NRC Research and/or Technical Assistance Rept

PDR

June 1982
EGG-WRR-5946

MONTHLY REPORT REPRESENTING THE RESEARCH PORTION OF THE WATER REACTOR RESEARCH DEPARTMENT 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
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EG&G Idaho

189 LISTING BY PROGRAM

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

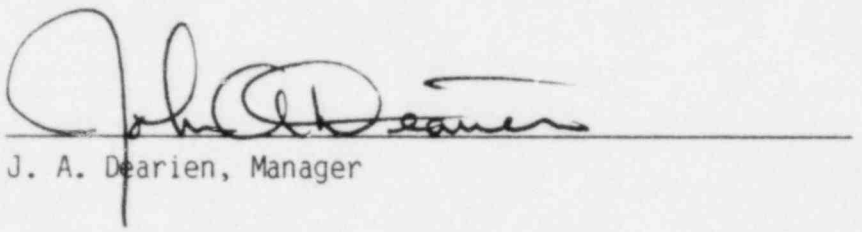
EP&A	Experimental Planning and Analysis
EPRI	Electric Power Research Institute
EQDB	Equipment Qualification Data Base
FCF	Facility Change Form
FDG	Fluid Distribution Grid
FIST	Full Integral Simulation Test
FMEA	Failure Mode Effects Analysis
FRG	Federal Republic of Germany
FSAR	Final Safety Analysis Report
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 Detectior
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
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

JUNE 1982



J. A. Dearien, Manager

B. E. Williams
Plans and Budget Branch

MONTHLY REPORT FOR

JUNE 1982

WATER REACTOR RESEARCH TEST FACILITIES DIVISION

Paul North

P. North, Manager

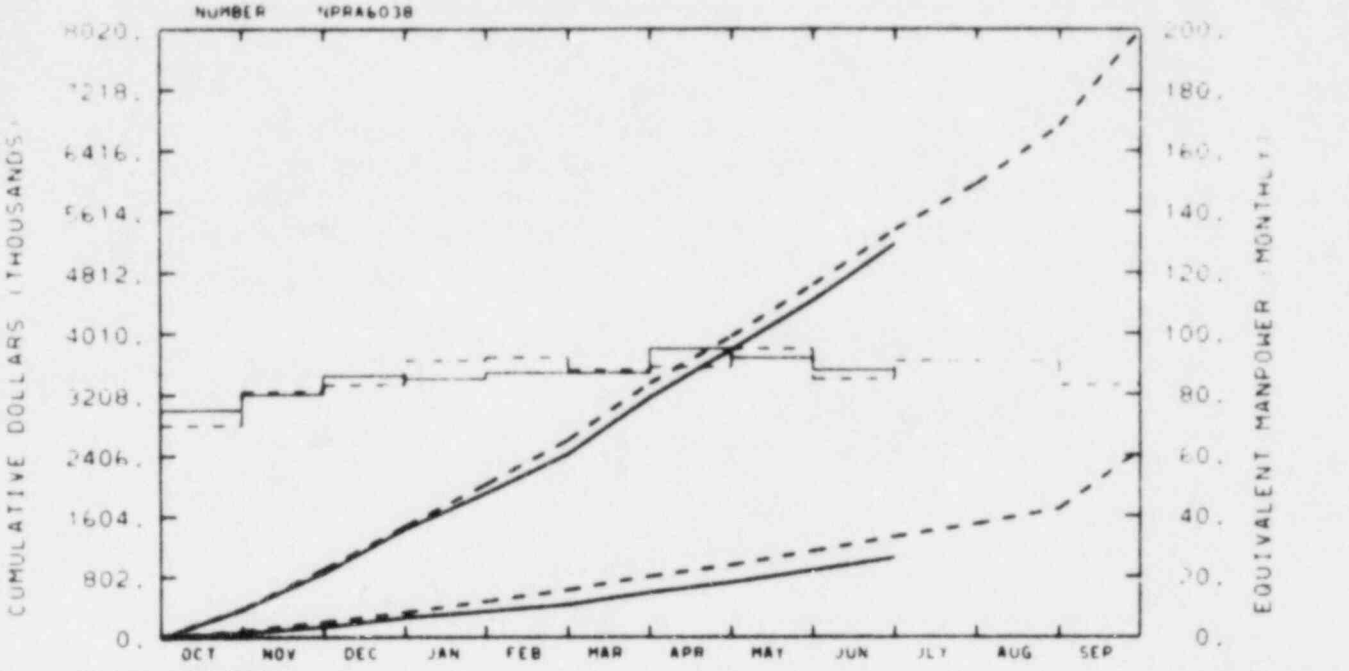
Paul Crouch for

J. P. Crouch
Plans and Budget Representative

EG&G IDAHO INC.

SEMISCALE PROGRAM

NUMBER %PRA6038



TOTAL PROGRAM

BUDGET	382	903	1469	2025	2610	3353	3969	4649	5375	5982	6748	8019
ACTUAL	375	856	1435	1905	2424	3165	3796	4441	5189			

MATERIAL

BUDGET	88	205	332	478	629	806	955	1141	1328	1500	1703	2475
ACTUAL	65	141	264	345	435	593	727	885	1052			

MANPOWER

BUDGET	70	81	83	91	92	88	89	95	85	91	91	83
ACTUAL	75	80	86	85	87	87	95	92	88			

BUDGET

ACTUAL

YTD VARIANCE: 186 (3%)

Individual cost graphs will give individual explanations.

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

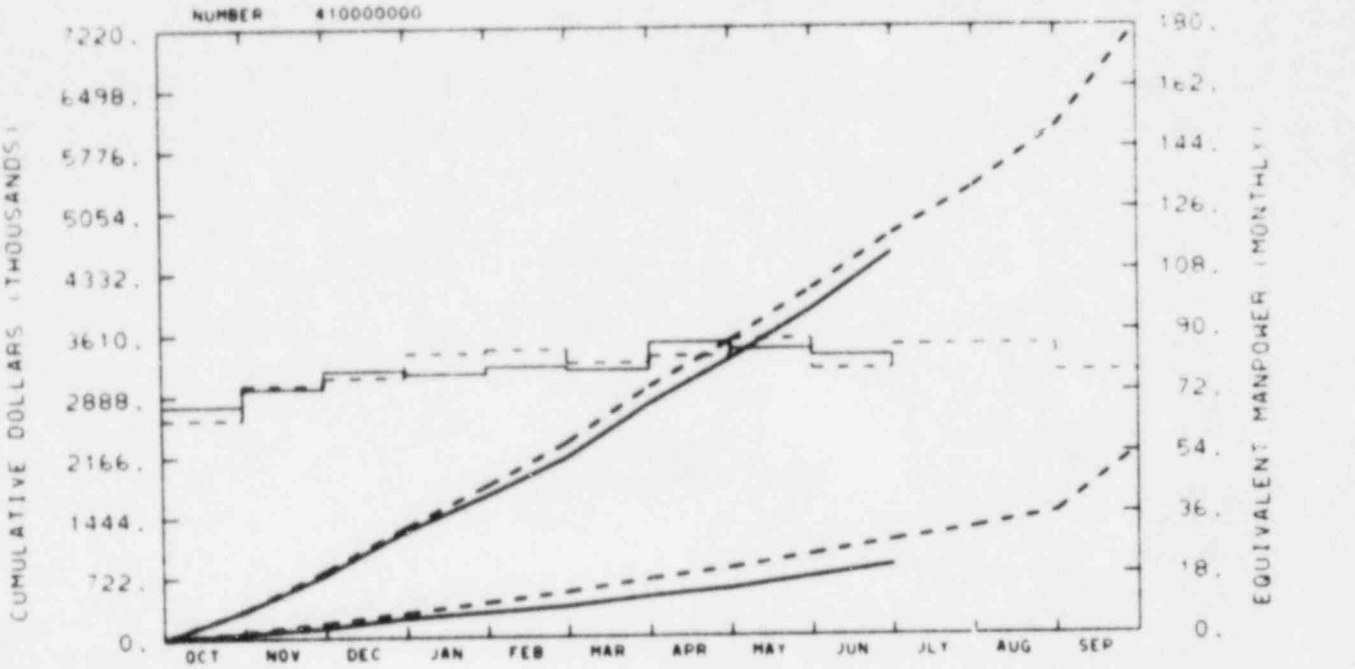
Semiscale: The Steam and Feedline Break experiments were completed with the conduct of S-SF-5. A system recovery Test S-SR-1 was added to the test plan.

THEF: Post-CHF testing has indicated that the full range of desired parameters can not be achieved with film boiling in the entire test section. Test modifications are under consideration. Preparation of the Two-Phase Flow Loop has started for the flow regime and critical flow experiments.

RESPONSIBLE MANAGER
[illegible]ORTH

EG&G IDAHO INC.

SEMISCALE-WRRTF



TOTAL PROGRAM

BUDGET	336	804	1316	1801	2314	2969	3511	4117	4759	5309	6009	7216
ACTUAL	333	756	1273	1688	2139	2768	3295	3875	4539			

BUDGET

ACTUAL

MATERIAL

BUDGET	75	179	293	412	535	686	808	967	1128	1275	1454	2202
ACTUAL	59	123	233	299	366	479	566	703	833			

MANPOWER

BUDGET	65	75	77	84	85	81	83	88	79	86	86	78
ACTUAL	69	74	79	78	80	75	87	85	83			

A6038

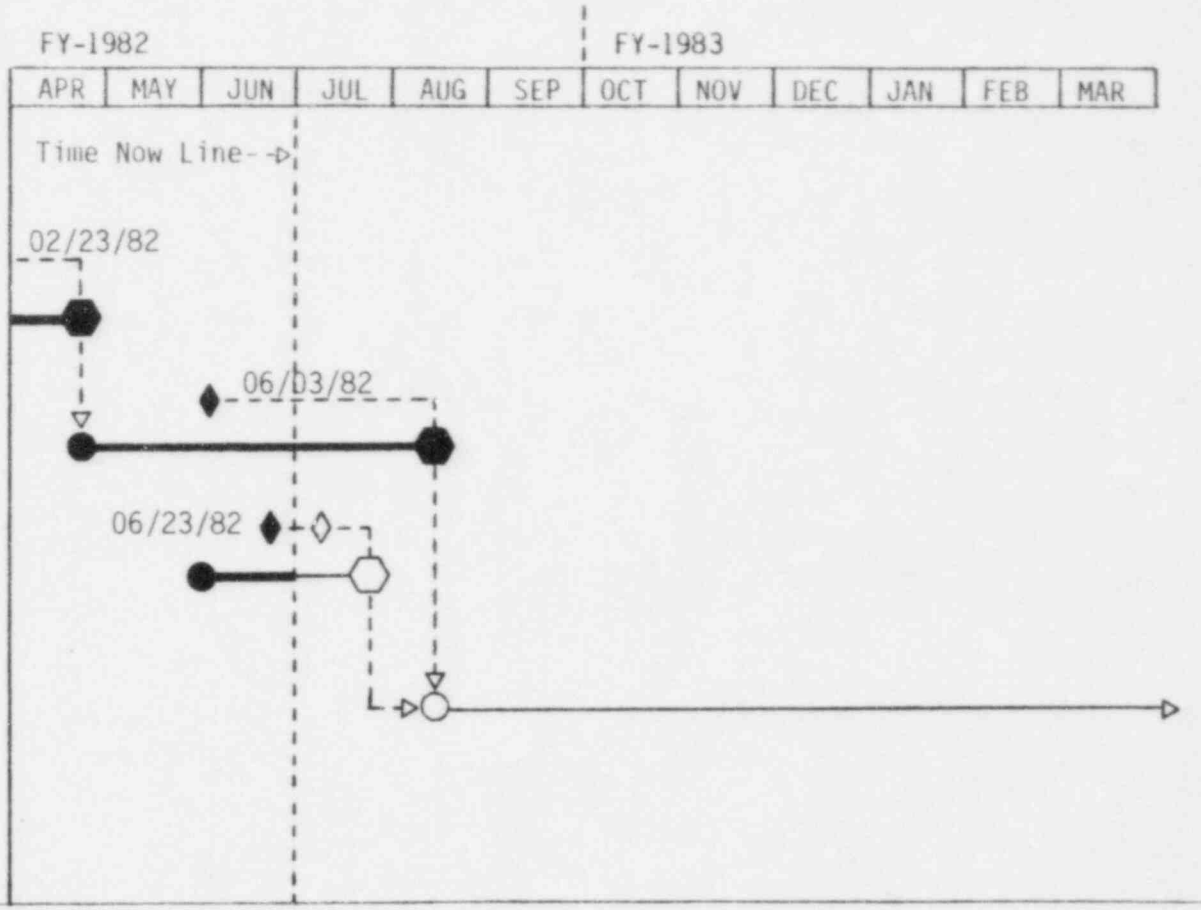
YTD VARIANCE: 220 (5%)

Material costs have underrun budgeted costs primarily in the areas of computer, reprographics, and travel. However, labor rates are higher than budgeted, therefore, partially offsetting the material underruns. These trends are expected to continue and a year-end underrun of $700K is expected (this includes Management Reserve).

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 REACTOR RESEARCH TEST FACILITIES DIVISION June 1982

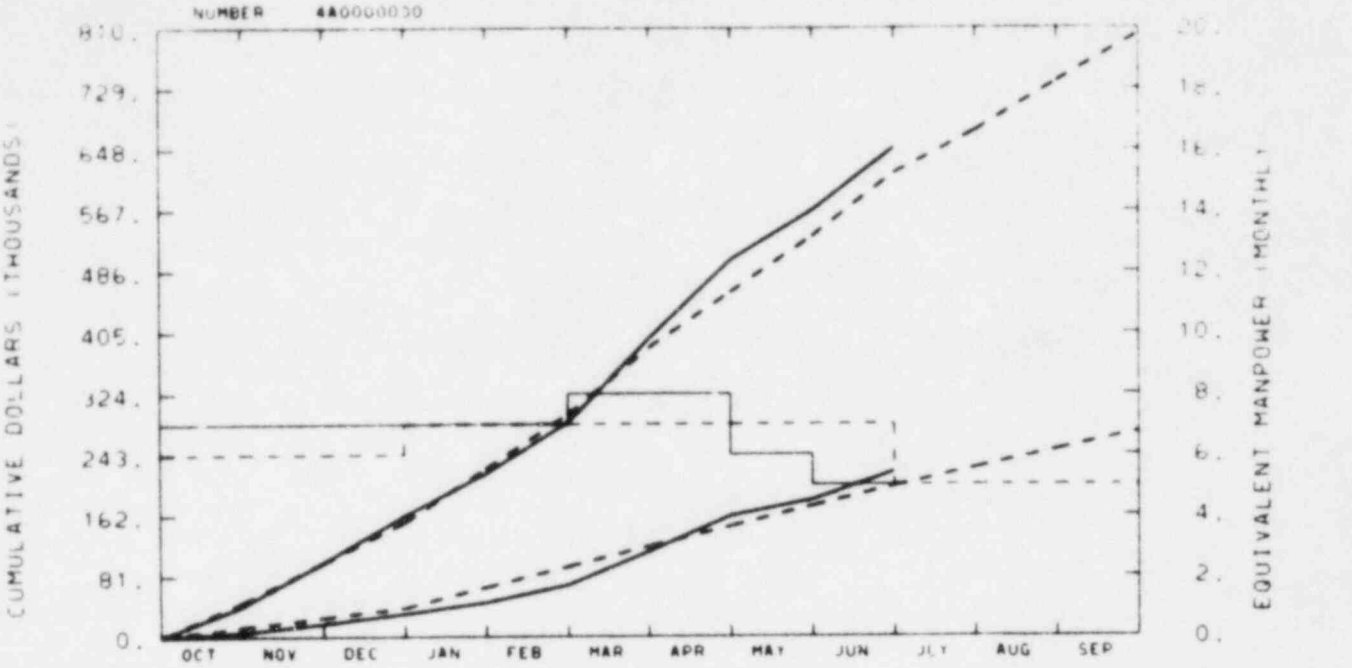


NOTES: The schedule change from last month is due to (1) deletion of Steamline Break Experiment 6 (CCB SS 82-09) identifying impact on schedule and budget of adding two experiments to the Semiscale Baseline (CCB SS 82-10), and (3) addition of experiments S-IB-SO-02 and S-SR-1 per DOE-ID and NRC direction (CCB SS 82-11).

EG&G IDAHO INC.

RELAP5

NUMBER 4A0000030



TOTAL PROGRAM

BUDGET	46	99	153	224	296	384	458	532	616	672	739	802
ACTUAL	42	99	162	218	285	397	501	567	650			

MATERIAL

BUDGET	13	26	39	66	93	121	147	174	200	225	249	277
ACTUAL	6	18	31	46	69	114	161	182	220			

MANPOWER

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

A6038

YTD VARIANCE: <34> (6%)

Manpower on this task will be reduced due to vacations and reassignment of one man on a part-time basis to a new program.

It is projected that this task will be on budget by fiscal year-end.

1. 189 A6038 - Water Reactor Research Test Facilities Division

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

A. 412100000 - Special Projects

1. 412123300 - Special Projects--Engineering

An SWR was prepared to true the inside diameter of the drive magnet for the modified auxiliary circulating pump.

Started to prepare drawings for the new tools which were fabricated at Associated Machine for use in disassembling the pump rotating assembly after balancing. A drawing was released for the new impeller puller. A revised disassembly procedure, incorporating use of these new tools, will be issued.

Continued work on an EDF justifying the use of on-hand tubing in ASTM A-213 and ASME SA-213 applications for Semiscale/THEF. H. Spaletta (Fuels and Materials Division) is assisting in reviewing the materials suitability.

A drawing for the cooled thermocouple pitot tube rake was completed and is in final review prior to release.

Work on the preliminary design for revised (core) low energy densitometers featuring encapsulated sources and "ruggedized" detectors was delayed because of higher priority effort on PL test series hardware mods. This work will be resumed in July.

Vessel upper head heat tape electrical drawings were as-built and are in checking prior to being released.

A preliminary design review was conducted on the pinhole video probe. The concept looks promising; however, due to budget considerations, work has been temporarily halted. We anticipate resuming this effort either later this year or in early FY-1983.

A meeting was held to discuss development of the interfacial area probe. In attendance were S. Banerjee (UC Santa Barbara), P. North, T. K. Larson and J. Zabriskie.

3A. Summary of Work Performed in June 1982 (Continued)

2. 412155500 - Mod-5 Feasibility Study

The document culminating Phase II of the project was reviewed by management. The document was revised extensively and is currently undergoing further review. Isometric and plan drawings of conceptual 2 x 4 and 1 x 1 Mod-5 systems were prepared on the CADS computer drafting system. These drawings will be incorporated in the final feasibility study report. RELAP5 calculations for 1 x 1 and 2 x 4 systems were completed and results analyzed. Calculations included a small break LOCA and a large break LOCA. A draft report satisfying Phase III of the study is approximately 75% complete. Presentations on the feasibility study were prepared and given to C. Kelber (NRC), the EG&G Scientific Advisory Group, and to the Advisory Committee on Reactor Safeguards.

B. 413100000 - Steamline/Feedline Break Series

413111100 - Steamline/Feedline Break Series

EP&A personnel provided analytical support for Test S-SF-5 which was the last test in the SF series. The first draft of the quick look report for the three feedwater line breaks (S-SF-1, 2,3) has been written and is being reviewed. Analysis of the results shows that the experiments provided excellent data for meeting their primary objective of evaluating the primary-to-secondary heat transfer that occurs during a secondary blowdown.

Work on the quick look report for the two steam line breaks (S-SF-4, 5) is in progress.

The volumes of the steam generator secondaries in the RELAP5 computer code model were found to be in error. The intact loop steam generator volume was approximately 10% low, and the broken loop steam generator was approximately 100% low, as determined by Test SC-2A-05. These volumes were re-calculated and corrected as described in MXL-6-82. Using the corrected model, RELAP5 posttest analyses for Tests S-SF-2 and S-SF-3C were performed. With the exception of break flow, generally good agreement was obtained between RELAP5 and the test data, especially in the timing of the primary coolant system heatup and the scram. The calculated scram times were within 5 seconds of the observed times.

2. 413122100 - Steamline/Feedwater Breaks--Hardware

As-building of drawings for the steamline and feedline breaks was initiated.

3B. Summary of Work Performed in June 1982 (Continued)

3. 413133100 - Feedwater/Steamline Break

Test S-SF-5 was successfully performed June 3, 1982. Test S-SF-6 was delayed until June 30, 1982 to allow EP&A to determine the actual scope of the test based on Data from SF-4 & 5. Test S-SF-6 has been redefined and renamed as S-SR-1, Test System Recovery Test.

4. 413133110 - EDR for S-SF-1, 2, and 3C

Work continues on preparation of the EDR to report Data from these SF Tests.

5. 413133150 - EDR for SF-4 and 5

Work has begun in preparing the EDR to report Tests SF-4 and 5. Test S-SR-1 (formerly S-SF-6) will not be reported.

6. 413144100 - Experimental Measurements (SF-Tests)

Test S-SF-4, a test simulating a 100% steam line break in a Westinghouse plant at hot standby without loss of offsite power, was conducted on May 26, 1982. Data was collected for 4534 seconds after initiation of transient on 308 measurement channels. No significant instrumentation failures occurred.

Test S-SF-5, a test simulating a 50% steam line break in a Westinghouse plant at hot standby with simultaneous loss of offsite power, was conducted on June 3, 1982. Data was collected for 2510 seconds after initiation of transient on 306 measurement channels. No significant instrumentation failures occurred.

Corrected data tapes for Test S-SF-4 containing 298 qualified channels on time base -20 to 992 seconds and -20 to 4534 seconds were delivered to test engineering on June 10, 1982.

Corrected data tapes for Test S-SF-5 containing 291 qualified channels on time base -20 to 992 seconds and -20 to 2510 seconds were delivered to test engineering on June 16, 1982.

Corrected data tapes for Test S-SF-3C (conducted May 19, 1982) containing 316 qualified channels were delivered to test engineering: time base -100 to 4454 seconds on June 3, 1982 and time base -20 to 578 seconds on June 16, 1982.

3B. Summary of Work Performed in June 1982 (Continued)

Corrected data tapes for Test S-SF-1 (conducted May 1, 1982) containing 301 qualified channels were delivered to test engineering: time base -100 to 2108 seconds on May 26, 1982 and time base -20 to 210 seconds on June 17, 1982.

A corrected data tape for Test S-SF-2 (conducted April 21, 1982) containing 302 qualified channels on a time base -20 to 532 seconds was delivered to test engineering on June 18, 1982.

C. 414100000 - Level of Effort

1. 414119300 - Unscheduled Work

A draft RIL on the S-NC test series has been prepared and submitted to the division manager for signature.

2. 414123100 - Semiscale Engineering--Level of Effort

A drawing was released for a new bearing pre-load spring to reduce or eliminate bearing skidding in the high speed intact loop pump. Additionally, DCN's were prepared to incorporate the new, higher rate spring in the pump assembly drawings.

The broken loop pump seal replacement procedure EP-072 was revised to reflect improved assembly practices.

A conceptual design cost estimate to add a steam line to the existing air-water loop was completed and transmitted to EP&A.

An EDF was prepared and issued to document calculations of the broken loop steam generator volume for comparison with measured water volume.

Drawings of the funnel holders for use in filling the densitometer detectors with liquid nitrogen have been processed through initial checking prior to release.

Fabrication of four 1 1/2-inch turbine meter housings is in progress at TAN.

The configuration of the pressurizer PORV line was revised for the feed and bleed test.

The pump bypass spools were re-installed for the feed and bleed test.

3C. Summary of Work Performed in June 1982 (Continued)

In reply to several inquiries from Operations, an EDF was issued to document the operating limits for the primary coolant pumps.

Semiscale FY-1983 work packages were prepared and reviewed with NRC and DOE program personnel.

3. 414136300 - Mechanical Instrumentation

Provided mechanical instrumentation services to accomplish Tests S-SF-5 and S-IB-SO-2.

4. 414148100 - DAS & DDAPS Operation

A letter on transducer calibration was written to Herb Richardson to satisfy QP-12. This letter covers (48 differential pressure, 7 pressure, and 30 turbine) transducers that are o.k. to use. Also, this letter covered (6 differential pressure, 1 pressure, and 1 turbine) transducers with calibration problems, plus 5 differential pressure transducers calibration data problems.

Two of the 5 differential pressure transducers with calibration data problems have been corrected. Received calibration data that has been reviewed and approved on (1 differential pressure and 8 turbine) transduces, and 1 differential pressure rejected calibration changed 4.8%.

Wrote a general specification on requirements for Semiscale differential pressure transducers.

The pulse generator on system one failed again. Another pulse generator was installed in place of it for the duration of data acquisition on that system.

Ranged instrumentation and calibrated drag transducers for S-IB-SO-2.

Continued checkout of new data acquisition system (Preston) in 1000 computer. The problems discovered are the inability to scan at low frequencies and faulty termination of routines.

Assembled scanning densitometer system to perform background scatter tests. Found several mechanical problems with system so tests were postponed until modification can be made.

3. Summary of Work Performed in June 1982 (Continued)

D. 415100000 - Intermediate Break Test Series

1. 415119600 - EP&A S-IB Test Support

Initiated resolution and incorporation of review comments into QLR's for S-IB-2 and S-IB-3. Completed specification of requirements for Test S-IB-SO-2. Prepared figures for S-IB-2 QLR.

2. 415119700 - Post S-IB Series Analysis

Completed, reviewed, and published the analysis plan for the S-IB Series TRR. Received and loaded LOBI BR-1M data on the CYBER system for future comparison with S-IB-3. Initiated analysis to support TRR.

A RELAP5/MOD1.5 (ZELAP) assessment calculation for Test S-IB-2 was run out to the beginning of reflood. Major trends were in good agreement with data. The calculation failed when the reflood option turned on due to excessive computer memory requirements. The results were presented in the RELAP5/MOD1.5 Users Group meeting on June 15, 1982. The meeting was convened to present the RELAP5/MOD1.5 computer code to engineers from the national laboratories and certain utilities.

3. 415136500 - Operations Support Intermediate Break Tests

EDR: IB-1, 2 and EDR: IB-3 were published June 14, 1982.

E. 416100000 - Loss-of-Offsite Power

1. 416119800 - Loss-of-Offsite Power--Pre Series

Provided a draft of the research design document for management review. Issued pressurizer system measurement requirements for the PL series. Initiated task to define total work scope for CC, SO, and SC testing. Prepared and transmitted a definition of required scoping calculations for planning purposes. Provided design analysis support for the pressurizer spray line location and thickness and conductivity for the guard heater wrapper. Initiated work on the series EOS.

2. 416119830 - Pre-PL Series P&A by ECS

Scoping calculations for the S-PL series were resumed. An engineer from the Thermal Analysis Branch was retained to perform these calculations. An S-PL-2 calculation,

3E. Summary of Work Performed in June 1982 (Continued)

performed approximately a month ago by an engineer from the Advanced Methods Office, was extended 900 s to investigate the boiloff characteristics at the relief valve setpoints of the steam generators. These results are currently being studied.

The RELAP5 model was reconfigured to simulate pump suction breaks and calculations are being started to obtain a steady state initialization. This model will be used to perform a pump suction break size sensitivity study next month.

3. 416123700 - Loss-of-Offsite Power--Hardware Mods

The pump peripherals drawing and SWR package were released.

The checkout procedure (CC-2A-30) for the intact loop pump peripheral equipment was completed and is in final sign-off prior to release.

A preliminary draft of the SC test procedure for high speed pump R' determination was prepared.

A drawing revision was initiated to enlarge the opening in the Semiscale base plate. This was necessary to provide additional clearance for the pump suction loop.

A drawing revision was initiated to relocate the pump suction ECC and drain lines.

Drawings for the steam generator relief valve piping system were released and an SWR package was issued to planning to install.

Fabrication of the intact loop pump support stand was completed.

The planning for installation of the high speed intact loop pump and associated 2 1-2 inch pump suction piping was completed.

Rework of 2 1-2 inch spool PC-16 is approximately 90 percent complete. The only work remaining is hydrotest.

Revision of the upper head vent system drawing has been postponed because of high priority work on pressurizer drawings. This work will be completed in July.

Drawings were released for the pump suction break, and an SWR for spool piece fabrication was issued.

3E. Summary of Work Performed in June 1982 (Continued)

The drawing for the compact condensing system was released. The SWR for hardware fabrication was also issued.

SWR's and drawings were issued for removal of the old Hot Water Makeup System (HWMS) pump, and installation and electrical connection of the new motor for hot water makeup system. The SWR and drawings for the HWMS control chassis and control wiring are approximately 90 percent complete.

The design was finalized for the electrical installation of the new intact loop pump and peripherals including the I.L. pump control chassis and the necessary conduit and wiring from the inverter, pump peripherals, and the control chassis. The SWR packages and drawings are 80 percent complete.

Continued engineering follow-up on the SWR package to install the new Alarm/Trip/Scaling (A/T/S) chassis for the intact loop pump.

F. 419100000 - Natural Circulation Test Series

1. 419519600 - EP&A Posttest Analysis (NC, UT)

Reviewed the WRVLIS report from Test S-IB-1. The report will be returned for resolution and incorporation of comments in July.

2. 419519630 - UT PTS by ECS

A new posttest calculation of Test S-UT-6 has been performed with the latest code version (RELAP5 cycle 18). This calculation serves as a comparison base for the S-UT-8 calculation in the vessel coolant mass depletion study. Both calculations demonstrate good agreement with data and have met the objective of verifying the codes capability to predict the influence of upper head bypass on the depression of the core liquid level prior to loop seal blowout. The calculated core level recovery following loop seal blowout is over-predicted in both calculations. The cause of the poor comparison with data following loop seal blowout is excessive calculated coolant mass inventory from an under-predicted break mass flow. This portion of the analysis will not be investigated further due to limited resources.

3. Summary of Work Performed in June 1982 (Continued)

G. 41B118100 - S-IB-SO-2

1. 41B118101 - S-IB-SO-2 EP&A Support

Prepared and transmitted the test specification for S-IB-SO-2. Provided pretest analysis support to Semiscale Operations/Test Engineering/and Measurements personnel in preparation for the test. Provided support for test conduct and initial data review. Initiated analysis of data and preparation of an informal report intended to address downcomer insulator effectiveness.

EP&A personnel are providing analytical support for a primary feed and bleed system recovery test (Test S-SR-1). The EOS has been prepared. The experiment will consist of two subparts involving, respectively, a scaled "low head" HPIS curve and a "high head" HPIS curve. Data on core cooling capability will be obtained at various system pressures and inventories with no secondary heat sink.

2. 41B118103 - Test S-IB-SO-2

The Semiscale Mod-2A Loop was re-configured to allow running Test S-IB-SO-2 (Repeat of IB-SO and SO-7-6). In preparation the Intact Loop pump was replaced with the Spare, the Broken Loop pump cooling air pump was replaced with a new spare, and the makeup pump MUP-1-A was replaced with a new spare. The test was successfully performed June 23, 1982. The initial Data Review was conducted June 24, 1982 and Preliminary Data Tapes were delivered to Data Processing June 25, 1982.

3. 41B118104 - IB-SO-2 and S-SR-1 Tests "MEDS" Support

Test S-IB-SO-2, a 200% noncommunicative cold leg break test with cold leg ECC injection, was conducted on June 23, 1982. Data was collected for 532 seconds after blowdown on 317 measurement channels. No significant instrumentation failures occurred.

Preliminary data tapes for Test S-IB-SO-2 with corrections only on densitometers, drag transducers, and TSAT's, containing 353 channels on time bases -20 to 72 seconds and -20 to 532 seconds, were delivered to test engineering on June 25, 1982.

3. Summary of Work Performed in June 1982 (Continued)

H. 9D0800000 - Semiscale Equipment

1. 9D0820100 - Piping Spool Pieces

Rework of piping spool PC-16 is completed except for hydrotest.

Fabrication and heat treatment of the replacement gage for inspection of piping spool instrument ports was completed. Inspection of these items remains to be performed.

Priority is being established to process the Beryllium washers through TAN receiving inspection as the parts will be needed at Semiscale to hydrotest an intact loop pump suction spool.

Installation of heat tapes was started on the new intact loop pump suction spools.

2. 9D0820200 - Pressurizer Vessel

The thermal liner design was finalized and the drawing released. The TAN shop is developing fabrication planning, and "mockup" fabrication has started.

The design of the pressurizer missile shield is in progress.

The pressurizer installation drawing is in final check prior to release. The SWR package is 90% complete.

Fabrication of the surge, relief and spray line orifices is in progress.

Fabrication of the pressurizer body is complete except for the honing of the bore. The body has been shipped to Commercial Honing Co. of Fontana, CA. to have the honing performed.

Fabrication of the pressurizer internal heaters is proceeding and the RAMA Corporation is now quoting a delivery date of July 6, 1982.

The Johns Manville Co. of Manville, N.J., supplier for the molded Min-K 2000 insulation to be used in the thermal liner, reports that the mold tooling was recieved on schedule and that the molding of test parts has been started. Production of deliverable molded insulation will be initiated as soon as the process has been verified and final equipment adjustments completed. The initial shipment of insulation is scheduled for July 9, 1982.

3H. Summary of Work Performed in June 1982 (Continued)

The pressurizer control chassis has been completed with the exception of the temperature controller which must be removed from the old chassis.

Fabrication of the pressurizer (internal heater) power panel (381) is 90% complete. It will be completed immediately after the shutdown starts. Two magnetic contactors must be removed from the motor control center and installed in panel 381 to complete the power panel.

An SWR and 33 new and interim drawings were issued for interconnection and final wiring of all pressurizer electrical components.

Fabrication of the pressurizer external heater control chassis is 80% complete. An SWR to install the pressurizer external heater subsystem has been prepared and will be released during the next report period.

Engineering follow-up was provided on the subcontract to fabricate the A/T/S chassis, and the subcontract for the pressurizer external heater power supply. The A/T/S chassis is expected to ship in mid August, and the power supply in early July.

The CC and SO test procedures for the pressurizer makeup and control system have been prepared and are ready for approval signatures. The CC and SO test procedures for the pressurizer external heaters have been written and are in final typing prior to release.

3. 9D0820600 - Intact Loop Pump

Vendor fabrication of the motor stator for the high speed pump is on schedule for delivery September 7, 1982.

All bids were received and evaluated and a subcontract awarded to Associated Machine for the fabrication of a spare high speed intact loop pump. The contract delivery date is December 23, 1982.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

A. 412100000 - Special Projects

1. 412155500 - Mod-5 Feasibility Study

A draft of the Phase III report will be completed by the end of the first week in July. The study will then be complete. A presentation on the status may be given at a joint NRC-B&W Owners Group meeting in late July. Also in connection with the study, an NRC arranged tour of the GERDA facility will be taken by an EG&G representative.

2. 412123300 - Special Projects Engineering

Complete assembly of the modified auxiliary circulating pump and initiate testing.

Incorporate the new impeller puller drawing in the shaft balance procedures ANC-70029 and ES-70050.

Issue EDF to justify use of on-hand tubing in ASTM A-213 and ASME SA-213 applications for Semiscale/THEF.

Complete review and release drawing for cooled thermocouple pitot tube rake. Generate engineering cost estimate.

Continue preliminary design study for revised (core) low energy densitometers featuring encapsulated sources and "ruggedized" detectors.

Engineering estimates will be prepared for low flow measurement tasks in support of Measurement Engineering requests as follows:

a. HPIS measurement tanks: flip-flop system for HPIS pump suction.

b. Phase separator/condensing system: Energy balance and mass flow measurements using miniature condensing system.

Initiate interfacial area probe development.

Follow drawing updates and release as-built drawings for the upper head heat tape installation.

5. Scheduled Milestones for July 1982 (Continued)

B. 413100000 - Steamline/Feedline Break Series

1. 413111130 - RELAP5 Posttest Doc-FW

Posttest RELAP5/MOD1 calculations of Tests S-SF-1, 2, and 3C will be completed. A draft report documenting these calculations will be written.

The quick look reports for the feedwater line breaks and the steam line breaks will be completed and issued.

2. 413122100 - Steamline/Feedline Breaks--Hardware Mods

Complete the as-building of drawings for feedline and steamline breaks to reflect specific test configurations.

3. 413133100 - Feedwater/Steamline Break

Setup and run Test S-SR-1 on June 30, 1982. Correct, Qualify, and place Data from S-SR-1 on CWAF.

4. 413133110 - EDR for SF-1, 2, and 3C

Continue preparation of the EDR for Tests S-SF-1, 2, and 3C.

5. 413133150 - EDR for SF-4 and 5

Continue preparation of the EDR for Tests SF-4 and 5.

C. 414000000 - Level of Effort

1. 414123100 - Semiscale Engineering--Level of Effort

Release revised assembly drawings of the high speed intact loop pump to incorporate the new bearing pre-load spring.

Release drawings for the funnel holders to be used for filling the densitometer detectors with liquid nitrogen.

Complete the fabrication of four 1 1-2-inch turbine meter housings at TAN.

2. 414136300 - Mechanical Instrumentation

Provide mechanical instrumentation services for Test S-SR-1 and the PL-Series shutdown.

5C. Scheduled Milestones for July 1982 (Continued)

3. 414148100 - DAS & DDAPS Operation

Complete SF series testing with steam feed recovery test. Begin change over to 1000 system for data acquisition. This includes additional software/hardware changes to the system and a complete wiring of the Bay Lab amplifiers to the Preston multiplexer.

D. 415100000 - Intermediate Break Test Series

1. 415119600 - EP&A S-IB Test Support

QLR's for S-IB-2 and S-IB-3 will be returned to management for review by mid month with completion and transmittal expected by month end.

2. 415119700 - Post S-IB Series Analysis

Continue analysis effort in support of the S-IB TRR. Expect to complete research and documentation on major phenomena typifying large and small breaks.

3. 415119730 - Post-S-IB Series Analysis

The RELAP5/MOD1.5 (ZELAP) assessment calcultion of Test S-IB-2 will be completed and documented. The analysis for Test S-IB-3 will be started and a steady-state achieved. Model requirements to replace the Semiscale heater rod geometry with the LOBI heater rod geometry will be defined. The LOBI model will be used to investigate the sensitivity of S-IB-3 results to heater rod geometry.

E. 416100000 - Loss-of-Offsite Power

1. 416119800 - Loss-of-Offsite Power--Pre Series

Plan to complete and distribute final SC test requirements for tests to be done prior to S-PL-1. Review series scoping calculations as available and incorporate results into the series EOS. Complete and transmit the RDD. Provide continued design analysis support for measurements and hardware.

2. 416123700 - Loss-of-Offsite Power--Hardware Mods

Incorporate checkout procedure (CC-2A-30) for intact loop pump peripheral equipment into a SO test procedure and release for use.

5E. Scheduled Milestones for July 1982 (Continued)

Complete the SC test procedure for high speed pump R' determination.

Release drawing revision to enlarge opening in Semiscale base plate to provide clearance for pump suction loop.

Release drawing revision to relocate intact loop pump suction ECC and drain lines.

Prepare SO test procedures for the hot water makeup system.

Provide engineering assistance on the following tasks:

a. Removal of Lawrence pump, support stand, spools, and peripheral equipment.

b. Installation of the intact loop pump sliding base and support stand, the pump assembly and piping spool pieces.

Revise and release the drawing for the upper head vent system.

Release drawings and SWR for the HWMS control chassis modification and control wiring.

Release SWR packages and drawings required for final hook-up of the I.L. pump. Electrical engineering field follow-up will be provided to support the installation activity. Also, complete the SWR package to relocate and wire the A/T/S chassis in panel 220.

Complete the SWR package to install the redesigned (existing) broken loop pump control chassis in panel 210.

F. 419100000 - Natural Circulation Test Series

419519600 - EP&A Posttest Analysis (NC, UT)

Incorporate comments into the WRVLIS report on Test S-IB-1. Provide for management review by month end.

5. Scheduled Milestones for July 1982 (Continued)

G. 419519600 - EP&A Posttest Analysis (NC, UT)

419519630 - UT PTS by ECS

The results of full-scale PWR calculations with a range of bypass flow rates will be compared to evaluate or threshold bypass, below which, extensive core level depression may be expected for a given break size. These results and the S-UT-6/S-UT-8 calculations will be documented in a report which will be submitted for management review.

H. 418118100 - S-IB-SO-2

1. 418118101 - S-IB-SO-2 EP&A Support

Analysis of data from S-IB-SO-2 will be completed and a report intended to assess downcomer insultor effectiveness will be prepared and issued for review.

Test S-SR-1 will be conducted and the quick look report begun.

2. 418118103 - Test S-IB-SO-2

The data from this test will be corrected, qualified, and placed on CWAF.

I. 9D0800000 - Semiscale Equipment

1. 9D0820100 - Piping Spool Pieces

Complete the hydrotesting of spool piece PC-16.

Complete the inspection of gages to be used for "go-no go" inspection of piping spool instrument ports.

Complete the installation of heat tapes on the intact loop pump suction spools and finish the related electrical modifications.

2. 9D0820200 - Pressurizer Vessel

Complete the fabrication of surge, relief and spray line orifices.

Start fabrication of the pressurizer thermal liner at TAN.

5I. Scheduled Milestones for July 1982 (Continued)

Receive the honed pressurizer body from Commerical Honing Co. Engineering coverage of the honing operation and source inspection acceptance will be performed by R. Fee.

Complete the pressurizer support stand installation.

Receive the molded Min-K 2000 insulation from Johns-Manville for the thermal liner.

Conduct CC tests on various pressurizer system components.

Prepare final draft of SO and CC test plan for pressurizer assembly and related piping system.

Release drawings for the pressurizer assembly and system installation, and complete preparation of SWR package to install the pressurizer.

Complete the drawings and fabrication of the pressurizer control chassis.

Complete the fabrication and installation of pressurizer (internal heater) power panel 381.

Provide engineering assistance on SWR's for pressurizer display chassis mods and pressurizer electrical interconnection package.

Complete the fabrication and documentation of pressurizer external heater control chassis. Issue SWR to install the pressurizer external heater control subsystem.

Provide engineering follow-up and assistance on subcontracts for A/T/S chassis and pressurizer external heater power supply.

Obtain final approval of CC and SO test procedures, and release to the field.

3. 9D0820600 - Intact Loop Pump

Continue followup on the subcontract with Welco to fabricate a motor stator for the high speed pump.

Provide followup on the subcontract with Associated Machine for the procurement of a spare high speed intact loop pump. EG&G supplied items will be shipped to the fabricator.

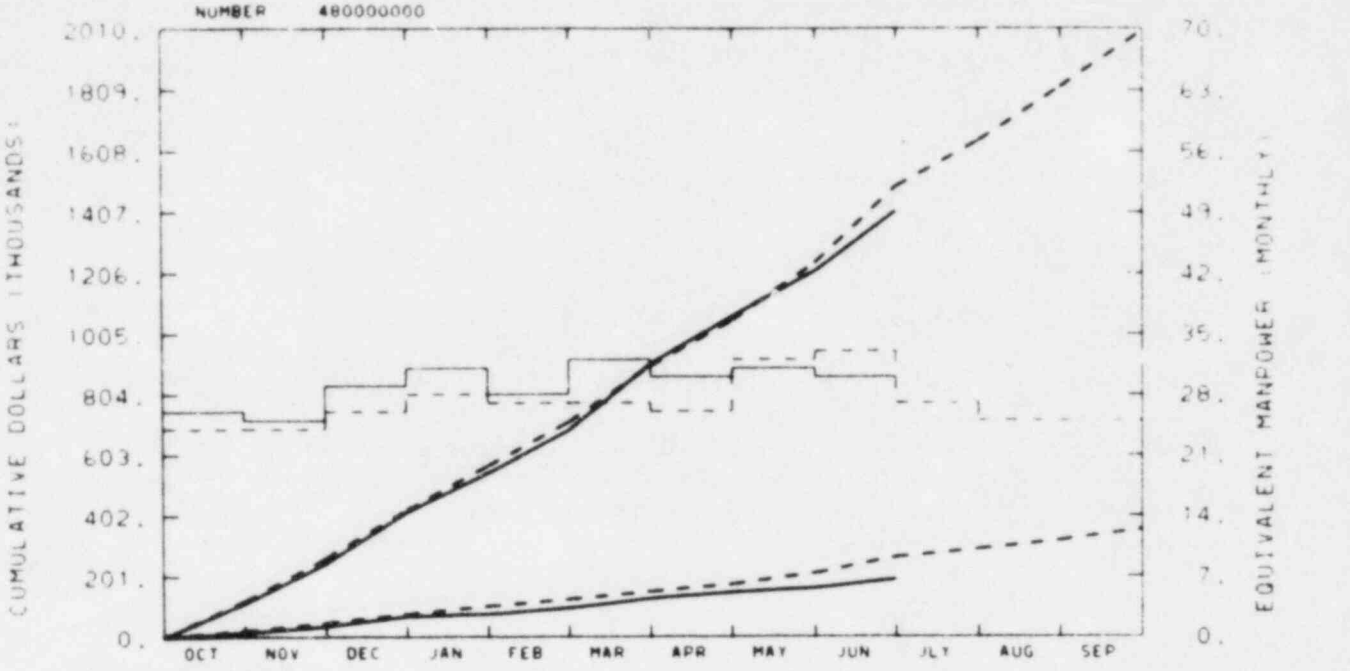
6. Problems and Potential Problems

None.

EG&G IDAHO INC.

SEPARATE EFFECTS TEST FAC-WRRTF

NUMBER 480000000



TOTAL PROGRAM

BUDGET	119	262	421	567	711	898	1049	1240	1492	1642	1820	2003
ACTUAL	112	244	414	542	684	904	1062	1214	1411			

MATERIAL

BUDGET	21	47	76	102	125	150	174	211	263	290	319	357
ACTUAL	15	36	69	77	96	127	148	162	190			

MANPOWER

BUDGET	24	24	26	28	27	27	26	32	33	27	25	25
ACTUAL	26	25	29	31	28	32	30	31	30			

BUDGET

ACTUAL

A6043 (LOFT Test Support Facility Portion)

YTD VARIANCE: 81 (5%)

The year-to-date underrun of $81K is due to a delay in the testing schedule and material purchases in operations and facility maintenance running behind schedule. Recovery is expected by year-end.

1. 189 A6043 - THEF

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

A. 481100000 - LTSF Test Projects

1. 481100100 - Planning and Supervision

Reviewed and statused test project budget and schedule. Reviewed the final EDR draft for the L9-3 PORV experiments. Reviewed and discussed analysis plans for the Two-Phase System Characterization Experiment results. Reviewed the Two-Phase Regime and Critical Flow Test EOS and analysis plans.

2. 481100300 - Two-Phase Flow Loop Characterization

Prepared, reviewed, and transmitted the analysis plan. Initiated data processing and analysis to support the report planned for completion in late July.

3. 4181100500 - L9-3/4 PORV Calibration

Completed and transmitted the EDR.

4. 481101100 - Two-Phase Regime and CF Study

Work on system upgrade tasks continued with slight schedule slippage due to a shortage of crafts personnel. The Two-Phase Flow Regime and Critical Flows Studies, Experiment 1 Experiment Operating Specification was reviewed, revised, and is ready for approval signatures.

B. 481200000 - Engineering

1. 481202010 - THEF Engineering Effort

Design and drafting for the two-phase loop upgrade was completed. The SWR's to accomplish this task have been initiated.

Design and drafting has been completed on the critical flow test hardware. Packages have been released to the field for fabrication and installation.

3B. Summary of Work Performed in June 1982 (Continued)

Provided engineering support to the post-CHF test, as requested.

Electrical requirements were determined for installing the makeup pump in the two-phase loop. The electrical subsystem was designed and a combination motor starter/disconnect ordered. An SWR was issued to perform the electrical installation.

C. 481300000 - Operation

1. 481301009 - Operations Post CHF

S.O. Testing was the major work area. Numerous difficulties (Turbine failure, Heater Bundle Failure, etc.) affected the actual number of test runs completed. S.O. Testing is planned now to be completed June 28, 1982.

The Post CHF Test Procedure was completed June 4, 1982.

The B.F. Test Loop was flushed numerous times on June 18 and June 21st to help clean the Loop and lower the suspended solids level in the loop.

The 4 pin heater bundle was replaced and redesigned with help from K. Nii.

Installed new calibrated orifice for Mass Flow Measurement and installed Turbines with a new style bearing.

2. 481301011 - Two Phase Flow Regime Testing

Final design review for Two Phase System Upgrade was accomplished on June 8, 1982. All System Design Changes for the Flow Regime and Critical Flow Test were accomplished.

The Loop maintenance and upgrade is about 90% complete, but moving slowly due to manpower problems.

The E.O.S. for the Two Phase Flow Regime and Critical Flow Test was received June 18, 1982 for review. Some preliminary work on the Test Operations Procedure (T.O.P) has begun.

3. Summary of Work Performed in June 1982 (Continued)

D. 481400000 - Measurement

1. 481401011 - Two Phase Regime Studies

Work started on a limited basis to install transducers and gather equipment required for the Two Phase Flow Regime Studies and Critical Flow tests to be accomplished in the Two Phase Flow Loop during September-October, 1982. The mounting rings and detector casks for the three-beam densitometer located downstream of the mixer were installed.

2. 481401109 - Post CHF Test

Maintained and operated the data acquisition system and maintained the Blowdown Loop control system during Post CHF testing. Several problems associated with measuring the subcooled flow to the test section were encountered.

