PDR

December 1981
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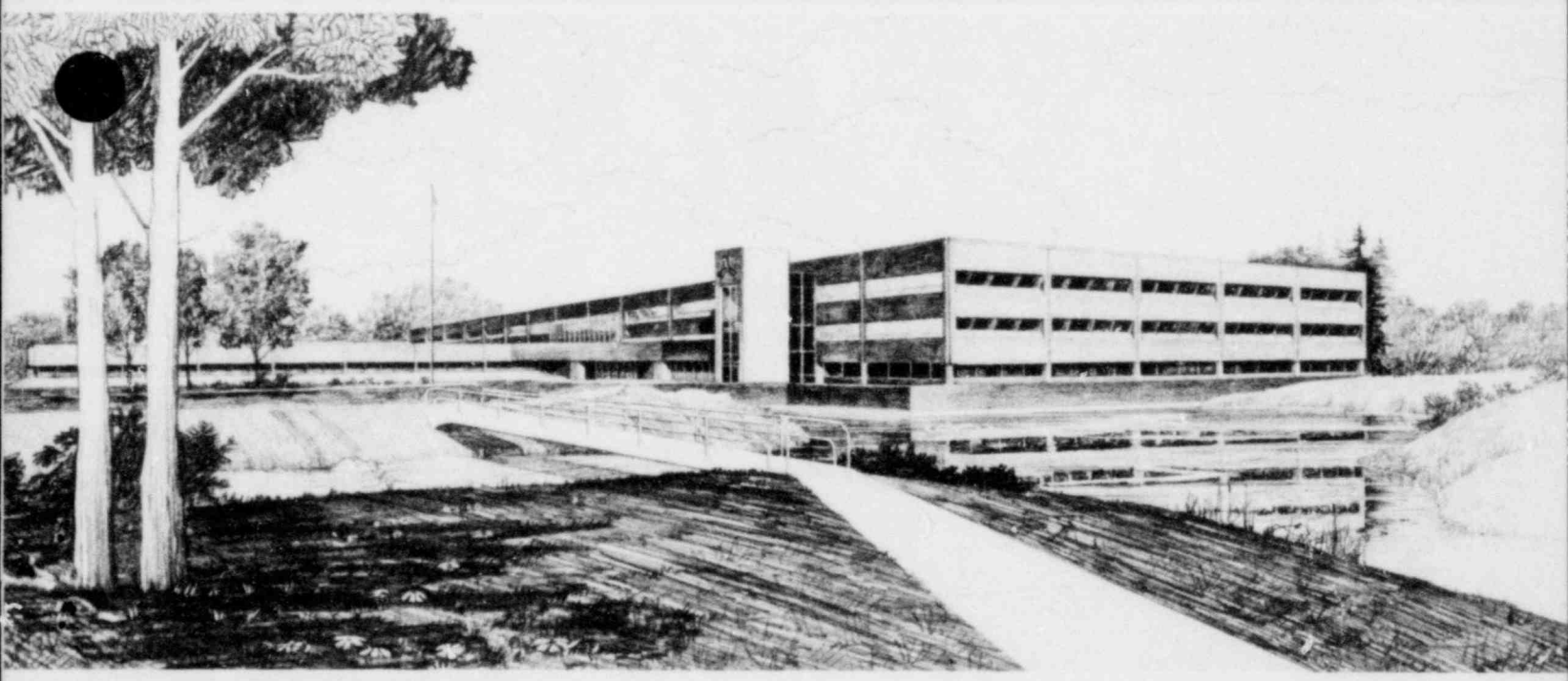
MONTHLY REPORT FOR THE WATER REACTOR RESEARCH TEST FACILITIES, 2D/3D, CODE DEVELOPMENT, CODE ASSESSMENT AND APPLICATION DIVISIONS, AND THE THERMAL FUELS BEHAVIOR PROGRAM

J. A. Dearien

NRC Research and/or Technical Assistance Report

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



This is an informal report intended for use as a preliminary or working document

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EG&G Idaho

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CODE DEVELOPMENT/CODE ASSESSMENT AND APPLICATION DIVISIONS (NRR) (Cont.)

CONSTRUCTION/GPP AND LINE ITEMS

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
BU/ECC	Blowdown/Emergency Core Coolant
BWR	Boiling Water Reactor
CA&AD	Code Assessment and Application Division
CAM	Constant Air Monitor
CC	Component Checkout
CCB	Change Control Board
CCTF	Cylindrical Core Test Facility
CDC	Control Data Corporation
CDD	Code Development Division
CDUM	Code Description and User's Manual
CE	Combustion Engineering
CHF	Critical Heat Flux
CLLMS	Conductivity Liquid Level Measurement System
CM	Corrective Maintenance
CPM	Critical Path Method
CSNI	Committee on Safety for Nuclear Installation
DAPS	Data Acquisition and Processing System
DARS	Data Acquisition and Reduction System
DAS	Data Acquisition System
DDAPS	Digital Data Acquisition and Processing System
DE	Division of Engineering
DER	Data Evaluation Report
DL	Division of Licensing
DOE	Department of Energy
DP	Differential Pressure
DSI	Division of Systems Integration
DSRR	Division of Systems and Reliability Research
DST	Division of Safety Technology
EI	Energy Incorporated
EICS	Electrical Instrumentation and Control System
EDF	Engineering Design File
EDR	Experimental Data Report
EM	Energy Measurements
ENICO	Exxon Nuclear Idaho Company, Incorporated
EOS	Experiment Operating Specifications

EP&A	Experimental Planning and Analysis
EPRI	Electric Power Research Institute
EQDB	Equipment Qualification Data Base
FCF	Facility Change Form
FDG	Fluid Distribution Grid
FIST	Full Integral Simulation Test
FMEA	Failure Mode Effects Analysis
FRG	Federal Republic of Germany
FSAR	Final Safety Analysis Report
GE	General Electric
GRS	Gesellschaft fur Reaktorsicherheit
HDR	Heiss Dampf Reaktor
HLS	Hot Leg Spool Piece
HPIS	High Pressure Injection System
HSST	Heavy Section Steel Technology
I&C	Instrumentation and Controls
IFA	Instrumented Fuel Assemblies
IGSCC	Intergranular Stress Corrosion Cracking
ILSG	Intact Loop Steam Generator
INEL	Idaho National Engineering Laboratory
IOER	Integrated Operational Experience Reporting System
IPT	In-Pile Tube
IREP	Interim Reliability Evaluation Program
ISDMS	Idaho National Engineering Laboratory Scientific Data Management System
ISI	In-Service Inspection
ISP	International Standard Problem
IST	In-Service Testing
JAERI	Japan Atomic Energy Research Institute
KfK	Kernforschungszentrum Karlsruhe
LANSL	Los Alamos National Scientific Laboratory
LER	Licensee Event Report
LLD	Liquid Level Detection
LLL	Lawrence Livermore Laboratory
LOC	Loss-of-Coolant
LOCA	Loss-of-Coolant Accident
LOFT	Loss-of-Fluid Test
LPIS	Low Pressure Injection System
LTSF	LOFT Test Support Facility
LVDT	Linear Variable Differential Transformer
LWR	Light Water Reactor
MFD	Master Facility Drawing
MIT	Massachusetts Institute of Technology
MSLB	Main Steam Line Break

NESC	National Energy Software Center
NPRDS	Nuclear Plant Reliability Data System
NPSH	Net Positive Suction Head
NRL	Naval Radiation Laboratory
NRR	Nuclear Reactor Regulation
NSRDC	Naval Ship Research and Development Center
NSSS	Nuclear Steam Supply System
NTOL	Near-Term Operating License
OPTRAN	Operational Transient
OR	Operating Reactor
ORNL	Oakridge National Laboratory
P&IA	Plant and Instrument Air
P&ID	Process and Instrument Diagram
PAS	Probabilistic Analysis Staff
PBF	Power Burst Facility
PCM	Power Cooling Mismatch
PCP	Primary Coolant Pump
PCS	Primary Cooling System
PIE	Postirradiation Examination
PKL	Primary Coolant Loop
PM	Preventive Maintenance
PMG	Program Management Group
PMIS	Performance Management Information System
PNL	Pacific Northwest Laboratory
PORV	Power Operated Relief Valve
PPS	Plant Protection System
PR	Combination of PCM/RIA
PRAC	Power Reactors Advisory Committee
PWR	Pressurized Water Reactor
QA	Quality Assurance
QDR	Quality Discrepancy Report
QLR	Quick Look Report
QPP	Quality Program Plan
RCCS	Reactor and Canal Cleanup System
RCG	Radioactivity Concentration Guide
RES	Office of Nuclear Regulatory Research
RFQ	Request for Quotes
RIA	Reactivity Initiated Accident
RIL	Research Information Letter
ROSA	Rig of Safety Assessment
RPG	Radiation Protection Guide
RSB	Reactor Systems Branch
RSR	Reactor Safety Research
SAI	Scientific Applications Incorporated
SASA	Severe Accident Sequence Analysis
SBE	Small Break Experiment
SCDAP	Severe Core Damage Analysis Package
SCTF	Slab Core Test Facility

SDD	System Design Description
SEP	Systematic Evaluation Program
SER	Safety Evaluation Report
SHB	Single Heated Bundle
SO	Systems Operations
SOW	Statement of Work
SPERT	Special Power Excursion Reactor Test
SQRT	Seismic Qualification Review Team
SRP	Standard Review Plan
SRV	Safety Relief Valve
SSE	Safe Shutdown Earthquake
SSRT	Senior Seismic Research Team
SSTF	Steam Sector Test Facility
STP	Standard Temperature and Pressure
SWR	Site Work Release
TAN	Test Area North
TC	Thermocouple
TDP	Technical Development Program
TER	Technical Evaluation Report
TFBP	Thermal Fuels Behavior Program
TFCF	Transient Flow Calibration Facility
THTF	Thermal Hydraulic Test Facility
TLTA	Two Loop Test Apparatus
TMI	Three Mile Island
TRR	Test Results Report
TVA	Tennessee Valley Authority
UHI	Upper Head Injection
UIC	Unique Identification Code
USSP	United States Standard Problem
UPTF	Upper Plenum Test Facility
WBS	Work Breakdown Structure
WRRD	Water Reactor Research Department
WRRTF	Water Reactor Research Test Facilities

MONTHLY REPORT FOR

DECEMBER 1981

J. A. Dearien, Manager

B. E. Williams
Plans and Budget Branch

MONTHLY REPORT FOR

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WATER REACTOR RESEARCH TEST FACILITIES DIVISION

Paul North

P. North, Manager

John P. Crouch

J. P. Crouch
Plans and Budget Representative

WATER REACTOR RESEARCH TEST FACILITIES DIVISION

COST SUMMARY AND COMMENTS

WATER REACTOR RESEARCH TEST FACILITIES DIVISION

189a	Title	(1) Obligational Authority Carried Over From FY-1981	(2) New FY-1982 Obligational Authority	(3) Total Obligational Authority	(4) December FY-1982 YTD Costs	(5) (3)-(4) Balance	(6) Outstanding Commitments December FY-1982	(7) (5)-(6) Balance
A6038	Semiscale Program	$1,063.7K*	$1,055.0K	$2,118.7K	$1,435.0K	$ 683.7K	$17.6K	$ 666.1K

* Includes $170K GSO.

NOTE: LOFT Test Support Facility (LTSF) financial data is included in A6043 totals in the LOFT monthly report. LTSF year-to-date December costs were $411.9K with an outstanding commitment of $17.8K.

WATER REACTOR RESEARCH TEST FACILITIES DIVISION

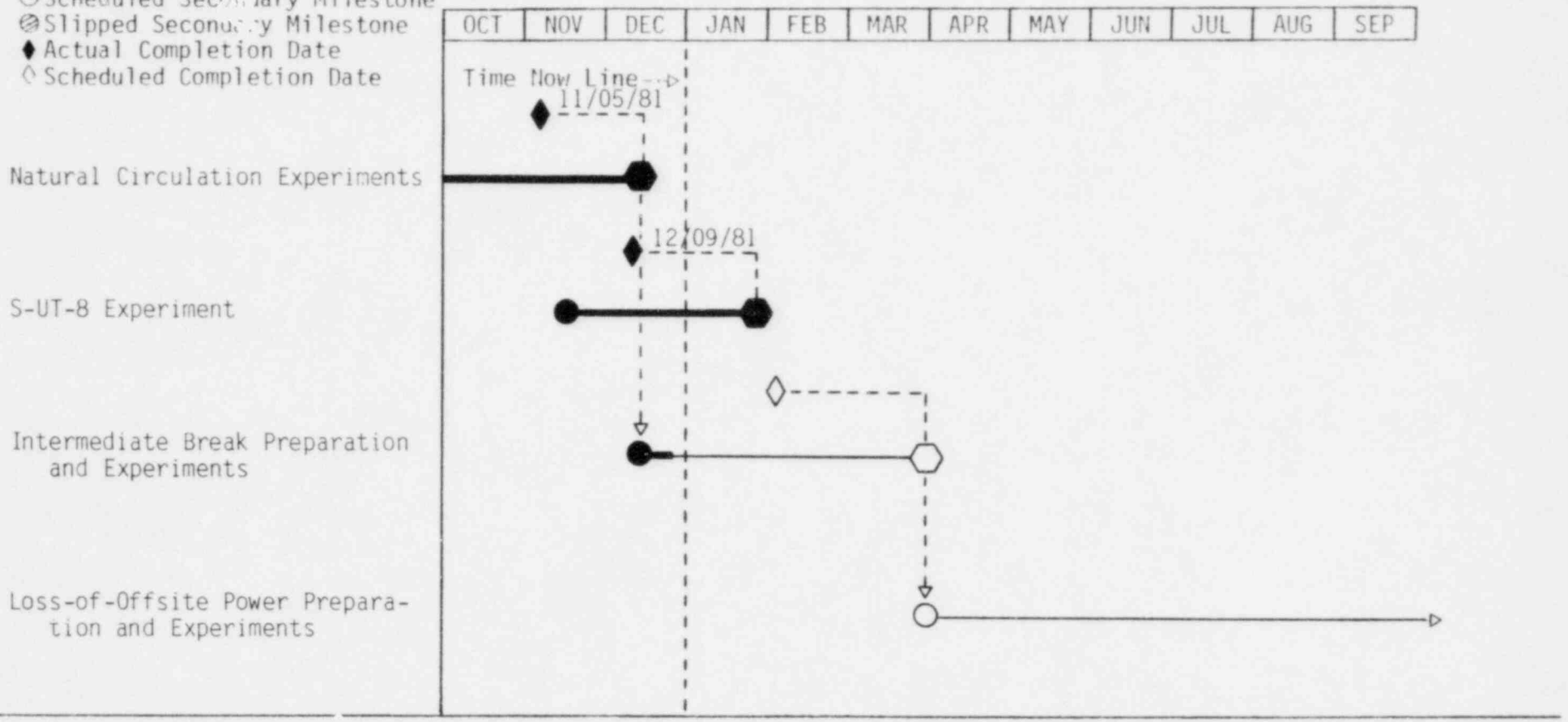
CURRENT WORKING SCHEDULE

WATER REACTOR RESEARCH TEST FACILITIES DIVISION December 1981

Semiscale Program (A6038)

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:

WATER REACTOR RESEARCH TEST FACILITIES DIVISION

TECHNICAL REVIEW AND SUMMARY

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

The additional small break test, S-UT-8, was added at the request of NRC and was conducted to provide further data on the Westinghouse RVLIS.

Preparation is underway for the Intermediate Break Experiment Series.

A potential problem exists in that analysis work packages are behind schedule due to lack of manpower and there is a potential for engineering work to fall behind due to lack of specifications. Efforts are underway to provide additional personnel and a complete recovery plan will be provided in the January Monthly Report.

The work scope and schedules are being modified to support accelerated LOFT L9-3/4 schedules and the deletion of LOFT L3-8. Work is on schedule for L9-3/4 support.

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

2. Scheduled Milestones for December 1981

None.

3. Schedule of Work Performed in December 1981

A. 412100000 - Special Projects

1. 412123300 - Special Projects--Engineering

The auxiliary pump intended for use in a redesigned primary system pump seal cooling system was received, disassembled and inspected. Areas requiring increased structural capability have been identified and plans made to upgrade the design pressure rating to 2500 psig. A new drive magnet enclosure has been fabricated.

A test plan for hydro-testing of the redesigned metallic O-ring seal for experimental instrumentation was discussed with operations personnel and permission was obtained to perform the test in spool pieces installed in the Semiscale loop during regular pretest procedures, provided the required test points and data can be obtained.

A sole source bid for the heater rod grid spacers was obtained from Caran Precision, Paramount, California. To support this procurement and forthcoming award of subcontract, the specification ANC-50030 has been revised to an EG&G Specification 50080 Rev. A.

Processing of the turbine meter calibration spools through Receiving Inspection was completed and the spools are now in use by Semiscale (Instrumentation Calibration Laboratory).

A purchase requisition for fabrication of a pitot tube rake for the 1-1/2-inch broken loop was issued.

A layout sketch of the high speed intact loop pump peripheral equipment installation was distributed for review and comment. An engineering drawing of the oil pump assembly for use in the bearing lubrication system was distributed for review and comment.

B. 414100000 - Level of Effort

1. 414119100 - Supervisory Level of Effort

Additional temporary personnel have been obtained from engineering in an attempt to meet planned EP&A objectives.

3.B Schedule of Work Performed in December 1981 (continued)

are working on IB series planning and analysis tasks. Offers have been extended to others for permanent positions.

2. 414119350 - Unscheduled Work Level of Effort

The Semiscale Mod-2A RELAP5 model has been reconfigured to simulate steam line and feedwater line breaks. This model will be used in January to perform scoping calculations to determine the relative sensitivity of break size and location, and system initial conditions for these transients.

3. 414119400 - Training, Education and Technical Papers

A study was performed to develop a film boiling correlation using data from the Semiscale Mod-3 Baseline Test Series (Series 7). Comparison with existing correlations shows a definite improvement due to the use of a void fraction dependence. Work is currently directed toward improving the smoothness of the correlation at regime transitions. A paper is also being prepared.

5. 414123100 - Semiscale Engineering - Level of Effort

Drafting work to as-build the control room panel drawings was completed and the master facility drawing list (ES-50633) was updated and released.

As-built and associated weld map drawings were prepared and released for the ECCS modification.

Repair of 1-1/2-inch Grayloc seals on the break assembly spool was completed.

All materials were obtained to complete installation of intact and broken loop pump suction remote drains. This work has been temporarily deferred because of higher priority tasks.

An internal leak in the vessel at the upper head/upper support plate was fixed by installing plugs and packing. This repair reduced the leak rate to one-tenth of the initial value.

Initial design and scaling for LOBI configuration of a 19% break nozzle was completed. A drawing will be completed and fabrication of the nozzle started in January.

3.B Schedule of Work Performed in December 1981 (continued)

Initial sizing and design for HPIS flow rate measuring tanks was completed. This will enable HPIS flow measurements in all future tests.

Alternate methods of making drag disc measurements were reveiwed. Currently the variable reluctance transducers are difficult to set up and recalibrate. The most promising design is based on a cantilever beam/strain gage concept. Work on this design will be done on a noninterference basis with high priority test specific projects.

Status of drawings requested by the EP&A Branch to show important Mod-2A system chacteristics and aid in report preparation and system documentation, is as follows:

a. Drafting was completed on drawings delineating the location and orientation of experimental instrumentation in the intact loop and broken loop steam generators.

b. An isometric drawing of the primary system configuration for the natural circulation test series was completed.

Temporary hardware modifications were made to the intact loop steam generator to obtain riser section pressure drop.

An SWR was issued to inject hot water to the intact loop steam generator to prepare for the dryout test.

Design requirements for modification of the hot water makeup system was prepared and will be issued in January.

Information on the Zion plant was obtained with regard to secondary system relief valve design bases and PCS purification system. Design requirements for the Semiscale modification required to model the Zion plant will be issued in January.

Machining of orifices for the 100, 50, and 19% break tests was completed, and final inspection is in progress.

Work packages covering the FY-1982 capital equipment funding were prepared and transmitted to Plans and Budgets. Status reporting against these two accounts (9D0820100 and 9D0820200) will begin next month.

3.B Schedule of Work Performed in December 1981 (continued)

5. 414136300 - Mechanical Instrumentation

The major work efforts for December were preparing for S-UT-8, re-working the upper head to decrease drain time, and preparing for IB-1.

6. 414148100 - DAS and DDAPS Operations

a. Semiscale Uncertainty Report NUREG/CR-2459 EGG-2142 was reviewed and edited and will be available for informal review near January 15, 1982. Appendices that go with this report are being written, the one on thermocouple measurements and the one on differential pressure measurements are half completed. The rest of the appendices should be completed by the end of February.

b. Nine differential pressure transducers were received from the Standards and Calibration Laboratory, their calibration information was reviewed and they were approved for use. Six differential pressure transducers that would not calibrate to tolerance were put on surplus.

c. Test S-UT-8 was conducted on December 9, 1981. Three hundred eight channels of data were recorded with no significant instrumentation problems. Data corrections have been made and hard copies of plots and overlay plots of S-UT-8 with S-UT-6 have been sent to analysis. A corrected data tape has not been sent to analysis because there is no requirement for an EDR on this test and analysis has requested only hard copies of plots.

d. Test preparations are underway for Test S-IB-1 a 100% break.

e. Fourteen new sources received November 24, 1981, were checked out and source strengths found acceptable. One Am-241 source was found to leak and was returned to the vendor (Isatone Products Laboratories, Burbank, CA). Vendor will replace this source and will still supply two additional sources to complete the requisition. (Receipt to be early January.)

f. Performed R' study of Semiscale vessel bypass line to determine the measurement uncertainty and its R' value variation as a function of flow. The data was obtained in the SAW Loop and results were reported in a letter included in the S-UT-8 data record, Appendix A.

3. Schedule of Work Performed in December 1981 (continued)

g. Densitometer systems are being prepared for the IB test series. Detector assemblies are being completed on both steam generator pant legs using new sources. Cabling has been pulled to support these measurements.

C. 415100000 - Intermediate Break Test Series

1. 415119500 - Pre S-IB Series and Analysis

Scoping calculations using the RELAP5 computer code were performed for 50%, 100%, and 200% communicative cold leg break transients in the Semiscale Mod-2A system to provide core heater rod thermal-hydraulic boundary conditions. These boundary conditions are needed to develop power control schemes for the heater rods such that they simulate the responses of a nuclear fuel rod to the same boundary conditions. In addition, these calculations provided thermal-hydraulic data for use in establishing the appropriate instrumentation ranging for these transients.

Planning for the IB test series was completed. The series Research Design document is 75% complete. The EOS for Tests S-IB-1 and S-IB-2 was completed. Test S-IB-3 is a counterpart to LOBI Test B-RIM, a 19% break, and is different enough from the other IB tests that separate Experiment Operating Specification (EOS) is being prepared for it. The few minor facility modification requests for the IB test series are being recorded in a series Design Requirements document which is 10% complete.

2. 415119600 S-IB Testing Support

Pretest prediction analysis for Tests S-IB-1 and S-IB-2 using, the RELAP5 computer code were performed and documentation of this work will be completed by January 12, 1982. Calculations for both of these tests were extended through the end of the blowdown phase of the transients where water properties table failures precluded extending the calculations through to the end of reflood. The computer code problem that caused the failures is being investigated by Code Development Division personnel.

3. Schedule of Work Performed in December 1981 (continued)

D. 416100000 - Loss of Offsite Power Test Series

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

Characterization tests of the intact loop steam generator were accomplished and test specifications for additional such tests were completed. The pressure drop in the riser section of the steam generator was measured under cold water/blocked downcomer conditions. The data obtained was reviewed. A memo summarizing the results is being prepared. The maximum stable secondary level P was measured for both flow and no flow conditions. The flow condition involved maximum power at which fluid conditions remained stable. A draft of a specification for a test comparing secondary side boiloff rates for the intact versus broken loop steam generators was completed. The boiloff will be conducted twice: once using reduced core power technique, and once using a hot water fill technique.

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

A conceptual design of the pressurizer vessel and relief valve system was prepared. A sketch was made showing proposed installation of the vessel, vessel components, and relief system. A formal conceptual design review was conducted on December 22, 1981. Informal cost and delivery estimates were obtained on major hardware components. Additional electrical design help has been obtained to prepare a design package.

Purchase requisitions for long lead material for the intact loop upgrade were released to Materiel. Items being processed for outside procurement are as follows: density washers; and R-Con clamps, seals and bolting. The packages for intact loop pump suction piping spools, and inspection gauges for drag transducer and pressure probe ports are being reviewed by the Make/Buy Committee.

Design requirements for the vessel upper head heat tapes were completed and issued.

Design requirements for the vessel upper head vent were not completed because of higher priority work. It is expected that the requirements will be completed in January 1982, which will support the test schedule because of the relative simplicity of this design.

3. Schedule of Work Performed in December 1981 (continued)

E. 418100000 - S-UT-8 Test

1. 418118100 - Test S-UT-8 Analysis

Test S-UT-8 RELAP5 scoping calculations were completed in order to determine the overall thermal-hydraulic response of the transient. The results of these calculations were documented in a letter report.

