; terminating RELAP4/MOD7 maintenance after FY-1981; and carrying over approximately $125K of funds into FY-82. In the meantime, work progressed satisfactorily toward the June 30, 1981 interim goal of providing an early, but limited ATWS capability.

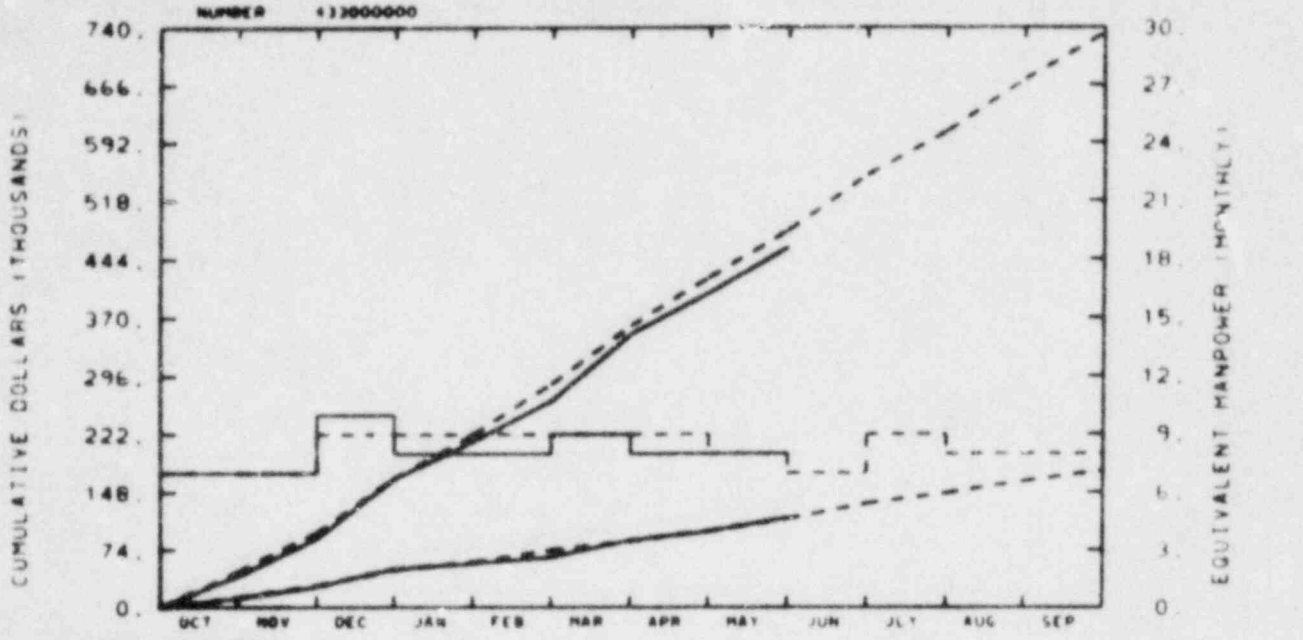
A review of the multi-node steam generator initialization task for RELAP4/MOD7 was completed. Results were reported to NRC by telephone. It was demonstrated that the existing algorithm does, in fact, provide initial states for steam generator secondaries in which recirculation is not modeled. A study is underway to determine whether the existing multi-node capability can be coupled with a "null transient" procedure to obtain initial states for steam generator models including recirculation flow. This will be complete by mid-June. If successful, the steam generator initialization task will be complete. If not, options for task resolution will be provided.

The FRAP-T6 developmental assessment report was completed as scheduled. Maintenance for MATPRO-11, Revision 2 was completed with the development of a fuel hot pressing model. Development of SCDAP continued to progress satisfactorily.

RESPONSIBLE MANAGER
AGUILAR

EG&G IDAHO INC.

FUEL BEHAVIOR MOD DEVELOPMENT



TOTAL PROGRAM

BUDGET	46	97	166	222	287	361	421	481	551	607	673	733
ACTUAL	40	88	165	213	265	350	402	459				

MATERIAL

BUDGET	13	29	48	58	74	85	99	114	134	147	162	171
ACTUAL	12	26	50	57	65	87	98	116				

MANPOWER

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

BUDGET
ACTUAL

A6050

YTD VARIANCE: 22 (5%)

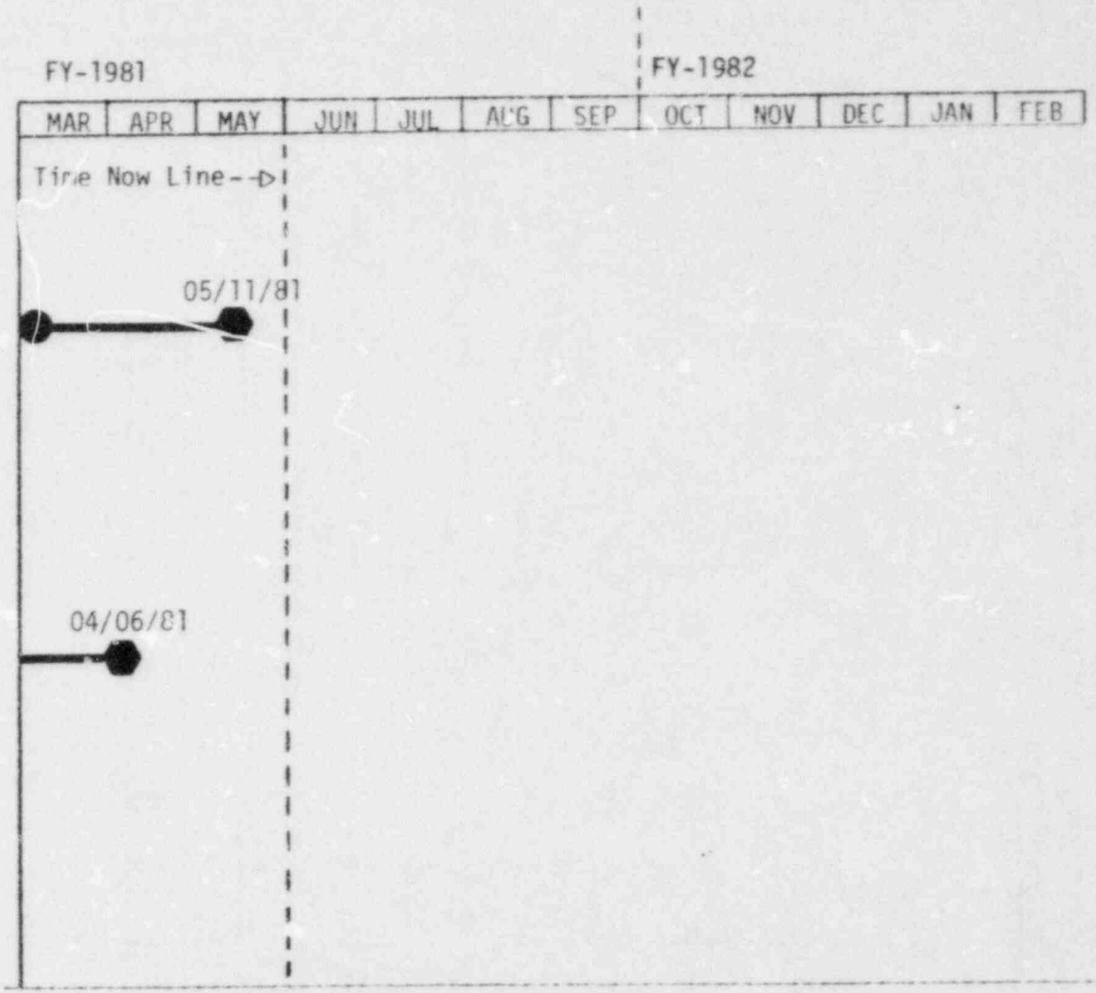
CODE DEVELOPMENT DIVISION

May 1981

FRAP-T Development (A6050)

LEGEND

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



NOTES: The start 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.

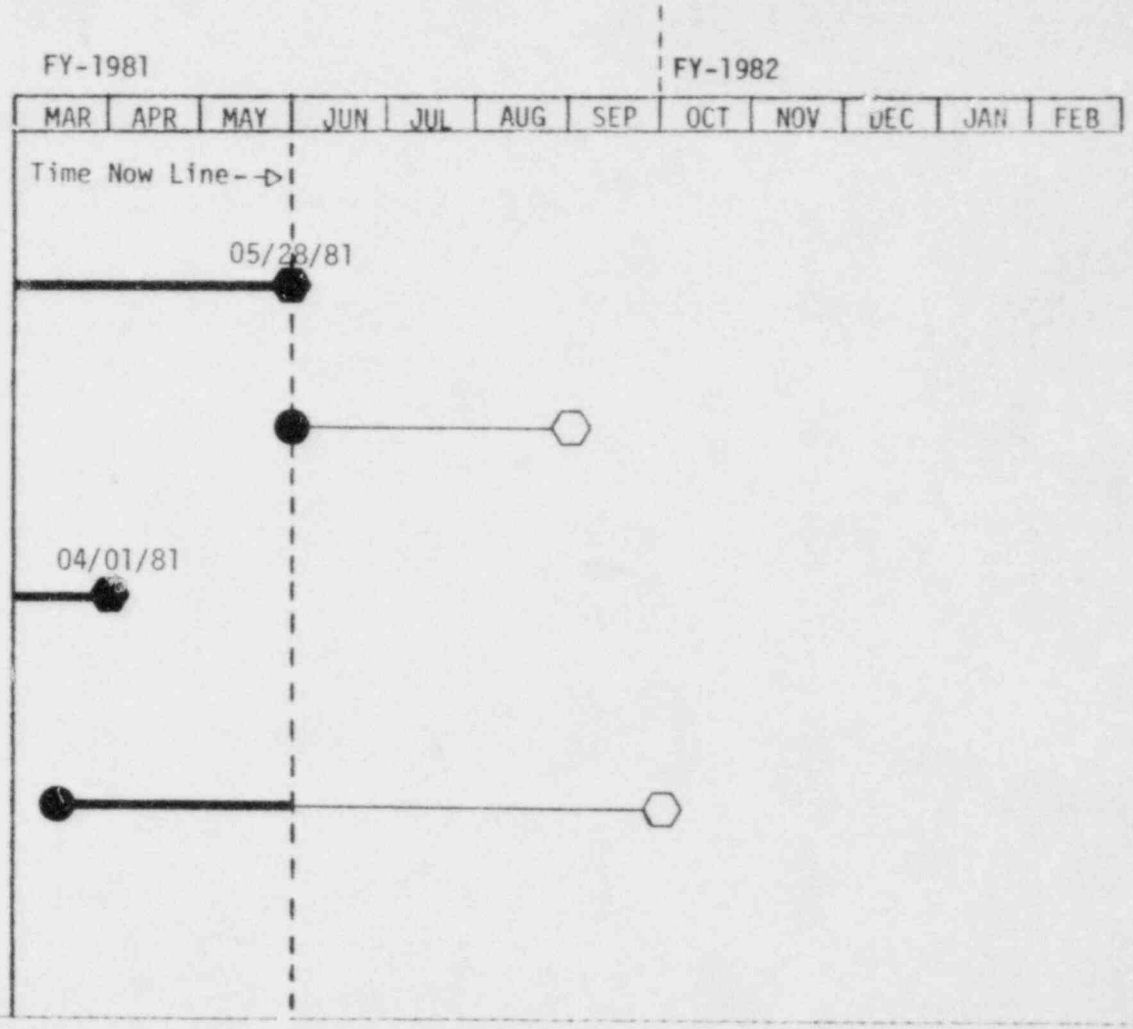
LEGEND

- 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

May 1981

MATPRO Development (A6050)



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.

189a A6050

1. 189a A6050 - Fuel Behavior Model Development

2. Scheduled Milestones for May 1981

Node	Description	Due Date	Actual Date
FA-1-81	FRAP-T6 Developmental Assessment Delivered to NRC	05/11/81	05/11/81C (FA-43-81)
N/A	MATPRO Maintenance (Fuel Hot Pressing)	06/01/81	05/28/81C (FA-48-81)

3. Summary of Work Performed in May 1981

a. FRAP-T6

The FRAP-T6 developmental assessment report was completed and issued on May 11, 1981 as scheduled. The FRAP-T6 version with the BALLOON-2 model updates was delivered to independent assessment. Several additional updates were incorporated in FRAP-T6 to correct minor code errors that have been discovered. These updates will be provided to the National Energy Software Center (NESC) by June 1981.

b. MATPRO

Maintenance for MATPRO-11, Revision 2 was completed with completion of the new fuel hot pressing model. A report describing the hot pressing model was issued on May 28, 1981 ahead of the scheduled June 1, 1981 date. Preparation of figures for the MATPRO-11, Revision 2 handbook began. The handbook updates will be issued by the scheduled August 31, 1981 date.

c. SCDAP

The functional and data requirements and driver logic for SCDAP/MODO was reviewed for consistency by code development participants. The literature review for the debris formation and behavior models was completed and development of the fragmented debris models began. Development of the bundle thermal and hydraulic models began in May; review of the modeling basis for the conduction models began and will be completed in late June and work began on the non-condensible gas transport model which will be coded during June. Review of the liquefaction, flow, and solidification models has been delayed until July due to manpower limitations. Presentations on SCDAP were given at the German-American-Japanese fuel behavior information meeting and to the NRC Fuel Testing Task Force.

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

d. Special Projects

The FRAP newsletter was not issued during May. However, typing of the newsletter was completed and the document will be issued during June. The FRAPCON-1 Code Description and User's Manual was released as a NUREG report. Due to working on a joint paper with Westinghouse on effects of cladding ballooning on rod heat transfer, the BALLOON-2 model description report was not issued. However, the report was modified to include model updates which resulted from the incorporation of the model in FRAP-T6. Typing is in progress and the report will be issued during June 1981. A presentation was given at the German-American-Japanese fuel behavior information exchange meeting describing the BALLOON-2 model development and assessment. A model was developed to convert the distribution of input parameters to a distribution of cladding shapes for the flow area restriction model. Preparation of a preliminary design report for the flow area restriction model is in progress and will be completed for review during early June.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

a. FRAP-T6

FRAP-T6 updates will be sent to the NESC, ending planned support for FRAP-T6 during Fiscal Year 1981.

b. MATPRO

Work will continue on the MATPRO-11, Revision 2 handbook as a low level of effort until July. During June, the figures for the handbook updates will be completed.

c. SCDAP

Work is expected to begin on the isotopic summation decay heat model. Preliminary design requirements for this model will be established. Theory development and preliminary design review will be completed for the fragmented debris formation and behavior models. The literature review for the liquefaction, flow, and freezing models will continue and will be completed in early July. Theory development for the heat conduction models will be completed in late June. Coding of the non-condensible gas transport models

3.c Summary of Work to be Performed in June 1981 (Continued)

will be completed and debug of the model will begin. Depending on manpower availability, coding of the SCDAP/MODO driver logic will begin and design of the data management system will be completed.

d. Special Projects

The FRAP newsletter and BALLOON-2 model description reports will be completed and issued. A preliminary design review will be held for the flow area restriction model and checkout of the model with a driver code will begin. Checkout is expected to be completed during July at which time the model will be incorporated in FRAP-T6.

6. Problems and Potential Problems

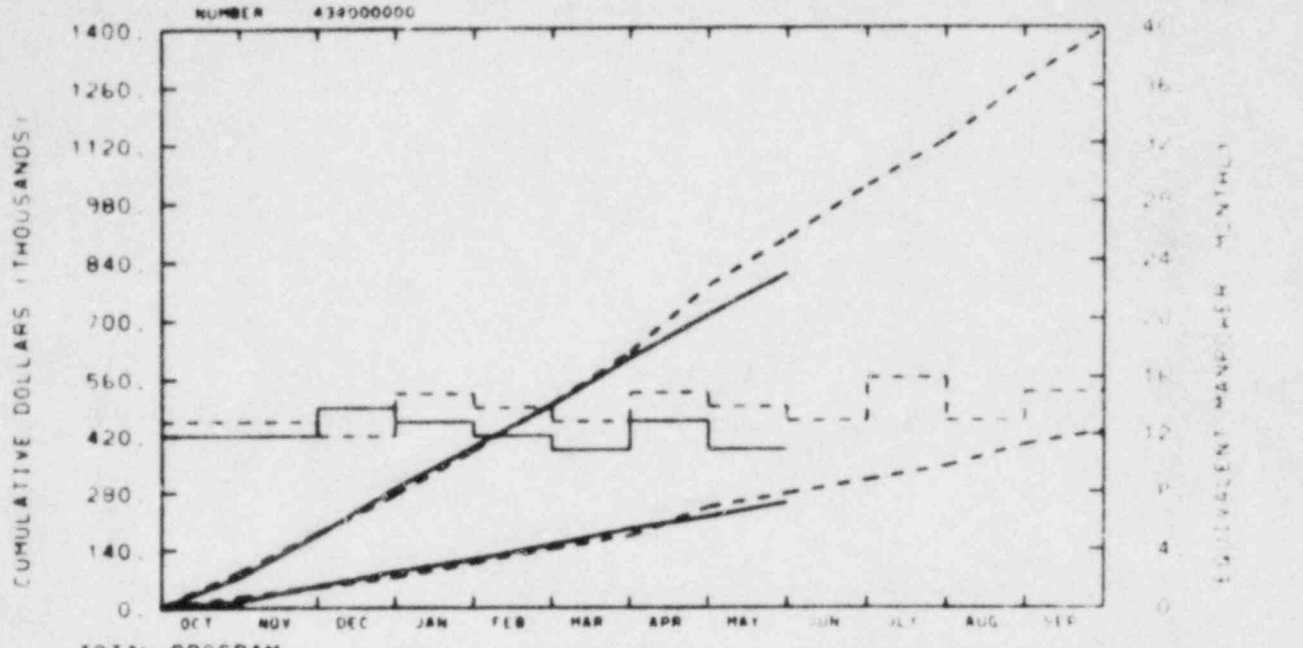
None.

RESPONSIBLE MANAGER
J. AGUILAR

EG&G IDAHO INC.

COBRA ANALYSIS

NUMBER 434000000



TOTAL PROGRAM

BUDGET	86	180	275	385	499	623	780	894	1017	1128	1271	1395
ACTUAL	74	176	291	393	496	609	711	810				

MATERIAL

BUDGET	25	50	74	108	144	173	243	276	309	343	396	429
ACTUAL	15	52	87	117	152	191	220	254				

MANPOWER

BUDGET	13	13	12	15	14	13	15	14	13	16	13	15
ACTUAL	12	12	14	13	12	11	13	11				

A6052

YTD VARIANCE: 84 (9%)

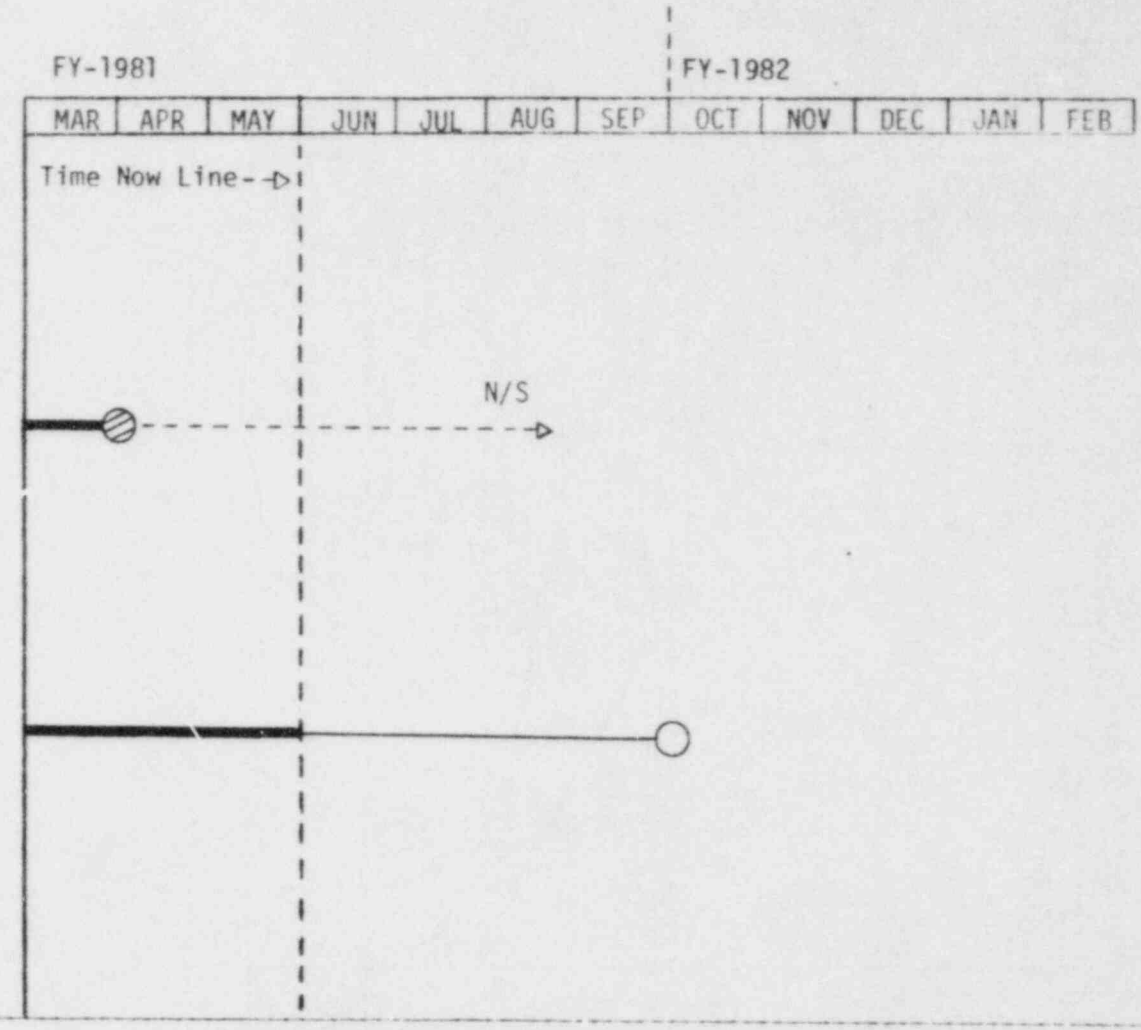
Publication costs (~$40 K) for the RELAP4/MOD7 manual have been deffered from April until July. Because of the anticipated abrupt reduction in funding ($1395 K in FY-1981 to $800 K in FY-1982), actions are being taken to carryover as much as $125 K into FY-1982.

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 May 1981

RELAP4/MOD7 Integral Code Development and Checkout (A6052)



NOTES: * See text for status.

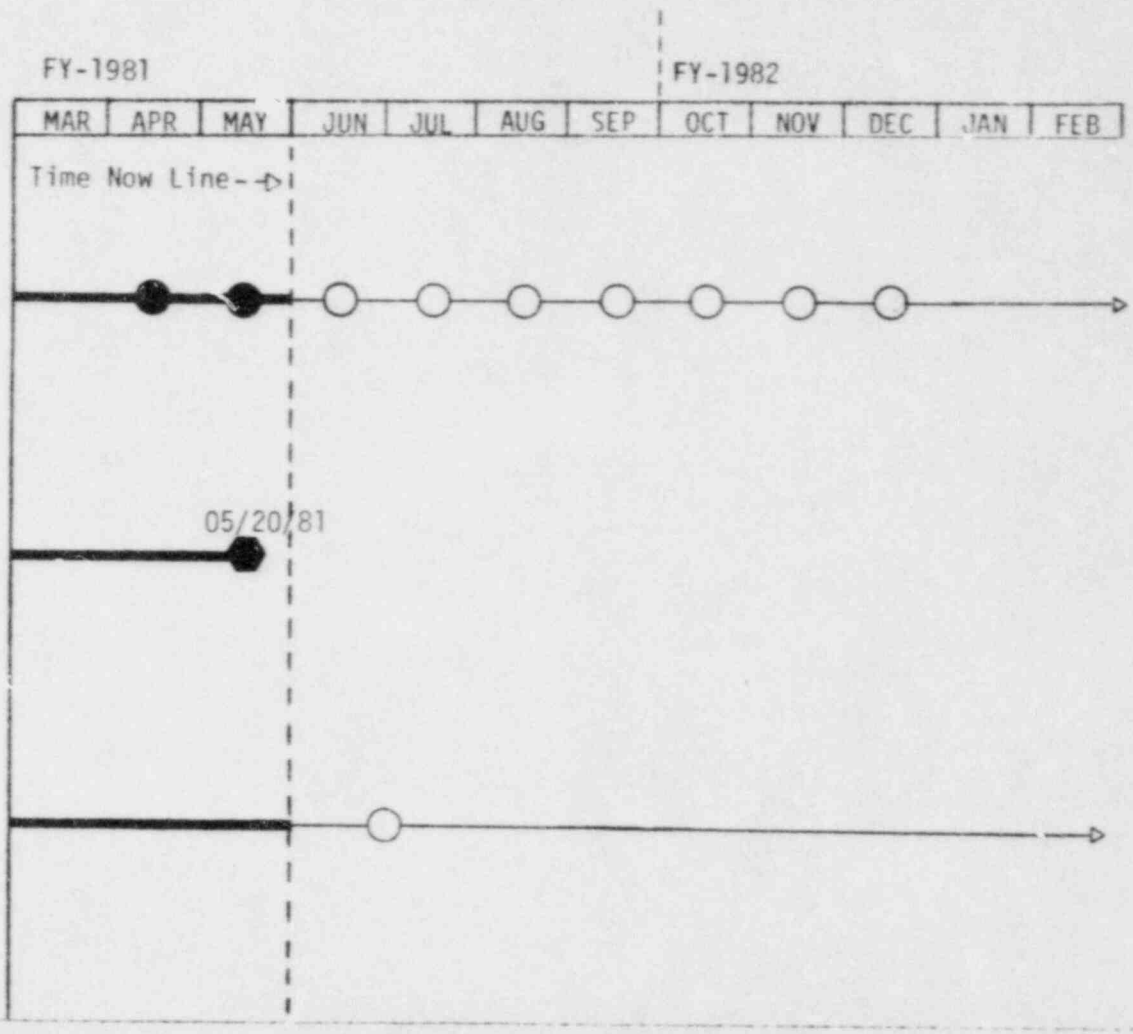
LEGEND

- 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

TRAC-B Development (A6052)

May 1981



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.

** An interim version of TRAC-BD1/MOD1 has been identified that will provide a basic ATWS capability on June 30, 1981. Long-range schedules and milestones are under final negotiation with NRC.

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

2. Scheduled Milestones for May 1981

Node	Description	Due Date	Actual Date
PN-55-80	Preparation of TRAC-BD1 Draft Manual	05/20/81	05/20/81 (FA-47-81)

3. Summary of Work Performed in May 1981

a. Code Maintenance and Enhancement

Integration of known error corrections and model improvements into the mainline version of RELAP4/MOD7 continued on schedule toward a September 30, 1981 release to the National Energy Software Center (NESC). Assistance was provided to NRR on a Diablo Canyon RELAP4/MOD7 loss-of-coolant accident (LOCA) calculation.

A review of the multi-node steam generator initialization task was completed. It was determined that the base initialization algorithm (single-node secondary) has, in fact, been successfully extended to handle multi-node representation of steam generator secondaries in which recirculation flow is not modeled. A power mismatch problem in the base algorithm was identified and it is believed that this is responsible for a "null transient" drift from the initial states provided by both the base (single node) and multi-node initialization algorithms. These results were communicated to NRC by telephone on May 11 instead of by letter. A study was begun to determine whether the existing multi-node secondary capability can be used to initialize models having a recirculation volume and flow path. The scheme is to use the existing multi-node initialization algorithm to provide an initial state with the recirculation line valved shut and then to run a "null transient" with an open valve to establish recirculation flow.

b. Boiling Water Reactor (BWR) TRAC Development

The draft TRAC-BD1 User's Manual was completed on schedule. The four-volume manual has been delivered to EG&G Technical Editing for final processing. Final publication of the manual is planned for October 30, 1981.

3.b Summary of Work Performed in May 1981 (Contd.)

The boron tracking model has been debugged and a completion report written. The Andersen-Ishii interfacial shear model and reactivity feedback model are in the final checkout phases. All model development is progressing on schedule toward the June 30 completion date.

The control system models have been completely programmed. Two test problems are being used for checkout and debugging.

The TRAC-BD1/MOD1 plans have been reworked to incorporate NRC comments and desires regarding the work scope and to account for the anticipated large reduction in FY-82 funding.

4. Scheduled Milestones for June 1981

Node	Description	Due Date	Actual Date
N/A	TRAC-BD1/Anticipated Transient Without Scram (ATWS) Version	06/30/81	06/30/81E

5. Summary of Work to be performed in June 1981

a. Code Maintenance and Enhancement

Work will continue toward preparation of a final version of RELAP4/MOD7 to be released to the NESC by the end of FY-81. The study to determine whether the existing multi-node secondary initialization capability can be used in conjunction with a "null transient" procedure will be completed by mid-June. If this is successful, the steam generator initialization task will be complete. If not, cost and schedule estimates will be provided NRC for alternate technical approaches including one suggested by NRC.

b. Boiling Water Reactor (BWR) TRAC Development

The interim version of TRAC-BD1/MOD1 with the boron tracking Andersen-Ishii interfacial shear, and reactivity feedback models will be completed. Completion reports will be written. The final long-range plans for TRAC-BD1/MOD1 development will be completed. A presentation will be made at the Advisory Committee on Reactor Safety (ACRS) Emergency Core Cooling System (ECCS) Subcommittee Meeting on June 23, 1981. The General Electric (GE)/NRC/Electric Power Research Institute (EPRI) Refill-Reflood Program Management Group (PMG) meeting will be attended in San Jose. A monthly coordination meeting with GE will be held.

6. Problems and Potential Problems

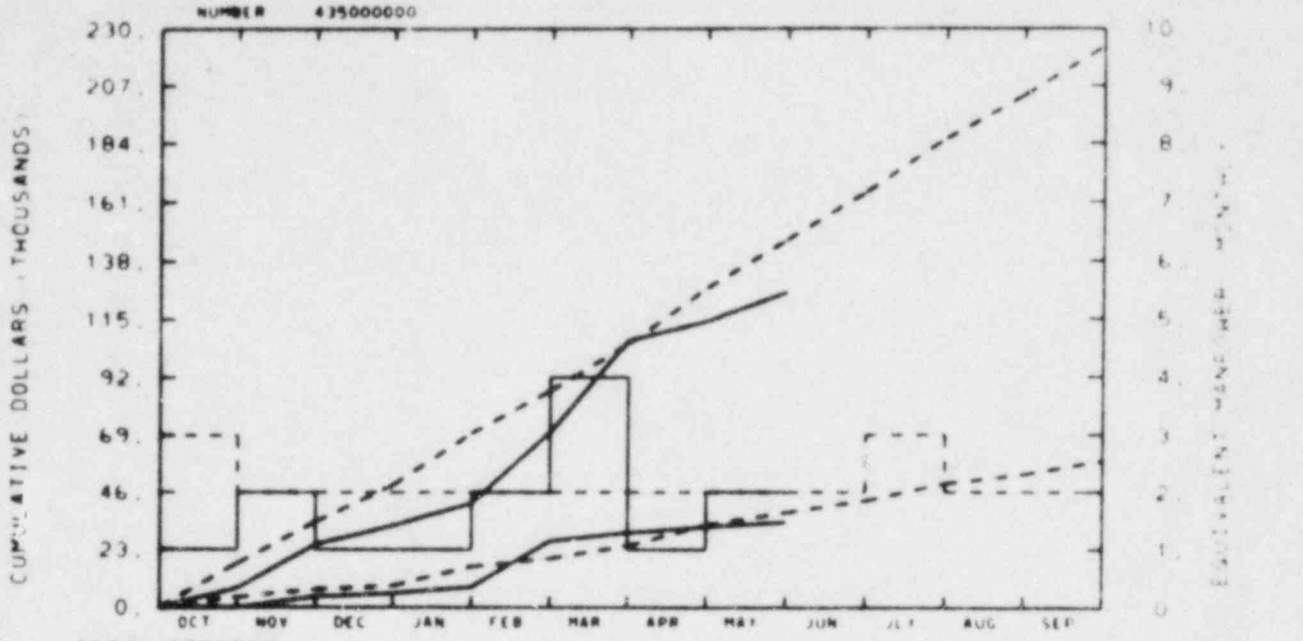
Because of the anticipated abrupt reduction in funding ($1395K in FY-1981 to $800K in FY-1982), actions to manage the problem have been incorporated in the TRAC-BD1/MOD1 development plans. These include: postponing the release of TRAC-BD1/MOD1 until early FY-1983, terminating RELAP4/MOD7 maintenance after FY-1981, and carrying-over approximately $125K into FY-1982.

RESPONSIBLE MANAGER
S. FISCHER

EG&G IDAHO INC.

TRAC LWR HEAT TRANSFER

NUMBER 435000000



TOTAL PROGRAM

BUDGET	18	34	49	70	87	105	127	146	165	186	203	221
ACTUAL	8	25	33	42	70	107	114	126				

MATERIAL

BUDGET	4	7	9	16	19	25	33	38	42	49	53	58
ACTUAL	0	4	6	8	26	30	32	34				

MANPOWER

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

BUDGET

ACTUAL

A6278

YTD VARIANCE: 20 (14%)

Beginning in mid-June, additional manpower will be assigned to assist with the assessment tasks. No impact on work scope is anticipated.