3. 481402010 - DAS Facility Maintenance

The first phase of installing operational software into the DAS system for utilization of the new ModComp Classis computer is 75% complete. At this point the Classic and its associated equipment (newly dubbed the Data Reduction System - DRS) will be a complete backup to the ModComp II system (DAS). Either system will be able to acquire data. The system not acquiring data can be reducing previously acquired data while the other system is busy displaying operator information and/or acquiring new data. The second phase of software work will involve adding on-line and off-line computational capability to the system.

4. 481402011 - Tomographic Densitometer

Work started in late June on writing and compiling an operation manual for the tomographic densitometer. This work is being done by the design and fabrication organizations that built and installed the densitometer (Org. E320, E330, and 3010). Scheduled completion date for the manual is August 15, 1982. These organizations will also assist in a complete operational checkout of the system and a one-day THEF technician training session.

E. 48199AA00 - Nine-Rod Quench Tests

Completed and submitted the final manuscript of a technical paper for presentation at the 1983 International ANS/ASME Topical Meeting. Incorporated resolution of final comments into the NUREG report.

3. Summary of Work Performed in June 1982 (Continued)

F. 5J1241200 - Post-CHF Heat Transfer Tests

Numerous checkout tests were conducted during June and data acquisition system, measurement, and hardware failures required extensive support prior to acquiring acceptable data. Orifice flow measurements were added to complement the turbine meter measuements. The results of tests to date indicate the full range of desired test parameters cannot be achieved with film boiling in the entire test section. A modified approach allowing quench front propagation into the test section may be substituted for the existing procedure to allow acquisition of data over a wider range of parameters.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

A. 481100000 - LTSF Test Projects

1. 481100100 - Planning and Supervision

Review and status test project budget and schedule. Participate in FY-83 planning for THEF baseline. Review the final 9-rod bundle experiment NUREG.

2. 481100300 - Two-Phase Loop Characterization

Prepare and distribute a first draft of the system characterization report.

3. 481101100 - Two-Phase Regime and Critical Flow Studies

Continue system modification and upgrade tasks. Issue approved ECS. Perform Flow Regime evaluation analysis and literature search.

B. 481200000 - Engineering

1. 481202010 - THEF Engineering

Provide engineering support for fabrication and installation of the two-phase loop upgrade and the critical flow test hardware. This work is scheduled to be completed in July 1982.

Provide engineering support to the post-CHF test, as requested.

5B. Summary of Work to be Performed in July 1982 (Continued)

Order materials and issue SWR to install crowbar circuitry (GFI) for LTSF warmup and test heaters, when funding becomes available.

Perform repair work on the diesel generator control system and complete the equipment testing.

Provide engineering support to follow the electrical installation of the makeup pump for the two phase loop. Document the installation by as-building drawings to show electrical installation.

Begin design work for installation of an electric motor driven exhaust fan in the THEF north test cell.

C. 481300000 - Operations

1. 481301009 - Operations Post CHF

Begin Post CHF Testing June 28, 1982, continuing through July.

2. 481301011 - Two Phase Flow Regime Testing

Continue with Loop upgrade and maintenance, including the following: Water Softener, preventive maintenance and valve repairs; #5 Fuel Pit condensate line repair; #2 Diesel Fuel Pump electrical circuit checkout and re-design if necessary; and #2 Fuel Tank foot valve repair/replacement.

Continue preparation of T.O.P. for the Two Phase Flow Regime and Critical Flow Test.

D. 481400000 - Measurements

1. 481401011 - Two Phase Regime Studies

Continue transducer installation in the Two Phase Loop in preparation for the Two Phase Regime tests. (This effort will be conducted on a manpower available basis).

E. 48199AA00 - Nine-Rod Quench Tests

Complete final edit and processing, and transmit the NUREG report.

5. Summary of Work to be Performed in July 1982 (Continued)

F. 5J1241200 - Post CHF

Modify the Experiment Operating Specification to provide for testing with the quench front in the test section. Plan to complete 75% of production testing by the end of July.

6. Problems and Potential Problems

None.

WATER REACTOR RESEARCH TEST FACILITIES DIVISION

CAPITAL EQUIPMENT

WATER REACTOR RESEARCH TEST FACILITIES DIVISION

CAPITAL EQUIPMENT COST REPORT
(A6059)

(1) Priority Number	(2) Description	(3) EA/WBS Number	(4) Planned Requisition Date	(5) Actual Requisition Date	(6) DOE Authorized Amount	(7) Requisition Value (+ 6%)	(8) P/O Award Date	(9) Outstanding Commitment (+ 6%)	(10) Prior Year Costs	(11) Current Year Costs	(12) Total Costs and Outstanding Commitments	(13) Variance	(14) Status	(15) Estimate At Complete.
Pre FY-1982														
1/79	Low Energy Densitometer Support Electronics	9D1990230	01/79	07/79	103,884	103,884	-	0	103,884	0	103,884	0	C	103,884
7/79	ADPE Procurement	9D1989830	03/79	04/79	25,417	25,417	-	0	25,417	0	25,417	0	C	25,417
2/80	DDAPS Support and Replacement Equipment	9D1991520	-	03/80	95,800	95,800	03/80	0	95,800	0	95,800	0	C	95,800
3/80	Multibeam Gamma Densitometers and Detector Assemblies	9D1992210	-	04/80	117,912	117,912	05/80	0	111,278	6,634	117,912	0	C	117,912
4/80	ADPE Procurement	9D1991680	-	03/80	25,802	25,802	06/80	0	25,802	0	25,802	0	C	25,802
5/80	Control System Support Equipment	9D1992260	-	04/80	18,734	18,734	06/80	0	18,091	643	18,734	0	C	18,734
7/80	Air-Water Loop Upgrade Equipment	9D1991650	-	03/80	81,867	81,867	04/80	0	81,867	0	81,867	0	C	81,867
9/80	Densitometer Detectors	9D1993160	08/80	03/80	67,436	67,436	03/81	0	40,900	26,536	67,436	0	C	67,436

WATER REACTOR RESEARCH TEST FACILITIES DIVISION

CAPITAL EQUIPMENT COST REPORT
(A6059)

(1) Priority Number	(2) Description	(3) EA/WBS Number	(4) Planned Requisition Date	(5) Actual Requisition Date	(6) DOE Authorized Amount	(7) Requisition Value (+ 6%)	(8) P/O Award Date	(9) Outstanding Commitment (+ 6%)	(10) Prior Year Costs	(11) Current Year Costs	(12) Total Costs and Outstanding Commitments	(13) Variance	(14) Status	(15) Estimate At Complete.
Pre FY-1982														
11/80	High Resolution Graphics (ADPE)	9D1993180	08/80	08/80	14,792	14,792	-	0	14,792	0	14,792	0	C	14,792
1/81	Common Support Equipment	9D0810100	01/81	01/81	35,324	35,324	-	1,224	5,346	28,928	35,498	< 174>	0	35,498
2/81	Spare Intact Loop Components	9D0810200	01/81	01/81	28,103	28,103	-	0	13,964	14,139	28,103	0	C	28,103
3/81	Optical Probes for Steam Generator	9D0810300	01/81	01/81	13,136	13,136	-	0	13,126	10	13,136	0	C	13,136
4/81	Mod-2A Test Loop Components	9D0810400	01/81	01/81	319,047	319,047	A/ 04/81	0	309,657	9,395	319,052	< 5>	C	319,052
5/81	Steam-Air-Water (SAW) Loop Upgrade Components	9D0810500	01/81	01/81	230,000	230,000	A/ 04/81	0	123,103	111,735	234,838	<4,838>	0	234,838
6/81	DDAPS Upgrade and Replacement	9D0810600	01/81	01/81	36,841	36,841	-	0	5,634	31,207	36,841	0	C	36,841
7/81	DAS Upgrade and Replacement	9D0810700	01/81	01/81	27,129	27,129	-	0	13,277	13,852	27,129	0	0	27,129
	Subtotal Pre FY-1982 Costs				1,241,224 -1,001,938	1,241,224		1,224	1,001,938 -1,001,938	243,079	1,246,241 -1,001,938	<5,017>		
	NET: Pre FY-1982				239,286	1,241,224		1,224	0	243,079	244,303	<5,017>		

WATER REACTOR RESEARCH TEST FACILITIES DIVISION

CAPITAL EQUIPMENT COST REPORT
(A6059)

(1) Priority Number	(2) Description	(3) EA/WBS Number	(4) Planned Requisition Date	(5) Actual Requisition Date	(6) DOE Authorized Amount	(7) Requisition Value (+ 6%)	(8) P/O Award Date	(9) Outstanding Commitment (+ 6%)	(10) Prior Year Costs	(11) Current Year Costs	(12) Total Costs and Outstanding Commitments	(13) Variance	(14) Status	(15) Estimate At Complete.
FY-1982														
1/82	Pump Inlet Spool Pieces	9D0820100	12/81	01/82	57,000	57,000	-	0	0	52,848	52,848	4,152	0	57,000
2/82	Pressurizer	9D0820200	12/81	01/82	112,000	112,000	-	41,386	0	45,234	86,620	25,380	0	112,000
3/82	DDAPS	9D0820300	02/82	02/82	199,000	199,000	-	45,256	0	26,447	71,703	127,297	0	199,000
4/82	Data Acquisition System	9D0820400	03/82	-	237,000	237,000	-	131,356	0	11,683	143,039	93,961	C	237,000
5/82	Word Processor	9D0820500	02/82	02/82	6,000	6,000	-	5,618	0	0	5,618	382	0	5,618
6/82	Intact Loop Pump Components	9D0820600	02/82	02/82	159,974	159,974	-	10,599	0	0	10,599	149,375	0	159,974
7/82	Common Support Equipment	9D0820700	05/82	-	50,000	50,000	-	0	0	0	0	50,000	C	50,000
					820,974	820,974		234,215	0	136,212	370,427	450,547		
	GRAND TOTAL FY-1982 ACTIVITY				1,060,260	2,062,198		235,439	0	379,291	614,730	445,530		

MONTHLY REPORT FOR

JUNE 1982

THERMAL FUELS BEHAVIOR PROGRAM

W. A. Spencer, Manager

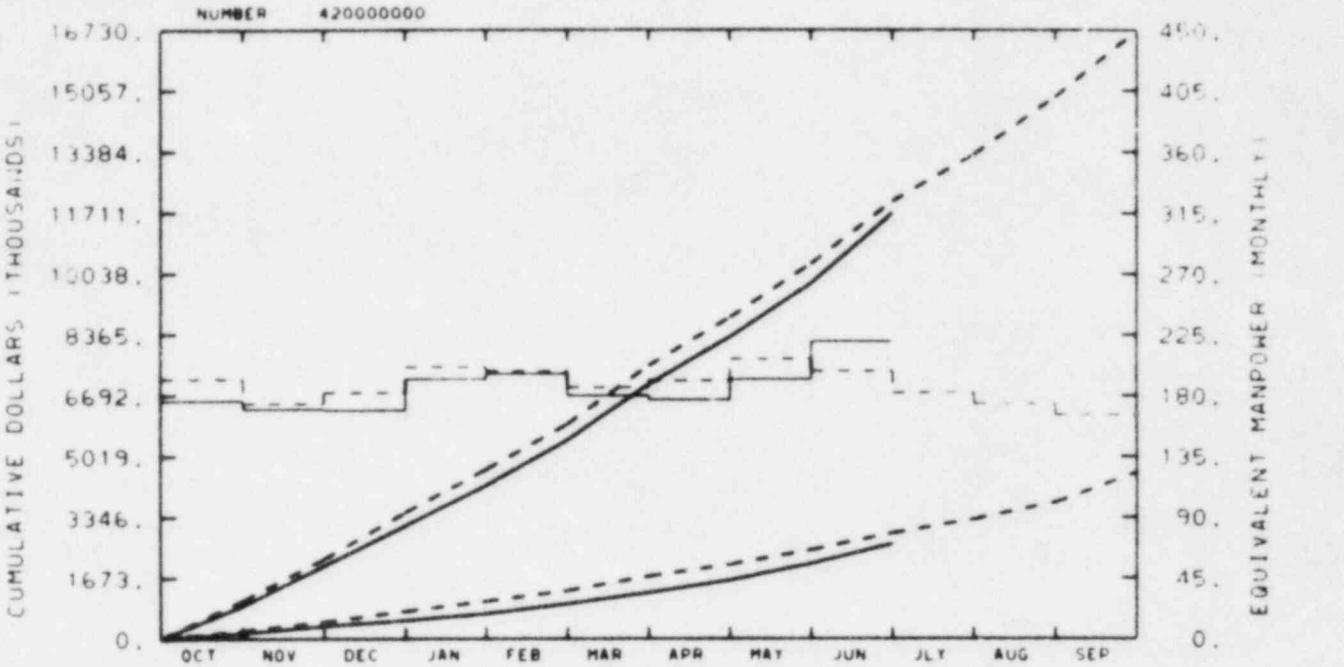
D. Zorn, Jr.
Plans and Budget Representative

RESPONSIBLE
MANAGER
L. A. SPENCER

EG&G IDAHO INC.

TFBP PROGRAM

NUMBER 420000000



TOTAL PROGRAM

BUDGET	1064	2203	3481	4666	5911	7514	8839	10318	12043	13319	14894	16729
ACTUAL	918	2012	3120	4220	5470	7003	8301	9779	11712			

MATERIAL

BUDGET	231	473	770	1042	1334	1727	2053	2447	2912	3295	3761	4584
ACTUAL	162	358	518	701	974	1275	1620	2074	2616			

MANPOWER

BUDGET	192	174	182	201	198	186	191	207	198	182	174	166
ACTUAL	176	170	169	192	196	180	177	192	220			

BUDGET - - - - - -

ACTUAL ———

YTD VARIANCE: 331 (3%)

Individual cost graphs will give individual explanations.

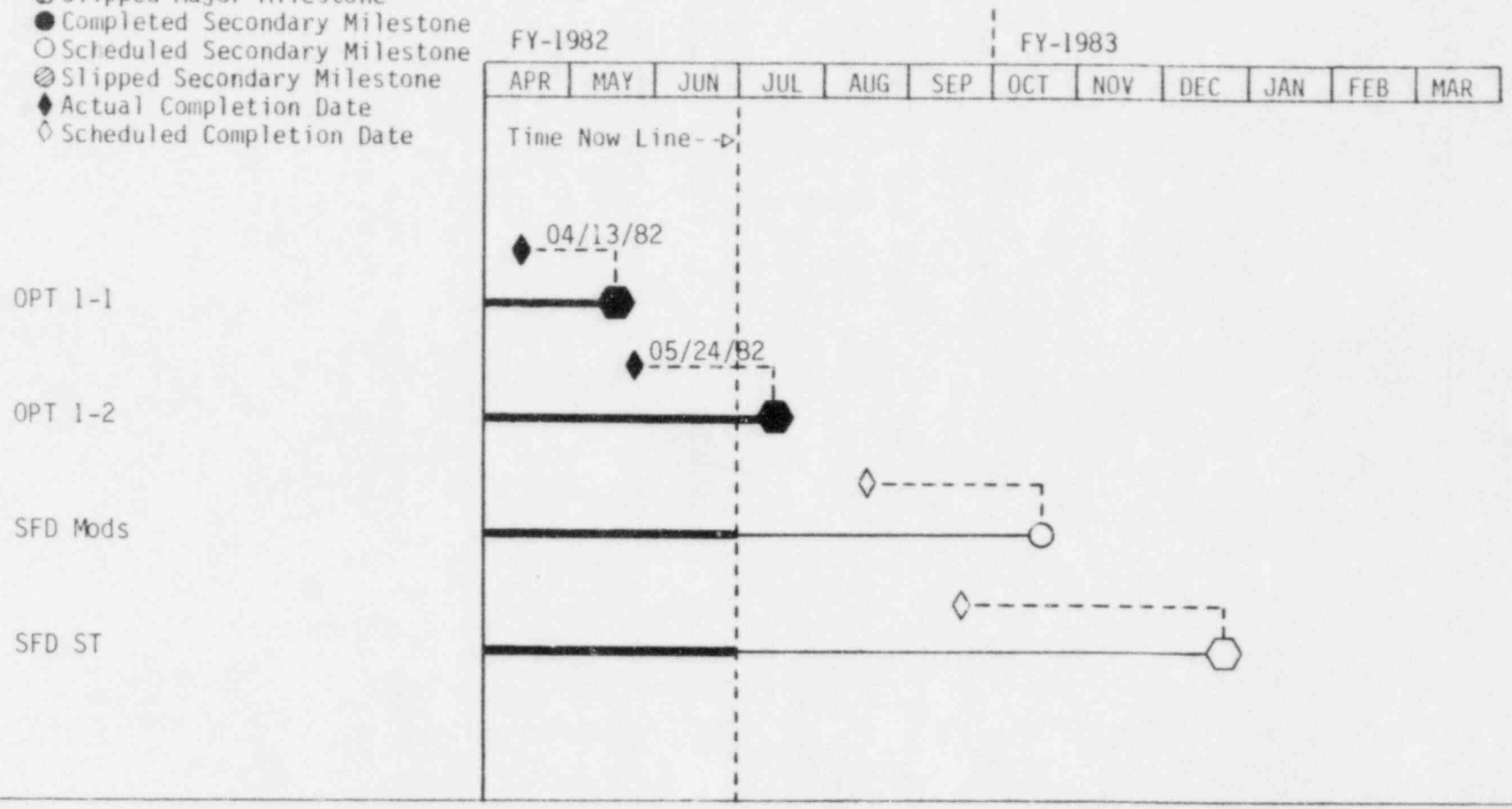
Explanations for major 189's will be made if the variance exceeds $25K. Minor 189 graphs will explain variance of over $10K.

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

June 1982



NOTES:

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

Operational Transient Test 1-2 (OPT 1-2) was completed and the Quick Look Report issued. The test was performed to evaluate the probability and extent of fuel rod damage during a severe anticipated boiling water reactor transient without scram that results in boiling transition. The Power Burst Facility fission product detection system indicated that one or more of the test rods was leaking after the transient. Since a leak had developed in one of the rods prior to the transient, it is not possible to determine from the on-line data if the test rods failed as a result of the transient. Metallurgical examinations will be performed to identify which rod failed prior to the transient, and to determine the extent of cladding damage and the damage mechanisms incurred during the transient.

Dryout of the damaged loop pump motor windings was completed and a high potential test and a turn-to-turn short test were satisfactorily completed. A work package for repair of the motor has been prepared and long lead items have been ordered.

University of Washington personnel visited EG&G Idaho to demonstrate their PBF fission chamber simulator. Six channels were connected to the data acquisition and reduction system; the recorded data will be analyzed at the university. A program was also developed to transmit the data to the university in a more compact and acceptable format.

Documentation progress made during the reporting period includes (a) printing and distribution of the Thermocouple Effects Test Series Test Results Report, (b) issuance of the Experiment Specifications Document for Severe Fuel Damage Test 1-2 (SFD 1-2), and (c) issuance for approval of the revised Experiment Operating Specification for the SFD Scoping Test.

The PBF loop modifications are about 75% complete. The craft work is scheduled to complete mid-July and will be followed by the necessary hydrostatic testing and flushing. The work is 1-2 weeks behind the schedule for commencing system operation testing. An effort is underway to find additional means to compress the remaining work.

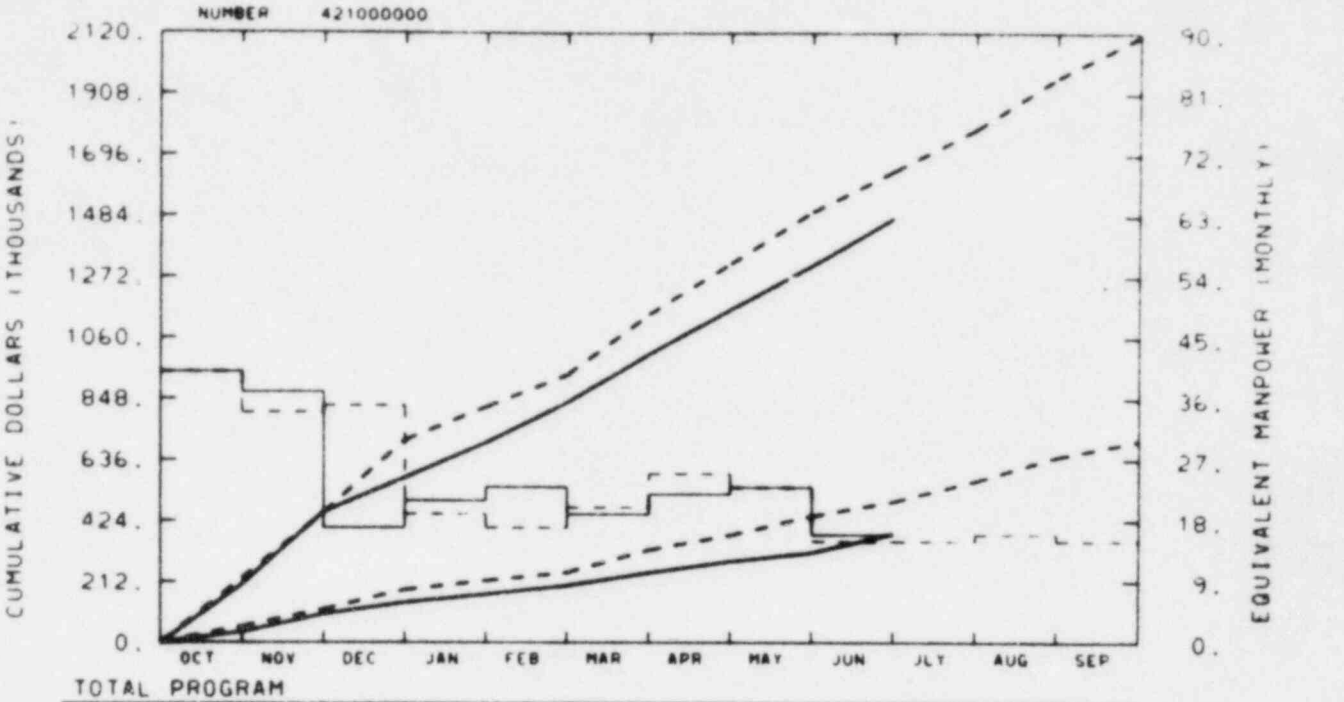
Overall program funding is remaining within the budget but is extremely tight with very little flexibility to handle any new problems.

RESPONSIBLE MANAGER
MACDONALD

EG&G IDAHO INC.

TFBP EXPER DESIGN & ANALYSIS

NUMBER 421000000



TOTAL PROGRAM

BUDGET	224	452	705	820	932	1144	1320	1500	1642	1787	1966	2111
ACTUAL	203	455	575	696	837	1006	1161	1315	1479			

MATERIAL

BUDGET	58	117	184	216	245	324	375	442	493	564	647	704
ACTUAL	38	100	140	169	200	245	285	315	381			

MANPOWER

BUDGET	40	34	35	19	17	20	25	23	15	15	16	15
ACTUAL	40	37	17	21	23	19	22	23	16			

BUDGET

ACTUAL

A6041

YTD VARIANCE: 163 (10%)

Due to delay in the OPTRAN 1-1 and 1-2 tests, the associated analyses (PIE's and TRR's) are underspent. There is $70K anticipated carryover at year-end in this 189.

1. 189a A6041 - Experiment Design & Analysis

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

a. Power-Cooling-Mismatch Test Series

Revision of the Test PCM-7 Fuel Rod Materials Behavior Report has resumed.

b. Operational Transient (OPTRAN) Test Series

Detailed metallurgical examination of the Test OPT 1-1 fuel rods continue. No evidence of cladding cracking has been established. The Test OPT 1-2 Quick Look Report was issued and the Test Results Report presentation completed.

c. Loss-of-Coolant Accident Test Series

The Test LOC-6 Fuel Rod Behavior Report is being reviewed. The Thermocouple Effects Test Series Test Results Report has been issued.

d. Reactivity Initiated Accident Test Series

Management review of the Test RIA 1-4 Fuel Behavior Report continue.

e. Zircaloy Oxidation Embrittlement Topical Report

Processing of the report by the Documentation Office continues and publication is expected July 26.

f. Fission Product Behavior Research

A quick look analysis of the samarium injection and the monitoring of Test OPT 1-2 were performed and reported in the Test OPT 1-2 Quick Look Report.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

a. Power-Cooling-Mismatch Test Series

The Test PCM-7 Fuel Rod Materials Behavior Report will be revised as time permits. The report will be completed in FY-82.

b. Operational Transient (OPTRAN) Test Series

Posttest metallurgical examination of the Test OPT 1-1 fuel rods will continue.

c. Loss-of-Coolant Accident Test Series

Review of the draft Test LOC-6 Fuel Rod Behavior Report will continue.

d. Reactivity Initiated Accident Test Series

Review of the Test RIA 1-4 Fuel Behavior Report will continue.

e. Zircaloy Oxidation Embrittlement Topical Report

The report will be published approximately July 26.

f. Fission Product Behavior Research

Analysis of data from past tests, PCM-7, RIA 1-1, RIA 1-4, and PR-1, will continue. A paper titled "Fission Product Source Terms Measured During Fuel Damage Tests in the Power Burst Facility" will be prepared for the Thermal Reactor Safety Meeting.

6. Problems and Potential Problems

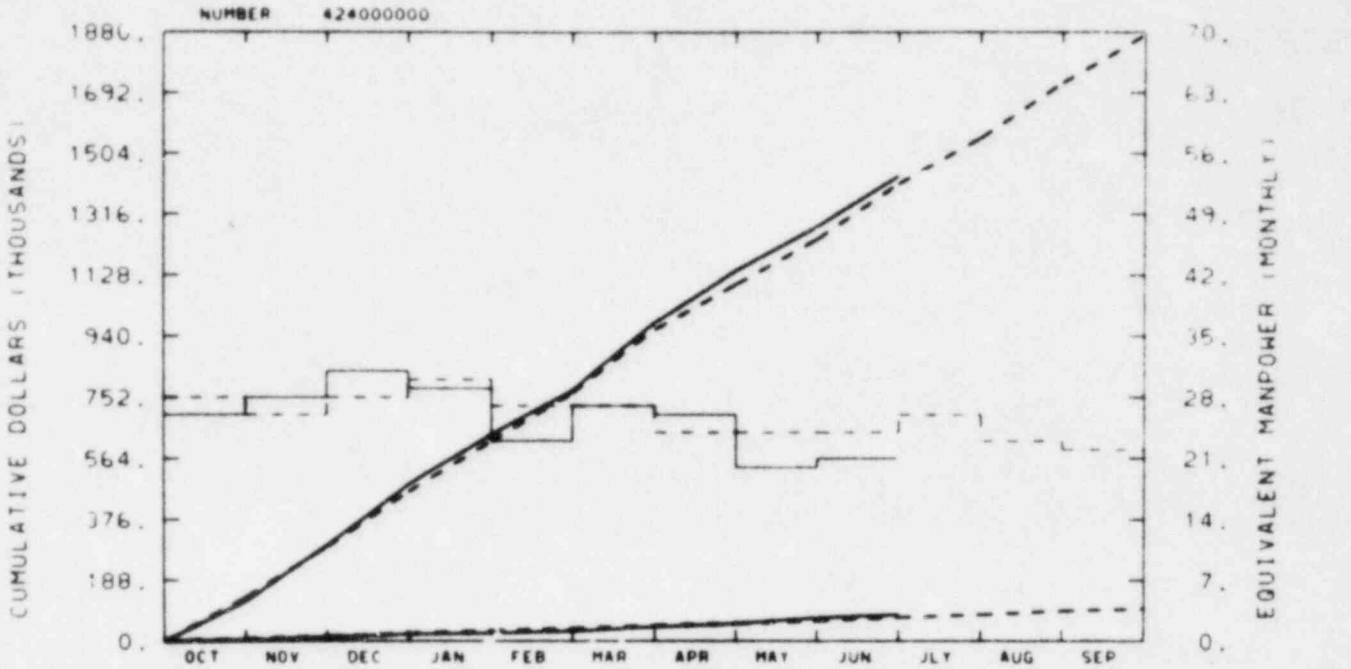
None.

RESPONSIBLE
MANAGER
KESTER

EG&G IDAHO INC.

PdF ENGINEERING

NUMBER 424000000



TOTAL PROGRAM

BUDGET	137	292	463	617	764	961	1100	1240	1410	1553	1723	1872
ACTUAL	125	297	486	638	772	982	1143	1279	1435			

MATERIAL

BUDGET	8	16	25	34	40	50	56	64	75	83	94	101
ACTUAL	4	15	22	26	31	45	55	74	82			

MANPOWER

BUDGET	28	26	28	30	27	27	24	24	24	26	23	22
ACTUAL	26	28	31	29	23	27	26	20	21			

BUDGET - - - - - -

ACTUAL ———

A6044

YTD VARIANCE: <25> (2%)

1. 189a A6044 - PBF Design Engineering

2. Schedule Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

a. Severe Fuel Damage Modifications

Project and systems engineering support has been provided during in initial phases of the installation. The Systems Operation Test Procedure was issued.

b. Liquid Nitrogen Supply for the Reactor Building

Design was completed and fabrication started on a system to provide liquid nitrogen to the Reactor Building first basement. The liquid nitrogen is required for operating the fission product detectors in the Severe Fuel Damage (SFD) Sample System.

c. Contamination Control for Posttest Handling of SFD Test Trains

Design has started on a contamination control and ventilation system for use in posttest handling of SFD test trains in the PBF canal.

d. PBF Spare Loop Pump

Winding dryout on the damaged PBF loop pump motor was completed. A high potential test and a turn-to-turn short test were performed and satisfactorily completed. Since the winding will not require replacing, repair of the damaged motor is preferable to the purchase of a new motor, or a complete pump. A work package for the repair was prepared and long lead items have been ordered.

e. Technical Specifications

The criticality analysis of the canal storage rack was completed. Final preparation of the canal limits specifications for PRAC review was completed.

An upgraded basis report for the in-pile tube (IPT) integrated neutron flux limit was completed.

A revised loop water chemistry specification was drafted.

4. Schedule Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

a. Severe Fuel Damage Modifications

Project and Systems Engineering will continue to support installation and SO test preparations of the SFD modifications.

b. Liquid Nitrogen Supply for the Reactor Building

Installation and checkout of the liquid nitrogen fill system should be completed.

c. Contamination Control for Posttest Handling of SFD Test Trains

The design concept will be reviewed for a ventilation and containment system to limit radioactive contamination spread from the PBF canal.

d. PBF Loop Pump Repair

Ordering of repair materials is scheduled to be completed. Repair of the rotor and design of the stator repair will be started.

e. Technical Specifications

An upgraded basis report for the neutron flux limit will be incorporated into the Technical Specifications.

The loop water chemistry specifications will be approved and issued, as will canal limits specifications.

The Technical Specifications for the Severe Fuel Damage tests will be drafted and review will be partially completed.

6. Problems and Potential Problems

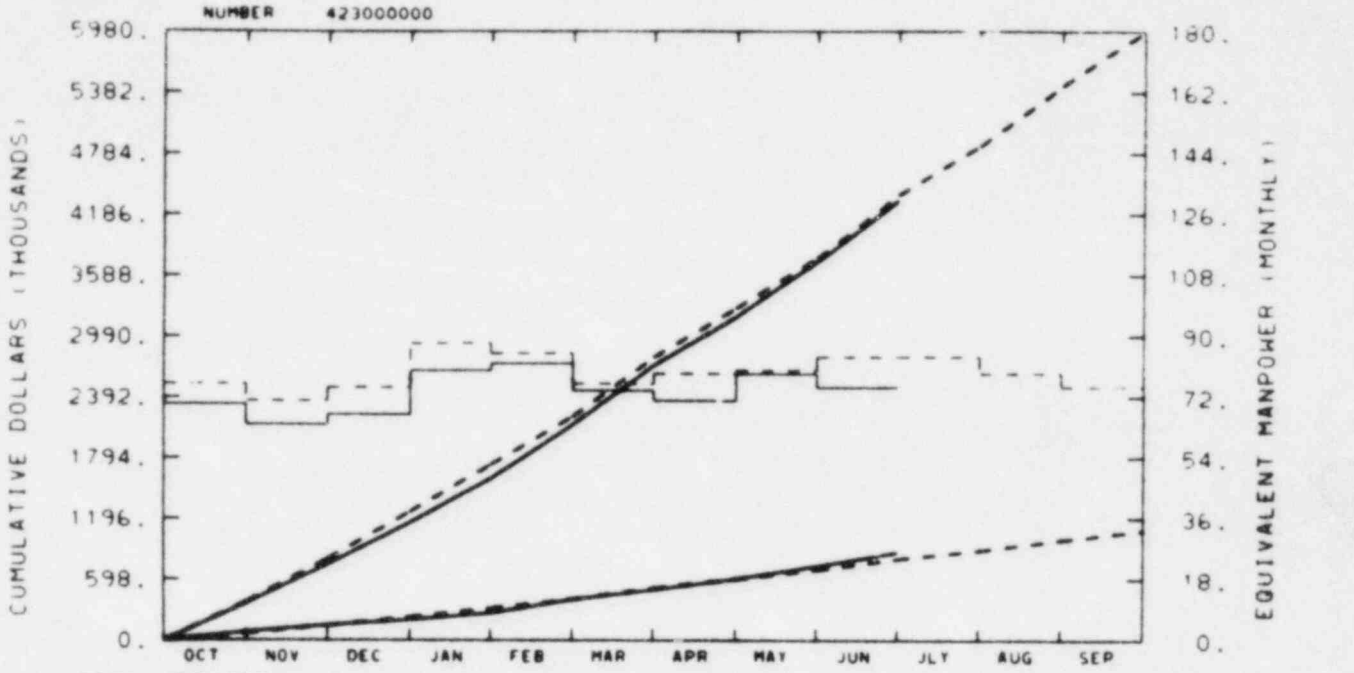
None.

RESPONSIBLE MANAGER
D. DOLLETTE

EG&G IDAHO INC.

PBF OPERATIONS

NUMBER 423000000



TOTAL PROGRAM

BUDGET	378	601	1268	1730	2204	2785	3271	3761	4378	4857	5445	5979
ACTUAL	365	746	1161	1595	2122	2705	3186	3727	4326			

MATERIAL

BUDGET	69	146	232	318	407	517	606	695	801	883	985	1079
ACTUAL	85	151	205	272	405	499	607	731	866			

MANPOWER

BUDGET	76	71	75	88	85	76	79	80	84	84	79	75
ACTUAL	70	64	67	80	82	74	71	75	75			

BUDGET - - - - - -

ACTUAL ———

A6057

YTD VARIANCE: 52 (1%)

The $52K variance is due primarily to delays in filling open requisitions with qualified personnel. CCB's 82-53 and 82-54 have recently been approved which will return $92K to Management Reserve. It is projected to come in at fiscal year-end with no variance.

1. 189a A6057 - PBF Operations

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed In June 1982

a. Plant Operations

The work performed during this reporting period was primarily directed toward support of the plant modifications and the new systems installation in preparation for performance of the upcoming Severe Fuel Damage Scoping Test (SFD-ST).

Plant conditions were established and work continued on the Experiment Cooling System, the Emergency Quench Injection System, the Fission Product Detection System, and the Liquid Nitrogen System Severe Fuel Damage Modifications (SFD).

The Instrument and Data Section completed the posttest data reduction for the Operational Transient Test 1-2 (OPT 1-2), the June process instrument calibrations, and the preventive maintenance items. Installation of the thermocouple junction modifications were completed, and the instrumentation and electronic support work for the SFD Modifications is continuing.

b. PBF Operations Support

Preventive Maintenance examinations for May are complete, June examinations are 98% compiete, and July examinations are 50% complete.

Of the six remaining in-service inspection examinations for the second subinterval ending June 1982, two are in the planning stage and four have been issued to the field. All six examinations are on the shutdown schedule and will be worked during the SFD shutdown window.

Corrective Maintenance examinations include the correction of plant deficiencies and scheduling for the SFD Modifications. The core drilling required for electrical and piping runs for the various SFD Modifications was completed.

Data Qualification work for Tests OPT 1-1 and OPT 1-2 is continuing. The Data Qualification Systems User Programs are being updated from the calculator programs. Assembly of the SFD Fission Chamber Instrumentation Systems is approximately 50% complete. An Engineering Design File comparing the predicted and actual measurement uncertainties for thermocouples is in preparation.

3. Summary of Work Performed in June 1982 (continued)

   b. PBF Operations Support

      An initial draft of the SFD-ST Experiment Operating Procedure was completed. Some additional input is required and will be incorporated upon review and approval of the Experiment Operating Specification and Experiment Safety Analysis documents.

4. Scheduled Milestones for July 1982

Node	Description	Due Date	Actual Date
N/A	OPT 1-2	07-02-82	05-21-82

5. Summary of Work to be Performed in July 1982

   a. Continue the SFD Modifications.

   b. Continue to provide support for the SFD Modifications.

6. Problems and Potential Problems

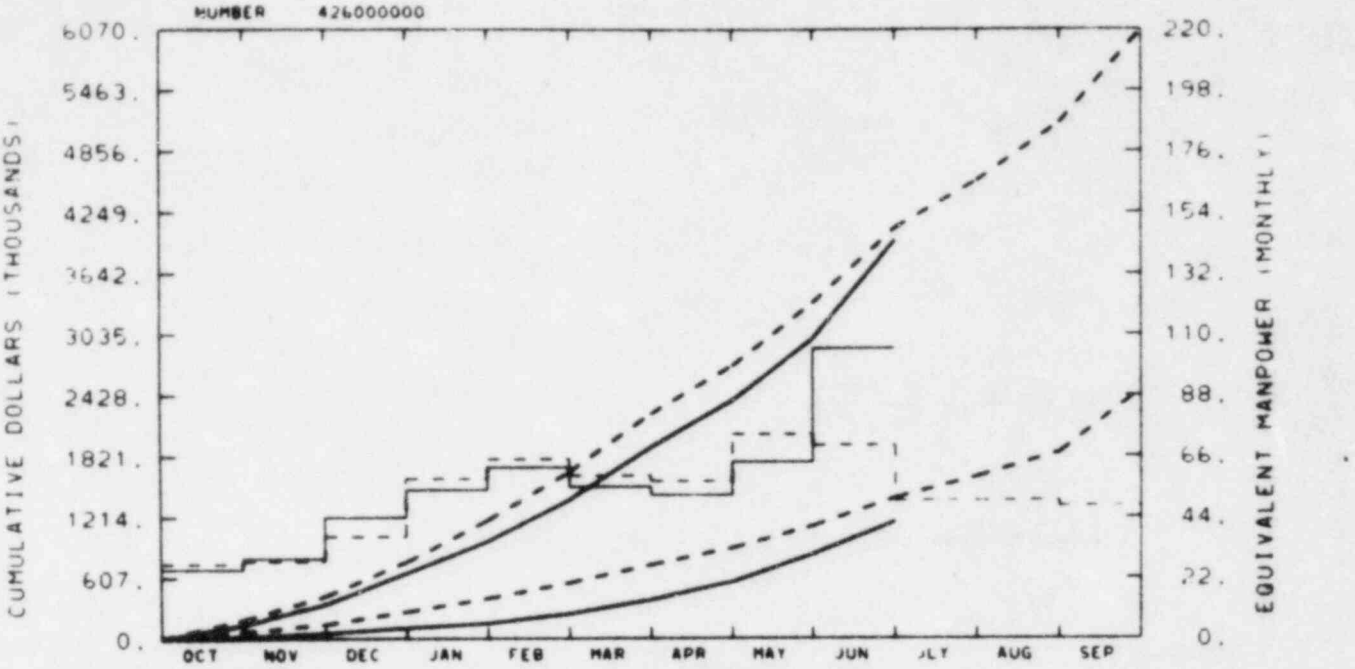
   None.

RESPONSIBLE
MANAGER
[redacted]UESCHER

EG&G IDAHO INC.

SEVERE FUEL DAMAGE

NUMBER 426000000



TOTAL PROGRAM

BUDGET	190	426	767	1184	1668	2244	2724	3350	4094	4561	5134	6067
ACTUAL	139	345	656	973	1387	1913	2378	2993	3974			

MATERIAL

BUDGET	65	146	270	403	559	736	905	1125	1407	1616	1857	2483
ACTUAL	20	58	108	155	251	388	567	841	1169			

MANPOWER

BUDGET	27	28	37	58	65	59	57	74	70	50	50	48
ACTUAL	25	29	44	54	62	55	52	64	105			

BUDGET - - - - - -

ACTUAL ———

A6305

YTD VARIANCE: 120 (3%)

Taking into consideration the outstanding commitments, A6305 is actually overrun, which is due primarily to the high level of expenditures on the modifications.

1. 189a A6305 - TFBP Severe Fuel Damage Studies

2. Scheduled Milestones for June 1982

Node	Description	Due Date	Actual Date
N/A	Issue SFD-ST, and -1 ESD	6/30/82	6/24/82
N/A	Issue SFD-2 ESD	6/30/82	6/24/82

3. Summary of Work Performed in June 1982

a. Scoping Test Experiment Operating Specification (EOS)

The revised EOS was issued for approval.

b. Safety Analyses - Severe Fuel Damage Scoping Test (SFD-ST)

Experiment Safety Analysis (ESA) was reviewed and comments incorporated into the document.

Analysis was started to determine the pressure behavior within the shroud and loop during the fast quench.

A draft of the failure mode analysis was completed and reviewed.

c. Power Burst Facility (PBF) Power Measurements

A report was started to document the power measurements made prior to OPTRAN Test OPT 1-1.

d. Severe Fuel Damage (SFD) Test 1 Experiment Prediction Analysis

The flow rate to be used in SFD-1 is to be reduced to about 1/10 of its original value to achieve more representative conditions. Efforts were initiated to incorporate a steam starvation model into TRAC to support the revised analysis.

e. Severe Fuel Damage Test 2 Experiment Specification Document (ESD)

The ESD for Severe Fuel Damage Test 2 was issued.

f. Severe Fuel Damage Test 2 Experiment Prediction Analysis

An analysis of quenching rate versus inlet flow was performed using TRAC. A TRAC analysis was initiated on a TMI type transient to support the revision to the test series.

3. Summary of Work Performed in June 1982 (continued)

g. Severe Fuel Damage Test 3 and Test 4 Experiment Specification Document

Work was initiated on a draft ESD for Tests 3 and 4.

h. Postirradiation Examination and Hot Cell Support

Materials have been received and design drawings released for the PBF-to-TRA transport canister, the TRA drying canister, the centering insert for the PBF shipping cask, and the cell penetration alignment equipment. Materials have been ordered and the final design drawings are in drafting for the ANL-West cask skid frame. Final design reviews were held and materials ordered for the ANL-PRDC cask target and alignment iris. The iris drawings were released and the target drawings are in drafting for final modification prior to release. The final design review was held, the materials ordered, and the final drawings are being drafted for the extraction unit. Materials have been ordered for jacks, rollers, and blocks. Drawings have been released and materials ordered for the positioning stage. Materials have been ordered for the drying system. Drafting is in progress on designs for miscellaneous hot cell tooling and work on upgrading in-cell photographic capability was initiated. Fabrication was begun on the in-cell table. A conceptual design for the in-canal test train gross gamma scanner was completed and circulated for internal review. Agreement was reached on a method for detaching the steam collection line in the PBF Canal. Comments to the postirradiation examination planning document were incorporated and the report was distributed externally for comment.

i. Severe Fuel Damage Analysis

Management review of the topical report on fuel foaming continued. A draft paper titled "An Assessment of LWR Fuel Foaming Potential During Core Meltdown Accidents" was prepared for the Thermal Reactor Safety Meeting.

j. Severe Fuel Damage Fission Product Studies

The data management and display software packages were integrated into the system. A few hardware problems were worked; software debugging continued. Craft work started on facility modification and system installation.

k. Severe Fuel Damage - Liquefaction-Flow-Solidification Model

Results of the LIQSOL code for the 3 ft rod of the SFD tests were in good agreement with those obtained using another simple analytical model. A preliminary run was made for a 12 ft fuel rod to investigate the usefulness and representation of the PBF SFD tests to commercial LWRs.

3. Summary of Work Performed in June 1982 (continued)

l. Instrument Development and Fission Chamber

University of Washington personnel visited EG&G and demonstrated their PBF fission chamber simulator in Idaho Falls. The simulator was then taken to PBF where six channels were connected to the DARS and data were recorded. These data will be taken to Seattle to be analyzed.

Following the discussions with the University of Washington personnel, a simple program was developed to transmit the PBF data to the university in a more compact and acceptable format. The program will be used to transmit data from the simulator demonstration.

m. Test Train Assembly Facility (TTAF)

The SFD-ST test train was completed to the point of performing straightness checks on the final assembly. The flow tube assembly was completed to the point of installation on the test train. All equipment needed to ship the test train to PBF was fabricated and fit checked. The procurement of long lead materials continued for the Tests SFD 1-2, 1-3, and 1-4 test trains. The TFBP transport System 2 transport plan was completed by EG&G and submitted to DOE-ID. DOE-ID comments are being resolved.

n. Phase II and Program Development

Phase II continues to evolve in order to fit expected budgets and achieve greater approbation of Industry and Government. In the course of the reporting month, Phase II has changed from two series to one, from two test train designs to one, and from a total of six (plus) tests to four. Former objectives of Series 2 are partly transferred to Series 1, since first use of irradiated rods will now take place in Test SFD 1-3 and first use of control rods will take place in Test SFD 1-4. Series 2 will now undertake a greater emphasis on melt progression.

In order to assess feasibility of using control rods in Series 1, physics calculations were executed during the month and reported in RWM-13-82. The study concluded that although the bundle FOM is reduced by 33% and radial power depression increased from 29% to 37%, tests with 4 control rods appear reasonable. Additional calculations of temperature distributions are being prepared.

3. Summary of Work Performed in June 1982 (continued)

n. Phase II and Program Development (continued)

The Memorandum Purchase Order to enable Los Alamos to proceed with development of a crucible for Series 2 has been signed off and is being transmitted to LANL. A Sole Source Justification was also prepared.

Results of last month's meeting at LANL were summarized in a letter report (RWM-10-82), which concluded that thermal stress problems were likely to occur unless additional insulation was permitted behind the thoria crucibles. To accommodate more insulation, it was proposed that the melt detector and inner water channel be converted to insulation. TRAC calculations have been initiated to assess the suitability of three potential designs for Series 2.

Writing of an ESD for Series 2 continued.

o. Modifications

Two-thirds of the construction for the modifications have been completed. The System Operating Test Procedures have been approved. The majority of the Plant Operating Manuals and Detailed Operating Procedures have been drafted.

p. Fission Product Signature Analysis

A report was drafted and reviewed that describes the computer model for estimating fission product release rate constants. ORIGEN-2 signature calculations continued for alternative SFD test scenarios and hypothetical accident scenarios.

4. Scheduled Milestones for July 1982

Node	Description	Due Date	Actual Date
N/A	Issue SFD-ST EOS	7/15/82	7/15/82E
N/A	Complete Draft SFD-3 ESD	7/1/82	6/28/82C
N/A	Complete Draft SFD-4 ESD	7/15/82	7/15/82E

5. Summary of Work to be Performed in July 1982

a. Scoping Test Experiment Operating Specification (EOS)

The Scoping Test EOS will be issued.

b. Safety Analyses - Severe Fuel Damage Scoping Test (SFD-ST)

Experiment Safety Analysis (ESA) will be issued.

Failure mode analysis report will be issued.

c. Safety Analysis Severe Fuel Damage Test (SFD-1)

Safety analysis for the SFD-1 ESA will be started.

d. Power Burst Facility (PBF) Power Measurements

The report to document the power measurements made prior to OPTRAN 1-1 will be issued.

e. Severe Fuel Damage (SFD) Test 1 Experiment Prediction Analysis

The steam starvation model will be incorporated into TRAC and the analysis using low steam flows will continue.

f. Severe Fuel Damage Test 2 Experiment Prediction Analysis

Work on the TRAC predictions for the TMI-2 transient will continue.

g. Severe Fuel Damage Test 3 and Test 4 Experiment Specification Document

The draft ESD will be completed. Work will begin on the physics analysis required to set the enrichment of the instrumented rods in these tests.

h. Postirradiation Examination and Hot Cell Support

Fabrication will be initiated on the PBF-TRA transport canister, the TRA drying canister, the positioning stage, the centering insert for the PBF shipping cask, the TRA transfer port, and the in-cell table inserts. Fabrication on the in-cell table will be completed in July. Drawings for the transport canister handling tools will be released in July. The final design review will be held, the materials ordered, and the drawings released for the lifting beam. The final drawings for the drying system will be released.

5. Summary of Work to be Performed in July 1982 (continued)

i. Severe Fuel Damage Analysis

The fuel foaming paper for the Thermal Reactor Safety Meeting and the topical report on the same subject will be sent to the Documentation Office for processing.

j. Severe Fuel Damage Fission Product Studies

The upgraded fission product detection system will have the software completed and released for use. The system will be moved to PBF for installation. Collimators will be received.

k. Severe Fuel Damage - Liquefaction-Flow-Solidification Model

Results from LIQSOL for both the 3 ft and 12 ft rods will be compared to those obtained using another analytical model for the two cases. The comparison will be documented and submitted to management this month.

l. Instrument Development and Fission Chamber

Work will continue on the instrument system hardware and software.

m. Test Train Assembly Facility (TTAF)

The SFD-ST test train will be completed and shipped to PBF. The TFBP transport System 2 transport plan will be approved. The long lead procurement of SFD 1-2, 1-3, and 1-4 components and materials will continue.

n. Phase II and Program Development

Crucible development at LANL should commence early in July barring delays in transmitting or acceptance (at LANL) of the Purchase Order.