2. 418118101 - Test S-UT-8

Test support and preliminary analysis of the performance of the Westinghouse reactor vessel level indicating system was completed. (Test was conducted on December 9, 1981.) Significant bypass leakage problem around and through auxiliary connections in the upper support plate were identified. The test was accepted on the basis that the Westinghouse system was subjected to a large range level transient and valid data were obtained from both the Westinghouse and Semiscale system, even though the bypass leakage precluded subjecting the system to the exact transient desired. Data plots of (uncertainty) vessel liquid levels were provided to the Westinghouse representative at noon of the day following the test. This was accomplished by an outstanding and concerted effort by Measurements and Test Engineering people.

3. 418118102 - S-UT-8 Hardware Mods

All installation/modification of hardware for Test S-UT-8 were completed and the "as-built" configuration documented.

F. 419100000 - Natural Circulation Test Series

1. 419119500 - Natural Circulation Testing

Quick look reports for Tests S-NC-8 and S-NC-9 were transmitted to DOE. These were the final tests in the NC series.

2. 419139500 - Semiscale Operations

The EDR for Tests NC-2, 3 and 4 was published on December 16, 1981. Work on the other NC-EDR's is progressing on schedule.

3.F Schedule of Work Performed in December 1981 (continued)

3. 419519630 - EP&A Posttest Analysis S-UT and S-NC Test Series

RELAP5 analyses are being performed for inclusion in the S-UT Series Report. These analyses simulate the Zion Nuclear Steam Supply System's response to primary coolant system piping breaks and operating conditions corresponding to Tests S-UT-1, S-UT-4, and S-UT-6. RELAP5 calculations of S-UT-4 and S-UT-6 have been completed. The S-UT-1 calculation and documentation of all the calculations will be completed in January.

Work was completed on the Series 7 TRR. The report entitled "Comparison of Thermal-Hydraulic Response in the Semiscale, THTF, and FLECHT Facilities" was printed and mailed to distribution the week of December 21.

The outline for the Natural Circulation series TRR was submitted for management review.

G. 9D0810400 - Intact Loop Pump

The fabrication of the alarm/trip/scaling chassis for the intact loop was completed. Acceptance testing was completed and Measurements Engineering accomplished a buy-off on the completed unit which was delivered to Semiscale in mid-December.

4. Scheduled Milestones for January 1982

None.

5. Work to be Performed in January 1982

A. 412100000 - Special Projects

1. 412123300 - Special Projects--Engineering

Complete formal drawing of pump peripheral equipment installation, and send out for review.

Release (bearing lubrication) oil pump assembly drawing.

Prepare and release drawings of modified and additional hardware to upgrade the pressure rating of the circulating pump. Order special materials and fittings. Fabricate required components, and assemble the modified auxiliary pump.

5.A Work to be Performed in January 1982 (continued)

Write test plan for hydrotest and performance testing of the modified auxiliary pump and start testing.

Perform testing on redesigned metallic O-ring and document results.

Issue drawing and SWR to install vessel upper head heat tapes and upper head isolation switch on the external heater control chassis.

Award subcontract to Caran Precision for fabrication of the heater rod grid spacers.

B. 414100000 -Level of Effort

1. 414123100 - Semiscale Engineering--Level of Effort

Prepare a study and cost estimate on the external heater overtemperature trip circuitry.

Perform installation work on the pump suction remote drains on a noninterference basis.

Prepare DCN's to document internal plugs and packing installed in the vessel upper head in December.

Revise and update the 19% break nozzle to LOBI configuration. Issue drawing and SWR for fabrication.

Design, fabricate, and install two tanks for HPIS flow rate measurement for the intermediate break test series.

Revise and redesign, if necessary, the pressurizer surge line to achieve proper R' with isolation valve and additional orifice.

Make envelope drawing of video probe and transmit to J. Bolstad in Instrumentation Development to use in starting prototype pinhole probe for SAW loop testing.

Design developmental "chopper" wheel to test strobe effect for Storz lens pictures.

Initiate engineering review of drag device design and measurement techniques. Effort will be expended in the area of weldable strain gauge temperature compensating circuitry.

5.B Work to be Performed in January 1982 (continued)

Review possible sealing method for various instrumentation probes which would permit low level (acceptable) internal leakage between sections within the pressure boundary.

Complete checking and release of drawings showing the location and orientation of experimental instrumentation in the Mod-2A intact and broken loop steam generators.

Begin planning work (hardware concepts, cost/schedule estimates) for the steam generator feedwater line break experiments.

Prepare SO test procedure for the hot water fill line and components for the intact loop steam generator dryout test.

Initiate work in preparation for the steam generator filler piece thermal conductivity test.

2. 414136300 - Mechanical Instrumentation

The major work efforts will be in preparing and running IB-1, and setting up for the 200% break SO test.

C. 415100000 - Intermediate Break Test Series

1. 415119500 - Pre S-IB Series Analysis

The Research Design and Design Requirements documents will be completed.

2. 415119600 - IB Test Series

Pretest prediction analyses of Test S-IB-3 will be performed and documented in a letter report.

The test specifications for the SO test will be completed. Test support for Tests S-IB-1 and the SO Test will be provided and the Quick Look Report for IB-1 will be prepared.

D. 416100000 - Loss of Offsite Power Test Series

1. 416119830 - Loss of Offsite Power Pre Series Analysis

RELAP5 scoping calculations will be performed for Test S-PL-1. This test will be the series baseline test showing system response during normal recovery from a loss of offsite power. The results of these calculations will

5.D Work to be Performed in January 1982 (continued)

provide the thermal-hydraulic response of this transient in the Semiscale Mod-2A system so that potential concerns of conducting these type transients, such as system heat loss and steam generator secondary volume overscaling, can be addressed in the experiment operating specifications. The final requirements for steam generator modifications will be completed and the long lead items design requirements document will be started. Test specification on the steam generator external separator test will be completed. Work on the PL series Research Design document will be started.

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

Prepare and release drawings of components for the new pressurizer.

Start the preparation of requisition packages to procure pressurizer heaters and pressurizer components/vessel.

Solicit bids (issue RFQ's) on the density washers, and R-Con clamps, seals and bolting.

Expedite the procurement and/or fabrication of intact loop pump suction piping spools, and inspection gauges for drag transducer and pressure probe ports.

Prepare design requirements for the vessel upper head vent system and the hot water makeup system, and start detail design of both systems.

Complete draft of secondary coolant system relief valve design requirements.

Prepare design requirements for the intact loop steam generator external downcomer and start detail design.

E. 418118101 - Test S-UT-8

The report on the performance of the Westinghouse system will be completed.

F. 419100000 - Natural Circulation Test Series

1. 419139500 - Semiscale Operations

The major work efforts will be in preparing and running IB-1, and setting up for the 200% break SO test.

5.F Work to be Performed in January 1982 (continued)

2. 419519600 - EP&A Posttest Analysis

Work on the UT series TRR draft will continue with the report expected to be about half written by the end of the month.

Work will begin on writing the NC series TRR and performing associated analyses.

3. 419519640 - Westinghouse System NC Series

The report on the performance of the Westinghouse system during the NC Test Series will be approximately 50% complete.

G. 9D0810400 - Intact Loop Pump

All work has been completed. This account number will be closed, and will not be reported in the future.

6. Problems and Potential Problems

Analysis work is behind schedule due to manpower shortages and this schedule slippage is impacting design schedules because design requirements are not available. Efforts are underway to obtain additional personnel either permanently or on loan. A complete recovery plan will be reported in the January Montly Report.

1. 189a A6043 - LOFT Test Support Facility

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

A. 481100000 - LTSF Test Predictions

1. 4811001 - Planning and Supervision

Conducted a meeting with LOFT to replan the FY-82 LTSF support work, and initiated tasks to redefine work by end of January. Provided revised work packages and schedule networks for supporting the baseline revision required to account for the accelerated schedule for the L9-3 valve test and the elimination of the L3-8 support work.

Generated and obtained approval for an employee requisition to replace one engineer from the Separate Effects Experimental Projects Section. Participated in preparation of a proposal for conducting separate effects experiments to study pressurizer performance, bubble compression condensation, and sweep-through in a B&W "candy-cane" steam generator inlet. The proposal including discussion of work scope, budget required, and schedule will be available for distribution to the NRC during the first week in January.

Statused on-going activities from current working plan December 30. Revised the schedule for completion of the 2D/3D Hot Leg Spool Test EDR, LOFT L9-1 PORV and DSTM Test EDR, Subcooled Critical Flow Nozzle Calibration EDR, and Advanced DTT Test Report to account for loss of one engineer, revised L9-3 test support schedule and Kepner-Tregoe training and teaching commitments.

2. 4811003 - TPFL Characterization

Scope of work for analysis of data from the Two-Phase Loop System Characterization (SC) tests was reviewed with LOFT on December 10. The results of that meeting were summarized and distributed in a letter on December 15. Scope of work identified during the meeting as documented in the letter exceeds that associated with the original work package. Estimates for budget and schedule required to perform the revised work scope will be available for modifying the work

3.A Summary of Work Performed in December 1981 (continued

package by mid-January. Resumption of work in completing and documenting analysis of data will occur when the current open section position is filled.

3. 4811005 - L9-3/4 PORV Calibration

Pretest specification documentation, hardware installation, and facility instrumentation in support of the LOFT L9-3 experimental pressurizer relief valve test were continued. Preliminary hard- ware installation was completed on December 2 including all system components except those associated with the reference metering section, and the heater modification. The fabrication of the reference metering section was initiated on December 14, and it is scheduled for installation during the week of January 4 - January 8, 1982.

Fabrication and installation was initiated for activities with the heater modification on December 14, with completion and SO testing scheduled for the week of January 4 - January 8. Distributed requirements for test facility SO testing, and catch tank calibration on December 17.

The preliminary EOS was distributed for review on December 21, and scheduled for final review on January 8. Conducted a meeting with LOFT which identified the data analysis and reporting requirements and responsibilities on December 23. Transmitted final measurement requirements on December 28. Assessed the schedule impact of forming display blowdown in the facility prior to initiating SO and catch tank calibration tests, and prepared a summary letter scheduled for distribution by January 4, 1982.

4. 4811007 Current LOFT planning does not include the L3-8 experiment. The LTSF L3-8 support work package was removed from the LTSF baseline, and budget reallocated for revised work scope in the facility maintenance and two-phase regime study work packages.

5. 4811011 - Two-Phase Regimes Study

The budget for Two-Phase Regime Experiments was augmented in order to account for increased work scope resulting from eliminating L3-8 support work from the LTSF baseline. Preliminary planning on increased work scope was initiated following discussions with LOFT, and final work scope, budget. and schedule will be reviewed by the end of January 1982.

3. Summary of Work Performed in December 1981 (continued

B. 481202010 - LTSF Engineering Support

Continue to provide engineering support on the Emergency Diesel Generator project by following orders for the lube oils, low pressure switch, high water temperature switch, fuel valve solenoid, and overspeed trip switch. Installation and testing is scheduled in January.

A final design review was completed on the LTSF blowdown loop heater upgrade on December 8, 1981, and all action items have been resolved. The SWR for fabrication and installation of the heater vessel was issued on December 9, 1981, and work for this task is 95% complete. Fabrication of heater penetrations and grid spacers and a seal spacer was completed. An SWR field change was issued to install a section of cable tray and to make heater rod final connections.

Engineering support was also provided for installation of hardware for L9-3 testing scheduled to start in early February 1982. A drawing was made for a 14 x 5 inch reducer required to accommodate the display blowdown valve and hardware for blowdown system (SO) operational test. The LTSF Blowdown Facility P&ID Dwg. 207201 was revised and is ready for release.

Installation of the 75 kW power supply and associated wiring for the Post-CHF test is approximately 70% complete. Some details regarding power supply fan installation, safety switch installation and wire sizing are being addressed. Final electrical installation cannot be completed until the Post-CHF test vessel is installed. A March completion date is expected.

A new Dwg. 415433, Two-Phase Flow Relief Valve Test Stand Schematic Diagram, was issued to close out an old SWR.

Completed a proposal for modifying the LTSF to perform thermal-hydraulic separate effects tests associated with the Babcock & Wilcox (B&W) PWR pressurizer and candy-cane. A four page writeup was provided on the required system capabilities. This writeup was augmented by a isometric and P&ID for each of the two proposed test configurations. A cost and schedule were also provided as part of the proposal.

C. 481301003 - LTSF Operations

LTSF Operations has been preparing for L9-3/L9-4 valve test series which is scheduled to begin February 15, 1982. Work is progressing on schedule.

3. Summary of Work Performed in December 1981 (continued

D. 48149100 - DAS Test Projects

1. 481401005 - LOFT L9-3 PORV Test

Experimental measurement work has been completed as far as possible. Final instrument installation and system checkout will be accomplished after the warmup heater vessel and remaining test spool pieces are installed in the Blowdown Loop.

2. 481401009 - Post CHF Test

The data system software installation is 90% complete. Final component check out and load testing is scheduled to be completed by January 15.

3. 481402000 - DAS Facility Maintenance

The MODCOMP Classic (4820) Computer and peripheral equipment has been received. Integration into the DAS will commence after several engineering change order revisions have been made to the existing MODCOMP II and work window can be arranged in the test schedule.

The relief valve test stand drawings have been submitted to drafting. Drawings are 60% complete.

The Ampex 3020 analog tape recorder has been reconnected to the DAS and is now an integral part of the data system.

The rework on two gamma densitometers to be used on the next test has been completed and the units have been installed in the Blowdown Loop.

4. 48199AA - Nine-Rod Bundle Tests

Advanced Instrumentation provided a letter summarizing results of analysis of nine-rod bundle Rebeka rod embedded thermocouple response, and result of the post mortem and tests conducted on the thermocouple wire. This information will be included in the final report which is scheduled for completion in April.

5. 48199AP - L5-1 Instrumentation Calibration

The EDR for the LOFT Instrument Performance Tests was 80% complete at month end. The measurement uncertainty analysis remains incomplete, and efforts are underway to identify available manpower to complete this work in order to finish the EDR. Schedule for report distribution was modified to account for the transfer of the author, and revised support required for the L9-? experiment.

3. Summary of Work Performed in December 1981 (continued

E. Foreign Funded Activities - Post-CHF Heat Transfer Tests

The test section densitometers and thermocouples were installed, and densitometer checkout performed. The test section is ready to be shipped to LTSF. The test section power supply installation at LTSF was completed. Fabrication of needed valve assemblies and control panels was completed. The MODCOMP and EPTAK computer programs were written, but documentation has not yet been received. Program checkout will be performed upon hardware installation in late March. The EOP rough draft has not yet been forwarded from Operations due to support required for the L9-3 valve test. The schedule for completing this EOP will be renegotiated in early January.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

A. 481100 - LTSF Test Projects

1. 4811001 - Supervision and Planning

Review LTSF budget and schedule. Complete negotiation of work scope and required budget and schedule for augmented Two-Phase Loop System Characterization data analysis and Two-Phase Regime Studies with LOFT. Modify the LTSF baseline as appropriate. Distribute the "pressurizer candy-cane" test proposal to the NRC. Interview prospective candidates for the open section position, and fill the position by mid-January. Provide review and editing support for completing the L5-1 Instrument Performance Test EDR, and the 2D/3D Hot Leg Spool EDR.

2. 4811003 - TPFL Characterization

Complete revision of work package to incorporate revised work scope. Initiate data analysis and reporting.

3. 4811005 - L9-3/4 PORV Calibration

Complete EOS review and distribute by January 15, 1982. Prepare, review and distribute EOP by January 25. Complete hardware and instrument installation, and perform system SO tests and catch tank calibration by January 29, 1982.

4. 4811011 - Two-Phase Regimes Study

Initiate definition of experiment objectives, hardware requirements, and measurement requirements for the Two-Phase Regime Studies. Incorporate revised work scope into the

5.A Summary of Work to be Performed in January 1982 (continued

work package and LTSF baseline. Complete requirement formulation and negotiation by January 29. Initiate work on the EOS.

5. 481202010 - LTSF Engineering Support

Continue to provide engineering support on the Emergency Diesel Generator project. Complete installation and testing of equipment.

Complete LTSF blowdown loop heater (upgrade) installation and wiring, and preparation of component checkout procedure. Revise Dwg. 415427 to reflect heater penetration work accomplished.

Support LTSF display blowdown schedule for January 14, 1982. Fabricate 14 x 5-inch reducer for use in the blowdown system.

Develop work plan for engineering support to LTSF for remainder of FY-82.

Provide engineering support to Post-CHF effort by correcting drawing and SWR deficiencies. Issue SWR field changes and drawing changes.

6. 481301003 - LTSF Operations

Work will continue on preparing for the L9-3/L9-4 test series. This will include modifications to the test facility, procedure writing, and personnel training.

7. 481400000 - Data Acquisition

Complete DAS installation and checkout for LOFT L9-3 test.

Complete Blowdown Loop control system installation and checkout for LOFT L9-3 test.

8. 48199AA - Nine-Rod Bundle Tests

Complete analysis of nine-rod bundle quench tests data. Continue report preparation, schedule for 50% complete with first draft by month end.

5.A Summary of Work to be Performed in January 1982 (continued

9. 48199AP - L5-1 Instrument Calibration

Submit L5-1EDR to word processing. Initiate work on measurement uncertainty analysis, and complete first draft for review by January 29, 1982.

B. Foreign Funded Activities - Post-CHF Heat Transfer Tests

Provide support to combine EOP draft prior to January 29. Revise existing work package to account for revised LTSF schedule.

6. Problems and Potential Problems

None.

WATER REACTOR RESEARCH TEST FACILITIES DIVISION

CAPITAL EQUIPMENT

The Capital Equipment for the Water Reactor Research Test Facilities Division will not be presented in the December 1981 monthly report. The Capital Equipment will be included in the January 1982 monthly report and, thereafter, on the regular quarterly basis.

MONTHLY REPORT FOR

DECEMBER 1981

THERMAL FUELS BEHAVIOR PROGRAM

for W. A. Spencer, Manager

D. Zorn, Jr.
Plans and Budget Representative

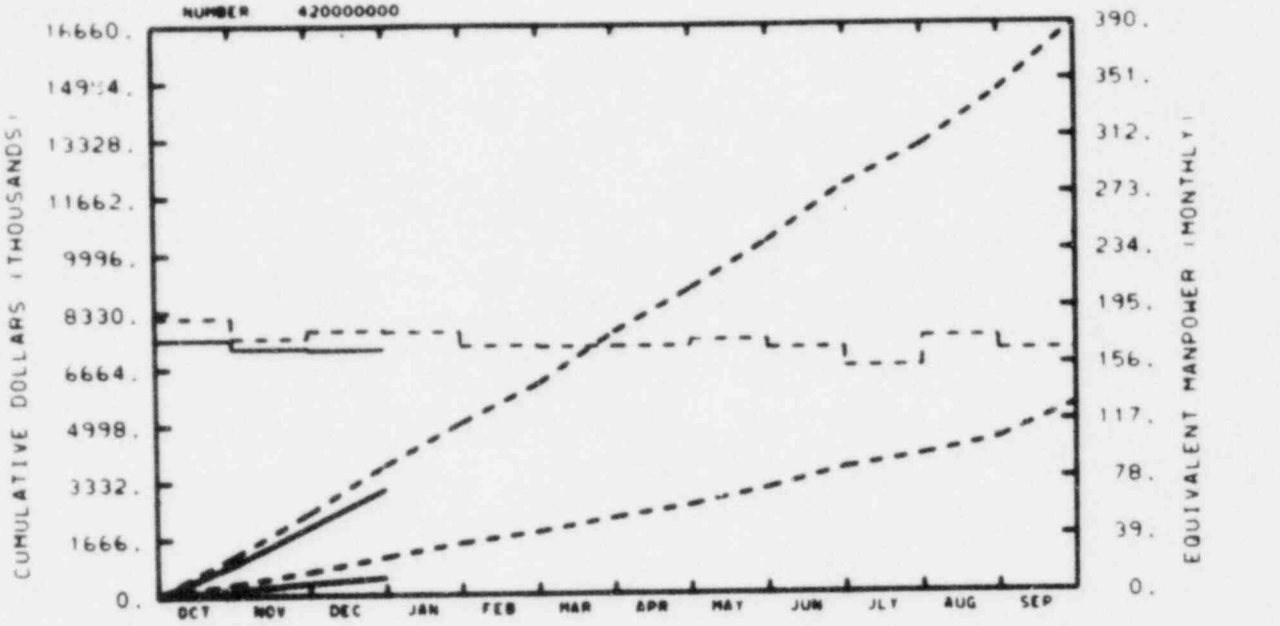
The basis for the budget figures given on the Thermal Fuels Behavior Program overall cost graph and also on the individual cost graphs contained herein. is the $16,293K FY-1982 Baseline Program that the Thermal Fuels Behavior Program submitted to DOE-ID in CCB 82-02. The CCB was an attachment to W. A. Spencer's letter of November 24, 1981 (WAS-253-81). The $370K budget for A6351 (Core Melt Mitigation System) was not submitted as part of the FY-1982 Baseline. It is, however, included in the Thermal Fuels Behavior Program overall program cost graph.

RESPONSIBLE MANAGER
M.A. SPENCER

EG&G IDAHO INC.

TFBP PROGRAM

NUMBER 420000000



TOTAL PROGRAM

BUDGET	1156	2420	3829	5048	6181	7677	8929	10312	11959	13079	14664	16654
ACTUAL	918	2012	3120									

MATERIAL

BUDGET	340	697	1126	1525	1837	2235	2596	3072	3655	4016	4485	5473
ACTUAL	162	358	518									

MANPOWER

BUDGET	191	177	182	181	171	170	170	174	168	155	175	166
ACTUAL	176	170	169									

YTD VARIANCE: 709 (19%)

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.

THERMAL FUELS BEHAVIOR PROGRAM

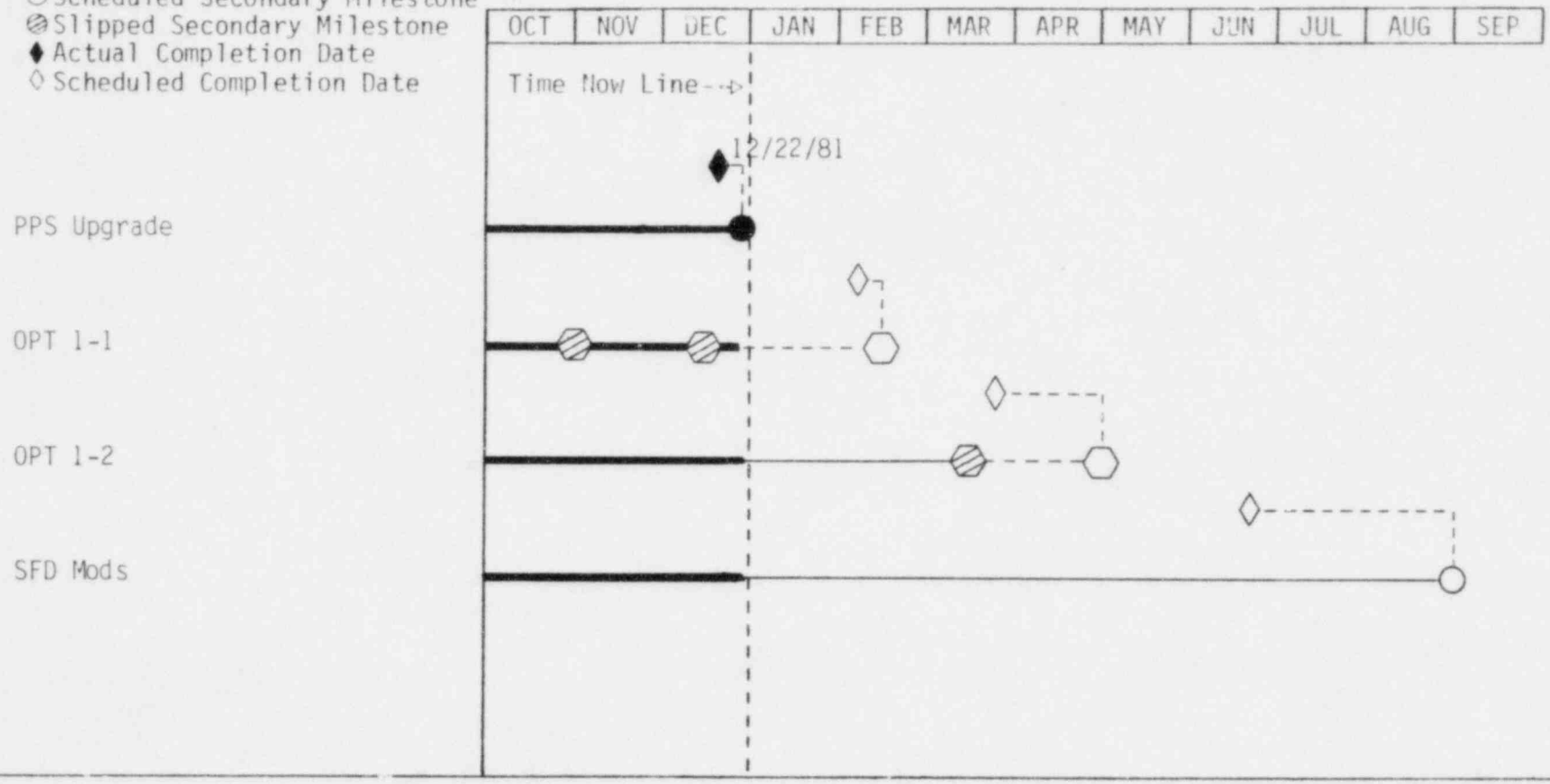
CURRENT WORKING SCHEDULE

LEGEND

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

THERMAL FUELS BEHAVIOR PROGRAM

December 1981



NOTES:

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

The pretest analysis for the Severe Fuel Damage Scoping Test has been completed, and preparation of the Experiment Operating Specifications has begun. The MITAS and RELAP computer codes are being set up to model the loop coolant behavior and fuel rubble and shroud temperatures for loss-of-flow and loss-of-coolant accidents. The behavior described by these analyses will be used to determine (a) the requirements for shutting down the reactor power and (b) the timing and amount of emergency core coolant to be injected.