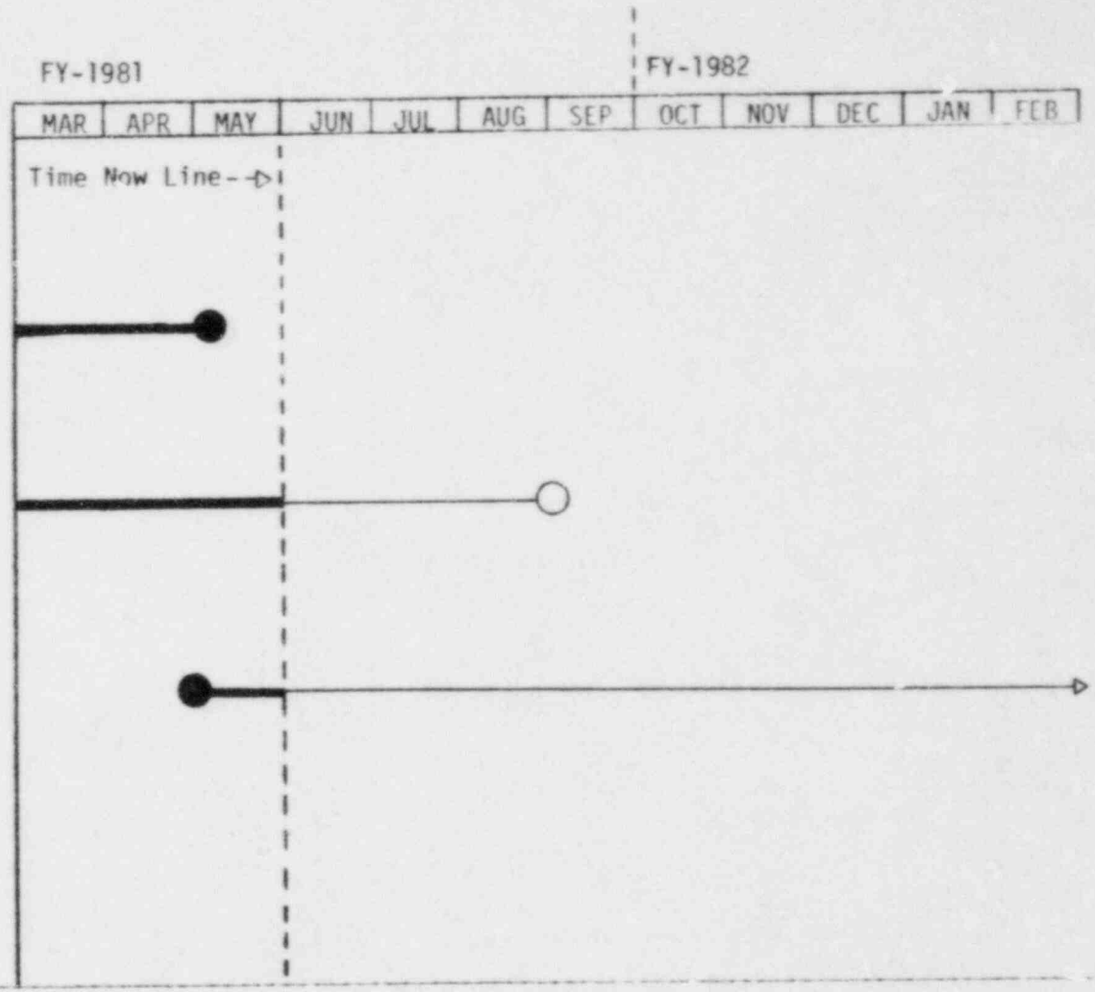
CODE DEVELOPMENT DIVISION

May 1981

Heat Transfer (A6278)

LEGEND

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



NOTES: The 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 May 1981

Node	Description	Due Date	Actual Date
FA-32-80	Assessment Plan to NRC	05/01/81	04/07/81 (FA-42-81)

3. Summary of Work Performed in May 1981

The TRAC-BWR heat transfer correlation assessment plan was transmitted to NRC on May 7, 1981. Work was started on modularizing the TRAC-BD1 heat transfer correlation package and incorporating sensitivity multipliers. A completion report on the implementation of the Lahey mechanistic subcooled boiling model has been written.

Work was started on developing TRAC-BD1 models of the University of Ottawa single vertical tube boiling test and the FRIGG 3 subcooled boiling experiment. These simulations are being performed as part of our separate effects assessment of the TRAC-BD1 heat transfer package.

4. Schedule Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Model debugging will be completed and TRAC-BD1 code data comparisons for the University of Ottawa and FRIGG 3 data will begin. TRAC-BD1 models will be developed for the Bennett and Rouhani separate effects experiments. Work will continue on modularizing the TRAC heat transfer package and incorporation of user input heat transfer coefficient multipliers in preparation for our planned assessment and sensitivity study.

6. Problems and Potential Problems

None.

MONTHLY REPORT FOR

MAY 1981

CODE ASSESSMENT AND APPLICATION DIVISION

B F Saffell by EC

B. F. Saffell, Manager

E. L. Pierson

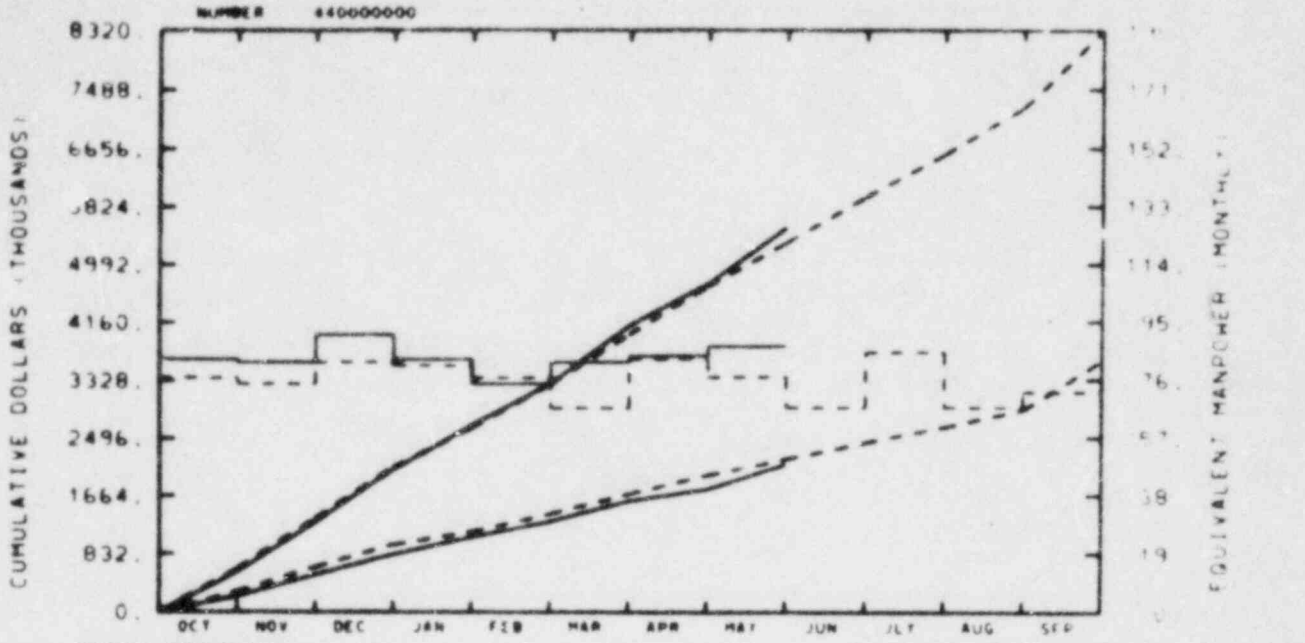
E. L. Pierson
Planning & Budgets Representative

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

CODE ASSESSMENT & APPLICATIONS

NUMBER 440000000



TOTAL PROGRAM

BUDGET	625	1345	2087	2850	3281	3988	4676	5306	5963	6571	7229	8313
ACTUAL	578	1286	2055	2688	3286	4119	4714	5522				

MATERIAL

BUDGET	295	648	964	1151	1404	1692	1959	2191	2430	2652	2897	3596
ACTUAL	226	535	827	1071	1293	1589	1755	2114				

MANPOWER

BUDGET	77	75	82	81	77	67	82	77	67	85	67	72
ACTUAL	83	82	91	83	75	82	84	67				

BUDGET - - - - - -

ACTUAL ———

YTD VARIANCE: <216> (4%)

Individual cost graphs will give individual explanations.

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

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

A6276: The draft pump report, including data through September 30, 1980, was completed and transmitted to NRC.

A6290: A letter report describing the completion of Task 1 in the A6290 Program Brief was transmitted to NRC.

A6291: The Software Development task and the Cross-Component Quick Look Report were completed.

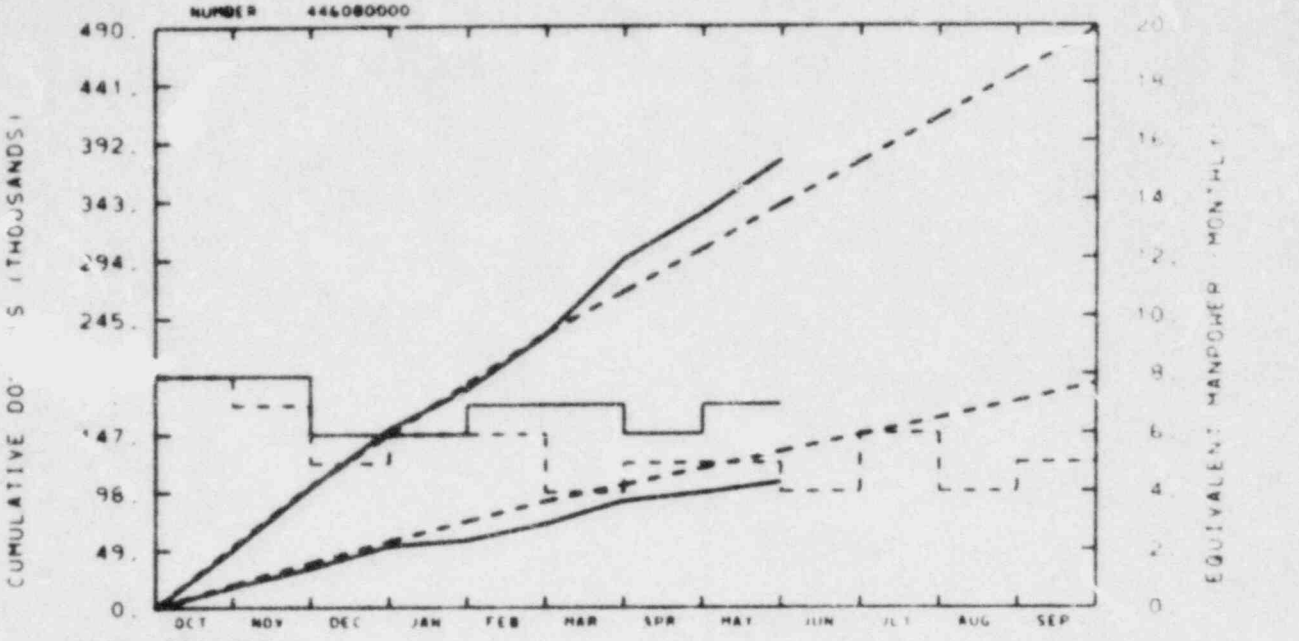
A6353: The final report on impedance tests conducted by Transitek at the Kuosheng power plant was received by EG&G.

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	376				

MATERIAL

BUDGET	20	39	57	74	90	104	118	132	146	159	173	188
ACTUAL	18	34	53	57	71	91	97	106				

MANPOWER

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

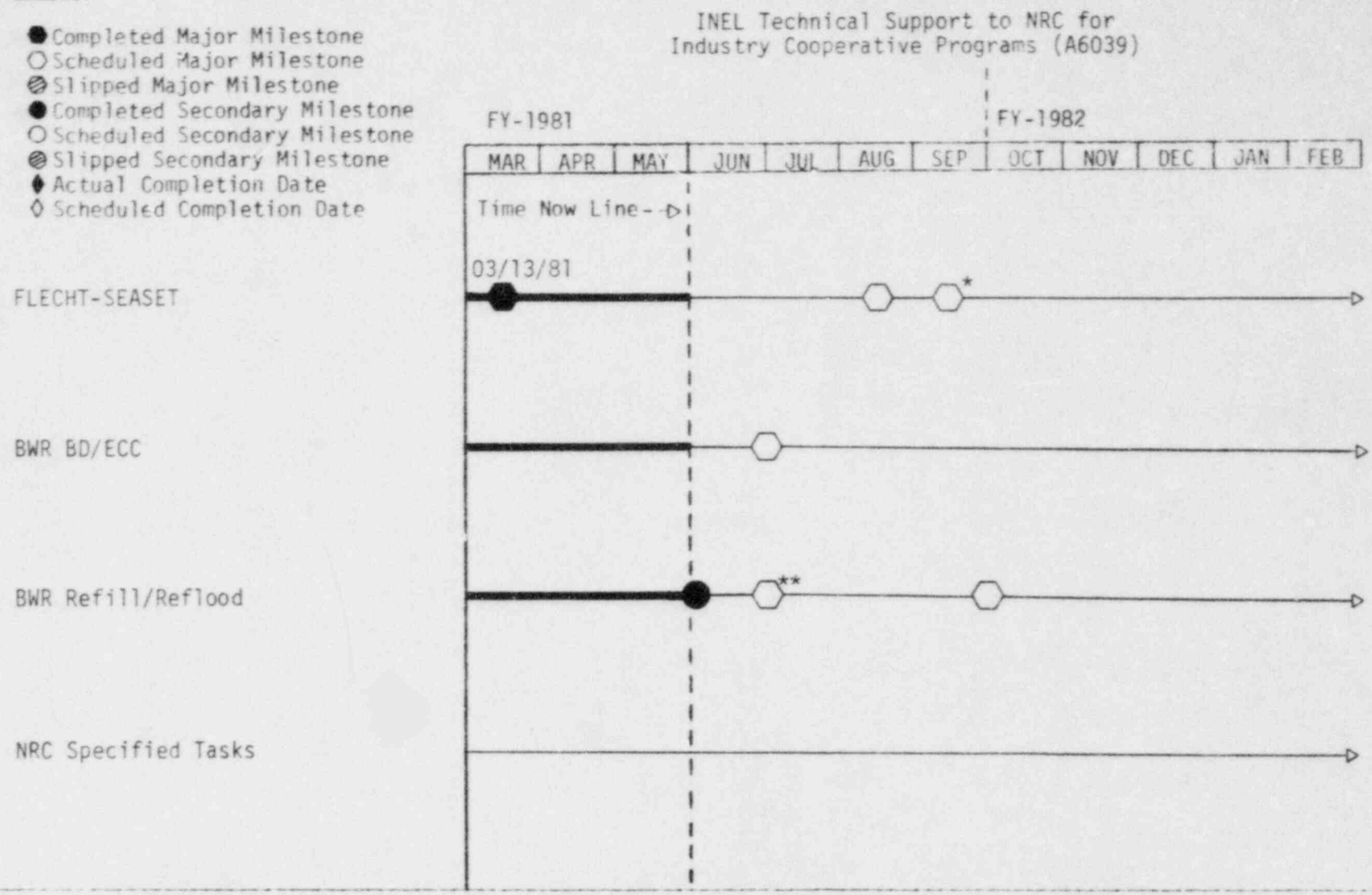
A6039

YTD VARIANCE: <37> (11%)

Additional funding of $150 K has been received and will be reflected in the budget for June. Part of this additional funding will help recover costs for (a) a FLECHT-SEASET study which was redirected from reflood effects to natural circulation conditions, and (b) an NRC specified pumps on/pumps off study. With these recovered costs and planned activities, no budget overrun at year end is expected.

CODE ASSESSMENT AND APPLICATION DIVISION May 1981

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



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

** With NRC agreement, formal documentation of the Single Heated Bundle data evaluation will be provided at the end of June. Major results will be informally transmitted in early June.

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

The following boiling water reactor (BWR) experimental documentation was reviewed with comments transmitted to the Department of Energy (DOE)/Nuclear Regulatory Commission (NRC) by the indicated letters: 30° Steam Sector Test Facility (SSTF), Facility Description (Saff-120-81), Two Loop Test Apparatus (TLTA) Low Flow Bundle Test Topical Report (Saff-121-81).

The Single Heated Bundle (SHB) data evaluation and the TLTA Emergency Core Cooling (ECC)/No ECC study continued. A review of the data tapes for the TLTA ECC/No ECC study indicated some data was not acceptable. New tapes will be provided by General Electric (GE) at the June Program Management meeting.

The RELAP5 evaluation of the FLECHT-SEASET natural circulation system in the single phase continued with the simulation of several single phase tests. A simulation of a two phase test is being performed.

The COBRA/TRAC computer code was put on our system and a sample problem has been successfully run. A COBRA/TRAC model for the evaluation of FLECHT-SEASET flow blockage has been developed and is now being debugged.

4. Scheduled Milestones for June 1981

Node	Description	Due Date	Actual Date
BB2	BWR-Refill/Reflood Single Heated Bundle Evaluation Study	6-1-81T	

5. Summary of Work to be Performed in June 1981

The SHB data evaluation will be completed and comments informally transmitted early in June. Formal documentation will be provieed late in June.

The TLTA ECC/No ECC calculations will be completed and informal comments transmitted.

Evaluation of the FLECHT-SEASET natural circulation system with RELAP5 will continue with the completion of the single phase calculations and the continuation of the two phase calculations. Evaluation of FLECHT-SEASET flow blockage will continue with COBRA/TRAC simulations.

6. Problems and Potential Problems

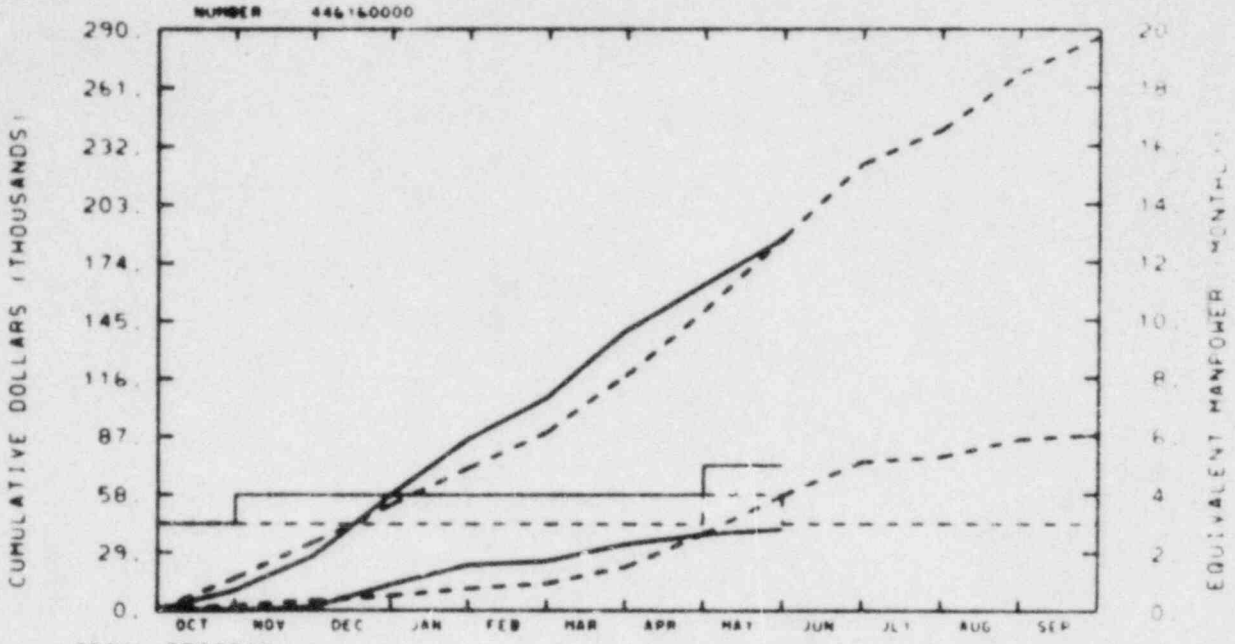
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

FUEL BEHAVIOR ANALYSIS A6046

NUMBER 446160000



TOTAL PROGRAM

BUDGET	16	34	53	71	89	117	150	186	223	240	268	286
ACTUAL	10	27	58	86	107	140	163	186				

MATERIAL

BUDGET	3	5	8	11	14	22	39	57	74	77	85	88
ACTUAL	0	2	13	23	25	33	38	41				

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

A6046

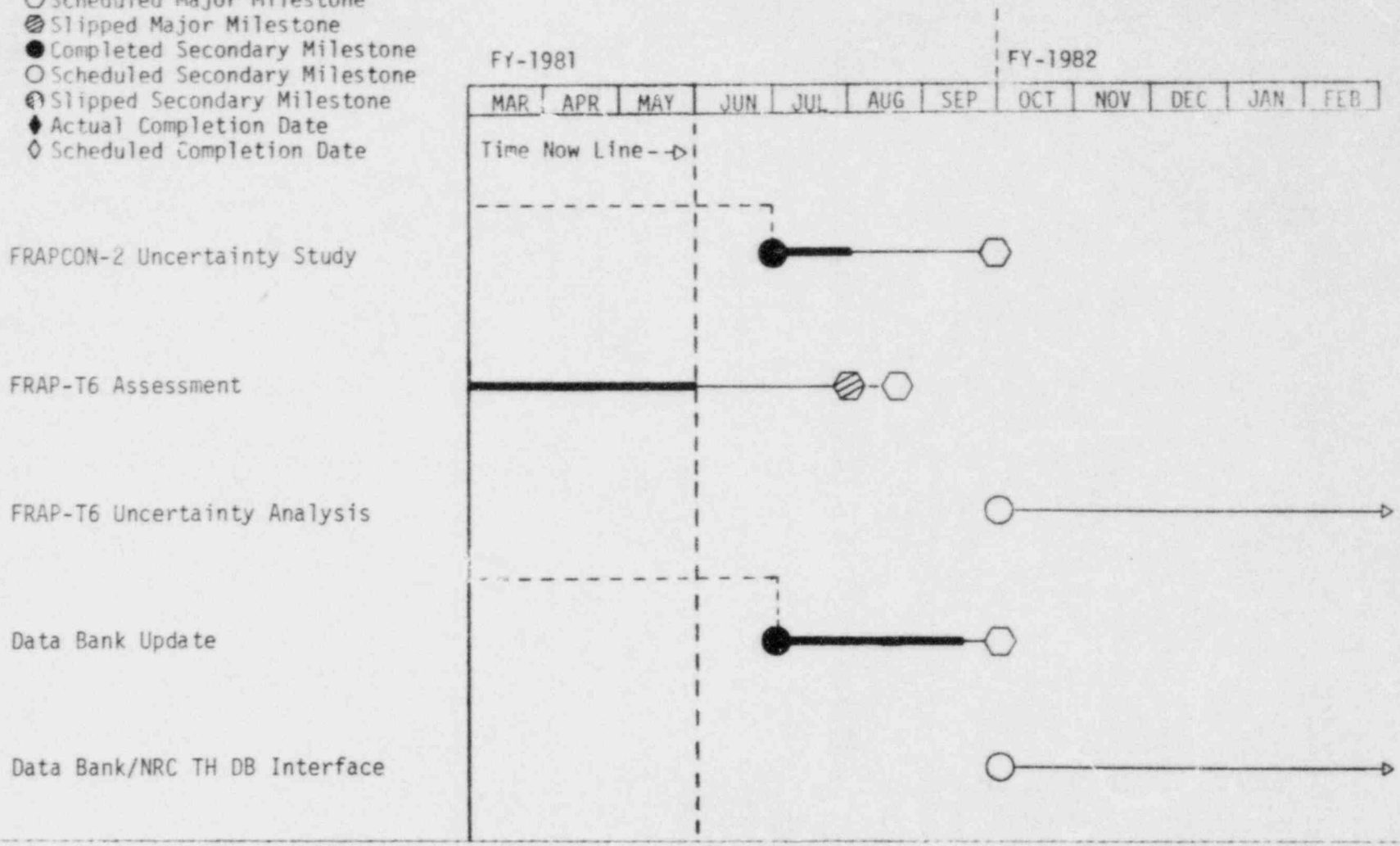
YTD VARIANCE: 0

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 May 1981

Fuel Code Assessment (A6046)



NOTES:

189a A6046

1. 189a A6046 - Fuel Behavior Analysis Assessment

2. Scheduled Milestones for May 1981

Node	Description	Due Date	Actual Date
CC2	Assess FRAP-T6	5-1-81E 8-21-81T	

3. Summary of Work Performed in May 1981

The FRAP-T6 code assessment continued. The analyses of CHF is complete and is drafted. The tables, plots, and references are in final form. Results show that the Combustion Engineering (CE)-1 and Loss of Fluid Test (LOFT) correlations give the most accurate calcultions of mass flux and power at CHF for pressurized water reactor (PWR) system conditions. While running a sample of overpower cases, an error in the FRAPCON-2 linkage to FRAP-T6 was discovered and has been corrected. The error failed to pass the permanent fuel displacement term in the correct units when the FRACAS-II deformation model was used. Therefore, it was necessary to rerun the sample overpower cases and the commercial rod decks for end-of-life. All of the steady state FRAPCON-2 runs are completed for the transient gas release and overpower categories. The old out-of-pile burst category files were restored from tapes and decks. These decks and about 240 new decks are being processed into T6 input format.

Drafting of the Idaho National Engineering Laboratory (INEL) Fuels Data Bank Report is complete and all figures describing the data sample are in final form.

Errors were identified in the FRAPCON-2 automated uncertainty analysis option and were corrected by code development. The problem was in the common block that linked the FASTGRASS gas release model to the main part of FRAPCON-2. A checkout case for the FRAPCON-2 uncertainty study is being run.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Assessment of FRAP-T6 will continue. The commercial rod studies, with the corrected FRAPCON-2 input, will be completed. The remainder of the overpower and transient gas release runs will be performed and the results will be drafted and plotted. The remaining out-of-pile burst decks will be converted to FRAP-T6 format and the runs will be made.

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

Production runs for the FRAPCON-2 uncertainty study will be completed. Work will temporarily cease on the data bank task.

6. Problems and Potential Problems

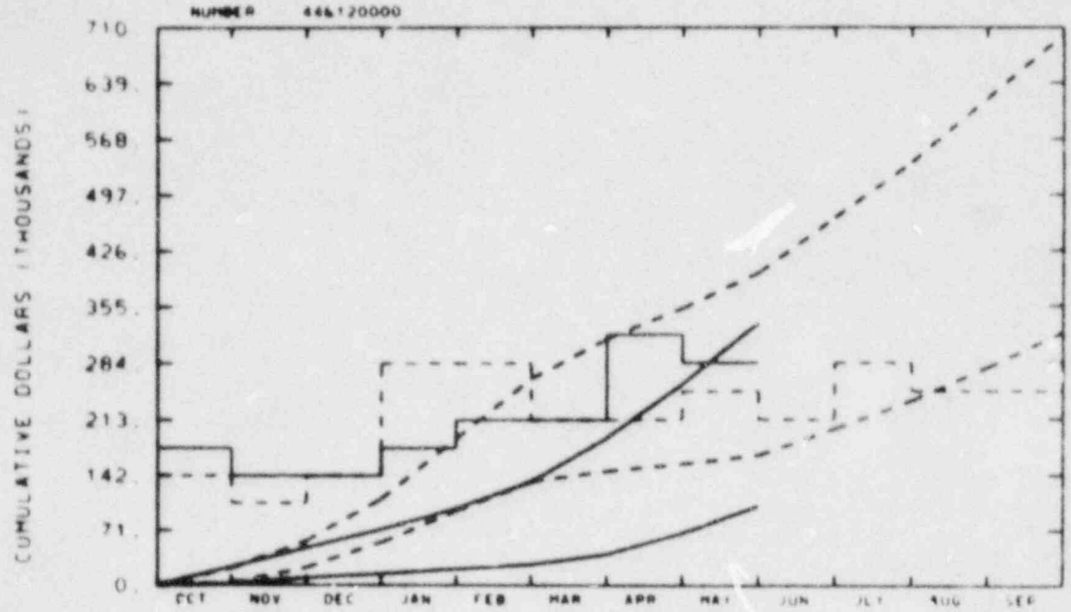
None.

RESPONSIBLE MANAGER
B. T. LAFFELL

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	334				

MATERIAL

BUDGET	3	23	56	96	134	148	157	168	201	236	277	322
ACTUAL	3	10	15	21	27	41	68	103				

MANPOWER

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

BUDGET

ACTUAL

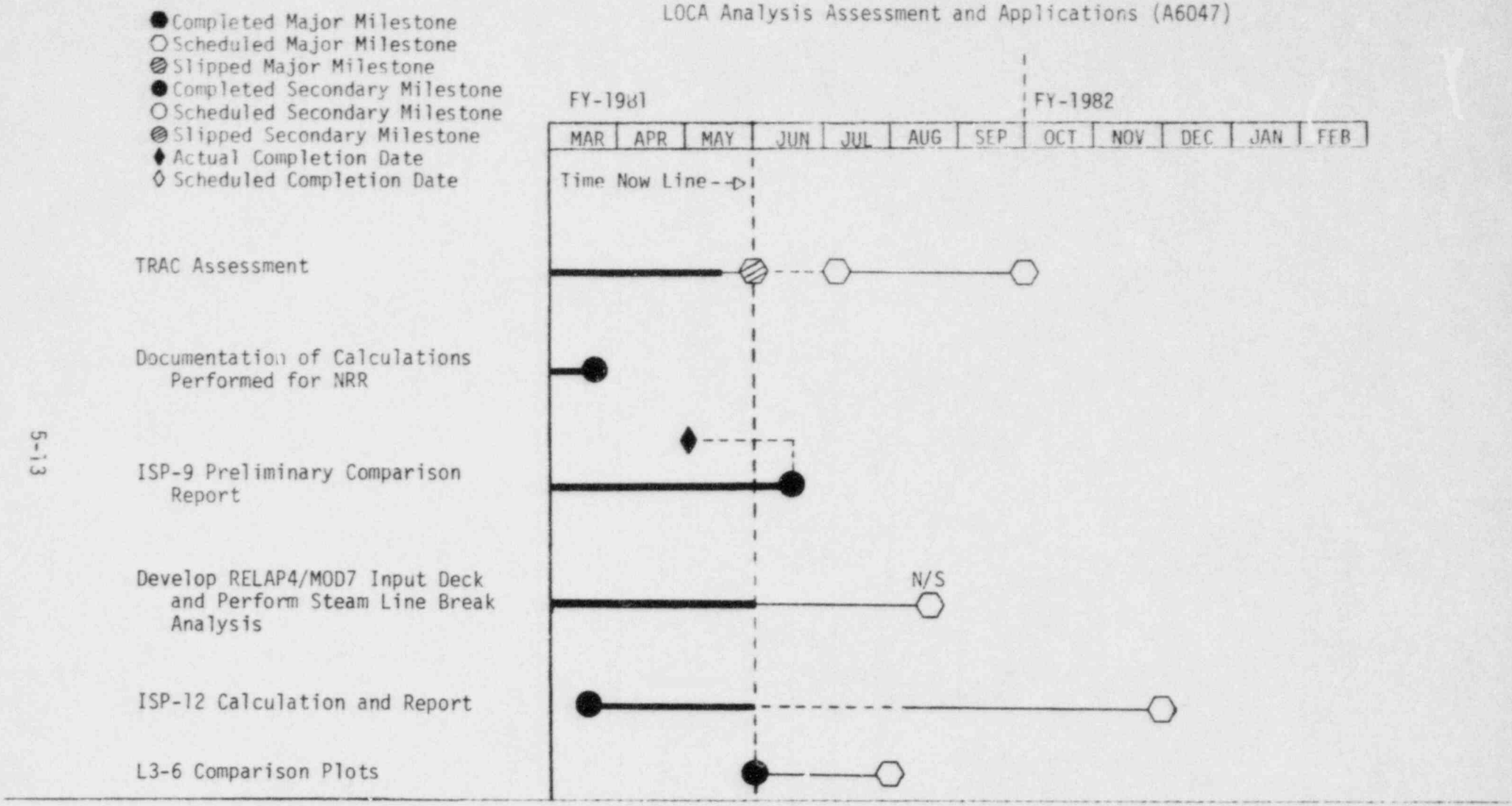
A6047

YTD VARIANCE: 64 (16%)

The variance continues to be primarily the result of a delay in the initiation of TRAC-PD2 assessment due to an error in the initial released version. The scope of the TRAC-PD2 assessment has been increased for the second half of the fiscal year, which is reflected in a decrease in the variance from 27% in April to 16% in May. A potential carryover of $50 K at year end is anticipated.

CODE ASSESSMENT AND APPLICATION DIVISION May 1981

LOCA Analysis Assessment and Applications (A6047)



NOTES:

189a A6047

1. 189a A6047 - LOCA Analysis Assessment and Applications

2. Scheduled Milestones for May 1981

None

3. Summary of Work Performed in May 1981

RELAP4/MOD7 calculations of a steam line break resulting in an overcooling transient for the Oconee plant was continued. A calculation of a single volume steam generator secondary was completed and calculations using a multivolume secondary were initiated.

TRAC-PD2 calculations for Tests S-04-6 and S-07-4 were completed. TRAC-PD2 calculations for Tests S-28-01 and S-28-10 were continued.

The development of a TRAC-BD1 model for the ROSA-III facility was continued.

4. Scheduled Milestones for June 1981

Node	Description	Due Date	Actual Date
DD03	Perform calculations for S-04-6, S-28-01, S-28-10 and S-07-4	6-1-81T	6-30-81E

5. Summary of Work to be Performed in June 1981

TRAC-PD2 calculations for Tests S-28-1 and S-28-10 will be completed. TRAC-PD2 calculations for Tests S-04-5, LOCA-11C and S-SB-2A will be initiated.

Plots comparing vendor calculations with experiment results from required problem L3-9 will be prepared.

6. Problems and Potential Problems

The development of the TRAC-BD1 model of the ROSA-III facility will be stopped for two months. This delay is a result of not having required documentation of the geom try of the facility.