Writing of an ESD for Series 2 will continue.

o. Modifications

Construction for the modifications is scheduled to be completed. All Plant Operating Manuals and Detailed Operating Procedures will be completed.

p. Fission Product Signature Analysis

The report on the computer model for generating release rate constants was sent out for review; comments are being incorporated. Calculations continued on various SFD signatures.

6. Problems and Potential Problems

The reduction in flow rate in SFD-1 requires additional analysis that will delay issuing the SFD-1 EPR and also result in additional costs.

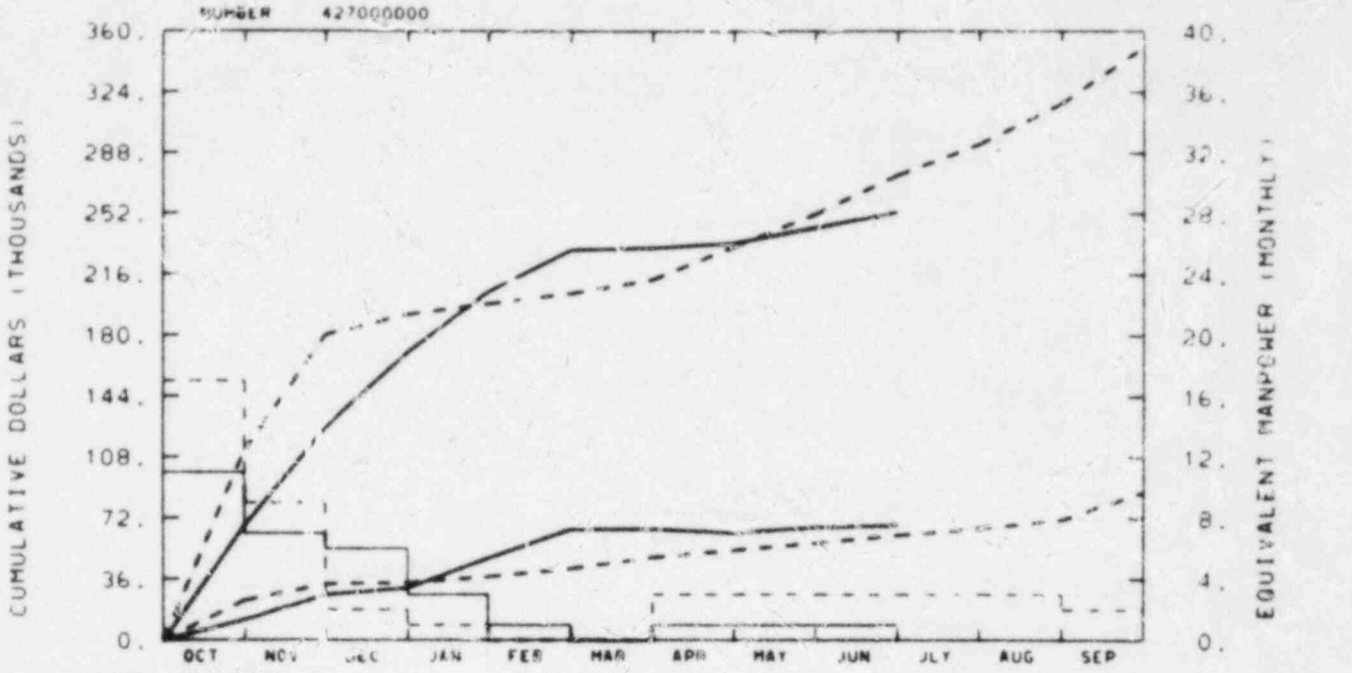
The experiment analysis tasks are also being modified to include scaling studies and establishing typical parameters for the higher probability accidents that will require scope, budget, and schedule adjustments.

RESPONSIBLE MANAGER

EG&G IDAHO INC.

CORE MELT MITIGATION SYSTEM

NUMBER 427000000



TOTAL PROGRAM

BUDGET	112	180	192	198	205	213	232	252	275	293	317	351
ACTUAL	60	125	170	206	230	237	235	244	253			

MATERIAL

BUDGET	24	33	34	37	42	49	53	57	62	66	71	88
ACTUAL	12	27	31	48	65	65	63	67	68			

MANPOWER

BUDGET	17	9	2	1	0	0	3	3	3	3	3	2
ACTUAL	11	7	6	3	1	0	1	1	1			

BUDGET

ACTUAL

A6351

YTD VARIANCE: 22 (8%)

Work effort has slowed way down and it is estimated that there will be a $50K underrun. Action has been started to transfer $50K elsewhere in the Thermal Fuels Behavior Program where it is needed.

1. 189a A6351 - Core Melt Mitigation

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

Completed draft review letter on HF-sequence.

Proceeded with design work on V-sequence.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

Complete design work on V-sequence.

Start writing of final report.

6. Problems and Potential Problems

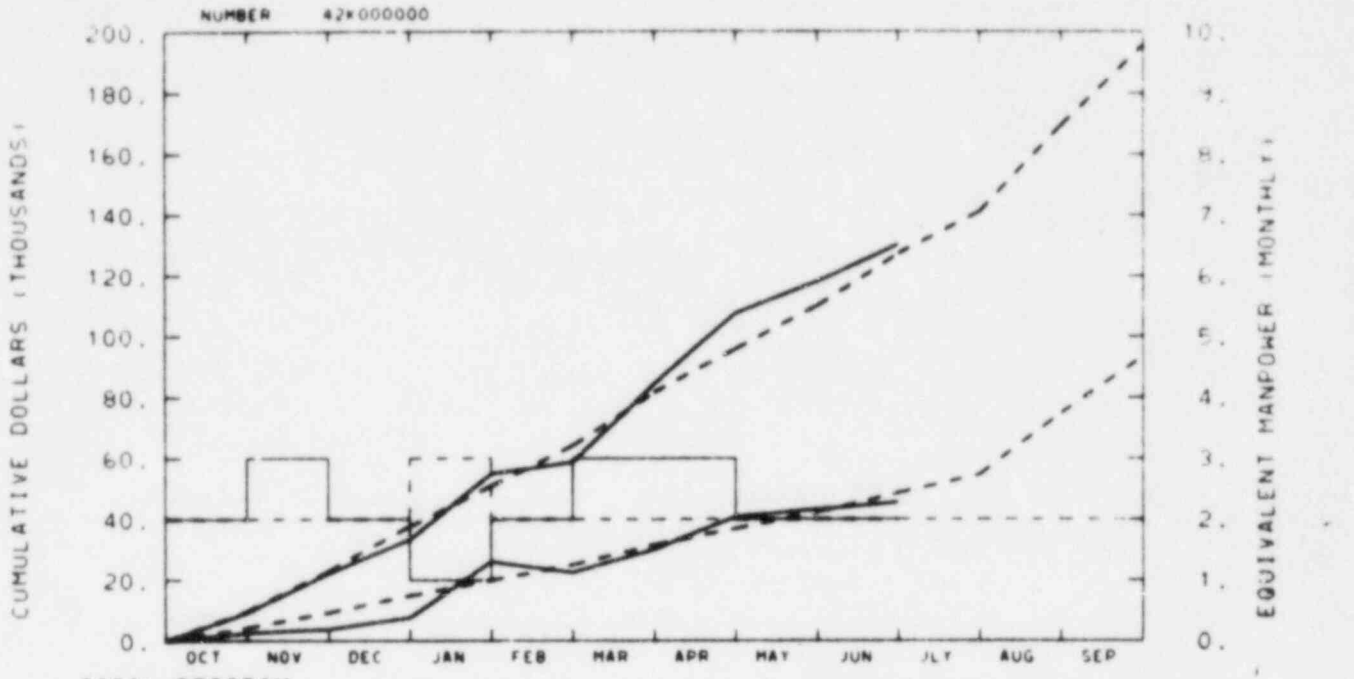
Review of as-built Sequoyah-1 data received from TVA indicates that some of the more obvious deficiencies identified by the Sandia RSSMAP study have already been remedied by TVA. This is true of systems involved in the HF sequence, which had been identified by EG&G Idaho as one of the first two to be examined. Only one possible design change, involving the V sequence, has been identified. The rationale for not changing design is being documented as promised in the Project Proposal. However, the work is proceeding at a reduced level (less than one FTE). A proposal has been made to DOE-ID to transfer $50K of unused funds from this 189 to another 189.

RESPONSIBLE MANAGER
R HOBBINS

EG&G IDAHO INC.

NRC REP TO KFK

NUMBER 42×000000



TOTAL PROGRAM

BUDGET	10	23	38	51	64	82	96	110	127	141	170	196
ACTUAL	9	22	33	55	59	84	108	118	130			

MATERIAL

BUDGET	4	9	15	20	25	32	37	42	49	55	75	93
ACTUAL	3	4	8	26	23	30	41	43	46			

MANPOWER

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

BUDGET

ACTUAL

A6352

YTD VARIANCE: <3> (2%)

1. 189a A6352 - NRC Representative to KfK

2. Scheduled Milestones for June 1982

   None.

3. Summary of Work Performed in June 1982

   This task is reported separately in bimonthly reports prepared by the NRC representative to KfK and are transmitted under separate cover.

4. Scheduled Milestones for July 1982

5. Summary of Work to be Performed in July 1982

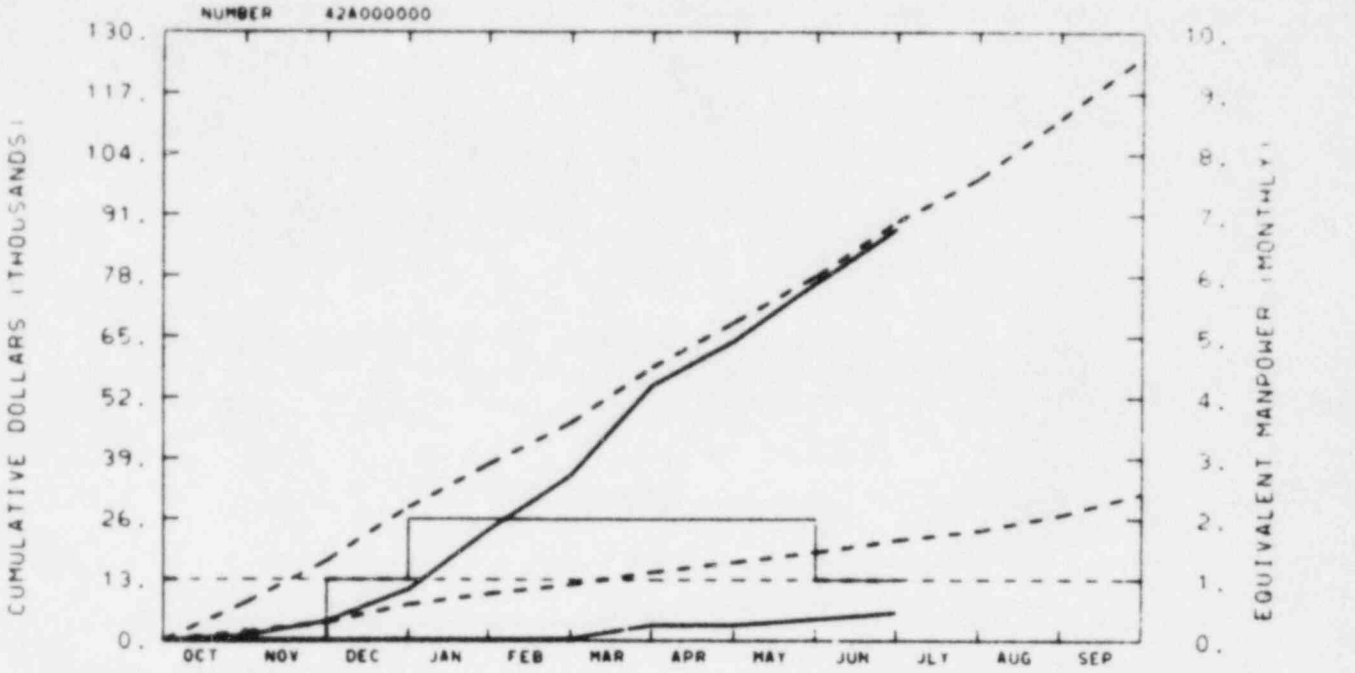
6. Problems and Potential Problems

   None.

RESPONSIBLE
AGER
ROUCHER

EG&G IDAHO INC.

FIS PROD BEHAV - PAST ACCIDENTS



TOTAL PROGRAM

BUDGET	8	17	28	38	47	59	68	78	90	99	112	125
ACTUAL	1	4	11	24	36	55	64	76	88			

MATERIAL

BUDGET	2	4	8	10	12	15	17	19	21	24	27	31
ACTUAL	0	0	0	0	1	3	3	5	6			

MANPOWER

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

A6372

YTD VARIANCE: 2 (2%)

1. 189a A6372 - Fission Product Behavior During Past Accidents

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

A draft of the report of past accidents and destructive tests is being reviewed by management. A request for additional data on the Plutonium Recycle Test Reactor accident was sent to Battelle-PNL.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

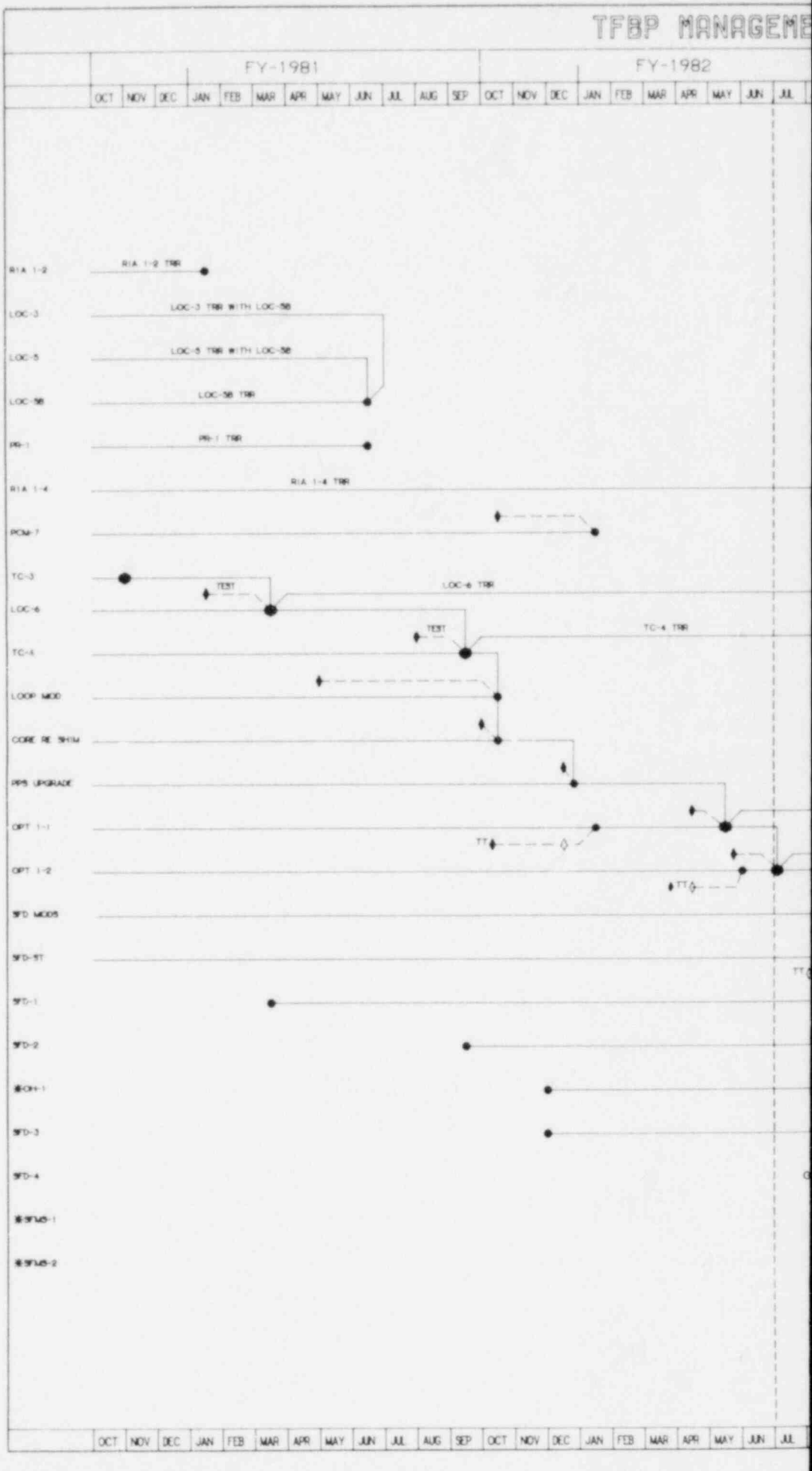
Review of the report will be completed. The CORRAL-2 code will be rerun for PRTR in July pending receipt of additional information from Battelle-PNL. TMI-2 data will be collected to run the CORRAL-2 code. The review report of past accidents and destructive tests is scheduled for July 15, 1982.

6. Problems and Potential Problems

None.

THERMAL FUELS BEHAVIOR PROGRAM

MANAGEMENT SUMMARY SCHEDULE


TFBP MANAGEME
FY-1981
FY-1982
OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL
R1A 1-2
R1A 1-2 TRR
LOC-3
LOC-3 TRR WITH LOC-5B
LOC-5
LOC-5 TRR WITH LOC-5B
LOC-5B
LOC-5B TRR
PR-1
PR-1 TRR
R1A 1-4
R1A 1-4 TRR
PCM-7
TC-3
TEST
LOC-6 TRR
LOC-6
TEST
TC-4 TRR
TC-4
LOOP MOD
CORE RE SHIM
PPS UPGRADE
OPT 1-1
TT
OPT 1-2
TT
SFD MODS
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 JUN JUL

NT SUMMARY SCHEDULE

FY-1983 | FY-1984

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 MILESTONE
- C SECONDARY MILESTONE

LOC	LOSS OF COOLANT
OH	ONTARIO HYDRO
OPT	OPERATIONAL TRANSIENT
PCM	POWER COOLANT MISMATCH
PR	PCM RIA
RIA	REACTIVITY INITIATED ACCIDENT
SFD	SEVERE FUEL DAMAGE
SFMS	SEVERE FUEL MELT SERIES
TC	THERMOCOUPLE
TRR	TEST RESULTS REPORT
TT	TEST TRAIN
⊗	PENDING FINAL APPROVAL AND FUNDING

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
42XXXXX	82-01	TFBP Test Schedule	Approved	01/24/82
42XXXXX	82-02	TFBP FY-1982 Baseline	Approved	02/04/82
4245F53	82-03	PPS Upgrade for OPTRAN	Approved	01/24/82
42M1112	82-04	Discretionary Reserve	Disapproved	01/24/82
4261824	82-06	Foreign Fuel Procurement	Approved	01/24/82
4261210	82-07	Severe Fuel Analysis	Approved	01/24/82
4233M10	82-08	PBF Visitor Display	Approved	02/23/82
4219C64	82-09	OPT 1-2 TRR	Approved	01/24/82
42M1112	82-10	Discretionary Reserve	Approved	01/24/82
423XXXX	82-11	PBF Operations	Approved	01/24/82
4262110	82-14	MTR Canal Alarm Power Change	Disapproved	02/04/82
4262110	82-15	Removal of Radiation Hazard (Pipe)	Approved	02/04/82
4244BXX	82-16	Small Loop Break/Loop and IPT Analysis	Approved	01/24/82
42XXXXX	82-17	Test Completion Schedule	Canceled	02/04/82
42XXXXX	82-18	Add $75K to A6372 and Re-establish A6355	Approved	02/04/82
4264110	82-19	FCV-1 Manual Positioner	Approved	02/04/82
4262410	82-20	Hot Cell Equipment and Procedure Development	Approved	02/04/82
4261510	82-21	FPDS Upgrade	Approved	02/04/82
4263423	82-23	SFD-2 Test Train Design	Canceled	02/04/82
4219C2X	82-24	OPT 1-2 Test Train	Approved	02/23/82
4264170	82-25	FPDS Sample System	Approved	02/23/82
4219BXX	82-26	OPT 1-1 Test Schedule	Approved	02/23/82
42XXXXX	82-27	Test Schedule (OPT 1-2, SFD Mods, SF-ST)	Approved	02/23/82
4233F51	82-28	SFD "C" Thermocouple	Approved	02/23/82
4219C26	82-29	OPTRAN 1-2 Test Train	Approved	03/24/82
4233D81	82-30	Corrective Maintenance	Approved	03/24/82
4292BXX	82-32	SFD 2-1 Test Series	Approved	04/29/82
4216F64	82-36	LOC-6 TRR	Approved	04/15/82
4245D91	82-37	PPS Investigation	Approved	04/29/82

CHANGE CONTROL BOARD STATUS (Continued)

Cost Account	CCB #	Description	Status	Date
4264170	82-38	Sample Shielding - SFD Mods	Approved	04/29/82
42XXXXX	82-39	Series II and SFD-ST Test Train Requirements	Approved	04/29/82
4219C32	82-40	OPTRAN 1-2 ESA	Approved	04/29/82
42M1112	82-41	Discretionary Reserve	Approved	04/29/82
4261510	82-42	FPDS Upgrade	Approved	05/27/82
4263126	82-43	SFD-ST/SFD-1 Test Trains	Approved	05/27/82
4233D91	82-44	Craft Shutdown Maintenance	Approved	05/27/82

CHANGE CONTROL BOARD ACTION

($000)

CCB #	Description	FY-1982	FY-1983	FY-1984/Beyond	Total Approved Action
82-01	TFBP Test Schedule	N/A			N/A
82-02	TFBP Baseline	16,292.6			16,292.6
82-03	PPS Upgrade for OPTRAN	33.7			33.7
82-06	Foreign Fuel Procurement	10.0			10.0
82-07	Severe Fuel Analysis	20.0			20.0
82-08	PBF Visitor Display	29.7			29.7
82-09	OPT 1-2 TRR	< 80.0>	80.0		0.0
82-10	Discretionary Reserve	34.0			34.0
82-11	PBF Operations	25.0			25.0
82-15	Removal of Radiation Hazard	2.5			2.5
82-16	Small Loop Break/Loop and IPT Analysis	25.0			25.0
82-18	Add $75K to A6372 and Re-establish A6355	101.3			101.3
82-19	FCV-1 Manual Positioner	10.5			10.5
82-20	Hot Cell Equipment and Procedure Development	77.6			77.6
82-21	FPDS Upgrade	142.0			142.0
82-24	OPT 1-2 Test Train	32.7			32.7
82-25	FPDS Sample System	105.0			105.0
82-26	OPT 1-1 Test Schedule	N/A			N/A
82-27	Test Schedule (OPT 1-2, SFD Mods, SF-ST)	N/A			N/A
82-28	SFD "C" Thermocouple	10.0			10.0
82-29	OPTRAN 1-2 Test Train	10.8			10.8
82-30	Corrective Maintenance	100.0			100.0
82-32	SFD 2-1 Test Series	200.0			200.0
82-36	LOC-6 TRR	20.0			20.0
82-37	Reactor and Control	8.0			8.0
82-38	SFD Sample System Shielding Transport Plan	10.0			10.0

< > Return to Management Reserve

CHANGE CONTROL BOARD ACTION (Continued)

($000)

CCB #	Description	FY-1982	FY-1983	FY-1984/Beyond	Total Approved Action
82-39	SFD-ST Test Train/Series II Funding Requirements	<367.3>			<367.3>
82-40	OPTRAN 1-2 ESA	19.1			19.1
82-41	Discretionary Reserve	25.0			25.0
82-42	FPDS Upgrade	16.0			16.0
82-43	SFD-ST/SFD-1 Test Trains	212.5			212.5
82-44	Craft Shutdown Maintenance	54.0			54.0

< > Return to Management Reserve

THERMAL FUELS BEHAVIOR PROGRAM

STATUS BY 189

($000)

189 Number	New 189 Total
A6041	$ 2,100.8
A6044	1,882.0
A6057	5,979.2
A6305	5,744.2
A6351	355.5
A6352	195.7
A6355	26.3
A6372	125.0
A6454*	0.8
Subtotal	$16,409.5
Management Reserve	303.8
Discretionary Reserve	4.8
TOTAL	$16,718.1

* NRR Funding.

THERMAL FUELS BEHAVIOR PROGRAM

CAPITAL EQUIPMENT

THERMAL FUELS BEHAVIOR PROGRAM

CAPITAL EQUIPMENT COST REPORT
(A6091)

(1) Priority Number	(2) Description	(3) EA/WBS Number	(4) Planned Requisition Date	(5) Actual Requisition Date	(6) DOE Authorized Amount	(7) Requisition Value (+ 6%)	(8) P/O Award Date	(9) Outstanding Commitment (+ 6%)	(10) Prior Year Costs	(11) Current Year Costs	(12) Total Costs and Outstanding Commitments	(13) Variance	(14) Status	(15) Estimate At Complete
Pre FY-1982														
1/80	PBF P&M System	9E4993060	08/80	08/80	231,824	155,341	A/ 04/81	0	191,528	26,702	218,230	13,594	O	227,537
5/80	Data System Module and Maint. System	9E4991940	-	-	66,463	66,500	0	8,081	61,911	758	70,750	<4,287>	M	1/ 70,750
16/80	FPDS Upgrade (80)	9E4991960	-	04/80	49,665	32,100	05/80	0	37,294	16,205	53,499	<3,834>	C	2/ 53,499
20/80	Data Conditioning Equipment	9E4810701	-	-	11,000	12,984	-	0	0	12,984	12,984	<1,984>	M	3/ 12,984
22/80	Radiation Instrumentation	9E4992990	-	08/80	80,793	78,272	A/ 02/81	0	78,273	732	79,005	1,788	O	80,793
1/81	Transient Rod Drive Control Subsystem Servo Upgrade	9E4810100	01/81	01/81	79,438	65,807	-	0	5,206	64,116	69,322	10,116	O	77,454
02/81	Remote SEM Installation	9E4810200	01/81	01/81	85,000	76,890	A/ 03/81	0	84,103	2,357	86,460	<1,460>	C	4/ 85,000
03/81	MTR Equipment	9E4810300	01/81	01/81	32,094	25,458	A/ 03/81	0	28,766	2,845	31,611	483	C	32,094

1/ $4,287 overrun will be covered from 9E4993060.

2/ $3,834 overrun will be covered from 9E4820100.

3/ $1,984 overrun will be covered from 9E4810100.

4/ $1,460 overrun is under review.

THERMAL FUELS BEHAVIOR PROGRAM

CAPITAL EQUIPMENT COST REPORT

(A6091)

(1) Priority Number	(2) Description	(3) EA/WBS Number	(4) Planned Requisition Date	(5) Actual Requisition Date	(6) DOE Authorized Amount	(7) Requisition Value (+ 6%)	(8) P/O Award Date	(9) Outstanding Commitment (+ 6%)	(10) Prior Year Costs	(11) Current Year Costs	(12) Total Costs and Outstanding Commitments	(13) Variance	(14) Status	(15) Estimate At Complete.
Pre FY-1982														
05/81	PBF Data System Magnetic Tape Recorders Replacement	9E4810800	01/81	01/81	67,282	66,000	-	0	0	60,712	60,712	6,570	0	67,282
06/81	FPDS Upgrade (81)	9E4810500	01/81	01/81	60,000	56,122	-	5,671	8,062	51,081	64,814	<4,814>	M	5/ 64,814
7/81	Data Qualification System Replacement	9E4810600	01/81	01/81	90,000	70,664	A/ 04/81	0	16,127	69,916	86,043	3,957	0	90,000
8/81	PBF Process Equip and Instrument.	9E4810700	-	-	35,200	35,000	A/ 05/81	8,850	21,288	5,903	36,041	< 841>	M	35,200
	SUBTOTAL				888,759	741,138		22,602	532,558	314,311	869,471	19,288		
PRE FY-1982 COSTS					-532,558									
NET: PRE FY-1982 UNCOSTED					356,201									
FY-1982														
1/82	FPDS Upgrade (82) & Hydrogen Monitor	9E4820100	10/81	11/81	200,000	105,151	-	12,160	0	197,912	210,072	<10,072>	0	6/ 191,352

5/ $4,814 overrun will be covered from 9E4820100. $15K has been added to FY-1982 Priority Item 1.

6/ $10,072 overrun is due to $21,000 accrual which is being charged to this number incorrectly.

THERMAL FUELS BEHAVIOR PROGRAM

CAPITAL EQUIPMENT COST REPORT
(A6091)

(1) Priority Number	(2) Description	(3) EA/WBS Number	(4) Planned Requisition Date	(5) Actual Requisition Date	(6) DOE Authorized Amount	(7) Requisition Value (+ 6%)	(8) P/O Award Date	(9) Outstanding Commitment (+ 6%)	(10) Prior Year Costs	(11) Current Year Costs	(12) Total Costs and Outstanding Commitments	(13) Variance	(14) Status	(15) Estimate At Complete.
FY-1982														
2/82	PBF Process Equipment and Instrumentation	9E4820200			30,000	30,000	-	19,944	0	11,446	31,390	<1,390>	0	30,000
3/82	Wave Length Spectrometer	9E4820300			55,000		-	0	0	0	0	55,000	0	55,000
	TOTAL FY-1982				285,000	135,151		32,104	0	209,358	241,462	43,538		
	GRAND TOTAL FY-1982 ACTIVITY				1,173,759	876,289		54,706	532,558	523,669	1,110,933	62,826		

MONTHLY REPORT FOR

JUNE 1982

2D/3D PROGRAM

Paul North

P. North, Manager

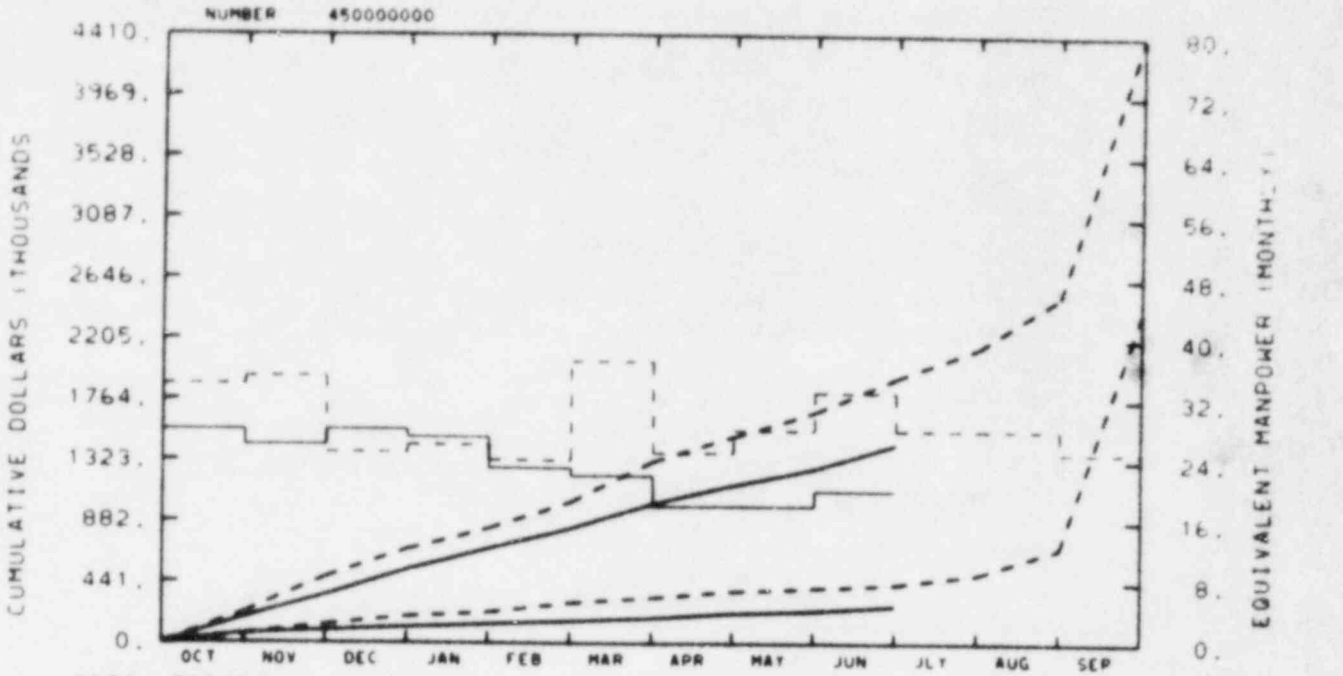
Paul Keele

P. B. Keele
Plans and Budget Representative

RESPONSIBLE MANAGER
B COLSON

EG&G IDAHO INC.

20-30 PROGRAM



TOTAL PROGRAM

BUDGET	223	477	678	829	1022	1318	1498	1676	1926	2142	2518	4400
ACTUAL	187	348	530	684	832	1012	1147	1267	1444			

MATERIAL

BUDGET	66	136	195	225	295	334	379	402	430	503	689	2408
ACTUAL	71	94	119	140	163	188	222	239	275			

MANPOWER

BUDGET	34	35	25	26	24	37	25	28	33	28	28	25
ACTUAL	28	26	28	27	23	22	18	18	20			

YTD VARIANCE: 482 (25%)

Individual cost graphs will give individual explanations.

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

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

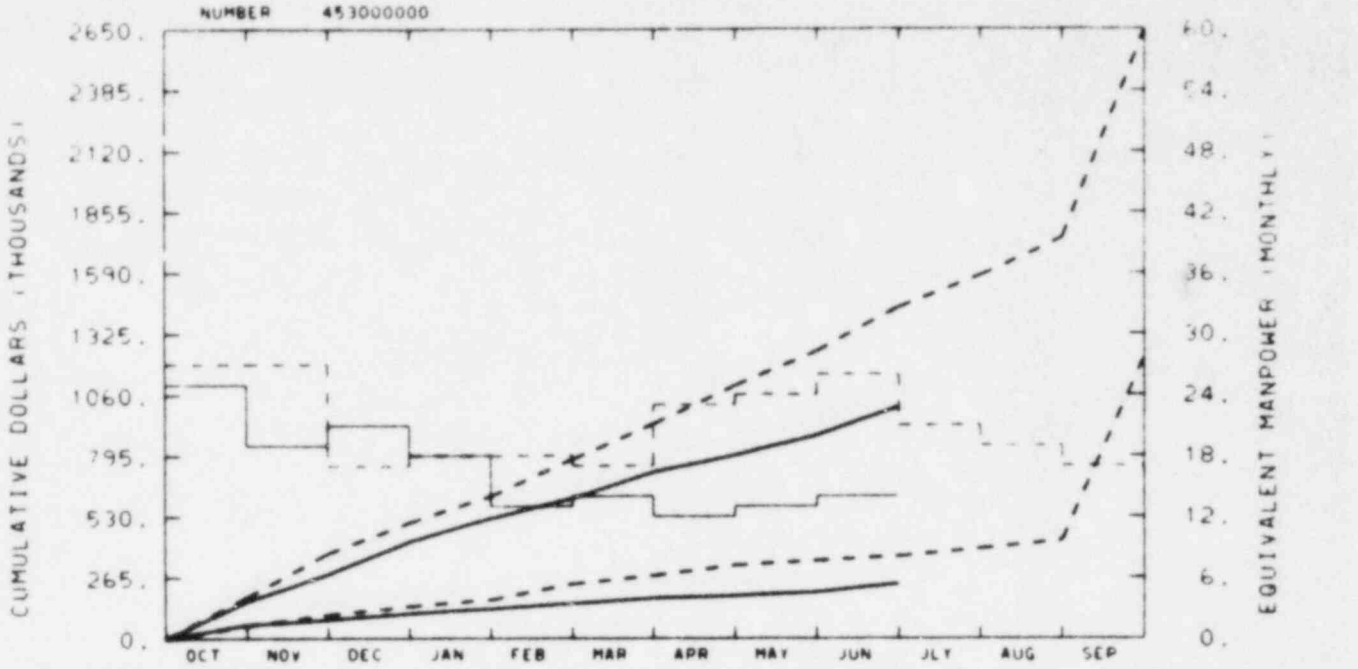
A final design review was held on June 26, 1982 on the Upper Plenum Test Facility Drag Disk and Absolute Pressure Systems.

A review of the first drafts of the instrument networks supplied by Sandia Labs was completed and corrections were transmitted to Sandia.

EG&G IDAHO INC.

A6100 TECH SUPPORT & INSTRUMENT

NUMBER 453000000



TOTAL PROGRAM

BUDGET	179	369	504	619	779	932	1098	1248	1439	1577	1742	2649
ACTUAL	161	280	421	523	609	723	797	883	1006			

MATERIAL

BUDGET	57	104	140	168	237	273	318	338	357	389	425	1227
ACTUAL	60	83	110	130	153	176	186	202	238			

MANPOWER

BUDGET	27	27	17	18	18	17	23	24	26	21	19	17
ACTUAL	25	19	21	18	13	14	12	13	14			

BUDGET - - - - - -

ACTUAL ———

A6100

YTD VARIANCE: 433 (30%)

The year-to-date variance is the result of the continuing situation with UPTF instrumentation. Work scope associated with UPTF instrumentation was initially delayed because of a lack of specifications, this schedule slip continues to cause an underrun stiuation. Fiscal Year 1982 UPTF work scope will be carried over into FY-1983, the budget associated with this work scope is approximately $600K. Even with the present schedule slip and the resultant carryover work scope, we expect to be able to meet required UPTF delivery dates.

CCB 3D 82-05 was submitted to DOE-ID for review and approval.

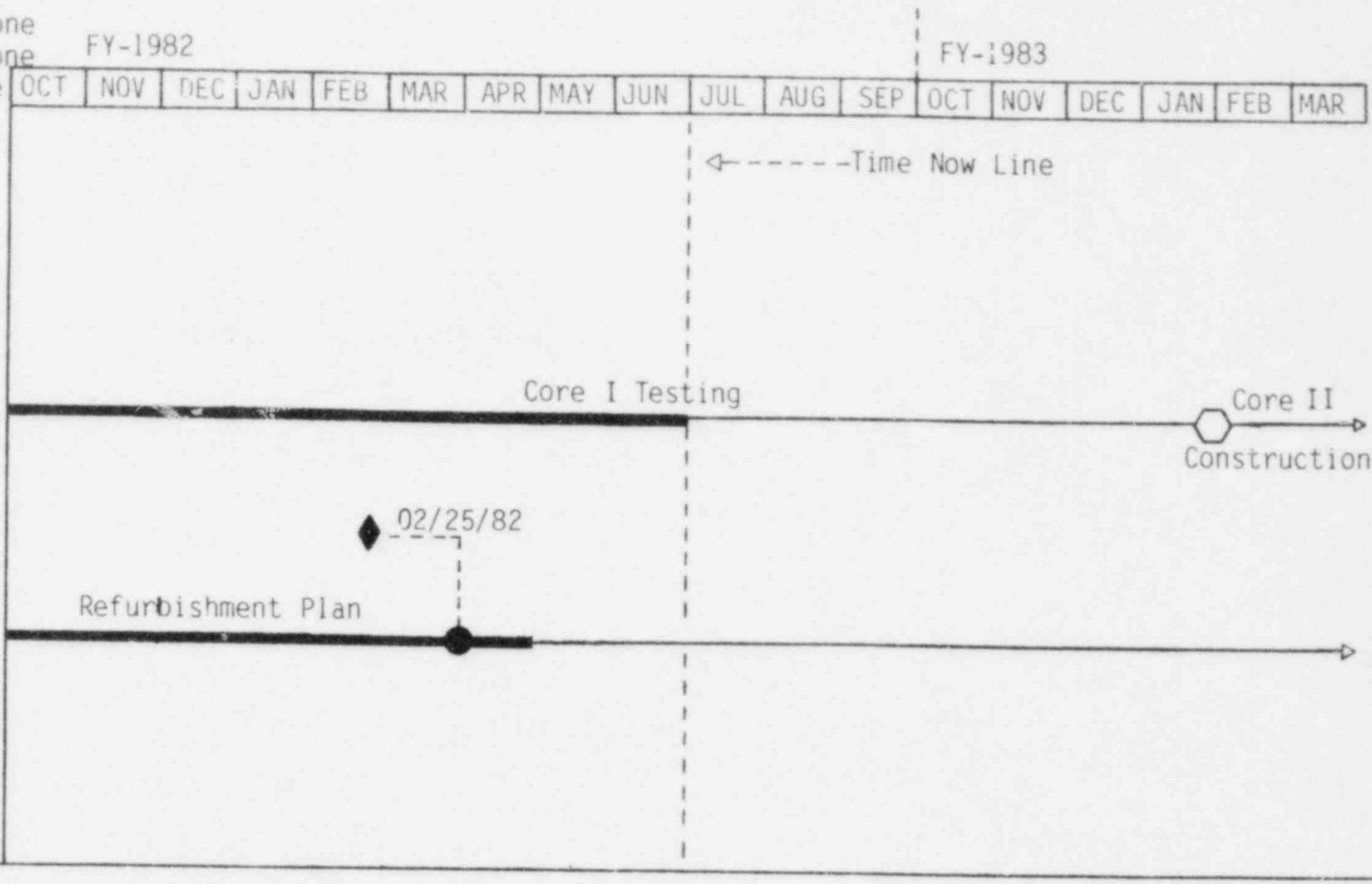
LEGEND

- 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 PROGRAM

SCTF Projects

June 1982



NOTES:

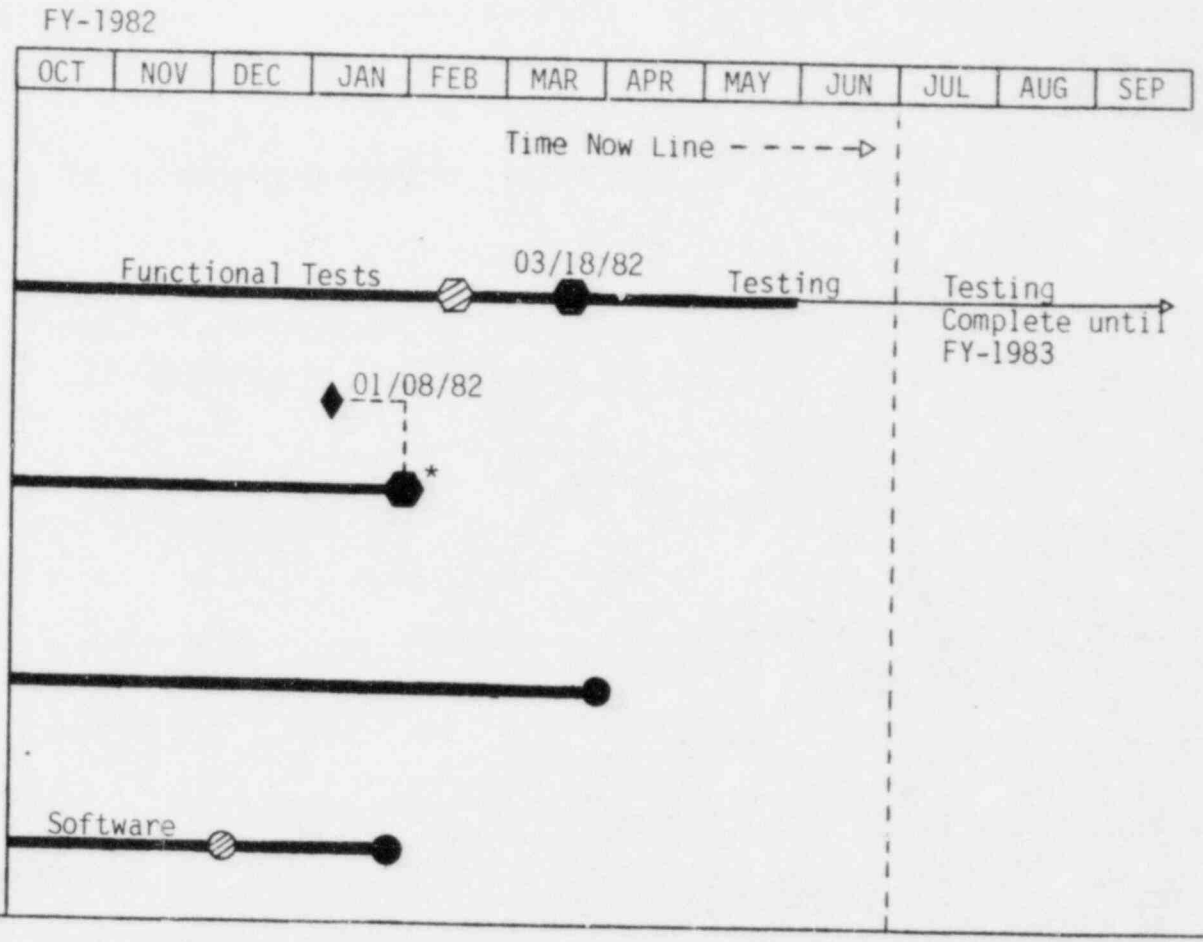
LEGEND

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

2D/3D PROGRAM

CCTF-II Projects

June 1982



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

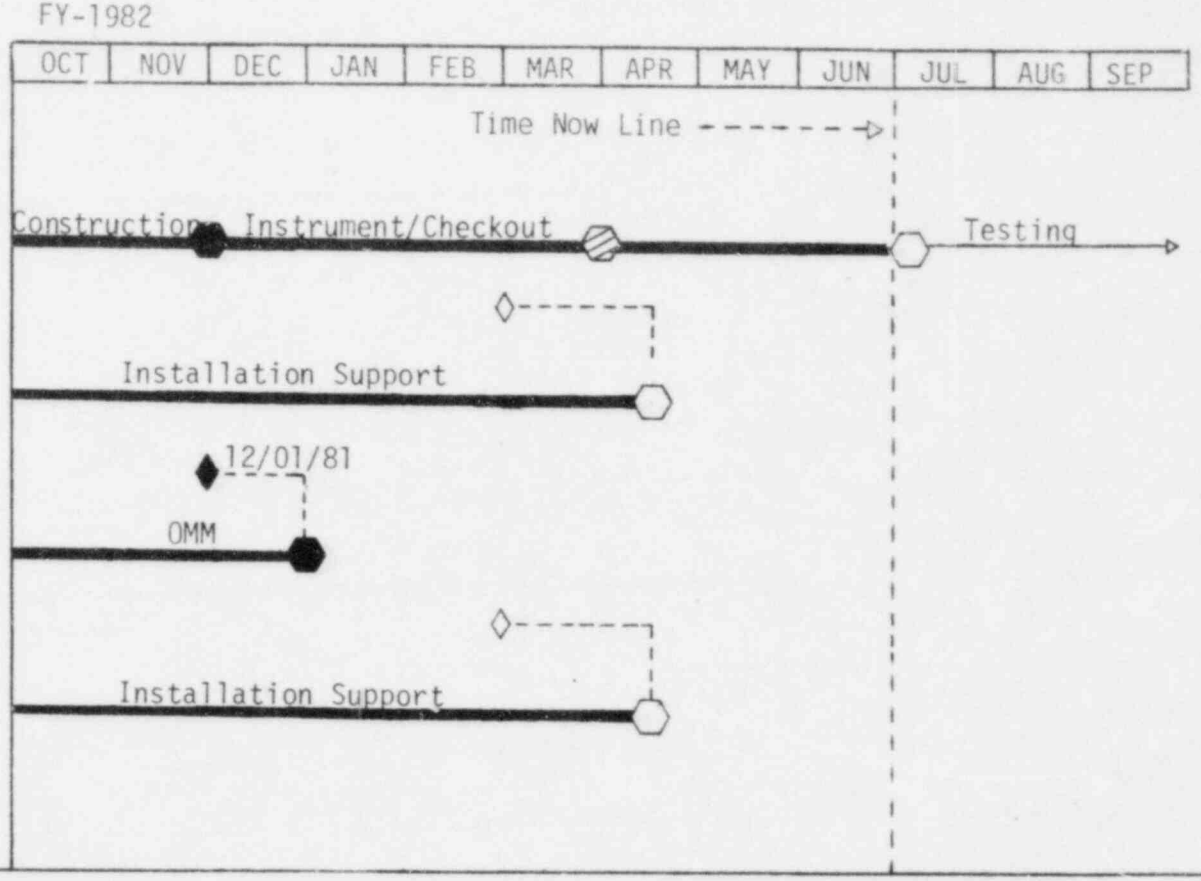
LEGEND

- 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 PROGRAM

PKL Projects

June 1982



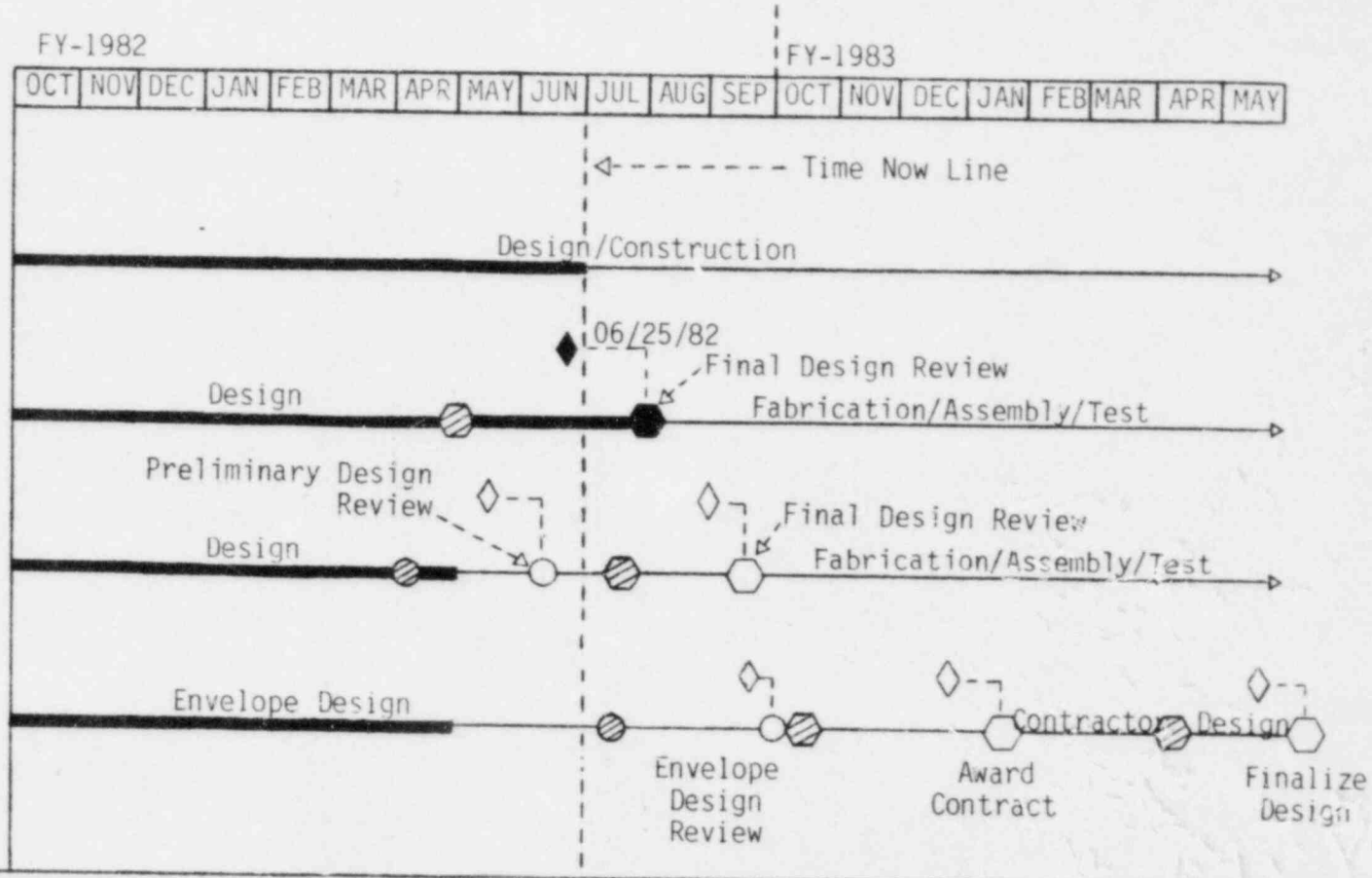
NOTES: Instrument installation support and checkout is complete except resolution of problems encountered in checkout testing.