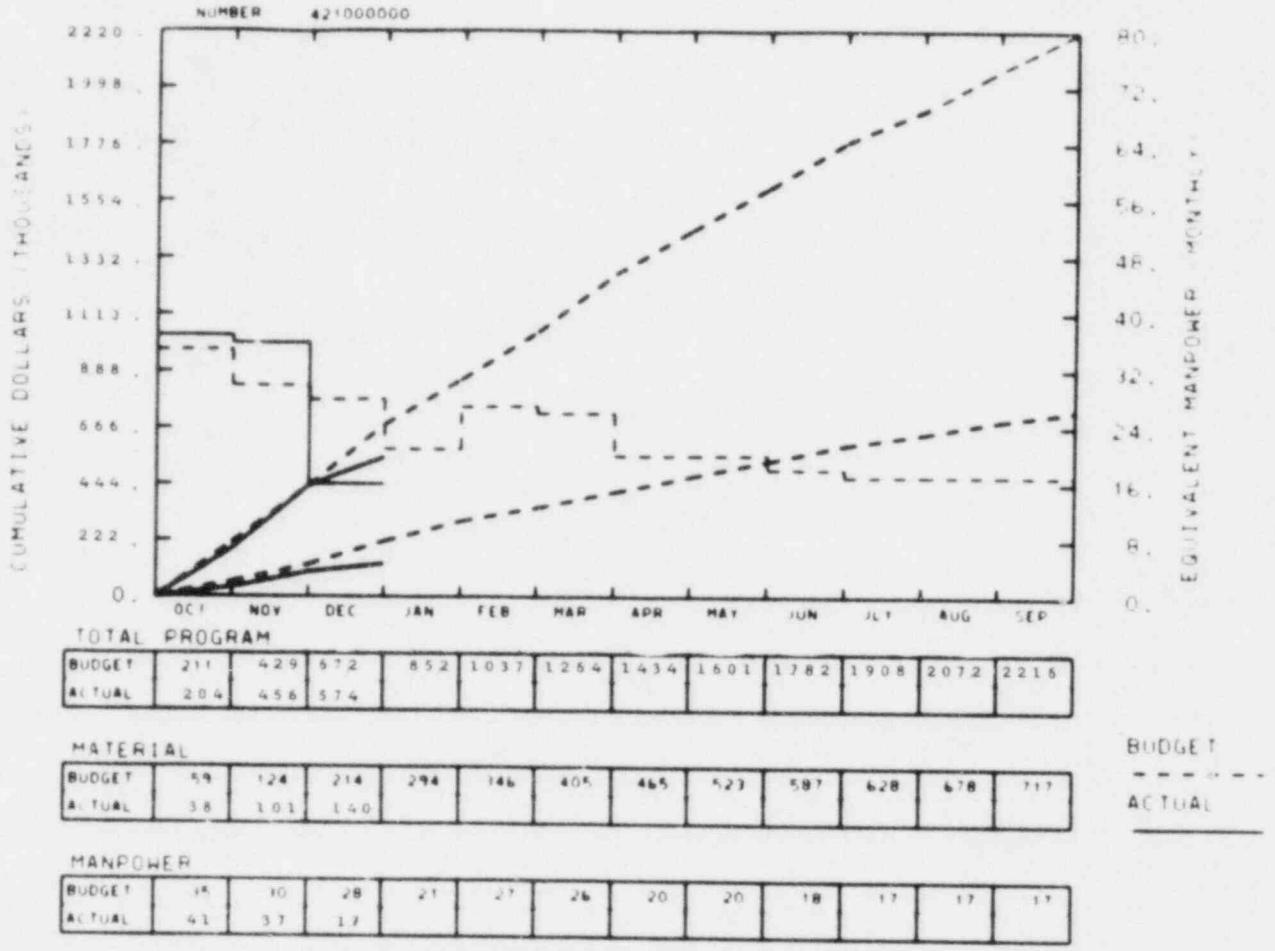
Progress on other documentation includes submission of the first draft of the Power-Cooling-Mismatch Test 7 Fuel Rod Materials Behavior Report for management review, completion of a draft of the Thermocouple Effects Test Series Test Results Report, and issuance of the Experiment Operating Specification and the Experiment Prediction document for Operational Transient Test 1-2.

System operational testing of the modified reactor control and protective systems was completed. The modification significantly increases the amount of core energy that can be safely used in the Power Shaping (>28 MW) Mode of reactor operation.

RESPONSIBLE MANAGER: E. E. MACDONALD

EG&G IDAHO INC.

TFBP EXPER DESIGN & ANALYSIS



TOTAL PROGRAM

BUDGET	211	429	672	852	1037	1264	1434	1601	1782	1908	2072	2218
ACTUAL	204	456	574									

MATERIAL

BUDGET	59	124	214	294	346	405	465	523	587	628	678	717
ACTUAL	38	101	140									

MANPOWER

BUDGET	15	10	28	21	27	26	20	20	18	17	17	17
ACTUAL	41	37	17									

A6041

YTD VARIANCE: 98 (15%)

The year-to-date variance is due to uncosted outstanding commitments (PIE work in Harwell, England) and behind schedule Test Results Reports for RIA 1-4 and PCM-7 due to redirection of priorities within the Thermal Fuels Behavior Program.

1. 189a A6041 - Experiment Design & Analysis

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

a. Power-Cooling-Mismatch Test Series

The first draft of the Test PCM-7 Fuel Rod Materials Behavior Report was submitted for management review. Review of the report has been delayed due to higher priority tasks.

b. Operational Transient (OPTRAN) Test Series

Final preparations for Test OPT 1-1 continued. A Document Revision Request (DRR) to the Test OPT 1-1 Experiment Operating Specification (EOS) was issued. The Test OPT 1-2 EOS and the Experiment Prediction documents were issued, and assembly of the test train continued to meet a February 8, 1982, delivery date.

The OPT 1-1 Experiment Safety Analysis (ESA) was revised to include (a) the test conduct changes described in DRR-326 to the EOS, (b) the radioactive tracer injection, and (c) reestimation of the probabilities of exceeding the PBF anticipated and unlikely fault limits after correcting for the effect of the centerline hole in the fuel rods at the time the temperature measurements were made.

c. Loss-of-Coolant Accident Test Series

Efforts continued on the Test LOC-6 Fuel Rod Behavior Report. A draft of the Thermocouple Effects Test Series Test Results Report was completed. Preliminary analyses and design efforts continued for the PBF Ontario Hydro (PBF-CANDU) LOCA Test to be performed in FY-1983.

d. Reactivity Initiated Accident Test Series

Preparation of the Test RIA 1-4 Fuel Behavior Report continued, and a revised draft of the Capsule Driver Core Fuel Enthalpy Report was completed.

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

e. Zircaloy Oxidation Embrittlement Topical Report

Modification of the COBILD code has been completed. The code was tested for five rods and the results were satisfactory.

f. Fission Product Behavior Research

The fission product detection system was prepared for Test OPT 1-1. The sample injection system is ready, pending final approval of the Facility Change Form. Preparation of the ^{153}Sm sample for injection is planned for the current operating period at the Advanced Test Reactor.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

a. Power-Cooling-Mismatch Test Series

Review of the first draft of the Test PCM-7 Fuel Rod Materials Behavior Report will continue.

b. Operational Transient (OPTRAN) Test Series

Final preparations for Test OPT 1-1 will continue. Initiation of Test OPT 1-1 will commence when the loop pump is operable. Assembly of the OPT 1-2 test train will be continued.

c. Loss-of-Coolant Accident Test Series

Efforts will continue on the Test LOC-6 Fuel Rod Behavior Report. Review and revision of the draft of the Thermocouple Effects Test Series Test Results Report will continue. Efforts will continue on the analyses and design for the PBF-CANDU Fuel Element LOCA Test to be performed in FY-1983. A presentation on the objectives, status, and schedule for the test will be made to NRC representatives on January 19, 1982.

d. Reactivity Initiated Accident Test Series

Preparation of the Test RIA 1-4 Fuel Behavior Report will continue. The revised draft of the Capsule Driver Core Fuel Enthalpy Report will be reviewed by management and comments incorporated.

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

e. Zircaloy Oxidation Embrittlement Topical Report

A new driver for the COBILD code will be written and analytical results for 34 rods will be obtained and incorporated in the report.

f. Fission Product Behavior Research

Final approval of the Facility Change Form will be obtained. The ^{153}Sm sample will be prepared. Test OPT 1-1 will be monitored and the sample injection conducted.

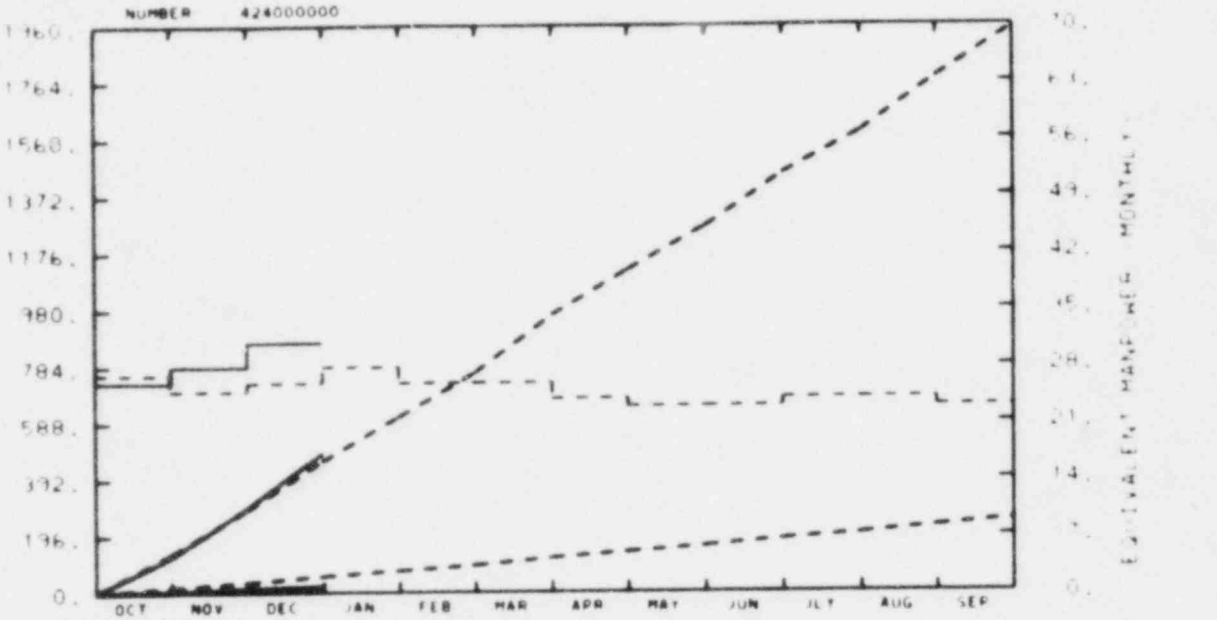
6. Problems and Potential Problems

Replacement of the PBF loop pump will delay initiation of Test OPT 1-1 until February 1, 1982.

EG&G IDAHO INC.

PBF ENGINEERING

NUMBER 424000000



TOTAL PROGRAM

BUDGET	135	289	459	611	762	962	1115	1266	1447	1590	1778	1953
ACTUAL	125	297	486									

MATERIAL

BUDGET	17	36	57	76	94	120	139	159	183	202	226	249
ACTUAL	4	15	22									

MANPOWER

BUDGET	27	25	26	28	26	26	24	23	23	24	24	23
ACTUAL	26	28	11									

BUDGET

ACTUAL

A6044

YTD VARIANCE: <27> (6%)

The budget figure represents the FY-1982 baseline. CCB 82-03 ($34K) was submitted in early December for added scope on the OPTRAN PPS Modification recovery program. Neither have been approved. The net overrun is a combination of an underrun associated with a late start on the TMI response engineering activities and overruns associated with the additional rod bump tests to confirm prior physics tests after reshimming the core and with the PPS mod. It appears that internal adjustments will compensate for all but the above noted CCB action.

1. 189a A6044 - PBF Design Engineering

2. Scheduled Milestones for December 1981

Node	Description	Date Due	Actual Date
N/A	PPS Modifications for OPTRAN Testing	12-31-81	12-22-81C

3. Summary of Work Performed in December 1981

a. Plant Protective System Modifications for OPTRAN Testing

System operational testing of the modified reactor control and protective systems were completed. The modification significantly increases the amount of core energy that can be safety used in the Power Shaping (>28 MW) Mode of reactor operation).

b. Improvement to the PBF Core Coolant Flow Measurement

A design review was conducted on an improvement to the core coolant flow measuring system. The change will provide the increased sensitivity required to reliably detect failure of the core inlet bellows.

c. Support System for Small-Diameter Tubing Exiting the In-pile Tube (IPT) Head

A preliminary design review of a stalk to provide support for small impulse lines exiting the IPT head was held. The support stalk will protect the tubing and instrument leads during operation and handling in the PBF canal.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

a. Improvement to the PBF Core Coolant Flow Measurement

Design will be completed on the improvement to the core coolant flow measurement system. Procurement of any long lead items required for the upgrade will be initiated.

b. PBF Remote Area Monitor (RAM) System Upgrade

Design of an upgrade to the PBF RAM System will be completed. This upgrade will replace obsolete detector units with modern hardware that will be integrated with the mini-computer-based Radiation Protection System.

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

   c. Support System for Small-Diameter Tubing Exiting the In-pile Tube (IPT) Head

      Design of the new IPT head tubing support stalk will be completed and will be reviewed in a final design review meeting.

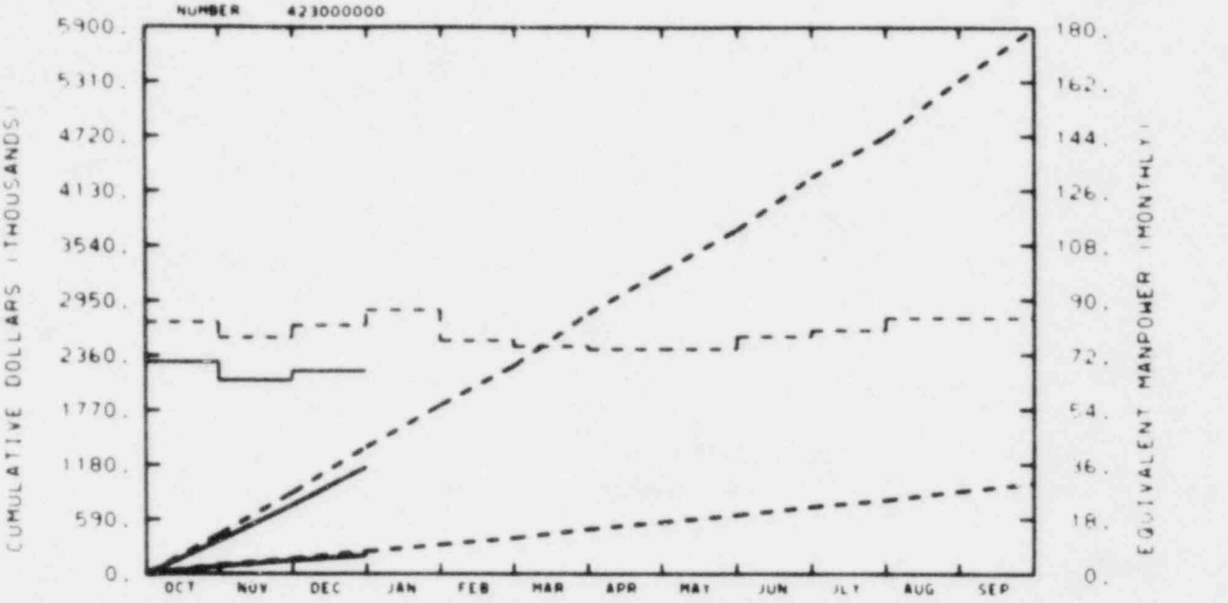
6. Problems and Potential Problems

   None.

RESPONSIBLE MANAGER
[illegible]

EG&G IDAHO INC.

PBF OPERATIONS



TOTAL PROGRAM

BUDGET	430	880	1377	1826	2252	2811	3258	3706	4271	4718	5322	5898
ACTUAL	365	746	1161									

MATERIAL

BUDGET	94	167	247	320	391	485	560	635	724	796	890	977
ACTUAL	85	151	205									

MANPOWER

BUDGET	83	78	82	87	77	75	74	74	78	80	84	84
ACTUAL	70	64	67									

BUDGET - - - - -

ACTUAL ———

A6057

YTD VARIANCE: 216 (16%)

Due to continuing resolution and budget uncertainties, expenditures have been held to a minimum. A CCF has been submitted to realign budgets. Expenditures are expected to increase during testing periods.

1. 189a A6057 - PBF Operations

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

a. Plant Operations

The work performed during this reporting period was primarily directed toward plant preparations for performance of the Reshim Core Physics Test (Part B) and Operational Transient Test 1-1 (OPT 1-1).

System operational testing of the Plant Protection System (PPS) Modification was completed. The fuel stored in the canal was transferred from the temporary fuel storage rack and reinstalled in the permanent fuel storage rack.

The Instrument and Data Section completed calibration of the Data Acquisition and Reduction System in preparation for Test OPT 1-1. The December process instrumentation calibrations were completed.

b. PBF Operations Support

Preventive Maintenance examinations for December were completed and January 1982 examinations are 99% complete.

Corrective Maintenance efforts include the changeout of resins in the No. 2 demineralizer, correction of various plant deficiencies, and continuation of the SPERT-II modification work.

In-service inspection examinations for 1981 have been completed and planning of the examinations scheduled for the first quarter of 1982 was started.

Final Data Integrity Review Committee meetings were held for Loss-of-Coolant Test 6 (LOC-6) and Thermocouple Effects Test 4 (TC-4). The data qualification reports for Tests LOC-6 and TC-4 are ready for signoff. The Data Acquisition and Reduction System directories are ready for Test OPT 1-1 and the Reshim Core Physics Test (Part B). A report draft was completed on a comparison of the uncertainties of the various methods of fuel rod energy calculations.

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

b. The Severe Fuel Damage test train fission chamber controller bids were evaluated, and the vendor was selected. Bids for the fission chamber amplifier are in the process of evaluation.

A PBF Standard Practice Bulletin was issued for temporary canal fuel storage limits that would allow for existing canal fuel storage as well as Operational Transient test train handling. Efforts have been initiated on the development of permanent storage limits for the canal permanent rack that requires no cadmium.

The Experiment Operating Procedures for the Reshim Core Physics Test and Test OPT 1-1 have been completed, except for the items that are dependent on the completion of the PPS Modification System Operation test.

Drafts of three of seven chapters of the PBF Emergency Action Manual rewrite have been completed.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Complete Reshim Core Physics Test (Part B).

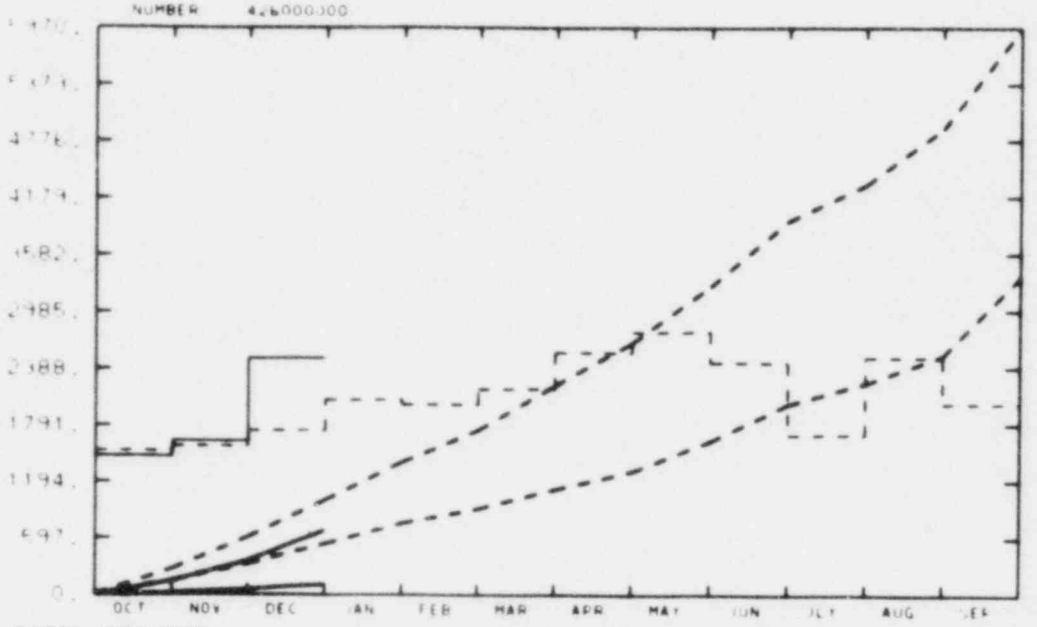
6. Problems and Potential Problems

None.

EG&G IDAHO INC.

SEVERE FUEL DAMAGE STUDIES

NUMBER 426000300



TOTAL PROGRAM

BUDGET	274	611	1002	1399	1740	2208	2659	3248	3934	4310	4903	5965
ACTUAL	147	362	684									

MATERIAL

BUDGET	140	329	542	765	910	1109	1303	1616	2009	2229	2516	3141
ACTUAL	21	60	111									

MANPOWER

BUDGET	28	29	42	38	37	40	47	43	45	41	46	47
ACTUAL	27	10	46									

A6305

YTD VARIANCE: 318 (32%)

Severe Fuel Damage Studies is showing an underrun of $318K as of December month-end. Of this, $308K can be attributed to underruns shown in three areas. The largest ($144.3K) is in the safety analysis task. This was due to an improperly aligned budget. The work packages are being corrected and this underrun should not appear next month.

The second underrun ($102.3K) is the hot cell effort on safety analysis, equipment development and development of procedures and equipment for analyzing fission product samples. There have been some delays in starting these tasks and the work to date has a low expenditure rate. This work supports the present test schedule and the underrun should disappear with the expected higher levels of spending.

The last underrun is in the PBF Loop Modification. This underrun ($60.2K) is due to having equipment on order, which has not yet been charged to the task.

1. 189a A6305 - TFBP Severe Fuel Damage Studies

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

a. Scoping Test Experiment Prediction Analysis

The TRAC analysis was completed and the final FRAP runs were made. Preparation of the text and figures continued.

b. Scoping Test Experiment Operating Specification (EOS)

Preparation of the EOS was started.

c. Safety Analyses

Safety analyses for the Plant Protective System (PPS) requirements continued. Computer codes, MITAS and RELAP, are being set up to model the loop coolant behavior and fuel rubble and shroud temperatures for loss-of-flow and loss-of-coolant accidents. From the behavior described by these analyses, the requirements for shutting down the reactor power and the timing and amount of emergency coolant will be determined.

d. Postirradiation Examination and Hot Cell Support

The scope and funds required for the Severe Fuel Damage (SFD) postirradiation examination equipment and procedure development were finalized. Preliminary design for a majority of the Hot Cell equipment has been completed.

e. Severe Fuel Damage Analysis

Analysis of the potential for fuel foaming during a severe fuel damage accident was initiated. Additional topics are being reviewed.

f. Severe Fuel Damage Fission Product Studies

Requisitions were issued for all hardware items for the Fission Product Detection System (FPDS) upgrade. A PDP 11/34 computer was identified for reutilization in the FPDS; a cost savings of about $50K will be realized and applied to other remaining tasks in the upgrade work package. Delivery of the PDP 11/34 is expected about mid February. Efforts were initiated

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

f. Severe Fuel Damage Fission Product Studies (Continued)

on the software for the new system. Facility requirements were compiled, and a work package for installation of the new equipment at the PBF is being prepared. A request was issued to the Hot Cell for sample processing cost estimates. The quality assurance plan was completed and approved.

g. Instrument Development and Fission Chamber

The subcontract for the fission chamber data analysis was awarded to the University of Washington, effective January 1 through September 30, 1982. The hardware order has been awarded for the system controller, and bids on the amplifiers were received.

h. Test Train Assembly Facility (TTAF)

The procurement of the flow tube, the completion of a criticality analysis to assemble SFD fuel bundles within the TTAF, the transport plan modifications to ship SFD test trains from the PBF, and the design of the SFD-2 test train continued.

i. Phase II and Program Development

Analysis of meltdown-refreeze fuel rod behavior continued in preparation for the Phase II Experiment Requirements Document (ERD). Also for the ERD, analysis of fuel foaming behavior continued. A meeting was held with Guenter Hoffman of KfK concerning the results of his experimentation with cooling of volumetrically heated beds of spheres. Considerable literature pertaining to debris bed heating and dryout was collected and reviewed. A summary paper on INEL activities regarding Degraded Core Studies was prepared and submitted for the Summer Annual ANS meeting in June 1982. An abstract for a paper on Phase II planning was prepared and submitted for the International Meeting on Thermal Nuclear Reactor Safety in August 1982.

j. Modifications

Long lead component purchase requisitions were 90% completed.