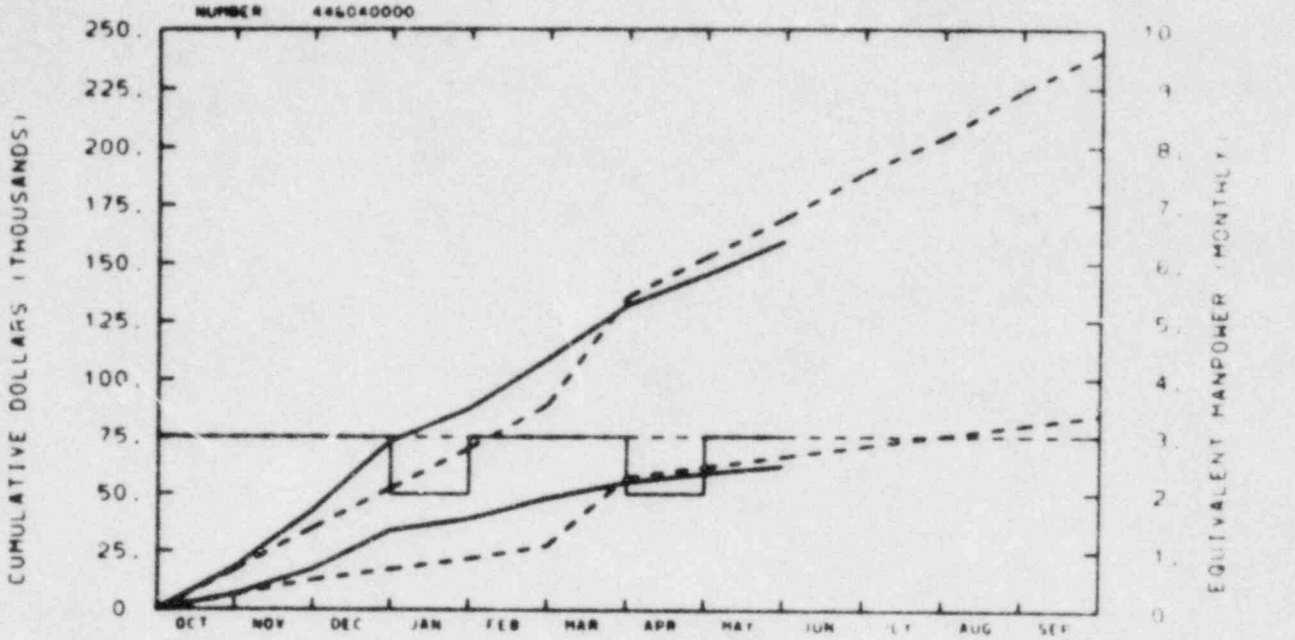
TRAC-PD2 calculations for S-28-01 and S-28-10 have taken longer to perform due to unexpected nodalization sensitivities and slow computer availability.

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	137	145	160				

MATERIAL

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

MANPOWER

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

BUDGET
ACTUAL

A6102

YTD VARIANCE: 9 (5%)

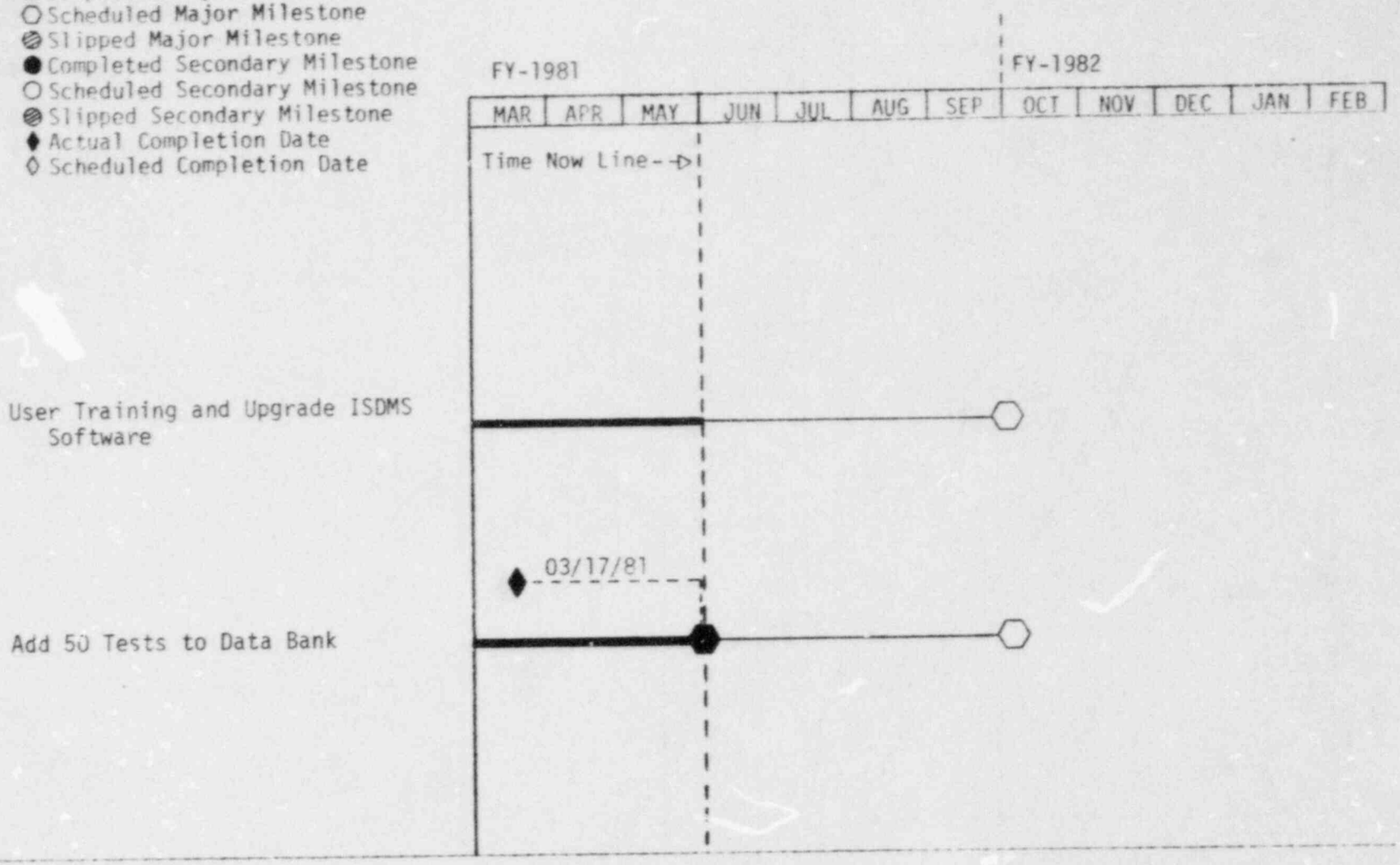
CODE ASSESSMENT AND APPLICATION DIVISION

May 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:

1. 189a A6102 - Data Bank Processing System

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

The Data Bank Users Manual was distributed for evaluation and comments. A Data Bank Encounter (#6) was issued and contained a current listing of Data Bank contents.

GE at San Jose, California is now actively using the on-line Data Bank capabilities.

A computer program is being developed to accomodate steady state data from recent Oak Ridge National Laboratory (ORNL) tests.

Semiscale and the Data Bank are combining efforts to make available through the Data Bank the preliminary data from the SUT series. Both Oak Ridge National Laboratory (ORNL) and Westinghouse will be using this password protected data.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Data entry will continue.

6. Problems and Potential Problems

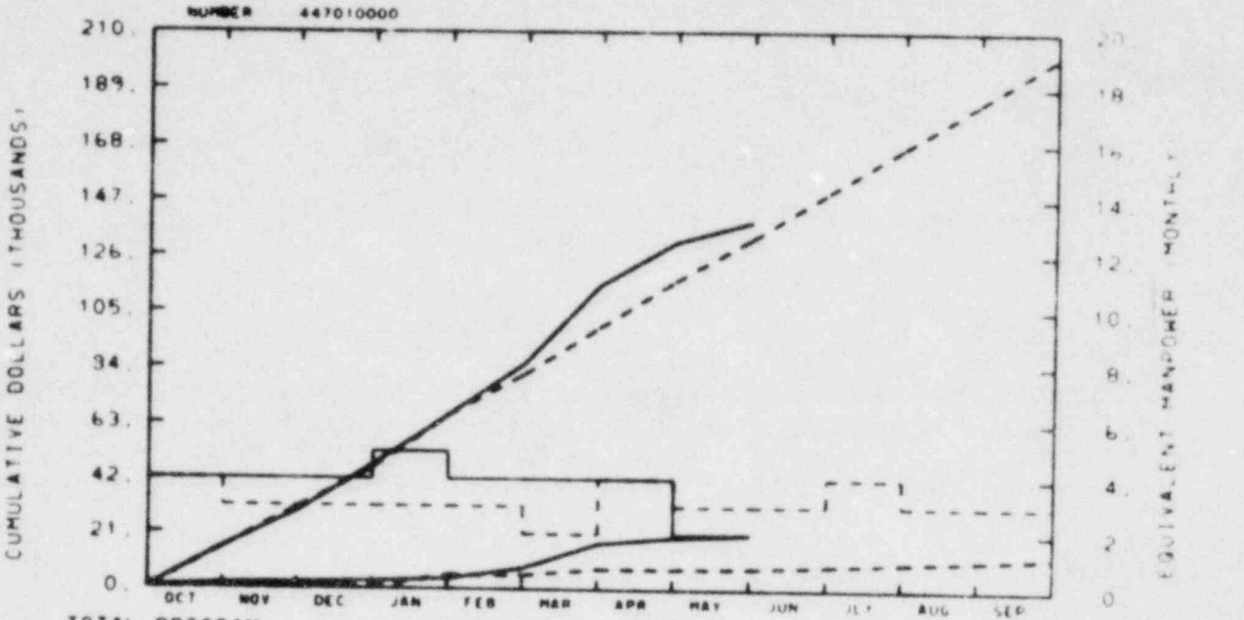
None.

RESPONSIBLE MANAGER
B. F. SAFFELL

EG&G IDAHO INC.

LER FAILURE RATE A6276

NUMBER 447010000



TOTAL PROGRAM

BUDGET	15	31	46	66	81	99	116	132	150	167	184	201
ACTUAL	16	29	47	66	85	115	131	139				

MATERIAL

BUDGET	0	0	1	5	5	8	8	8	9	10	11	13
ACTUAL	2	2	3	4	8	17	20	21				

MANPOWER

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

BUDGET
ACTUAL

A6276

YTD VARIANCE: <7> (5%)

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

2. Scheduled Milestones for May 1981

Node	Description	Due Date	Actual Date
K-9	Update report of Pump LERs	5-15-81E	5-13-81C Saff-119-81

3. Summary of Work Performed in May 1981

The draft Pump Report (January 1, 1972 to September 30, 1980 data) was completed and issued (Node K-9). Work began on updating valve data in preparation for updating the valve NUREG to include 1979 and 1980 LER data.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Coding of valve LER data will continue throughout the month. Additional preliminary work will be accomplished, as necessary, to support the initial steps in updating the valve NUREG.

6. Problems and Potential Problems

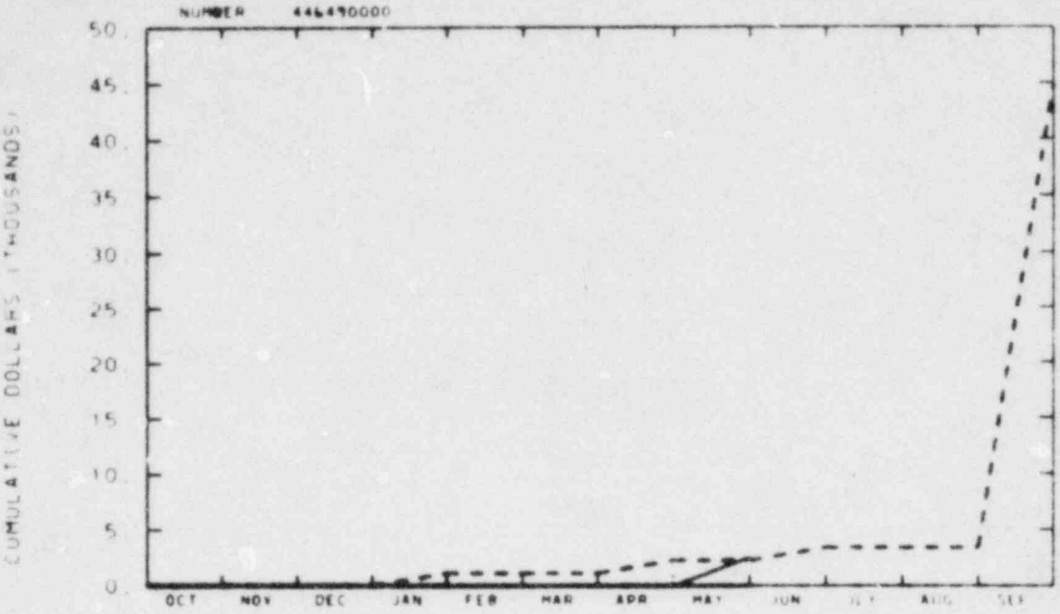
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

PREP OF DOC FOR TAP A1 A6279

NUMBER 446490000



CUMULATIVE DOLLARS (THOUSANDS)

EQUIVALENT MANPOWER MONTHS

BUDGET

ACTUAL

TOTAL PROGRAM

BUDGET	0	0	0	1	1	1	2	2	3	3	4	45
ACTUAL	0	0	0	0	0	0	0	3				

MATERIAL

BUDGET	0	0	0	1	1	1	2	2	3	4	4	45
ACTUAL	0	0	0	0	0	0	0	0				

MANPOWER

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

A6279

YTD VARIANCE: <1> (50%)

1. 189a A6279 - Investigations of Experimentally Determined Damping in Piping Systems

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

Piping system damping data from Heissdampfreaktor (HDR), Germany, ANCO Engineers, Electric Power Research Institute (EPRI), and Taipower (Kuosheng Plant, Taiwan) were collected and evaluated. Requests for additional data were made to the HDR project leader in Germany and to ANCO engineers.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Available data will be classified according to excitation level, type of piping supports, method of excitation, and site of piping. Efforts to gather additional data will continue.

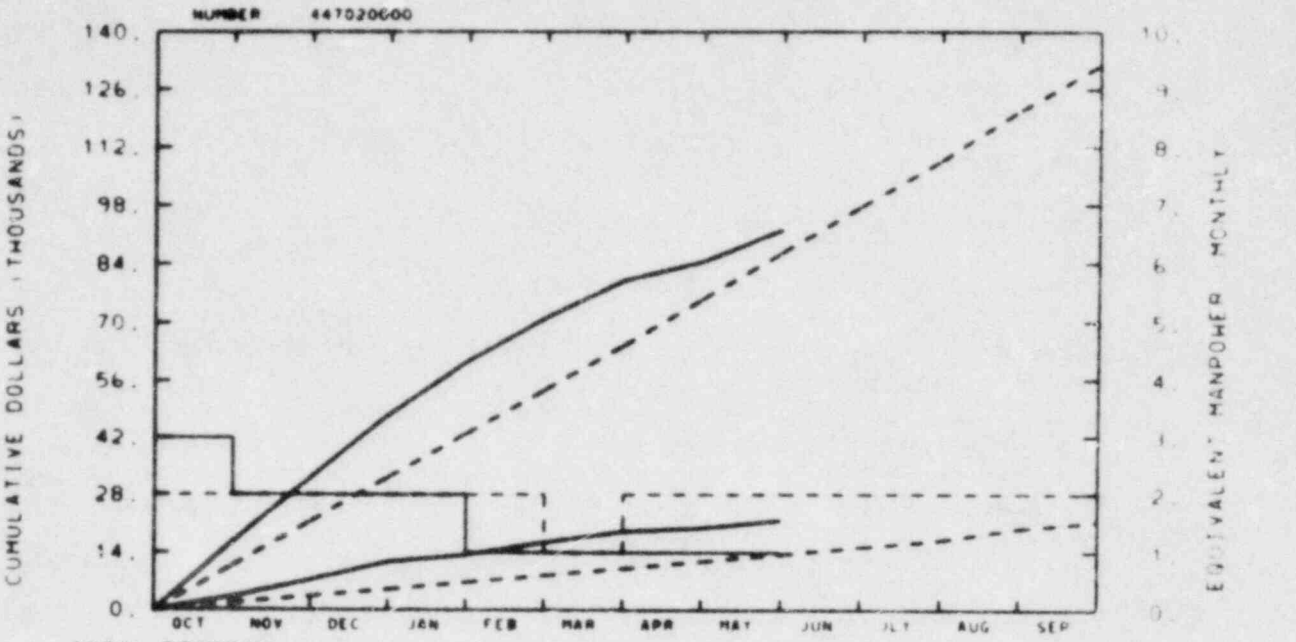
6. Problems and Potential Problems

None.

RESPONSIBLE
MANAGER
B F SAFFELL

EG&G IDAHO INC

COMMON CAUSE STAT MODELING A6283



TOTAL PROGRAM

BUDGET	11	22	32	43	54	65	76	87	98	109	121	132
ACTUAL	17	32	48	61	71	80	84	-				

MATERIAL

BUDGET	2	3	5	7	8	10	12	4	15	17	20	21
ACTUAL	3	7	12	13	16	19	20	22				

MANPOWER

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

A6283

YTD VARIANCE: <5> (6%)

1. 189a A6283 - Common Cause Data Analysis

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

The report on valves is nearly complete.

The coding of Instrumentation and Control (I&C) data was completed, and analysis begun.

A paper was submitted and accepted, to the American Statistical Association 1981 annual meeting. The title is "Tests of a Simple Multinomial Hypothesis When the Sample is Not Large". This paper describes a methodology and computer program that were developed over the past year to deal with failure data in nuclear plants (including common cause data).

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Typing of the valve report will be completed.

Analysis of the I&C data will continue.

Writing of a User's Guide to BFR, the computer code that does the common cause rate estimation, will be initiated.

6. Problems and Potential Problems

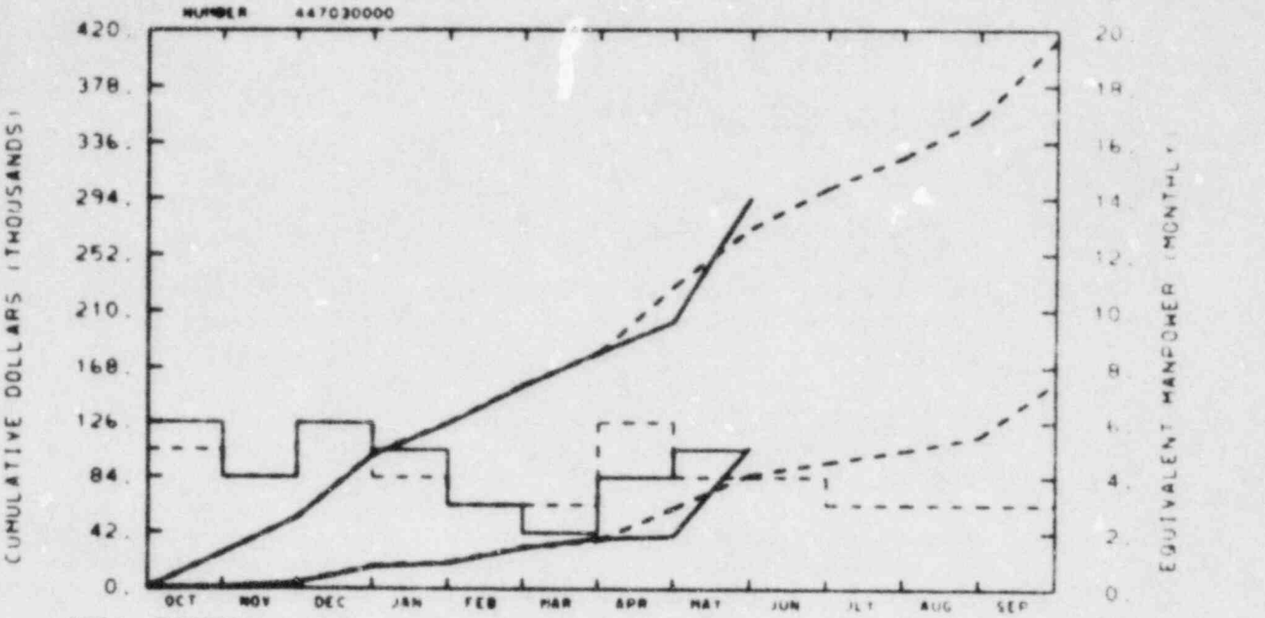
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

NPRDS DATA ANALYSIS A6290

NUMBER 447030000



TOTAL PROGRAM

BUDGET	27	53	102	126	155	179	228	271	301	325	354	413
ACTUAL	26	51	101	125	154	179	202	295				

MATERIAL

BUDGET	1	4	17	20	31	36	60	86	95	104	115	157
ACTUAL	1	4	16	19	31	38	39	107				

MANPOWER

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

BUDGET

ACTUAL

A6290

YTD VARIANCE: <24> (9%)

The budget amount does not reflect an additional $40 K which was received in May on a modified work order (Form 173). The large step increase shown in May resulted in a total accrual of costs on a subcontract with Kansas State University.

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

a. Limited Monte Carlo testing of the performance of bounding techniques was completed and a technical letter report is being prepared.

b. A letter report describing the completion of Task 1 in the program brief (Bernero to Williams letter, February 2, 1981) was transmitted to NRC.

c. A report on generic component failure rates was completed by taking review comments into account and the report transmitted to NRC. It represents partial completion of item 4a of the A6290 program brief.

d. A technical document describing the adaptation of multiway contingency table analysis, per item 4b of the A6290 program brief, was partially completed.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

a. Visits to subcontractors are anticipated for the purpose of monitoring their work under FIN A6290.

b. Completion of a technical document describing the adaptation of multiway contingency table analysis (per item 4b of the A6290 program brief) is expected.

6. Problems and Potential Problems

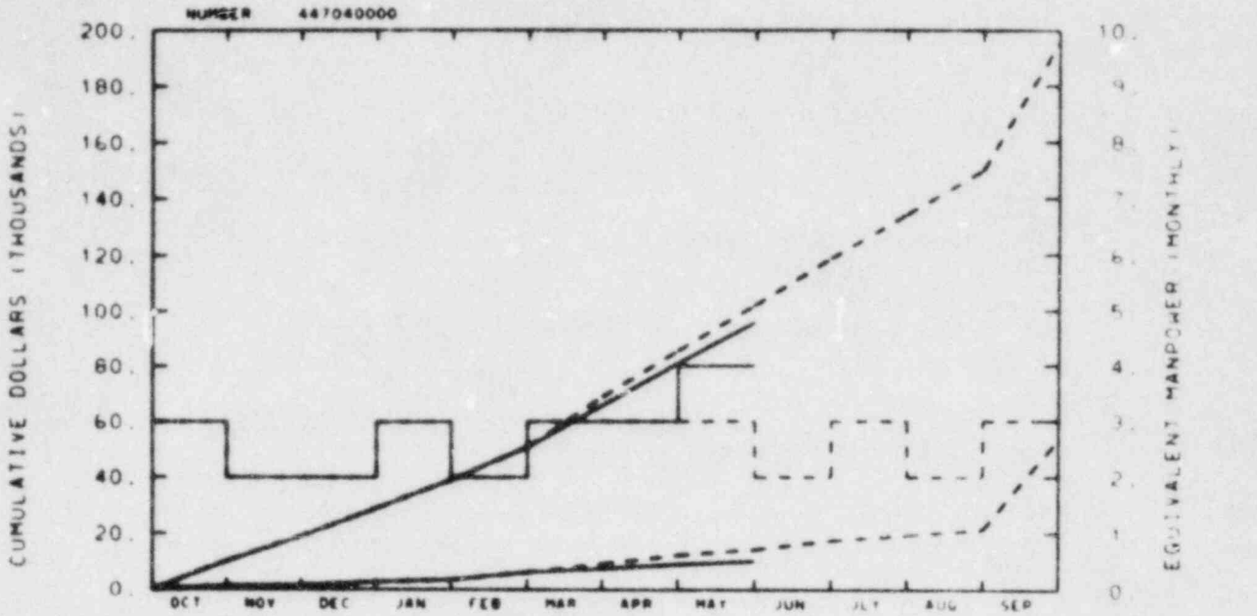
None.

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	96				

MATERIAL

BUDGET	1	2	3	4	6	9	12	14	18	19	21	53
ACTUAL	1	2	3	4	6	8	9	10				

MANPOWER

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

BUDGET
ACTUAL

A6291

YTD VARIANCE: 6 (6%)

189a A6291

1. 189a A6291 - LER Flagging Analysis

2. Scheduled Milestones for May 1981

Node	Description	Due Date	Actual Date
K32	Software Development	5-29-81T	4-24-81C NCS-5-81
K37	Cross-component Quick Look Report	5-29-81E	6-5-81C Saff-147-81

3. Summary of Work Performed in May 1981

The Software Development task, Node K-32, was completed on April 24. The Cross-Component Quick Look Report (QLR), Node K-37, was also completed.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Assistance will be provided in completion of the updated valve report for Node K-10 of the LER Failure Rate Analysis Program (A6276).

6. Problems and Potential Problems

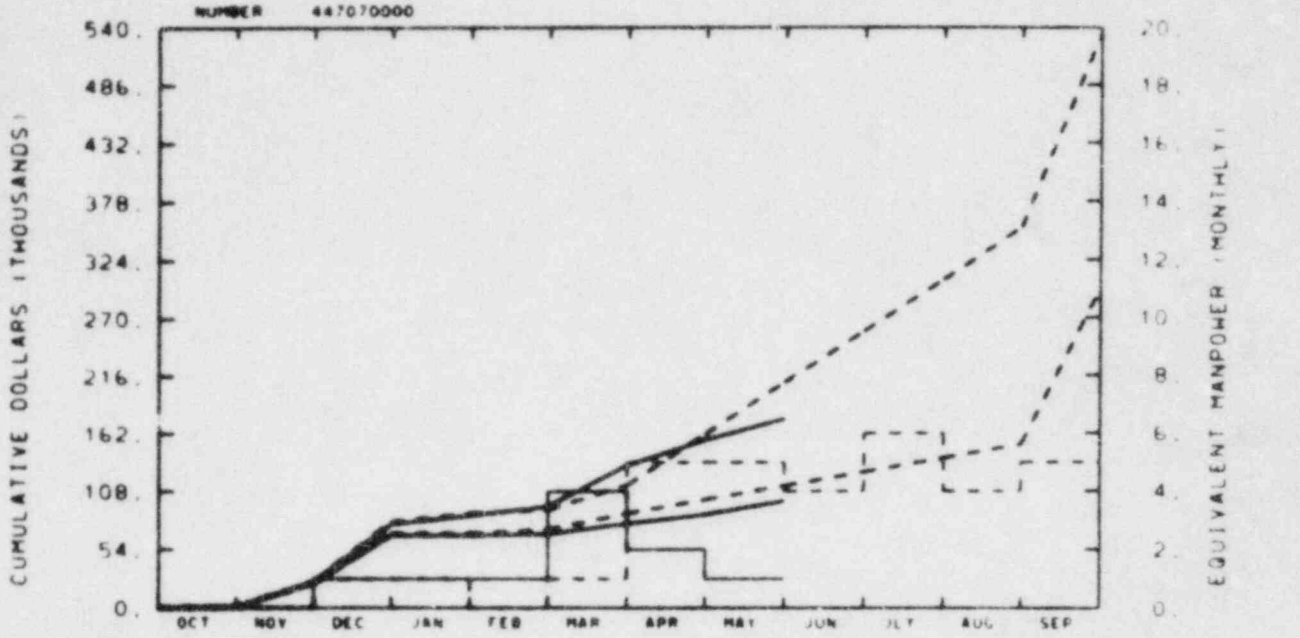
None.

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	176				

MATERIAL

BUDGET	1	23	69	69	72	87	100	113	126	139	152	298
ACTUAL	1	22	67	67	68	78	86	99				

MANPOWER

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

BUDGET

ACTUAL

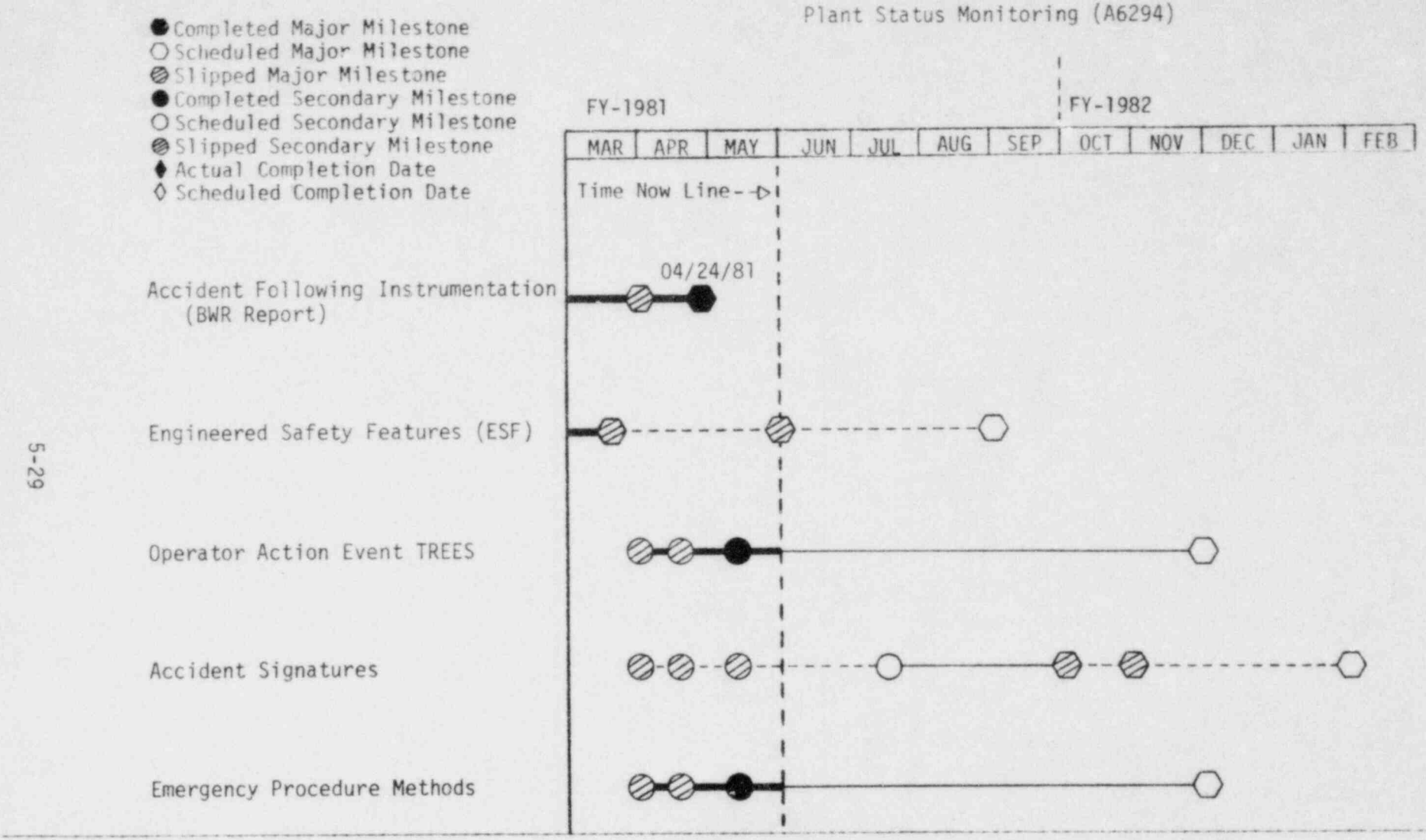
A6294

YTD VARIANCE: 34 (16%)

The current underrun is due to the delay in the placement of the subcontract for the event tree development and emergency operating procedure review tasks. The program cost to complete will be estimated in the near future to realign the budget to more accurately reflect the FY-1981 work scope.

CODE ASSESSMENT AND APPLICATION DIVISION May 1981

Plant Status Monitoring (A6294)



NOTES:

189a A6294

1. 189a A6294 - Plant Status Monitoring

2. Scheduled Milestones for May 1981

Node	Description	Due Date	Actual Date
S12-2	Engineered Safety Features Status Monitoring Report	5-31-81T	

3. Summary of Work Performed in May 1981

A contract with Wood, Leaver, and Associates has been negotiated and put into place to perform tasks relative to the development of operator action event trees and accident descriptions and to review symptom-oriented emergency procedures. NRC comments on the engineered safety feature status monitoring work were received. Efforts to resolve the comments were initiated. The milestones signifying the completion of the operator action event trees task and the emertency procedure review task were changed from November 15, 1981 to November 30, 1981. The change was necessitated by the delay in placing the subcontract that provided for the completion of these tasks. The change of the operator action event tree task necessitated that the completion of the accident signature task be slipped from October 30, 1981 to January 29, 1982 since the delayed event tree task was to identify the sequences for analysis by the accident singature task. No programmatic impact has been identified due to these schedule changes. Funds that carryover from FY-81 to FY-82 will complete these tasks in FY-82.

The final release of the engineered safety features report was changed from May 31, 1981 to August 31, 1981 due to the delayed transmittal of NRC comments. No fiscal or other programmatic impact has been identified by these changes.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Work will continue on development of accident sequence descriptions and operator action event trees.

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

Work will continue on the review of symptom-oriented emergency procedures.

Activities to resolve the NRC comments on the engineered safety feature status monitoring work will continue.

A meeting with Wood, Leaver, and Associates will be held to discuss the accident sequence description/operator action event trees task, the symptom-oriented emergency procedures review task, accident signature tasks, and potential future programmatic tasks.