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 PROGRAM
UPTF Projects

June 1982



NOTES: * The slip in the Turbine Meters schedule is due to addition of prototype bearing work as documented by CCB 3D 82-05.

1. 189 A6100 - 3D Technical Support and Instrumentation

2. Scheduled Milestones for June 1982

Node	Description	Due Date	Actual Date
	Installation support (support at PKL Facility for installation of the CLLMS)	3-1-82*	
	* Rescheduled for June 25, 1982. Expected completion is July 2, 1982, based on minor modifications requirements determined during checkout tests.		
	Complete installation and checkout support for the PKL spool pieces (San Ramon office)	3-1-82*	
	* Rescheduled for June 25, 1982. Expected completion date is July 2, 1982, due to problems encountered with the densitometer detectors during checkout and tests.		
	Pipe flowmeter drag disk absolute pressure and temperature systems final design review	7-30-82	6-25-82

3. Summary of Work Performed in June 1982

A. Federal Republic of Germany (FRG) Primary Coolant Loop Instrument

1. Conductivity Liquid Level Measurement System - 453051000

The PKL CLLMS was installed in the PKL facility and the check out tests were completed. Installation support was provided by EG&G San Ramon personnel. Some troubleshooting was necessary on the system and minor modifications will be needed for fine tuning.

2. Spool Pieces - 453052000

Spool pieces were installed in the PKL facility and support was provided by San Ramon personnel during installation and checkout. Problems encountered with the densitometer system necessitated sending two detector units back to ORTEC Paris for repairs.

3. Summary of Work Performed in June 1982 (Continued)

B. FRG Upper Plenum Test Facility

1. Drag Disks - 453071000

A final design review of the drag-disk, temperature, and absolute pressure systems was held on 6-25-82. The drag-disk electronic fabrication is approximately 55% completed. Machining of parts for the drag-disk coil assemblies is approximately 45% completed.

2. Gamma Densitometers - 453072000

The design of the test vessel fixture for the optimization tests was completed and fabrication of the vessel and fixture has been initiated.

3. Turbine Meters - 453073000

The design of a prototype turbine capsule with a graphite bearing was completed and procurement of all required materials and components initiated. A subcontract for testing the prototype is being negotiated.

C. Japan Atomic Energy Research Institution (JAERI) Cylindrical Core Test Facility Core II Instruments

1. Spool Piece and Drag Disk Refurbishment - 453082000

No activity.

D. JAERI Slab Core Test Facility

1. Core-II Refurbishment - 453091000

Refurbishment of the conductivity probes was 5% completed.

2. Core-III Refurbishment - 453092000

Information was relayed to JAERI concerning the time and requirements to refurbish the upper plenum and downcomer fluid distribution grid.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

A. FRG Primary Coolant Loop Instruments

1. Conductivity Liquid Level Measurement System - 453051000

Modifications will be made to the CLLMS system as required to improve performance and final buy off of the system is expected to be completed. This effort will be performed by EG&G San Ramon personnel.

2. Spool Pieces - 453052000

Checkout and final buy off of the spool pieces at PKL will be completed following repair of the densitometer detectors and cleanup of minor problems in the system software.

B. FRG Upper Plenum Test Facility

1. Drag Disks - 453071000

A final design review report and a resolution of action items report will be issued. The drag-disk electronic fabrication will progress to approximately 70% completion. Machining of parts for the drag-disk coil assemblies will be approximately 60% completed.

2. Gamma Densitometer - 453072000

Fabrication of the optimization test vessel and fixture will be completed. Setup of hardware and electronics for the otpimization tests will be completed.

3. Turbine Meters - 453073000

Negotiations for a subcontract for testing the prototype turbine capsule will be completed. The design will be completed on the envelope for the UPTF downcomer turbines and fabrication of the bottom support pins for the UPTF turbine stalks will be completed.

C. JAERI Cylindrical Core Test Facility Core II Instruments

1. Spool Piece and Drag Disk Refurbishment - 453082000

No activity planned.

5. Summary of Work to be Performed in July 1982 (Continued)

D. JAERI Slab Core Test Facility

1. Core-II Refurbishment - 453091000

Refurbishment of the conductivity probes will continue. There is a possibility some new conductivity probes, left over from another project, can be obtained.

2. Core-III Refurbishment - 453092000

No activity planned.

6. Problems and Potential Problems

A. FRG PKL Spool Pieces

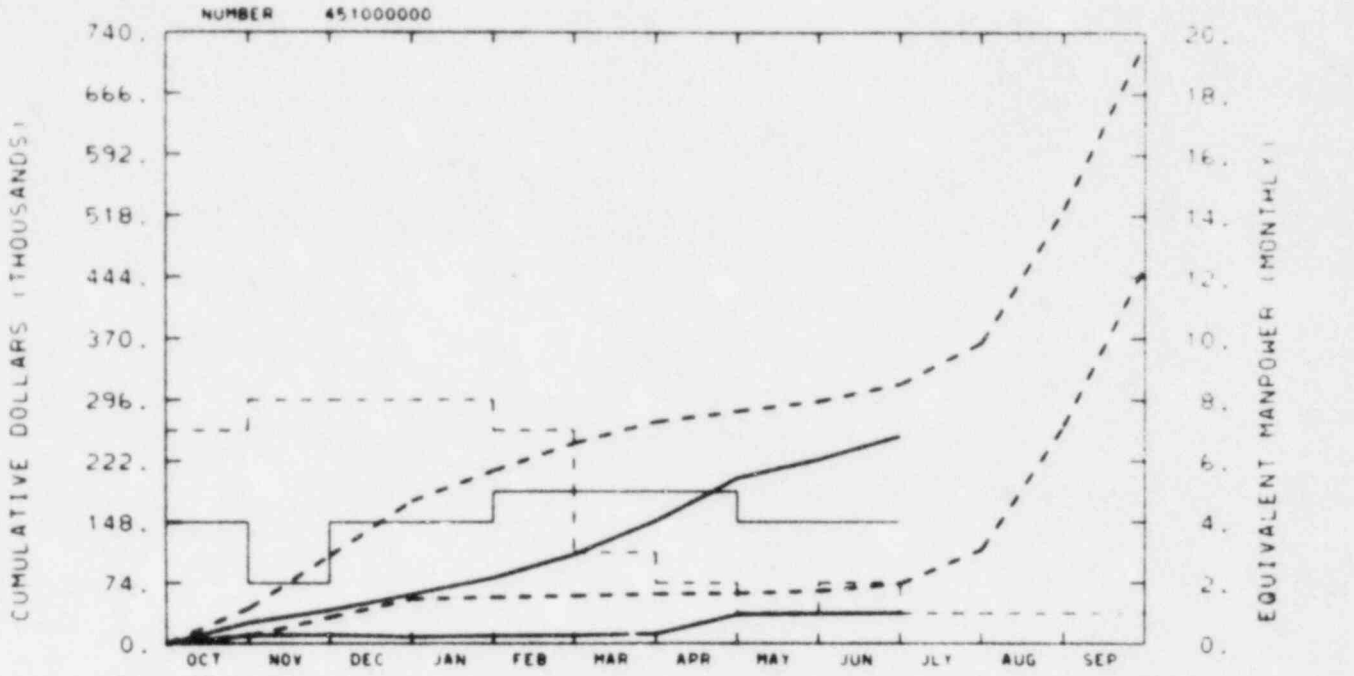
Problems encountered during instrument and system checkout tests at PKL, including the failure of two detectors, will require a representative from EG&G San Ramon Office to remain at the PKL facility for an additional week.

RESPONSIBLE MANAGER
R COLLINS

EG&G IDAHO INC.

A6282 FLUID DISTRIBUTION GRIDS

NUMBER 451000000



TOTAL PROGRAM

BUDGET	43	107	174	210	243	269	282	294	315	364	526	730
ACTUAL	26	41	60	80	108	149	201	224	252			

MATERIAL

BUDGET	10	32	55	57	58	61	61	64	73	114	264	458
ACTUAL	10	11	8	10	10	12	36	37	37			

MANPOWER

BUDGET	7	8	8	8	7	3	2	1	2	1	1	1
ACTUAL	4	2	4	4	5	5	5	4	4			

BUDGET - - - - - -

ACTUAL _____

A6282

YTD VARIANCE: 63 (20%)

As reported in previous months, work scope for CCTF color display terminal and UPTF FDG continues to run behind schedule. The CCTF work scope has accelerated significantly with no anticipated year-end underrun. UPTF FDG work scope is expected to underrun at year-end, however, the majority of this underrun is associated with Purchase Orders for optical probe material which will be committed but not costed.

CCB 3D 82-06 was submitted to DOE-ID for review and approval.

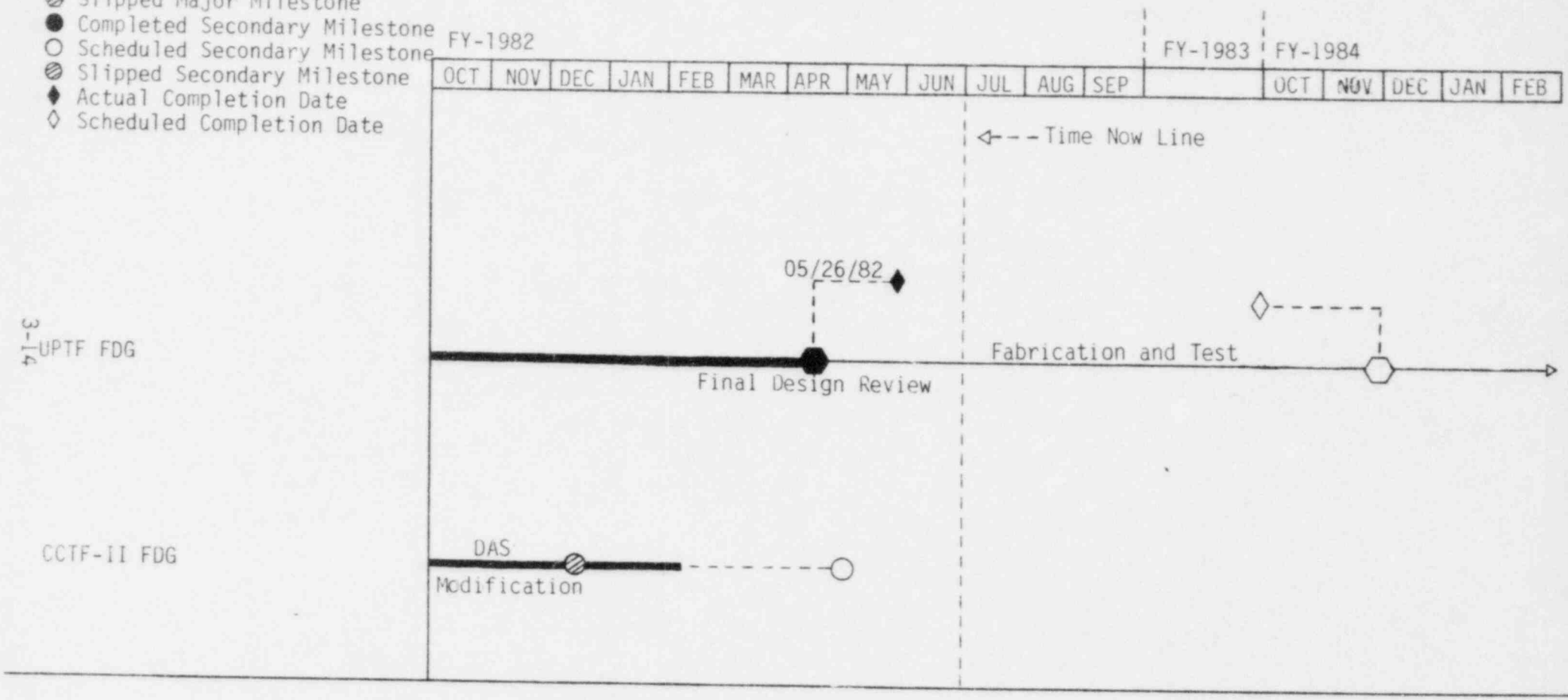
LEGEND

- 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 PROGRAM

Fluid Distribution Grids

June 1982



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

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

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

A. JAERI Cylindrical Core Test Facility Core-II Fluid Distribution - 451012000

Downcomer regional dry fraction plots to plotter with data averaging was completed. Data averaging to bubble plot routine was added. The sensor routine to print sensor file, modify status of sensor, and replace sensor for use in FDG display was completed. Bubble plots on actual data were plotted. The software design is 40% complete. A CCB was prepared for the increase in hours to complete the software design.

B. FRG Upper Plenum Test Facility - 451013000

The mechanical and electrical final design review meeting minutes was prepared and issued. A purchase requisition was initiated to procure the optical tips. A specification to procure the optical fiber was completed and given to purchasing. The vendor who is supplying a sample run of Polyimide coating on the optical fiber is having problems in his process. Changes from the mechanical design review have been incorporated into the drawings.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

A. JAERI Cylindrical Core Test Facility Core-II Fluid Distribution Grid System - 451012000

The software for the FDG display on the video terminal will commence. The software design will be 50% complete. The CCB to increase the hours to complete the software design will be submitted.

5. Summary of Work to be Performed in July 1982 (Continued)

B. FRG Upper Plenum Test Facility Distribution Grid System - 451013000

An interface meeting with FRG will be held in Germany to resolve some open items. Bid packages will go out for optical tips and fiber. A purchase requisition will be submitted for the stainless steel tubing that will house the optical fibers.

6. Problems and Potential Problems

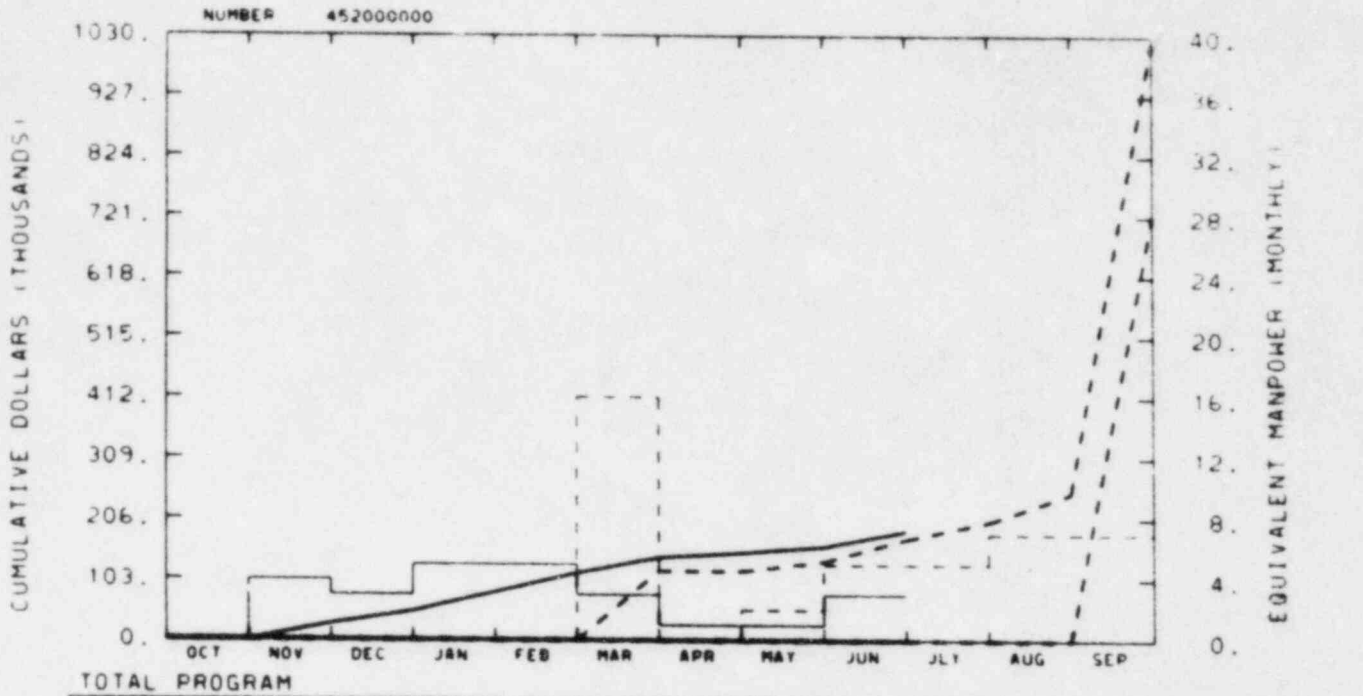
None.

RESPONSIBLE MANAGER
DIVISION

EG&G IDAHO INC.

A6289 UPTF DAS

NUMBER 452000000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	117	117	134	172	202	250	1021
ACTUAL	0	27	49	82	114	141	149	160	186			

MATERIAL

BUDGET	0	0	0	0	0	0	0	0	0	0	0	723
ACTUAL	0	0	0	0	0	0	0	0	0			

MANPOWER

BUDGET	0	0	0	0	0	16	0	2	5	5	7	7
ACTUAL	0	4	3	5	5	3	1	1	3			

BUDGET

ACTUAL

A6289

YTD VARIANCE: <14> (8%)

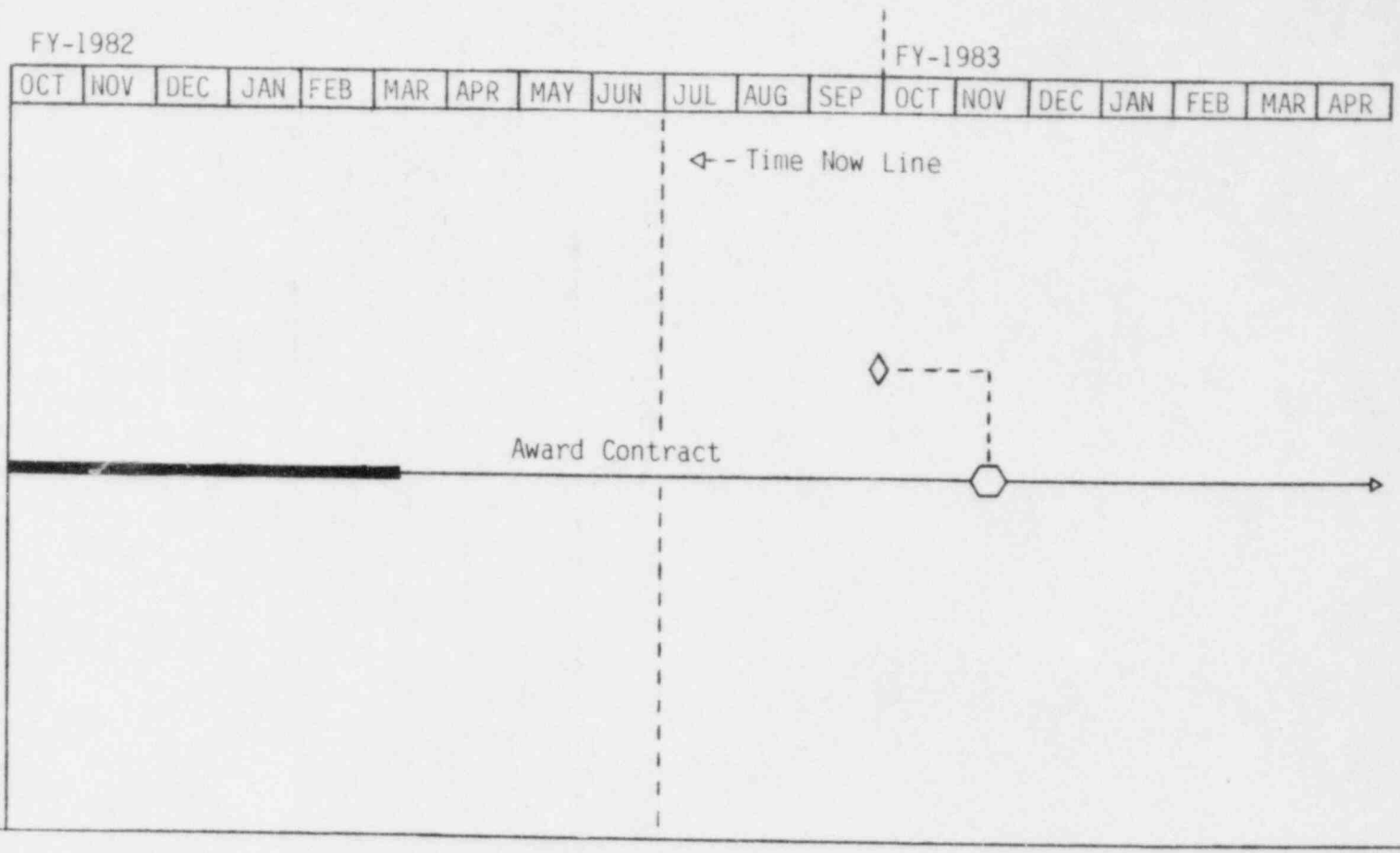
LEGEND

- ● 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 PROGRAM

UPTF Data Acquisition System

June 1982



Data Acquisition System

NOTES: Work scope is under review and redefinition as agreed with NRC and DOE.

1. 189 A6289 - FRG Upper Plenum Test Facility Data Acquisition System

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

An informal design review was held on the UPTF DAS grounding and shielding system. More information on the facility environment is needed from FRG and was requested. A Project Plan was completed and reviewed with project participants. The Sandia CPM networks were reviewed and changes were transmitted to Sandia. A work package was completed except for the cost estimate and work on the cost estimate started. Work started on a new task to investigate and prepare a report on the cost and technical implications of using LOFT equipment in the DAS. About 100 potential suppliers of equipment have received information copies of the main DAS specification and have been asked for comments to help us prepare an RFP. No comments have been received yet.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

The work package, including cost estimate, will be completed. Work will start on the Implementation Plan for the main DAS and the system study for the FDG DAS. As comments are received from potential DAS suppliers the main DAS hardware specification will be revised. The investigation of the LOFT DAS option will be completed.

6. Problems and Potential Problems

None.

2D/3D PROGRAM

CAPITAL EQUIPMENT

2D/3D PROGRAM

CAPITAL EQUIPMENT COST REPORT
(A6295)

(1) Priority Number	(2) Description	(3) EA/WBS Number	(4) Planned Requisition Date	(5) Actual Requisition Date	(6) DOE Authorized Amount	(7) Requisition Value (+ 6%)	(8) P/O Award Date	(9) Outstanding Commitment (+ 6%)	(10) Prior Year Costs	(11) Current Year Costs	(12) Total Costs and Outstanding Commitments	(13) Variance	(14) Status	(15) Estimate At Complete.
Pre FY-1982														
1/80	Instrument Development Data System	9M5992530	05/80	05/80	24,600	24,600	05/80	53	23,515	34	23,602	998	C	23,602

MONTHLY REPORT FOR

JUNE 1982

CODE DEVELOPMENT DIVISION

Walter L. Weaver III for Felix Aguilar

F. Aguilar, Manager

L. P. Morgan

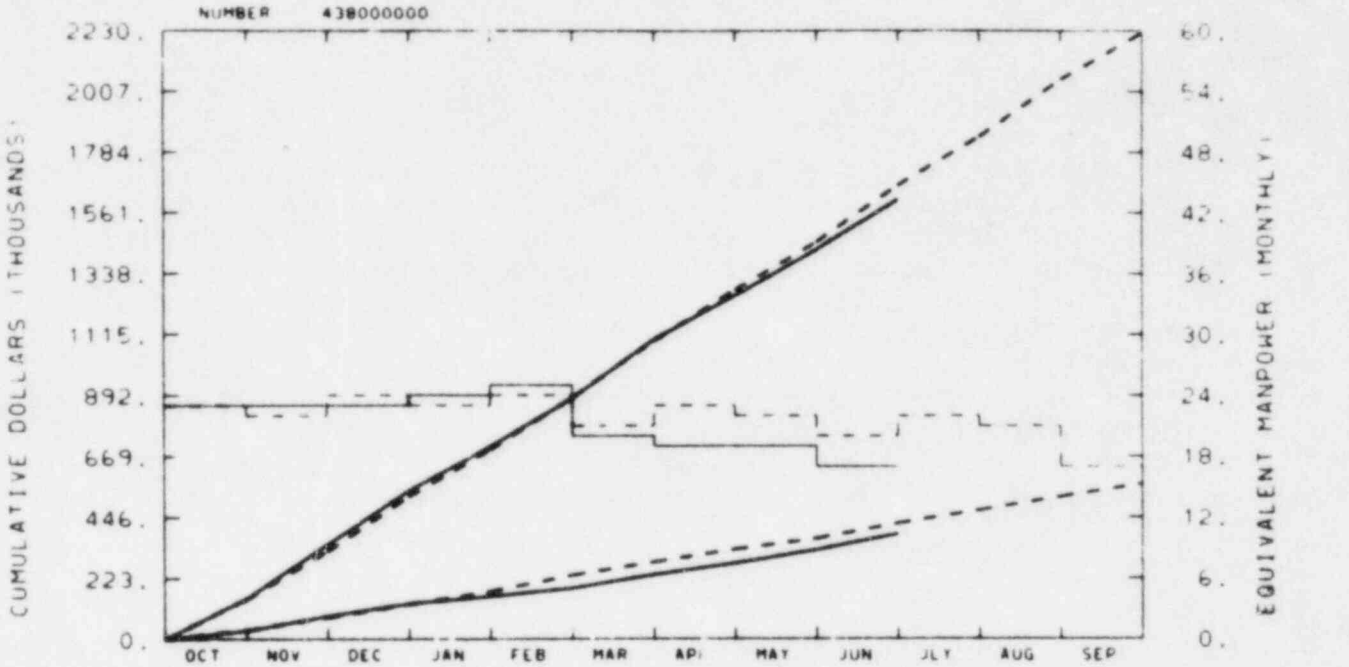
L. Morgan
Plans and Budget Representative

RESPONSIBLE MANAGER
J. AGUILAR

EG&G IDAHO INC.

RES- Code Development

NUMBER 438000000



TOTAL PROGRAM

BUDGET	147	321	522	693	885	1093	1279	1454	1663	1840	2051	2223
ACTUAL	150	347	543	705	882	1097	1259	1427	1611			

MATERIAL

BUDGET	35	79	129	175	234	282	329	368	424	472	522	569
ACTUAL	32	85	131	158	187	237	277	327	386			

MANPOWER

BUDGET	23	22	24	23	24	21	23	22	20	22	21	17
ACTUAL	23	23	23	24	25	20	19	19	17			

BUDGET - - - - - -

ACTUAL ———

YTD VARIANCE: 52 (3%)

Individual cost graphs will give individual explanations.

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

PROGRAM MANAGER'S

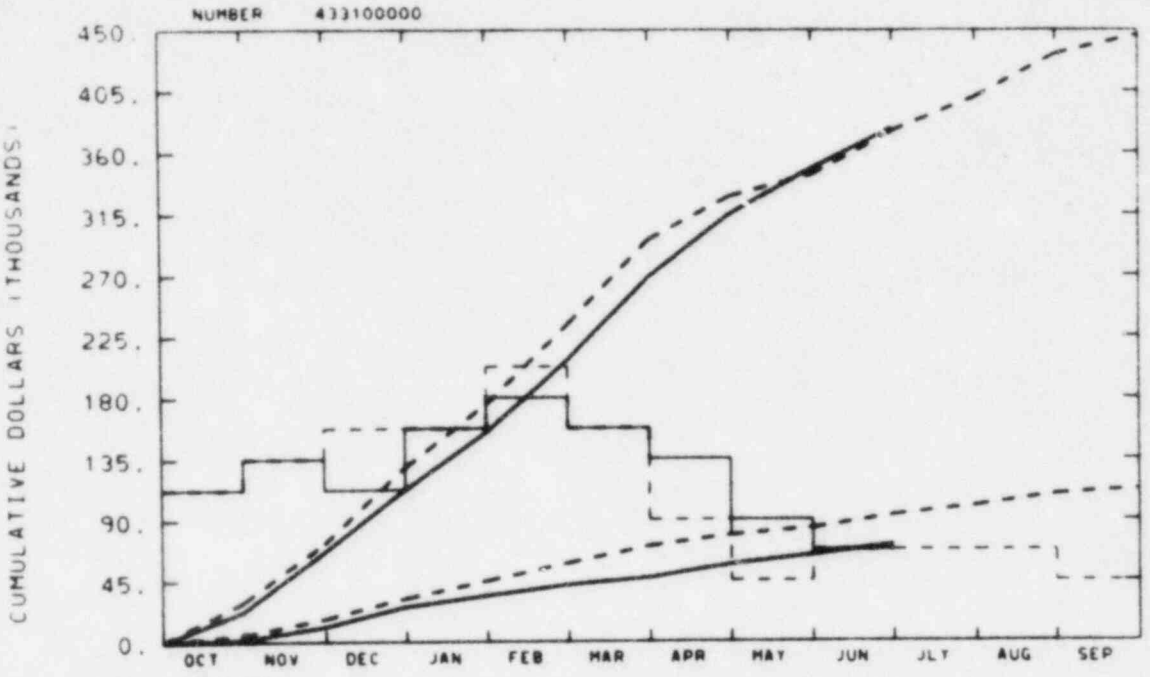
SUMMARY AND HIGHLIGHTS

Checkout and testing of most of the features of the SCDCOMP subcode of SCDAP was completed. A version of this subcode was supplied to NTAP personnel at INEL for performing hydrogen generation calculations for the NRC. A Schedule 189a was prepared for the Integrated Nuclear Plant Analysis Program. The purpose of this activity is to integrate and coordinate the development of mechanistic codes for severe core damage analysis and to provide a code library with which to assess uncertainties in the NRC's risk assessment codes. An interim version of the TRAC-BD1/MOD1 code was supplied to foreign requesters at the direction of the NRC. These include Kraftwerk Union in Germany, EIR in Switzerland, Studsvik in Sweden, and Toshiba and Hitachi in Japan.

EG&G IDAHO INC.

FUEL BEH MOL DEVEL (A6050)

NUMBER 433100000



TOTAL PROGRAM

BUDGET	30	73	129	175	233	296	328	344	375	400	432	447
ACTUAL	23	67	113	155	207	268	315	348	378			

BUDGET - - - - - -

ACTUAL ———

MATERIAL

BUDGET	5	17	32	45	58	71	79	84	93	100	109	113
ACTUAL	2	12	26	34	42	47	57	64	71			

MANPOWER

BUDGET	5	6	7	7	9	7	4	2	3	3	3	2
ACTUAL	5	6	5	7	8	7	6	4	3			

A6050

YTD VARIANCE: <3> (1%)

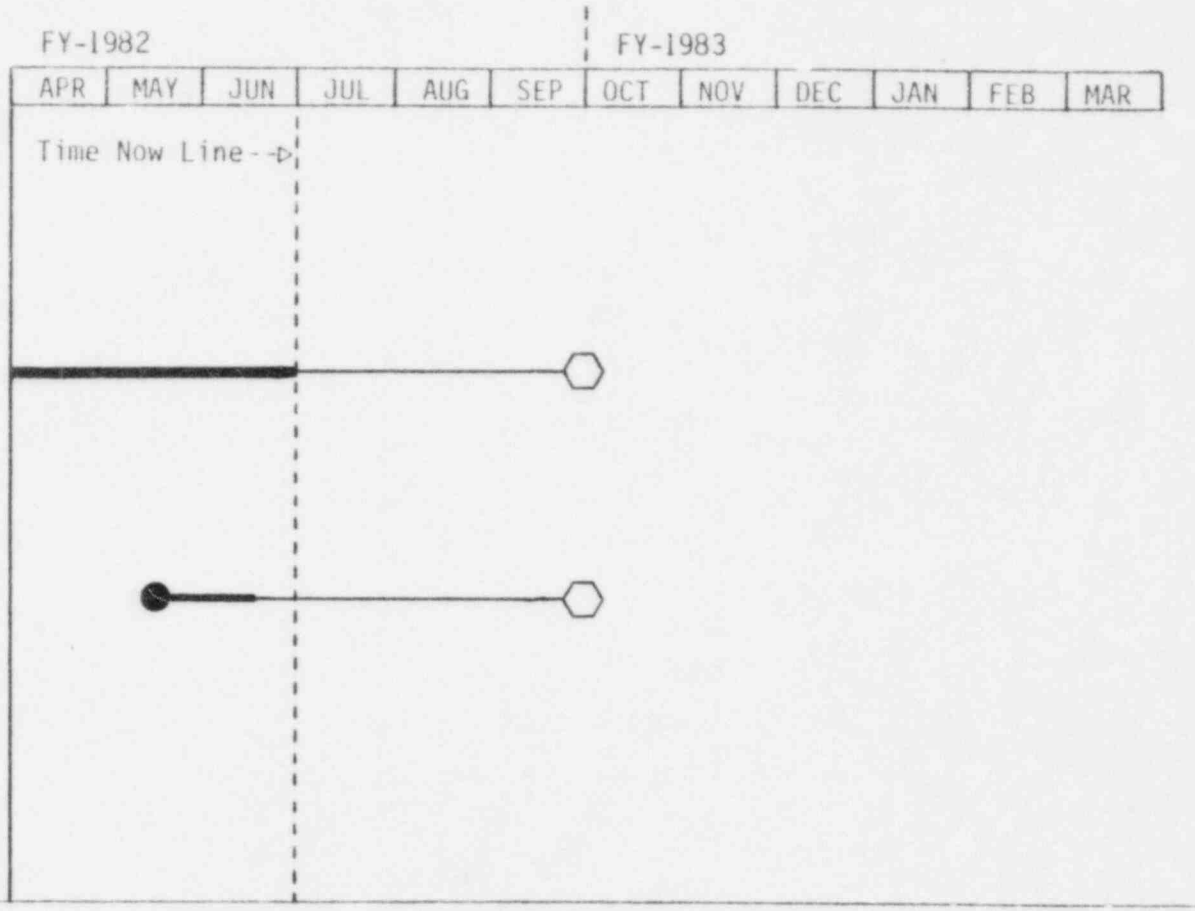
LEGEND

- ● 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

June 1982

Fuel Behavior Model Development (A6050)



NOTES:

1. 189a A6050 - Fuel Behavior Model Development

2. Scheduled Milestones for June 1982

None

3. Summary of Work Performed in June 1982

a. MATPRO

Comments were incorporated into the draft position paper on materials properties data needs for severe core damage code development and experimental analysis. The report is currently being typed and will be issued to the Nuclear Regulatory Commission (NRC) in early July.

b. FRACAS-II

Coding of the axial-radial pellet cladding mechanical interaction (PCMI) model was completed during June. Coding of the trapped-stack model was begun and is progressing ahead of schedule. Coding of this model and testing of both models will continue through July and be completed during early August.

c. FRAP-T6

A recommended set of user inputs and defaults for FRAP-T6 was assembled during June. The code is being updated to reflect these default inputs, and this will be completed during July. The FRAP-T6 version will be sent to the National Energy Software Center (NESC) during July. Work on incorporating the new FASTGRASS version into FRAP-T6 did not begin during June. This work will begin as soon as the Idaho National Engineering Laboratory (INEL) receives a copy of the FASTGRASS code to be incorporated into the FRAPCON-2 code at the Pacific Northwest Laboratories (PNL). A firm date for receiving this version of FASTGRASS is currently under negotiation at PNL.

d. Transient Fuel Behavior Models

All of the remaining design reports for component behavior developed for SCDAP/MODO were issued during June, except for the fission gas release from fuel model report. This report will be issued during July. A revised PARAGRASS model was developed by the Argonne National Laboratory during June for incorporation into the fission gas release from fuel model. (The original PARAGRASS could not be used because its architecture was not compatible with SCDAP.). The new PARAGRASS has been sent to INEL but has not yet been received. It will be included in SCDAP during July and early August.

4. Scheduled Milestones for July 1982

None

5. Summary of Work to be Performed in July 1982

a. MATPRO

The position paper describing materials properties data needs for severe fuel damage code development and experimental analysis will be issued to the Department of Energy and NRC. This will include MATPRO work during FY-1982.

b. FRACAS-II

Coding and testing of the trapped-stack model will continue through July and will be completed during early August. Testing of the axial-radial PCMI model will also continue during July and will be completed during early August.

c. FRAP-T6

The new version of FRAP-T6, which includes updates from code maintenance and a recommended set of inputs and defaults, will be sent to NESC. The CHF logic in FRAP-T6 will be corrected for consistency with RELAP4/MOD7. The stress corrosion cracking model will be reviewed to isolate a problem in predicting cladding failure probability during overpower ramps that were detected in the independent assessment of FRAP-T6.

d. Transient Fuel Behavior Models

The report describing the fission gas release from fuel model will be issued. Work will begin on incorporating PARAGRASS into this model. This effort will continue into August.

6. Problems and Potential Problems

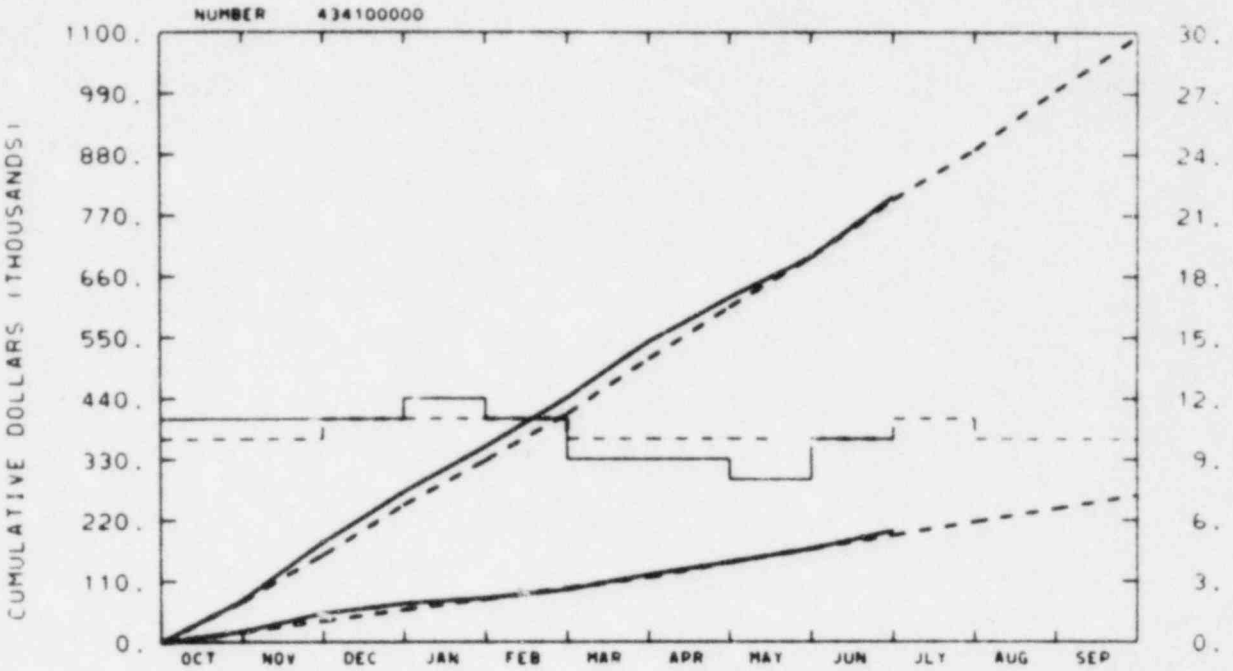
Actions have been taken to minimize impact of a personnel termination on completion of the FRAP-T6 model update task by the September 30, 1982 milestone date. All work has been reassigned except for the correction of the cladding irradiation annealing model. Efforts are continuing to find personnel to work this task during FY-1982.

RESPONSIBLE
NAGER
AGUILAR

EG&G IDAHO INC.

LOSS-OF-COLNT ACC (A6052)

NUMBER 434100000



TOTAL PROGRAM

BUDGET	74	158	248	328	412	511	605	695	799	889	996	1093
ACTUAL	76	181	272	353	441	542	622	695	804			

BUDGET - - - - - -

ACTUAL ———

MATERIAL

BUDGET	19	39	58	78	97	117	144	168	192	217	241	265
ACTUAL	20	52	70	79	95	122	144	168	201			

MANPOWER

BUDGET	10	10	11	11	11	10	10	10	10	11	10	10
ACTUAL	11	11	11	12	11	9	9	8	10			

A6052

YTD VARIANCE: <5> (1%)

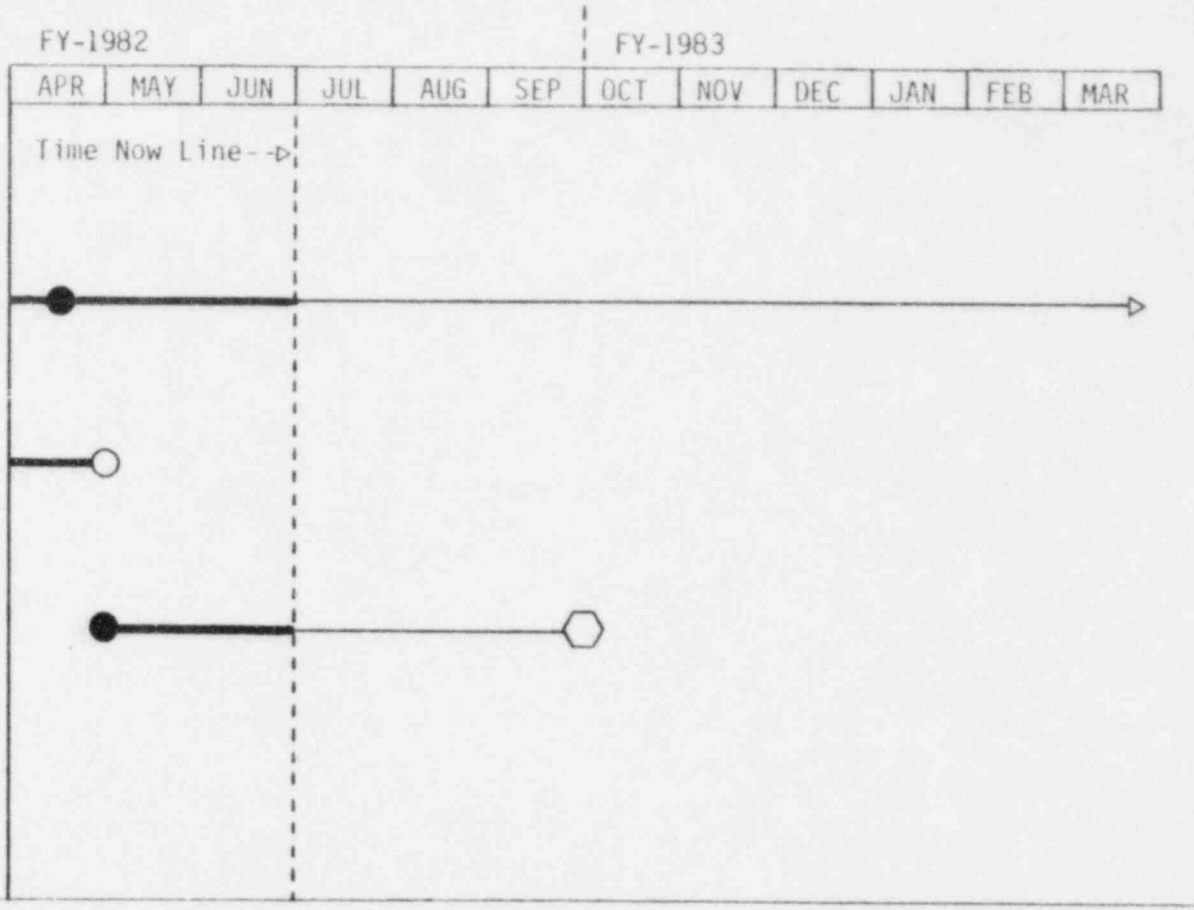
LEGEND

- ● 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)

June 1982



NOTES: The interim secondary milestone, Limited Operational Transient Model Development, consists of development of the controls package and BOP models. The control systems package is complete; the BOP model is delayed. The completion of the BOP model will be rescheduled after the June 3, 1982, BOP workshop. Barring changes in the planned modeling approach resulting from the workshop, the BOP model will be completed well in advance of the October 1, 1982, major milestone. Version 12 has been released to NRC contractors and provides a "limited" operational transient capability. The lack of a BOP model in Version 12 has no impact on related NRC programs. Progress on the BOP task will be tracked against the October 1 major milestone.

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

2. Scheduled Milestones for June 1982

None

3. Summary of Work Performed in June 1982

a. Boiling Water Reactor (BWR) TRAC Development

The Balance-of-Plant Workshop was held on June 3. Organizations represented at the Workshop were the TRAC-BWR and RELAP5 Code Development groups at the Idaho National Engineering Laboratory, the TRAC-BWR Code Development group at Los Alamos National Laboratory, the TRAC-BWR Code Development group at the General Electric Company, the MINET Code Development group from the Brookhaven National Laboratory (BNL), the Electric Power Research Institute, and Energy Incorporated. Minutes of the Workshop have been prepared and have been circulated for comments by the attendees. The TRAC-BWR Workshop scheduled for July 8-9 was postponed at the request of BNL. A presentation was prepared and made to the Emergency Core Cooling System Subcommittee of the Advisory Committee on Reactor Safety on June 17 in Idaho Falls.

TRAC-BWR, Version TRAC1B002, was released to several foreign requesters at the direction of the Nuclear Regulatory Commission (NRC). These included Toshiba and Hitachi in Japan, Kraftwerk Union in Germany, Studsvik in Sweden, and EIR in Switzerland. Work continued on the committed TRAC-BD1/MOD1 as scheduled: the balance-of-plant models, the containment model, the multiple CHAN option, the Brown's Ferry developmental assessment calculations for the control systems model, and the BWR initialization. Work on the multiple CHAN option and the Brown's Ferry developmental assessment calculation was completed and draft completion reports are being prepared. An Official Version 13 of TRAC-BWR was created. This version converted TRAC-BWR to FORTRAN V. The developmental assessment of Version 12 was completed and a draft report describing the results was prepared. Work continued of trying to correct the problems with the interfacial shear at high void fraction and low pressure.

b. RELAP4/MOD5 and MOD7

"Level 1" maintenance was provided.