Formal review meetings were conducted on the Emergency Quench and Shroud Pressurization Systems.

The overall SFD Plant Modification Project Management Plan has been issued. Cost estimates were completed.

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

k. Fission Product Signature Analysis

Efforts continued on the calculations of release rate constants for Tests RIA 1-1 and 1-4. Efforts were initiated on the use of the ORIGEN2 code for signature calculations.

4. Scheduled Milestones for January 1982

Node	Description	Due Date	Actual Date
N/A	Issue Draft EOS for Scoping Test	01-15-82	01-15-82E

5. Summary of Work to be Performed in January 1982

a. Scoping Test Experiment Prediction Analysis

Preparation of the draft report will continue. A design change has been requested to substitute helium for argon in the annular gap containing the melt-through detector. This will require additional work and another appendix in the report. This work will be absorbed within the existing budget and schedule for the Experiment Prediction (EP) report.

b. Scoping Test Experiment Operating Specification (EOS)

The draft EOS will be issued.

c. Severe Fuel Damage Test 1 Experiment Prediction Analysis

Efforts on the EP for Test SFD-1 will begin with an analysis of the data from the out-of-pile simulation run at KfK.

d. Safety Analyses

The formulation of the Plant Protective System (PPS) requirements will be completed. Analyses will be initiated to evaluate the potential for fire and detonation of the hydrogen leaking from the loop and collection system.

e. Postirradiation Examination and Hot Cell Support

All work releases will be issued for development of the SFD postirradiation examination equipment. Design of the necessary hardware will be made to neutrograph the dummy bundle at Argonne National Laboratory-West.

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

f. Severe Fuel Damage Analysis

A summary of the fuel foaming analyses will be prepared for the Thermal Nuclear Reactor Safety Meeting in August 1982. Review of additional analysis topics will continue.

g. Severe Fuel Damage Fission Product Studies

All facility requirements for the installation of the new FPDS equipment will be defined and provided for cost estimates and scheduling. Efforts will continue on software development and special hardware fabrication. User interface specifications will be completed for the operating software. Cost estimates will be prepared for sample processing at the Hot Cell.

h. Instrument Development and Fission Chamber

More hardware orders will be awarded, and the majority of the purchase requisitions will be released. The University of Washington will begin setting up their analysis system and analyzing the INEL test tapes.

i. Test Train Assembly Facility (TTAF)

The procurement of the flow tube, the completion of a criticality analysis to assemble SFD fuel bundles within the TTAF. the transport plan modifications to ship SFD test trains from the PBF, and the design of SFD-2 test train will continue.

j. Phase II and Program Development

Writing of the ERD for Phase II will commence. An informal report of the results of earlier work for a Program Requirements Document will be prepared. A paper abstract for the Information Exchange Meeting on Post Accident Debris Cooling (July 1982 at KfK) will be prepared and submitted.

k. Modifications

Final design review will be conducted for the Experiment Cooling System.

Conceptual design for sampling system component shielding will be completed.

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

1. Fission Product Signature Analysis

Release rate constants will be calculated for Tests RIA 1-1 and 1-4, and efforts will begin on Tests PR-1 and PCM-7. A trial run with ORIGEN2 will be completed.

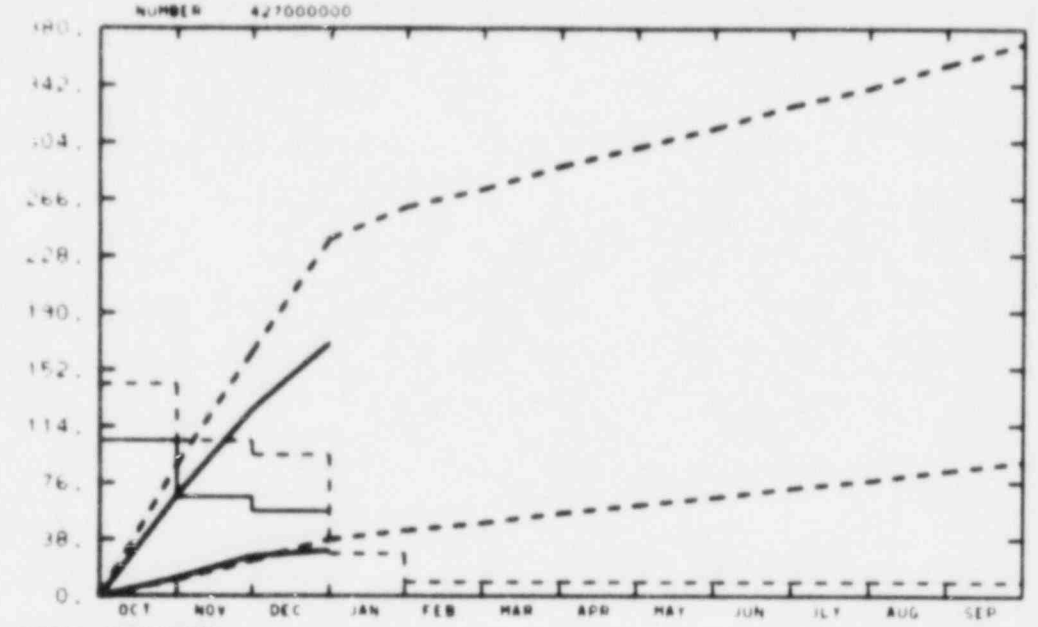
6. Problems and Potential Problems

The current scope of work for the final assembly of the test train and the delivery schedule from Battelle Pacific Northwest Laboratories results in a 5 week delay in delivery of the test train to PBF, therefore delaying the Severe Fuel Damage Scoping Test.

EG&G IDAHO INC.

CORE MELT MITIGATION SYSTEM

NUMBER 427000000



TOTAL PROGRAM

BUDGET	88	164	240	261	272	288	300	313	328	340	356	371
ACTUAL	68	125	170									

MATERIAL

BUDGET	11	24	38	44	49	56	61	66	72	77	84	90
ACTUAL	12	27	31									

MANPOWER

BUDGET	1A	11	10	1	1	1	1	1	1	1	1	1
ACTUAL	11	7	6									

BUDGET

ACTUAL

A6351

YTD VARIANCE: 70 (29%)

Spending on this task has been cut back due to deferral of the Grand Gulf work (see "Potential Problems"). Budget will be revised after completion of the Sequoyah report at the end of January, 1982.

189a A6351

1. 189a A6351 - Core Melt Mitigation

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

Writing of conceptual design reports was completed.

Reliability analysis was completed.

Cost estimates were completed.

Risk analysis for plant with CMMS installed was completed.

Sequoyah accident sequence analysis was revised for the effects of as-built numbers from TVA.

Chapter 4 of Phase 2 Report was revised.

First draft of the final project report was completed.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Complete and issue the final project report on Sequoyah.

6. Problems and Potential Problems

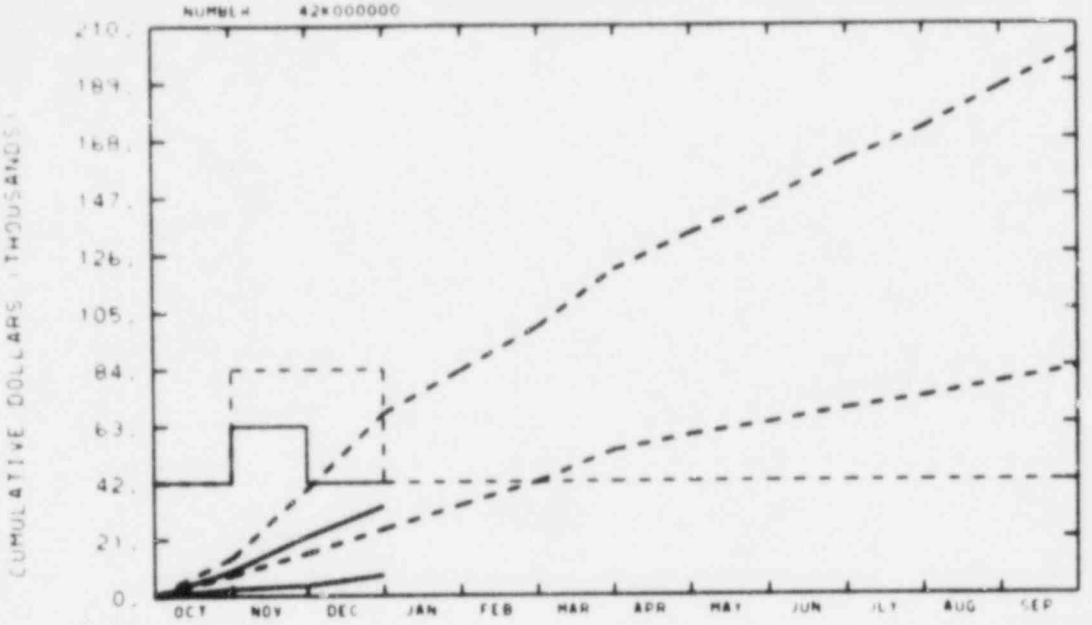
DOE was informed in December (ref. ltr. W. A. Spencer to R. E. Tiller, WAS-270-81) that work on this project will terminate after the completion of the Sequoyah Report unless additional direction is received from NRC.

RESPONSIBLE MANAGER: [illegible]

EG&G IDAHO INC.

NRC REP TO KFA

NUMBER 42X000000



TOTAL PROGRAM

BUDGET	14	40	68	83	99	120	133	146	160	172	187	201
ACTUAL	9	22	33									

MATERIAL

BUDGET	8	16	25	33	42	54	59	63	69	73	78	83
ACTUAL	3	4	8									

MANPOWER

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

BUDGET

ACTUAL

A6352

YTD VARIANCE: 35 (51%)

Budget is spread evenly but costs will come in at a greater rate later in the year.

1. 189a A6352 - NRC Representative to KfK

2. Scheduled Milestones for December 1981

   None.

3. Summary of Work Performed in December 1981

   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 January 1982

   None.

5. Summary of Work to be Performed in January 1982

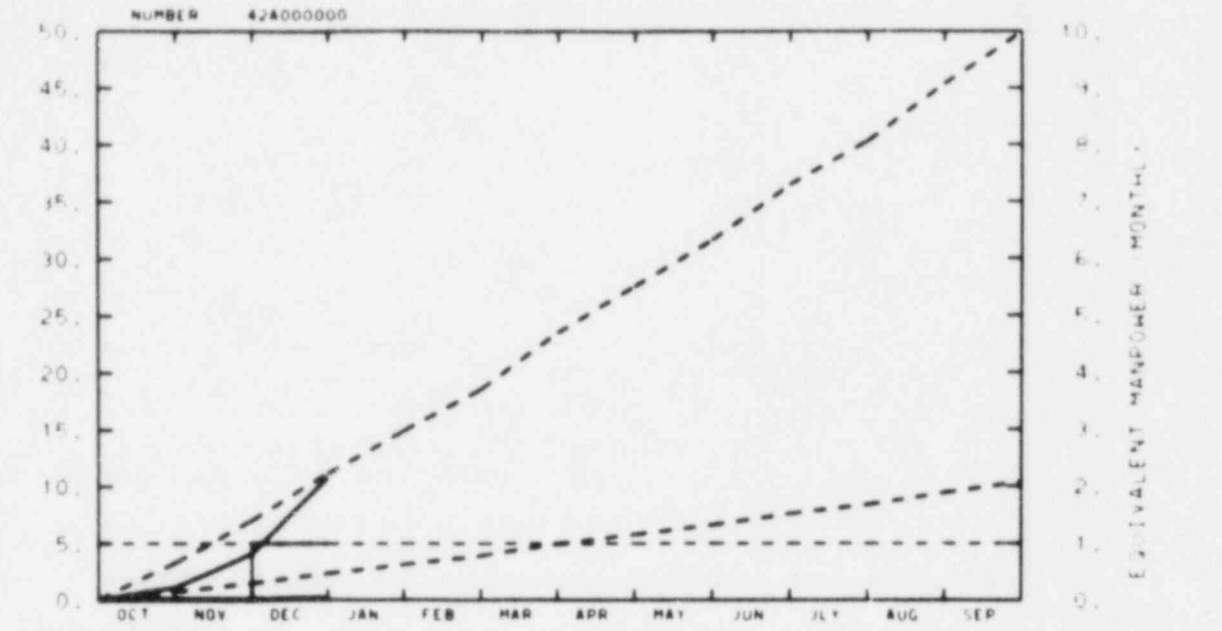
6. Problems and Potential Problems

   None.

RESPONSIBLE MANAGER
W. BUCHER

EG&G IDAHO INC.

FIS PROD BEHAV - PAST ACCIDENTS



TOTAL PROGRAM

BUDGET	3	7	11	15	19	24	28	32	36	40	45	50
ACTUAL	1	4	11									

MATERIAL

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

MANPOWER

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

BUDGET - - - - -

ACTUAL ———

A6372

YTD VARIANCE: 0

189a A6372

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

A more detailed review of past accidents and destructive tests is being conducted, having defined the potential subjects in the November Monthly Report. The literature survey for destructive tests is nearly complete. Data from the Plutonium Recycle Test Reactor (PRTR) accident are being prepared for input to TRAP-MELT. The CORRAL-2 code is also being reviewed for possible use in analyzing PRTR.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Evaluation of literature on SL-1, SNAPTRAN, and SPERT will be performed. Preliminary analyses of PRTR will be performed using TRAP-MELT.

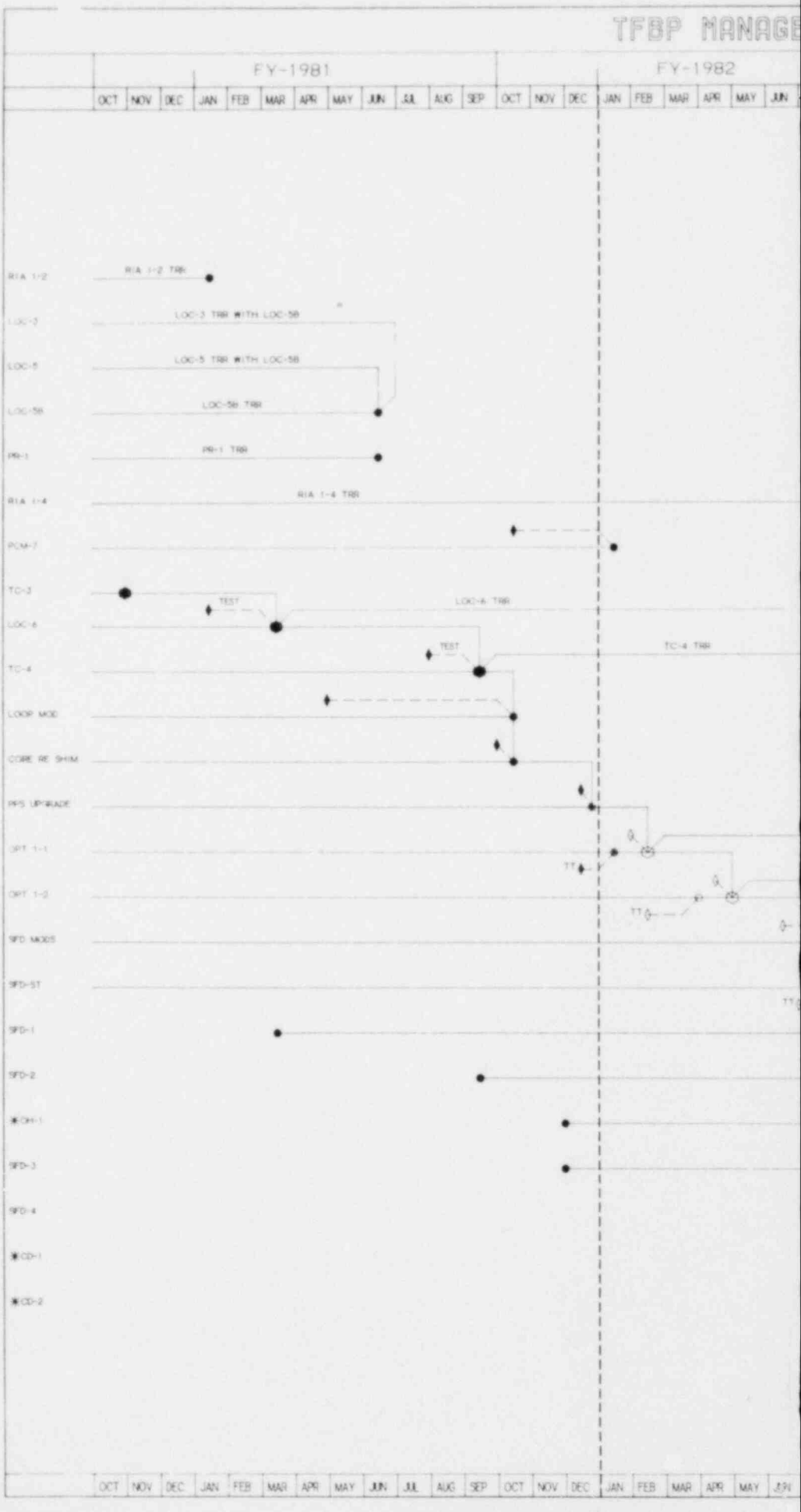
6. Problems and Potential Problems

None.

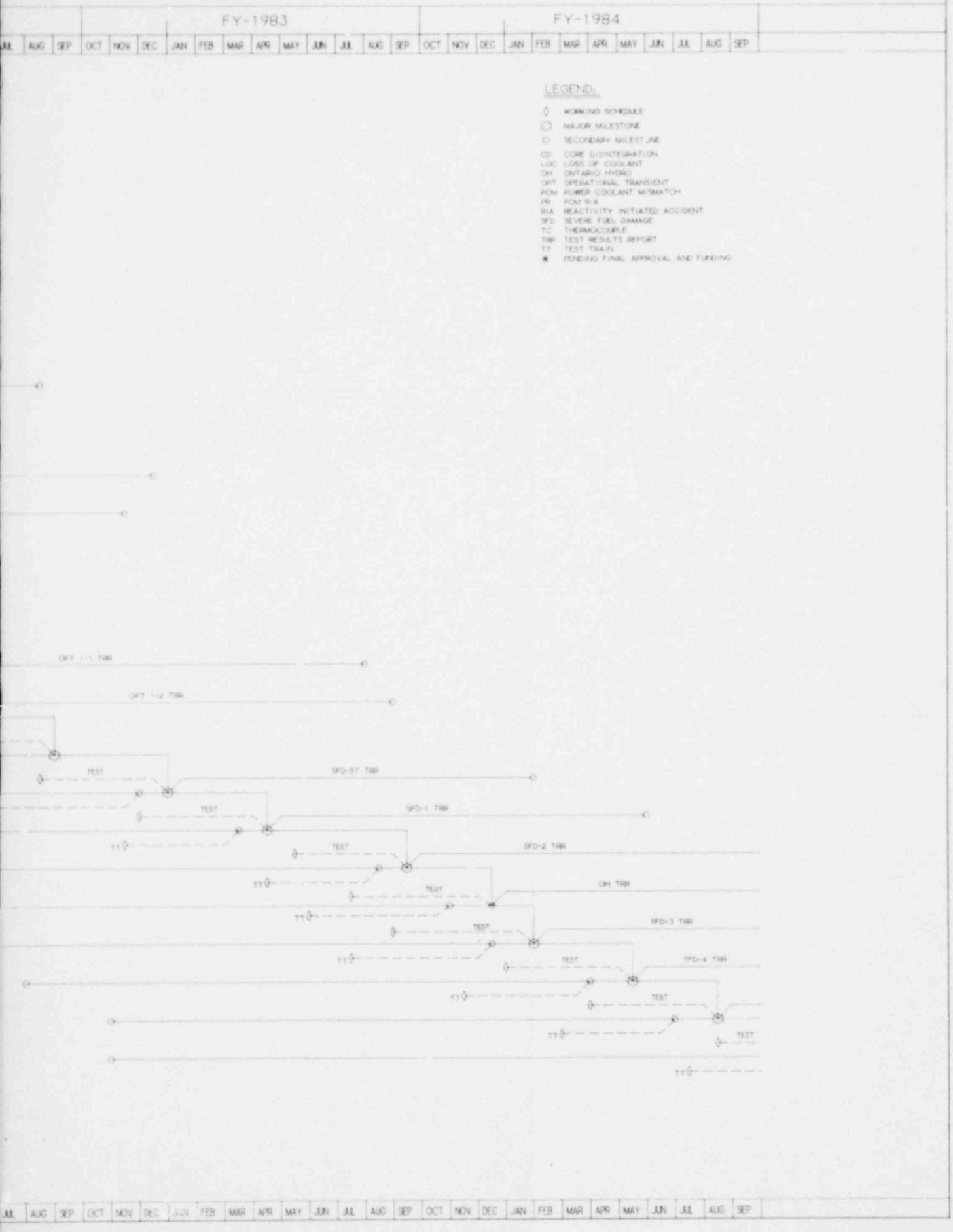
THERMAL FUELS BEHAVIOR PROGRAM

MANAGEMENT SUMMARY SCHEDULE

The Management Summary Schedule shown herein, is based on the $16,293K Baseline Program submitted to DOE-ID in CCB 82-02.


TFBP MANAGE
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
RIA 1-2
RIA 1-2 TRR
LOC-2
LOC-2 TRR WITH LOC-5B
LOC-5
LOC-5 TRR WITH LOC-5B
LOC-5B
LOC-5B TRR
PR-1
PR-1 TRR
RIA 1-4
RIA 1-4 TRR
PCM-7
TC-3
TEST
LOC-6
LOC-6 TRR
TC-4
TEST
TC-4 TRR
LOOP MOD
CORE RE SHIM
PPS UPGRADE
OPT 1-1
TT
OPT 1-2
TT
SFD MODS
SFD-ST
SFD-1
SFD-2
*CH-1
SFD-3
SFD-4
*CD-1
*CD-2
OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN

MENT SUMMARY SCHEDULE



THERMAL FUELS BEHAVIOR PROGRAM

CHANGE CONTROL BOARD ACTIONS

CHANGE CONTROL BOARD STATUS

Cost Account	CCB #	Description	Status	Date
42XXXXX	82-02	TFBP FY-1982 Baseline	Pending	12/27/81
4245F53	82-03	PPS Upgrade	Pending	12/27/81
42M1112	82-04	Discretionary Reserve	Pending	12/27/81

CHANGE CONTROL BOARD ACTION

($000)

CCB Number	Description	FY-1982	FY-1983	FY-1984/Beyond	Total Approved Action
	NONE				

THERMAL FUELS BEHAVIOR PROGRAM

CAPITAL EQUIPMENT

The Capital Equipment for the Thermal Fuels Behavior Program will not be presented in the December 1981 monthly report. The Capital Equipment will be included in the January 1982 monthly report and, thereafter, on the regular quarterly basis.

MONTHLY REPORT FOR

DECEMBER 1981

2D/3D PROGRAM

Paul North

P. North, Manager

Paul Keele

P. B. Keele
Plans and Budget Representative

2D/3D PROGRAM

COST SUMMARY AND COMMENTS

2D/3D PROGRAM

189a	Title	(1) Obligational Authority Carried Over From FY-1981	(2) New FY-1982 Obligational Authority	(3) Total Obligational Authority	(4) December FY-1982 YTD Costs	(5) (3)-(4) Balance	(6) Outstanding Commitments December FY-1982	(7) (5)-(6) Balance
A6100	3D Tech Support & Inst.	$ 368.8K	$300.0K	$ 668.8K	$419.9K	$ 248.9K	$48.8K	$ 200.1K
A6282	Fluid Distribution Grids	18.4K	215.0K	233.4K	60.0K	173.4K	0.0K	173.4K
A6289	UPTF DAS	1,021.1K	0.0K	1,021.1K	48.9K	972.2K	0.0K	972.2K
		$1,408.3K	$515.0K	$1,923.3K	$528.8K	$1,394.5K	$48.8K	$1,345.7K

Due to the constraint of continuing resolution, certain activities have been rescheduled to minimize program costs during this period. These activities do not impact completion of the major milestones even though, in some instances, cost status is shown under budget.