6. Problems and Potential Problems

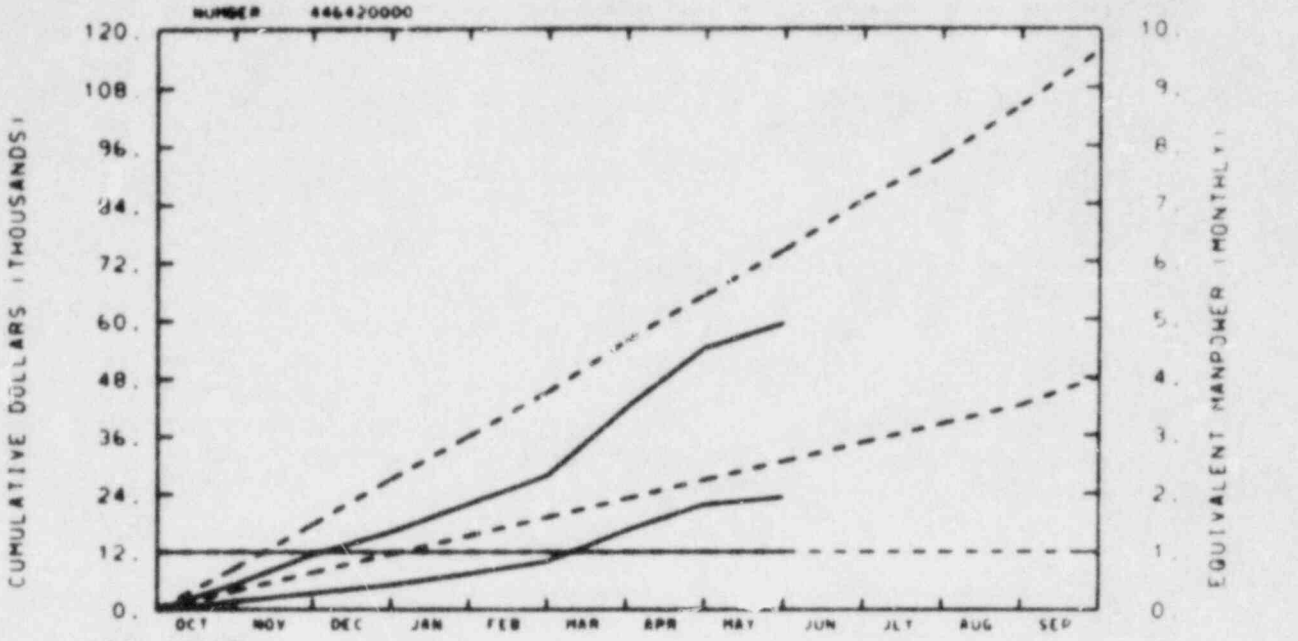
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

RESIDENT ENGINEER - FRG A6304

NUMBER 446420000



TOTAL PROGRAM

BUDGET	9	18	27	36	45	56	65	74	85	94	104	116
ACTUAL	5	11	16	27	28	42	54	59				

MATERIAL

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

MANPOWER

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

BUDGET

ACTUAL

A6304

YTD VARIANCE: 15 (20%)

Postponement of planned travel and conservatism in the original cost estimates are responsible for the underexpenditure on this task. Completion of the scheduled travel itinerary is expected to partially compensate the underexpenditure. It is expected that this task will be approximately $16 K underspent at year's end.

189a A6304

1. 189a A6304 - Resident Engineer in Germany

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

Work involvement was in the area of interpretation of recent dynamic test results from snap-back testing of the HDR piping system that is installed on the MPA test floor. My assignment was to prepare a subroutine to be used in the MPA frequency response computer system for calculation of base line corrections to be applied to measured displacements so that resultant drift during the test period is minimized

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Continuation of work performed in April (preparation of a calculational procedure to be used for deterimination of base line corrections to be applied to measured displacements). A significant meeting between personnel from MPA, GRS, USNRC, and ORNL occurred in late May. The purpose of the meeting was to discuss and outline active interaction between MPA and USNRC contractors for FY-82. Ongoing and future plans for materials research at MPA and ORNL were presented and discussed. Significant agreements and commitments were: ORNL will perform detailed fracture mechancis analyses of MPA model vessel tests and planned pressurized thermal shock experiments; MPA will perform posttest fracture mechanics analyses of the ORNL TSE-8A thermal shock experiments.

6. Problems and Potential Problems

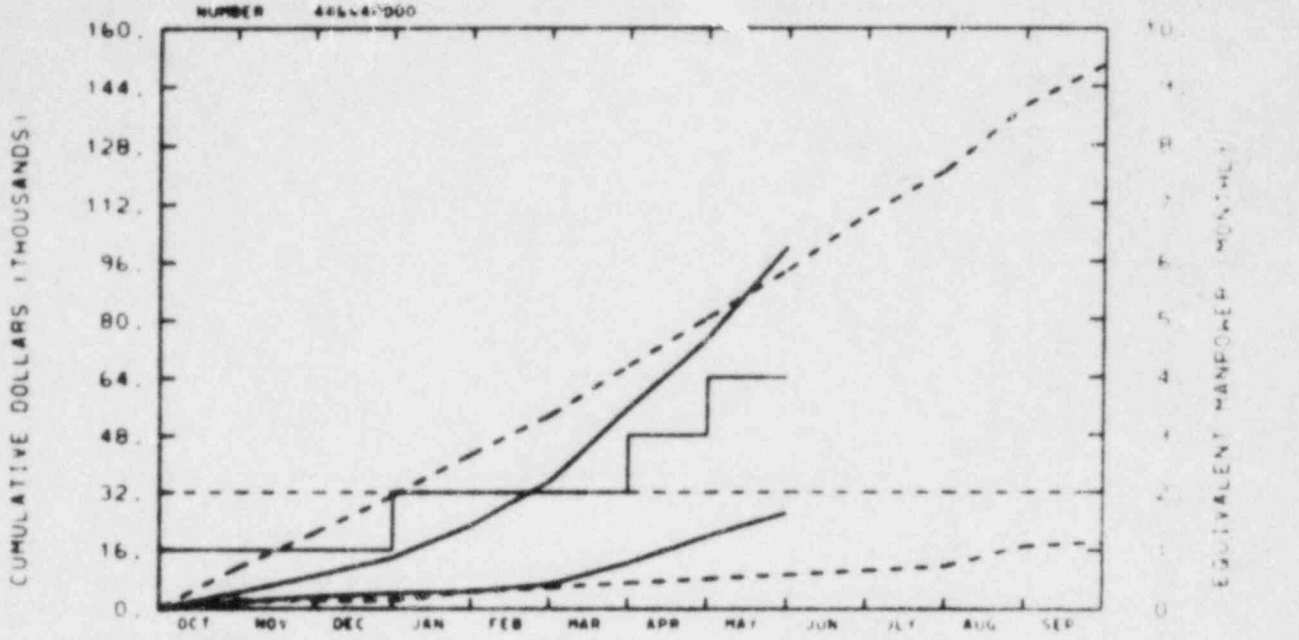
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

HDR EVALUATION A6306

NUMBER 44664/000



TOTAL PROGRAM

BUDGET	11	21	31	43	54	67	80	94	109	121	139	150
ACTUAL	4	9	14	23	35	55	75	100				

MATERIAL

BUDGET	2	2	2	5	6	7	8	9	10	12	17	18
ACTUAL	2	3	4	5	7	12	20	26				

MANPOWER

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

A6306

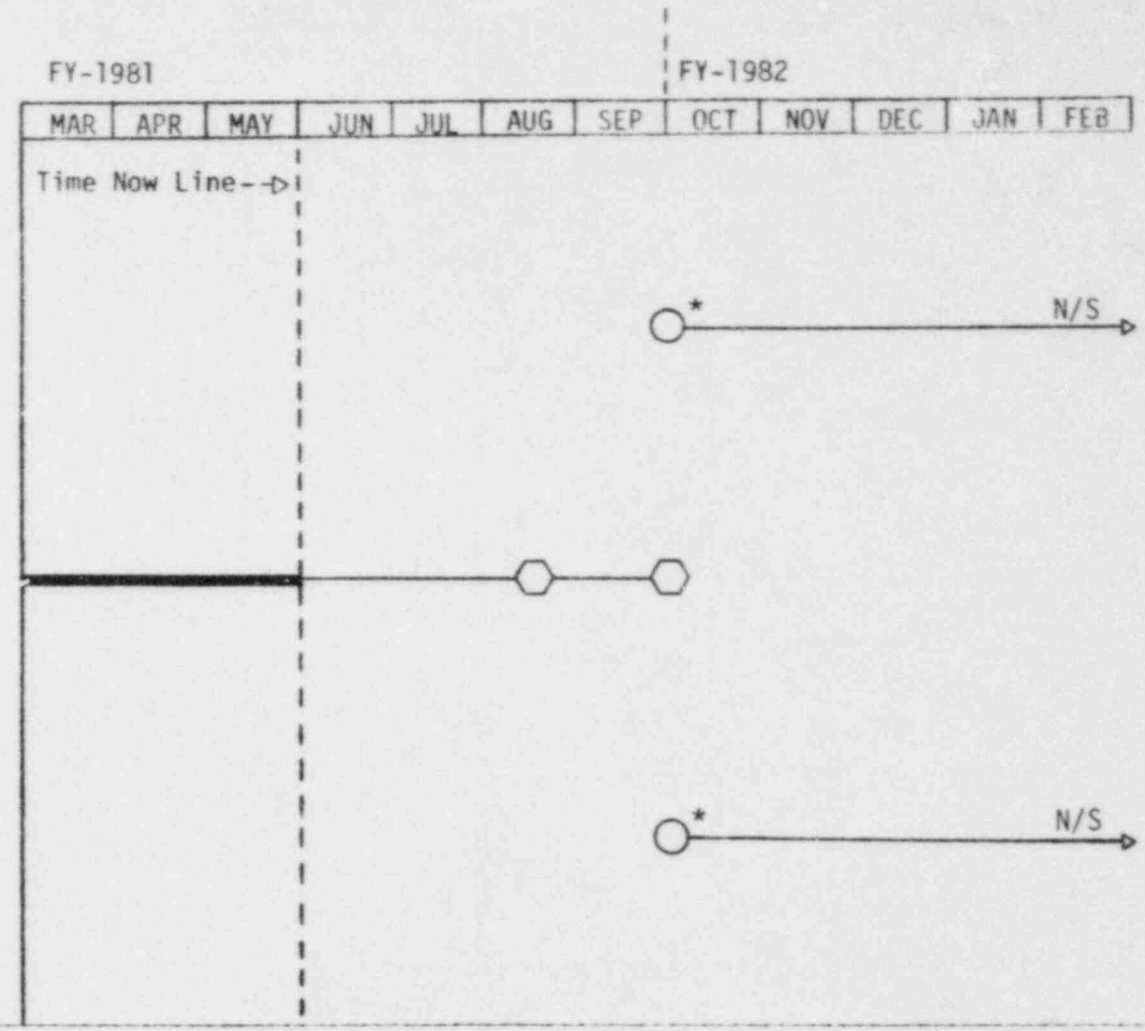
YTD VARIANCE: <6> (6%)

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 May 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 May 1981

None.

3. Summary of Work Performed in May 1981

A meeting with the cognizant personnel from NRC, the German Heiss Dampf Reaktor (HDR), ANCO engineers, and Brookhaven National Laboratory was held at which future direction of work in HDR was planned. The meeting provided an opportunity for informal presentation of some results determined in the Umwalzschleife (URL) piping analysis comparisons. Mode shapes, as well as acceleration response history and spectra comparisons, have been plotted.

Work was intiated on the portion of the comparative analysis which includes independent support motions in the URL piping.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Analytical comparative studies in the area of independent support motions will be continued.

6. Problems and Potential Problems

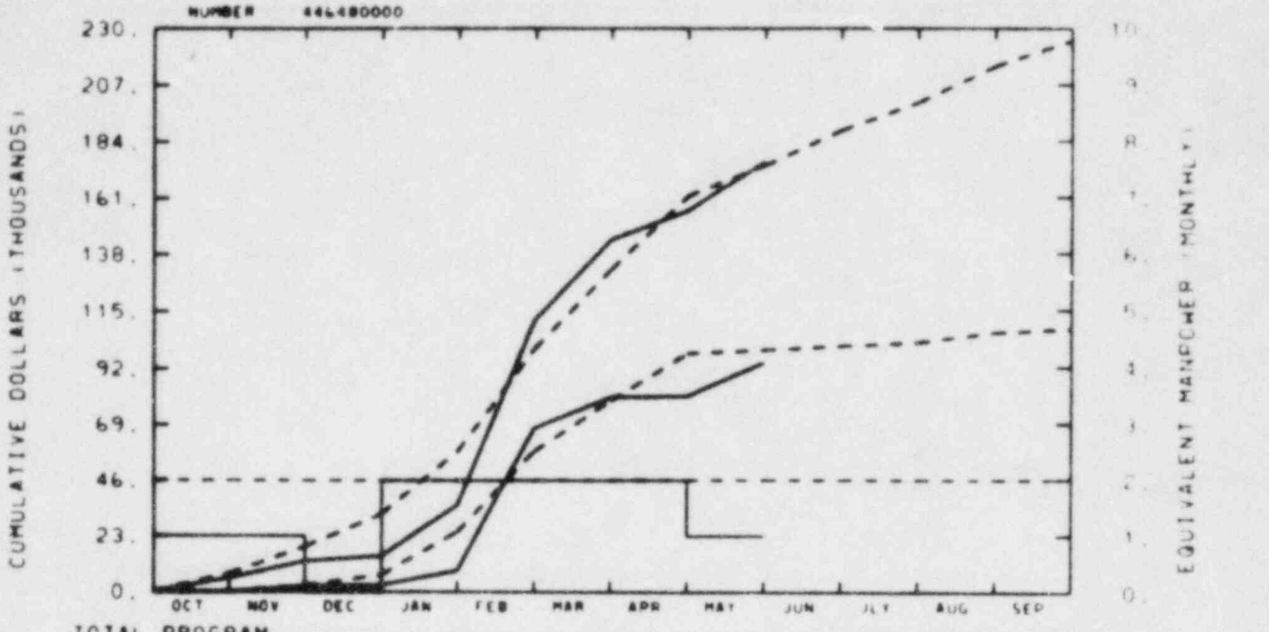
None.

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	225
ACTUAL	6	13	15	36	111	144	156	176				

MATERIAL

BUDGET	0	2	7	25	58	79	98	99	101	102	106	107
ACTUAL	0	2	3	9	68	80	81	94				

MANPOWER

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

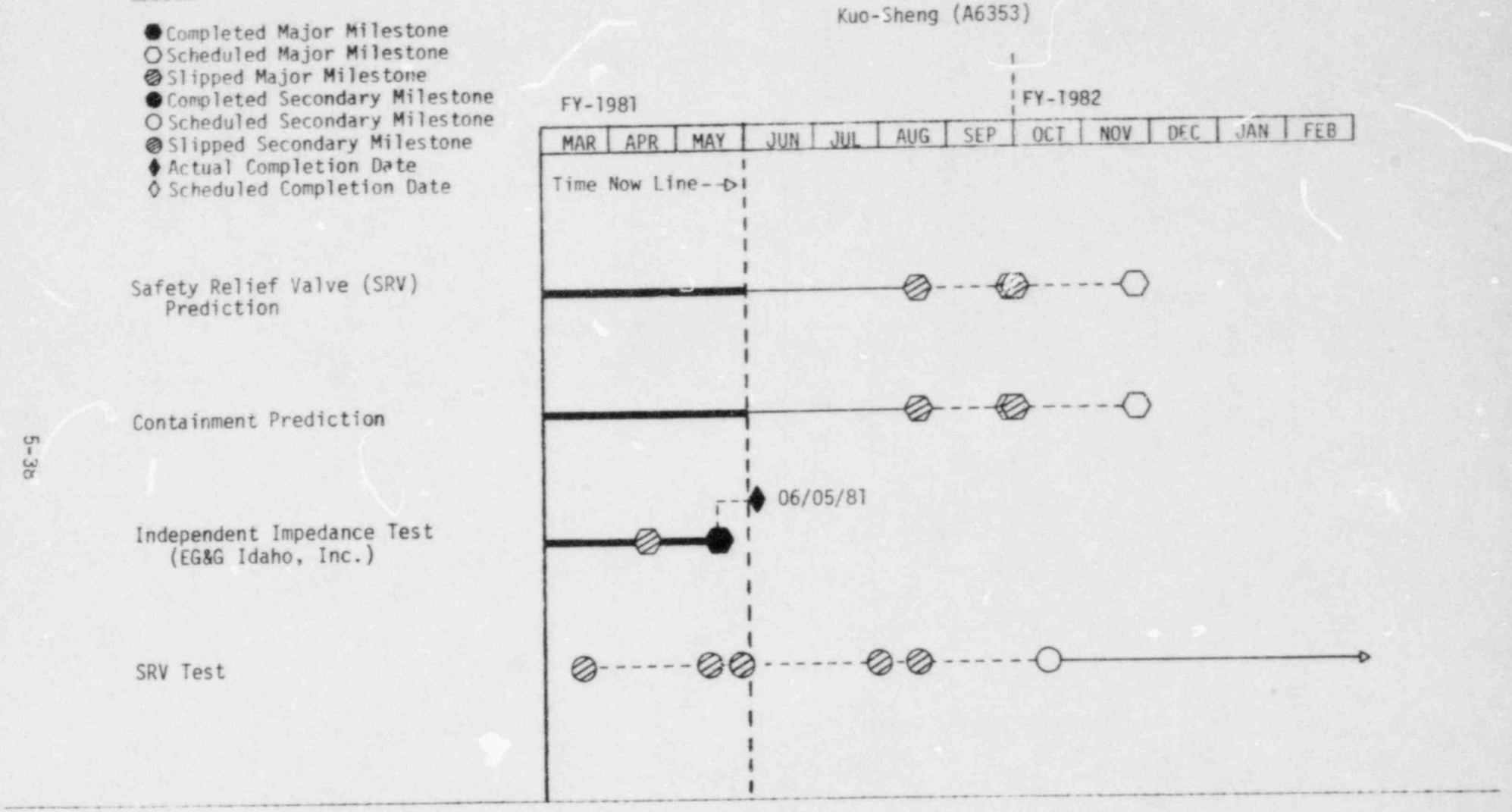
A6353

YTD VARIANCE: <2> (1%)

CODE ASSESSMENT AND APPLICATION DIVISION

May 1981

Kuo-Sheng (A6353)



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 May 1981

None.

3. Summary of Work Performed in May 1981

The final report on impedance tests conducted by Transitek at the Kuosheng power plant in Taiwan was received in late May. It is currently being reviewed and incorporated into an EG&G report.

Work began on modeling the Kuosheng SRV-8 piping for later comparisons of predicted versus observed response loads and pressures.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Plans call for issuing the Kuosheng impedance test report, finishing the SRV-8 piping model, performing a modal analysis of same, and predicting loads and pressures for a specified test condition.

6. Problems and Potential Problems

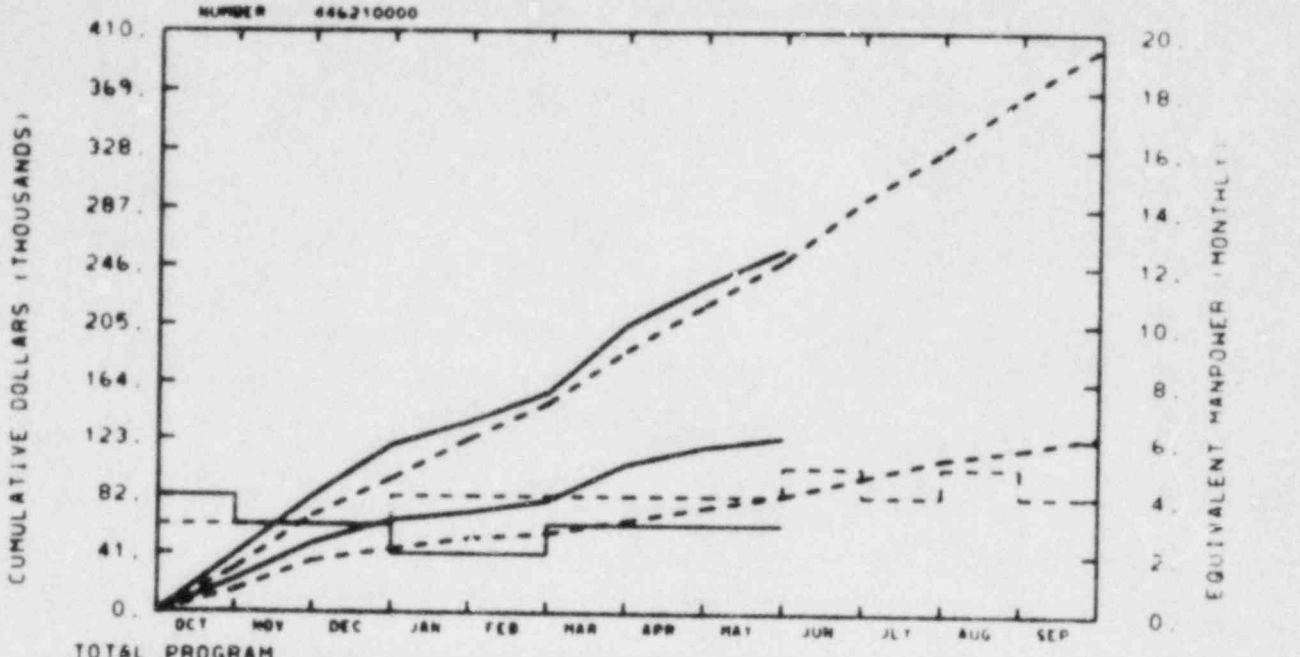
Difficulties in acquiring data on SRV-8 valve characteristics from the vendor may delay the prediction analysis.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

SEVERE ACCIDENT SEQ ANAL A6354

NUMBER 446210000



TOTAL PROGRAM

BUDGET	30	68	94	123	149	187	219	251	294	327	366	400
ACTUAL	40	81	119	135	157	205	233	258				

MATERIAL

BUDGET	15	36	44	52	55	65	74	83	96	109	116	126
ACTUAL	22	49	65	70	79	105	117	124				

BUDGET - - - - - -

ACTUAL ———

MANPOWER

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

A6354

YTD VARIANCE: <7> (3%)

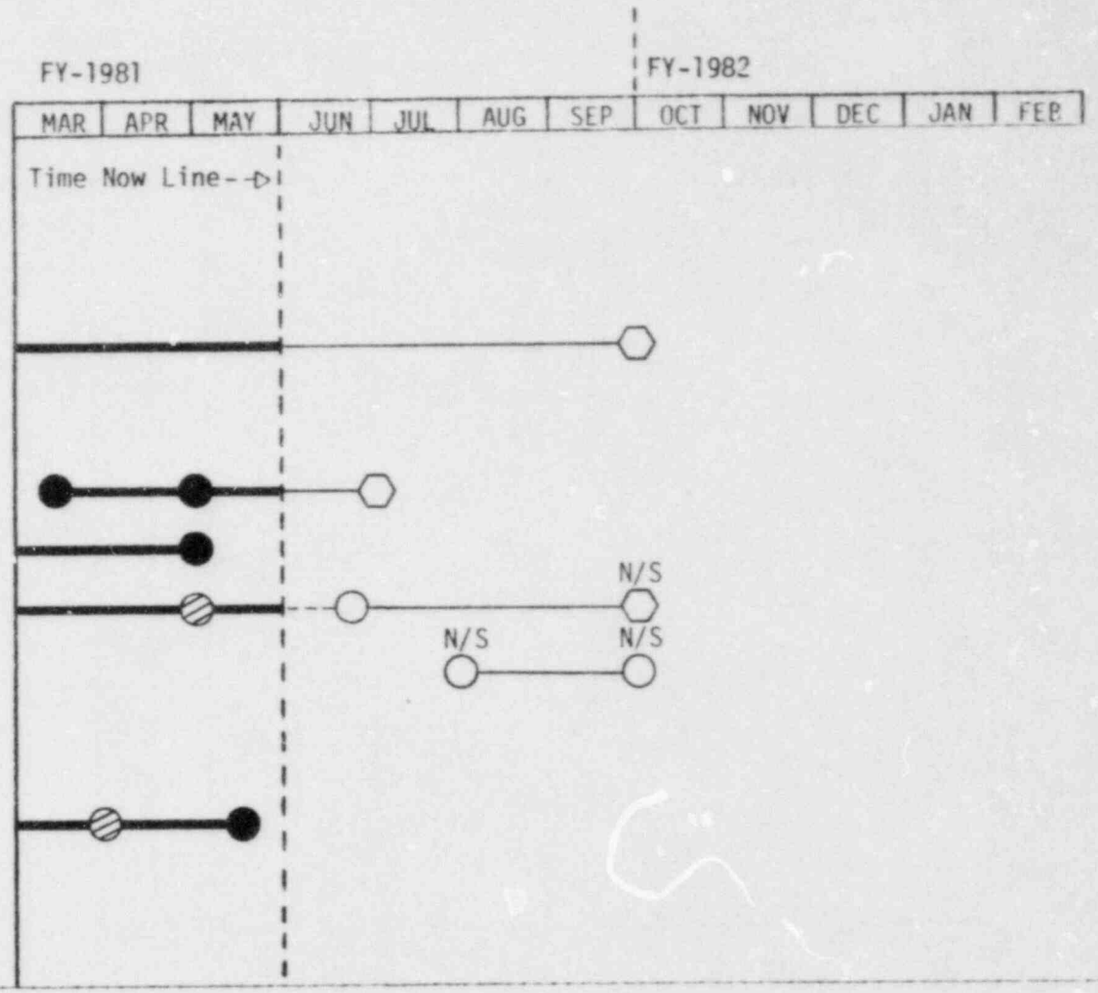
An additional $100 K was received and will be budgeted in June.

CODE ASSESSMENT AND APPLICATION DIVISION May 1981

Severe Accident Sequence Analysis (A6354)

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

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

2. Scheduled Milestones for May 1981

None

3. Summary of Work Performed in May 1981

A planning meeting was attended at Sandia National Laboratory (SNL) to discuss future SASA efforts to analyze ANO-1, B&W plant. A preliminary integrated plans involving SNL, LANL, and INEL was developed. The ANO-1 data IREP file at SNL was also reviewed during the meeting.

INEL also participated in a program review meeting held in Silver Springs on May 28 and 29.

A letter report was issued which documented preliminary results of four station blackout PWR calculations considering primary coolant pump seal and stuck open PORV leakage.

Work was initiated to define the calculations necessary to define small break minimum engineered safety feature requirements to maintain a cool core.

Work continued on the revision of the PWR station blackout report.

A preliminary list of ANO-1 information deficiencies was generated and transmitted to NRC, LANL, and SNL.

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

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

The final station blackout summary report is currently scheduled for completion by July 1, 1981. The final release of the report will be delayed pending identification of any additional calculations by NRC.

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

The calculation matrix for minimum engineered safety feature requirements will be developed. The completion is scheduled for June 19, 1981.

The calculation log will be modified by incorporating representative plots of key parameters for all calculations currently recorded in the log.

The effort to balance and checkout the interim Browns Ferry RELAP5 model will continue. 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.

6. Problems and Potential Problems

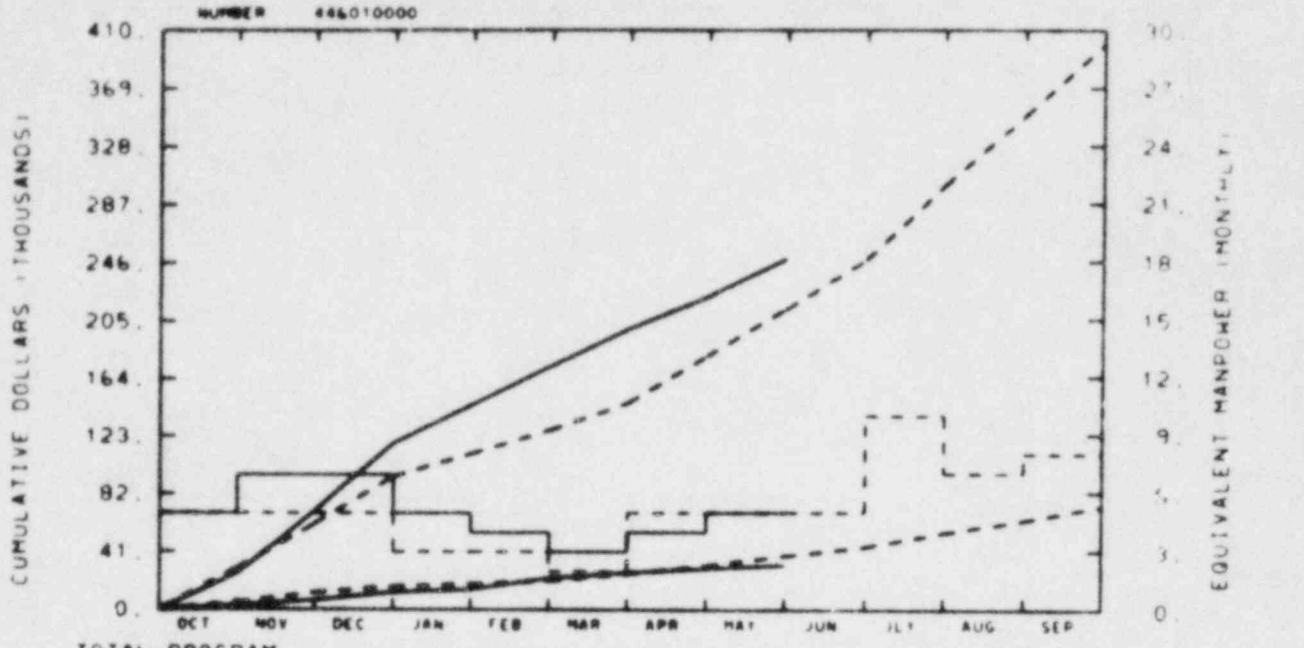
None.

RESPONSIBLE MANAGER
B. F. SAFFELL

EG&G IDAHO INC.

NRC RELIEF VALVE PROGRAM A6356

NUMBER 446010000



TOTAL PROGRAM

BUDGET	29	61	96	111	127	146	180	213	248	300	349	400
ACTUAL	25	70	118	145	173	199	222	248				

MATERIAL

BUDGET	5	12	17	18	21	25	31	38	46	54	63	72
ACTUAL	3	7	12	14	22	26	29	32				

MANPOWER

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

A6356

YTD VARIANCE: <35> (16%)

The program budget has been realigned to conform to the projected work scope for the remainder of the fiscal year. The realignment is intended to correct the variance as currently shown to a value close to zero. The above variance graph does not reflect the realignment.

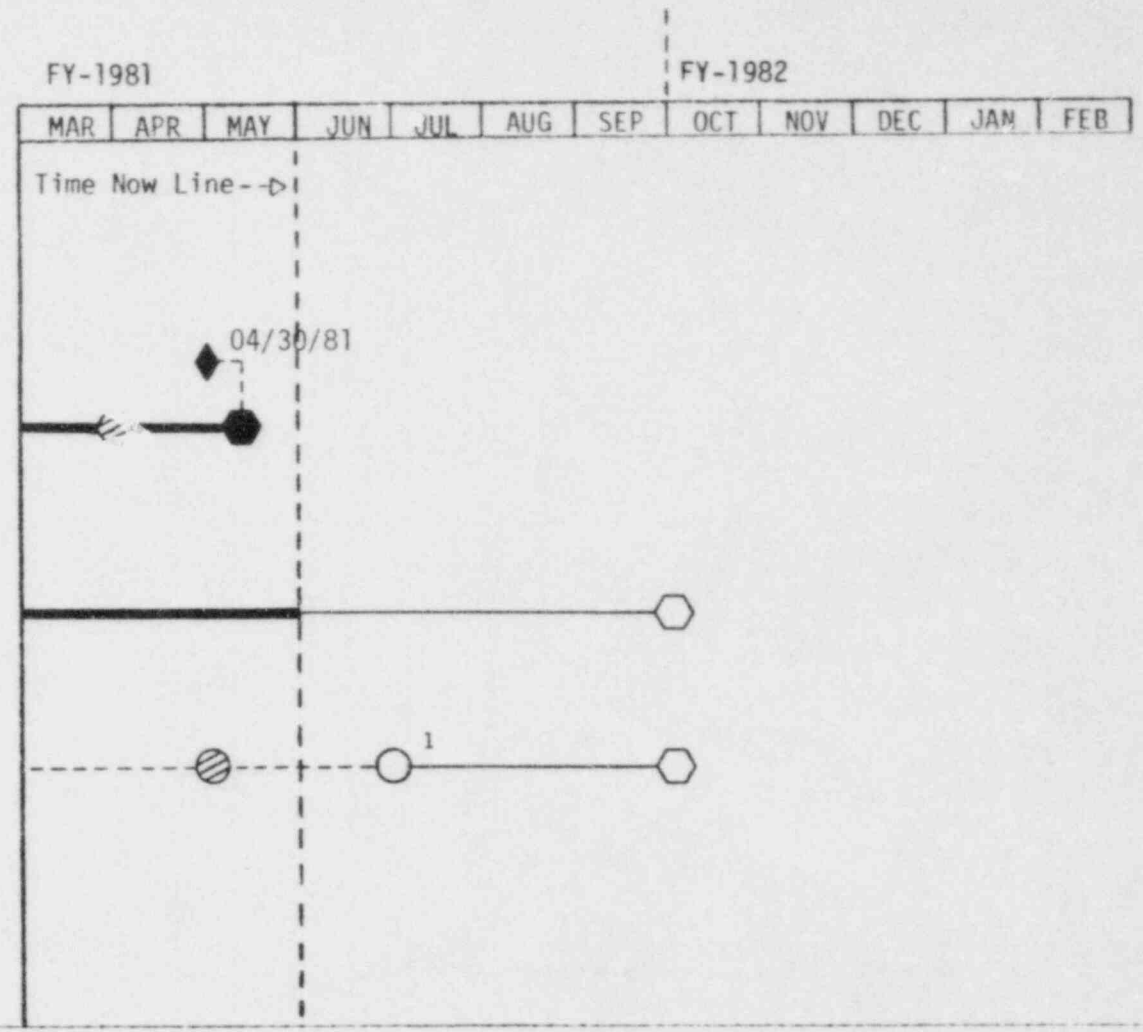
CODE ASSESSMENT AND APPLICATION DIVISION

NRC Relief Valve Program (A6356)

May 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



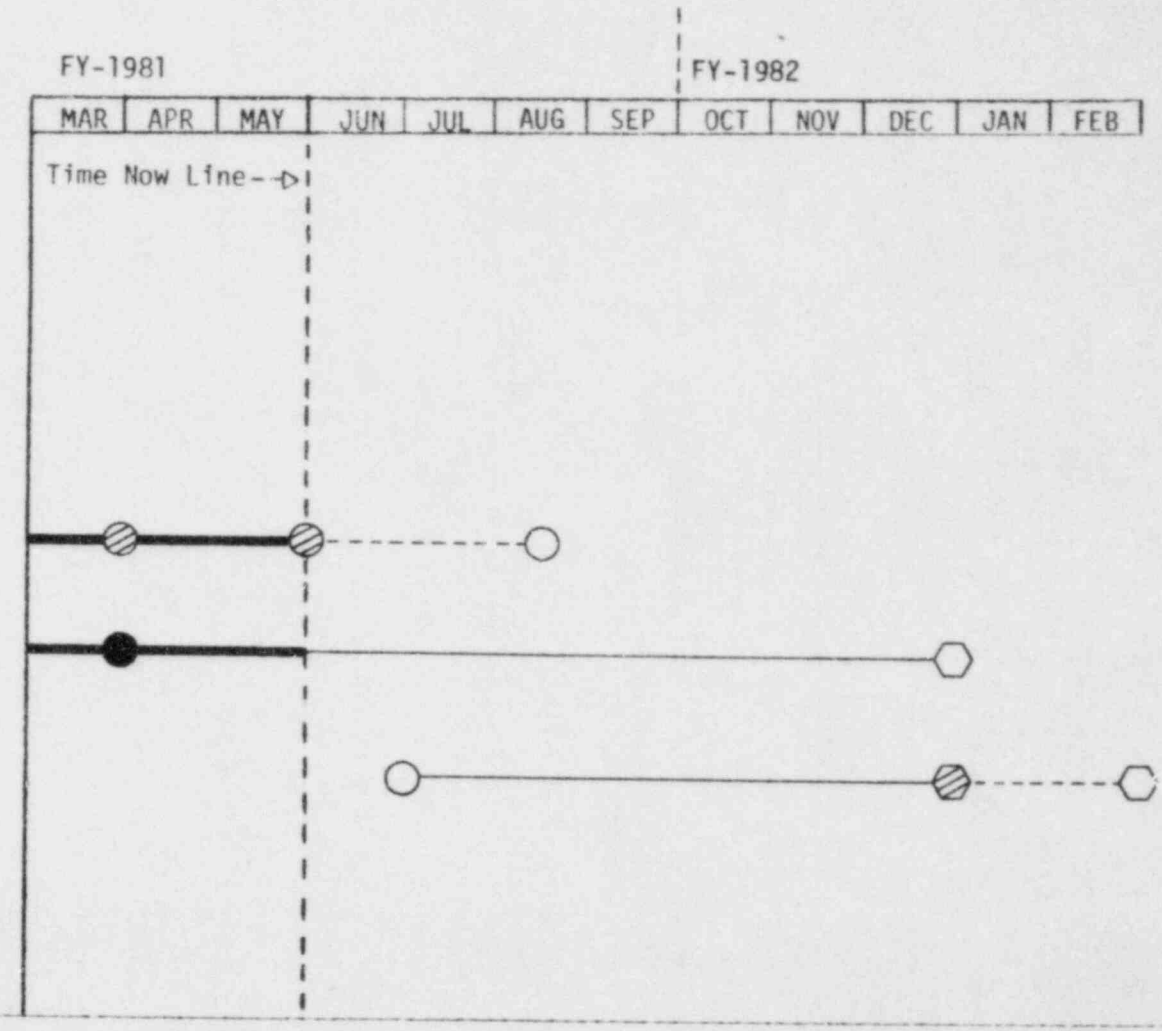
NOTES: [1] Start date will depend upon the date EPRI or GE will transmit the data to NRC/EG&G. The start date has changed since no EPRI or GE test data has been received.