4. Scheduled Milestones for July 1982

None

5. Summary of Work to be Performed in July 1982

a. Boiling Water Reactor (BWR) TRAC Development

The final minutes of the Balance-of-Plant Workshop will be sent to all participants and the NRC. The completion reports for the multiple CHAN option and the Brown's Ferry developmental assessment calculations will be reviewed, revised, and issued. The BWR initialization task will be completed, and a completion report will be written, reviewed, and issued. Work will continue on the remaining committed work scope: the containment model and the balance-of-plant models. A candidate Version 14 containing the multiple CHAN option will be created and testing of this version will begin.

b. RELAP4

"Level 1" maintenance will be provided.

6. Problems and Potential Problems

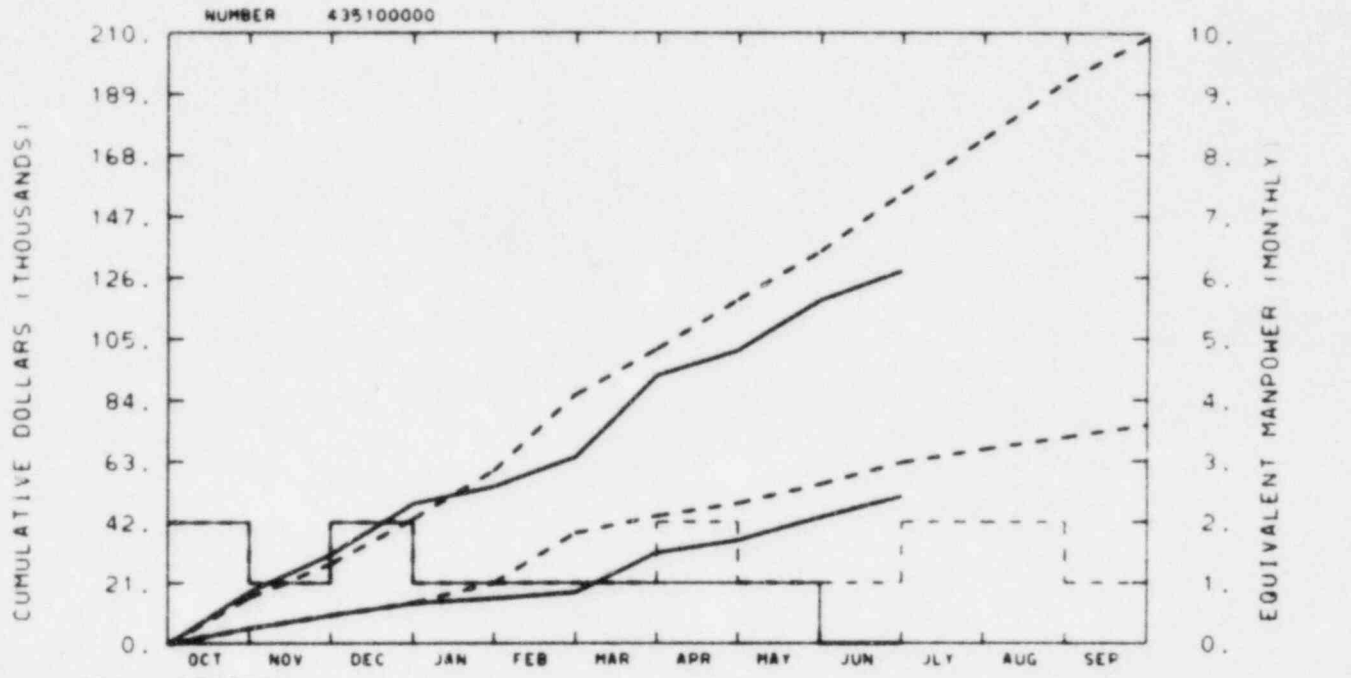
None

RESPONSIBLE MANAGER
[redacted]UILAR

EG&G IDAHO INC.

HET TRAN CORRLATN (A6278)

NUMBER 435100000



TOTAL PROGRAM

BUDGET	16	28	43	60	86	101	118	135	155	174	194	209
ACTUAL	18	31	48	54	64	92	101	118	128			

MATERIAL

BUDGET	5	10	14	21	38	44	48	55	62	67	71	75
ACTUAL	5	10	14	16	18	31	36	44	51			

MANPOWER

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

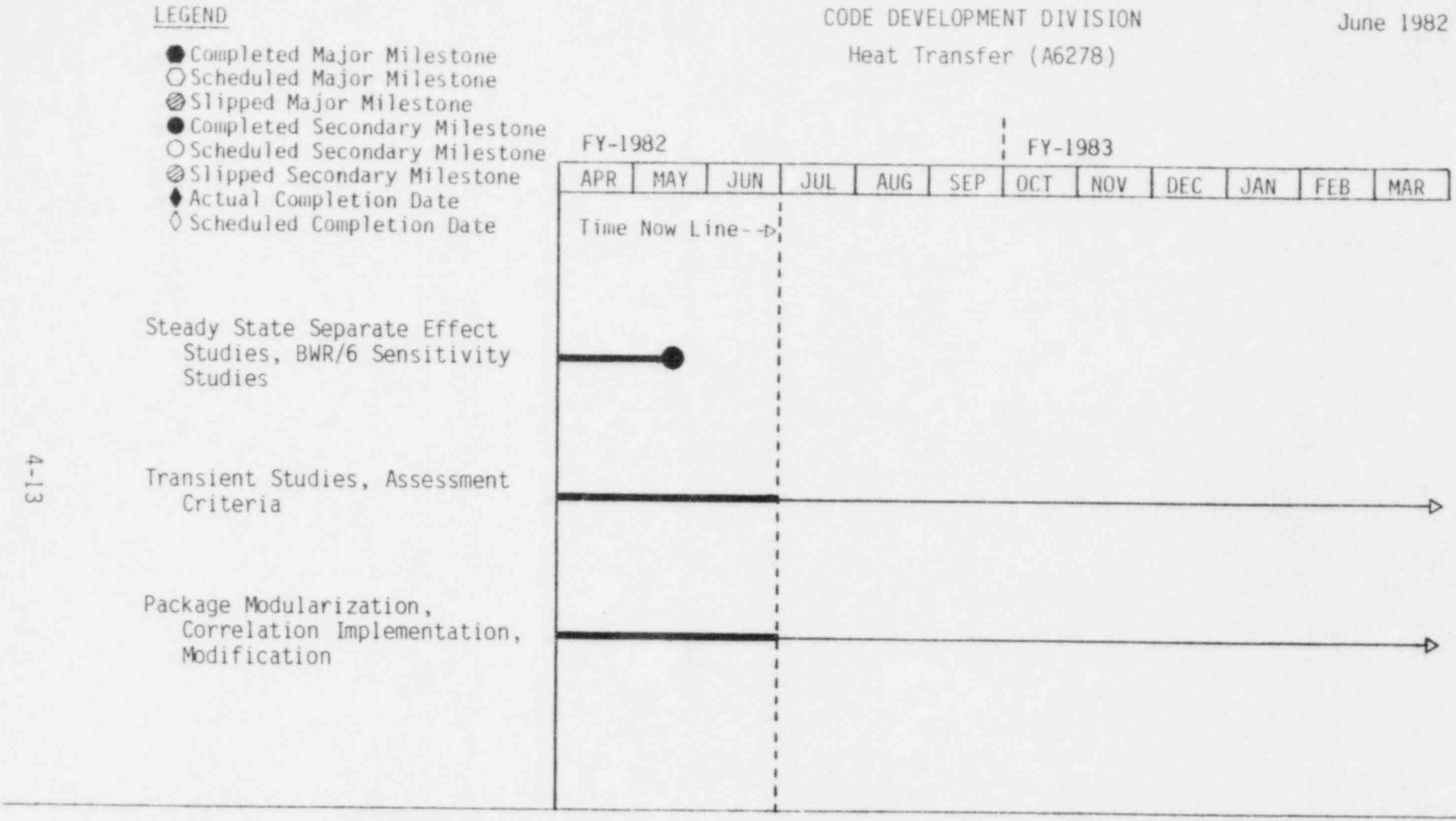
BUDGET - - - - - -

ACTUAL ———

A6278

YTD VARIANCE: 27 (17%)

The variance is composed of labor ($15K), computer ($7K), and miscellaneous material ($3K). The budget has been impacted by the postponement of a portion of the transient sensitivity study (see Potential Problems). A partial recovery should be made by year-end as the high pressure sensitivity study proceeds. The funds for the low pressure sensitivity study will be reserved for that task and expended once the problems with the low pressure interfacial shear have been resolved. They will be carried over into FY-1983 if necessary. Finally, funds reserved for technical assistance to the NRC have not been expended as yet. Any funds reserved for NRC technical assistance remaining at the end of the fiscal year will also be carried over into FY-1983.



NOTES: The TRAC BWR Heat Transfer milestone chart is adapted from FA-68-81 and has been revised as per FA-154-81.

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

2. Scheduled Milestones for June 1982

None

3. Summary of Work Performed in June 1982

The transient sensitivity continued with the calculation of base cases for the high pressure tests. These calculations were performed with Official Version 12 and consisted of the THTF Test 3.06.6B (film boiling), and the ATLAS 16-Rod Test (transient CHF). The problem with the interfacial shear identified in the low pressure Lehigh post-CHF test analysis continued to be investigated with no satisfactory resolution of the problem. This problem has impacted the completion of the transient sensitivity study.

4. Scheduled Milestones for July 1982

None

5. Summary of Work to be Performed in July 1982

The high pressure transient sensitivity study will continue. Investigation of the interfacial shear problem at low pressure will continue. This problem will be discussed at a workshop on the post-CHF heat transfer experiments to be held at the Idaho National Engineering Laboratory on July 27.

6. Problems and Potential Problems

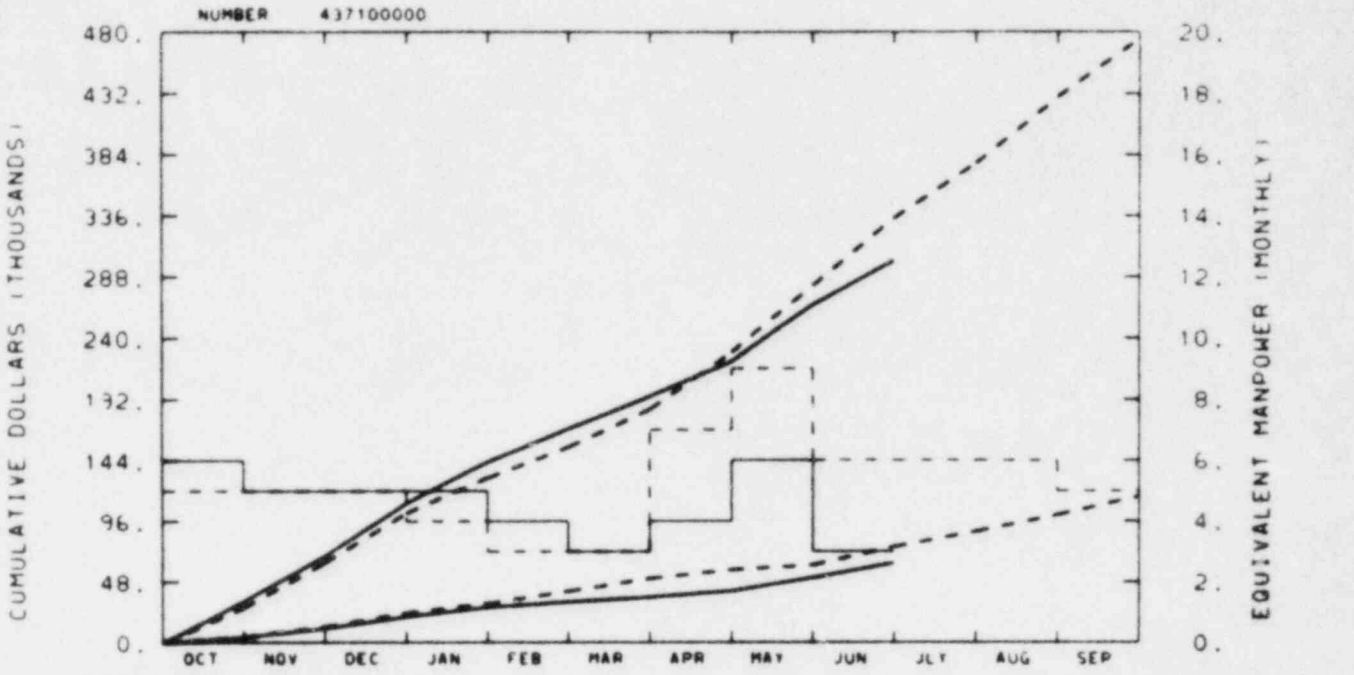
The interfacial drag problem revealed by the Lehigh data analysis has impacted the completion of the transient sensitivity study. As a result, we are proposing that this task be divided into two separate tasks - a high pressure transient sensitivity study and a low pressure transient sensitivity study. The high pressure transient sensitivity study will proceed as scheduled, but the low pressure portion of the transient sensitivity study will have to be postponed until the low pressure drag problem has been resolved. Other heat transfer problems related to the calculations of the low pressure reflood type transients will be investigated while the interfacial drag problem is examined. The workshop to be held on July 27 will examine the drag problem and recommendations regarding the resolution of the interfacial drag problem, and the rescheduling of the low pressure transient sensitivity study will be made after the workshop.

RESPONSIBLE
AGER
AGUILAR

EG&G IDAHO INC.

MDL SEV FUEL DAM (A6360)

NUMBER 437100000



TOTAL PROGRAM

BUDGET	28	63	102	130	154	184	229	281	334	377	430	475
ACTUAL	33	69	110	143	169	194	222	266	301			

MATERIAL

BUDGET	5	13	24	31	41	51	58	61	76	88	101	116
ACTUAL	5	12	21	28	32	36	41	51	63			

MANPOWER

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

BUDGET

ACTUAL

A6360

YTD VARIANCE: 33 (10%)

The $33K underrun consists of a $20K underrun in labor and a $13K underrun in material, most of which consists of underruns in travel and computer. Plans include increasing the staffing level during July and August, which should resolve the labor underrun by year-end close. The underrun in material does not represent a problem for closing on budget by year-end.

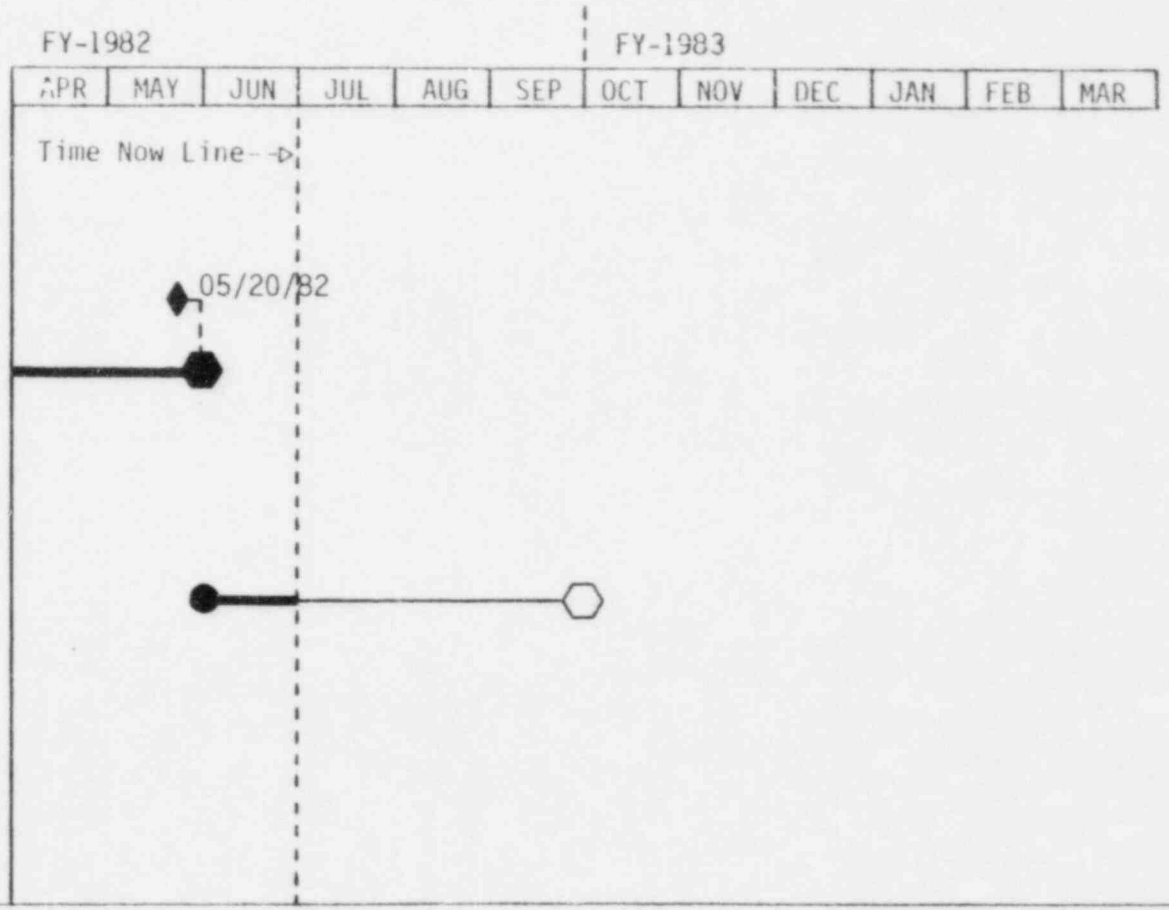
CODE DEVELOPMENT DIVISION

June 1982

Modeling Severe Fuel Damage (A6360)

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 A6360 - Modeling Severe Fuel Damage

2. Scheduled Milestones for June 1982

Node	Description	Due Date	Actual Date
FA-12-82	Build SCDAP/MODO Library	06/01/82	05/20/82 FA-56-82

3. Summary of Work Performed in June 1982

a. Debris Transition Model

Preparation of the debris transition model continued during June. The report will be issued during July.

b. SCDAP Checkout and Testing

Checkout of the SCDCOMP subcode was completed except for the ballooning, control rod, axial fuel relocation, and fragmented debris formation features. These features will be exercised during July. A version of SCDCOMP was provided to Code Assessment personnel for performing hydrogen generation calculations for the Nuclear Regulatory Commission. Support for this activity will continue through early July.

c. SCDBUND Checkout and Testing

Set up of a deck to check SCDBUND using the PBF SFD-ST test geometry and boundary conditions was completed. Testing of SCDBUND will begin during July and be completed during early August.

d. SCDAP/MODO Checkout and Testing

A checkout and testing plan was formulated and coordinated with Code Assessment personnel. This activity will continue through September 1982. Work was initiated during June to create SCDAP/MODO/Version 2. This version will include corrected deficiencies found in SCDCOMP and in the TRAC routines utilized by SCDAP/MODO.

4. Scheduled Milestones for July 1982

None

5. Summary of Work to be Performed in July 1982

a. Debris Transition Model

Debris transition model description report will be issued during July.

b. SCDCOMP Checkout and Testing

Checkout of SCDCOMP will be completed by exercising the ballooning, control rod, axial fuel relocation and fragmented debris formation features. Input decks for these test cases (MARCH code simulation of core uncovery, a simulation of PBF SFD-ST, and an adiabatic heatup) will be assembled during July. These calculations will be completed during August. Support to Code Assessment on the hydrogen generation calculations will continue through early July.

c. SCDBUND Checkout and Testing

An input routine will be developed during July so that SCDBUND can be checked independently of SCDAP/MODO. Checkout using the SFD-ST case, assembled during June, will be completed during July. The SCDBUND subcode will be fully functional by early August.

d. SCDAP/MODO Checkout and Testing

SCDAP/MODO/Version 2 will be created. Testing of SCDAP/MODO will be at a low level during July while SCDBUND and SCDCOMP checkouts will be completed. During August, SCDAP/MODO will be made fully functional and, during September, used to perform a variety of severe accident calculations.

6. Problems and Potential Problems

None

CODE DEVELOPMENT DIVISION

CAPITAL EQUIPMENT

CODE DEVELOPMENT DIVISION

CAPITAL EQUIPMENT COST REPORT
(A6094)

(1) Priority Number	(2) Description	(3) EA/WBS Number	(4) Planned Requisition Date	(5) Actual Requisition Date	(6) DOE Authorized Amount	(7) Requisition Value (+ 6%)	(8) P/O Award Date	(9) Outstanding Commitment (+ 6%)	(10) Prior Year Costs	(11) Current Year Costs	(12) Total Costs and Outstanding Commitments	(13) Variance	(14) Status	(15) Estimate At Complete.
Pre FY-1982														
1/80	ADPE Item	9SB992740	06/80	06/80	10,000	10,000	07/80	0	11,468	0	11,468	<1,468>		
1/81	Fuel Model Development Analysis Tool	9SB810100	05/81	06/81	10,000	6,569	-	0	1,937	4,632	6,569	3,431		
	TOTAL				20,000	16,569		0	13,405	4,632	18,037	1,963		20,000

CODE DEVELOPMENT DIVISION

CAPITAL EQUIPMENT COST REPORT
(A6109)

(1) Priority Number	(2) Description	(3) EA/WBS Number	(4) Planned Requisition Date	(5) Actual Requisition Date	(6) DOE Authorized Amount	(7) Requisition Value (+ 6%)	(8) DOE Award Date	(9) Outstanding Commitment (+ 6%)	(10) Prior Year Costs	(11) Current Year Costs	(12) Total Costs and Outstanding Commitments	(13) Variance	(14) Status	(15) Estimate At Complete.
Pre FY-1982														
1/79	O/L S/A Plotting System	9SA990240	08/79	08/79	27,906	0	-	0	21,351	1,937	23,288	4,618		27,906

MONTHLY REPORT FOR

JUNE 1982

NRC TECHNICAL ASSISTANCE PROGRAM DIVISION

B. F. Saffell, Jr., Manager

E. L. Pierson
Plans and Budget Representative

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

A6039 The evaluation of the FLECHT-SEASET reflood data was completed.

A6354 A final plan to analyze Combustion Engineering (CE) CESSAR-80 plant designs in-depth based on the Reactor Safety Study Methods Application Program (RSSMAP) Calvert Cliffs study was developed.

A6353 The Kuosheng safety relief valve discharge and piping vibrational test data reduction task continued. Temperature histories through pipe walls were calculated, thermal drift corrections were made for both Bechtel and Nutech experimental data, and initial comparisons of experimental and analytical results were completed. This project is about 90% complete.

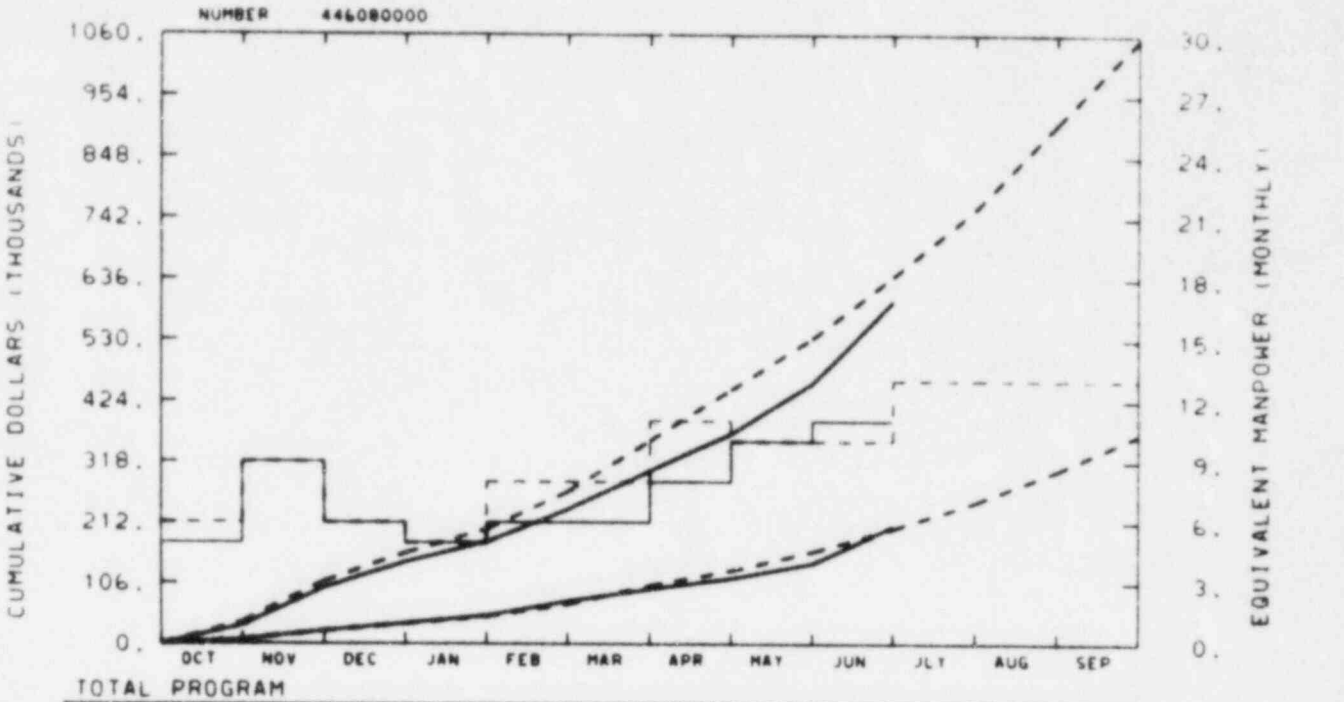
A6306 Seismic testing at the German Heiss Dampf Reaktor (HDR) was completed June 19, 1982; both test equipment and test personnel returned to the United States on June 25, 1982. The testing was completed as planned and on schedule in spite of minor equipment malfunctions during the tests. This test data will be reduced to illustrate the frequencies, damping, and mode shapes as functions of test variables and structural types.

RESPONSIBLE MANAGER
W. F. SAFFELL

EG&G IDAHO INC.

TECHNICAL SURVEILLANCE A6039

NUMBER 446080000



TOTAL PROGRAM

BUDGET	38	110	159	200	265	355	443	533	641	758	906	1053
ACTUAL	32	98	143	178	234	302	367	455	598			

MATERIAL

BUDGET	7	23	36	48	69	102	128	161	202	248	303	366
ACTUAL	7	23	36	50	75	96	115	141	206			

MANPOWER

BUDGET	6	9	6	5	8	8	11	10	10	13	13	13
ACTUAL	5	9	6	5	6	6	8	10	11			

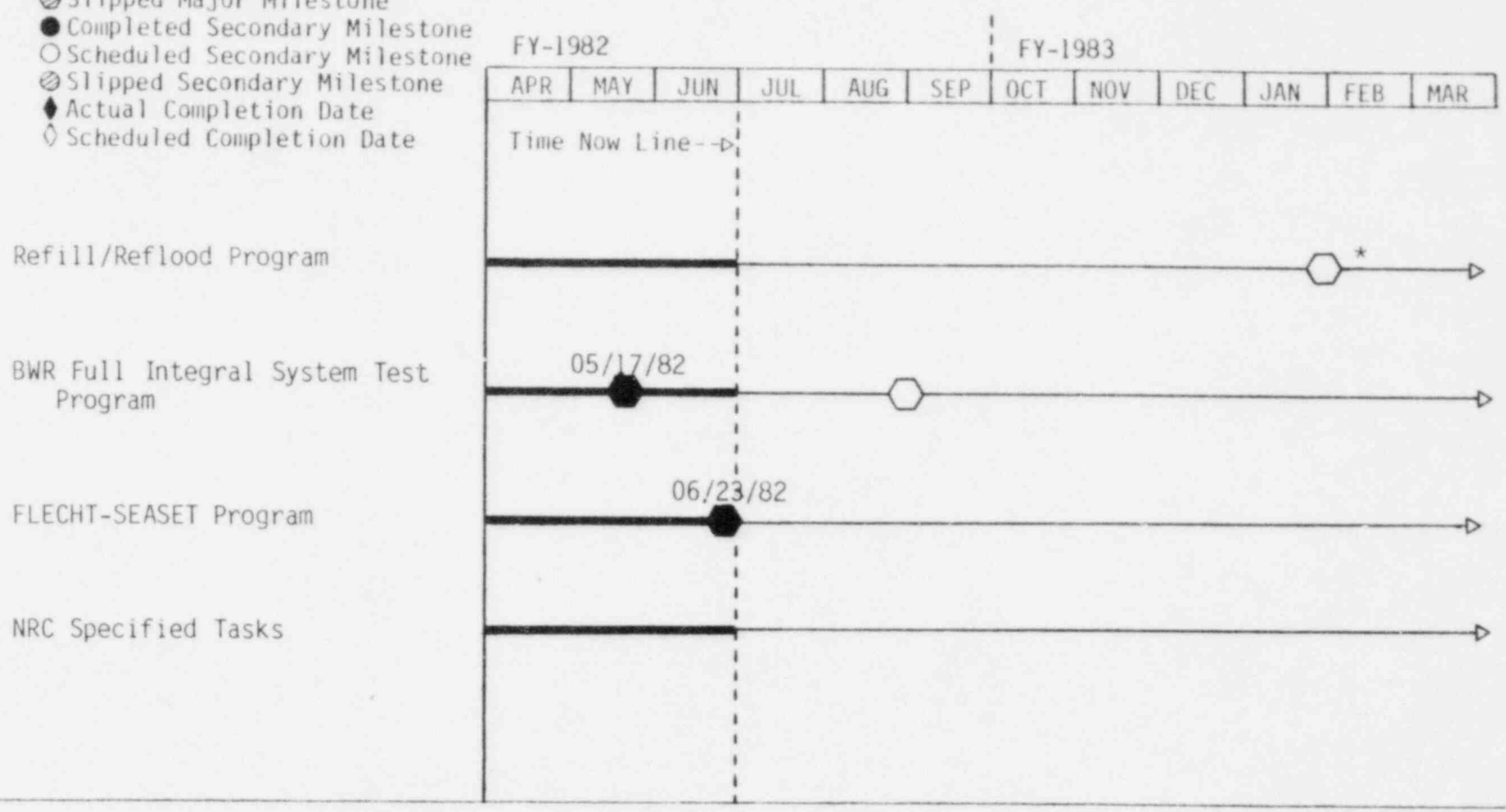
A6039

YTD VARIANCE: 43 (7%)

The underrun reflects delays in receiving necessary experimental data in the FLECHT-SEASET and BWR Refill/Reflood programs. With NRC/DOE concurrence, there will be a planned carryover in FLECHT-SEASET to cover identified, but postponed work. Resolution of the BWR Refill/Reflood work scope is pending decisions between NRC and GE now in progress.

NRC TECHNICAL ASSISTANCE PROGRAM DIVISION June 1982

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



NOTES: * At the June 1982 Program Management Group meeting is was determined General Electric will not complete transmittal of the Single Heated Bundle data tapes before August 31, 1982. Thus, DOE/NRC has directed EG&G Idaho to postpone completion of the Single Heated Bundle data analysis to FY-1983.

189a A6039

1. INEL Technical Support to NRC for Industry Cooperative Programs

2. Scheduled Milestones for June 1982

Description	Due Date	Actual Date
Reflood Data Evaluation	6-30-82T	6-23-82C Saff-255-82

3. Summary of Work Performed in June 1982

Boiling Water Reactor (BWR) Refill/Reflood Program: Personnel participated in the Program Management Group (PMG) meeting. At that meeting it was determined the Single Heated Bundle (SHB) experimental data tapes would not be available before August 31, 1982, therefore, completion of the SHB data analysis will be postponed to FY-1983, at PMG direction.

BWR Full Integral Simulation Test (FIST) Program: Personnel participated in the PMG meeting. Work continued on: (a) data reduction software, (b) automated data qualification (ADQ) software, and (c) gamma densitometer design. The BWR/6 scaling calculations were essentially completed and the results made available to General Electric (GE). Idaho National Engineering Laboratory is awaiting the results from the companion FIST calculations being performed by GE. These calculations must be completed in July if the program is to complete and document the scaling study by August 30, 1982 as scheduled.

Full Length Emergency Cooling Heat Transfer-System Effects and Separate Effects (FLECHT-SEASET) Program: The report documenting the reflood data base evaluation was completed and issued. A one day meeting with Dr. P. Ihle was held in which he gave a review of the results of the blockage tests conducted in he German FEBA facility.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

BWR Refill/Reflood Program: Audit activities will continue with review of the GE reports on the 30 degree Steam Sector Test Facility and the SHB system response results. A review and evaluation of an inverse heat conduction code will be initiated as part of the continuing SHB data analysis.

5. Summary of Work to be Performed in July 1982 (Continued)

BWR FIST Program: The data processing software and gamma densitometer activities will continue. Analysis and comparison of the BWR/6-FIST calculations will be performed. Exploratory efforts relative to testing FIST instrumentation in INEL two-phase flow loops will be initiated.

FLECHT-SEASET Program: Exploratory efforts relative to evaluations of the natural circulation tests (completed) and blockage tests (in progress) will continue. Both of these efforts are being paced by the availability of information from the experimenter.

6. Problems and Potential Problems

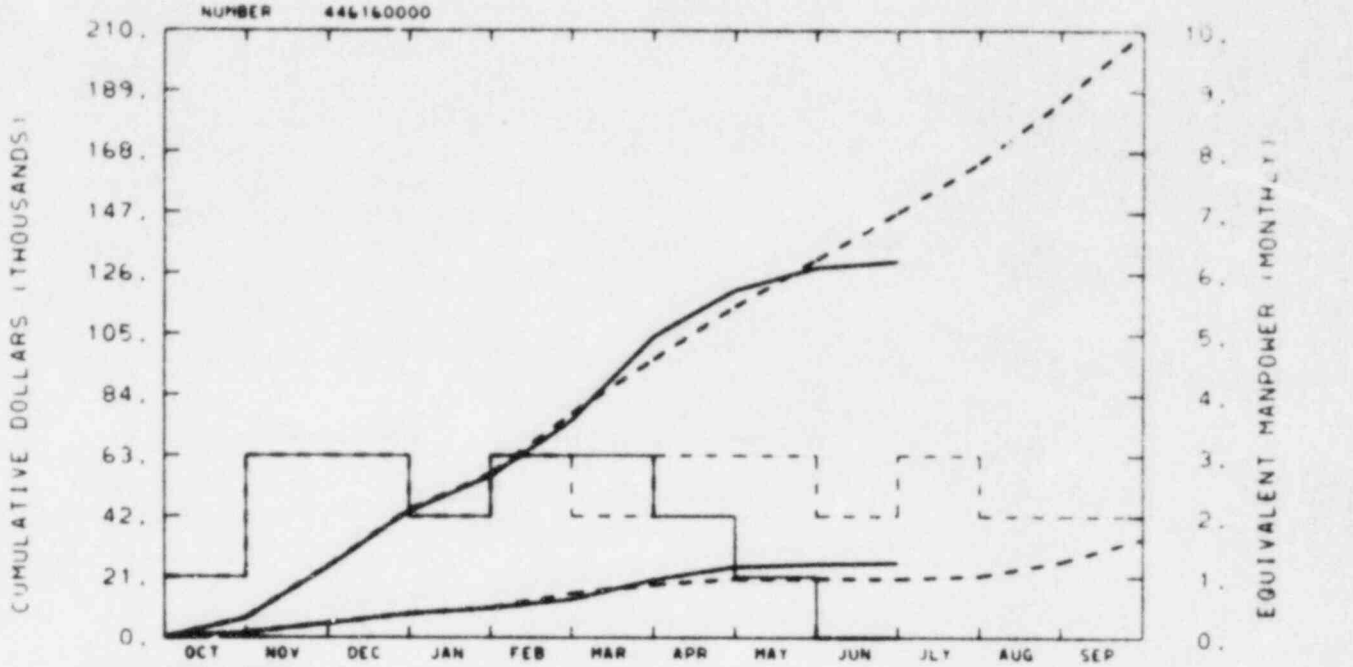
None.

RESPONSIBLE MANAGER
J. SAFFELL

EG&G IDAHO INC.

FUEL BEHAVIOR ANALYSIS A6046

NUMBER 446160000



TOTAL PROGRAM

BUDGET	7	25	44	57	78	96	115	131	147	164	185	210
ACTUAL	7	24	44	56	75	104	120	128	130			

MATERIAL

BUDGET	2	5	8	10	15	18	20	20	20	21	26	34
ACTUAL	2	5	8	10	13	20	24	25	26			

MANPOWER

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

BUDGET

ACTUAL

A6046

YTD VARIANCE: 17 (12%)

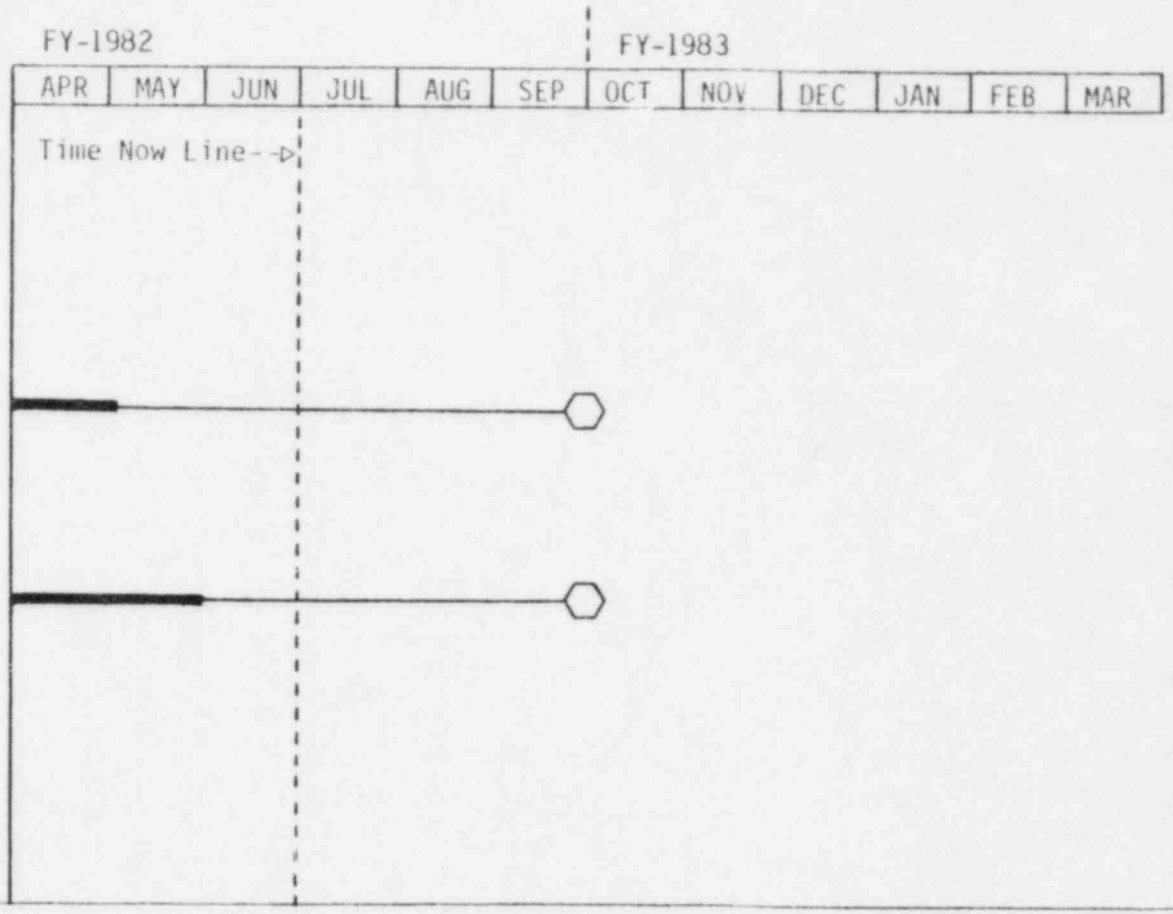
Work has temporarily been delayed on one task of this program to accommodate NRC needs. Some funding carryover is expected, with a projection to be given in next month's report.

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

NRC TECHNICAL ASSISTANCE PROGRAM DIVISION June 1982

Fuel Code Assessment (A6046)



NOTES:

189a A6046

1. Fuel Behavior Analysis Assessment

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

SCDAP/MOD0 Assessment: The first severe fuel damage test (SD-ST) to be conducted in the Power Burst Facility was selected for the code-to-code comparisons, which will compare the SCDAP/MOD0 code against several other codes now being selected. A packet of information was sent to S. O. Peck, the Nuclear Regulatory Commission (NRC) representative in Germany at the KfK facility. The information will be used by Peck to calculate expected rod behavior during the SFD-ST test, using the German SSYST/EXMEL code.

NRC Form 189a: The NRC Form 189a for fiscal year 1983 was drafted and is being reviewed.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

Work will continue on the SCDAP/MOD0 assessment. Input decks will be assembled for hypothetical Pressurized Water Reactor and Boiling Water Reactor cases.

The NRC Form 189a for fiscal year 1983 will be issued.

6. Problems and Potential Problems

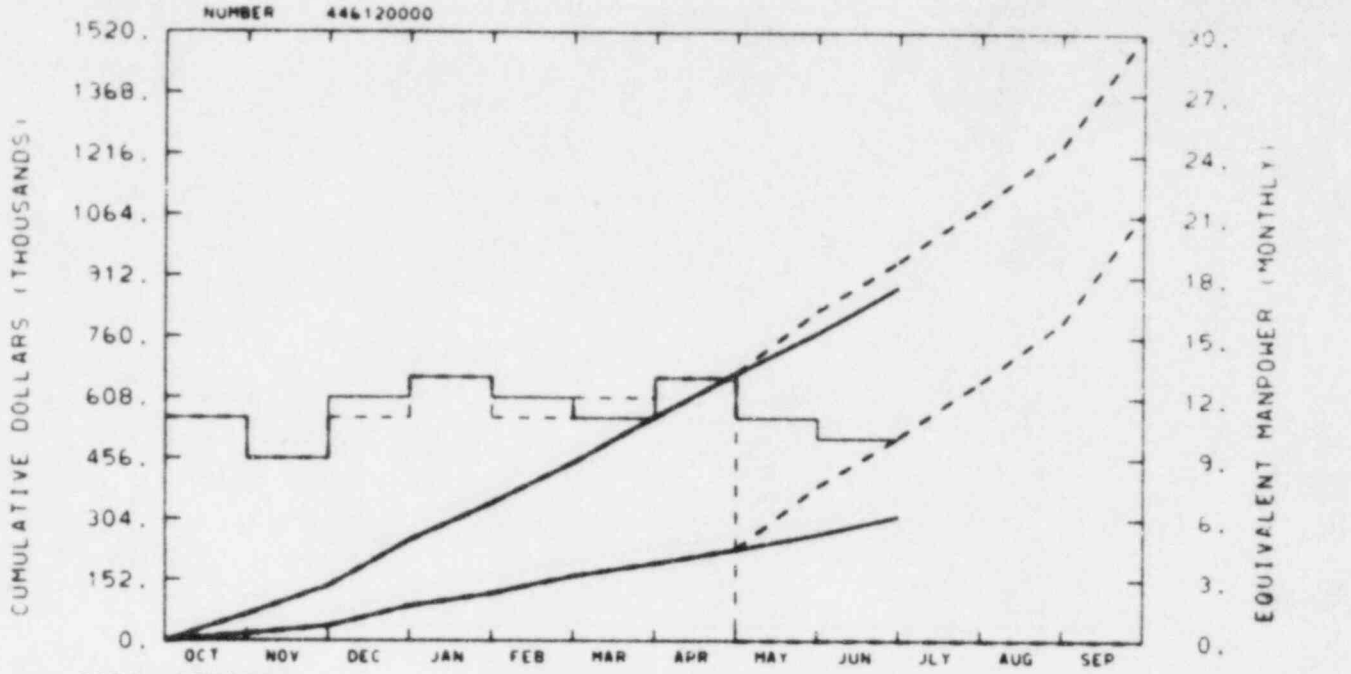
None.

RESPONSIBLE MANAGER
W. F. SAFFELL

EG&G IDAHO INC.

LOCA ANALYSIS ASSESSMENT A6047

NUMBER 446120000



TOTAL PROGRAM

BUDGET	66	137	252	345	446	561	670	827	951	1089	1240	1519
ACTUAL	67	138	252	345	446	561	669	771	887			

MATERIAL

BUDGET	18	37	88	119	163	195	230	387	511	649	798	1077
ACTUAL	18	38	88	119	163	195	229	267	313			

BUDGET - - - - - -

ACTUAL ———

MANPOWER

BUDGET	11	9	11	13	11	12	13	0	0	0	0	0
ACTUAL	11	9	12	13	12	11	13	11	10			

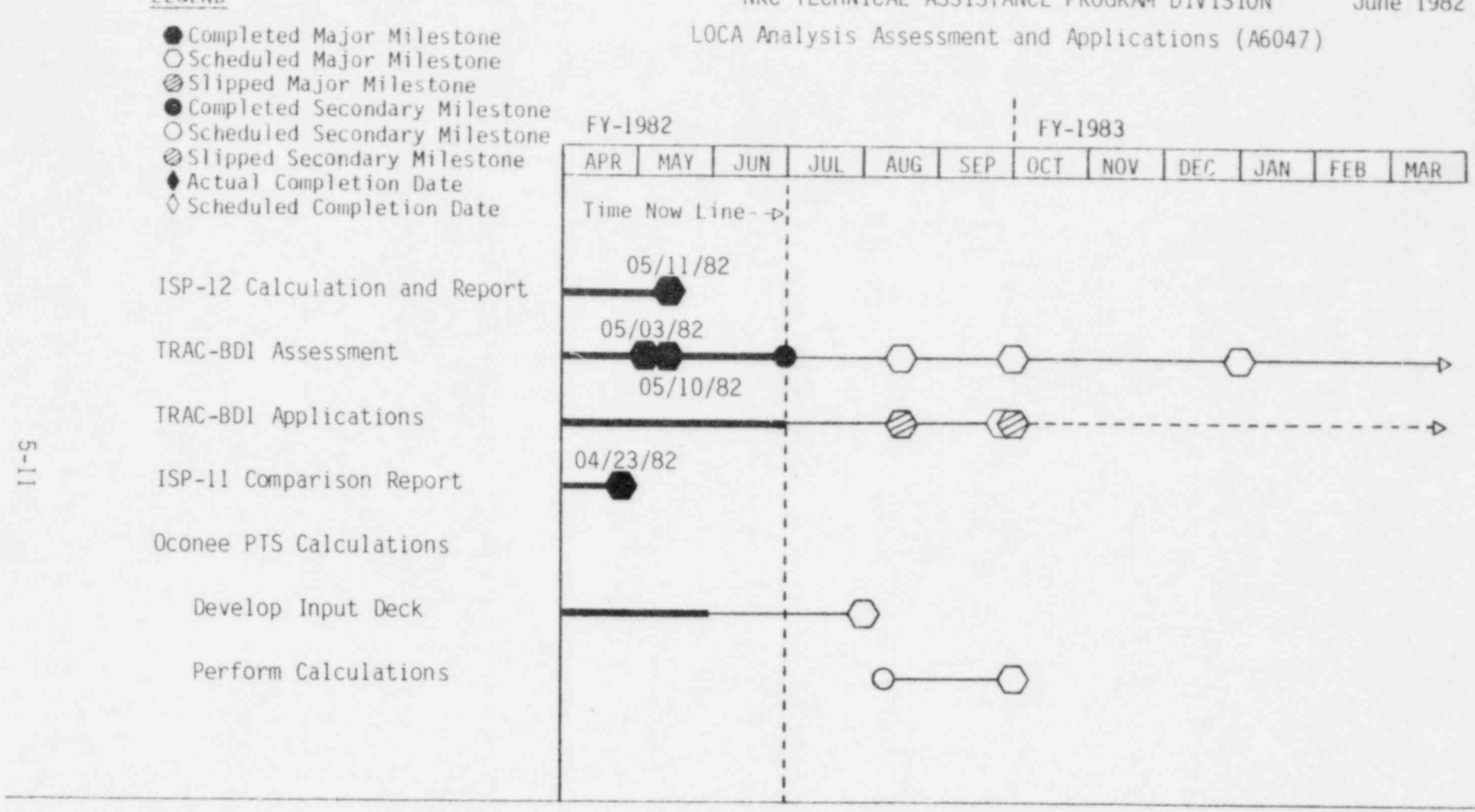
A6047

YTD VARIANCE: 64 (7%)

Several tasks have been dropped from the work scope that is reflected in this budget. This coupled with slower than anticipated work in the BWR task has created an underrun of $64K. Redefinition is underway and as soon as it is completed will result in rebudgeting.

NRC TECHNICAL ASSISTANCE PROGRAM DIVISION June 1982

LOCA Analysis Assessment and Applications (A6047)



NOTES:

189a A6047

1. LOCA Analysis Assessment and Applications

2. Scheduled Milestones for June 1982

Description	Due Date	Actual Date
TLTA Small Break Assessment Calculations	6-30-82E	6-30-82C

3. Summary of Work Performed in June 1982

The TRAC-BD1/V.12 assessment calculations of the Two Loop Test Apparatus (TLTA) small break tests were completed. Formal documentation of this task will be combined with the TLTA Design Basis Accident DBA) assessment study previously completed. The assessment of TRAC-BD1/V.12 with FRIGG data was initiated.

A limited amount of work was performed on the BWR/6 (Grand Gulf) detailed TRAC-BD1 model. Another information package was received from Mississippi Power and Light which contained some information released by General Electric. However, no proprietary information was included. Further information is required to complete the model.