2D/3D PROGRAM

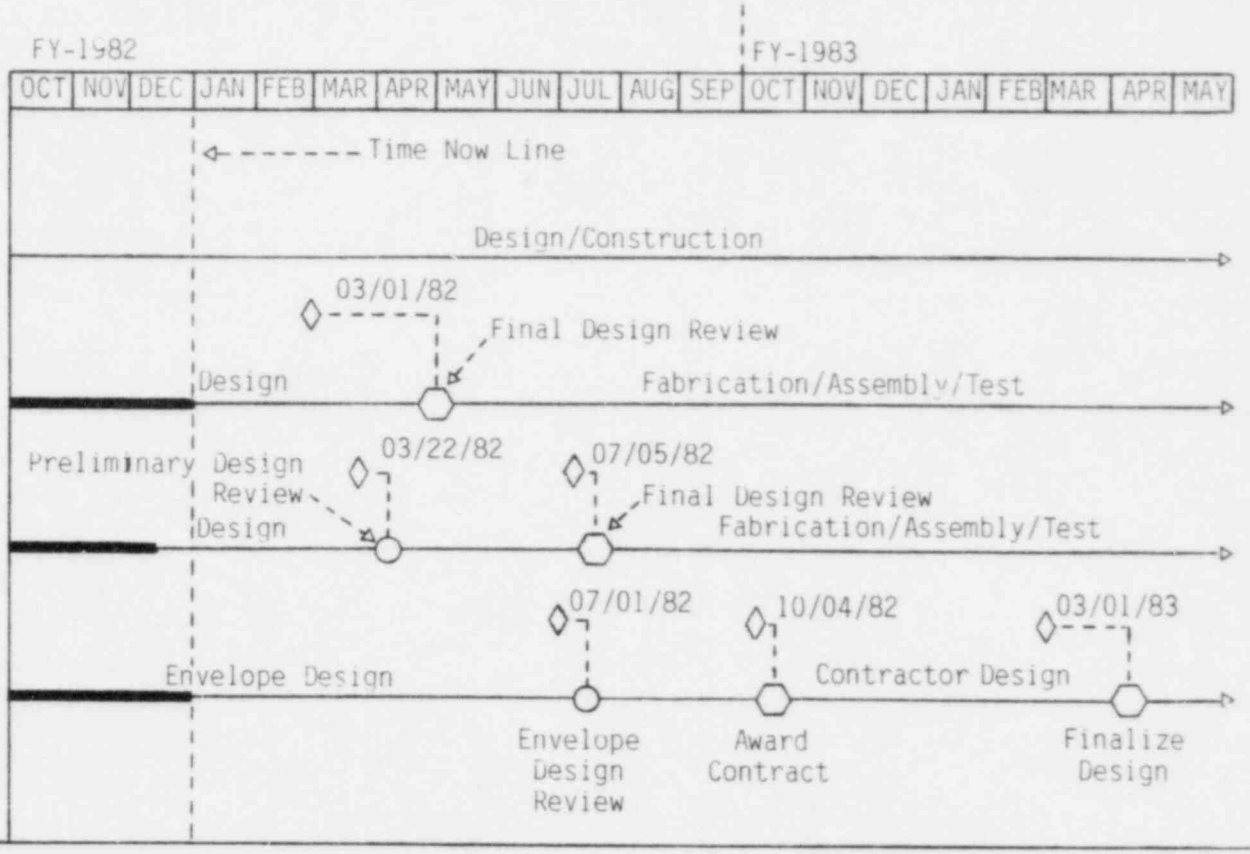
CURRENT WORKING SCHEDULE

LEGEND

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

2D/3D PROGRAM
UPTF Projects

December 1981



NOTES:

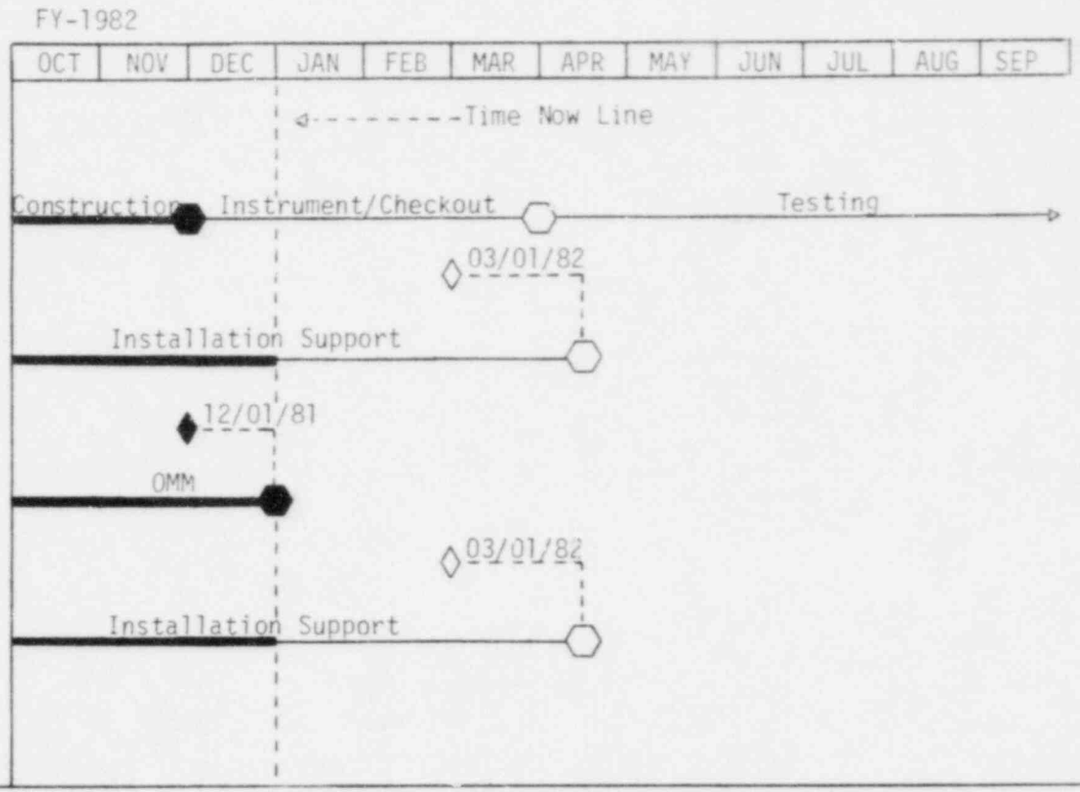
LEGEND

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

2D/3D PROGRAM

PKL Projects

December 1981



NOTES:

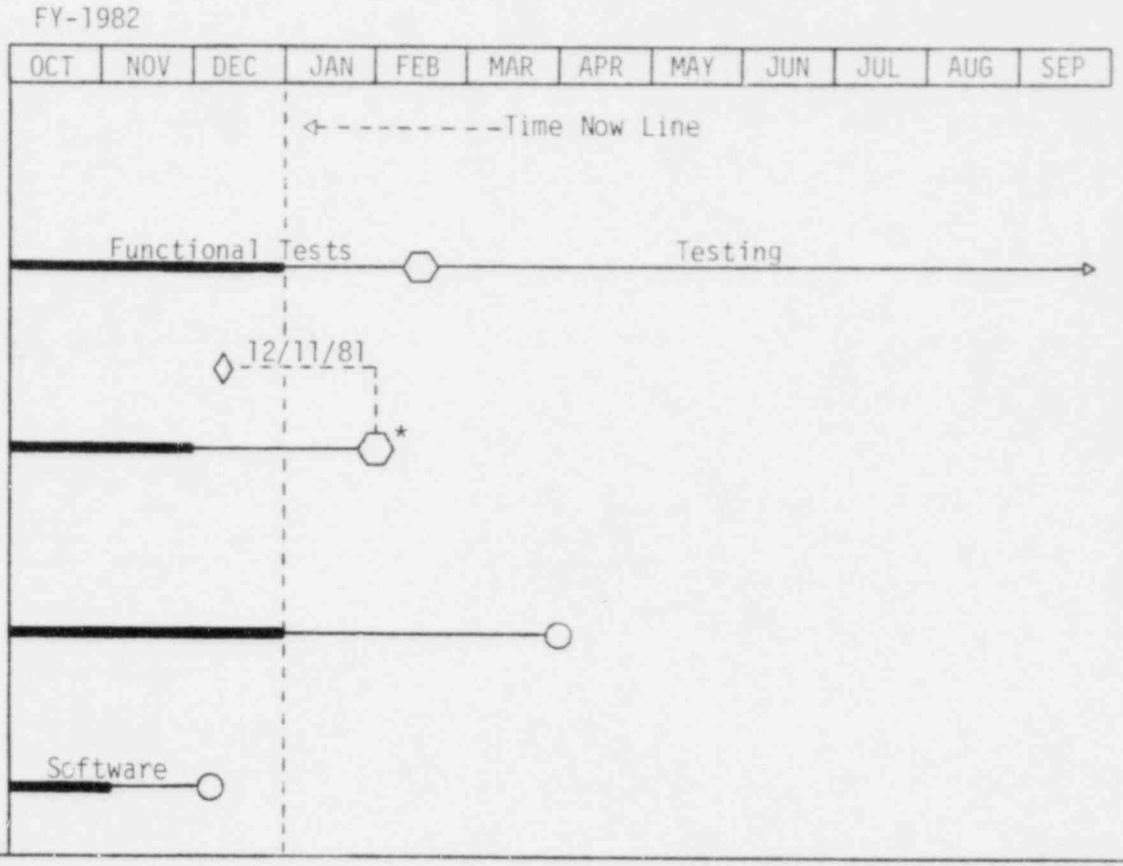
LEGEND

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

2D/3D PROGRAM

CCTF-II Projects

December 1981



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

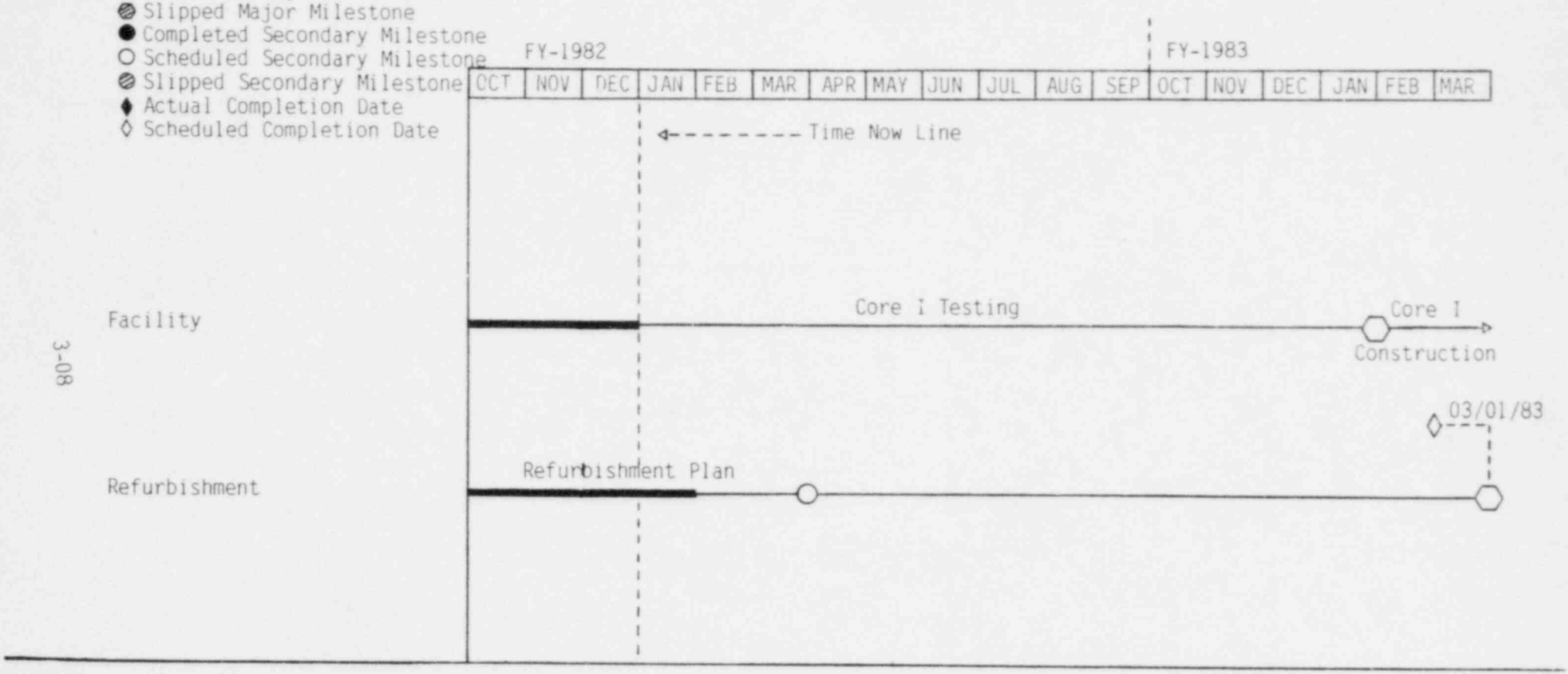
LEGEND

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

2D/3D PROGRAM

SCTF Projects

December 1981



NOTES:

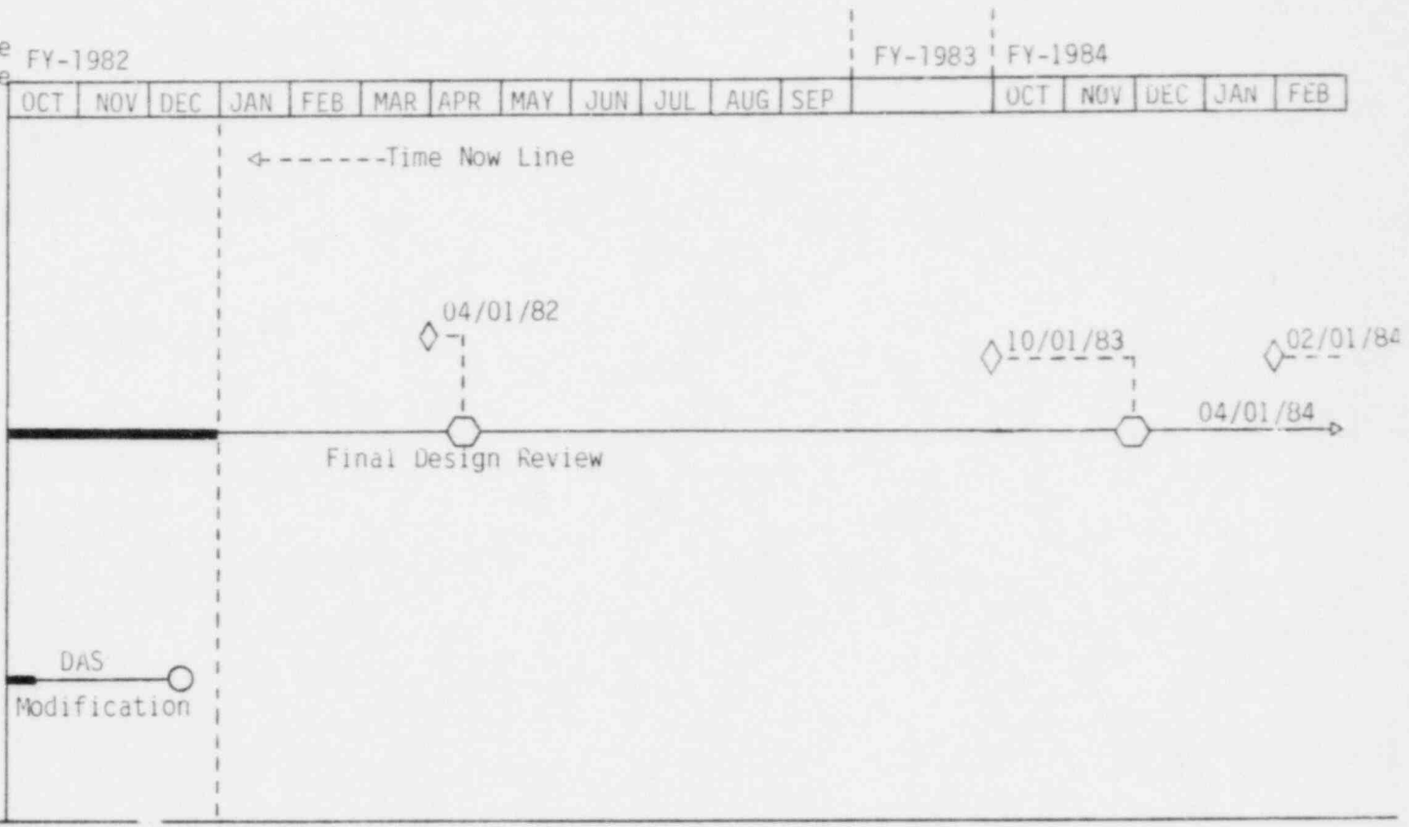
LEGEND

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

2D/3D PROGRAM

Fluid Distribution Grids

December 1981



3-09

UPTF FDG

CCTF-II FDG

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

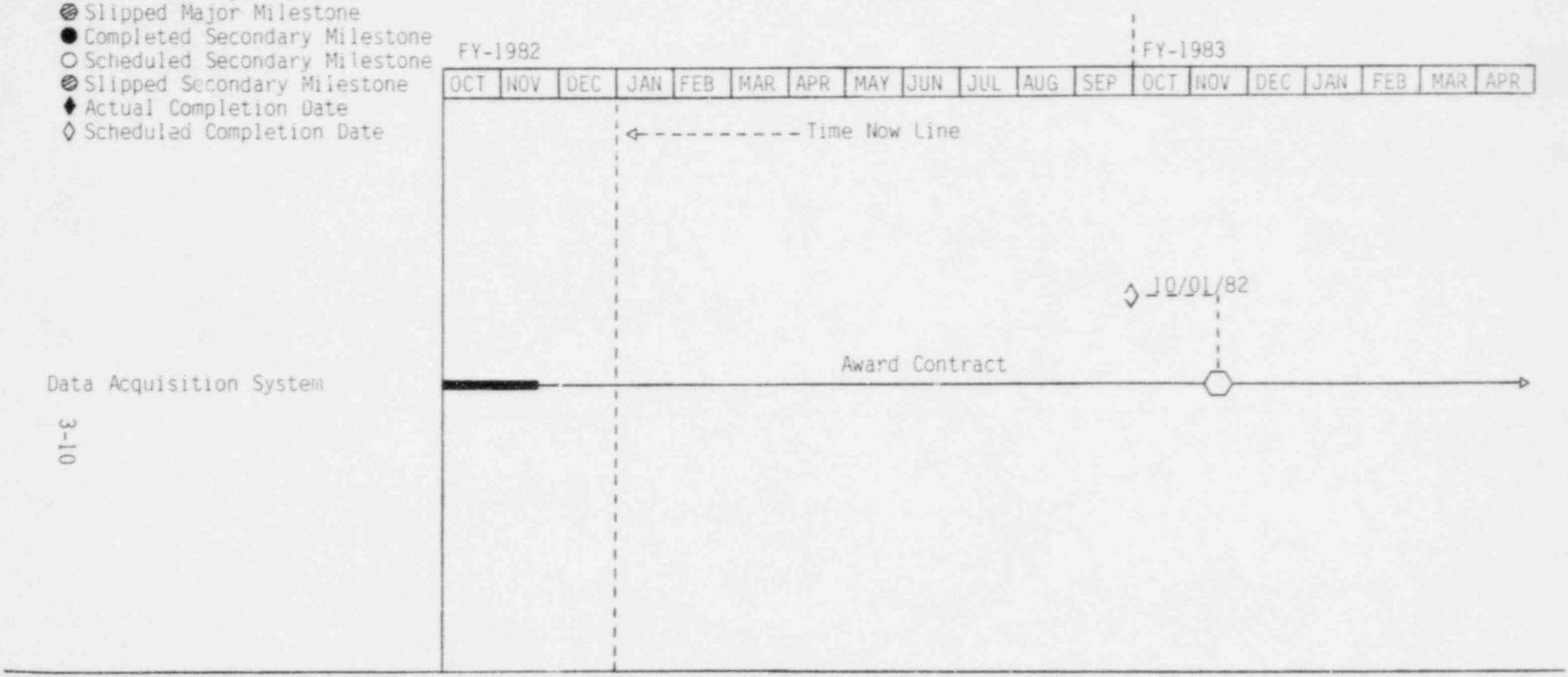
2D/3D PROGRAM

December 1981

JPTF Data Acquisition System

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

2D/3D PROGRAM

TECHNICAL REVIEW AND SUMMARY

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

The Operation and Maintenance Manual for the turbine meters used on the Primary Coolant Loop in Germany was completed on schedule. This activity completes the turbine meter project for this facility.

The Cylindrical Core Test Facility, Core I Uncertainty Analysis was completed ahead of schedule. Acceptance testing of the video probe systems for the Cylindrical Core Test Facility, Core II was successfully completed.

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

2. Schedule Milestones for December 1981

Node	Description	Due Date	Actual Date
	Software Users Manual for CCTF-II	12-06-81	1-31-82 (planned)
	CCTF Uncertainty Analysis Report	05-15-82	12-31-81
	PKL Turbine Meter Operation and Maintenance Manual	12-31-81	12-31-81

3. Summary of Work Performed in December 1981

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

1. Spool Pieces

No activity.

2. Conductivity Liquid Level Measurement System

No activity.

3. Turbine Meters

The Operation and Maintenance Manual was issued completing the work effort on the PKL turbines.

B. Upper Plenum Test Facility

1. Drag Disks

Scoping tests have been completed on the LOFT drag-disk electronics. These electronics meet the UPTF drag-disk electronic requirements and therefore will be used for the UPTF drag-disk system.

3.8 Summary of Work Performed in December 1981 (continued)

2. Turbine Meters

The design concept for the vent valve probes was furnished to CRNL and their response was received for review.

An investigation was initiated into alternate bearing materials for turbines. Improvements in bearing design could reduce maintenance requirements and improve performance of the turbines over their full range.

3. Gamma Densitometers

The conceptual design was completed and preparation for a conceptual design review was initiated.

C. Cylindrical Core Test Facility Core II Instruments

1. Turbine Meters

The Operation and Maintenance Manual is in reproduction.

2. Thermocouple Velocimeter

The Velocimeter Performance Test Report is in reproduction. The first draft of the Operation and Maintenance Manual is approximately 90% complete.

3. Spool Piece and Drag Disk Refurbishment

The calibration constants were established for the CCTF-II instruments and incorporated into the software tape.

The software tape, program listings and verification runs were mailed to JAERI.

The calibration constants for CCTF-II were outlined for all the test runs and sent to JAERI to aid them in reducing the data.

4. Conductivity Liquid Level Measurement System

The data package for JAERI signoff was compiled and given to Quality Control.

3.C Summary of Work Performed in December 1981 (continued)

5. Video Probe

Acceptance testing of the video probes for CCTF-II was completed. Testing was successful with the exception of the magnetic field tests. The camera is significantly sensitive to fields greater than 1 gauss. If this is a problem at the JAERI facility shielding will be used around the camera.

The video probes were assembled for a complete operational checkout prior to packing for shipment to Japan.

E. Analysis Support

The CCTF-I uncertainty analysis was completed and issued.

4. Schedule Milestones for January 1982

Node	Description	Due Date	Actual Date
	Software User's Manual for CCTF-II	12-06-81	1-31-82 (planned)
	Ship CCTF-II Video Probe System to Japan	01-15-82	

5. Summary of Work to be Performed in January 1982

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

1. Spool Pieces

No activity planned.

2. Conductivity Liquid Level Measurement System

No activity planned.

B. Upper Plenum Test Facility

1. Drag Disks

Components to fabricate the drag disk electronics will be ordered.

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

2. Turbine Meters

Preparations for an interface meeting with FRG personnel will be made. A goal of this meeting will be to firm up interface and resolve items that are prerequisite to finalizing envelope design for the turbine probes.

The investigation into alternate bearing materials and designs will be completed.

3. Gamma Densitometers

A conceptual design review will be conducted.

C. Cylindrical Core Test Facility II Instruments

1. Turbine Meters

The Operations and Maintenance Manual will be issued.

2. Thermocouple Velocimeter

The first draft of the OMM will be completed.

3. Spool Piece and Drag Disk Refurbishment

The CCTF-II Software Users Manual will be printed and issued.

4. Conductivity Liquid Level Measurement System

No activity planned.

5. Video Probe

Video probe assemblies will be packed and shipped to the JAERI facility in Japan.

E. Analysis Support

The NRC has requested that all analysis support actvities terminate. No further work will be done.

6. Problems and Potential Problems

A. Cylindrical Core Test Facility II

Problems were encountered with the video probe pressure boundary primary seal design (K-seals) and it was necessary to resort to a backup design using grafoil gaskets. This problem caused an increase in costs of less $5K and delays in acceptance testing. However, the schedule slippage will not affect the committed milestone for shipment of the probe assemblies.

B. Upper Plenum Test Facility

A potential problem exists as a result of delays in the establishment of the instrument interface with the UPTF facility. The design is proceeding slowly until the interface control document is issued from the UPTF facility. The interface meeting planned for the last week in January has been postponed which can further intensify this problem. When this is resolved a recovery plan will be necessary to get back on schedule.

189a A6282

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

2. Schedule Milestones for December 1981

Node	Description	Due Date	Actual Date
	DAS modification for CCTF-II FD Grid, Software and Video Display	12-15-81	4-30-82 (planned)

3. Summary of Work Performed in December

A. Japan Atomic Energy Research Institute (JAERI) Slab Core Test Fluid Distribution Grid System

No activity.

B. Cylindrical Core Test Facility Core-II Fluid Distribution Grid System

The rough draft of the Optical FDG software specification was completed and sent out for review.

Additional information for the FDG Operation and Maintenance Manual optical section has been received.

The purchase requisition for a display terminal for the CCTF-II FDG system has been given to purchasing.