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

CODE ASSESSMENT AND APPLICATION DIVISION

NRC Relief Valve Program (A6356)



NOTES:

189a A6356

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

An initial draft of a report documenting the thermal-hydraulic evaluation of RELAP5/MOD1 and TRAC-BD1 as applied to the loop seal safety/relief valve system was completed and reviewed. Based on the review, the report scope was modified to include two calculations with a version of TRAC-BD1 including a valve model with cycling capability.

Structural modeling of the CE valve test facility was initiated. Thermal-hydraulic model was also developed. Engineering data concerning the piping connecting the two storage tanks and valve loading mechanism has been requested from EPRI. This information will be used to update the models when available.

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.

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.

Structural modeling of the HDR Standard Problem 4A was initiated. 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. The structure codes NUPIPE-II and SAP-IV will be evaluated using this HDR data.

One scoping calculation was completed with a RELAP5/MOD1 model of the Virgil D. Summer safety/relief valve system. The hydraulic response to a saturated vapor blowdown was calculated. It was determined that the modeling assumptions for the relief tank was questionable. Modeling of the relief tank is a separate parameter study item included in the program code evaluation effort.

An effort continued to determine the effect of several modeling parameters with RELAP5. The parameters considered are relief tank modeling, air in the discharge piping and piping wall heat transfer.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Additional calculations with TRAC-BD1 will be performed and the report evaluating TRAC-BD1 and RELAP5/MOD1 will be revised.

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.

Structural model development for the CE facility will continue. Preliminary calculations to checkout the model will be initiated.

Structural modeling of the HDR check valve facility will be completed using NUPIPE-II and SAP-IV. Preliminary calculations will be completed. Effort will be made to obtain hydraulic calculations from LANL to assist in evaluating this task.

Evaluation of modeling parameters with RELAP5/MOD1 will continue. Relief tank modeling, piping wall heat transfer and matching downstream fluid sonic velocity with a two phase mixture will be evaluated.

Reporting of an 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.

A pretest calculation with a RELAP5/MOD1 model of a valve test in the CE facility will be completed. This calculation will be used for the hydraulic forcing function for the structural calculation.

Contact will be made with EPRI to investigate the possibility of exchanging pretest and posttest calculations for the CE test facility.

6. Problems and Potential Problems

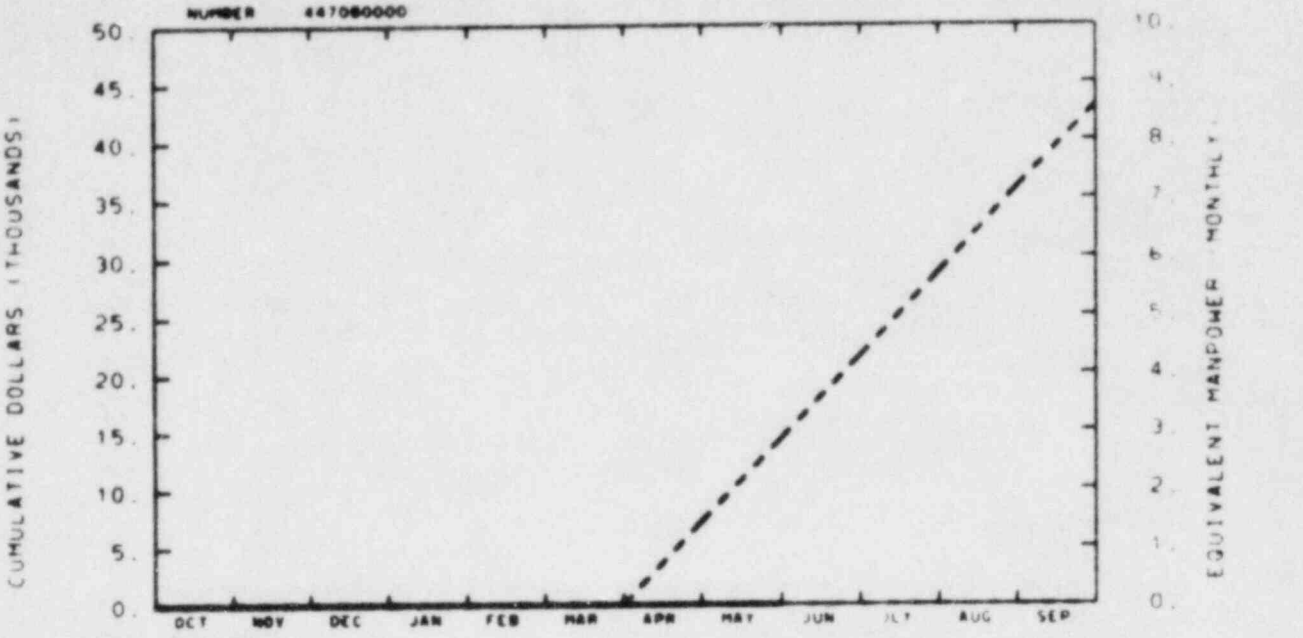
None.

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	0				

MATERIAL

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

MANPOWER

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

A6358

YTD VARIANCE: 14 (100%)

A contract is still being negotiated with the University of Texas for this work. No charges have yet occurred.

189a A6358

1. 189a A6358 - Applied James-Stein Estimators

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

Work centered on negotiating a subcontract with the University of Texas. This subcontract is expected to be in effect by June 1, 1981.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

A visit to the subcontractor is anticipated for the purpose of clarifying the work plan and how the work will be monitored.

6. Problems and Potential Problems

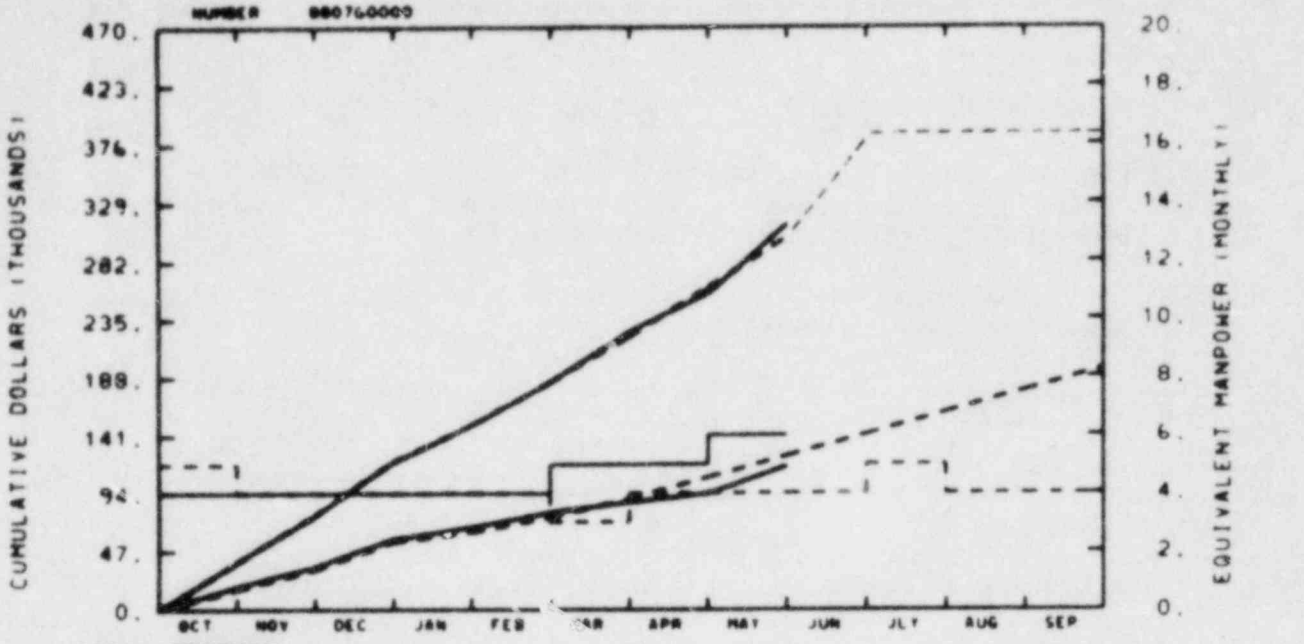
None.

RESPONSIBLE MANAGER
TRAINER

EG&G IDAHO INC.

INTEGRATED RELIABILITY EVAL

NUMBER 880760009



TOTAL PROGRAM

BUDGET	38	76	120	150	184	22	261	301	381	381	381	38
ACTUAL	30	76	120	149	184	229	255	311				

MATER

BUDGET	6	32	54	62	74	89	107	124	142	159	176	194
ACTUAL	19	34	57	66	78	86	93	116				

MANPOWER

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

BUDGET

ACTUAL

Sandia Purchase Order

YTD VARIANCE: <10> (3%)

An additional $155 K in funding is being requested, which will bring the total funding to $536 K.

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

2. Scheduled Milestones for May 1981

Previous milestones for May were deleted since both Sandia and NRC realized the deadlines were too ambitious for the IREP teams to meet No firm date for re-scheduling has been decided.

3. Summary of Work Performed in May 1981

Initial qualification of Browns Ferry (BF) front-line and support system fault trees was completed.

Rough screening of BF event tree sequences for LOCA's and transients was determined.

EG&G met with Sandia and NRC, May 20-21, to present status of BF team and discuss final report format.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Quantification, human error and other values for final model evaluations will be determined.

Transient intiator fault trees will be completed.

Candidate dominant sequences to will be provided Battelle-Columbus for consequence determination.

Writeup on the draft final report will continue.

6. Problems and Potential Problems

None.

MONTHLY REPORT FOR

MAY 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

PROGRAM MANAGER

SUMMARY AND HIGHLIGHTS

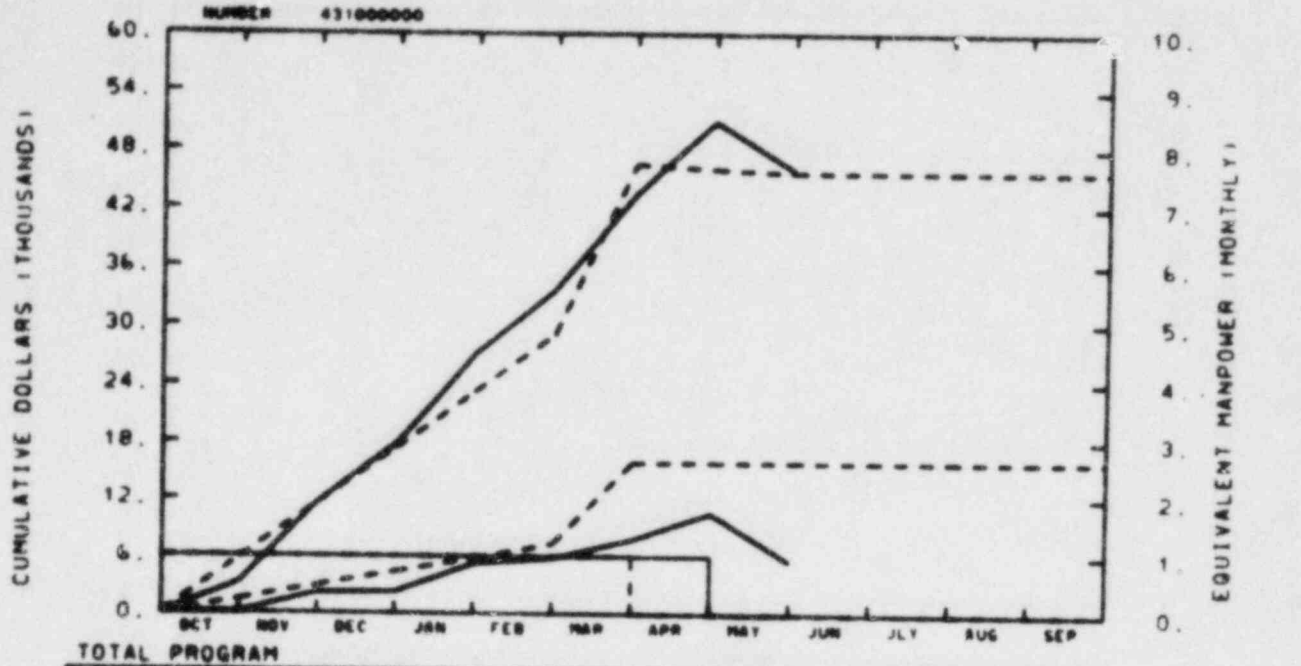
A tape containing all of the dry containment updates was prepared and transmitted to NRR. A report documenting these improvements was also transmitted. The CONTEMPT4/MOD3 benchmark calculations are progressing satisfactorily.

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	46				

MATERIAL

BUDGET	1	3	4	6	7	16	16	16	16	16	16	16
ACTUAL	0	2	2	5	6	8	11	6				

MANPOWER

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

A6009

YTD VARIANCE: 0

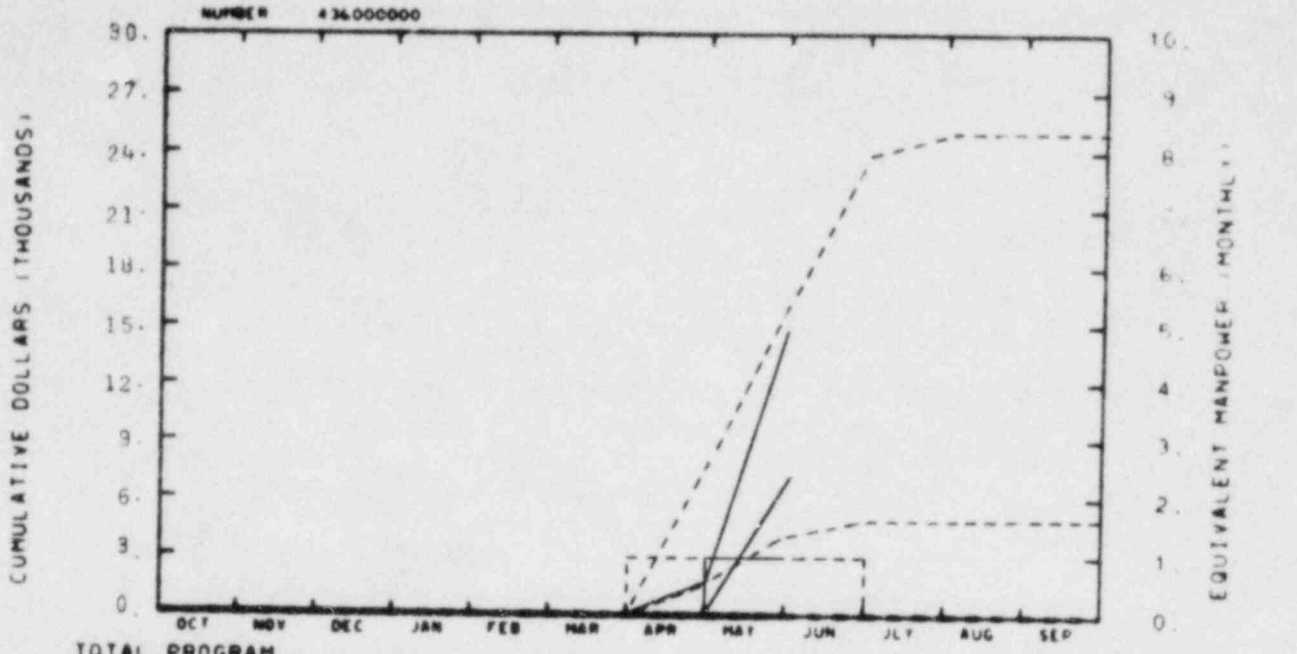
No activity on this task, work scope continuing under A6439. In the next report, A6009 will be deleted.

RESPONSIBLE
MANAGER
F AGUILAR

EG&G IDAHO INC.

CONTAINMENT ANALYSIS II A6439

NUMBER 436000000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	8	16	24	25	25	25
ACTUAL	0	0	0	0	0	0	2	15				

MATERIAL

BUDGET	0	0	0	0	0	0	2	4	5	5	5	5
ACTUAL	0	0	0	0	0	0	0	7				

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6439

YTD VARIANCE: 1 (6%)

1. 189a A6439 - Containment Analysis II

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

A transmittal tape of CONTEMPT4/MOD3 containing all of the dry containment updates was prepared and transmitted to NRR. Procedures have been established so that future preparation of transmittal tapes can be accomplished in a more timely manner.

An internal technical report, which documented all of the improvements to the dry containment portion of CONTEMPT4, was completed and transmitted to NRR. The document will be re-issued and available for public distribution after appropriate patent clearances are obtained.

Benchmarking of the CONTEMPT4/MOD3 dry containment models against previous CONTEMPT-LT calculations for North Anna, Arkansas and Midland is nearly complete and documentation of results is in progress. In addition, a CONTEMPT4/MOD3 calculation of the Battelle-Frankfurt D-15 experiment has been compared with test data. In all instances, the CONTEMPT4/MOD3 calculation compares well with previous CONTEMPT-LT calculations or with the test data (for D-15).

4. Scheduled Milestones for June 1981

Node	Description	Due Date	Actual Date
N/A	Completion of Dry Containment Benchmark Runs	06/05/81	06/03/81E

5. Summary of Work to be Performed in June 1981

Draft documentation of the dry containment benchmark problems will be completed and transmitted to NRR. A transmittal tape including all the dry containment corrections plus one sample problem will be sent to the National Energy Software Center (NESC) for release to the public

6. Problems and Potential Problems

None.

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

A6268: The FRAP-T5 uncertainty study was completed and issued as EGG-CAAD-5440.

A6415: The final report for San Onofre, Units 2 and 3, was issued.

A6422: Review of the River Bend FSAR was completed and the resulting questions transmitted to NRC.

A6425: Final draft evaluations were completed for:

Topic	Plant
III-10.A	Millstone 1
VIII-2	Millstone 1
VIII-2	Dresden 2
VIII-2	Yankee Rowe

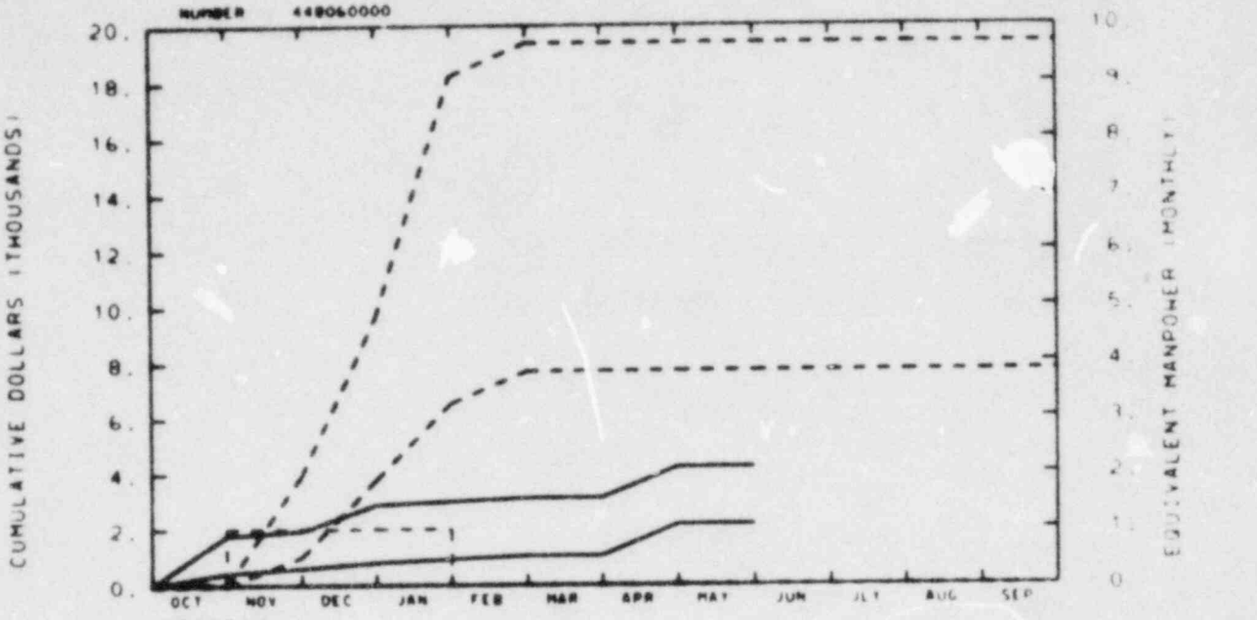
A6426: The Millstone piping analysis report, EGG-EA-5391, was issued to NRC.

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	4				

MATERIAL

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

MANPOWER

BUDGET	0	1	1	1	0	0	0	0	0	0	0	0
ACTUAL	0	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 May 1981

None.

3. Summary of Work Performed in May 1981

No work was performed this month.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Unless directed to do otherwise by the NRC Technical Monitor, EG&G is not planning to continue with this task until vendor-calculated response loads are obtained to serve as a comparison to EG&G results obtained thus far.

6. Problems and Potential Problems

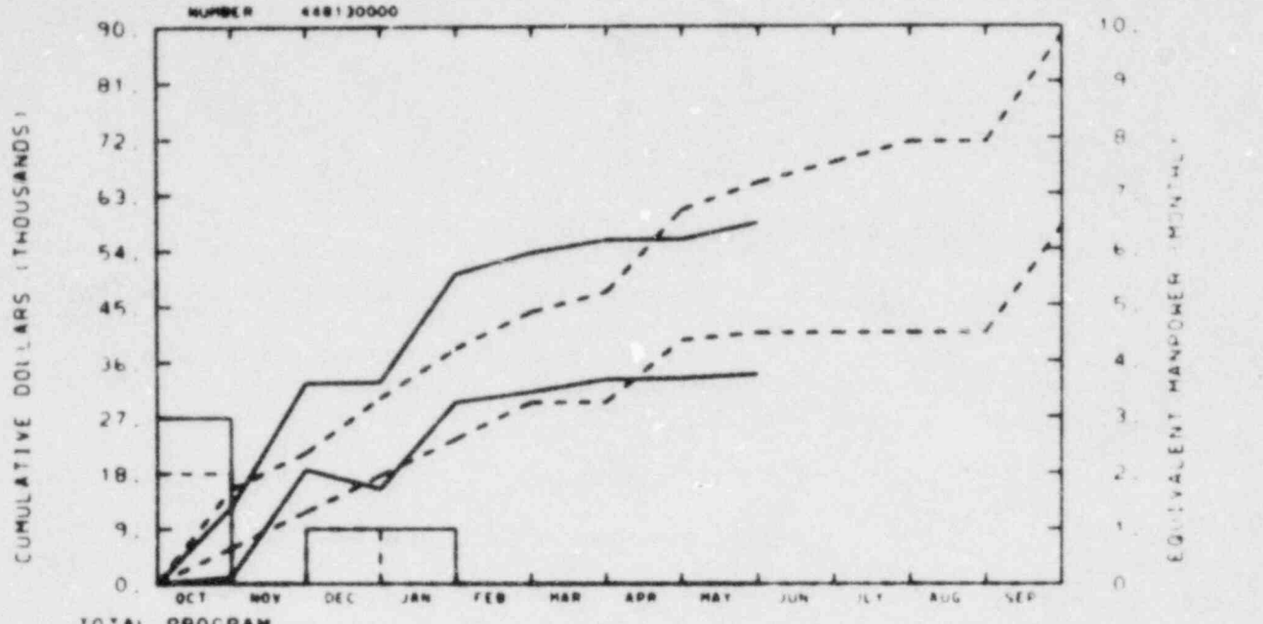
None.

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	58				

MATERIAL

BUDGET	6	12	18	24	29	29	39	41	41	41	41	58
ACTUAL	1	19	16	30	31	33	33	34				

MANPOWER

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

BUDGET

ACTUAL

A6159

YTD VARIANCE: 7 (11%)

189a A6159

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

Technical Evaluation of Temporary/Mobile Radwaste Management Systems - Subcontractor Exxon Nuclear Idaho is in the process of completing second round vendor and plant contacts to gather additional data and enable rescheduling the task after NRC review of the initial draft showed the report to require a major rewrite.

Very Low Level Waste (Deminimus Radioactivity Level Task) - Subcontractor EG&G Santa Barbara completed a draft of the final report which was transmitted to both the cognizant NRC technical monitor and EG&G Idaho project manager for review and comment prior to publication of the final report.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Technical Evaluation of Temporary/Mobile Radwaste Management Systems - The subcontractor will complete and transmit a detailed schedule for project completion to the technical monitors representing DOE-ID, EG&G Idaho, Inc., and the NRC by June 5, 1981. Initial second round vendor contacts will also be completed.

Very Low Level Waste (Deminimus Radioactivity Level Task) - Pending timely receipt of review comments from the NRC technical monitor and EG&G Idaho, the subcontractor will incorporate review comments and work on the final report.

6. Problems and Potential Problems

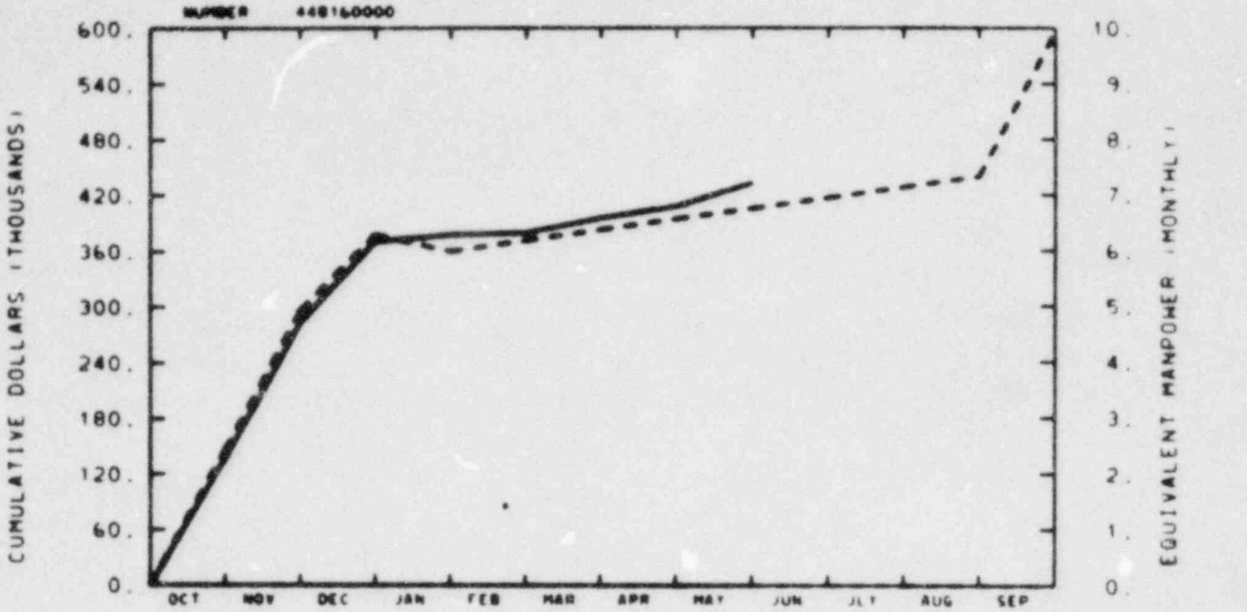
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

NRC USE OF INEL CDC A6209

NUMBER 448160000



TOTAL PROGRAM

BUDGET	146	296	378	360	372	383	394	406	417	428	440	596
ACTUAL	137	283	371	378	380	395	408	433				

MATERIAL

BUDGET	146	296	378	360	372	383	394	406	417	428	440	596
ACTUAL	137	283	371	378	380	395	408	433				

BUDGET - - - - - -

ACTUAL ———

MANPOWER

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

A6209

YTD VARIANCE: <27> (7%)

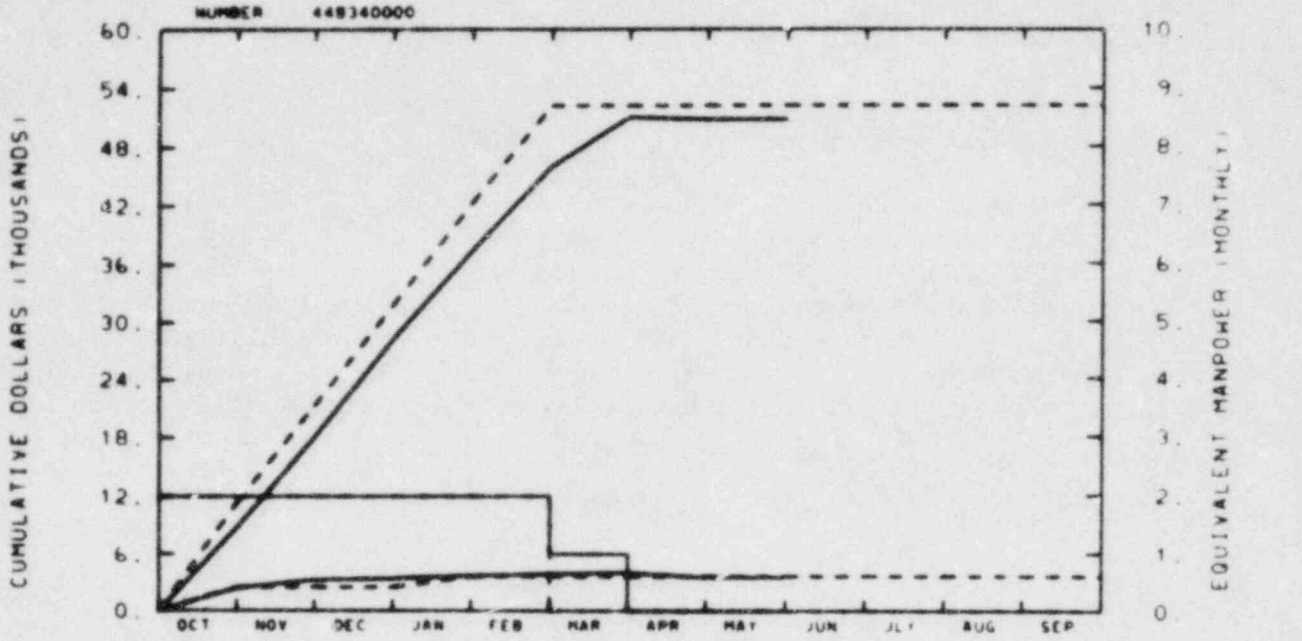
This computer fund is being used by NRC personnel only, and on an unscheduled basis. Therefore, the overexpenditure has no particular significance.

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	51				

MATERIAL

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

BUDGET - - - - - -

ACTUAL ———

A6258

YTD VARIANCE: 1 (2%)

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

No effort was expended on this task. Final reports have been typed for Nine Mile Point 1 and Indian Point 3 but final release is being held pending resolution of several items by the licensees. Preparation of the Oyster Creek report cannot be started until the resubmittal is received.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Future work on this task will be dependent on receipt of the necessary information from the licensees.