The Dresden 3 large break reload audit analysis was continued. Calculations were performed which showed that the refill rate of the lower plenum was sensitive to lower plenum and jet pump nodalization. The inventory of fluid mass in the lower plenum during blowdown was less sensitive to nodalization. A satisfactory calculation of lower plenum refill and core reflood has not been obtained. Potential problems related the interfacial heat transfer in the hot channel, spray induced condensation, and reflood heat transfer have been identified.

A steady state initialization of Oconee 1 has been performed. The conditions in the primary system are satisfactory, whereas the exit quality in the secondary system was too small. This problem is being discussed with code development for resolution. The Oconee-1 feed train model developed by Science Applications Incorporated is being reviewed and installed on the INEL computer.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

Preparation of an interim report to document the TLTA assessment studies identified in Section 3 will be started. The FRIGG assessment task will continue.

5. Summary of Work to be Performed in July 1982 (Continued)

Calculations in the Dresden 3 reflood audit task will continue. The calculation with a break C_D = 0.6 will be initiated. The remaining calculation is C_D = 0.4 and 0.8 will be conducted based on the C_D = 0.6 calculational results.

Further work will be conducted on the BWR/6 detailed TRAC-BD1 model as information is received.

The RELAP5 modeling of the once through steam generator in Oconee-1 will be continued and an initial scoping calculation performed. The independent checking of the computer code input model will be continued.

The specifications of LOFT Test L9-4 will be transmitted to special problem participants.

6. Problems and Potential Problems

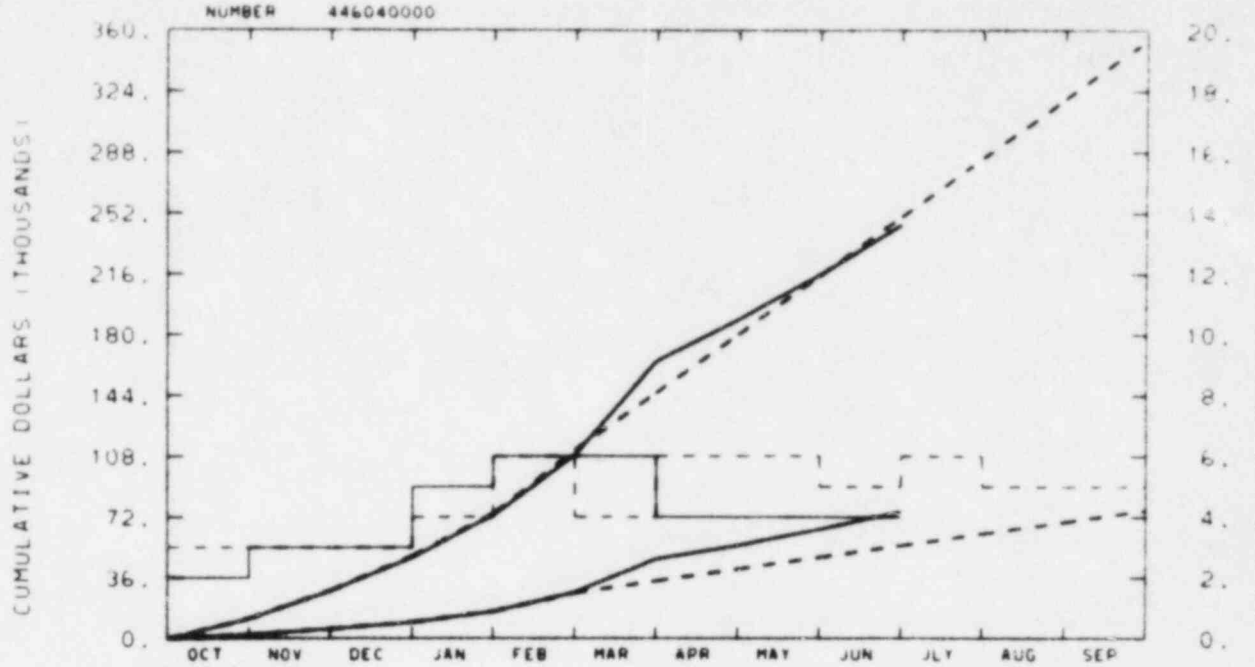
Mississippi Power and Light informed the NRC that the request for Grand Gulf plant information could not be provided until approximately August 1. Thus the plant deck development will be delayed.

The Dresden 3 reload audit calculation has experienced difficulties (see June summary of work). The date at which this task is due is being renegotiated.

EG&G IDAHO INC.

DATA BANK A6102

NUMBER 446040000



TOTAL PROGRAM

BUDGET	12	29	49	74	112	145	180	215	250	285	319	354
ACTUAL	12	28	48	73	109	164	189	216	245			

MATERIAL

BUDGET	2	6	10	16	27	34	41	48	55	62	69	76
ACTUAL	2	6	10	16	27	47	55	65	75			

MANPOWER

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

BUDGET

ACTUAL

A6102

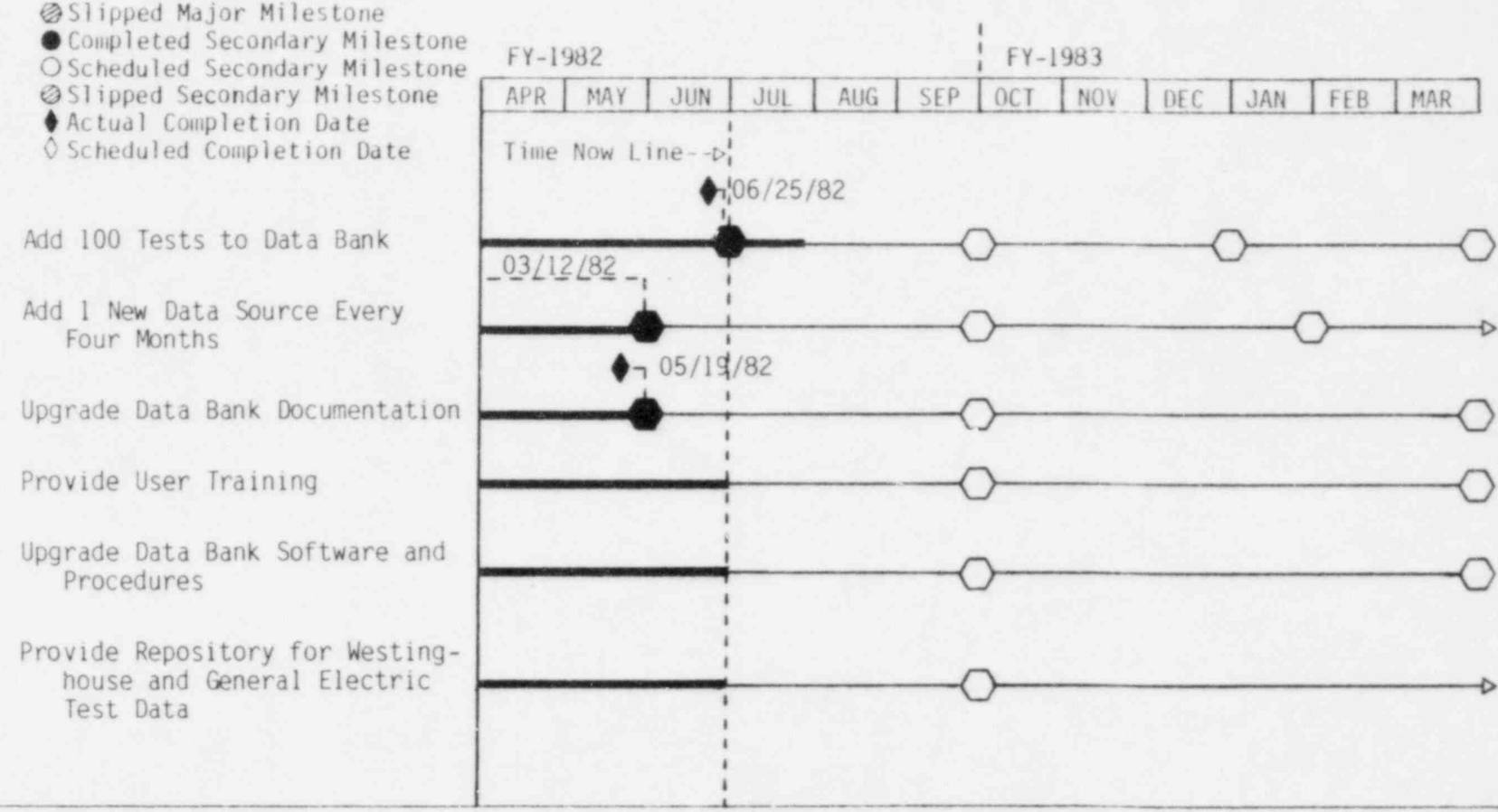
YTD VARIANCE: 5 (2%)

NRC TECHNICAL ASSISTANCE PROGRAM DIVISION June 1982

Data Bank Processing System (A6102)

LEGEND

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



NOTES:

189a - A6102

1. NRC/DAE Data Bank

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

Experiment data from Loss of Fluid Test (LOFT) Facility tests L6-6A and L6-6B, as well as L9-3 were added to the Data Bank. Data were received from the 22 Westinghouse G-2 core uncovery tests and 38 tests from 2D/3D test facility.

Data tape requests were processed for 6 non-Idaho National Engineering Laboratory organizations.

New Data Bank users were established at the Brookhaven National Laboratory, and new users are being established at the Exxon Nuclear Company in Richland, Washington.

A brochure briefly describing Data Bank contents and services was published.

A Data Bank demonstration session aimed at advanced users is being developed.

A paper was written and submitted to the Winter American Nuclear Society Meeting (Session 12.2 intitled Data Bases for Reactor Safety Analysis).

4. Scheduled Milestones for July 1982

Description	Due Date	Actual Date
Add 25 Tests to Data Bank	7/1/82T	6-23-82C Saff-254-82

5. Summary of Work to be Performed in July 1982

Data entry activities will continue.

Updating of the on-line information file and the user's manual will continue.

User training session development will also continue.

The NRC Form 189a for fiscal year 1983 will be completed and issued.

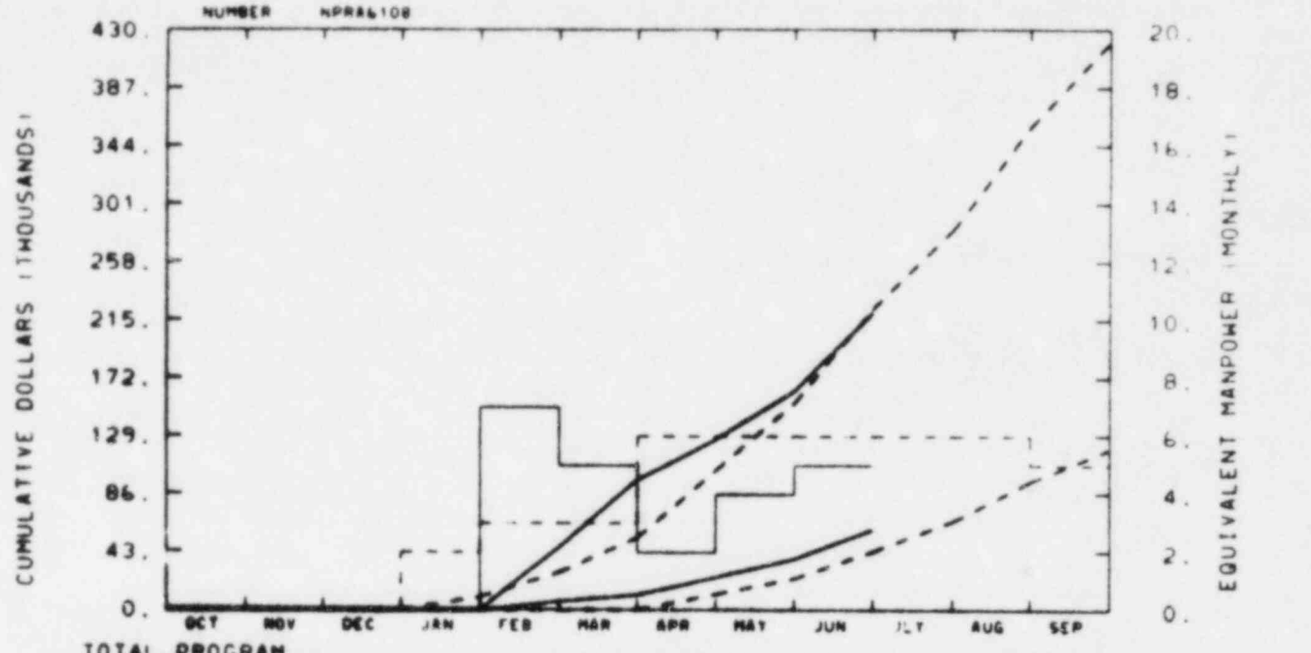
6. Problems and Potential Problems

None.

RESPONSIBLE MANAGER POINTER

EG&G IDAHO INC.

DIAGNOSTIC GRAPHICS RESEARCH



TOTAL PROGRAM

BUDGET	0	0	0	10	28	54	104	154	224	282	358	421
ACTUAL	0	0	0	0	47	97	127	163	221			

MATERIAL

BUDGET	0	0	0	0	0	1	12	24	44	66	95	119
ACTUAL	0	0	0	0	7	12	25	38	40			

MANPOWER

BUDGET	0	0	0	2	3	3	6	6	6	6	6	5
ACTUAL	0	0	0	0	7	5	2	4	5			

BUDGET

ACTUAL

A6108

YTD VARIANCE: 3 (1%)

189a A6108

1. Diagnostic Graphics Research

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

Task 1 - Effects of Control Room Modifications: Review and comments on the draft of this report caused some additional work to be required. The report was revised and will be ready for editing in July.

Task 2 - Advanced Display Concepts: Response tree and prediction display implementation continued and report preparation was planned. An SPDS review report was started but has been placed on hold until requested data is collected. A decision on report preparation will be made when the available data is reviewed.

Task 3 - Graphics Display Research Facility (GDRF): The NUREG report of this task was published in June (NUREG/CR-2711).

Task 4 - Upgrade Experimental Capability: This work started in June by preparing the initial set of requirements for upgrade.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

Task 1 - Effects of Control Room Modifications: This report will be completed and ready for editing and publication.

Task 2 - Advanced Display Concepts: Response Tree and Predictor Display report preparation will proceed. Data collection on the SPDS review will continue.

Task 3 - Graphics Display Research Facility: This task is complete.

Task 4: Upgrade Experimental Capability: The new experimental console preliminary design will be prepared.

6. Problems and Potential Problems

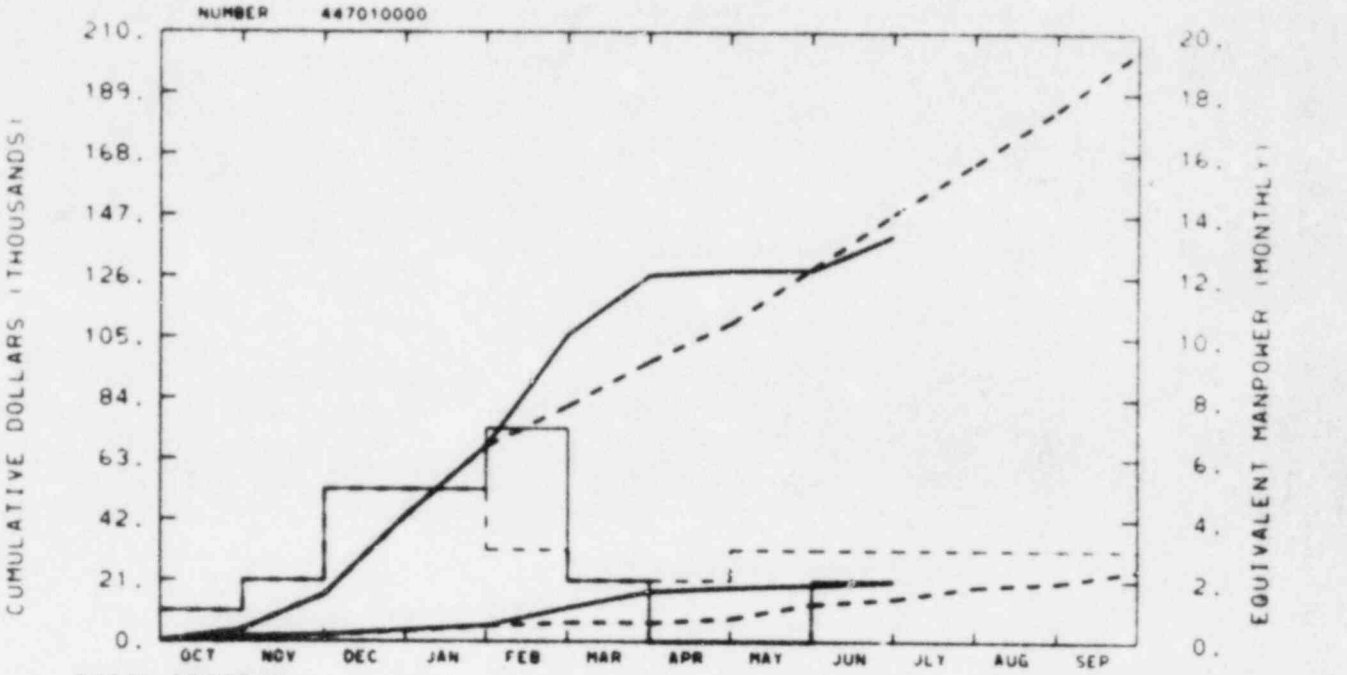
None.

RESPONSIBLE MANAGER
[illegible] F. SAFFELL

EG&G IDAHO INC.

LER FAILURE RATE A6276

NUMBER 447010000



TOTAL PROGRAM

BUDGET	4	16	43	67	81	97	110	129	148	165	183	204
ACTUAL	4	16	43	67	106	126	128	128	140			

MATERIAL

BUDGET	1	2	4	5	7	7	8	13	15	19	20	25
ACTUAL	2	2	4	6	12	17	19	20	21			

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6276

YTD VARIANCE: 8 (5%)

1. Licensee Event Report (LER) Failure Rate Analysis

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

Preliminary results of a special study on the Licensee Event Report (LER) history of battery and battery charger events for the Reactor Risk Branch of Nuclear Regulatory Commission were transmitted to the NRC June 2, 1982. Work progressed on the coding of LERs for instrumentation and control components; approximately 600 LERs on these components were coded.

The FY-1982 scope and budget for Fin A6276 are both at approximately the 70% level.

4. Scheduled Milestones for July 1982

Description	Due Date	Actual Date
Battery and Charger Final Letter Rpt	7-30-82	6-2-82C

5. Summary of Work to be Performed in July 1982

The coding of LERs for instrumentation and control components will continue. The battery and battery charger LER study results will be issued as a final letter report when comments from the NRC are received.

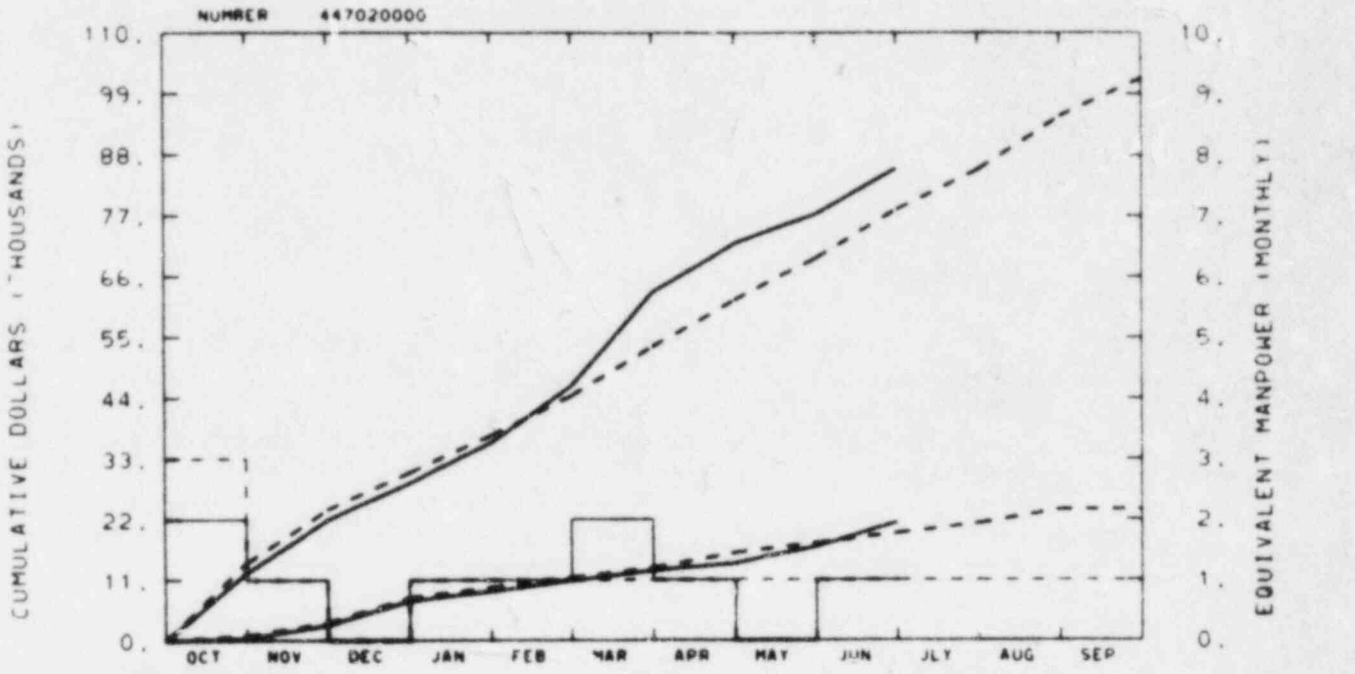
6. Problems and Potential Problems

None.

RESPONSIBLE
MANAGER
F SAFFELL

EG&G IDAHO INC.

COMMON CAUSE STAT MODELING A6283



TOTAL PROGRAM

BUDGET	14	24	31	37	44	53	62	69	78	85	95	102
ACTUAL	12	22	29	36	46	63	72	77	86			

MATERIAL

BUDGET	1	3	8	10	11	13	16	18	19	21	24	24
ACTUAL	0	3	7	9	11	13	14	17	21			

MANPOWER

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

BUDGET

ACTUAL

A6283

YTD VARIANCE: <8> (10%)

189a A6283

1. Common Cause Data Analysis

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

The analysis of the pump data has been completed. The pump report is presently being typed.

The analysis of the valve data is essentially complete and writing of the valve report started.

A revised user's guide to the BFR code (revisions handwritten) has been taken to a technical editor.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

The valve report will be written, typed, and reviewed internally. The reanalysis of the Instrumentation and Controls (I&C) data will be done, allowing for plant-to-plant variation. The writing of the I&C revised report will be started.

6. Problems and Potential Problems

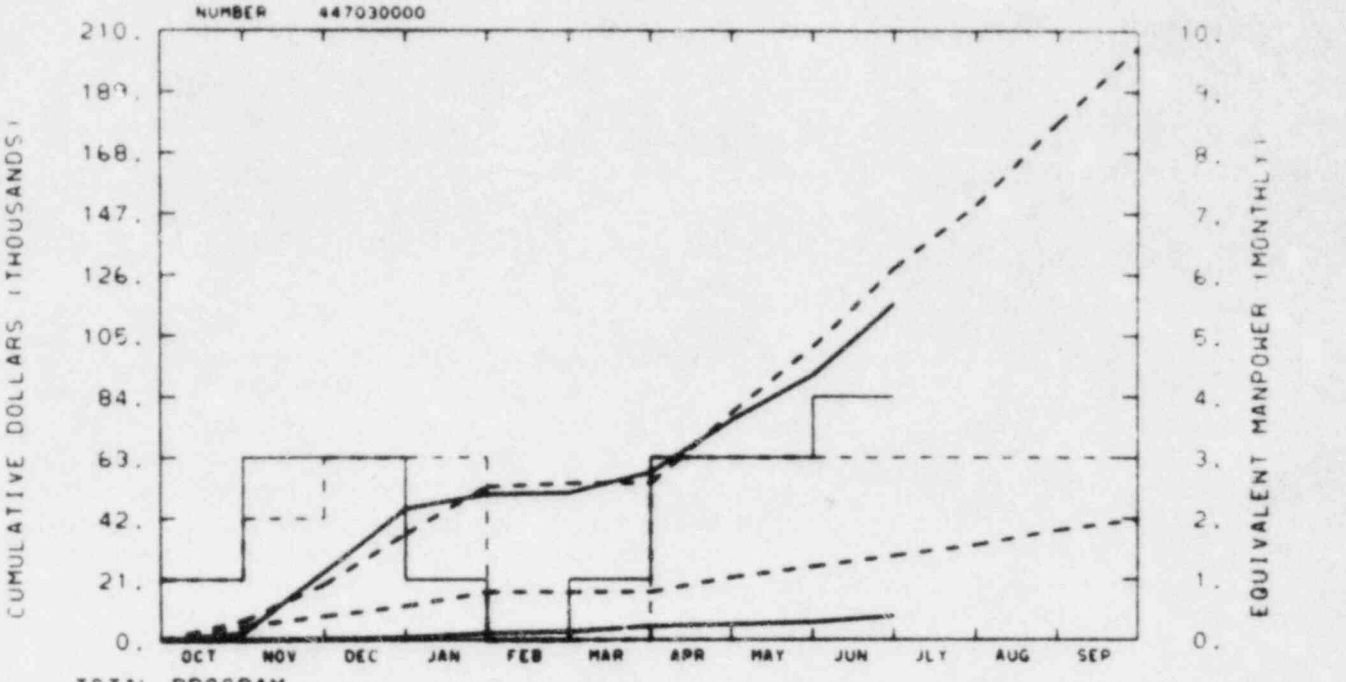
None.

RESPONSIBLE MANAGER
F. SAFFELL

EG&G IDAHO INC.

NPRDS DATA ANALYSIS A6290

NUMBER 447030000



TOTAL PROGRAM

BUDGET	7	19	37	53	54	54	78	101	128	150	178	204
ACTUAL	2	24	45	50	51	58	76	91	116			

MATERIAL

BUDGET	5	6	12	17	17	17	22	25	29	33	38	42
ACTUAL	0	1	1	2	3	5	5	6	8			

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6290

YTD VARIANCE: 12 (9%)

Anticipated FY-1983 carryover is $10K. Budget carryover is consistent with carryover work scope. Work delayed by lack of second NPRD data tape.

189a A6290

1. Nuclear Plant Reliability Data System (NPRDS) Data Analysis

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

Nineteen additional Licensee Event Reports (LERs) were received for analysis. All LERs received as the second sample have been analyzed and reduced to one-line descriptions of the associated events. In addition, detailed analyses of each Task 2 plants' NPRD-2 submittals are being conducted. Some of these analytical steps are being automated to allow for timely and accurate data searches. The results of this additional analysis effort will be included in the final NPRDS quality assurance report.

The overall NPRDS Quality Assurance and Data Review project is approximately 55% complete.

4. Scheduled Milestones for July 1982

Description	Due Date	Actual Date
Interim Letter Report on Second Sample Analysis	7-30-82E	

5. Summary of Work to be Performed in July 1982

Pending receipt of the NPRDS data tape for submittals in the first quarter of 1982, the second-sample status report will be completed approximately one month from receipt of the tape. In addition, 2-form analysis will continue as time permits.

6. Problems and Potential Problems

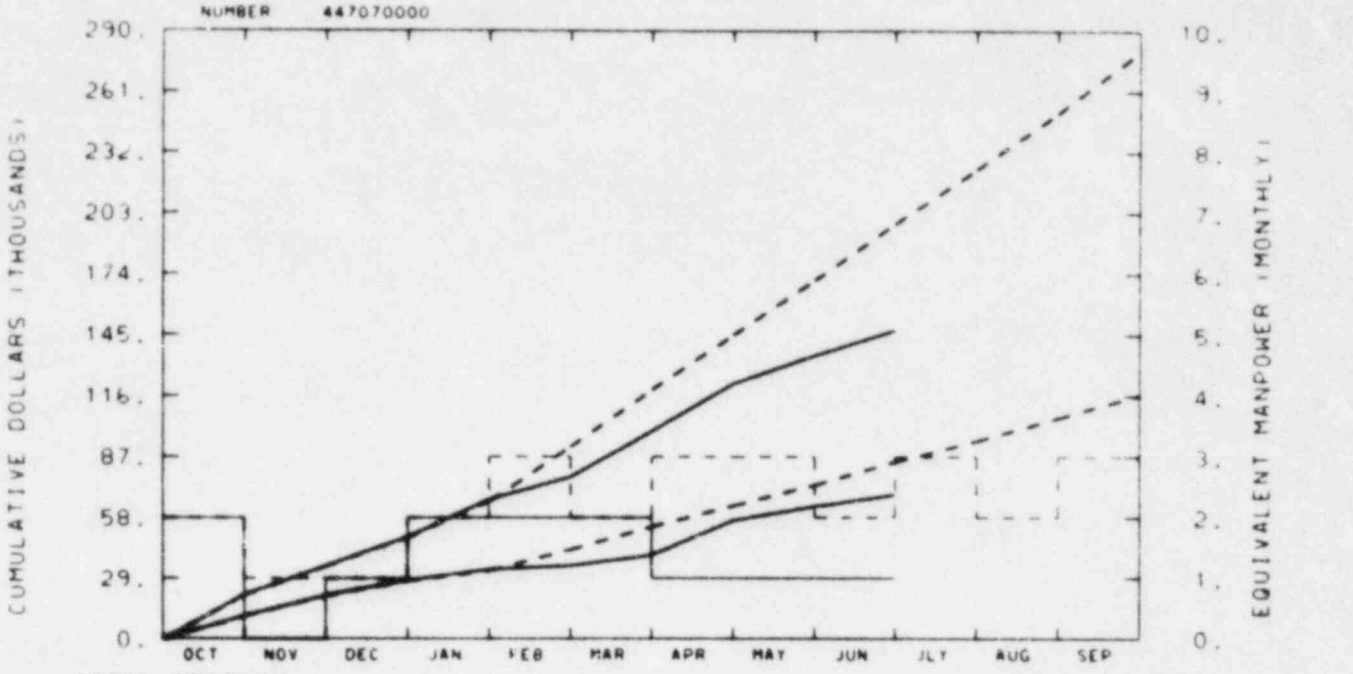
None.

RESPONSIBLE MANAGER
F. SAFFELL

EG&G IDAHO INC.

PLANT STATUS MONITORING A6294

NUMBER 447070000



TOTAL PROGRAM

BUDGET	21	35	48	66	92	119	145	171	198	224	251	280
ACTUAL	21	35	49	67	77	99	122	135	147			

MATERIAL

BUDGET	11	21	28	33	33	54	64	74	85	95	106	117
ACTUAL	11	21	28	33	35	40	57	63	69			

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6294

YTD VARIANCE: 51 (26%)

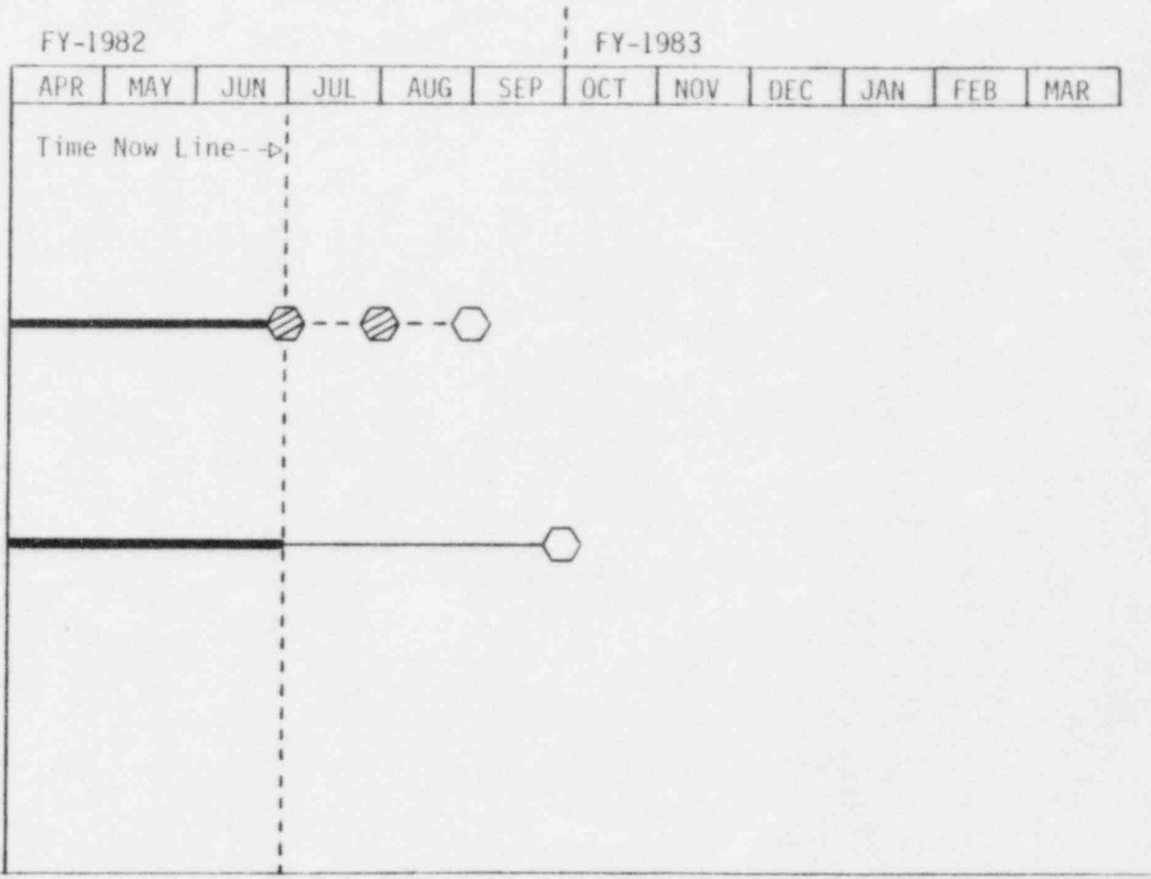
The underrun is mainly due to the delayed initiation of the development of diagnostic algorithms and the late initiation of the subcontract work to demonstrate the usefulness of operator action event trees in the development of emergency procedure guidelines. The final decision to proceed with the diagnostic algorithm development was made in the program midyear review held in March. Work on both tasks is in progress.

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

NRC TECHNICAL ASSISTANCE PROGRAM DIVISION June 1982

Plant Status Monitoring (A6294)



NOTES: This schedule will be revised in the near future to reflect additional tasks congruent with work scope agreements between NRC and EG&G Idaho.

189a A6294

1. Plant Status Monitoring

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

Work continued to demonstrate the application of the operator action event tree (OAET) methodology to the development of emergency procedure guidelines. Specifically, previously tabulated OAET information is being used to examine the adequacy of the Westinghouse Owners Group guidelines. Conclusions concerning the usefulness of the OAET approach are also beginning to be formulated.

The definition and development of the logic and decision process to specify the diagnostic algorithm continued. The work was based on Zion OAETs for small break loss of coolant accidents. Plans were made to insure that the final algorithm can be easily integrated into other programs which will develop accident management systems in the future.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

Work will continue to demonstrate the OAET methodology to emergency procedure guideline development as outlined in Item 3. In addition, emphasis will be placed on developing emergency procedure guidelines and on developing guideline formats.

Work will continue on the development of the diagnostic algorithm as described in Item 3. An outline of the final report will be developed.

6. Problems and Potential Problems

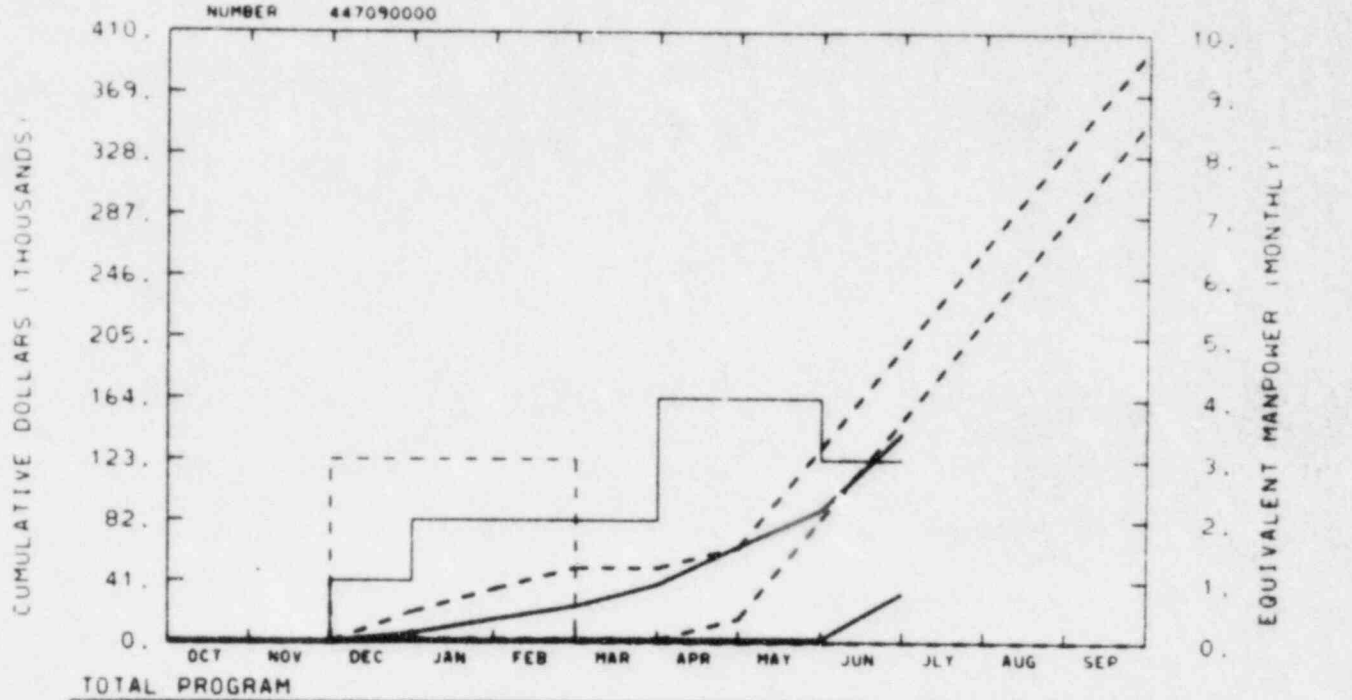
None.

RESPONSIBLE MANAGER
[illegible] CAFFELL

EG&G IDAHO INC.

ACCIDENT SEQ EVALUATION A6301

NUMBER 447090000



TOTAL PROGRAM

BUDGET	0	0	20	36	50	50	64	131	198	266	333	400
ACTUAL	0	0	6	15	24	39	65	83	141			

MATERIAL

BUDGET	0	0	2	2	2	2	16	83	150	217	285	352
ACTUAL	0	0	1	1	2	2	2	2	33			

MANPOWER

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

BUDGET

ACTUAL

A6301

YTD VARIANCE: 57 (29%)

Sandia National Laboratory and EG&G Idaho are currently working to develop an updated budget based on recent changes in schedule and scope. The proposed budget is currently being reviewed by NRC.

1. INEL Accident Sequence Evaluation Program (ASEP)

2. Scheduled Milestones for June 1982

Description	Due Date	Actual Date
Idaho National Engineering Laboratory (INEL) ASEP Phase I Final Report	6/30/82T	6/29/82C Saff-262-82

3. Summary of Work Performed in June 1982

The Nuclear Regulatory Commission (NRC) project manager, the Sandia project manager and the EG&G Idaho technical staff associated with this program met during the first week of this month. As a result of this meeting, a detailed schedule for ASEP Phase II activities was developed by Sandia and EG&G Idaho. In addition, the initial draft of the FY-1983 Form 189 for this project was completed. The final Form 189 will be transmitted by month-end. The EG&G Idaho technical personnel associated with this program completed the final report on EG&G Idaho Phase I activities.

The overall EG&G Idaho portion of the ASEP for FY-1982 is approximately 50% complete.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

The Phase I final report will be transported to Sandia and EG&G Idaho technical staff will assist Sandia with incorporation of our report into a Phase I combined report to be issued by Sandia. Technical personnel associated with this program will spend two weeks at Sandia assisting Sandia with the sensitivity analysis portion of the overall project. This analysis will be continued at EG&G Idaho subsequent to the Sandia meeting. Workshop participants will be contacted and any contractural arrangements will be initiated, as necessary.

6. Problems and Potential Problems

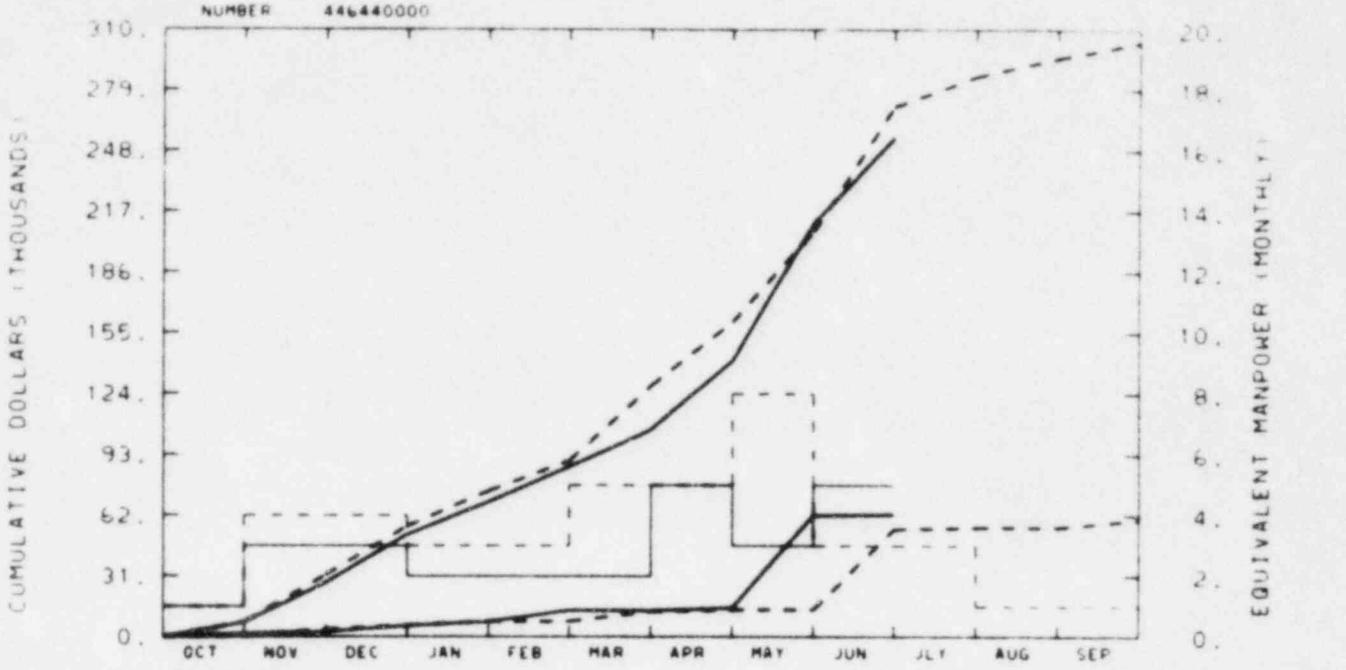
None.

RESPONSIBLE MANAGER
C. F. CAPPELL

EG&G IDAHO INC.

HDR EVALUATION A6306

NUMBER 446440000



TOTAL PROGRAM

BUDGET	8	32	56	74	90	128	161	207	270	286	295	303
ACTUAL	8	28	52	69	87	106	141	211	255			

MATERIAL

BUDGET	1	4	6	8	8	13	14	14	55	56	56	60
ACTUAL	2	3	6	8	14	13	15	62	63			

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

A6306

YTD VARIANCE: 15 (6%)

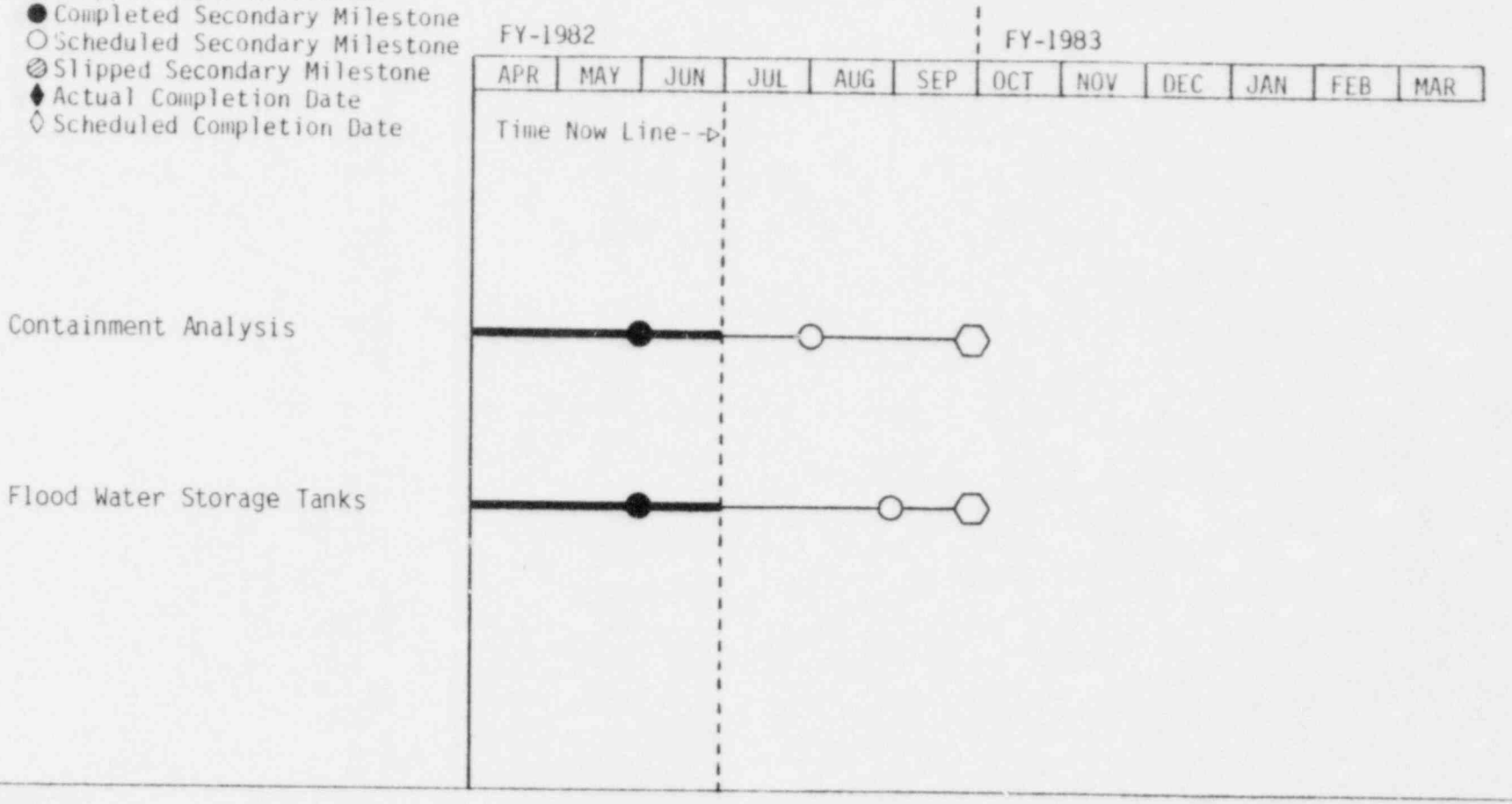
Delay in billing from travel and shipping charges to the HDR Facility resulted in a $15K underrun. Upon receipt of these billings, budget and actuals will agree.

NRC TECHNICAL ASSISTANCE PROGRAM DIVISION June 1982

HDR Mechanical Component Response Analysis (A6306)

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

189a A6306

1. Heiss Dampf Reaktor (HDR) Mechanical Component Response Analysis Testing

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

Testing at HDR was completed June 19, 1982 and the test equipment was packaged up and shipped back to the United States on June 25. Test personnel also flew home on June 25. This project is approximately 90% complete and is now 84% expended based on a FY-1982 work scope and budget of $303K.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

Data obtained in Germany will be reduced such that frequencies, damping, and mode shapes can be obtained for the different test methods and structures tested.