C. Upper Plenum Test Facility Fluid Distribution Grid System

Work was performed on the preliminary mechanical and electrical design of the FDG/LLD optical liquid level detector system and is 40% complete. A different design of the signal conditioning enclosure from the CCTF-II enclosure has been established. A new method of holding the fibers in the optical tip is being evaluated. A less expensive fiber then was used as CCTF-II is being evaluated.

Comments on FDG/LLD MPR specifications were noted and sent to MPR.

4. Scheduled Milestones for January 1982

Node	Description	Due Date	Actual Date
	DAS modification for CCTF-II FD grid, software and video display.	12-15-81	4-30-82 (planned)

5. Summary of Work to be Performed in January 1982

A. Japan Atomic Energy Research Institute (JAERI) Slab Core Test Fluid Distribution Grid System

No activity planned.

B. Clyindrical Core Test Facility Core-II Fluid Distribution Grid System

The Optical FDG software specification rough draft comments will be incorporated and the specification will be issued.

The rough draft for the FDG Operation and Maintenance Manual optical section will be completed and sent out for review.

The display terminal for the CCTF-II FDG system will be purchased.

The design of the software will begin.

C. Upper Plenum Test Facility Fluid Distribution Grid System

Work will continue on the preliminary mechanical and electrical design of the FDG/LLD optical liquid level detector system and will be 70% completed.

6. Problems and Potential Problems

A. Upper Plenum Test Facility

See A6100 for comment.

189a A6289

1. 189a A6289 Upper Plenum Test Facility Data Acquisition System

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

Revision 3 of the UPTF DAS Functional Specification was received from MPR. Based upon this document, the project work package is being revised. Preparations are underway for a meeting with Kraftwerk Union (KWU), MPR Associates Inc., and ORNL to resolve outstanding disagreements in work scope.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

A cost estimate will be prepared for the revised UPTF DAS work package and a CCB will then be submitted to DOE. EG&G comments on the revised MPR UPTF DAS Functional Specification will be submitted to MPR. A cost estimate for each of the FRG requested "out of scope" requirements will be prepared and submitted to NRC. Preparations for the meeting with MPR, KWU, and ORNL will be completed. Preliminary design of the DAS will be initiated in January.

6. Problems and Potential Problems

A delay in establishing, a firm specification is causing a delay in the planned work. However, there is enough slack in the procurement cycle such that no impact is seen in the delivery date if this problem is resolved soon. The delay in the specification review meeting with FRG can further postpone the establishment of a firm specification and may impact the final delivery.

2D/3D PROGRAM

CAPITAL EQUIPMENT

The Capital Equipment for the 2D/3D Program will not be presented in the December 1981 monthly report. The Capital Equipment will be included in the January 1982 monthly report and, thereafter, on the regular quarterly basis.

MONTHLY REPORT FOR

DECEMBER 1981

CODE DEVELOPMENT DIVISION

F. Aguilar, Manager

S. F. Tuck
Plans and Budget Representative

CODE DEVELOPMENT DIVISION

COST SUMMARY AND COMMENTS

CODE DEVELOPMENT DIVISION

(RES)

189a	Title	(1) Obligational Authority Carried Over From FY-1981	(2) New FY-1982 Obligational Authority	(3) Total Obligational Authority	(4) December FY-1982 YTD Costs	(5) (3)-(4) Balance	(6) Outstanding Commitments December FY-1982	(7) (5)-(6) Balance
A6050	Fuel Behavior Model Development	$121.7K	$180.0K	$301.7K	$222.5K	$ 79.2K	$0.0K	$ 79.2K
A6052	LOCA Analysis	295.3K	100.0K	395.3K	271.4K	123.9K	0.0K	123.9K
A6278	TRAC-BWR Heat Transfer	18.6K	50.0K	68.6K	48.2K	20.4K	0.0K	20.4K

CODE DEVELOPMENT DIVISION

CURRENT WORKING SCHEDULE

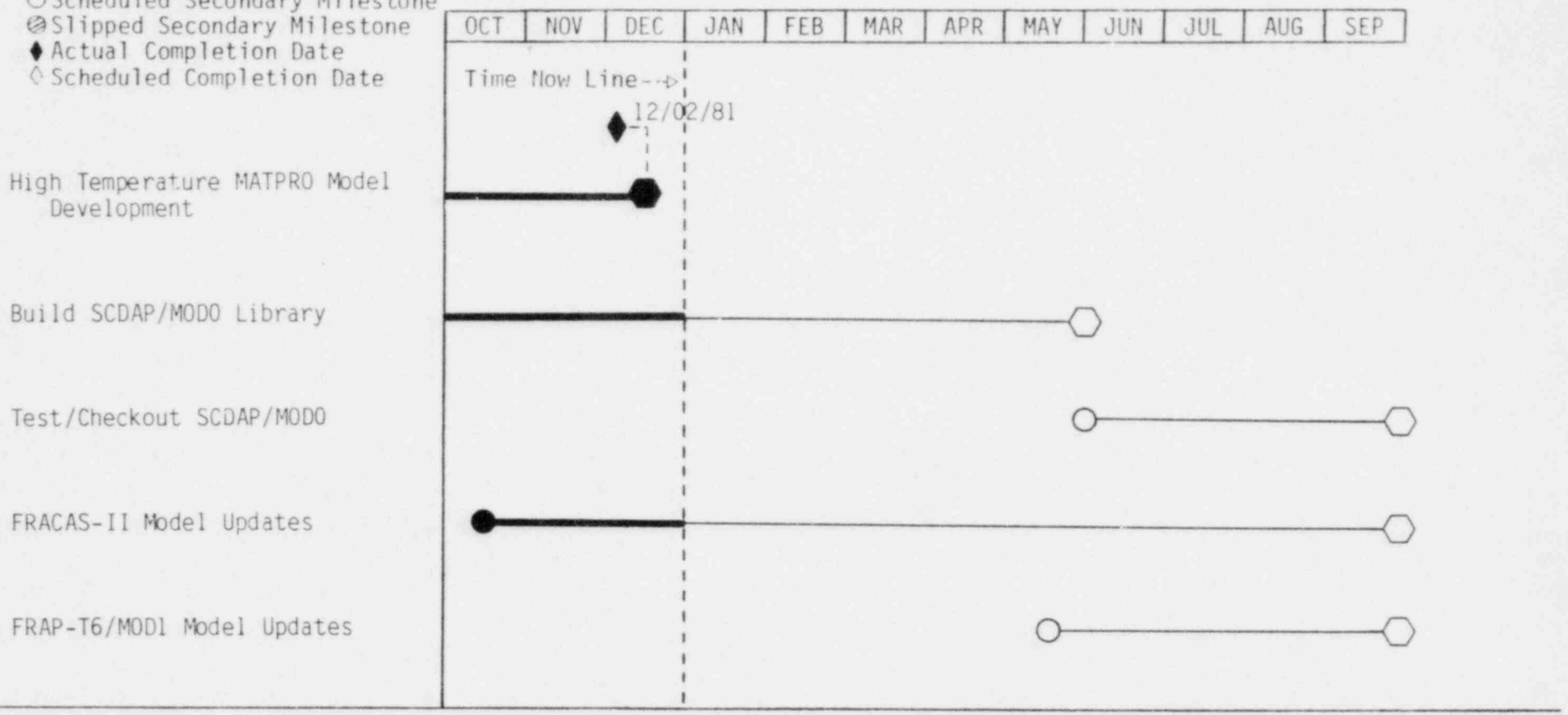
LEGEND

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

CODE DEVELOPMENT DIVISION

December 1981

MATPRO Development (A6050)



NOTES: Development of the library for SCDAP/MOD0 will be funded as part of 189 A6360. This task will be moved to A6360 as soon as funding is approved.

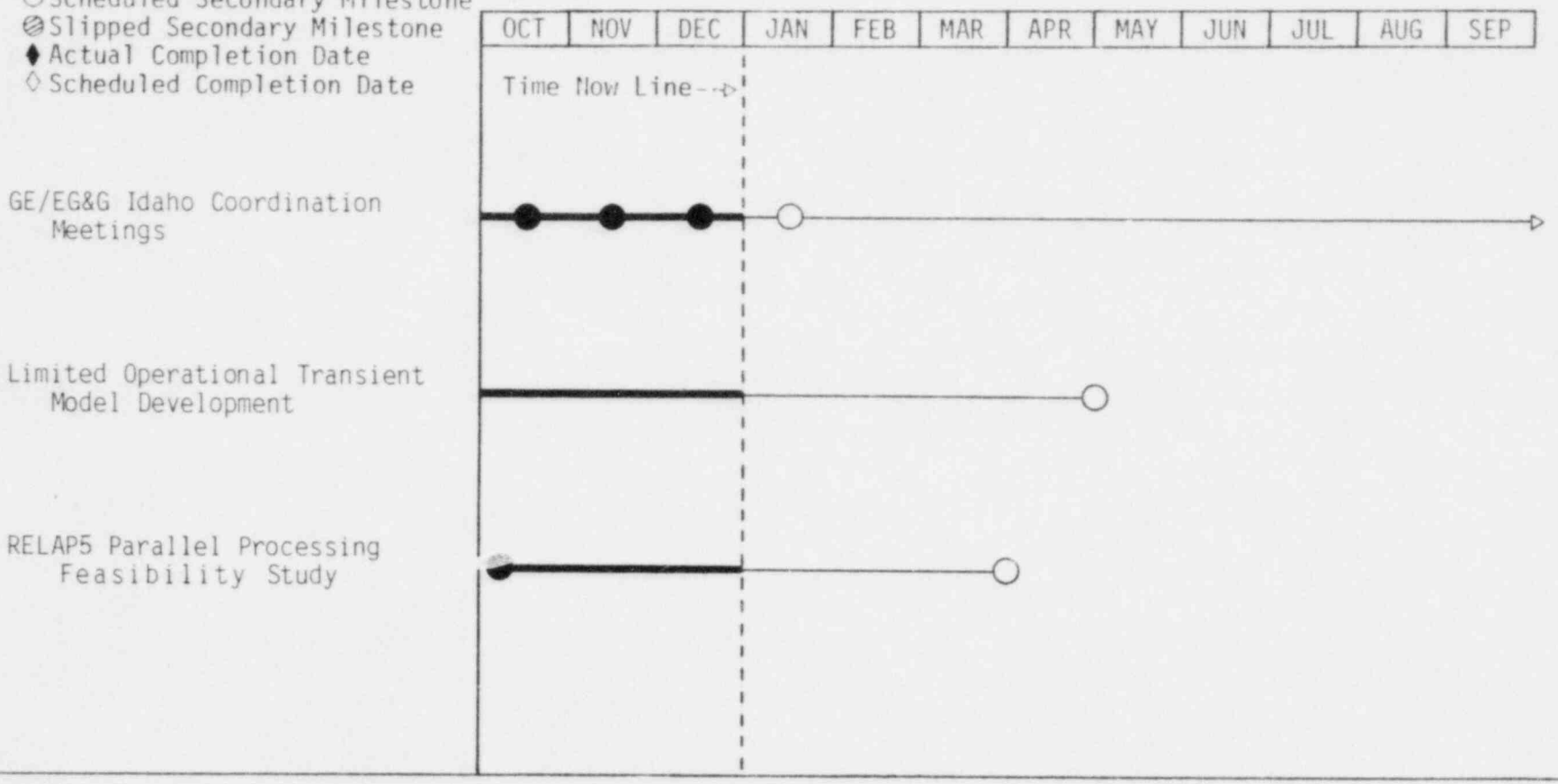
CODE DEVELOPMENT DIVISION

TRAC-B Development (A6052)

December 1981

LEGEND

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



NOTES:

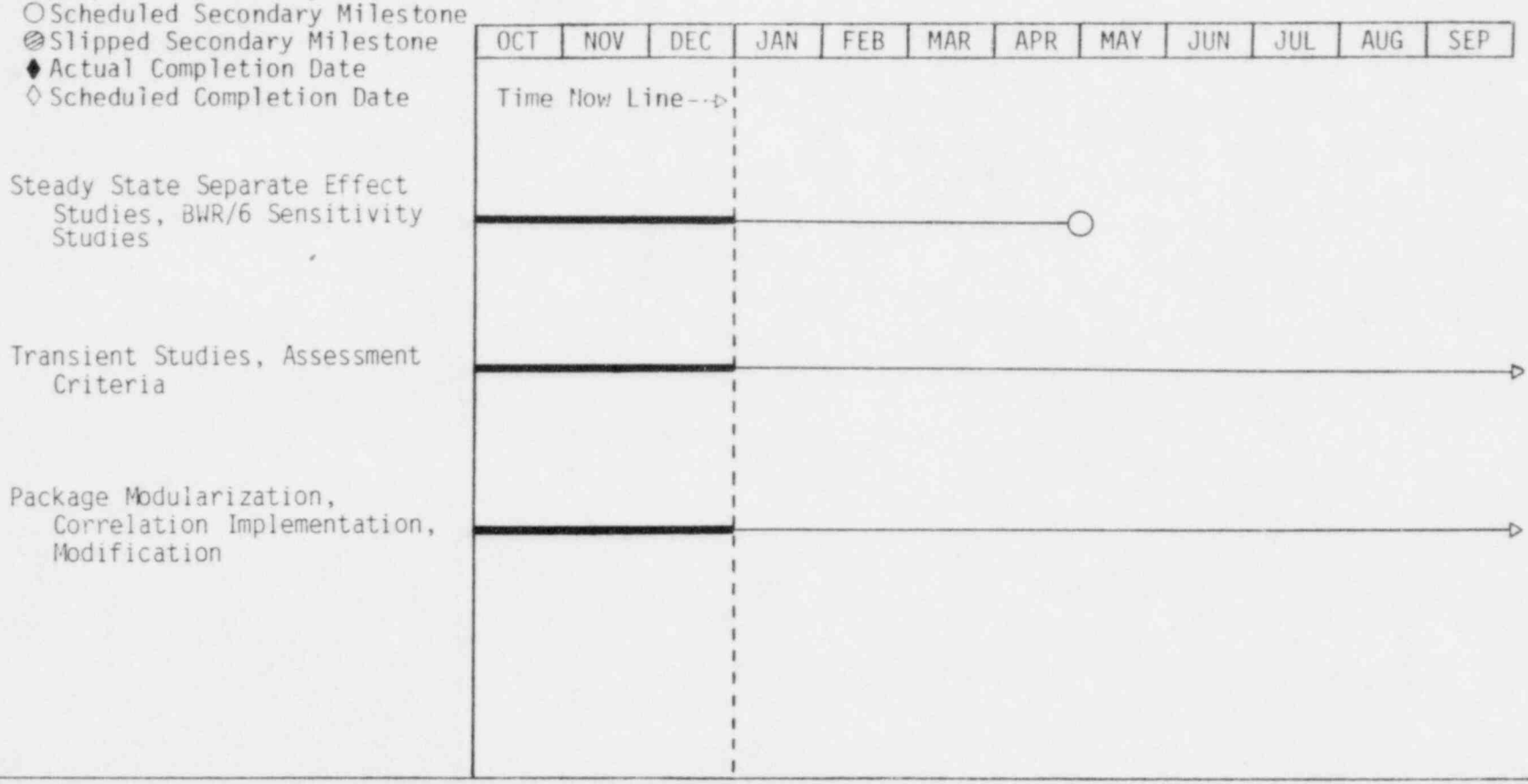
CODE DEVELOPMENT DIVISION

December 1981

Heat Transfer (A6278)

LEGEND

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



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

CODE DEVELOPMENT DIVISION

TECHNICAL REVIEW AND SUMMARY

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

The "early look" report on the planned TRAC-BWR heat transfer sensitivity studies, proposed acceptance criteria, and assessment method was completed as scheduled. The work plan for the TRAC-BWR heat transfer package development and assessment funded under A6278 was revised to accommodate requested changes to the A6052 (TRAC-BWR development) work scope that claim A6278 manpower and to account for the delay in beginning the steady-state experiment studies caused by unanticipated code problems. The overall work scope for FY-82 is unchanged, and there is no change in funding requirements.

TRAC-BD1/MOD1 development is progressing satisfactorily as planned. The completion of this work will be affected by requested changes in work scope including developmental assessment, a subsequent code release, and provision of training for NRC contractors. A new work scope, schedule, and budget will be devised during January. The search for a TRAC-BWR section leader will continue.

The RELAP4/MOD7 manual supplement was completed and distributed ahead of schedule. No additional tasks are planned except for continual maintenance of RELAP4 permanent files on the INEL computer.

Development of SCDAP/MOD0 is progressing as planned. A number of final design reports documenting various models were completed.

1. 189a A6050 - Fuel Behavior Model Development

2. Scheduled Milestones for December 1981

Node	Description	Due Date	Actual Date
--	MATPRO-11 High-Temperature Model Updates	12/15/81	12/02/81C (FA-141-81)

3. Summary of Work Performed in December 1981

a. MATPRO

A literature review identifying data sources for development of preliminary MATPRO models for SCDAP was begun. The review will be completed during January. Development of the models will continue through April 1982.

b. FRACAS-II

A final design report was completed which describes the coding changes for improving the numerical efficiency of the FRACAS-II subcode. A final design report was completed that described correction of the permanent cladding deformation problem in FRACAS-II identified during the developmental assessment. A final design report describing the corrections required to the fuel cracking model to prevent violation of Hooke's Law was submitted for technical review. The report will be completed during January.

c. SCDAP

Editing of the final design report for the debris transition and behavior models was completed and typing of the report was begun. The report will be issued in early January. Printing of the final design reports for the isotopic summation decay heat model, liquefaction/flow/solidification model, and the generalized heat conduction model was in process at month's end. Typing of the final design reports for the liquefaction/flow/solidification and chemical energy effective heat transfer model and the coupled heat conduction-oxidation model is in process. The above reports were not issued during December as expected because of the volume of typing involved. However, the reports will be released during January. The literature review for the axial fuel relocation model was completed. Preliminary coding and testing of the decay heat/fission heat models was completed during December. Drafting of the final design report for the model was begun. During January, coding and testing of the model will be completed and the final design report will be submitted for technical review. Preliminary design requirements for the fragmented fuel effective heat transfer model were established during December and will be reviewed

3.c. Summary of Work Performed in December 1981 (contd.)

during early January. Preliminary design requirements for the prior operating history effective heat transfer model were established and theory development began and will be completed during January. Design requirements for the thermal expansion effective heat transfer model and the gas pressure model were establsihed and theory development is in process. Preparation of an input/output list for SCDOMP was initiated during December. This list will be completed during January and will be incorporated into a preliminary design report for the SCDOMP pilot code. Coding and testing of the debris transition and propagation models was completed. Checkout of the noncondensible models was not completed during December due to a suspected storage overriding problem. Isolation of the specific cause of such a problem is very difficult and time consuming. Efforts to find this problem will be continuing during January. In spite of this problem, a version of the CHAN component was incorporated into the SCDBUND pilot code for use in checkout of the SCBUND-SCDAP/MODO interface. This checkout activity resulted in the need to convert CHAN from Fortran-4 to Fortran-5. This activity was initiated and is expected to be completed by early January. The conversion is not expected to cause a schedule delay due to the fact that it is being performed while personnel involved with the interfacing routine are on vacation. Design of the input routine for SCBUND were completed during December. Peer and management review of the SCDAP/MODO driver logic design suggested the design should be documented in a preliminary design report versus a final design report as previously intended. The major reason for this action is that a complete checkout of the design is not possible at this time due to the ongoing model development for SCDAP/MODO, a final design report for the tested and approved driver logic will be issued.

4. Scheduled Milestones for January 1982

Node	Description	Due Date	Actual Date
--	SCDAP Status Summary	1/29/81	

5. Summary of Work to be Performed in January 1982

a. MATPRO

The literature review of data source for preliminary MATPRO models for SCDAP will be completed. Development of the models will begin and continue through April 1982.

5. Summary of Work to be Performed in January 1982 (contd.)

b. FRACAS-II

An empirical crack pattern model will be developed. The model will be a function of as-fabricated gap size, power, and burnup and will replace the present fuel relocation model. A final design report discussing the new relocation model will be written and submitted for technical review.

c. SCDAP

Final design reports describing all completed models will be issued early in January. Development of the cladding collapse, ballooning and rupture model will begin with a review of the BALON2 model to determine required coding and modeling changes. This task will continue through March. Development of the axial fuel relocation model will be completed, and a preliminary design report for the model will be drafted and review will begin. A literature review for the model describing fission product release from the fuel will be performed and preliminary design requirements will be defined for the model. A preliminary design report will be drafted for the model describing fission product release from the fuel-cladding gap. The final design report for the decay heat/fission heat model will be submitted for technical review. The model will be completed during February. Development of the theory for the fragmented fuel effective heat transfer model will be completed during January. A preliminary design report for the prior operating history effective heat transfer model will be completed and coding and testing of the model will begin.

Preliminary design reports for the thermal expansion effective heat transfer model and the gas pressure model will be prepared and issued for review. Coding of these models will begin during January and be completed during February. Design of the SCDCOMP code will be completed and a draft preliminary design report will be issued for review. Preliminary integration of SCDCOMP models will begin and be completed during February and March. A draft final design report for the debris transition and propagation model will be issued for review and comment. The final design report will be issued during February. A preliminary design report for the SCDBUND pilot code will be issued for technical review. Conversion of CHAN to FORTRAN-5 will be completed and coding and testing of the SCDBUND-SCDAP interfacing routines will continue through January.

A letter summarizing the status of the SCDAP/MODO development effort will be issued to DOE-ID.

6. Problems and Potential Problems

None

189a A6052

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

2. Scheduled Milestones for December 1981

None

3. Summary of Work Performed in December 1981

a. RELAP4/MOD7 Maintenance

The RELAP4/MOD7 manual supplement describing the boron tracking model and steam generator initialization feature was released ahead of the December 15 schedule.

b. Boiling Water Reactor (BWR) TRAC Development

A presentation was made on December 2 to the ECCS Subcommittee of the ACRS. Checkout of Candidate Version 12 continued. Development of the FRAP fuel model and the multiple CHAN options continued as scheduled. Work continued on a simple containment model. Work was begun on simple models of "balance-of-plant" equipment such as turbines, condensers and feedwater heaters. Completion reports for the control systems model and the direct moderator heating model were prepared and reviewed. User assistance was provided to the Code Application and Assessment Division in their independent assessment of TRAC-BD1. An acceptance criterion for the moving mesh reflood heat transfer package was developed and test cases were identified.

c. Parallel Processing

Tasks 2 and 4 proceeded according to schedule. Task 3 was not completed. Work was halted on this task just short of completion. The unexpected availability of an IBM version of RELAP5 has obviated the need for Task 3 completion. Should funds be available upon completion of the remaining tasks, Task 3 will be completed.

4. Scheduled Milestones for January 1982

None

5. Summary of Work to be Performed in January 1982

a. Boiling Water Reactor (BWR) TRAC Development

Work on the FRAP fuel model, the multiple CHAN option, the containment model and the balance-of-plant models will continue as scheduled. Checkout of Candidate Version 12 will continue and it will be made into an official code version.

5.a. Summary of Work to be Performed in January 1982 (contd.)

A set of developmental assessment calculations will be performed with Version 12 in anticipation of release of Version 12 to the National Energy Software Center. Completion reports for the control systems model and the direct moderator heating model will be revised to incorporate the review comments and then issued. Acceptance testing of the moving mesh reflood heat transfer package will continue.

The work plan will be reviewed to accommodate requested changes in work scope. These changes include the developmental assessment and code release to the National Energy Software Center and provision of TRAC-BD1 training for Nuclear Regulatory Commission contractors.

b. RELAP4/MOD7 Maintenance

Maintenance of permanent files will continue.

c. Parallel Processing

Work will proceed as scheduled on Task 2. Task 4 will be completed.

6. Problems and Potential Problems

The TRAC-BWR section supervisor position is vacant. An acting supervisor has been appointed. A search is underway for a replacement. No impact on short-term tasks is foreseen.

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

2. Scheduled Milestones for December 1981

Node	Description	Due Date	Actual Date
--	"Early Look Report"	12/15/81	12/15/81C (FA-149-81)

3. Summary of Work Performed in December 1981

The sample heat transfer sensitivity study was completed and documented in an "early look" report, WR-CD-81-058, as scheduled.

A new schedule for completion of the TRAC-BWR heat transfer task was devised to accommodate changes in work scope to A6052 (TRAC-BWR development) that claim A6278 manpower and to account for the delay in beginning the steady-state studies caused by TRAC-BD1 code problems. The overall work scope for FY-82 is unchanged and there is no impact on funding requirements. The interim milestones for Tasks 1 and 2 have been postponed within the fiscal year to accommodate the higher priority tasks for A6052.

Development of input models for the transient studies continued.

4. Scheduled Milestones for January 1982

None

5. Summary of Work to be Performed in January 1982

The steady-state separate effect studies will continue as per the new schedule. Development of the transient separate-effects experiments will continue as per the new schedule.

6. Problems and Potential Problems

None

CODE DEVELOPMENT DIVISION

CAPITAL EQUIPMENT

The Capital Equipment for the Code Development Division will not be presented in the December 1981 monthly report. The Capital Equipment will be included in the January 1982 monthly report and, thereafter, on the regular quarterly basis.