6. Problems and Potential Problems

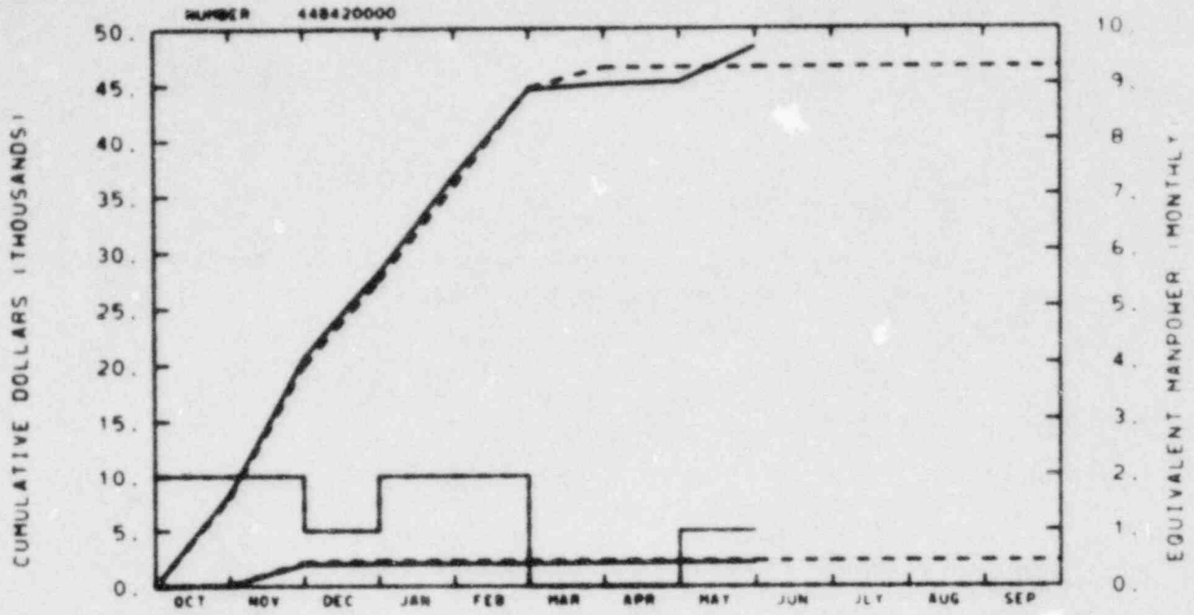
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

INSERVICE TESTING - DSS A6265

NUMBER 448420000



TOTAL PROGRAM

BUDGET	0	20	27	34	45	47	47	47	47	47	47	47
ACTUAL	0	21	28	37	45	45	45	48				

MATERIAL

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

BUDGET - - - - - -

ACTUAL ———

A6265

YTD VARIANCE: <1> (2%)

An additional $30 K was received and will be budgeted in June.

1. 189a A6265 - Inservice Testing - DSS

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

Preparation of the Safety Evaluation Report (SER) for North Anna was completed except for a few outstanding items which will require resolution by the licensee.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Pending satisfactory resolution of outstanding items, the SER for North Anna will be completed.

6. Problems and Potential Problems

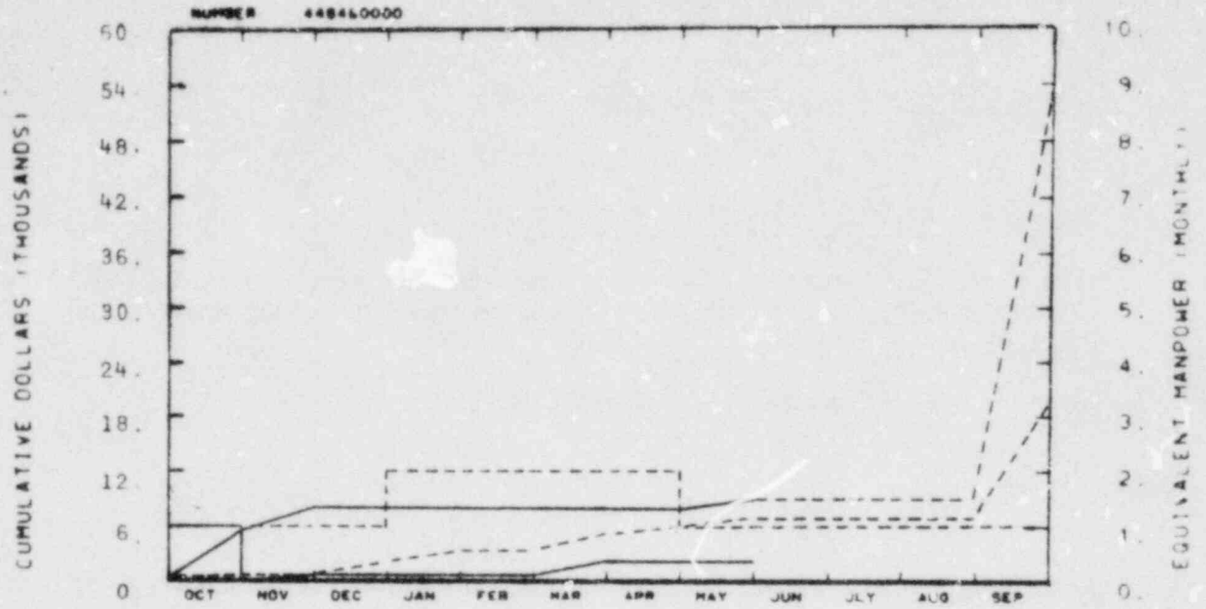
None.

RESPONSIBLE MANAGER
R F SAFFELL

EG&G IDAHO INC

FUEL PERF CODE APP PROG II A6268

NUMBER 448460000



TOTAL PROGRAM

BUDGET	5	8	8	8	8	8	8	9	9	9	9	52
ACTUAL	5	8	8	8	8	8	8	9				

MATERIAL

BUDGET	1	1	2	2	3	5	6	7	7	7	7	20
ACTUAL	0	1	1	1	1	2	2	2				

MANPOWER

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

BUDGET

ACTUAL

A6268

YTD VARIANCE: 0

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

1. 189a A6268 - Fuel Performance Code Applications II

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

The FRAP-T5 uncertainty study was completed and issued as EGG-CAAD-5440. A paper on the same topic was drafted for the Sun Valley ANS Topical Meeting.

No work was performed in the FRAP-T5/EM tasks.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

When direction is received from the NRC, work will commence on the FRAP-T5/EM tasks.

6. Problems and Potential Problems

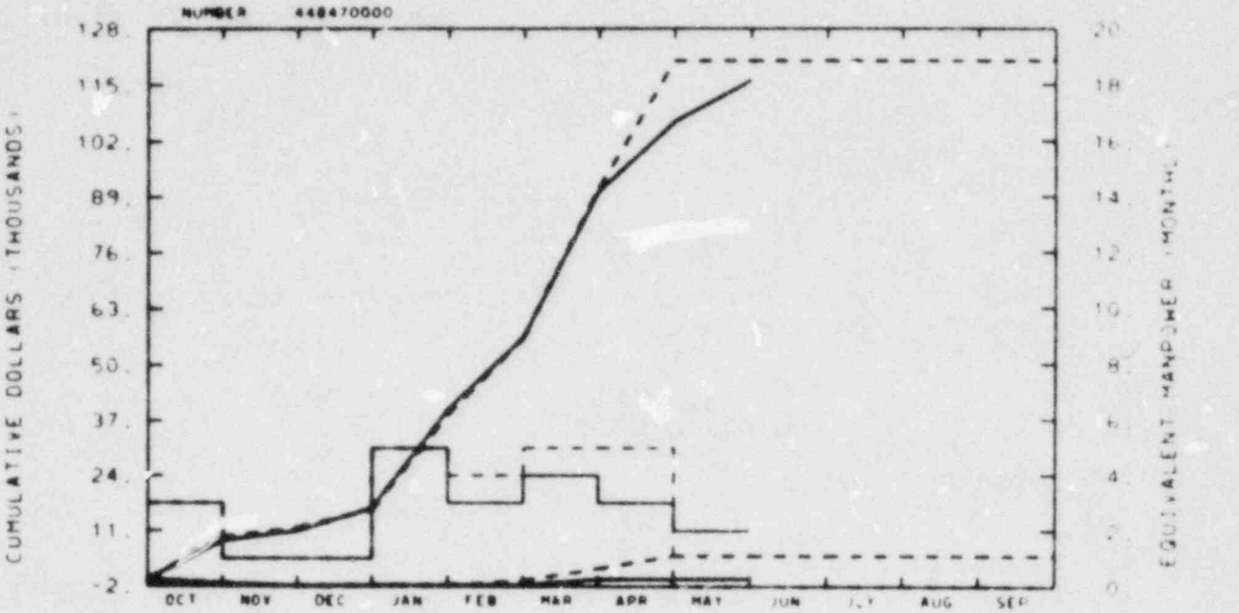
None.

RESPONSIBLE MANAGER: B. [illegible]

EG&G IDAHO INC

REAC SYS CASE RVW III A6270

NUMBER 448470000



TOTAL PROGRAM

BUDGET	10	12	16	39	57	92	121	121	121	121	121	121
ACTUAL	9	11	17	40	57	91	107	116				

MATERIAL

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

BUDGET

ACTUAL

A6270

YTD VARIANCE: 5 (4%)

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

Final input on the Comanche Peak SER was completed and prepared for formal transmittal to NRC.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Formal transmittal of the draft sections for the Comanche Peak SER will be made. Preparation of preliminary SER sections for Byron/Braidwood will continue and preparation of preliminary SER sections for South Texas will begin.

6. Problems and Potential Problems

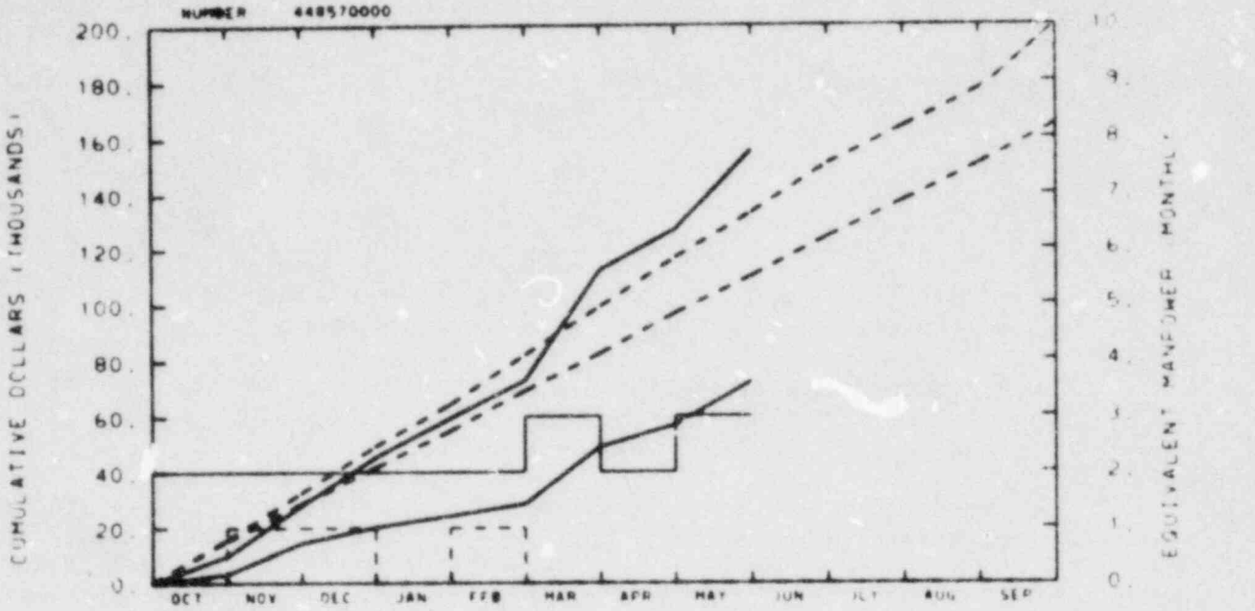
None.

RESPONSIBLE MANAGER
K. F. JAFFEE

EG&G IDAHO INC

MAT'L ENG'G CASE RVW 1 A6401

NUMBER 448570000



TOTAL PROGRAM

BUDGET	16	33	49	64	82	99	117	133	151	164	177	198
ACTUAL	10	28	45	59	73	112	127	156				

MATERIAL

BUDGET	15	29	42	55	69	82	97	110	124	137	151	165
ACTUAL	[illegible]	15	20	24	28	49	57	72				

MANPOWER

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

A6401

YTD VARIANCE: <23> (17%)

Accelerations in schedule, as requested by the NRC Technical Monitor, are responsible for early expenditure of funds on this task. We expect approximately $75 K in additional funding in FY-1981 to cover these accelerations.

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

The cognizant EG&G project engineer traveled to NRC-Bethesda to aid in the NRC evaluation of GEs response to questions in the Zimmer SER.

The St. Lucie 2 SER was completed and transmitted to the NRC informally on April 29, 1981. This task had been scheduled for July 1, 1981, but was moved up to May 4, 1981, by the NRC.

Work continued on the Charpy V-Notch (CVN) correlations. More difficulty was encountered than initially anticipated regarding the statistics, consequently the report will be late. This task will be rescheduled for completion at a later date acceptable to the technical monitor, who has indicated that the report is of lower priority than the SERs.

Washington Nuclear Power 2 (WNP2): Discussions concerning the WNP-2 Preservice Inspection Program Plan were held between representatives of NRC, WNP-2 and EG&G. Clarification of several items of concern was achieved during these discussions.

Watts Bar: Limited discussions concerning general issues of the Watts Bar Preservice Inspection Program Plan were conducted. Discussions of specific individual comments will be addressed pending further review by the NRC technical monitor.

Grand Gulf: Work on the draft version of the Grand Gulf Preservice Inspection Plan comments is in progress.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Work will continue on the CVN correlation.

Washington Nuclear Power 2: The WNP-2 Preservice Inspection Program Plan and FSAR comments will be discussed with the NRC technical monitor and subsequent to editing will be finalized for forwarding to NRC.

Watts Bar: After discussions on specific individual comments have been completed between NRC and EG&G, additional clarification comments will be forwarded to NRC.

Grand Gulf: Comments (draft versions) on the preservice inspection plan abstract will be transmitted to NRC.

6. Problems and Potential Problems

Cognizant EG&G personnel have informally committed to the schedule dates shown below:

Plant	Draft SER Due Date
Seabrook 1	August 1, 1981
Clinton 1	August 1, 1981
Wolf Creek	September 15, 1981

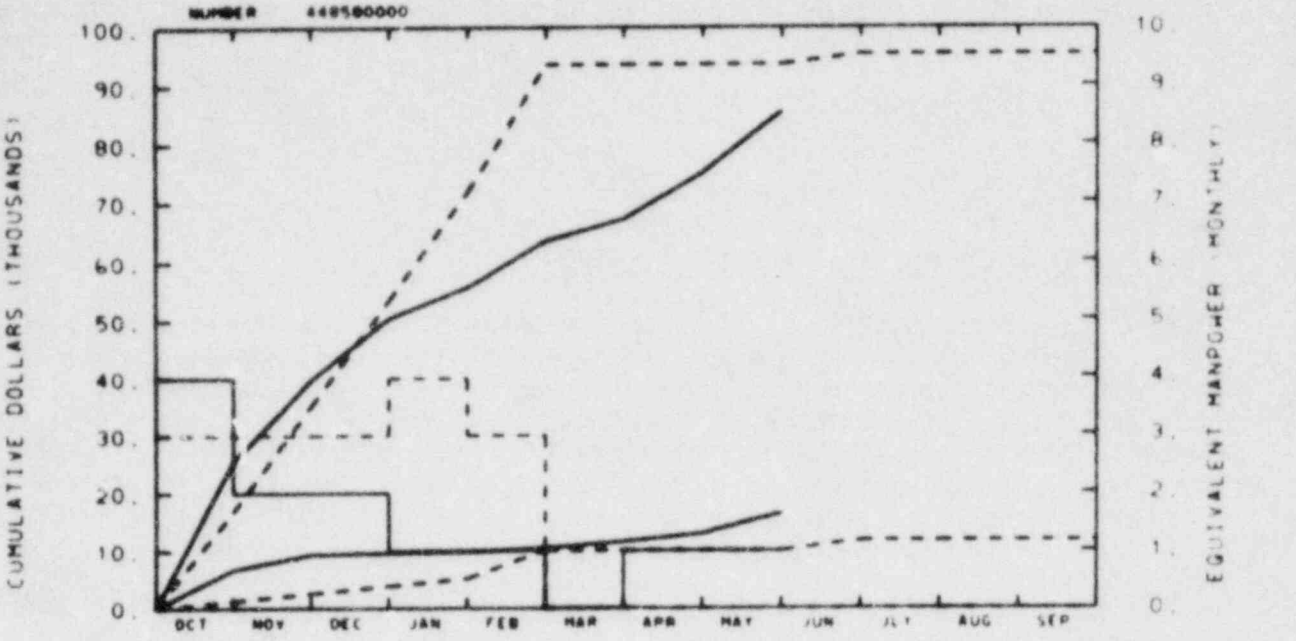
The FSARs and the money to start working on these plants are needed by July 1 in order to meet the above scheduled SER due dates.

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	85				

MATERIAL

BUDGET	1	3	4	5	10	10	10	10	12	12	12	12
ACTUAL	7	9	10	10	10	12	13	16				

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6402

YTD VARIANCE: 9 (10%)

An additional $22 K was received, which will be budgeted in June.

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

A6402 - Grand Gulf: Auxiliary and containment buildings were reanalyzed for new basemat rotations and new sign convention. It was planned to finish the report on Grand Gulf this month, however, comparisons of Bechtel and EG&G spectra for the containment indicated poor agreement. The Bechtel-supplied sign convention was later determined to be incorrect. A meeting between cognizant personnel from EG&G, Bechtel, and the NRC was held in Bethesda to resolve problems with the Bechtel input data as used in the EG&G analysis. The final report will be delayed and additional funding will be required as a result of the errors in Bechtels' input data. A letter to NRC addressing these two subjects is currently in preparation.

Byron/Braidwood: There was no activity this month because the requested input data was not received.

4. Scheduled Milestones for June 1981

Node	Description	Due Date	Actual Date
C9	Grand Gulf Support as Required	6-12-81T	
C10	Grand Gulf Structural Seismic Analysis	6-12-81T	

5. Summary of Work to be Performed in June 1981

Grand Gulf - Plans call for completion and transmittal of the final report based on the resolutions and findings of the above described meeting in Bethesda and final analysis by EG&G technical personnel.

Byron/Braidwood: Activity will commence upon receipt of requested data.

6. Problems and Potential Problems

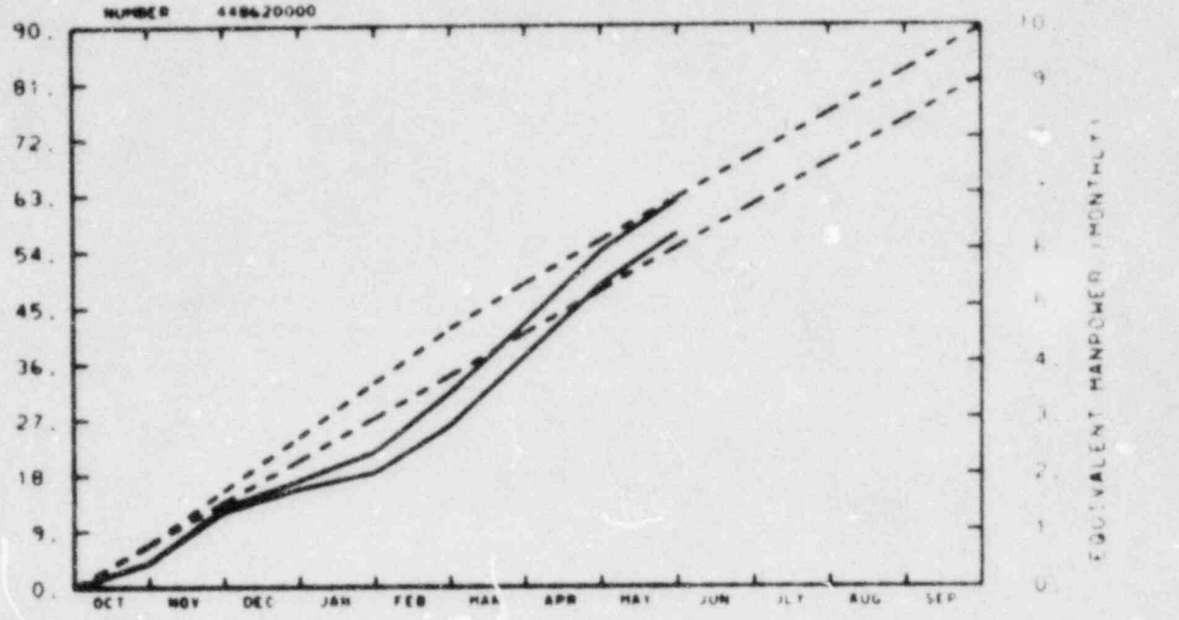
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

INSERVICE INSPECTION A6405

NUMBER 4486 20000



TOTAL PROGRAM

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

MATERIAL

BUDGET	7	14	20	27	34	41	48	54	61	68	75	82
ACTUAL	4	12	16	18	26	37	49	57				

MANPOWER

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

BUDGET

ACTUAL

A6405

YTD VARIANCE: 0

1. 189a A6405 - Inservice Inspection

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

The review of the four Inservice Inspection (ISI) procedures was continued. Plans were made to perform some limited laboratory evaluations of at least one of the procedures using available intergranular stress corrosion cracking pipe samples.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Limited laboratory evaluations will be performed on at least one of the submitted ISI procedures. Review of any more ISI procedures received from NRC will begin and review of the ISI procedures now on hand will be continued.

6. Problems and Potential Problems

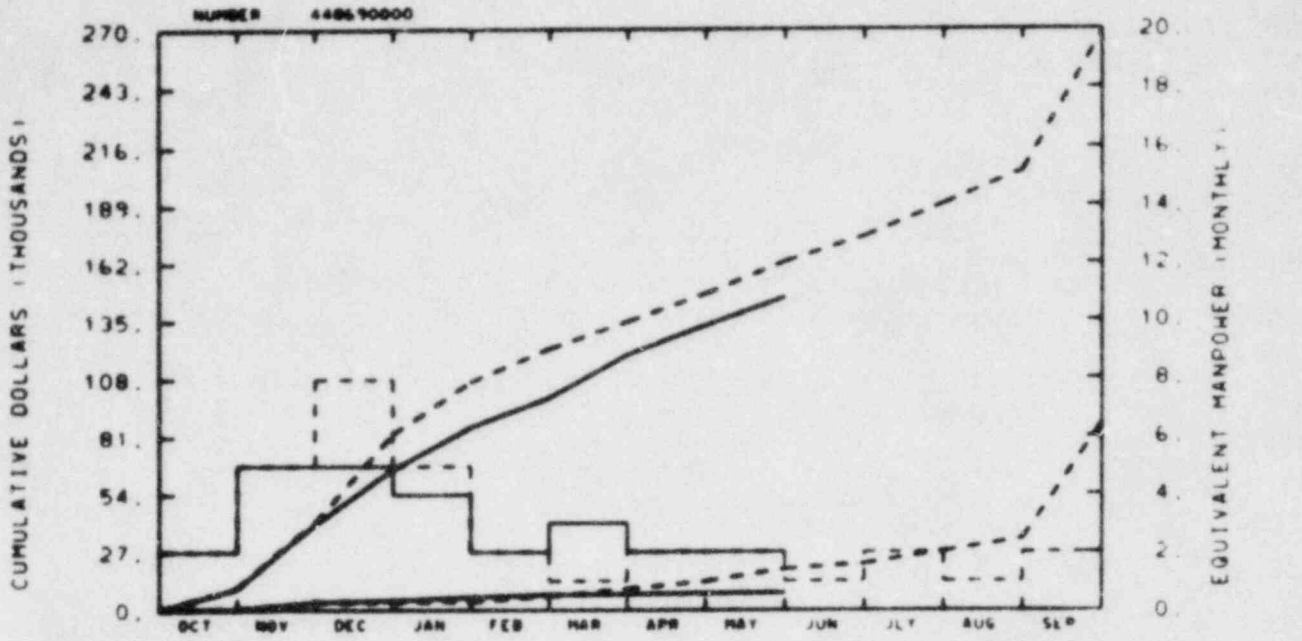
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

DYNAMIC QUAL ELEC & MECH A6415

NUMBER 4486 90000



TOTAL PROGRAM

BUDGET	10	41	83	107	122	135	147	163	174	190	205	268
ACTUAL	10	40	66	86	99	119	133	146				

MATERIAL

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

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6415

YTD VARIANCE: 17 (10%)

Delays in plant audits, as requested by the NRC, have caused an underrun and may result in a carryover at fiscal year end.

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

2. Scheduled Milestones for May 1981

Node	Description	Due Date	Actual Date
JJ13	San Onofre Units 2 and 3 Report Conference Revision	1/31/81E	5/26/81C Saff-126-81
JJ15	San Onofre Units 2 and 3 Unresolved Issued (N/S)	N/S	5/26/81 Saff-126-81

3. Summary of Work Performed in May 1981

The final report for San Onofre Units 2 and 3 was issued. Status reports on the nuclear steam supply system balance of plant (BOP) equipment for Zimmer were received. The equipment to be reviewed for this plant was selected and the list was sent to the NRC technical monitor.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

The site visit to Zimmer will be completed and the trip report will be prepared. Submittals from La Salle for resolution of outstanding issues are expected and are scheduled to be reviewed. The status report from Grand Gulf is scheduled to be reviewed and items picked for the Grand Gulf Seismic Qualification Review Team (SQRT) visit scheduled for July.

6. Problems and Potential Problems

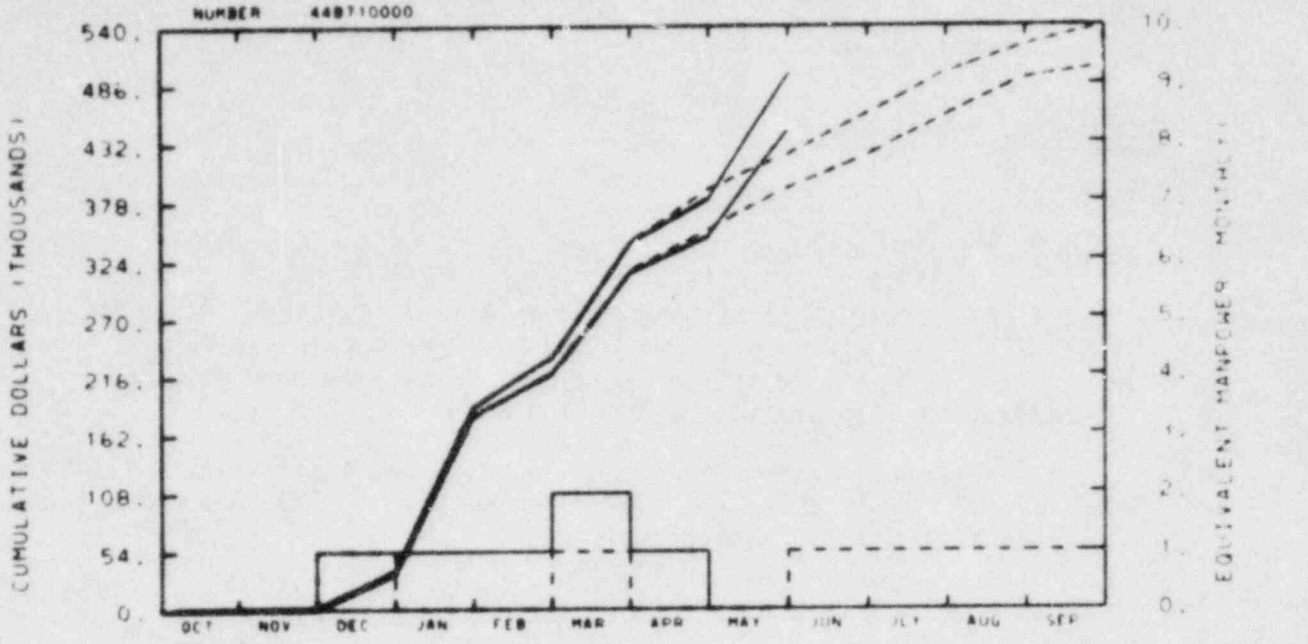
The schedule for the coming month is very crowded; some scheduled work may need to be deferred to July. If a deferral is necessary, this will be negotiated with the NRC technical monitor during June.

RESPONSIBLE MANAGER
D F SAFFELL

EG&G IDAHO INC.

ENVIR QUAL ELEC EQUIP A6417

NUMBER 448710000



TOTAL PROGRAM

BUDGET	1		37	188	234	340	390	425	460	495	515	
ACTUAL	1		37	188	234	340	181	492				

MATERIAL

BUDGET	0		33	180	218	313	354	389	424	459	489	
ACTUAL	0	0	33	180	218	313	346	456				

MANPOWER

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

A6417

YTD VARIANCE: <67> (16%)

Subcontract accruals were greater than anticipated. An accrual adjustment will be made in June, which will reflect a more accurate charge.

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

Tasks 1 and 2: November 1, 1980 responses to IE Bulletin 79-01B that cover 57 plants have been entered into the data base. Four of the 12 submittals that were tabled because of format problems have been reformatted and entered into the data base.

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 June 1981

None.

5. Summary of Work to be Performed in June 1981

Tasks 1 and 2: Work will continue on converting the 12 tabled 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

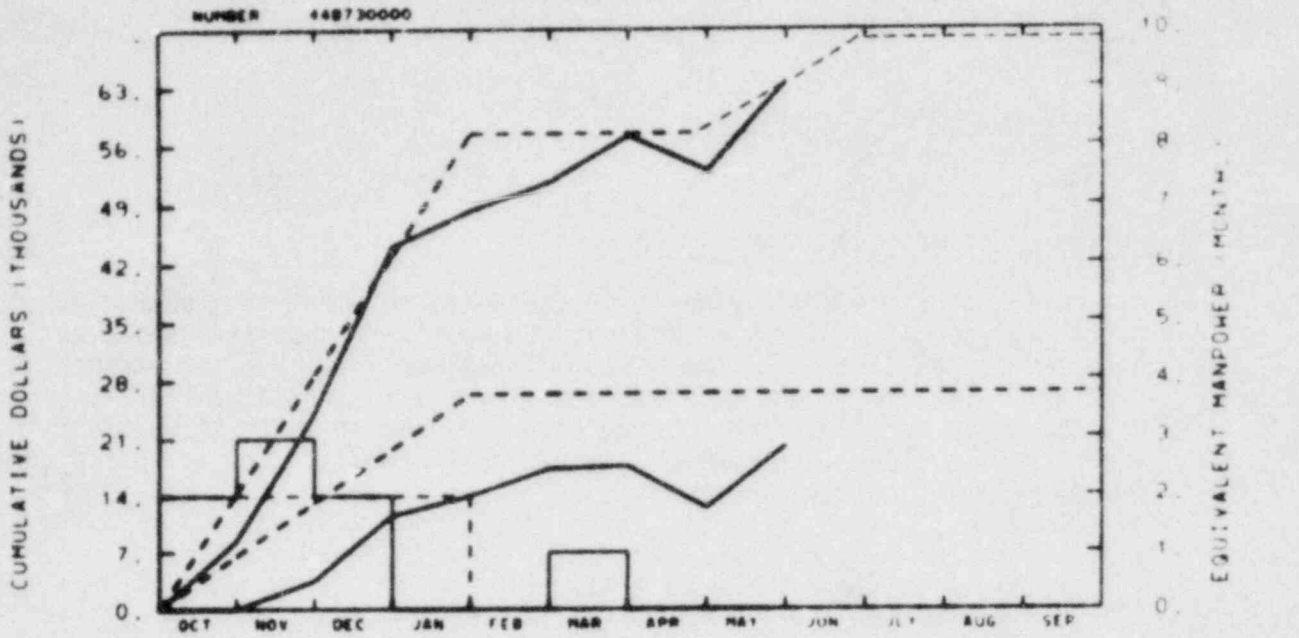
None.

RESPONSIBLE MANAGER
R F SAFFELL

EG&G IDAHO INC.

FRACTURE MECH EVALUATION A6419

NUMBER 4487 30000



TOTAL PROGRAM

BUDGET	14	29	43	57	57	57	57	64	72	72	72	72
ACTUAL	8	24	44	48	52	57	53	64				

MATERIAL

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

MANPOWER

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

A6419

YTD VARIANCE: 0

1. 189a A6419 - Fracture Mechanics Analysis

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

A review of a draft of Volume I of the NUREG document that summarizes the findings of TAP A-11 was completed. Changes were suggested and questions raised on the content of the NUREG. These comments have been transmitted to NRC. Six figures of the EG&G draft report submitted earlier, based on true stress and true strain, were also modified to indicate units of engineering stress and engineering strain for ease of use. These figures have been transmitted to the NRC.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Upon receipt of the draft copy of Volume II of the TAP A-11 NUREG, the review of this document will be completed.

6. Problems and Potential Problems

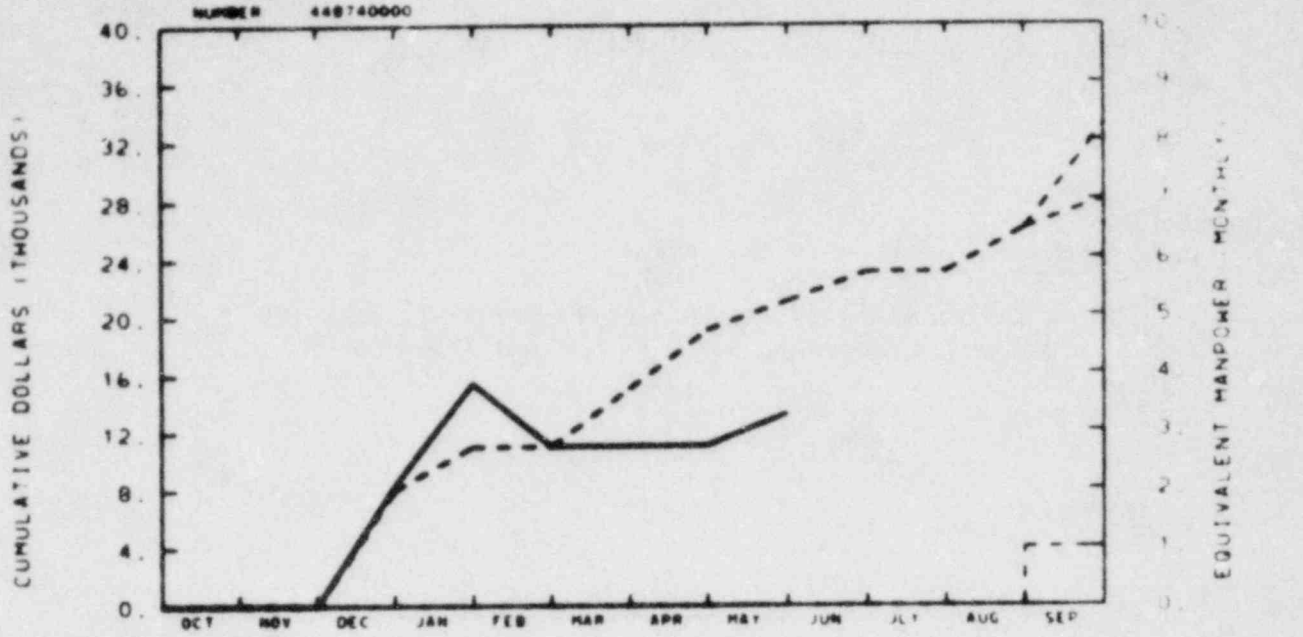
None.