6. Problems and Potential Problems

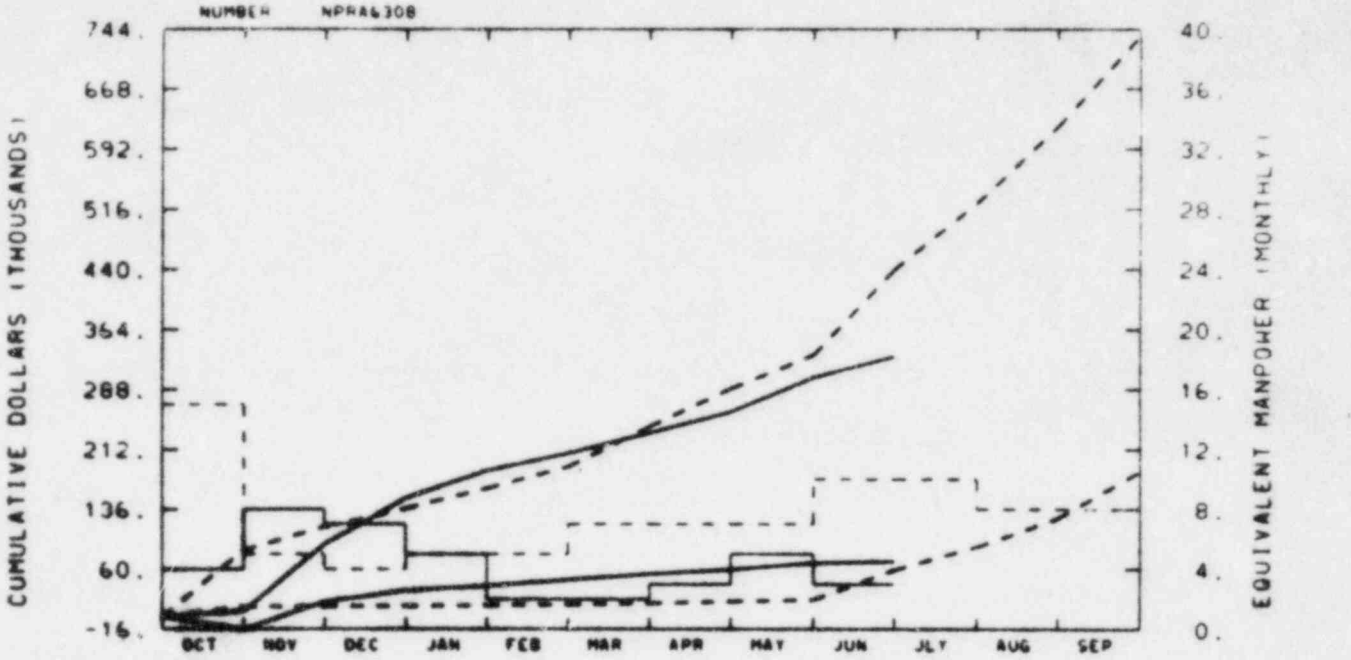
None.

RESPONSIBLE MANAGER
INTER

EG&G IDAHO INC.

CRT DISPLAY & DESIGN - 59

NUMBER NPRA6308



TOTAL PROGRAM

BUDGET	84	114	137	162	190	241	289	331	439	523	621	736
ACTUAL	7	91	150	185	207	223	259	303	330			

MATERIAL

BUDGET	13	13	13	14	15	17	19	21	59	88	124	184
ACTUAL	-15	19	33	39	47	54	60	68	70			

MANPOWER

BUDGET	19	5	6	5	5	7	7	7	10	10	8	3
ACTUAL	4	8	7	5	2	2	3	5	3			

BUDGET

ACTUAL

A6308

YTD VARIANCE: 109 (25%)

Work is proceeding as scheduled. It is expected and desired that funds from this task will be carried over into FY-1983.

189a A6308

1. Display Design and Evaluation

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

Work has continued throughout June on application of the new Lexidata system to graphics display research. Several displays have been programmed on the new system.

The preparation of a report on human engineering consideration for CRT displays has continued on schedule during June.

A draft checklist for display evaluation was prepared and critiqued. An amended checklist is being prepared.

Reactor transient scenarios for simulator based display testing have been developed.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

Previously discussed work will continue.

A specification for a pressure-temperature display will be prepared.

6. Problems and Potential Problems

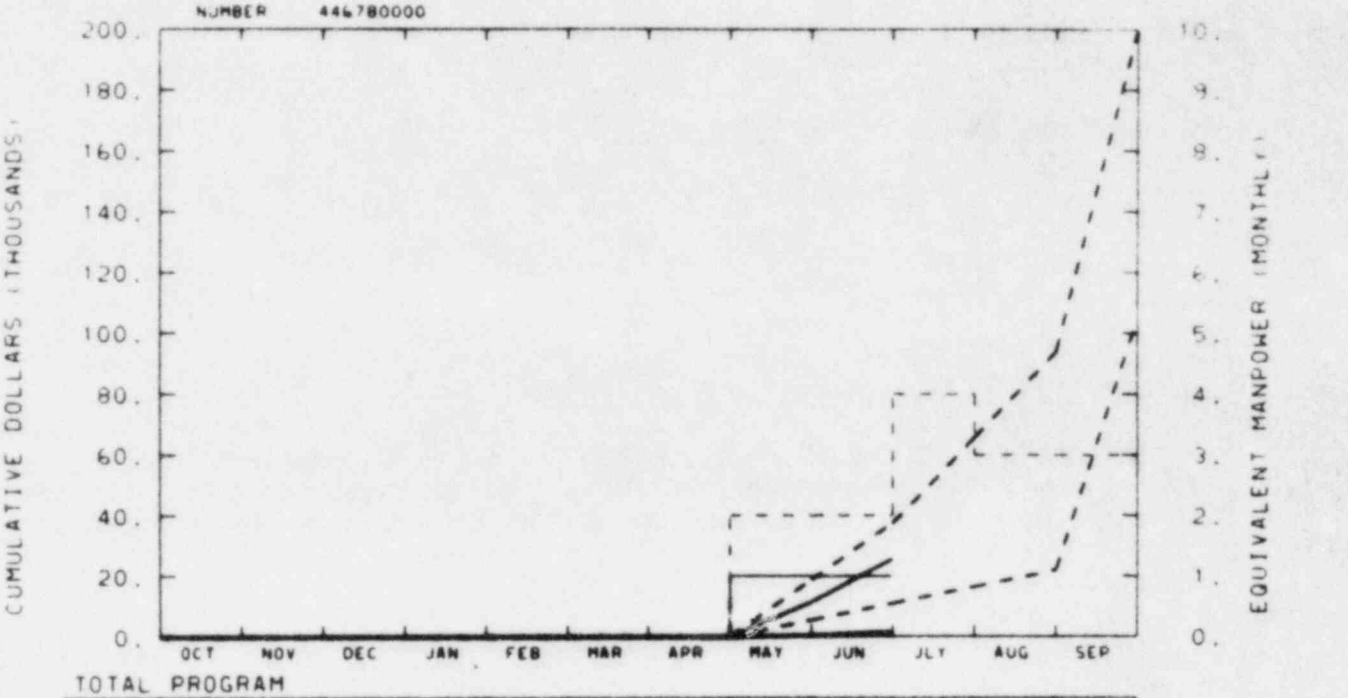
None.

RESPONSIBLE MANAGER
[illegible] SAFFELL

EG&G IDAHO INC.

LOW LEVEL WASTE RISK METH A6310

NUMBER 446780000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	0	19	37	66	94	200
ACTUAL	0	0	0	0	0	0	0	11	26			

MATERIAL

BUDGET	0	0	0	0	0	0	0	5	11	16	22	105
ACTUAL	0	0	0	0	0	0	0	1	2			

MANPOWER

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

BUDGET

ACTUAL

A6310

YTD VARIANCE: 11 (30%)

Project startup inertia, namely obtaining documents to review and the interference of previous commitments to higher priority tasks, caused the underspending. The FY-1983 carryover will be recalculated at the end of next month after actual costs have an opportunity to stabilize.

189a A6310

1. Low Level Waste Risk Methodology Development

2. Scheduled Milestones for June 1982

Description	Due Date	Actual Date
Prepare Program Plan	6/15/82E	6/14/82C Saff-237-82

3. Summary of Work Performed in June 1982

The Shallow Land Burial (SLB), BURYIT, was placed under administrative control so that no unauthorized changes can be made. At this time, some sample problems cannot be duplicated. Work to resolve this problem is underway. All personnel have initiated actions to identify and obtain literature that will be needed for Tasks I, II, and III. As part of Task I, work has been started for the validation of the computational modules UNSAT, ATMOS, DIRECT, and DOSET. Intrusion scenarios have been subjected to thorough review, and these seem complete. Site characteristics are being reviewed, keeping in mind that a screening methodology must be developed. Consideration is being given to accounting for seasonal variations in site characteristics especially in the semi-arid cases where the total annual rainfall is accumulated in a relatively few days.

As part of Task II, the adjustment of soil distribution coefficients is being investigated, as is the possibility of adding a computational module for water erosion. Information on the probabilities of transportation and handling accidents has been identified. Also uncertainty information has been identified for geologic data, terrestrial transport factors, aquatic transport factors, dietary and inhalation rates, and dose conversion factors.

As part of Task III, twenty documents concerning High Level Waste (HLW) risk methodology have been acquired thus far, and NUREG/CR-0458 has provided a concise summary of those release scenarios independent of the presence of a deep geologic repository. A new team member, B. J. Odegard, has been assigned the task of evaluating the relevance of these scenarios to shallow land burial.

The cumulative program expenditures through the May accounting period, which ended May 22, were $11,456. The EG&G Idaho personnel cumulative time expenditures were 198 hours; there is no subcontractor currently on this project. Through the fourth accounting week of June 14-18, the incremental costs were $8419 (4.2%) and the incremental time expenditures were 157 hours. Cumulative totals through June 18 were $19,875 (9.9%) and 355 hours.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

Task I: Resolution will be sought for the problem of being unable to duplicate the sample problems with the SLB code. Review of consequence models, release scenarios, and site characteristics will continue.

Task II: Collection of probability and uncertainty information will continue.

Task III: The evaluation of HLW release scenarios with respect to applicability to SLB will begin in mid-July.

6. Problems and Potential Problems

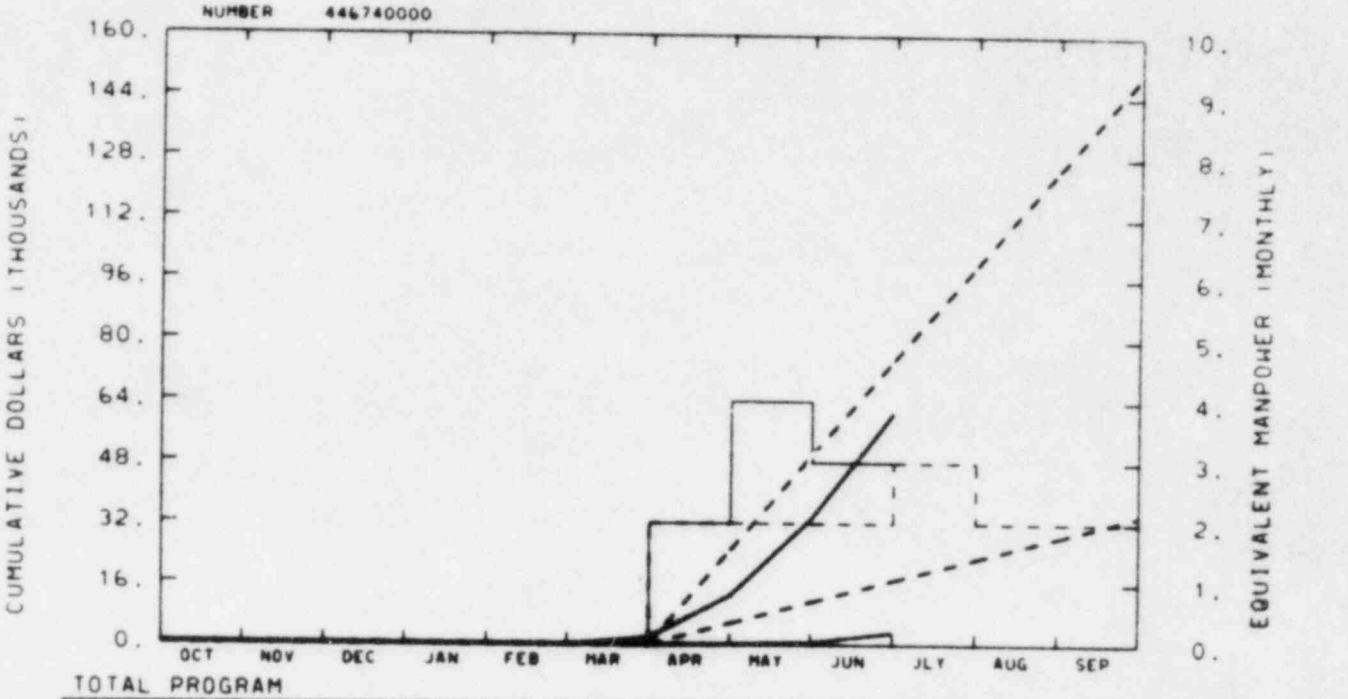
The rate of expenditure of project funds is lower than originally projected. This was partially due to lag time in receiving documentation and in getting the SLB code under administrative control. Work is expected to accelerate in July, and thus partially counter the potential schedule slippage. The situation will be watched carefully, and appropriate measures will be taken to prevent slipping the schedule. Revision of the funding projection will be postponed at least until the July experience becomes available.

RESPONSIBLE
MANAGER
W F SAFFELL

EG&G IDAHO INC.

INITIATING EVENT DATA EVAL A6313

NUMBER 446740000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	25	50	75	100	125	150
ACTUAL	0	0	0	0	0	2	13	33	61			

MATERIAL

BUDGET	0	0	0	0	0	0	6	11	17	23	28	34
ACTUAL	0	0	0	0	0	0	0	1	3			

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6313

YTD VARIANCE: 14 (19%)

Material spending has caused the budget underrun. The current task schedule requires carrying over some material funds into FY-1983. An estimate of the amount of carryover will be furnished next month.

189a A6313

1. Initiating Event Data Evaluation

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

Draft tables describing over 100 decreases in reactor coolant inventory events in the period from January 1, 1976 to December 31, 1980 were completed. The tables include available information on leak sizes, direction of blowdown, and recovery factors. A draft report presenting these findings is being prepared.

Approximately 40% of the FY-1982 budget for FIN No. A6313 has been expended. This is in accordance with the completed scope of the project.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

The primary coolant leakage report will be completed and transmitted to the Nuclear Regulatory Commission as a draft NUREG for review. Work on updating the transient event data in EPRI-NP-2230 will start.

6. Problems and Potential Problems

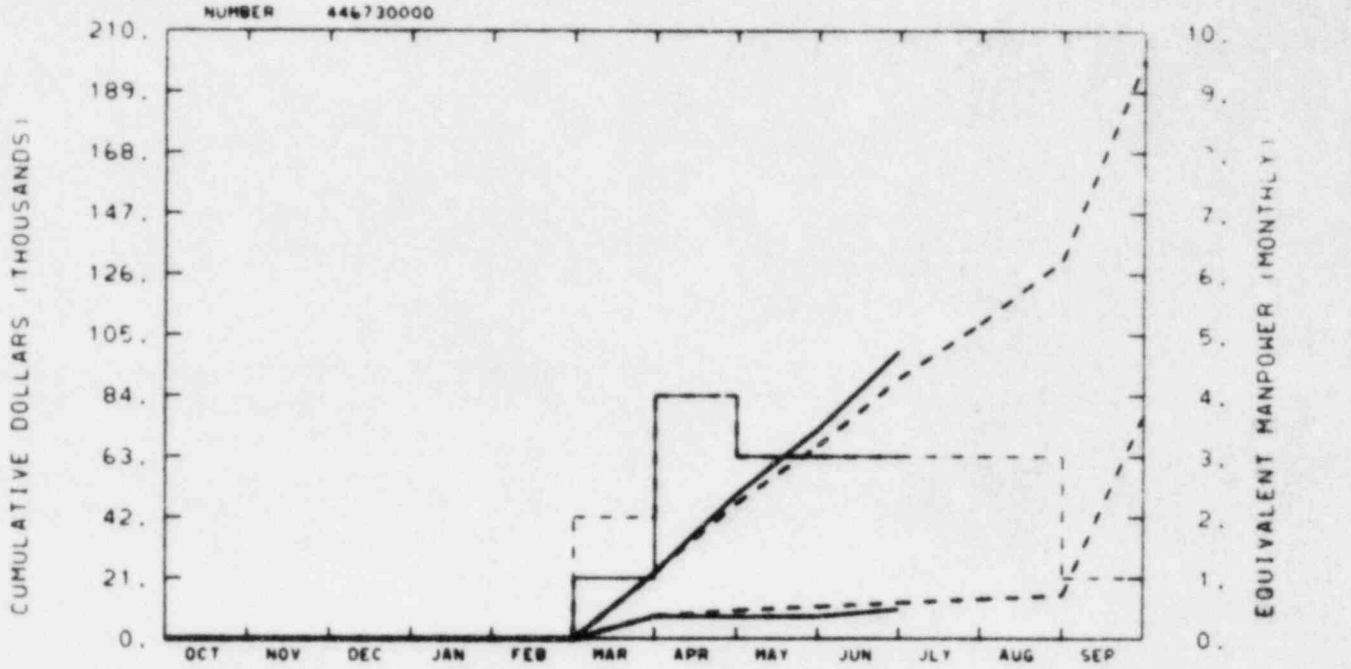
None.

RESPONSIBLE
MANAGER
W. F. SAFFELL

EG&G IDAHO INC.

PRELIM HTGR SITING EVAL A6315

NUMBER 446730000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	23	47	67	90	109	131	200
ACTUAL	0	0	0	0	0	23	50	72	99			

MATERIAL

BUDGET	0	0	0	0	0	8	10	11	13	14	15	77
ACTUAL	0	0	0	0	0	8	8	8	10			

MANPOWER

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

BUDGET

ACTUAL

A6315

YTD VARIANCE: <9> (10%)

1. Preliminary HTGR Siting Evaluation

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

Project personnel (H. Reilly) attended the United States-Japan Seminar on HTGR Safety Technology at Brookhaven National Laboratory (BNL) on June 2-3, 1982.

Project personnel (H. Reilley and S. Bengston) met with General Atomics (GA) personnel San Diego CA on June 15, 1982, to discuss current GA design information.

A design review of draft event trees was held on June 16, 1982. Final draft of event trees is scheduled for completion by August 15.

Documents received in literature search and from GA were reviewed.

Report outline was revised and forwarded to the other laboratories participating in the project. Writing was started on one of the appendices of the report and on the Plant Description Section.

GA containment response analysis in GA-A15000 was reviewed and the review was reported to Nuclear Regulatory Commission (NRC).

A meeting was set up by BNL on July 1 to discuss details of source term analysis with BNL and NRC.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

EG&G Idaho personnel will meet at BNL on July 1 to discuss details of source term analysis with BNL and NRC.

Additional GA containment atmosphere response calculations, using CARCAS code will be reviewed upon receipt of the material from GA.

EG&G Idaho will continue on the writing of draft sections of the report that can be written now, including "Description of Plant," "Potential Accidents," "Reactor Susceptibility to Fires," and "Reactor Susceptibility to Windstorms and Floods."

Continue development of event trees.

6. Problems and Potential Problems

At the May 5 meeting, it was identified that the core heatup work by BNL was the critical path for the project and that report inputs from BNL could not be sent to EG&G Idaho until at least two months beyond EG&G Idaho's estimated need date for a January 1, 1983, publication. Plans were made to accommodate this late arrival with minimal impact on the publication date. However, the schedule now shows February 1, 1983 for the publication date, one month later than in the draft schedule. This stretchout of one month has an adverse impact on the project cost. Manloading was adjusted to compensate; however, further slippage by BNL could potentially create a tendency to overrun the total funding available to EG&G Idaho for the project.

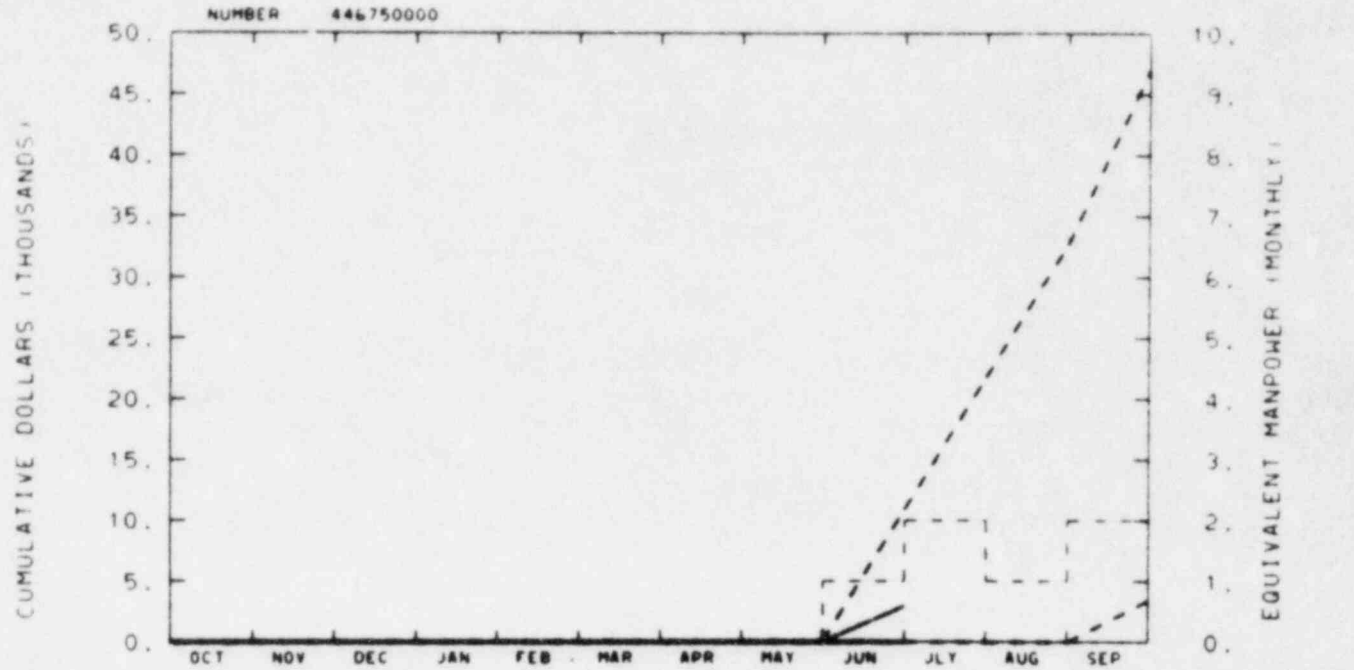
A determination of how to perform the containment atmosphere response calculations has not yet been made. It is not known whether these calculations can be performed within the project funding. The calculations need not be performed until after October 5, 1982, therefore, there is still time to consider options for this potential problem.

RESPONSIBLE
MANAGER
SAFFELL

EG&G IDAHO INC.

PARAMETERS INFL DAMP PIPNG A6316

NUMBER 446750000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	0	0	11	22	33	47
ACTUAL	0	0	0	0	0	0	0	0	3			

MATERIAL

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

MANPOWER

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

BUDGET

ACTUAL

A6316

YTD VARIANCE: 8 (73%)

189a A6316

1. Parameters Influencing Damping in Piping Systems

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

Support was provided for the NRC Mechanical Engineering Section in response to inquiries on damping data. Branch personnel prepared for the July 1 meeting with Dr. H. Shibota (Japan) to discuss cooperative damping efforts. This project is 6% expended and 6% complete.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

Japanese and United States damping studies will be reviewed by literature searches and telephone contacts. Preliminary planning for gathering damping data will begin.

6. Problems and Potential Problems

None.

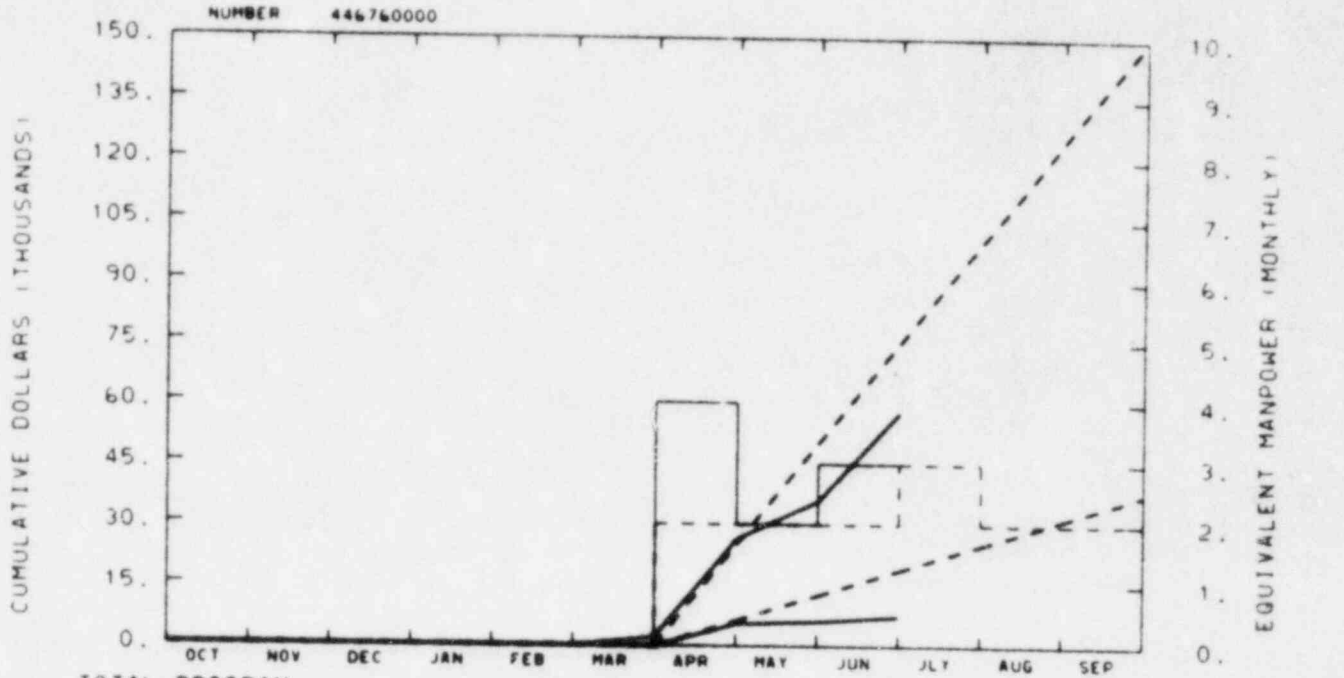
RESPONSIBLE MANAGER
R. F. SAFFELL

EG&G IDAHO INC.

DATA FOR NREP

A6317

NUMBER 446760000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	0	25	50	75	100	125	150
ACTUAL	0	0	0	0	0	2	26	36	58			

MATERIAL

BUDGET	0	0	0	0	0	0	6	12	19	25	31	37
ACTUAL	0	0	0	0	0	0	5	6	7			

MANPOWER

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

BUDGET

ACTUAL

A6317

YTD VARIANCE: 17 (23%)

The underrun is due principally to material costs. Anticipated expenditure between now and the end of the fiscal year should bring costs in line with budget.

189a A6317

1. Data for NREP

2. Scheduled Milestones for June 1982

Description	Due Date	Actual Date
Draft Chapter of NREP Guide	6-30-82	6/22/82C Saff-243-82

3. Summary of Work Performed in June 1982

Material for Section 5.7 of the NREP guide, describing a generic data base for NREP analyses, was put in the proper format for that document, including graphs of the data and its bounds. The section was inserted in an EG&G Idaho interim report and formally transmitted to the Nuclear Regulatory Commission (NRC).

Nearly 40% of the FY-1982 budget for Fin A6317 has been expended. This is in line with the completed scope of the project.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

Initial efforts to develop a bibliography of data bases for probabilistic risk assessment will be undertaken.

6. Problems and Potential Problems

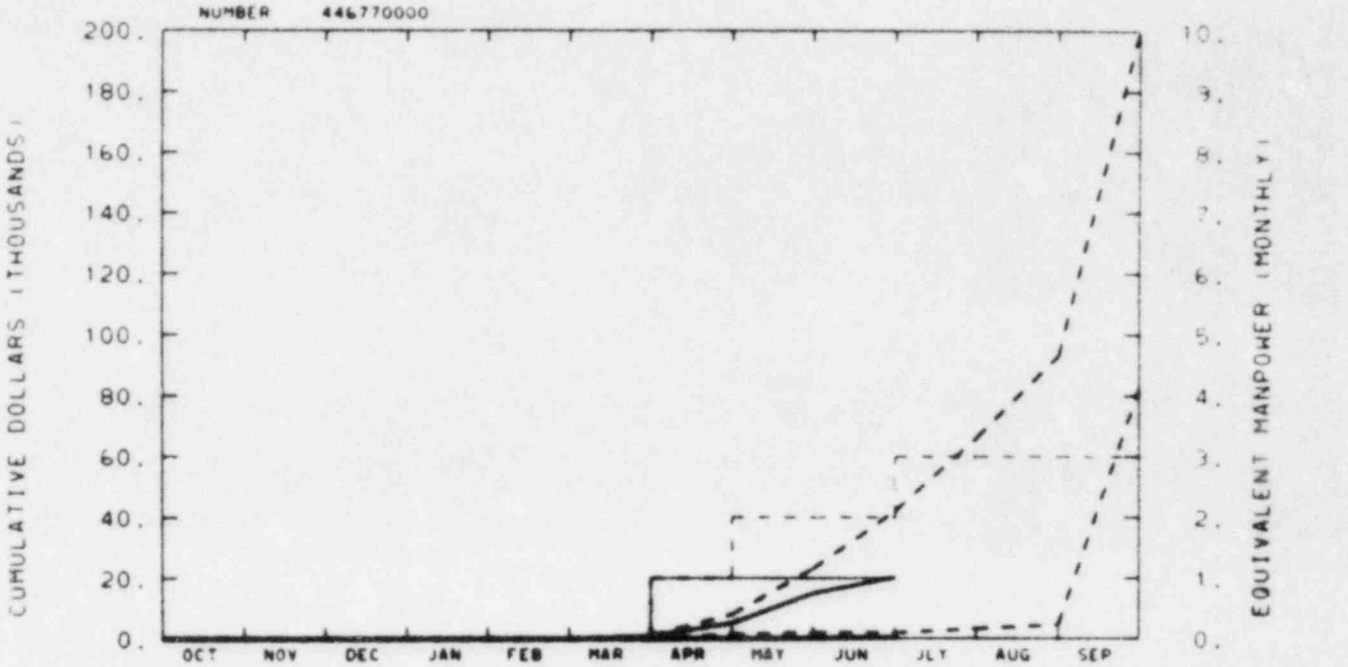
None.

RESPONSIBLE MANAGER
[illegible] F. LAFFELL

EG&G IDAHO INC.

SYS REQ/STND DEV ANNEAL RPVA6318

NUMBER 446770000



TOTAL PROGRAM

BUDGET	0	0	0	0	0	1	8	23	42	66	93	200
ACTUAL	0	0	0	0	0	1	5	15	20			

MATERIAL

BUDGET	0	0	0	0	0	0	1	2	2	3	5	82
ACTUAL	0	0	0	0	0	0	0	0	1			

MANPOWER

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

BUDGET

ACTUAL

A6318

YTD VARIANCE: 22 (52%)

Receipt of input data is running behind schedule on this task. Next month this task will be rebudgeted in consideration of a more realistic schedule for receipt of input data.

1. System Requirements and Standards Development for Annealing of Reactor Pressure Vessels

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

The attempt to obtain Combustion Engineering (CE) Owner's Group information on the CE study of in-situ annealing has failed. The data are proprietary and not open to the public. Also, the CE data on post-weld heat treating has not as yet been sold to the Electric Power Research Institute (EPRI), and therefore the data are not available.

Ted Marston of EPRI indicated that the Westinghouse/EPRI Final Report will be available by the end of July; the Appendix G of this report has raw Charpy data which is needed for curve-fitting and analysis. If this report (with Appendix G) is received in July, the parametric study of annealing on toughness recovery can possibly be completed by the end of this fiscal year as scheduled. Further delays would definitely impact schedules.

After review of the report by Bill Cooper of Teledyne Engineering Services (TES), Dr. Cooper was contacted by phone. Dr. Cooper has indicated that the pressure boundary components of the reactor system would have to be requalified pursuant to an ASME Code procedure. However, Dr. Cooper indicated that his real concern is more directed to other system components (piping, concrete, etc.). The TES report provides an excellent start to a requalification standard, and EPRI intends to further contract TES to continue this effort within the ASME Code Committee.

With respect to ASME Code Committees, contact was made with Bill Ham who is Chairman of the Section XI Subgroup on Repairs and Replacements. A task group is to be formed at the next Code meeting in September 1982 to address both requalification in general and thermal annealing in particular; Bill Ham asked for EG&G Idaho representation and help in establishing this task group.

During the last week in June, EG&G Idaho personnel attended the ASTM E-10 Symposium on Effects of Radiation on Materials and E-10.02 (nuclear materials, components and environmental effects) task group and subcommittee meetings in Scottsdale, Arizona. At the E-10.02 task group meetings, Dr. Peter Hedgecock (Chairman of E-10.02) solicited discussion on revision of ASTM Recommended Guide E509-74, In-service Annealing of Water-Cooled Nuclear Reactor Vessels. At the later E-10.02 main

3. Summary of Work Performed in June 1982 (Continued)

subcommittee meeting, it was decided to establish a task group to address this issue with W. L. Server as chairman. The scope at this time has not been established, but the material recovery determination and subsequent surveillance appear to be the most important issue for ASTM consideration; system procedures and effects are basically an ASME problem.

The ASTM E-10 Symposium was of particular interest the first day. Papers dealing with irradiation damage of pressure vessel steels were presented, and some effects of annealing were shown from both macro- and micro-kinetic recovery viewpoints. Discussions with Dr. Bob Odette and others suggest that even a meager understanding of the micro behavior can provide some interpolating insight into predicting radiation damage recovery for pressure vessel steels. Our review of Odette's physically-based models suggest that a minor effort be continued in updating the models to include the thermal annealing of radiation embrittlement.

Other activities this month included discussions with Russ Hawthorne of the Naval Research Laboratory (NRL) concerning raw data from his annealing work, debugging of the non-linear curve-fitting program on the EG&G CYBER system, and a request for information on the Hatch-1 reactor in-situ weld crack repair. Mr. Hawthorne could not easily send Charpy raw data from the NRL experiments, so this information will be digitized from report figures. The computer program debugging was delayed due to contractual delays, but is now in process. The Hatch-1 information is still being sought from Combustion Engineering (CE) who performed the weld repair; discussions with P. N. Randall of the NRC and W. Mikesell of Chicago Bridge and Iron Co. provided guidance leading to contact with CE.

The overall program for FY 82 is 15% complete and 17% of the funds have been expended. With regard to the monthly forecast, the program is underspent by 52% due to delays in receiving critical information for review.

4. Schedules Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

Computer curve-fitting of Charpy data will begin this month for the digitized NRL data. Work will begin in recruiting ASTM E-10 members for the new task group on an annealing damage standard. Also, contact with the ASME Repairs and Replacement Subgroup will continue for defining the scope of the ASME subtask. Hopefully, the EPRI/Westinghouse report will be available this month so that detailed review can commence.

6. Problems and Potential Problems

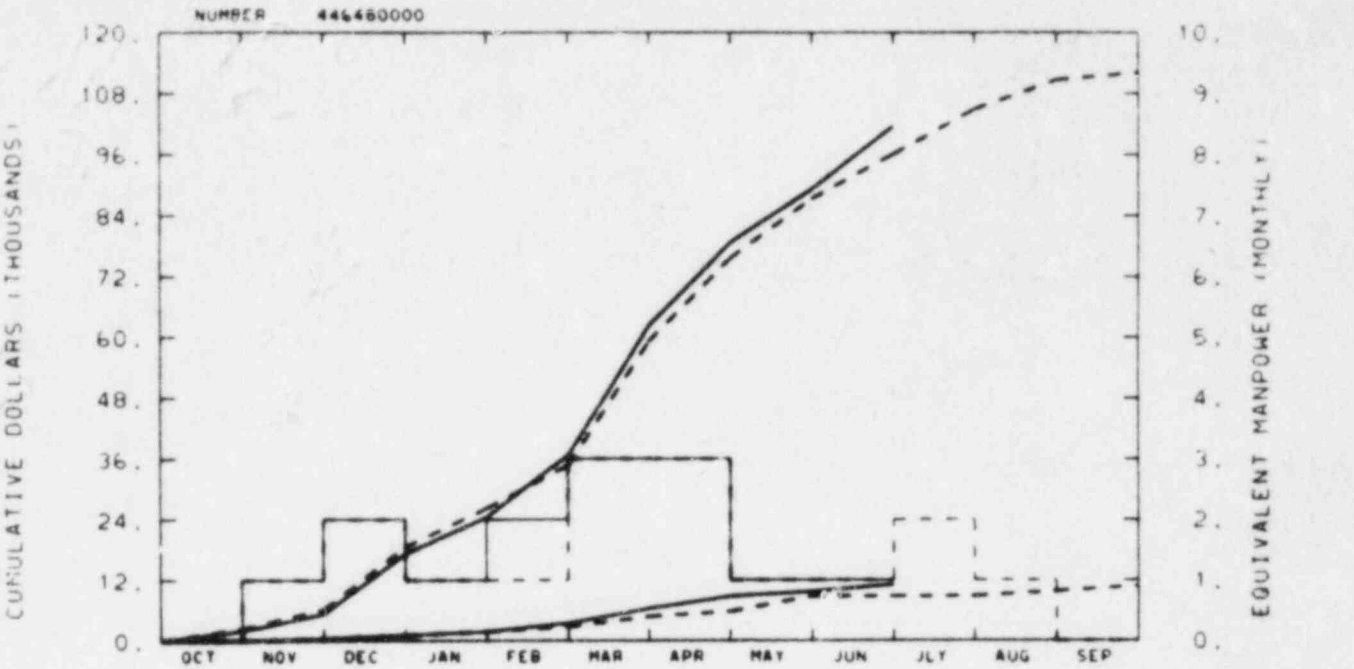
Further delays in receiving the EPRI/Westinghouse report will definitely impact projected schedules. Effects of these delays will be evaluated next month.

RESPONSIBLE
MANAGER
SAFFELL

EG&G IDAHO INC.

KUOSHENG SRV DISCHARGE A6353

NUMBER 446480000



TOTAL PROGRAM

BUDGET	2	6	19	26	35	59	76	87	96	105	111	112
ACTUAL	2	5	17	24	37	62	79	89	102			

BUDGET - - - - - -

ACTUAL ———

MATERIAL

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

MANPOWER

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

A6353

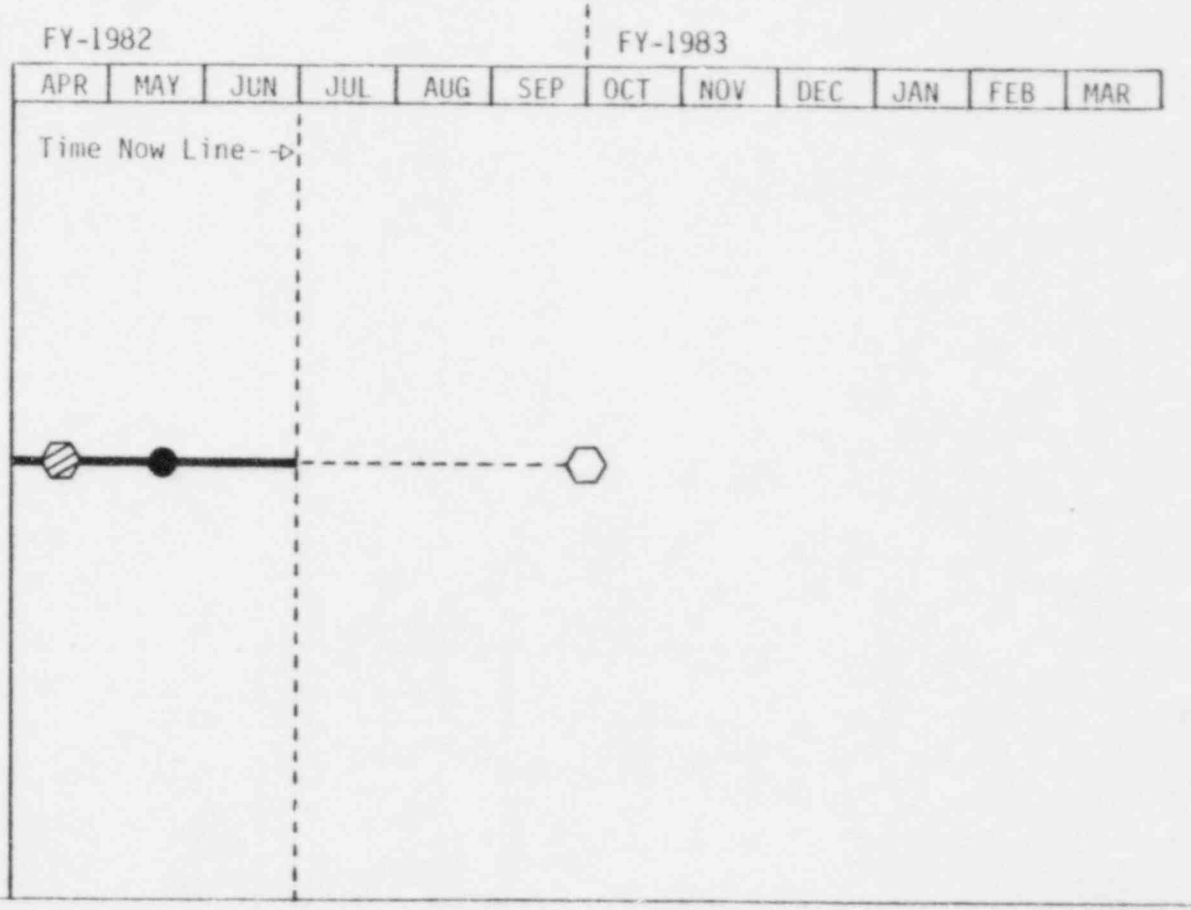
YTD VARIANCE: <6> (6%)

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

NRC TECHNICAL ASSISTANCE PROGRAM DIVISION June 1982

Kuo-Sheng (A6353)



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

189a A6353

1. Kuosheng Safety Relief Valve (SRV) Discharge and Piping Vibrational Tests

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

Temperature histories through the pipe wall of the SRV8 piping based on RELAP5 output were calculated for certain pipe locations. Thermal strain histories having a shape based on these results were subtracted from the Bechtel and Nutech experimental data to remove thermal drift from the data.

Comparing of experimental and analytical results was begun and discrepancies are being examined. This project is approximately 90% complete and 91% expended.

4. Schedules Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

Comparisons will be completed. Report preparation will continue.

6. Problems and Potential Problems

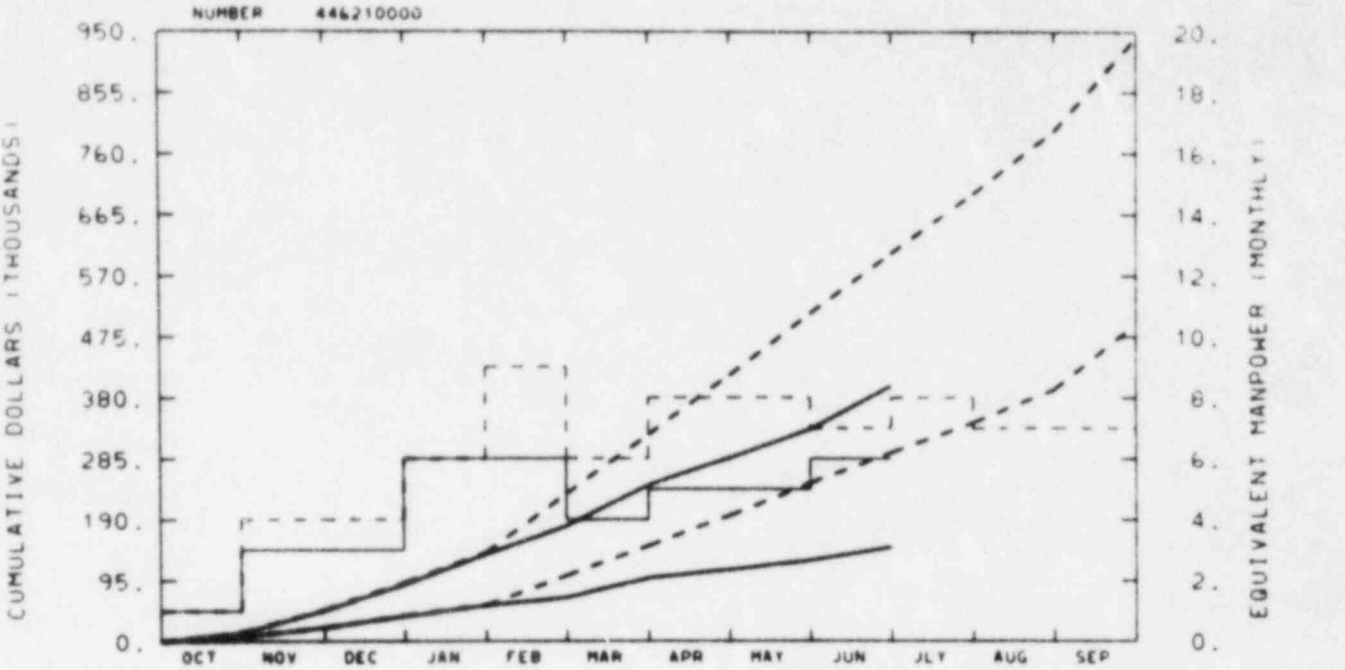
None.

RESPONSIBLE MANAGER
F SAFFELL

EG&G IDAHO INC.

SEVERE ACCIDENT SEQ ANAL A6354

NUMBER 446210000



TOTAL PROGRAM

BUDGET	14	50	92	138	230	322	415	512	604	697	794	941
ACTUAL	13	48	89	136	180	244	286	331	398			

MATERIAL

BUDGET	7	22	41	56	103	149	196	247	294	341	392	495
ACTUAL	7	22	39	56	69	99	112	126	147			

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

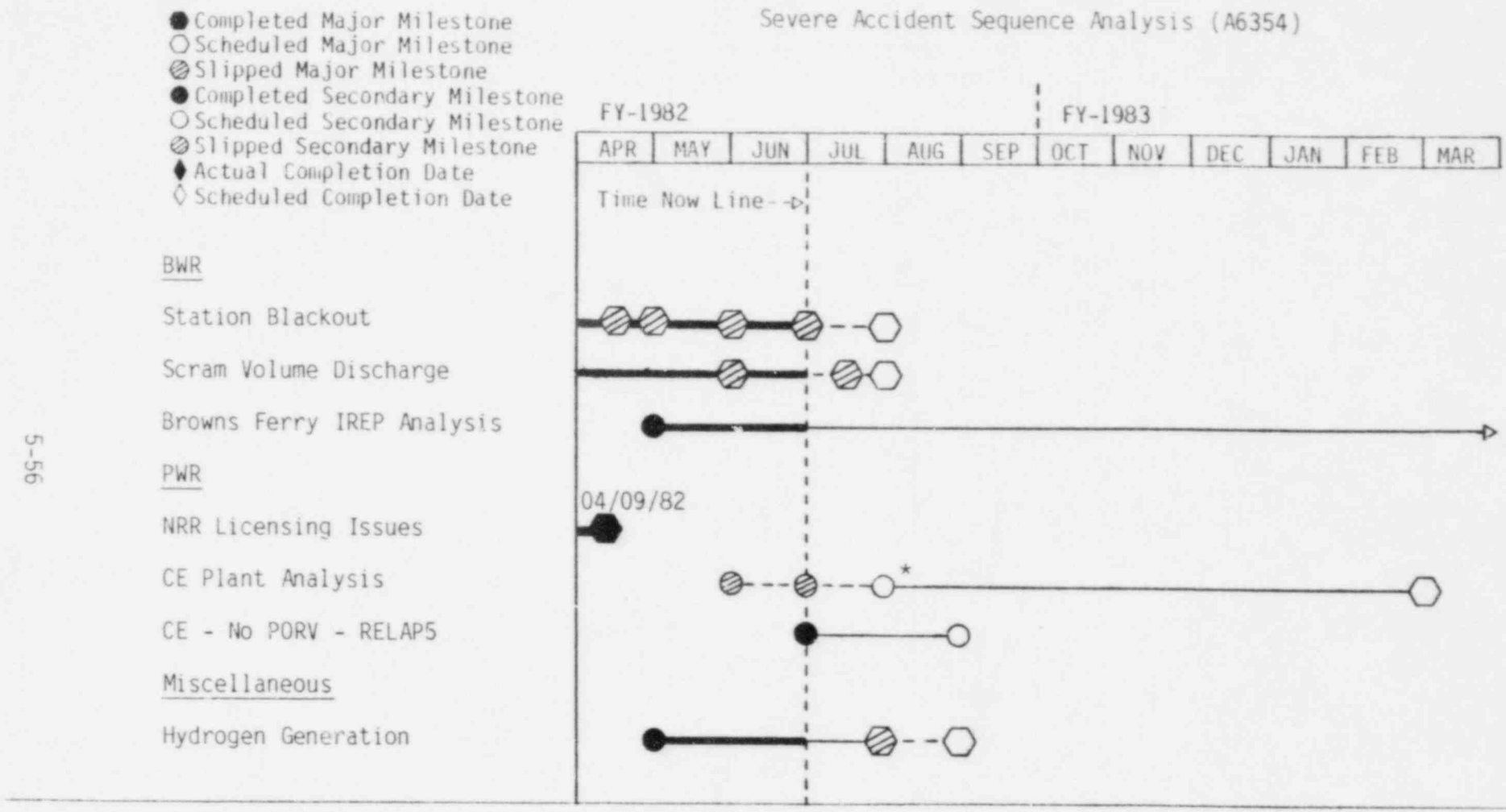
A6354

YTD VARIANCE: 206 (34%)

The $206K underrun is due to the delay in the initiation of the in-depth analysis of CE plants and the delay in ATWS evaluation. The anticipated FY-1982 carryover is $307K.