MONTHLY REPORT FOR

DECEMBER 1981

CODE ASSESSMENT AND APPLICATION DIVISION

B. F. Saffell, Manager

E. L. Pierson
Plans and Budget Representative

CODE ASSESSMENT AND APPLICATION DIVISION

COST SUMMARY AND COMMENTS

CODE ASSESSMENT AND APPLICATION DIVISION
(RES)

189a	Title	(1) Obligational Authority Carried Over From FY-1981	(2) New FY-1982 Obligational Authority	(3) Total Obligational Authority	(4) December FY-1982 YTD Costs	(5) (3)-(4) Balance	(6) Outstanding Commitments December FY-1982	(7) (5)-(6) Balance
A6039	Tech Surveillance	$313.1K	$ 0.0K	$313.1K	$143.1K	$170.0K	$0.0K	$170.0K
A6046	Fuel Behav Analy Assess	19.7K	30.0K	49.7K	43.7K	6.0K	0.0K	6.0K
A6047	Code Assess & Applic	399.2K*	30.0K	429.2K	252.1K	177.1K	0.0K	177.1K
A6102	Data Bank	31.3K	30.0K	61.3K	48.1K	13.2K	0.0K	13.2K
A6276	LER Evaluation Program	13.9K	0.0K	13.9K	43.4K	<29.5K>	0.0K	<29.5K>
A6279	HDR Struct Damp Study	1.1K	0.0K	1.1K	1.1K	0.0K	0.0K	0.0K
A6283	Common C Stat Model	1.8K	0.0K	1.8K	28.6K	<26.8K>	0.0K	<26.8K>
A6290	NPRDS Data Analysis	54.2K	0.0K	54.2K	45.4K	8.8K	0.4K	8.4K
A6291	LER Flagging Analysis	30.1K	0.0K	30.1K	30.1K	0.0K	0.0K	0.0K
A6294	Plant Stat Monitoring	280.4K	0.0K	280.4K	48.8K	231.6K	5.4K	226.2K
A6301	Accident Sequence Eval	50.0K	0.0K	50.0K	6.0K	44.0K	0.0K	44.0K
A6304	Resident Eng - Germany	19.0K	0.0K	19.0K	3.2K	15.8K	0.0K	15.8K
A6306	HDR Evaluation	3.4K	40.0K	43.4K	52.2K	< 8.8K>	0.0K	< 8.8K>
A6353	Kuo-Sheng	2.1K	20.0K	22.1K	17.2K	4.9K	0.0K	4.9K
A6354	Sev Acc Seq Analysis	126.2K	0.0K	126.2K	89.2K	37.0K	0.0K	37.0K
A6356	Relief Valve Testing	1.3K	151.0K	152.3K	115.4K	36.9K	0.0K	36.9K
A6358	Applied James-Stein Est	1.0K	0.0K	1.0K	0.0K	1.0K	0.0K	1.0K
A6367	Section XI Support	0.8K	10.0K	10.8K	0.5K	10.3K	0.0K	10.3K
A6368	ASME Supt to NRC B&PV	84.2K	0.0K	84.2K	43.3K	40.9K	0.0K	40.9K
A6369	Nuc Power Plt Inst Eval	206.4K	0.0K	206.4K	79.5K	126.9K	0.0K	126.9K
A6370	Microproc Based Sys Design	73.3K	25.0K	98.3K	62.2K	36.1K	0.0K	36.1K
88076	Sandia Purchase Order	45.7K	0.0K	45.7K	42.0K	3.7K	0.0K	3.7K

* Includes $15K GSO.

Continuing resolution is no longer in effect. Funding has been received, however, arrival of funding was too late to be reflected in the December 1981 report. This funding will be reported on in the January 1982 monthly report.

CODE ASSESSMENT AND APPLICATION DIVISION

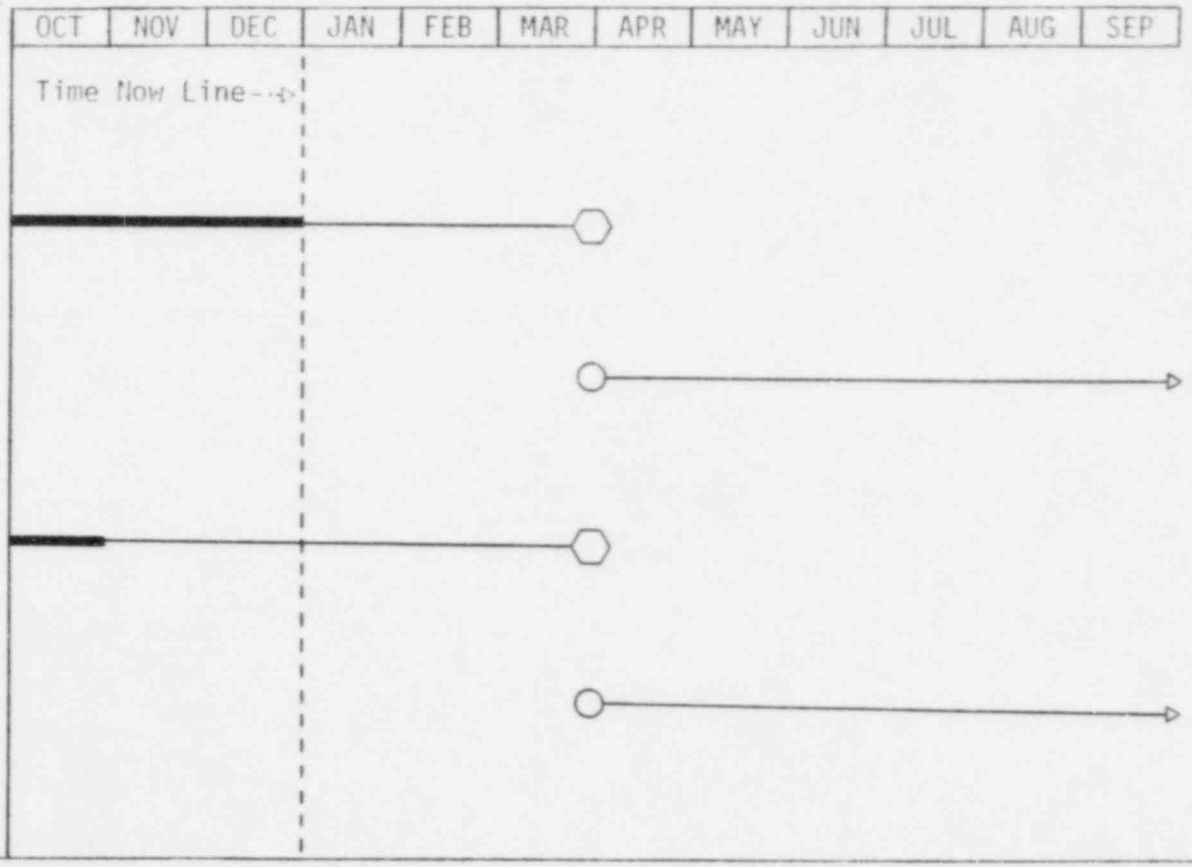
CURRENT WORKING SCHEDULE

LEGEND

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

CODE ASSESSMENT AND APPLICATION DIVISION December 1981

Fuel Code Assessment (A6046)



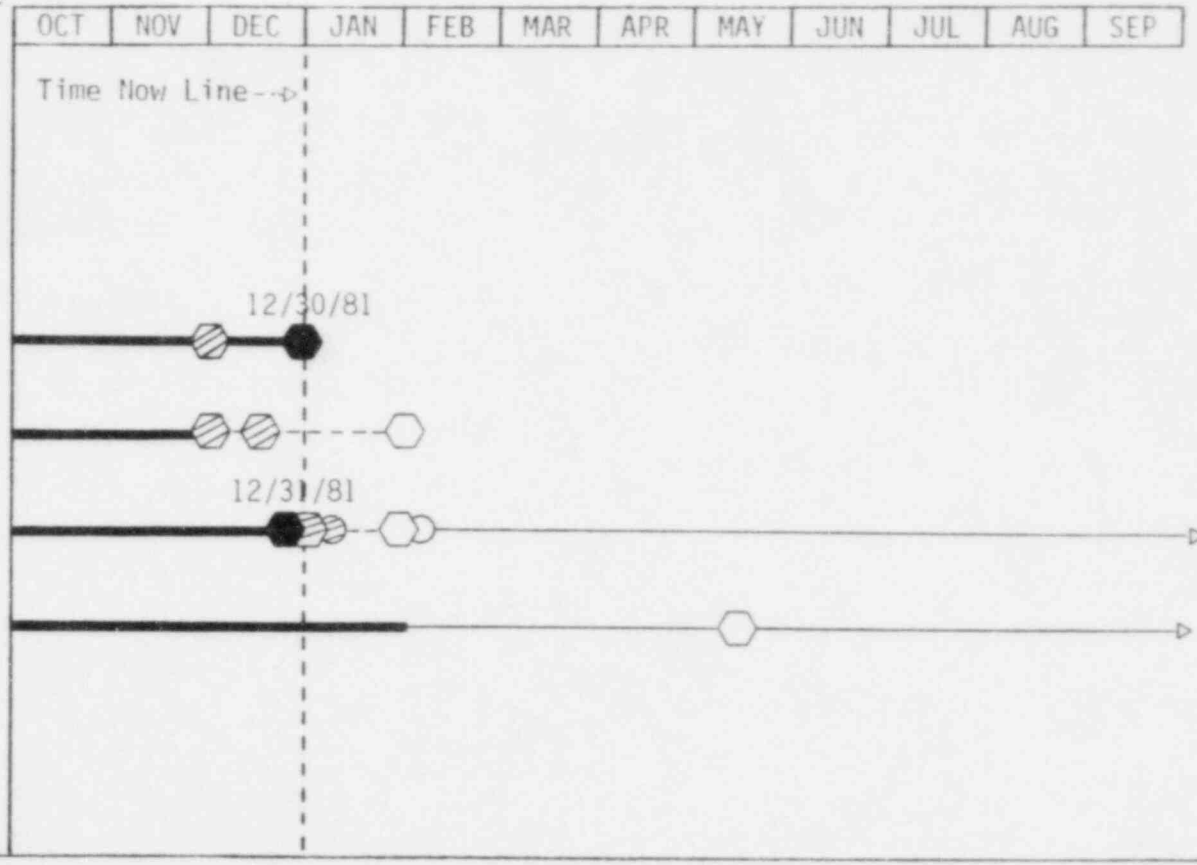
NOTES:

CODE ASSESSMENT AND APPLICATION DIVISION December 1981

LOCA Analysis Assessment and Applications (A6047)

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



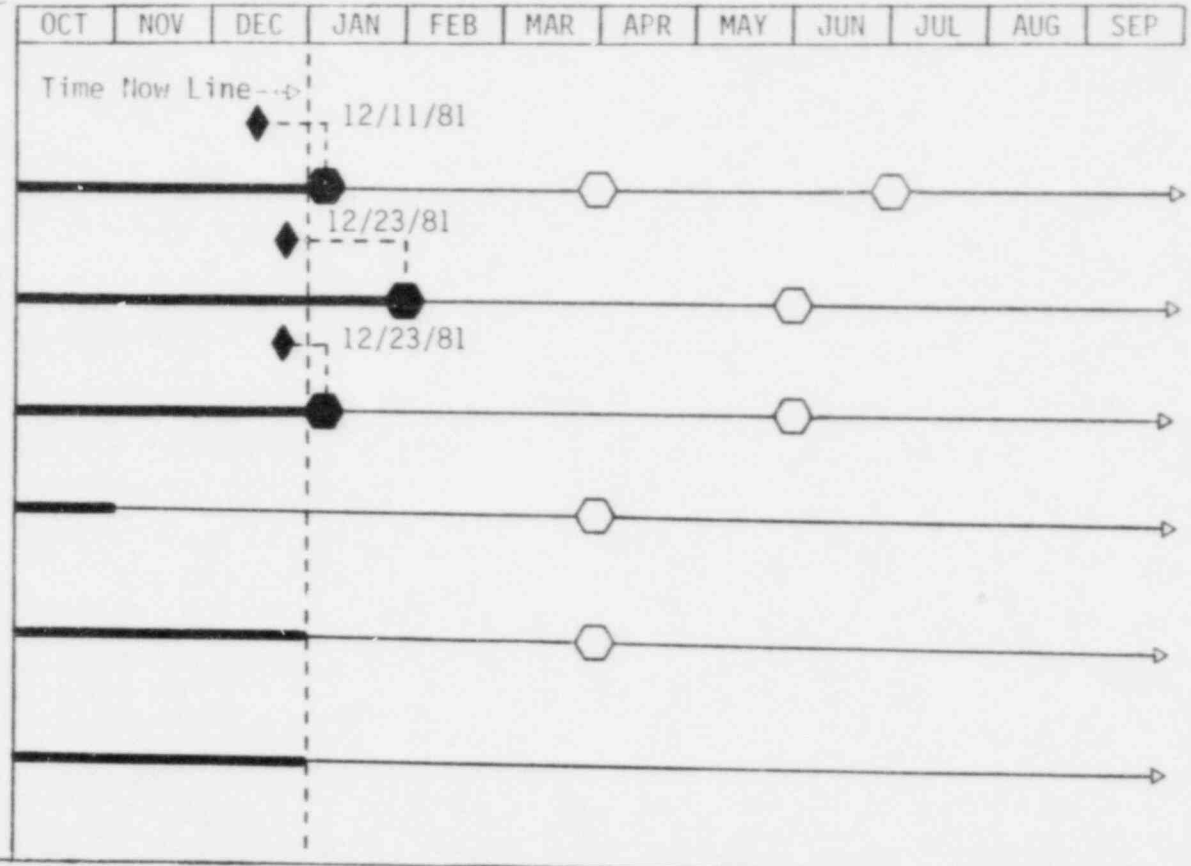
NOTES:

LEGEND

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

CODE ASSESSMENT AND APPLICATION DIVISION December 1981

Data Bank Processing System (A6102)



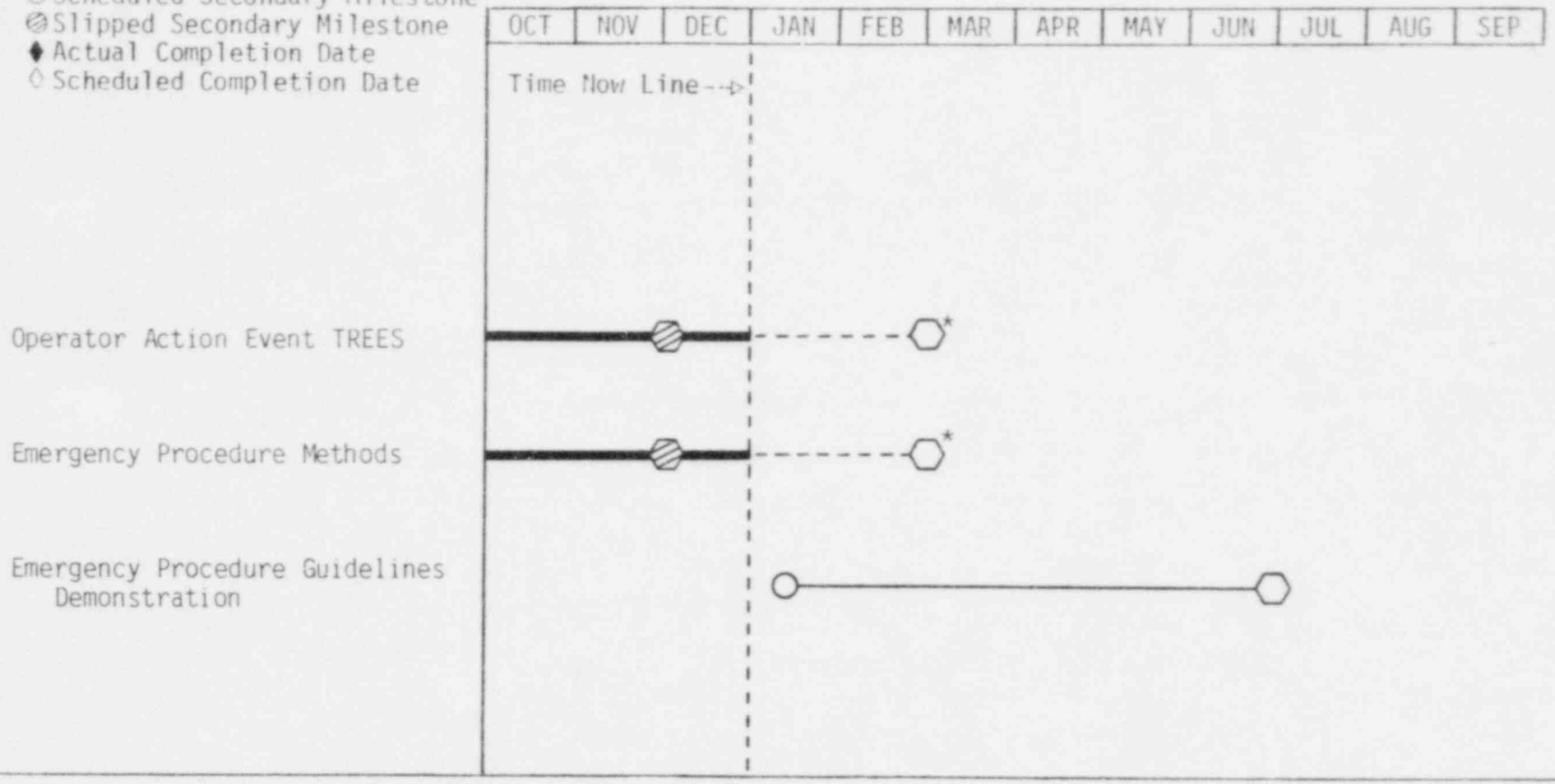
NOTES:

LEGEND

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

CODE ASSESSMENT AND APPLICATION DIVISION December 1981

Plant Status Monitoring (A6294)

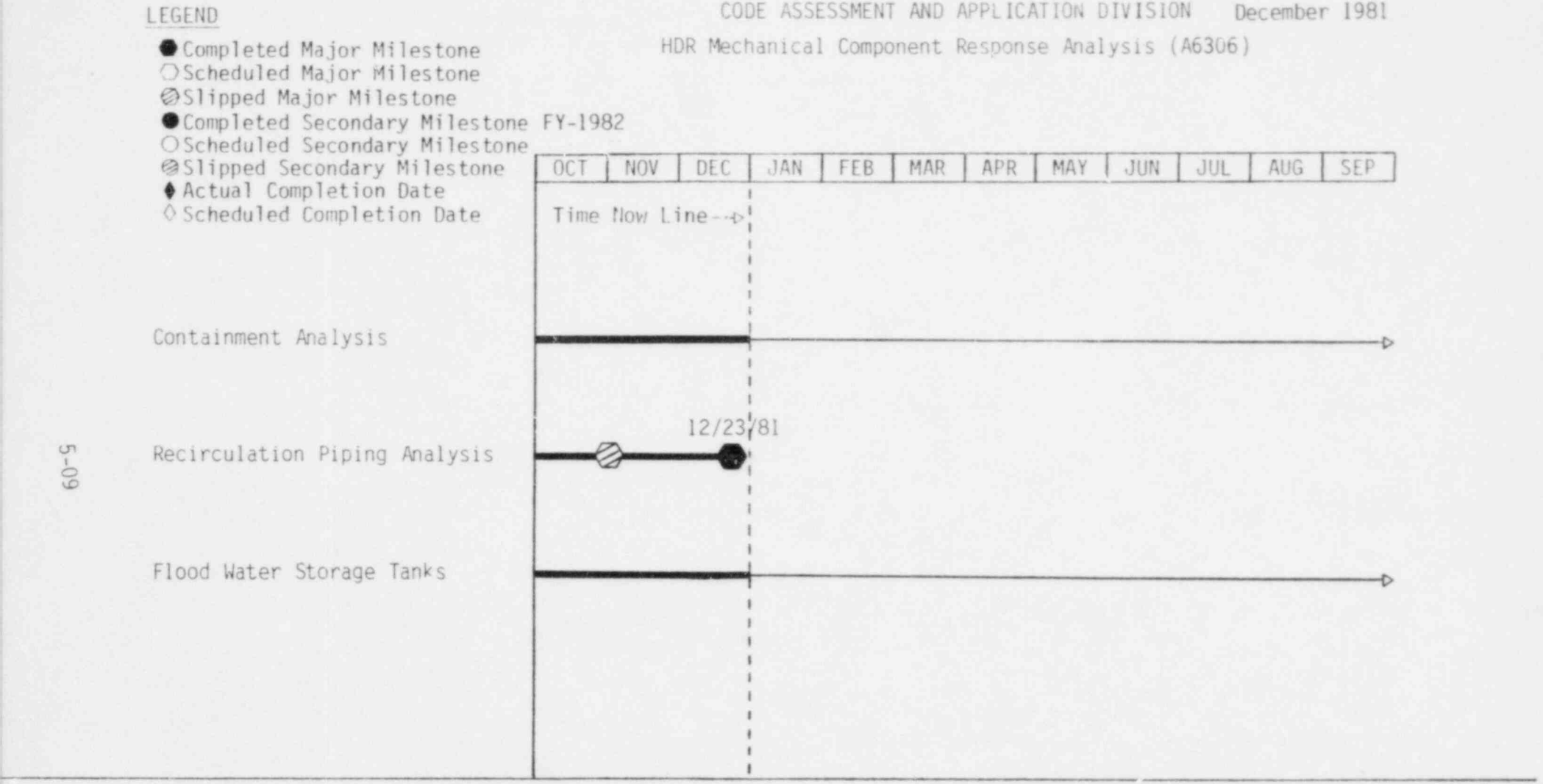


NOTES: This schedule will be revised in the near future to reflect additional tasks congruent with work scope agreements between NRC and EG&G Idaho.

* Completion contingent on NRC review of documents.

CODE ASSESSMENT AND APPLICATION DIVISION December 1981

HDR Mechanical Component Response Analysis (A6306)



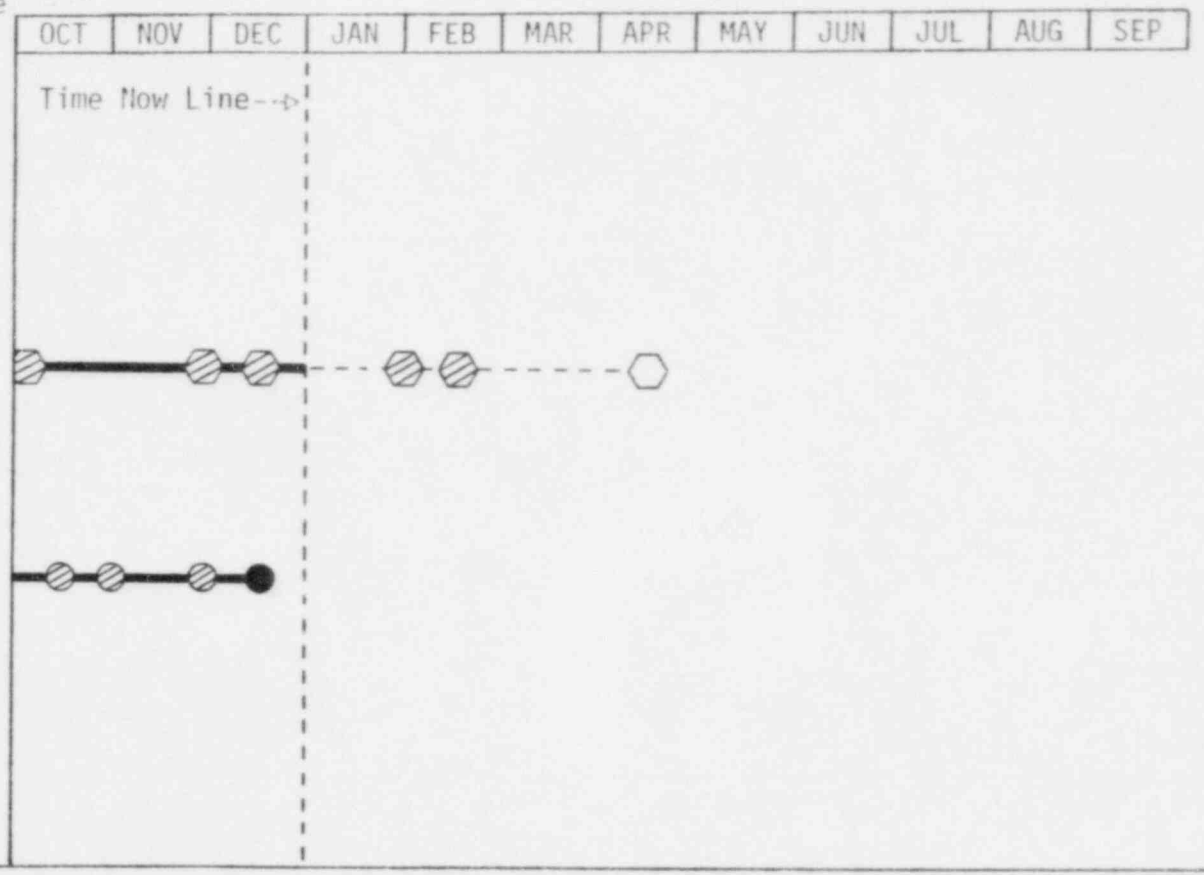
NOTES: All nodes are subject to change based on HDR's schedule.