RESPONSIBLE MANAGER: B F SAFFELL

EG&G IDAHO INC

PIPE CRACK STUDY GROUP A6420

NUMBER 448740000



TOTAL PROGRAM

BUDGET	0	0	8	11	11	15	19	21	23	23	26	33
ACTUAL	0	0	8	15	11	11	11	13				

MATERIAL

BUDGET	0		8	11	11	15	19	21	23	23	26	28
ACTUAL	0	0	8	15	11	11	11	13				

MANPOWER

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

A6420

YTD VARIANCE: 8 (38%)

189a A6420

1. 189a A6420 - Pipe Crack Study Group Analysis

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

There was no activity this month; we are still awaitin Dr. Paris' input for the NUREG, which is not expected until September.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

No activity expected until September.

6. Problems and Potential Problems

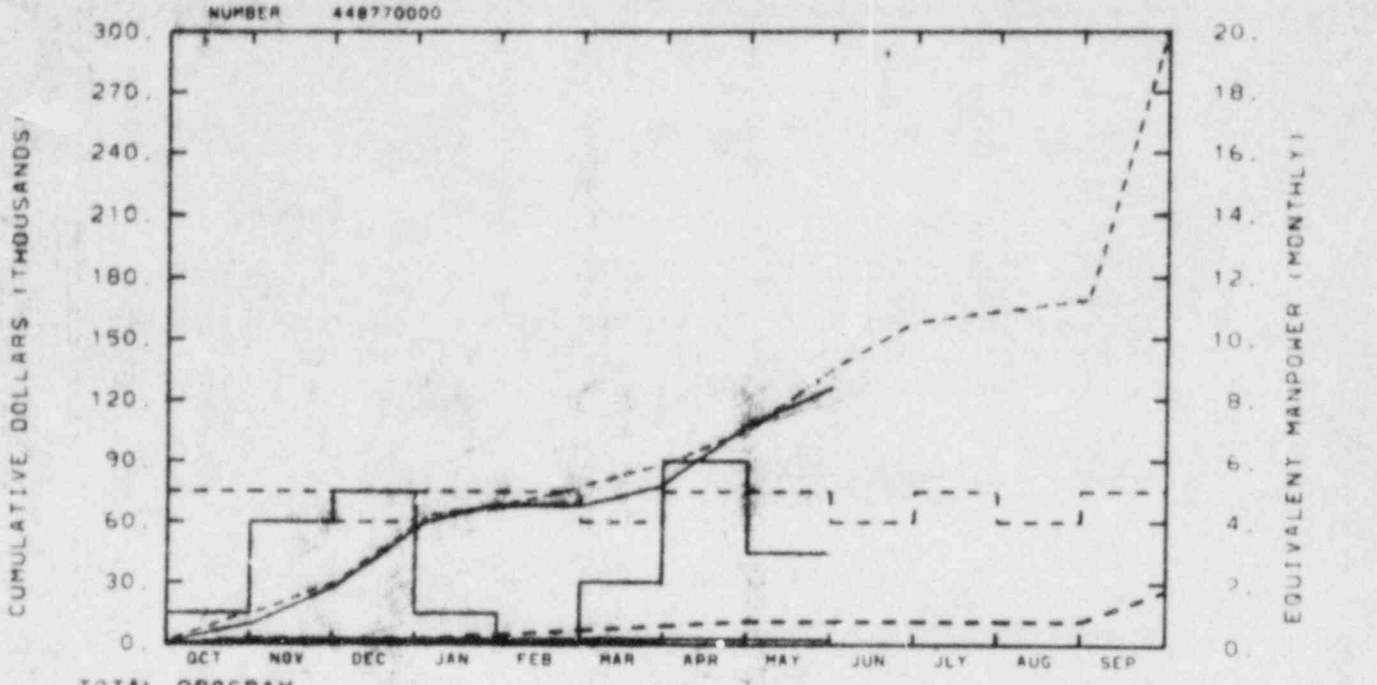
None.

RESPONSIBLE MANAGER
SAFFELL

EG&G IDAHO INC.

OPER LIC FSAR AC RV A6422

NUMBER 448770000



TOTAL PROGRAM

BUDGET	15	30	50	65	73	88	104	132	155	160	165	300
ACTUAL	9	29	59	65	65	76	107	126				

MATERIAL

BUDGET	2	2	2	5	7	9	11	11	11	11	11	26
ACTUAL	2	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	3				

BUDGET

ACTUAL

A6422

YTD VARIANCE: 6 (5%)

189a A6422

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

Review of the River Bend FSAR was completed and the resulting questions transmitted to NRC (Saff-137-81 dated 5-27-81). Review of the General Electric Standard SAR (GESSAR) started.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Review of the GESSAR will be completed.

6. Problems and Potential Problems

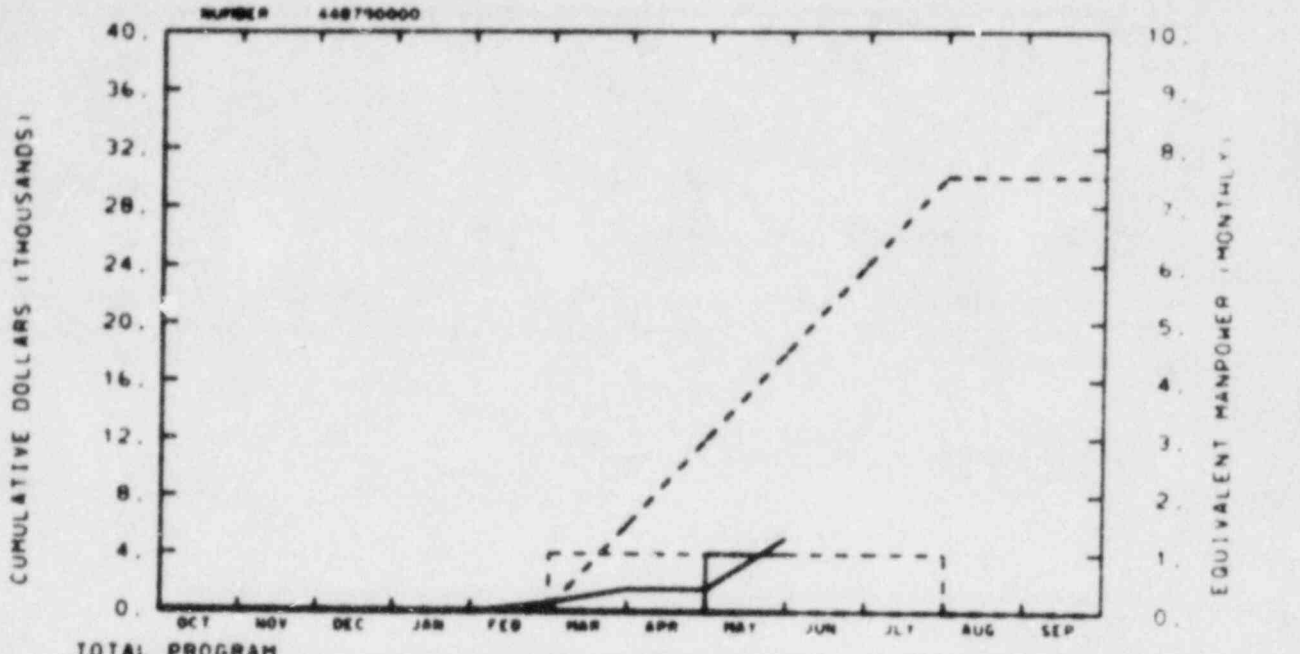
None.

RESPONSIBLE MANAGER
B. F. SOFFELL

EG&G IDAHO INC.

REACTOR INTERNAL ANALYSIS A6424

NUMBER 448790000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	6	12	18	24	30	30	30
ACTUAL	0	0	0	0	1	2	2	5				

MATERIAL

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

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6424

YTD VARIANCE: 13 (72%)

This project is underexpended because cognizant technical personnel were temporarily diverted to another NRC task. Plans call for rescheduling the task for completion by September 15, 1981 (per the Statement of Work) by adding compensating additional personnel.

1. 189a A6424 - Developing Mathematical Models for Reactor Internals

2. Schedule Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

Work was initiated on the overall model of the internals. A letter was issued requesting the additional information necessary from Westinghouse to complete the internals model.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Structural modeling will continue. The overall internals model is the item currently being formulated.

6. Problems and Potential Problems

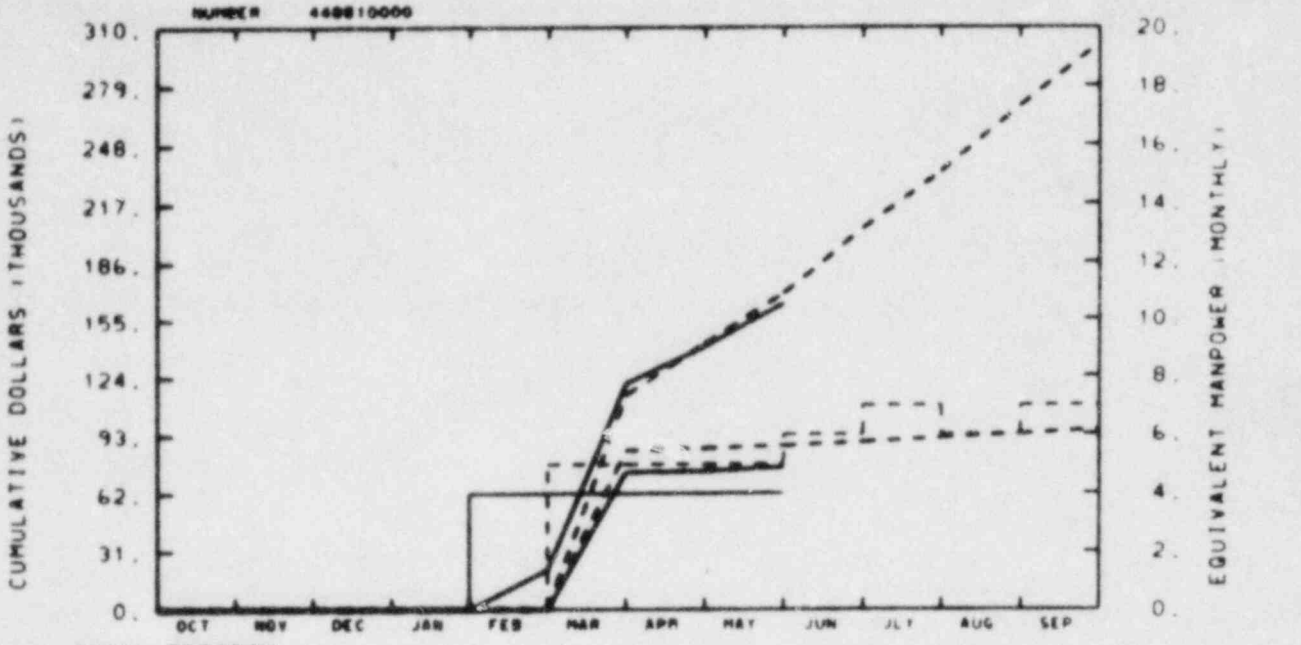
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

ELECT SYS SUPPORT II A6425

NUMBER 4408:0000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	114	142	169	204	234	268	301
ACTUAL	0	0	0	0	21	120	140	164				

MATERIAL

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

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6425

YTD VARIANCE: 5 (3%)

189a A6425

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

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

Topic	Plant
III-10 A	Millstone 1
VIII-2	Millstone 1
VIII-2	Dresden 2
VIII-2	Yankee Rowe

Costs will be reported next month.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

No initial drafts, three revised drafts and seven final drafts are scheduled for completion in June.

6. Problems and Potential Problems

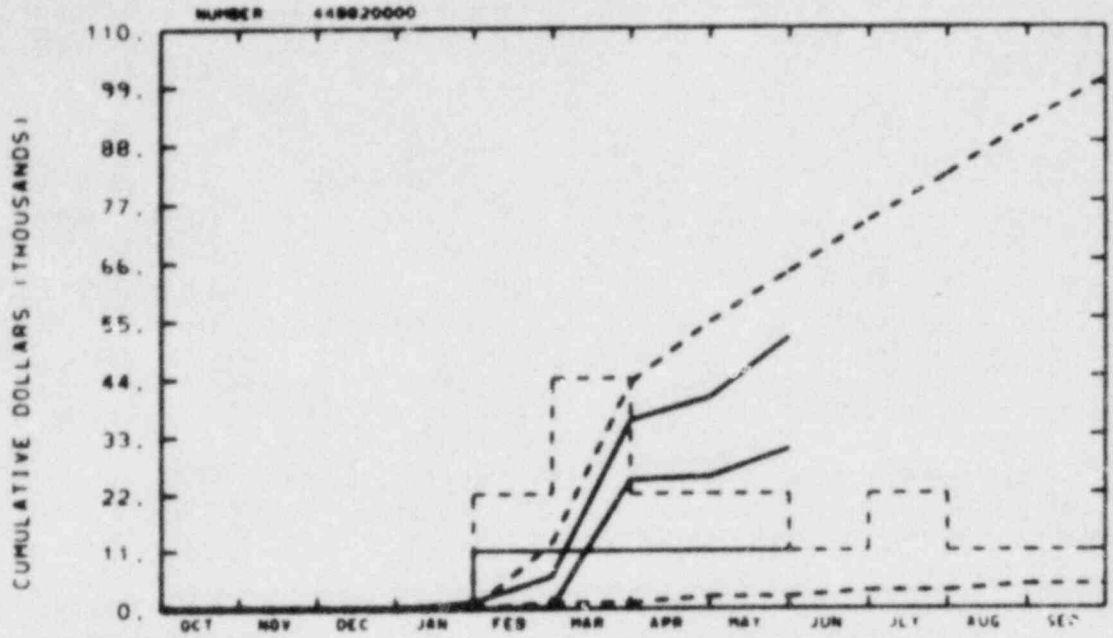
Eight initial drafts are behind schedule because licensee responses to questions have not been received. Four revised drafts are behind schedule because NRC comments have not been received. Six final drafts are behind schedule because licensee comments have not been received. Nine revised or final drafts are overdue because licensee responses to questions for the intial drafts have not been received or were received well after need dates.

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	52				

MATERIAL

BUDGET	0	0	0	0	1	1	2	2	3	3	5	5
ACTUAL	0	0	0	0	0	25	25	31				

MANPOWER

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

BUDGET

ACTUAL

A6426

YTD VARIANCE: 12 (19%)

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.

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

2. Scheduled Milestones for May 1981

Node	Description	Due Date	Actual Date
SSI-06	Millstone 1 Final Report	5-8-81	5-7-81C Saff-116-81

3. Summary of Work Performed in May 1981

The Millstone piping analysis report EGG-EA-5391 was issued. Additional analyses were performed on some of the Palisades piping systems to incorporate new information.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

A letter report describing the results of the additional Palisades analyses will be issued. Analysis work on the Ginna piping systems will be initiated.

6. Problems and Potential Problems

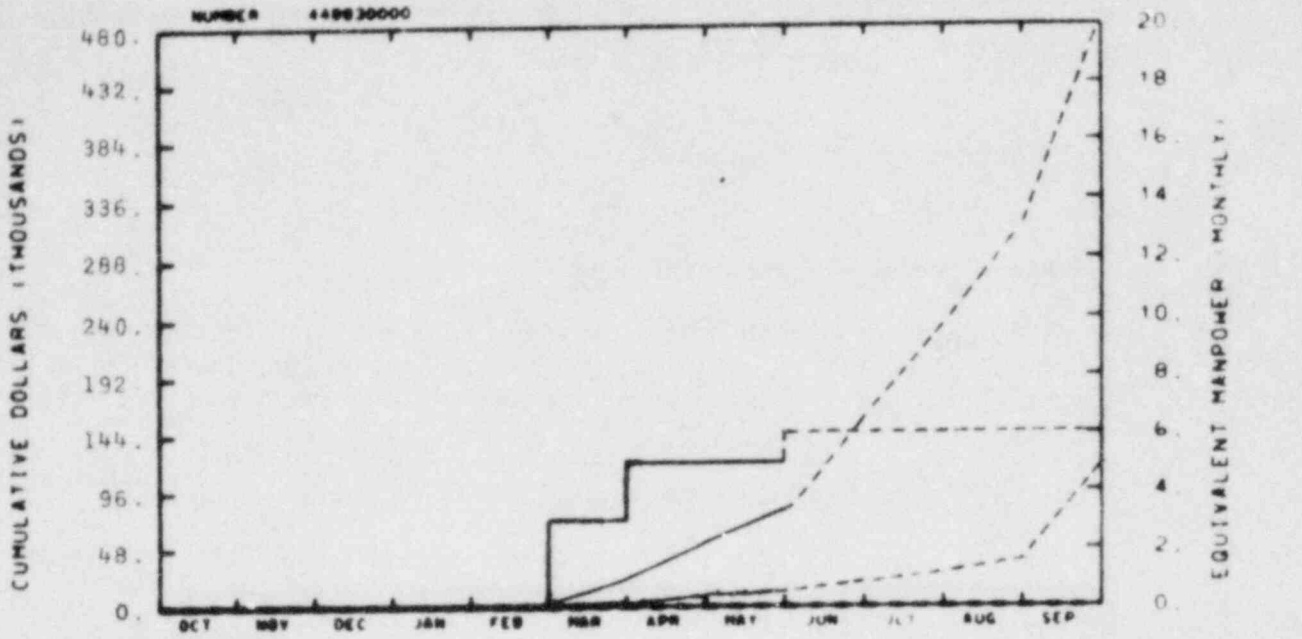
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

TMI LESSONS LEARNED A6427

NUMBER 4480 30000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	20	52	82	159	236	313	475
ACTUAL	0	0	0	0	0	20	52	82				

MATERIAL

BUDGET	0	0	0	0	0	1	5	8	12	23	34	122
ACTUAL	0	0	0	0	0	1	5	8				

MANPOWER

BUDGET	0	0	0	0	0	3	5	5	6	6	6	6
ACTUAL	0	0	0	0	0	3	5	5				

BUDGET - - - - -

ACTUAL ———

A6427

YTD VARIANCE: 0

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

All EG&G participants in this work attended a meeting with NRC personnel in Idaho Falls on May 6. An introduction to the Project Action Tracking System (PATS) was presented by NRC personnel, and summary programmatic reviews of each subtask were held.

Plant Shielding Modifications (Item II.B.2)

Category A submittals for eighteen plants were examined to identify the additional information that will be needed for the review of plant shielding modifications. NUREG-0737 Category B review criteria were used. Based on the above evaluations and discussions with NRC personnel in Bethesda, the nine licensees (fourteen plants) listed below were identified to receive a blanket request for final plant shielding descriptions.

Beaver Valley	D. C. Cook 1 and 2	Rancho Seco
Browns Ferry 1, 2 and 3	Duane Arnold	Monticello
Cooper	E. I. Hatch 1 and 2	Zion 1 and 2

Pump Seal Damage (Item II.K.2.16)

There was no activity on this task, since no additional licensee responses were received in May.

Depressurization Evaluation (Item II.K.3.45)

Began familiarization of BWR plants and systems.

Began reviewing BWR TRAC model and assembling information and data.

Core Spray and LPCI Evaluations (Item II.K.3.21)

Work continued on review of the Oyster Creek plant.

Common Reference Level (Item II.K.3.27)

Two letters of comments from licensees, which were missing in the April submittals were received and reviewed. The two documents NUREG/CR-1580 and NUREG-0659 were also reviewed. These documents deal with a Human Engineering Guide to Control Room Evaluation and are scheduled to be released in combination during June as NUREG-0700.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Plant Shielding Modifications (Item II.B.2)

Assessment of licensee Category A submittals will continue.

Pump Seal Damage (Item II.K.2.16)

Licensee responses to request for additional information will be reviewed as received. A single technincal evaluation report covering all six submittals will be prepared and issued when all responses have been received.

Depressurization Evaluation (Item II.K.3.45)

The TRAC model will be adapted to automatic depressurization systems of the BWRs. The diversity of BWR plant types will require development of several explicit TRAC models.

Core Spray and LPCI Evaluations (Item II.K.3.21)

The Oyster Creek review will be completed and a draft report submitted to NRC.

Common Reference Level (Item II.K.3.27)

NUREG-0700 will be reviewed in detail upon arrival. This document will form the basis for criteria to be used in evaluating licensee submittals on TMI Action Plan Item II.K.3.27.

6. Problems and Potential Problems

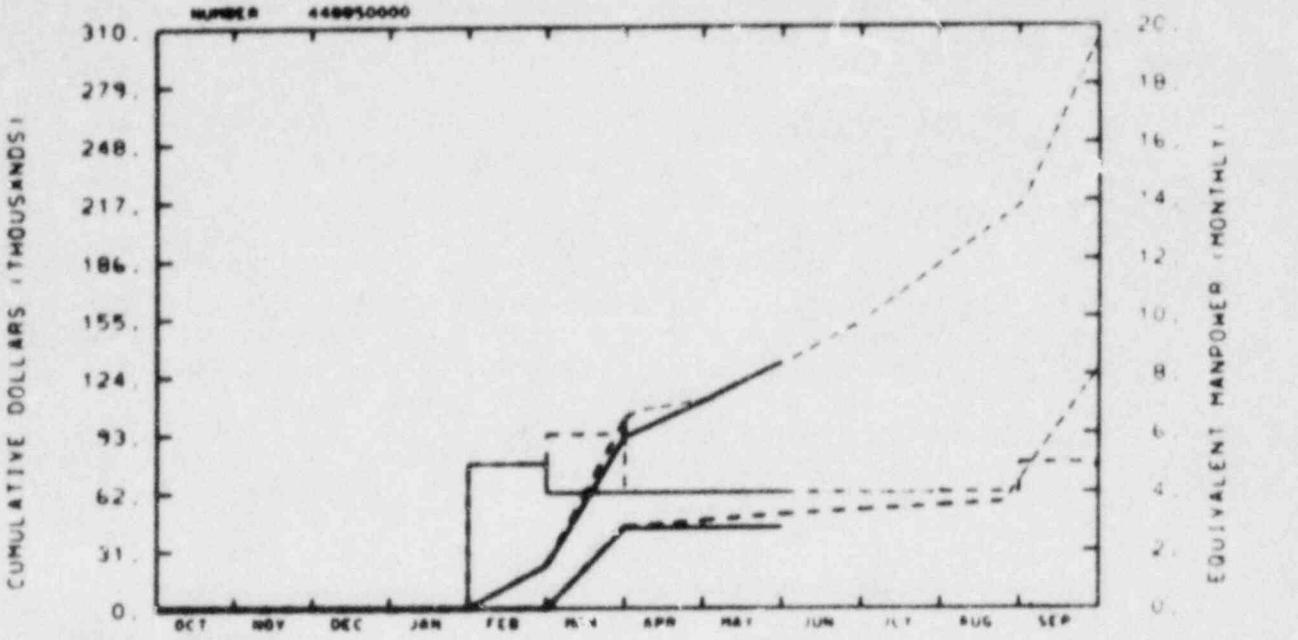
None.

RESPONSIBLE MANAGER
B. F. SAFFELL

EG&G IDAHO INC.

SELECT ISS I&C & RS II A6429

NUMBER 448850000



TOTAL PROGRAM

BUDGET	0	0	0	0	23	10	110	131	156	186	216	300
ACTUAL	0	0	0	0	23	91	110	131				

MATERIAL

BUDGET	0	0	0	0	0	44	47	50	53	55	57	126
ACTUAL	0	0	0	0	0	43	43	44				

MANPOWER

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

BUDGET

ACTUAL

A6429

YTD VARIANCE: 0

1. 189a A6429 - Selected Operating Reactors Issues

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

The preliminary review of the adequacy of station electrical distribution for Big Rock Point Nuclear Station (TAC #12781) was transmitted to the NRC. The status of assigned plant reviews as follows:

a.	Preliminary reports being prepared	9
b.	Final reports being prepared	2
c.	Preliminary reports at NRC	9
d.	Awaiting information	26
e.	Awaiting initial of revised submittals	14
f.	Under initial review	17
	TOTAL	77

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Additional plant reviews are needed for initial review and preparation of questions for full utilization of manpower. The present work on hand does not require the projected (budgeted) manpower and costs are running below the budgeted amount. P. Shemanski is currently determining new tasks.

6. Problems and Potential Problems

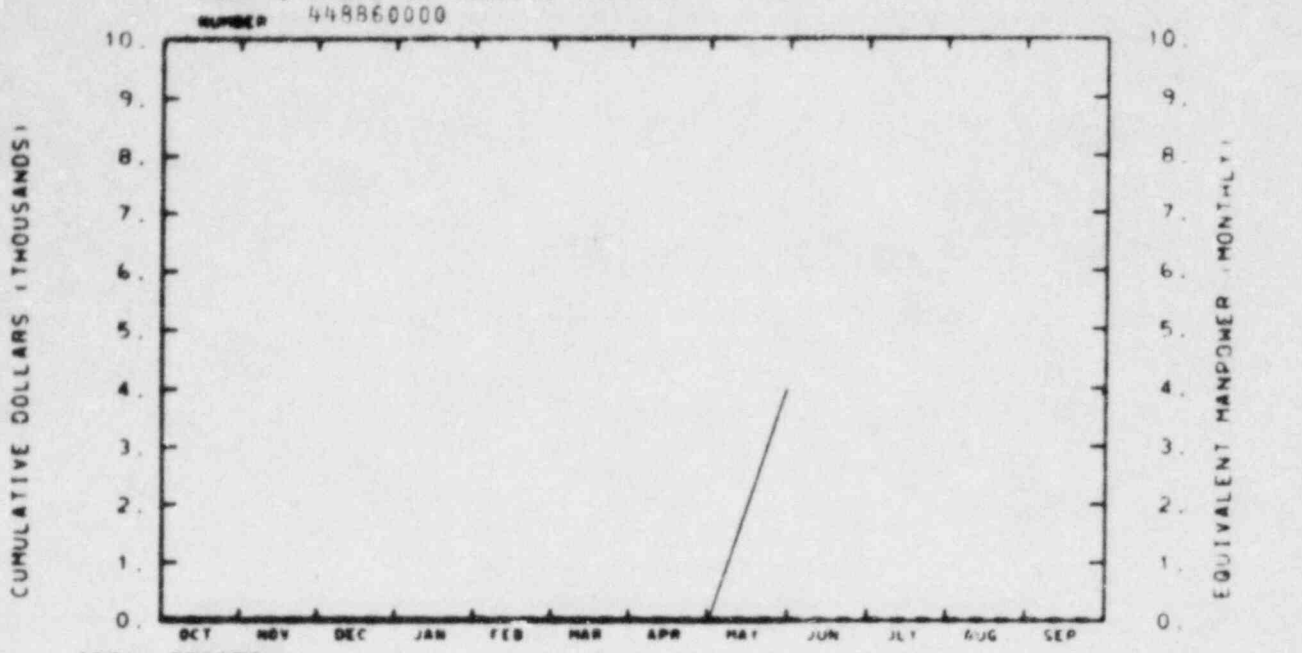
None.

RESPONSIBLE MANAGER
D F SAFFELL

EG&G IDAHO INC.

PUMP & VALVE IN-SERVICE TESTING A6430

NUMBER 448860000



TOTAL PROGRAM

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

MATERIAL

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

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6430

YTD VARIANCE: <4>

The budget will be input when the Statement of Work is finally approved.

189a A6430

1. 189a A6430 - Pump & Valve IST (OR)

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

Review of the Farley 2 IST program was started.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Review of the Farley 2 IST program will be completed and resulting questions transmitted to NRC. Further work on this task will be dependent on receipt of additional review materials or NRC scheduling of meetings.

6. Problems and Potential Problems

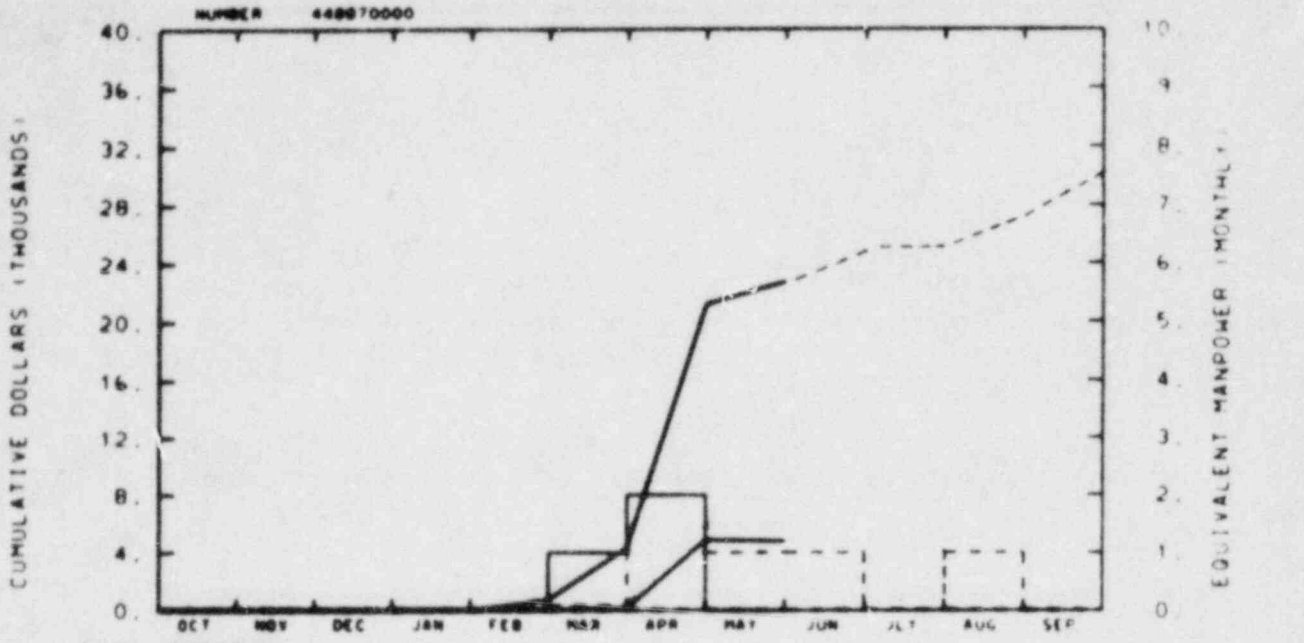
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

ASYM LOCA LOADS A6431

NUMBER 448070000



TOTAL PROGRAM

BUDGET	0	0	0	0	1	4	21	23	25	25	27	30
ACTUAL	0	0	0	0	1	4	21	23				

MATERIAL

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

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

A6431

YTD VARIANCE: 0

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

The D.C. Cook Feedwater Piping Thermal Analysis report is approximately 80% complete. This work was restarted this month (within the scope of A6156).

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

The following will be done within the scope of A6156: The D.C. Cook Feedwater Piping Thermal Analysis report will be completed. Upon receipt of review comments from the NRC Technical Monitor for the hydromass report submitted earlier, review comments will be incorporated, thereby completing this report.

Information is scheduled to be received from B&W by June 26. Work may begin on reviewing this information (A6431).

6. Problems and Potential Problems

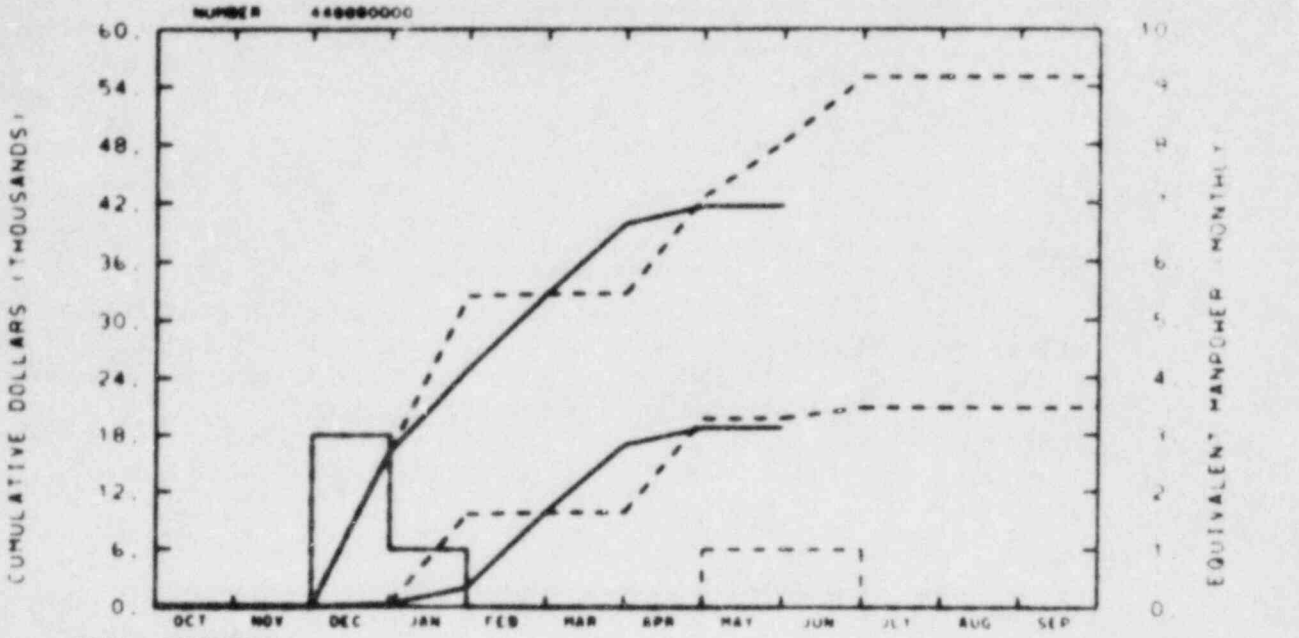
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC

COMP INTEGRITY EVALUATION A6432

NUMBER 440000000



TOTAL PROGRAM

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

MATERIAL

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

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

A6432

YTD VARIANCE: 6 (13%)

1. 189a A6432 - Component Integrity Evaluation Program

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

Subcontractor Dr. P. Paris of Del Research Corporation submitted a letter report of analyses performed in support of the evaluations of the asymmetric loads problem being performed by the Westinghouse Owners Group. This report was reviewed and found to be satisfactory by cognizant EG&G personnel. The NRC technical monitor had earlier received this report informally from the subcontractor and had also found it satisfactory.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

The level of activity will depend upon NRC direction and NRC supplied information.