NRC TECHNICAL ASSISTANCE PROGRAM DIVISION June 1982

Severe Accident Sequence Analysis (A6354)



NOTES: * Initiation of this task is contingent upon NRC-RES agreement with EG&G Idaho on the final analysis plan.

189a A6354

1. Severe Accident Sequence Analysis Program (SASA)

2. Scheduled Milestones for June 1982

Description	Due Date	Actual Date
Station Blackout BWR	6-30-82E	7-30-82E

3. Summary of Work Performed in June 1982

A final plan to analyze Combustion Engineering (CE) CESSAR-80 plant designs in-depth based on the Reactor Safety Study Methods Application Program (RSSMAP) Calvert Cliffs study was transmitted to the Nuclear Regulatory Commission (NRC). Work will be initiated as soon as the plan is accepted by NRC-Office of Nuclear Regulatory Research (RES).

The Browns Ferry station blackout report was drafted. The delay in the report is due to two reasons. First, there was a mismatch between boundary conditions predicted by the Idaho National Engineering Laboratory (INEL) using RELAP5 and by Oak Ridge National Laboratory (ORNL) using the LACP code. The boundary conditions mentioned are the mass and energy transmitted to the pressure suppression pool. Second, an error in the decay heat model in RELAP5 was discovered. It is now corrected. The net influence of these two facts is insignificant on the final value of the important boundary conditions total mass to reactor vessel and mass/energy to pressure suppression pool.

The Browns Ferry scram discharge volume report was drafted. Agreement between RELAP5 and the LACP code at ORNL is good.

The Browns Ferry RELAP5 model was modified to run with a jet pump model based on actual operating characteristics. Progress was also made toward completing a steady state run with the BWR version of RELAP5.

The potential use of the containment codes CONTAIN and CONTEMPT was investigated to assess their advantages as containment analysis tools for the IREP dominant sequences. The investigation was made because it is believed by INEL and ORNL that some of the IREP sequences will contain short term transient behavior which cannot be adequately modeled by MARCH. CONTAIN has the greatest potential since it can be used in conjunction with RELAP5. A final decision upon the use of one of these codes will be made between NRC, INEL and ORNL.

3. Summary of Work Performed in June 1982 (Continued)

A paper entitled "Application of the RELAP5 Code to the Station Blackout at the Browns Ferry Unit One Plant" was completed for submittal to the Second International Topical Meeting on Nuclear Reactor Thermal Hydraulics in Santa Barbara in January 1983.

Replication of MARCH hydrogen source term calculations continued. Four of the 16 cases to be analyzed with SCDAP/MOD0 were run. Nine additional cases were partially calculated. The need to rerun all 16 MARCH cases and SCDAP coding errors contributed to the delay. The status and progress of the analyses have been conveyed to John Larkins, NRC-RES. It is anticipated that final results will be available before the end of July.

4. Scheduled Milestones for July 1982

Description	Due Date	Actual Date
Scram Discharge Volume	7-30-82E	

5. Summary of Work to be Performed in July 1982

Work will be initiated on the analysis of CE plants per agreement with NRC-RES.

The Browns Ferry RELAP5 analyses will be published.

The Browns Ferry scram discharge volume analysis report will be published.

Analysis of the Browns Ferry IREP operational sequences will be initiated.

Work will continue to analyze the behavior of CE plants without power operated relief valves using RELAP5.

Work will continue on the replication of the MARCH hydrogen source term calculations using SCDAP/MOD0.

It is planned to reassess the strategy to analyze the Browns Ferry IREP sequences since the final version of the IREP report significantly reduced the number of dominant sequences from the early draft.

6. Problems and Potential Problems

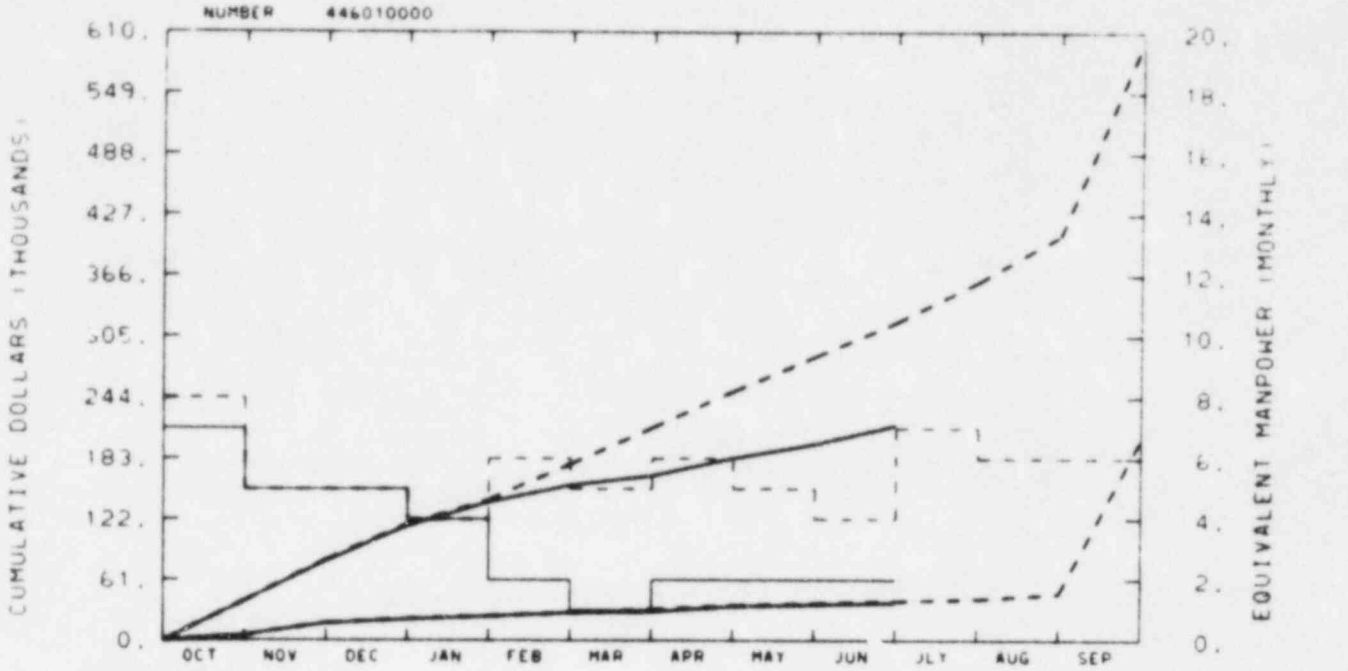
None.

RESPONSIBLE MANAGER
[illegible] SAFFELL

EG&G IDAHO INC.

SAFETY & RELIEF VAL A6356

NUMBER 446010000



TOTAL PROGRAM

BUDGET	40	81	117	142	177	214	250	285	319	360	406	601
ACTUAL	40	80	115	139	156	166	184	198	216			

MATERIAL

BUDGET	5	18	22	25	28	32	36	38	40	42	47	203
ACTUAL	5	18	22	25	28	29	35	36	38			

MANPOWER

BUDGET	8	5	5	4	6	5	6	5	4	7	6	6
ACTUAL	7	5	5	4	2	1	2	2	2			

BUDGET

ACTUAL

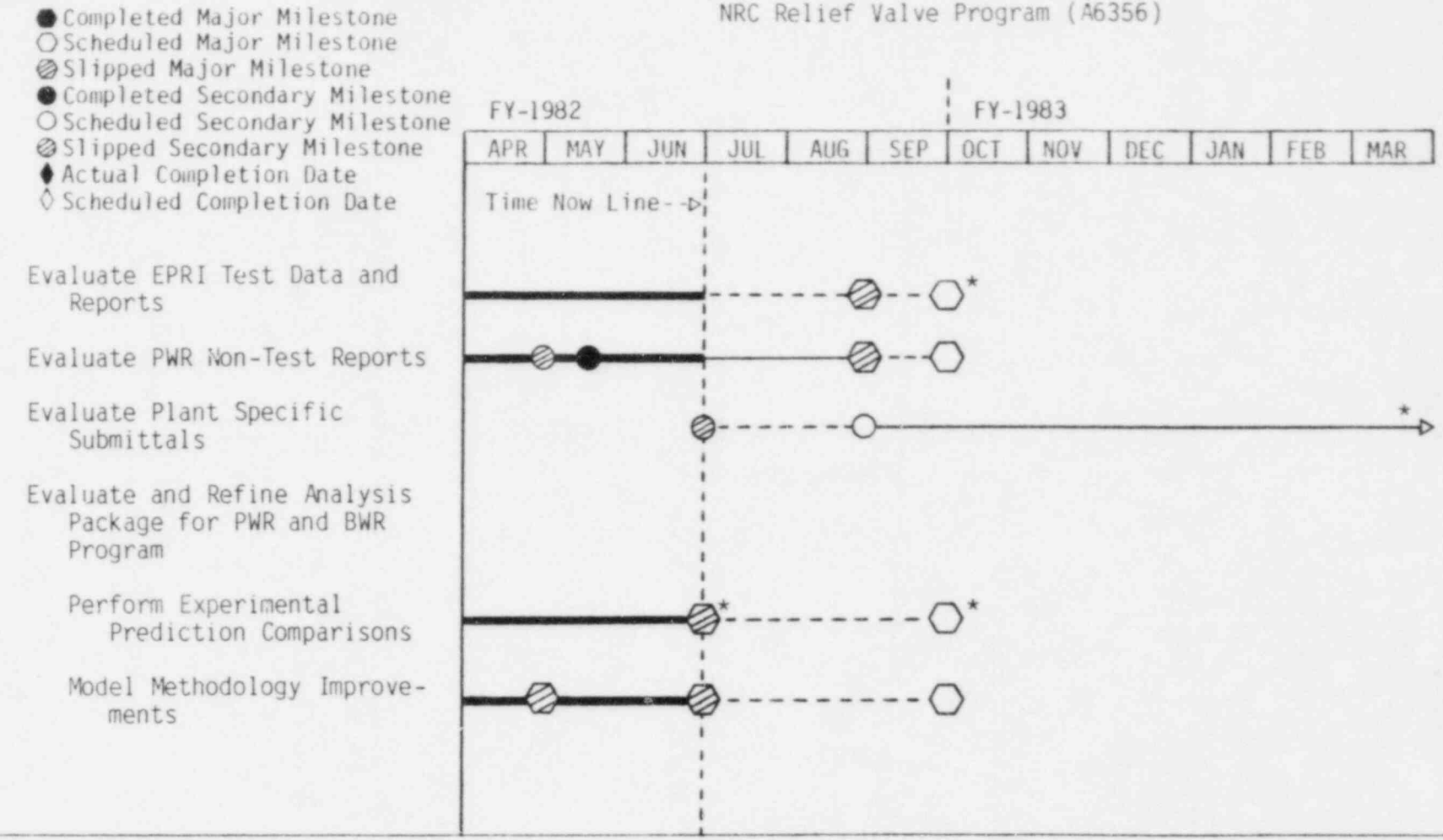
A6356

YTD VARIANCE: 103 (32%)

The underrun is due in part to the delay in receiving PWR/EPRI reports for evaluation and the lack of detail for evaluation in the BWR plant specific submittals. This lack of detail reduced the anticipated scope of the initial evaluation. The anticipated FY-1982 carryover is $170K.

NRC TECHNICAL ASSISTANCE PROGRAM DIVISION June 1982

NRC Relief Valve Program (A6356)



NOTES: * Completion depends on the date that data, reports, and plant specific submittals are made available to NRC and EG&G Idaho by EPRI and the PWR and BWR Owners.

189a A6356

1. NRC Safety/Relief Valve Program

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

A draft report describing an improved method for calculating hydraulic forces from RELAP5 output was reviewed by program personnel, and revision was initiated in response to the comments. The improved method will result in more accurate force calculations in safety/relief valve systems.

A report comparing RELAP5 calculations with HDR data (German Standard Problem No. 4) was completed. The results indicate that RELAP5 has the capability to reasonably calculate the hydraulic behavior of safety/relief valve systems. The HDR data is the best presently available information that describes valve system behavior for comparison with code calculations.

Papers concerning the developoment of the new technique for calculating hydraulic forces on piping from RELAP5 output and summarizing the hydraulic code selection process and effort evaluating RELAP5 for safety/relief valve system analysis were prepared and submitted for potential presentation at the ANS-ASME sponsored Topical Meeting on Nuclear Reactor Thermal Hydraulics to be held in Santa Barbara in January 1983.

Evaluation of seven PWR/EPRI test data and test justification reports is in progress.

Work was initiated to activate the direct integration version of NUPIPE-II on the INEL computer system. This expanded structural modeling capability will allow the high frequency response of a valve blowdown system to be modeled. This will enhance the plant specific confirmatory analysis capability.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

Review of several PWR/EPRI reports including the PWR block valve test report will continue.

5. Summary of Work to be Performed in July 1982 (Continued)

Evaluation of the BWR plant specific submittals will continue as required.

Work will continue to activate the direct integration version of NUPIPE-II on the INEL computer system.

The report describing an improved method for calculating hydraulic forces from RELAP5 out will be revised and given a final review.

6. Problems and Potential Problems

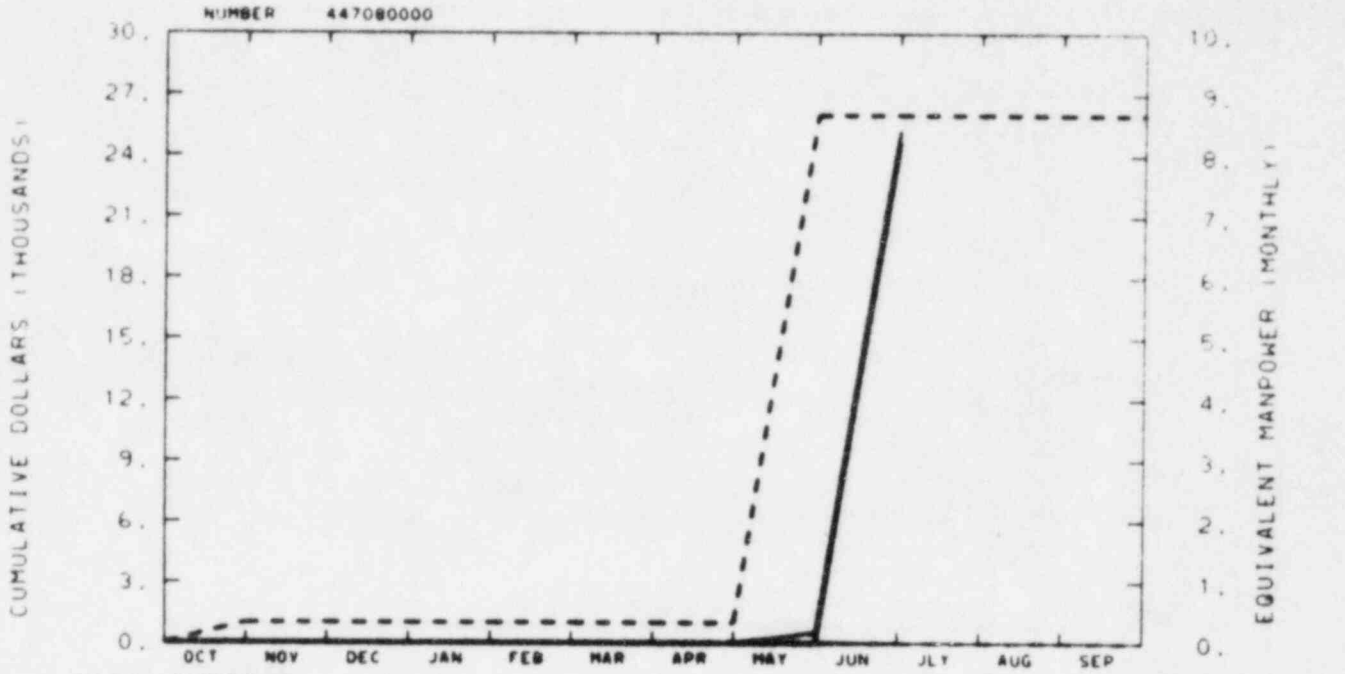
None.

RESPONSIBLE
MANAGER
SAFFELL

EG&G IDAHO INC.

APPLIED JAMES/STEIN A6358

NUMBER 447080000



TOTAL PROGRAM

BUDGET	1	1	1	1	1	1	1	26	26	26	26	26
ACTUAL	0	0	0	0	0	0	0	1	25			

MATERIAL

BUDGET	1	1	1	1	1	1	1	26	26	26	26	26
ACTUAL	0	0	0	0	0	0	0	0	25			

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6358

YTD VARIANCE: 1 (4%)

189a A6358

1. Applied James-Stein Estimators

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

The preparation of documentation on the theoretical aspects of James-Stein estimation and on the Monte Carlo simulation results continued. Preparations were made to attack the difficult problem of evaluating tolerance bounds. Additional funding of $22,500 was placed on the subcontract with the University of Texas at Austin. This will allow work to continue until January 1983.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

Documentation of theory should be completed. Documentation of Monte Carlo results will continue into August. Work on developing methodology for tolerance bounds will continue.

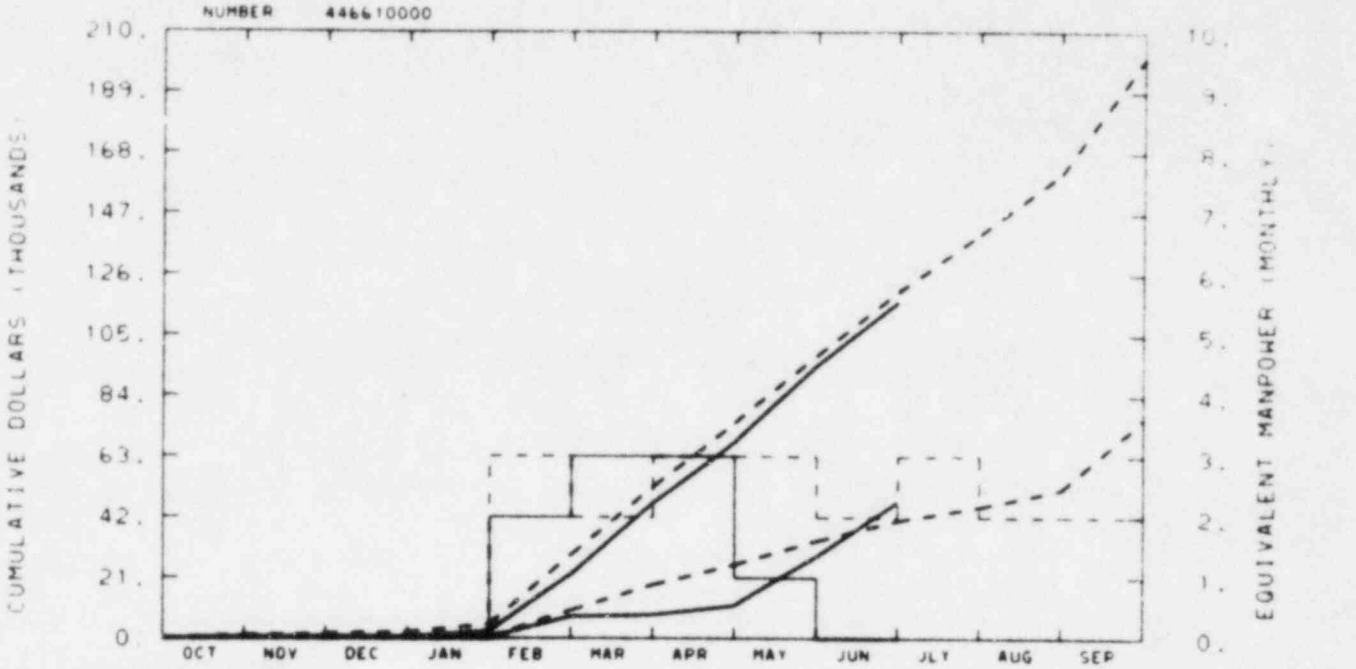
6. Problems and Potential Problems

None.

EG&G IDAHO INC.

SECTION XI SUPPORT A6367

NUMBER 446610000



TOTAL PROGRAM

BUDGET	1	2	2	5	29	53	75	98	120	140	161	201
ACTUAL	0	0	0	3	22	47	68	95	117			

MATERIAL

BUDGET	0	0	0	0	10	19	26	34	41	46	52	76
ACTUAL	0	0	0	0	8	8	12	29	47			

MANPOWER

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

BUDGET

ACTUAL

A6367

YTD VARIANCE: 3 (3%)

189a A6367

1. Support of NRC on ASME Code Section XI Activities

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

Task 6: There was no activity on this task during June. This task is 90% complete.

Task 7: The preliminary report for this task was formally transmitted to the NRC for their review and comment. This task is 98% complete.

Task 9: Continuing efforts were made to obtain adequate stress/spectrum data for the sample problem to be solved. The NRC work funded at Lawrence Livermore Laboratory (LLL) appears to have generated most (if not all) of the information needed for the Zion 1 Nuclear Plant. Contact with both NRC and LLL personnel indicates that there is most likely a mechanism available for obtaining the pertinent stress details. A formal letter has been written to LLL requesting the stress data. Other ongoing efforts by Oak Ridge National Laboratory (ORNL) provide a backup position if the LLL information proves to be inadequate or unavailable. This task is now 48% complete.

Task 10: A portion of the final report draft was completed. Data from the boiling water reactor (BWR) support survey were entered in the computer for analysis. The FY-1982 work scope for Task 10 is about 80% complete.

General: Overall, this project is 75% complete and 76% expended based upon an adjusted FY-1982 work scope and budget of $153K (excluding $48K of anticipated carryover).

4. Schedules Milestones for July 1982

Description	Due Date	Actual Date
Task 6 Review Valve Test Draft Report	7/16/82T	
Task 7 Review Support Examination Standards Draft Report	7/9/82T	6/9/82C Saff-230-82

5. Summary of Work to be Performed in July 1982

Task 6: The preliminary report for this task will be completed and transmitted to the NRC for review and comment.

5. Summary of Work to be Performed in July 1982 (Continued)

Task 7: No activity is planned on this task until NRC comments on the preliminary report. Assuming no major changes, the final report will then be issued during July.

Task 9: The stress information from LLL will hopefully be received and then evaluated for overall completeness. If the data prove to be adequate, the final definition of the sample problem will be made. Otherwise, one of the ORNL positions will be identified for the sample problem.

Task 10: Data from the BWR survey will be processed for the final report. The small amount of data remaining to be processed for completion of the pressurized water reactor (PWR) survey will be entered pending its receipt. Preparation of the final report will continue.

6. Problems and Potential Problems

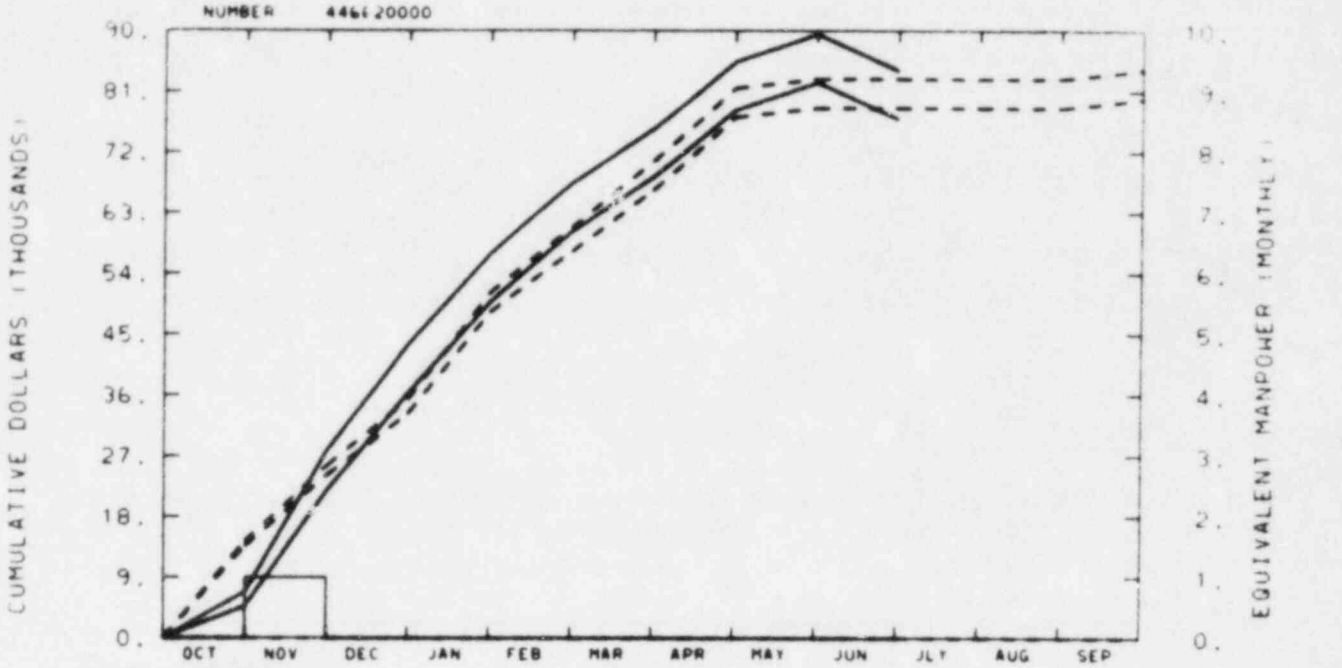
For Task 10, a portion of the PWR Class 1 support data is incomplete. The utility is attempting to locate the missing data.

RESPONSIBLE
MANAGER
F SAFFELL

EG&G IDAHO INC.

ASME SECTION XI SUPPORT A6368

NUMBER 4466 20000



TOTAL PROGRAM

BUDGET	14	25	35	51	61	71	82	83	83	83	83	84
ACTUAL	7	28	43	57	67	75	85	90	84			

MATERIAL

BUDGET	14	24	33	48	57	66	77	79	79	79	79	80
ACTUAL	5	22	36	50	60	68	78	82	77			

MANPOWER

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

BUDGET

ACTUAL

A6368

YTD VARIANCE: 1 (2%)

189a A6368

1. Support of NRC on ASME Boiler and Pressure Vessel Code, Section XI Activities

2. Scheduled Milestones for June 1982

Description	Due Date	Actual Date
Evaluate Use of Flat Calibration Blocks	9/30/82E	6/19/82C Saff-244-82

3. Summary of Work Performed in June 1982

Task 1: A letter report entitled "Recommendations for Calibration Block Requirements Changes and Evaluation of their Impact on Vessel and Piping Examinations" and a task plan for development of ultrasonic techniques for examination of parts with complex curved surfaces were sent to the Nuclear Regulatory Commission (NRC) Technical Monitor. This completes the task. Future presentations to the American Society of Mechanical Engineers Boiler and Pressure Vessel Code Code will be covered by A6367.

General: The A6368 tasks are 100% complete and 100% expended.

4. Scheduled Milestones for July 1982

None

5. Summary of Work to be Performed in July 1982

This program is complete and will not be reported on in future monthly reports.

6. Problems and Potential Problems

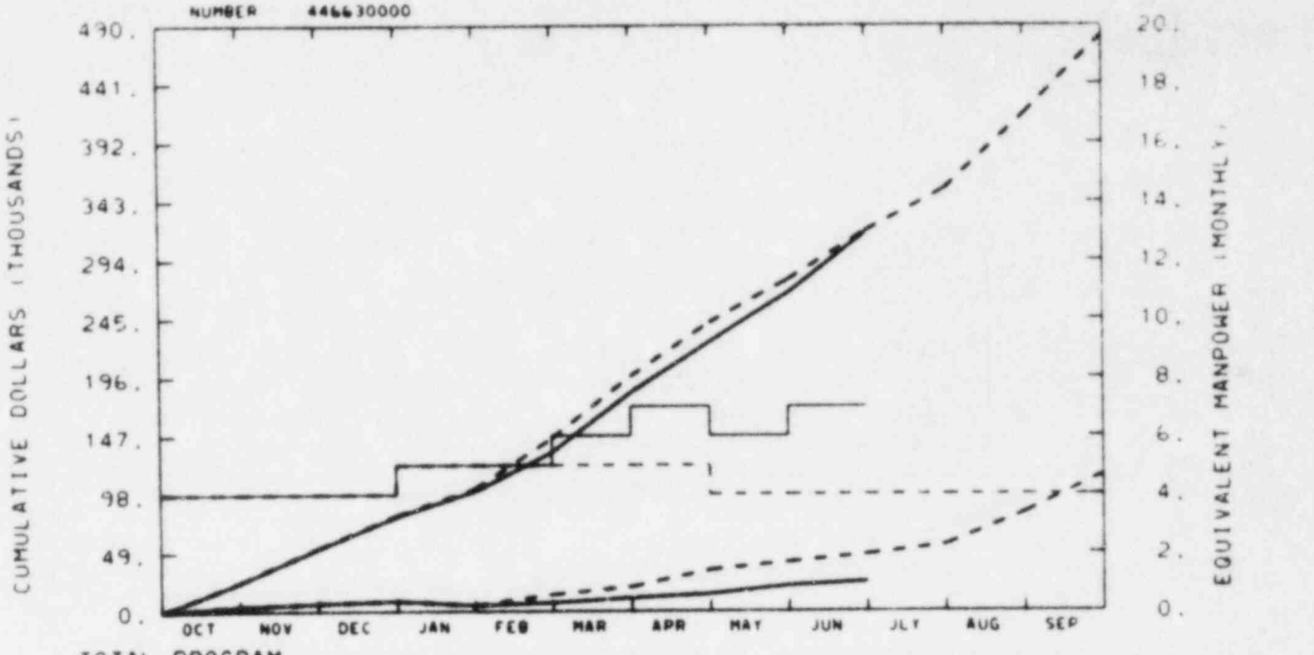
None.

RESPONSIBLE
MANAGER
[illegible] SAFFELL

EG&G IDAHO INC.

NUCLEAR POWER PLANT INST A6369

NUMBER 44663000



TOTAL PROGRAM

BUDGET	25	53	81	103	145	196	242	277	318	353	415	481
ACTUAL	24	53	79	100	133	183	225	266	317			

MATERIAL

BUDGET	4	7	9	5	14	21	35	41	48	55	83	114
ACTUAL	4	7	9	5	7	11	15	21	25			

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6369

YTD VARIANCE: 1

189a A6369

1. Nuclear Power Plant Instrumentation Evaluation

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

Program personnel addressed the American Instrument Society Power Conference and an Institute of Electrical and Electronics Engineers (IEEE) working group on Regulatory Guide (RG) 1.97. Both of these meetings were attended by personnel representing nuclear utilities as well as Nuclear Steam System Suppliers.

System and plant data are being incorporated into the data retrieval system in preparation for capability demonstrations scheduled for July 1982.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

Work will continue to examine and incorporate comments from review of the draft of the Regulatory Guide 1.97 clarification document. A final draft will be prepared for publication.

A briefing will be given for Department of Energy-Idaho Operations Office and Nuclear Regulatory Commission (NRC) personnel on the industry problems in implementing RG 1.97 that have been identified to date and the content and publicity of the data base management system currently employed by this program.

6. Problems and Potential Problems

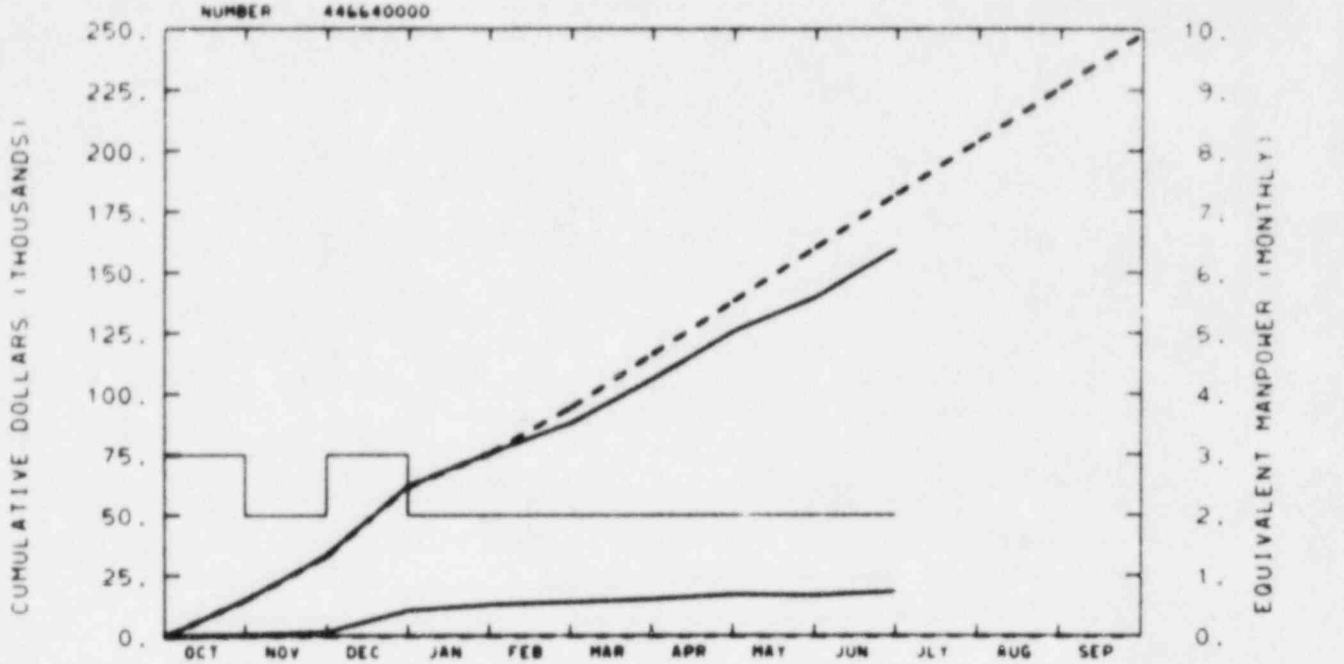
The expected Commission endorsement of NRC policy issue, SECY-82-111, "Requirements for Emergency Response Capability", and the corresponding industry response has made plant specific information difficult to obtain. This is dictating a change in the program emphasis. In addition, the probable implementation of SECY-82-111 has also influenced the number and types of comments received on the EG&G Idaho draft report, "Clarification of Regulatory Guide 1.97."

RESPONSIBLE
MANAGER
SAFFELL

EG&G IDAHO INC.

RES ASSESS-CON AUTO A6370

NUMBER 446640000



TOTAL PROGRAM

BUDGET	15	33	62	75	94	116	138	160	182	204	226	248
ACTUAL	15	34	62	76	88	106	126	140	160			

MATERIAL

BUDGET	15	33	62	75	94	116	138	160	182	204	226	248
ACTUAL	1	2	11	13	14	15	17	17	18			

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6370

YTD VARIANCE: 22 (12%)

Negotiations are still underway to determine task funding and requirements. When they are established, the budget will be realigned.

189a A6370

1. Microprocessor Based Design and Plant Control Automation

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

EG&G Idaho conducted a program review with the Nuclear Regulatory Commission (NRC) June 8 and 9. During that review a meeting was held with Quality Assurance representatives from the NRC and the Department of Energy (DOE). The subject of the discussion was the software quality assurance task. It was resolved that there is a need for clarification of the Software Quality Assurance issue. The definitions in NQA-1 and NQA-2 are not sufficient. Furthermore, EG&G Idaho was asked to determine if personnel from the Hanford, Washington site can help in the area of software qualification assurance.

During the NRC meetings, a Research Review Group (RRG) was chartered to direct this program.

The Form 189 draft was written for FY-1983 and submitted to DOE.

The preparation of the draft report (due to NRC in July) titled "Preliminary Assessment of Design Issues Related to the Use of Programmable Digital Devices for Safety and Control Systems" was started.

Preliminary discussion with Westinghouse-Hanford on software quality assurance were conducted. A meeting will take place the first part of August.

The signal isolator vendor survey is continuing. EG&G Idaho is making an initial review of information received to date to determine what additional information should be requested from each vendor. A form letter to be used to request this information has been prepared. This letter will become the instrument to formally request the remaining assistance required from the vendors.

EG&G Idaho sent the revised "Interim Safety Related Criteria for Signal Isolation Devices Used in Commercial Nuclear Reactors" to the NRC and four NSSS vendors for comment. These criteria will also be sent to the isolator vendors for comment when additional information is requested.

General Electric (NED) was contacted to request information on the new computer-based Class 1E system being developed by them.

4. Scheduled Milestones for July 1982

Description	Due Date	Actual Date
Preliminary Assessment of Design Issues Related to the Use of Programmable Digital Devices for Safety and Control Systems	7/31/82E	

5. Summary of Work to be Performed in July 1982

The major effort in July will be the preparation of the draft report listed in Item 4.

6. Problems and Potential Problems

None.

189a A6371

1. Technical Assistance Contract for Evaluation of and Guidance for Radiological Air Sampling

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

Laboratory analysis of uranium mill samples continued.

A project review was conducted by the Nuclear Regulatory Commission (NRC)-Washington.

Site visits were made to Monsanto and 3M byproduct material handling facilities.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

The laboratory setup for controlled testing of air sampling equipment will be completed.

A review of the Personal Air Sampling Evaluation will be accomplished.

6. Problems and Potential Problems

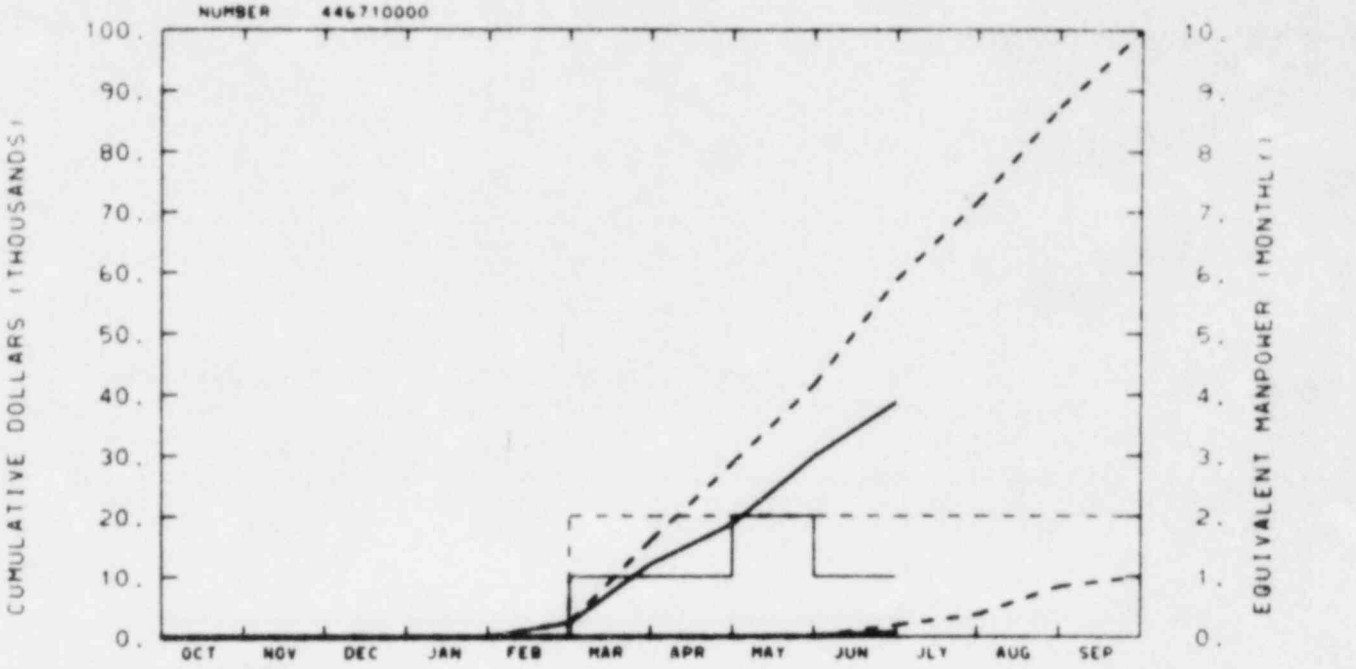
None.

RESPONSIBLE
MANAGER
F SAFFELL

EG&G IDAHO INC.

TWO-PHASE INSTRUMENT EVAL A6376

NUMBER 446710000



TOTAL PROGRAM

BUDGET	0	0	0	0	2	16	29	42	59	72	87	100
ACTUAL	0	0	0	0	2	12	19	30	39			

BUDGET

ACTUAL

MATERIAL

BUDGET	0	0	0	0	0	0	0	0	2	4	8	10
ACTUAL	0	0	0	0	0	0	0	0	1			

MANPOWER

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

A6376

YTD VARIANCE: 20 (34%)

Negotiations redefining the task are still underway. As soon as work scope is defined, a reevaluation will be reflected in the budget.

189a A6376

1. Two Phase Instrumentation Evaluation

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

The literature search is continuing and ongoing. Contact with other government supported research programs is continuing. An interim draft report is being prepared. Meetings with Nuclear Regulatory Commission (NRC) Technical Monitors were held exchanging information and discussing FY-1983 Form 189's.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

EG&G Idaho will continue the literature search and finish the draft interim report.

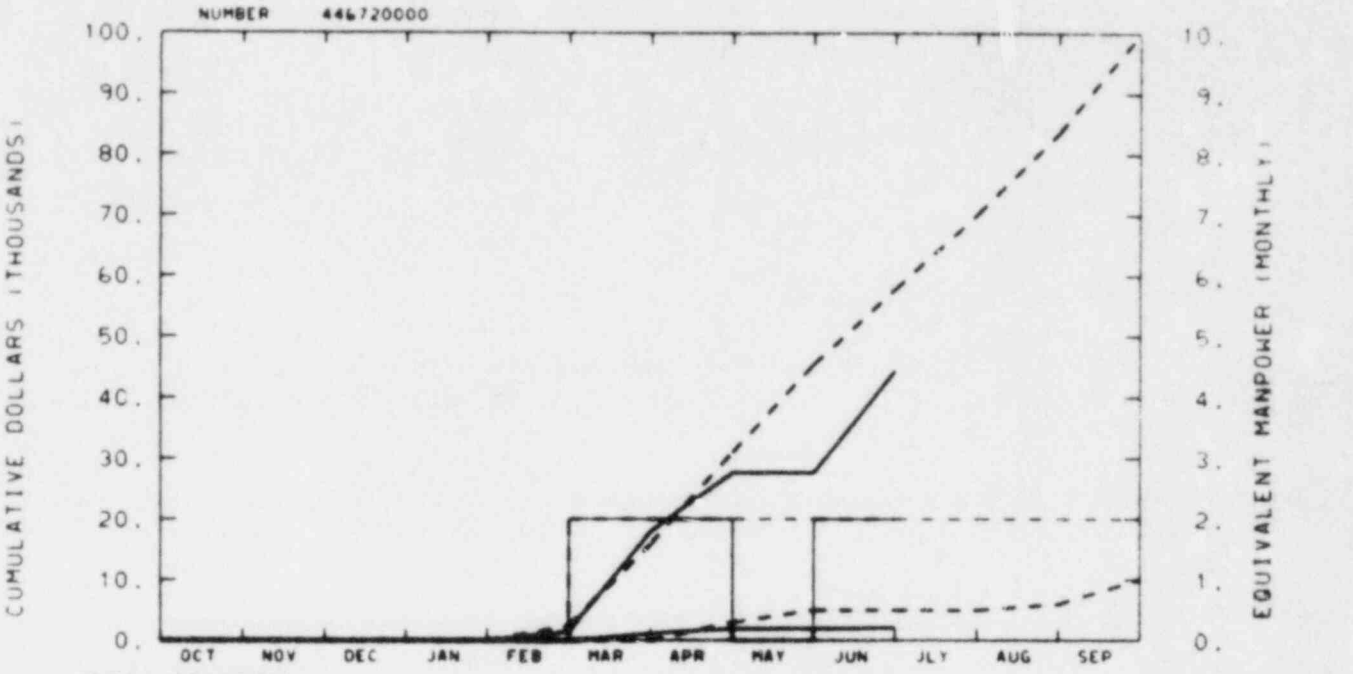
6. Problems and Potential Problems

Receipt of information from utilities and vendors continues to be very slow and sparce.

RESPONSIBLE
MANAGER
[illegible] SAFFELL

EG&G IDAHO INC.

DIAGNOSTIC INSTRUMENT EVAL A6380



TOTAL PROGRAM

BUDGET	0	0	0	0	2	16	31	45	58	70	84	100
ACTUAL	0	0	0	0	1	18	28	28	44			

MATERIAL

BUDGET	0	0	0	0	0	0	3	5	5	5	6	10
ACTUAL	0	0	0	0	0	1	2	2	2			

MANPOWER

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

A6380

YTD VARIANCE: 14 (24%)

Negotiations redefining the task are still underway. As soon as work scope is defined, a reevaluation will be reflected in the budget.

1. Diagnostic Instrumentation Evaluation

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

The FY-1982 Form 189 was again revised to reflect Nuclear Regulatory Commission (NRC) comments. The final draft will be transmitted when typed.

Work continued on a listing of needed diagnostic instrumentation based on fault tree analysis. This portion of the task is a continuing effort and will constitute the major portion of the task for this year.

In addition work was begun on the qualification and design criteria guidelines as they apply to diagnostic instrumentation. An investigation into the usefulness of noise analysis techniques for diagnostics was started.

4. Scheduled Milestones for July 1982

None.

5. Summary of Work to be Performed in July 1982

Work will continue on the three subtasks described above.

6. Problems and Potential Problems

None.

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

2. Scheduled Milestones for June 1982

None.

3. Summary of Work Performed in June 1982

Review comments by the IREP Quality Assurance (QA) team were incorporated into the main part of the report. The main report and its three appendices are in technical editing.

4. Scheduled Milestones for July 1982

Description	Due Date	Actual Date
Final IREP Report as NUREG	7/31/82	

5. Summary of Work to be Performed in July 1982

Complete editing, drafting, and publishing of IREP report.

6. Problems and Potential Problems

None.

NRC TECHNICAL ASSISTANCE PROGRAM DIVISION

CAPITAL EQUIPMENT

CODE ASSESSMENT AND APPLICATION DIVISION

CAPITAL EQUIPMENT COST REPORT
(A6093)

(1) Priority Number	(2) Description	(3) EA/WBS Number	(4) Planned Requisition Date	(5) Actual Requisition Date	(6) DOE Authorized Amount	(7) Requisition Value (+ 6%)	(8) P/O Award Date	(9) Outstanding Commitment (+ 6%)	(10) Prior Year Costs	(11) Current Year Costs	(12) Total Costs and Outstanding Commitments	(13) Variance	(14) Status	(15) Estimate At Complete
Pre FY-1982														
UNASSIGNED		9E5810100	N/A	N/A	5,000	N/A	-	0	0	0	0	5,000	0	5,000

CODE ASSESSMENT AND APPLICATION DIVISION

CAPITAL EQUIPMENT COST REPORT
(A6117)

(1) Priority Number	(2) Description	(3) EA/WBS Number	(4) Planned Requisition Date	(5) Actual Requisition Date	(6) DOE Authorized Amount	(7) Requisition Value (+ 6%)	(8) P/O Award Date	(9) Outstanding Commitment (+ 6%)	(10) Prior Year Costs	(11) Current Year Costs	(12) Total Costs and Outstanding Commitments	(13) Variance	(14) Status	(15) Estimate At Complete.
Pre FY-1982														
UNASSIGNED		9KA820000	N/A	N/A	3,139	N/A	-	0	0	0	0	3,139	0	3,139

CODE ASSESSMENT AND APPLICATION DIVISION

CAPITAL EQUIPMENT COST REPORT
(A6366)

(1) Priority Number	(2) Description	(3) EA/WBS Number	(4) Planned Requisition Date	(5) Actual Requisition Date	(6) DOE Authorized Amount	(7) Requisition Value (+ 6%)	(8) P/O Award Date	(9) Outstanding Commitment (+ 6%)	(10) Prior Year Costs	(11) Current Year Costs	(12) Total Costs and Outstanding Commitments	(13) Variance	(14) Status	(15) Estimate At Complete
Pre FY-1982														
1/81	Impedence Analyzer	9KH810100	04/81	04/81	132,387	137,800	09/81	0	130,811	1,576	132,387	0	0	132,387
2/81	Vibrator	9KH810200	09/81	09/81	20,015	21,359	02/82	454	0	19,561	20,015	0	0	20,015
	UNASSIGNED	9KH820000	N/A	N/A	2,598	N/A	-	0	0	0	0	2,598	0	2,598
	TOTAL Pre FY-1982				155,000	159,159		454	130,811	21,137	152,402	2,598		

MONTHLY REPORT FOR

JUNE 1982

GPP AND LINE ITEMS

R. E. Rice, Manager
Facilities Management Division

R. L. D. Hess
Planning and Budgets Division

EG&G IDAHO, INC.

GPP ITEM

PROGRAM WATER REACTOR RESEARCH TEST FACILITIES DIVISION

FY-1982

MANAGER P. North

189 No. A6038

($000)

EA No.	Item Description	Original PA Amount	Current Estimated Cost	Project To Date Costs
93520	WRRTF Water Well Upgrade	$ 125	$ 80	EG&G $ 30.0 M-K $ 44.0

Task Initiated ○
Task Completed △