6. Problems and Potential Problems

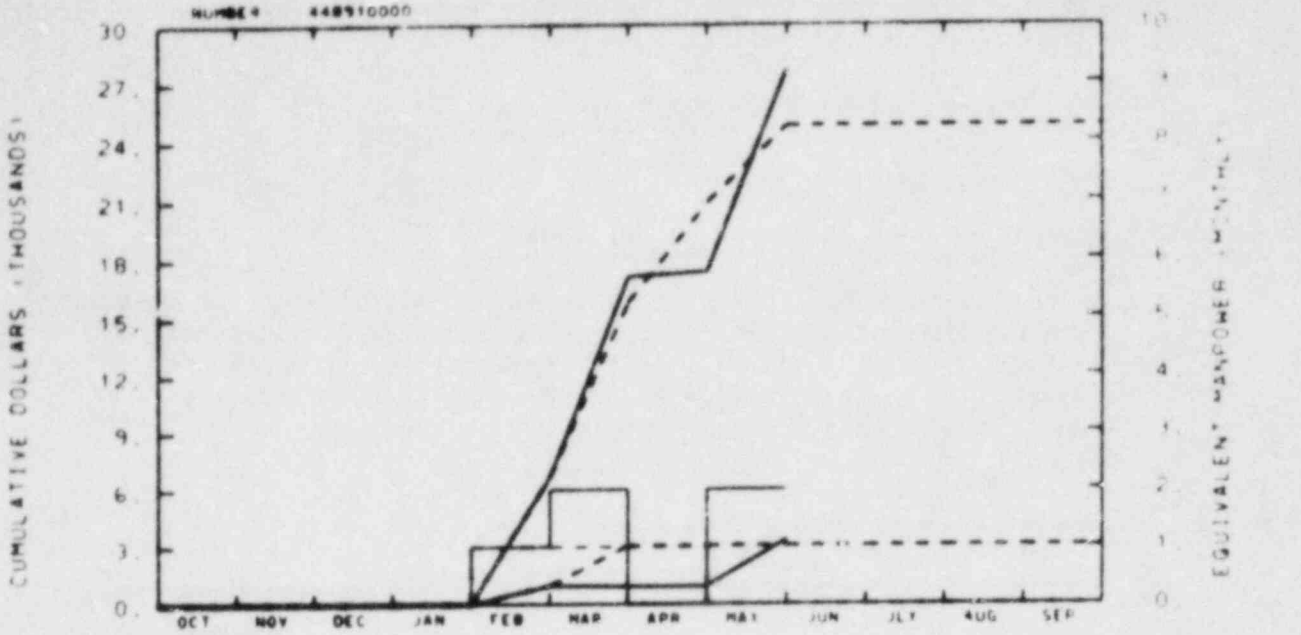
None.

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	28				

MATERIAL

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

MANPOWER

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

A6434

YTD VARIANCE: <3> (12%)

An additional $55 K was received and will be budgeted in June.

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

A meeting was held in Bethesda with NRC to discuss program status and obtain additional information. Review of available information on Callaway and St. Lucie and preliminary selection of components for detailed review was completed. Some additional information is still required to complete this phase of the reviews.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Results of the reviews to date and requests for additional information for Callaway and St. Lucie will be transmitted to NRC. Review of additional information on Palo Verde will be started.

6. Problems and Potential Problems

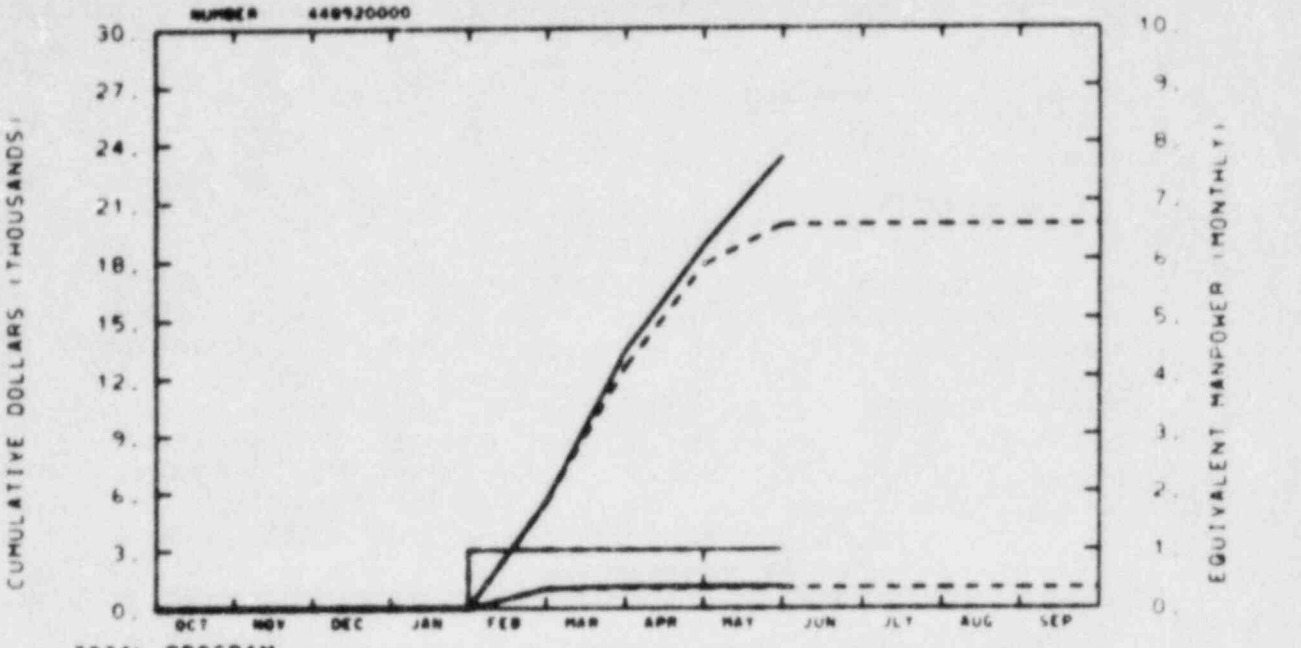
None.

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	23				

MATERIAL

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

A6435

YTD VARIANCE: <3> (15%)

An additional $50 K was received in late May and will be budgeted in June.

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

Drafting of the report documenting review of the proposed ANSI/ASME specification standard N551.1 dated May, 1980 was completed and is currently undergoing EG&G in-house approval before transmittal to NRC.

The report documenting review of ANSI/ASME specification standard B16.41-19 (draft 3, revision 10, dated September 1980) was started. Cognizant EG&G technical personnel contacted the NRC technical monitor to obtain feedback on the first two submittals before continuing efforts on the remaining tasks. The NRC technical monitor indicated satisfaction with the first submittal and promised timely review and comment on the second. Per the technical monitors request, more detail will be included in subsequent reviews.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Plans call for completion of the report documenting review of ANSI/ASME specification standard B16.41-19.

Work will continue on review of the remaining specification standards per the Statement of Work.

6. Problems and Potential Problems

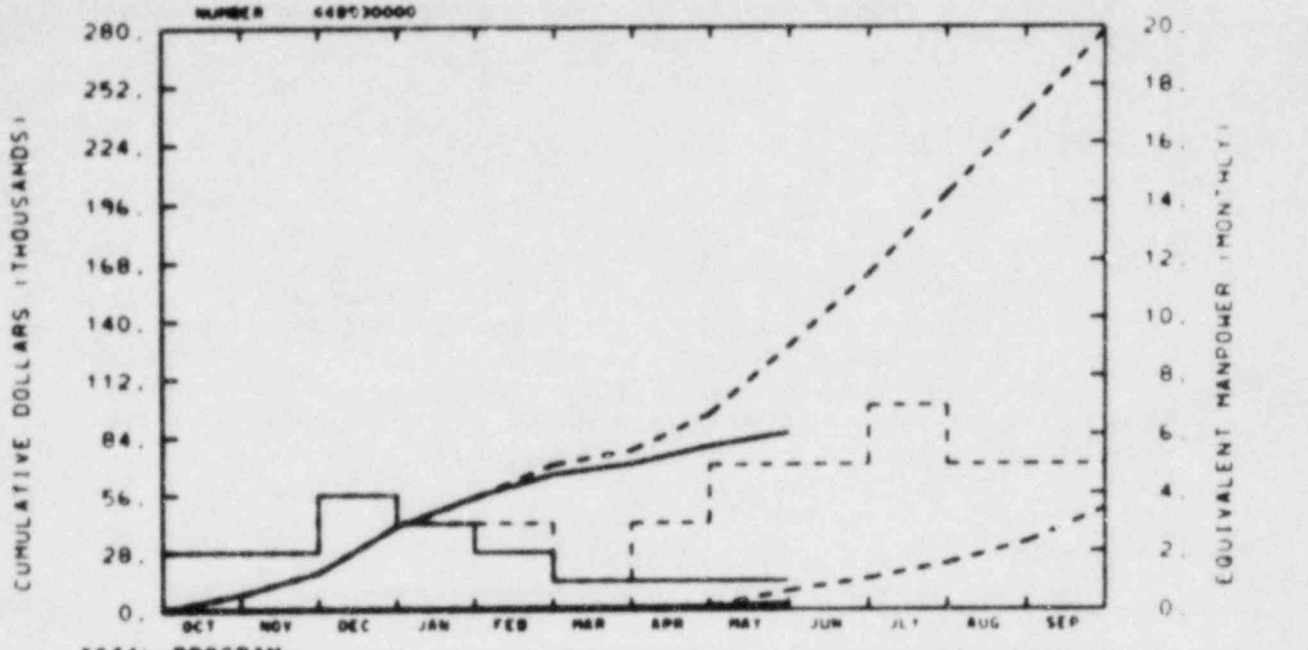
None.

RESPONSIBLE MANAGER
B F SAFFELL

EG&G IDAHO INC.

RELOADS GUIDELINES OR EVAL A6436

NUMBER 6480130000



TOTAL PROGRAM

BUDGET	8	18	41	54	70	77	94	127	161	200	238	278
ACTUAL	8	18	41	55	66	71	79	85				

MATERIAL

BUDGET	0	0	0	1	1	1	2	3	15	22	32	49
ACTUAL	0	0	0	1	1	1	2	3				

MANPOWER

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

BUDGET

ACTUAL

A6436

YTD VARIANCE: 42 (33%)

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.

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

An initial draft of the format for an applications manual was developed.

No effort was expended on Task 4 due to lack of review material from NRC. A telephone conversation with the new NRC Technical Monitor was held to arrange for transmittal of review materials.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

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

In anticipation of receipt of the detailed information required to develop a RELAP5 model of North Anna during this month, a second staff member will be assigned to this task. The second performer will review appropriate sections of the North Anna Unit 2 FSAR as background for the development of the RELAP5 model and analysis of the steam generator transients.

6. Problems and Potential Problems

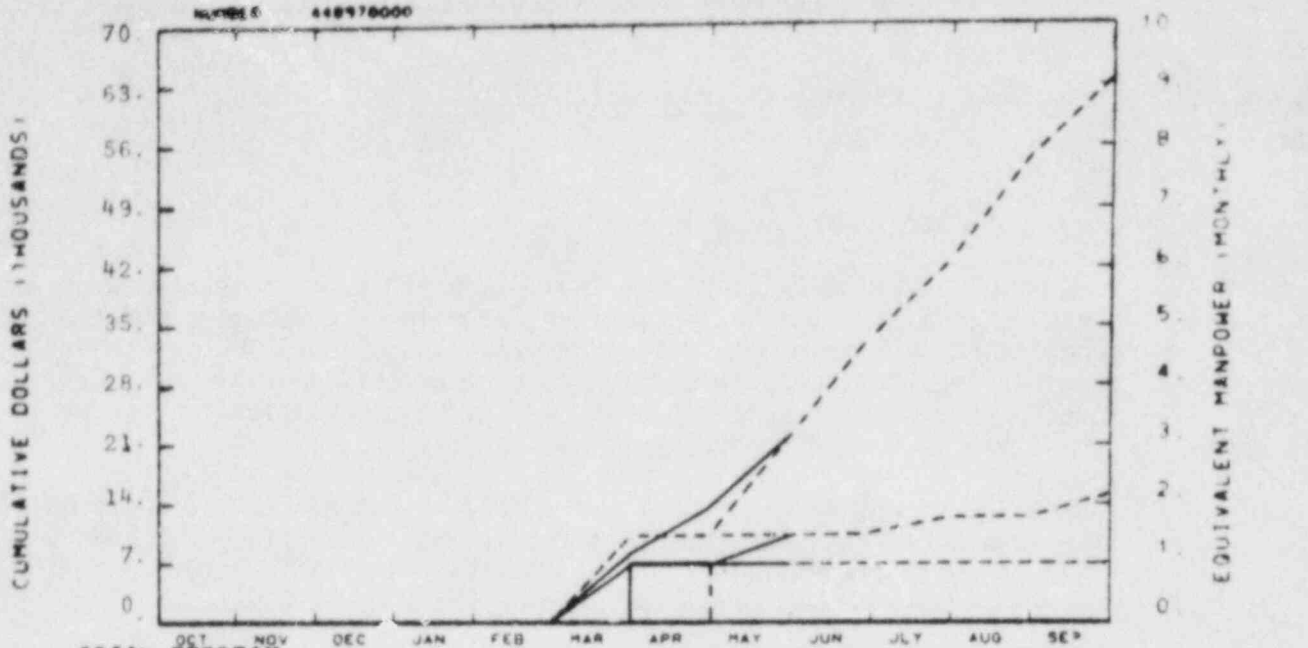
None.

RESPONSIBLE MANAGER
B. SAFFELL

EG&G IDAHO INC

FUEL MECH RES EVAL A6440

NUMBER 448978000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	10	10	22	33	43	54	64
ACTUAL	0	0	0	0	0	8	13	23				

MATERIAL

BUDGET	0	0	0	0	0	10	10	10	10	12	12	15
ACTUAL	0	0	0	0	0	7	7	10				

MANPOWER

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

A6440

YTD VARIANCE: 0

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

The axial audit analysis of San Onofre 2 and 3 fuel is nearly complete. This audit analysis is being performed for the inconsistent model (beginning of life model with end of life loads) supplied by Combustion Engineering (CE). The results obtained from EG&G analysis are not in good agreement with those obtained by CE. Further investigation as to the cause of this discrepancy is required.

The audit report on Exxon fuel was completed (within the scope of A6157) and issued; it was concluded from the analysis that Exxons methods of fuel assembly mechanical response analysis are satisfactory.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

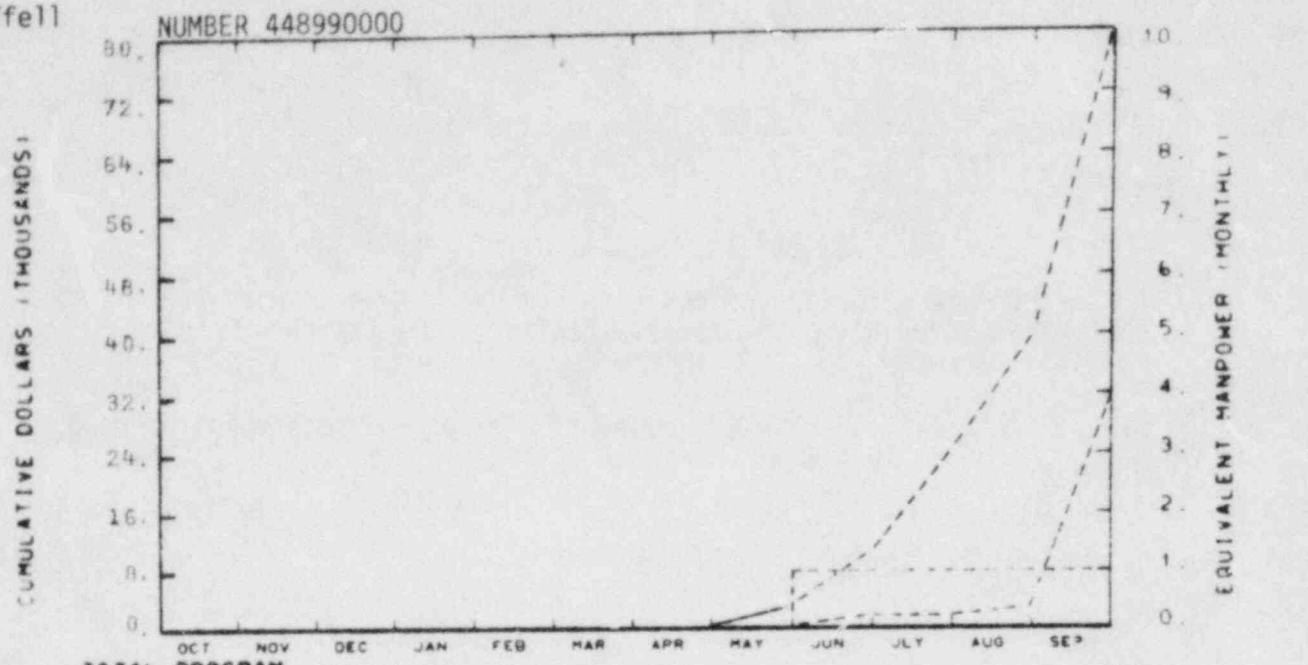
It is expected that the axial audit analysis of San Onofre 2 and 3 fuel will be completed and a technical report will be issued.

6. Problems and Potential Problems

None.

RESPONSIBLE MANAGER
B F Saffell

EG&G IDAHO, INC.
BIG ROCK RISK STUDY A6442
NUMBER 448990000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	0	3	11	25	40	80
ACTUAL	0	0	0	0	0	0	0	3				

MATERIAL

BUDGET	0	0	0	0	0	0	0	0	2	2	3	33
ACTUAL	0	0	0	0	0	0	0	0				

MANPOWER

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

A6442

YTD VARIANCE: 0

189a A6442

1. 189a A6442 - Big Rock Point

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

Initiated data gathering effort with Consumers Power Company to obtain supporting information for the evaluation of the Big Rock Point Probabilistic Risk assessment.

Work on subtask 1 of task I, review of efficacy of recirculation pump trip, was initiated.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Statistical review of data, sensitivity analyses, and uncertainty analyses of the Big Rock Point assessment will be initiated.

A draft report of the recirculation pump trip review will be completed and submitted to NRC.

6. Problems and Potential Problems

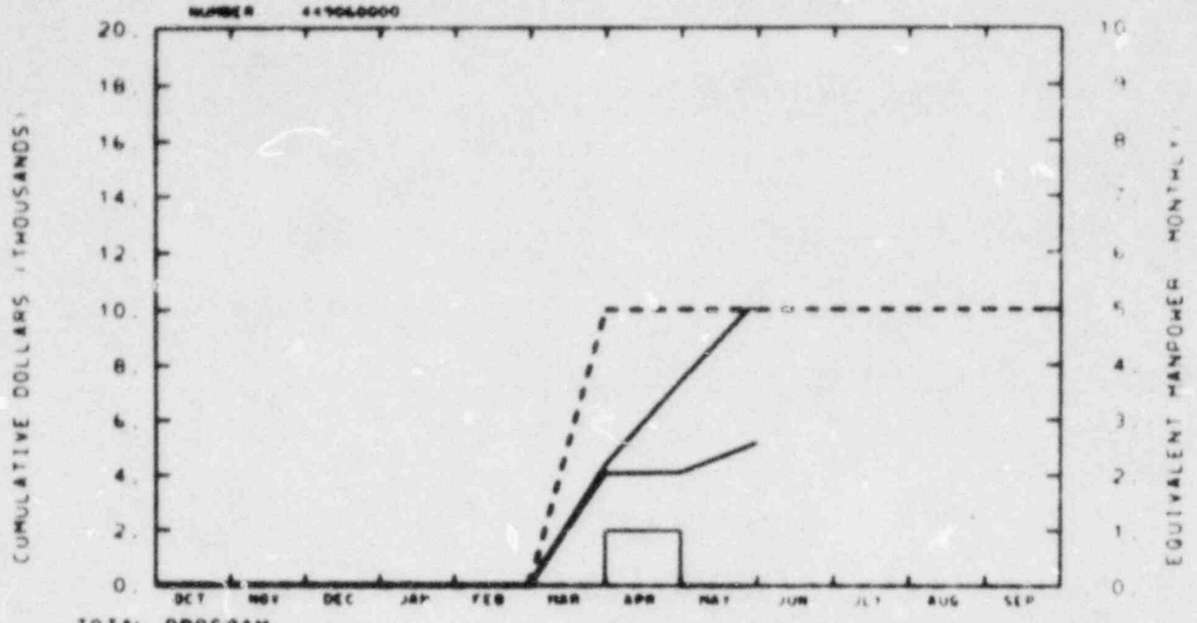
None.

RESPONSIBLE MANAGER
B. F. LOFFELL

EG&G IDAHO INC.

FUEL MECH EVAL OP RE A6448

NUMBER ***9068000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	10	10	10	10	10	10	10
ACTUAL	0	0	0	0	3	4	7	10				

MATERIAL

BUDGET	0	0	0	0	0	10	10	10	10	10	10	10
ACTUAL	0	0	0	0	0	4	4	5				

MANPOWER

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

BUDGET - - - - - -
ACTUAL ———

A6448

YTD VARIANCE: 0

An additional $28 K was received and will be budgeted in June.

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

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

No work was performed this month.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Activity depends upon receipt of input data from NRC.

6. Problems and Potential Problems

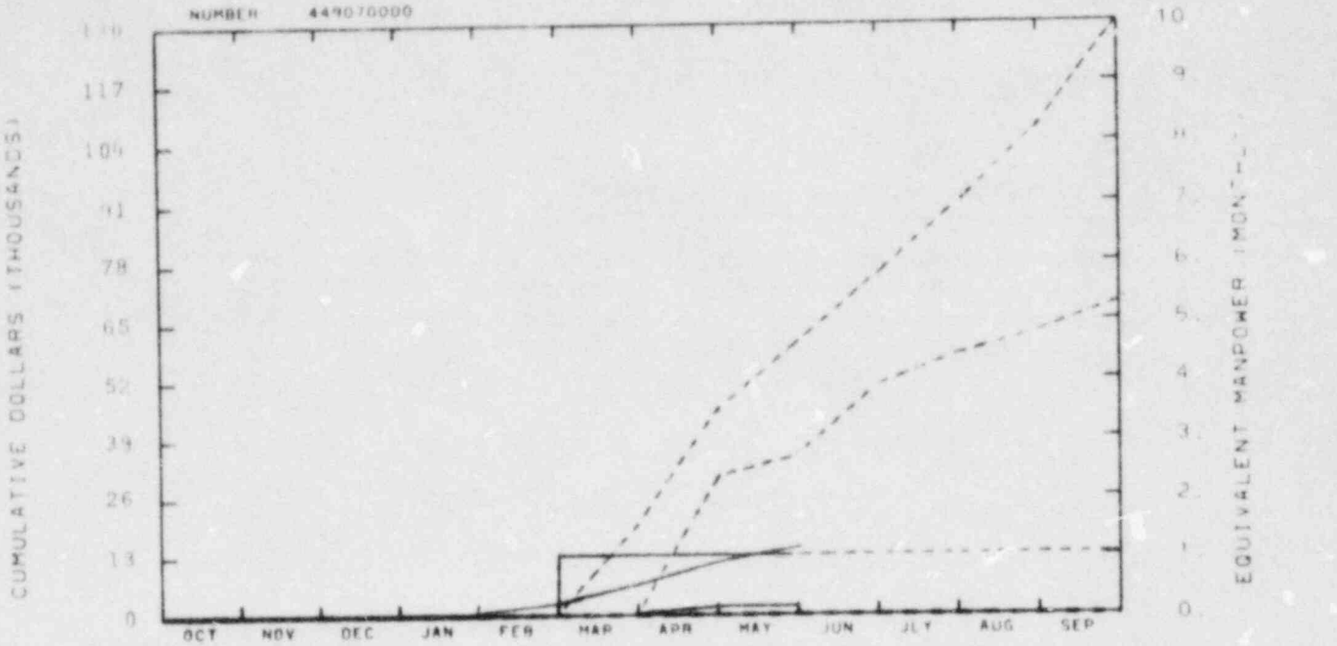
None.

ONSIBLE
ER
SAFFEL

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	130
ACTUAL	0	0	0	0	1	5	12	16				

MATERIAL

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

MANPOWER

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

BUDGET

ACTUAL

A6449

YTD VARIANCE: 44 (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 May 1981

None.

3. Summary of Work Performed in May 1981

Computer implementation of the J-integral calculations was begun. Parametric studies using various finite element meshes were performed to determine appropriate model dimensions and finite element meshes for fracture mechanics calculations.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

Computer implementation of the J-integral numerical calculations will continue. Checkout of the particular J-integral calculations methods will be begun.

6. Problems and Potential Problems

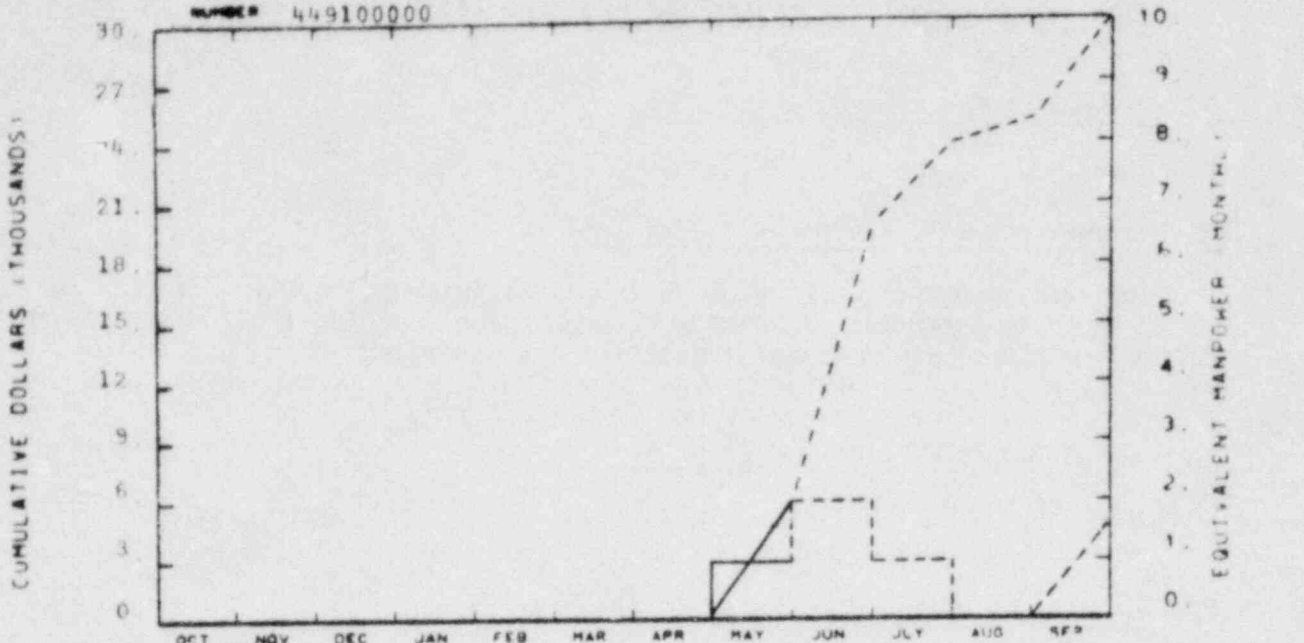
None.

RESPONSIBLE MANAGER
B. F. SAFFELL

EG&G IDAHO INC

COST EST PROP SAFETY REQ A6452

NUMBER 449100000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	0	6	20	24	25	30
ACTUAL	0	0	0	0	0	0	0	6				

MATERIAL

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

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

A6452

YTD VARIANCE: 0

1. 189a A6452 - Cost Estimation for Proposed Safety Requirements

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

Mechanical design work required from FSAR information was defined, and change diagrams and scope of work were prepared. Additional information to be provided by NRC was identified and requested.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

If NRC provides needed additional material, cost estimating for electrical and mechanical design and plant modification work will be initiated.

6. Problems and Potential Problems

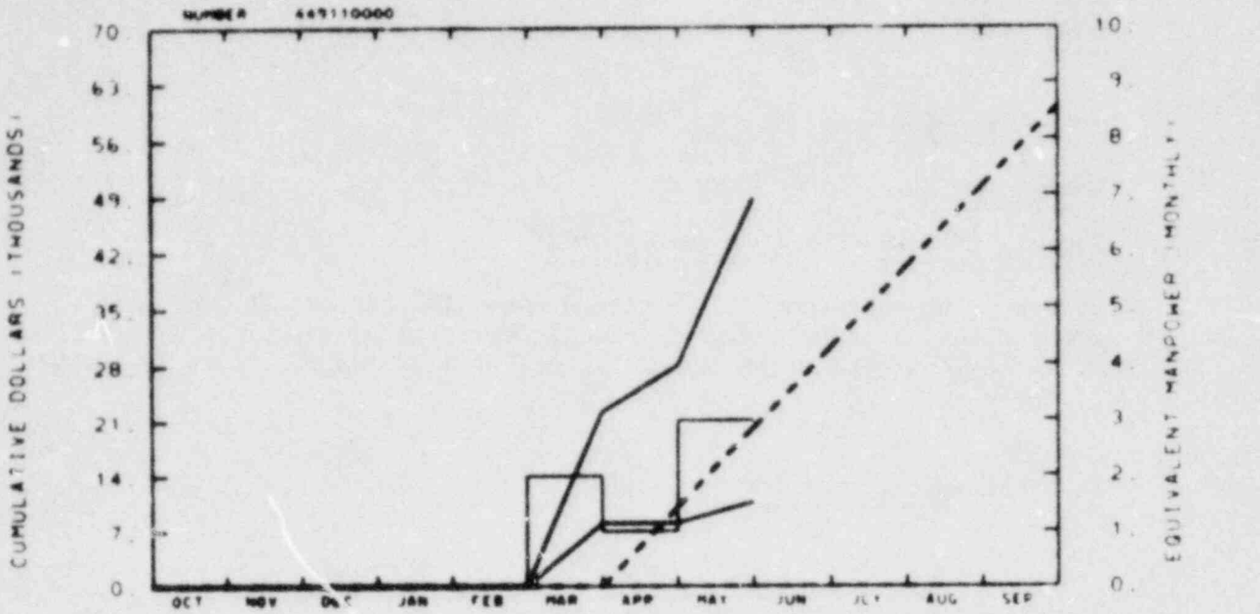
None.

RESPONSIBLE MANAGER
D F SAFFELL

EG&G IDAHO INC.

EQUIP QUAL CASE REVIEWS A6453

NUMBER 449110000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	10	20	30	40	50	60
ACTUAL	0	0	0	0	0	22	28	49				

MATERIAL

BUDGET	0	0	0	0	0	0	10	20	30	40	50	60
ACTUAL	0	0	0	0	0	8	8	11				

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6453

YTD VARIANCE: <29> (145%)

Budget will be updated as soon as work scope is established.

1. 189a A6453 - Equipment Qualification (EQ) Case Reviews

2. Scheduled Milestones for May 1981

None.

3. Summary of Work Performed in May 1981

Reviewed the environmental equipment submittal for San Onofre Nuclear power plants 3 and 4 and performed the Environmental Equipment Qualification site audit. Reports were written and submitted to the NRC at the plant site.

4. Scheduled Milestones for June 1981

None.

5. Summary of Work to be Performed in June 1981

The V. C. Summer environmental equipment submittal will be reviewed and a site audit performed.

6. Problems and Potential Problems

None.

MONTHLY REPORT FOR

MAY 1981

GPP AND LINE ITEMS

Ted L. Rasmussen

T. L. Rasmussen, Manager
Project Management Division

C. G. Bruch for

C. G. Bruch, Construction Program Manager
Planning & Budgets Division

EG&G IDAHO, INC.

GPP ITEM

PROGRAM WATER REACTOR RESEARCH TEST FACILITIES DIVISION

FY-1981

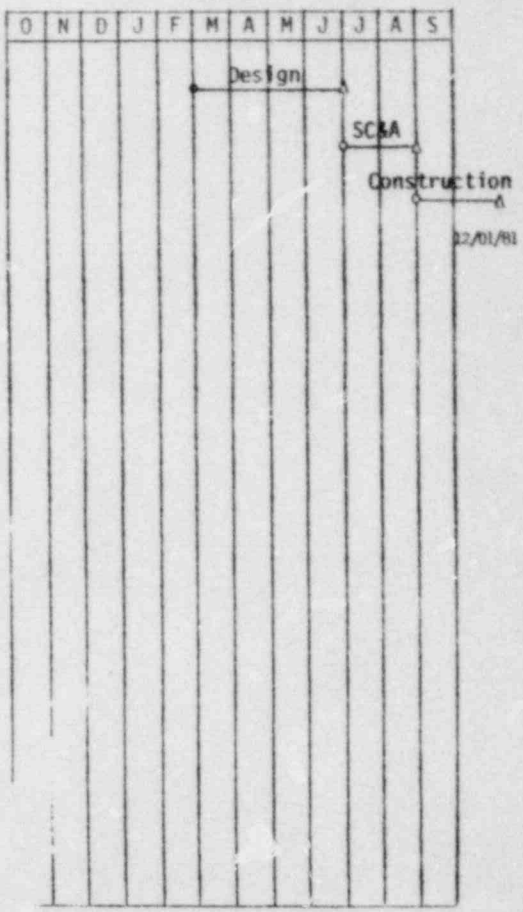
($000)

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 $14.9

Task Initiated o
Task Completed Δ



7-02