CODE ASSESSMENT AND APPLICATION DIVISION December 1981

Kuo-Sheng (A6353)

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



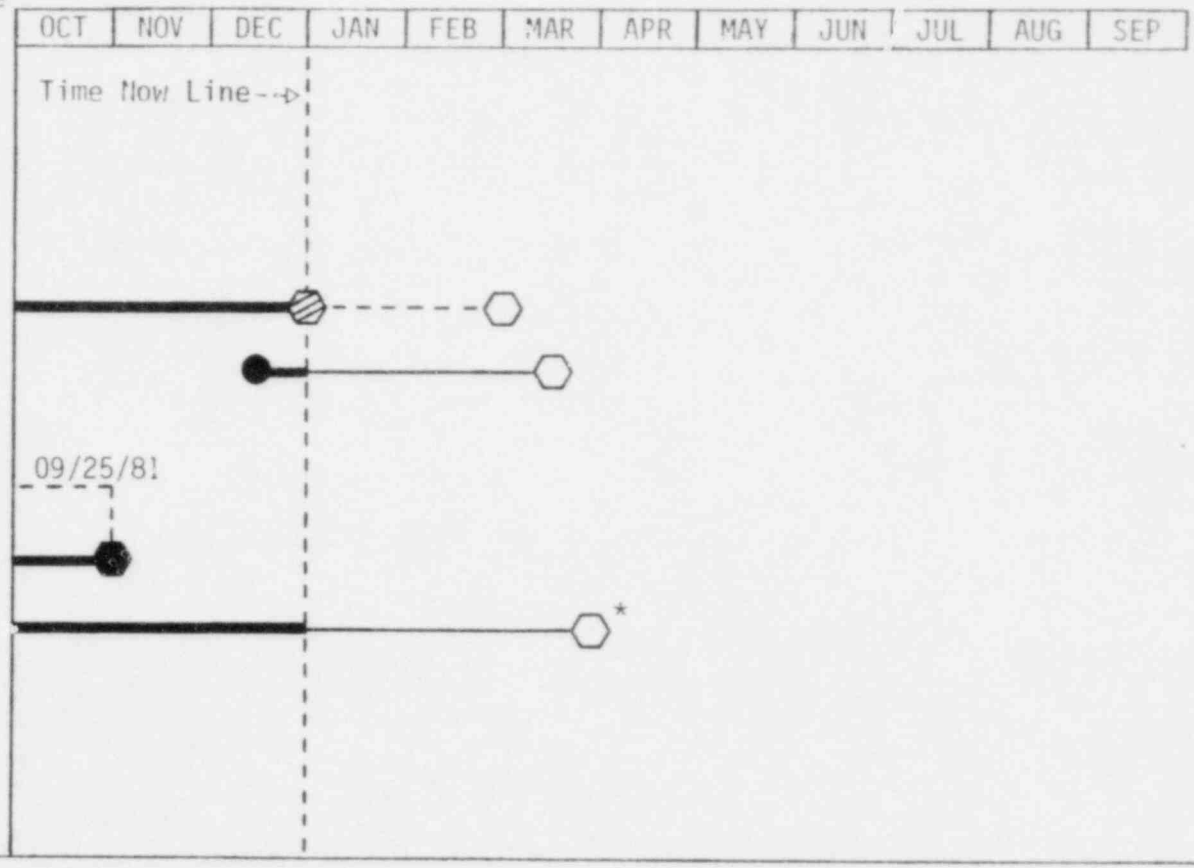
NOTES: All nodes are subject to change based on Tai Power's schedule.

CODE ASSESSMENT AND APPLICATION DIVISION December 1981

Severe Accident Sequence Analysis (A6354)

LEGEND

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

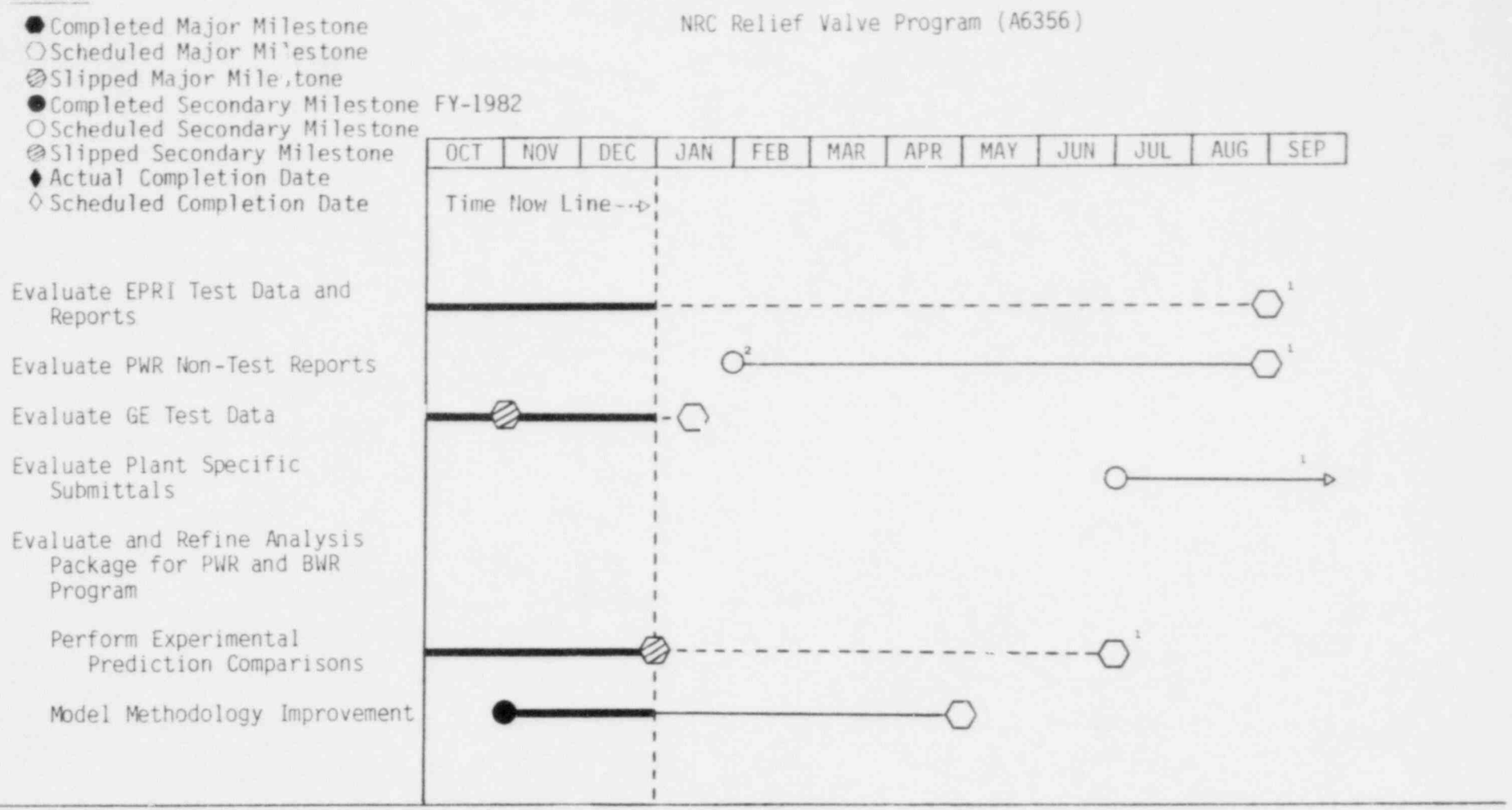


NOTES: This schedule will be revised in the near future to reflect new work scope agreements at the Severe Accident Sequence Analysis (SASA) Program review meetings.

* Completion dependent upon identification of additional issues.

CODE ASSESSMENT AND APPLICATION DIVISION December 1981

NRC Relief Valve Program (A6356)



NOTES: 1 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.

2 Initiation of this task depends on the date that the reports are received from EPRI by NRC and EG&G Idaho.

CODE ASSESSMENT AND APPLICATION DIVISION

TECHNICAL REVIEW AND SUMMARY

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

A6047: The first independent assessment task for TRAC-BD1 and the Marviken critical flow experiments was completed.

A6102: Three milestones for the Data Bank have been completed;

1. Upgrade of Data Bank Documentation
2. The addition of Browns Ferry as a data source by including generator load rejection startup data, and
3. The addition of 32 FLECHT-SEASET tests to the Data Bank.

A6276: Screening of all LERs submitted to the NRC for the years 1976 through 1980 has been completed.

A6290: The Kansas State University subcontract was completed and a final report prepared for issue to EG&G Idaho.

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

EG&G Idaho technical personnel performed the following tasks:

a. Blowdown/Emergency Core Coolant (BD/ECC) program:

(1) The Full Integral Simulation Test (FIST) pressure vessel stress analysis was completed. A report documenting the results is in progress.

(2) Work scopes, schedules and cost estimates for two FIST calculations were developed and transmitted to the Department of Energy/Nuclear Regulatory Commission (DOE/NRC). These tasks will support the scaling and test procedure rationale of the program if approved by DOE/NRC.

(3) Participated in the FIST design review of the pressure vessel.

b. FLECHT-SEASET Program:

(1) The reflood data evaluation task continued with analysis and issue of a requisition for data from three National Research Universal (NRU) reactor reflood tests.

(2) The Westinghouse 21 rod blockage data report was reviewed.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

a. BD/ECC Program:

(1) A work scope, schedule and cost estimate for a FIST piping stress analysis will be developed and sent to DOE/NRC.

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

(2) The FIST pressure vessel stress analysis report will be issued.

(3) The development of software for FIST data reduction and storage will be initiated. The software will be used by General Electric (GE), but generated by the Idaho National Engineering Laboratory (INEL).

b. FLECHT-SEASET Program: The reflood data evaluation will continue. Comments on the 21 rod blockage data report will be sent to DOE/NRC.

c. Boiling Water Reactor Refill/Reflood Program: INEL personnel will meet with GE to plan the single heated bundle data evaluation tasks.

6. Problems and Potential Problems

None.

189a A6046

1. 189a A6046 - Fuel Behavior Analysis Assessment

2. Scheduled Milestones for December 1981

None

3. Summary of Work Performed in December 1981

Work on the FRAP-T6 large break loss of coolant accident (LOCA) uncertainty study was continued. The thermal-hydraulic boundary conditions needed by FRAP-T6 for the LOFT L2-3 calculations have been obtained from both pretest and posttest RELAP4/MOD6 calculations. In order to supply FRAP-T6 with boundary conditions for the PBF LLR-3 experiment, a RELAP4/MOD7 run was made which modeled the hot pins, was made. The best estimate FRAP-T6 calculation for the PBF-LLR3 and LOFT L2-3 tests have been completed.

FRAP-T6 has been updated to include uncertainties in additional input variables; primarily the boundary conditions supplied by the RELAP code. This updated version has been debugged to assure the additional variables can be considered in the uncertainty analysis.

After reviewing experimental data reports for the PBF LLR3 and LOFT L2-3 tests, cladding surface temperature and pellet centerline temperature were selected as measured parameters important for the uncertainty study. The limits of the data uncertainty are being compiled.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

The uncertainty calculations will be made using the automated uncertainty analysis option in FRAP-T6. Results of these calculations will be analyzed and compared with test measurements together with their uncertainties. Drafting of the final report will commence.

6. Problems and Potential Problems

None.

1. 189a A6047 - LOCA Analysis Assessment and Applications

2. Scheduled Milestones for December 1981

Node	Description	Due Date	Actual Date
DD 13	Marviken Assessment	12/31/81T	1-4-82C Saff-5-82
DD 27	Documentation of TRAC-PD2 calculations	12/31/81T	12/31/81C Saff-366-81

3. Summary of Work Performed in December 1981

The following Boiling Water Reactor (BWR) code assessment and applications tasks were continued: (a) assessment of the TRAC-BD1 code with experimental data from Marviken, Two Loop Test Apparatus (TLTA) design basis accident, TLTA with and without emergency core coolant (ECC) and International Standard Problem (ISP) 12, and (b) development of the Dresden 3 (BWR/3) plant decks. The Marviken assessment task was completed; however, the report cannot be issued before January 1, 1982 because of experimenter imposed proprietary restraints. The ISP 12 calculation completed this month has exhibited ambient heat loss problems thought to be jointly associated with code capability and incomplete description by the experimenter (i.e., distribution throughout the system has not been adequately defined to date). Resolution of this condition is in progress.

The task to assess TRAC-BD1 with GOTA data was initiated.

4. Scheduled Milestones for January 1982

Node	Description	Due Date	Actual Date
DD14	TLTA ECC/No ECC Assessment	1/4/82T	
DD15	TLTA DBA Assessment	1/11/82T	
DD12	ISP 12	1/29/82E	

5. Summary of Work to be Performed in January 1982

Completion of the following BWR code assessment tasks is expected: TLTA design basis accident, TLTA ECC/No ECC and ISP 12. The GOTA assessment task will continue.

The implementation of TRAC-PF1 to the INEL computing system will be completed.

6. Problems and Potential Problems

None.

189a A6102

1. 189a A6102 - Data Bank Processing System

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

The Data Bank program completed three milestones in December. First, the addition of 32 FLECHT-SEASET tests to Data Bank was completed, thereby fulfilling the 25 test addition, as required by milestone AQ-01. Second, data from a generator load rejection startup test conducted at the Browns Ferry Nuclear Plant were also added to Data Bank, which represented the addition of a new data source required milestone AQ-05. Last, the Data Bank User's Manual was upgraded technically, and added to the DOCS documentation system, which is part of the INEL Scientific Data Management System. This fulfills milestone AQ-08.

4. Scheduled Milestones for January 1982

Node	Description	Due Date	Actual Date
AQ-01	Add 25 tests to Data Bank	1-4-82	12-11-81C Saff-347-81
AQ-05	Add 1 new data source	1-31-82	12-23-81C Saff-363-81
AQ-08	Upgrade Data Bank Documentation	1-4-82	12-23-81C Saff-363-81

5. Summary of Work to be Performed in January 1982

Data will continue to be added to Data Bank.

Requirements to add the Code Assessment Fuels Data Base to the NRC/DAE Data Bank, will be generated.

A letter to prospective, nonGovernment contracted users of Data Bank will be mailed.

6. Problems and Potential Problems

None.

189a A6276

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

Screening all of the Licensee Event Reports (LERs) submitted to the NRC for the years 1976 through 1980 has been completed. A brief report, documenting the findings of the screening process, will be issued.

Estimated % completion of FY-1982 work scope is 20%.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

It is anticipated that the draft of the updated valve data summary report will be returned from NRC in January. Changes and comments will be incorporated into the report and a camera-ready copy will be prepared for transmittal to the NRC so that the report can be published as a NUREG. An additional component analysis will begin, pending guidance from the NRC.

6. Problems and Potential Problems

None.

1. 189a A6283 - Common Cause Data Analysis

2. Scheduled Milestones for December 1981

Node	Description	Due Date	Actual Date
K18	Instrumentation & Controls (I&C) Common Cause Draft	12-15-81	12-15-81C Saff-348-81

3. Summary of Work Performed in December 1981

The I&C common cause draft report was issued on schedule.

Corrections were made to the BFR computer code where its behavior did not match the documentation.

Estimated completion of FY-1982 work = 10%.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

The recent mathematical work on treatment of plant-to-plant variation in data will be put into the BFR computer code.

6. Problems and Potential Problems

None.

189a A6290

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

Preparation of the final report for the Kansas State University subcontract was finished in accordance with the subcontract terms. In addition, four reports describing various aspects of the research have been submitted to NRC for publication.

Kansas State University:
Estimated Work Completion Percentage as of December 31, 1981 = 100%
Estimated Expenditure Completion as of December 31, 1981 = 100%.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Contract expires at KSU.

Planning for certain comparisons of LERs and NPRD reports will commence.

6. Problems and Potential Problems

None.

1. 189a A6294 - Plant Status Monitoring

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

A draft version of the emergency procedures report was submitted to the NRC for review. The report presents a systematic method for developing emergency procedures using operator action event trees.

Final preparation of a draft version of the Operator Action Event Tree (OAET) report continued.

Work continued on the placement of a subcontract to demonstrate the validity of the application of the OAET methodology to the development of emergency procedure guidelines.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

A draft version of the OAET development report will be submitted to NRC for review.

A subcontract to demonstrate the validity of the application of the OAET methodology to the development of emergency procedure guidelines will be placed and work initiated.

6. Problems and Potential Problems

None.

189a A6301

1. 189a A6301 - Accident Sequence Evaluation Program (ASEP)

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

EG&G technical personnel traveled to Albuquerque, NM on December 9 to attend a meeting with NRC and Sandia National Laboratories (SNL) to discuss EG&G's role in the current (Phase I) and future (Phases II and III) scope of the ASEP as envisioned by NRC. Work will be initiated toward completion of the Phase I requirements as delineated in the FY-1981 program brief from NRC regarding Accident Sequence Evaluations to be performed at INEL.

Estimated completion of the planned FY-1982 work is less than 5%.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Each of the Probabilistic Risk Assessments (PRAs) identified in the program brief will be subjected to a cursory review to begin for the dominant accident sequences, a catalog of the prominant engineering and probabilistic insights concerning the relationship between risk and systems design/operation. The uncertainty associated with each of these insights that led to postulation of these dominant accident sequences will be identified. A trip to Albuquerque may be required to further clarify and elaborate on the Phase II efforts which requires close cooperation between EG&G and Sandia.

6. Problems and Potential Problems

None.

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

Pretest safety calculations were completed and a report on the calculations and their impact on the testing procedures was completed.

The final test plan was completed and submitted with a cover letter to the NRC Technical Monitor for transmittal to KfK in Germany. This satisfies node EE01-01.

Work is continuing in the area of ordering equipment and making detailed arrangements for work schedules, training, and the actual test trip to HDR.

A limited amount of training on the spectral analyzer was completed.

The FY-1982 work scope is now approximately 14% complete and 17% expended of the $300K designated.

4. Scheduled Milestones for January 1982

Node	Description	Due Date	Actual Date
EE01-01	Submit initial test plan	1-1-82T	12-31-81C Saff-369-81

5. Summary of Work to be Performed in January 1982

Work will involve the following items:

a. Continuation of training on test procedures, specifically, practice tests on equipment similar to that at HDR will be performed.

b. Continuation of planning and scheduling efforts.

6. Problems and Potential Problems

None.

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

The time history solution for response of the SRV discharge piping was evaluated. This evaluation indicates that the results of the time history analysis are adequate and that a sufficiently small integration time step has been used.

Relationships between the strains and the forces and moments at the strain gage locations were developed so that the time history output can be readily converted to strains.

A computer routine which allows plotting of the strain histories was developed, but has not yet been checked. This routine will be run on sample output to assure that it performs appropriately.

This task is 14% complete and 17% expended based on a total FY-1982 budget of $202K.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

The routine for plotting of strain histories will be checked and debugged if necessary.

Results of the time history solution will be converted to strains and plotted in the form of strain-time histories at each strain gage location.

6. Problems and Potential Problems

None.

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

A letter report documenting the analysis of the strategies to depressurize CE plants without PORVs and the analysis of the characterization of two loop PWR behavior in the presence of steam generator tube ruptures were completed and discussed with NRC-NRR.

The analysis of the behavior of B&W plants in the presence of secondary side events in conjunction with multiple failures was initiated. The plan for executing the analysis was developed and mutually accepted by NRC-RES and NRC-NRR.

The analysis of the remaining currently identified Browns Ferry Unit 1 station blackout sequences continued. The sequences are (1) an uncontrolled depressurization with the reactor core isolation cooling (RCIC) system available, (2) a stuck open PORV with the RCIC available and (3) a controlled depressurization with RCIC available. A revised schedule for completion was developed due to unanticipated problems encountered during the analysis. The schedule was mutually agreed to between EG&G and NRC-RES.

A plan outlining BWR tasks prepared jointly by INEL and ORNL was documented and transmitted to NRC.

A discussion with NRC-RES, was held at INEL concerning the SASA Program and the issues it will address.

4. Scheduled Milestones for January 1982

Node	Description	Due Date	Actual Date
FF07	Develop Integrated Program Plan of SASA	1-1-81T	11-6-81C Saff-300-81

5. Summary of Work to be Performed in January 1982

Letter reports will be prepared documenting the results of the analysis of the behavior of B&W plants in the presence of secondary side events in conjunction with multiple failures.

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

Letter reports will be issued documenting the results of the Browns Ferry Unit 1 station blackout sequences outlined in Section 4.

Preparations will be made for a SASA steering group meeting to be held in Bethesda in mid-January.

6. Problems and Potential Problems

None.

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

The pressurized water reactor/Electric Power Research Institute (PWR/EPRI) Marshall relief valve test report and the boiling water reactor (BWR) GE safety/relief test report were reviewed. Draft letter reports documenting the results of the reviews were completed.

Reports (1) describing hydraulic pretest predictions for several CE valve tests, (2) RELAP5 parametric studies and (3) TRAC-BD1 and RELAP5 evaluations were published and transmitted to the NRC.

A letter report comparing RELAP5 thermal hydraulic predictions to limited preliminary CE test data for a Crosby 3 x 6 valve was completed.

A report comparing HDR displacement and acceleration responses measured during Standard Problem 4A with NUPIPE II and SAP-IV calculations was reviewed and revised.

A report describing analyses of the structural behavior for one CE valve test was reviewed and revised. The development and checkout of an improved method for calculating hydraulic forcing functions continued. A letter report describing an improved technique for calculating vapor to liquid transition phenomena during a valve discharge was drafted and reviewed. The improved technique will better represent the expected valve discharge physical behavior.

A letter report reporting studies with RELAP5 evaluating pressure wave tracking in a subcooled liquid was drafted. (60% completed, 60% funding expended).

4. Scheduled Milestones for January 1982

Node	Description	Due Date	Actual Date
GG06	Evaluate GE Test Data	1-15-82T	

5. Summary of Work to be Performed in January 1982

Final letter reports documenting the results of the review of the PWR/EPRI Marshall relief valve test report and of the BWR/GE safety/relief valve test report will be forwarded to NRC.

A report comparing HDR displacement and acceleration responses measured during Standard Problem 4A with NUPIPE II and SAP-IV calculations will be published.

A report describing analysis of the structural behavior for one CE valve test will be published.

A report describing an improved method for calculating hydraulic forces will be drafted.

A letter report describing an improved technique for calculating the phenomena during a vapor to liquid transition will be completed.

A letter report describing studies with RELAP5 evaluating pressure have tracking in a subcooled liquid will be completed.

6. Problems and Potential Problems

None.

1. 189a A6358 - Applied James-Stein Estimators

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

Preparation of a six-month progress report was completed and was in final typing by the subcontractor, at month's end. This report covers the technical details of the work to date.

Estimated Completion Percentage = 17.6%
Estimated Expenditure Percentage = 17.6%

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

In addition to continued development of James-Stein methodology, a proposal for continued funding out of FY-1982 funds is anticipated.

6. Problems and Potential Problems

None.

1. 189a A6367 - Support of NRC on ASME Code Section XI Activities

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

Task 4: The only change from the November report is the receipt of a valve survey sheet from Crystal River 3 Nuclear Power Station. All other aspects of the task are static and will remain so until the survey sheets have been received from the utilities. Receipt is anticipated in the early part of calendar year 1982. Progress on the task was discussed with the NRC. FY-1982 work planned on this task is about 5% complete.

Task 5: A modified proposal was discussed with the NRC Technical Monitor. A meeting was held with Loss of Fluid Test Reactor management to discuss a valve leak test research program and start preparation of a proposal for such an effort. This task is about 75% complete.

Overall FY-1982 work for these tasks is about 20% complete and 4.5% expended. This difference in the percents cited here are explained under the A6368 report.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Task 4: No work is planned, as receipt of all survey sheets is not anticipated.

Task 5: Efforts will proceed to collect the necessary data for a valve leak test research program. A draft of the revised program proposal will be prepared.

6. Problems and Potential Problems

The schedule continues to be delayed by late input of valve survey sheets from utilities.

1. 189a A6368 - Support of NRC on ASME Boiler and Pressure Vessel Code, Section XI Activities

2. Scheduled Milestones for December 1981

Node	Description	Due Date	Actual Date
AD-02C	Present Data in Interim Report	12-31081T	N/S CAAD-CR-27-81

3. Summary of Work Performed in December 1981

Task 1: Changes resulting from the November American Society of Mechanical Engineers (ASME) meeting were incorporated in the proposed Code Case on flat calibration blocks and transmitted for action by the ASME Section XI Subcommittee in February. A Code Inquiry regarding ultrasonic sizing of flaws was transmitted to ASME. This action was performed as a result of ASME Subgroup on Water Cooled Systems action which deleted a paragraph regarding ultrasonic flaw sizing from the proposed Code Case. Revisions to a draft test plan have been discussed with the NRC Technical Monitor and are ready for transmittal. This task is about 27% complete.

Task 2: This task was revised by mutual agreement with the NRC Technical Monitor to include preparation of tables describing and evaluating the impact of the proposed exemptions to the ASME Boiler and Pressure Vessel Code Section XI on the nuclear industry. Additionally, an evaluation of currently permitted Code exemptions is included in the revised work scope. This revised effort is approximately 35% complete. The Task 2 scope planned for FY-1982 is about 40% complete.

Task 3: On-Call Technical Assistance: No work was performed in December; this task is 38% complete and 38% expended.

General: The overall FY-1982 work scope is about 17% complete and 51.5% expended. The large variations shown here in percent complete and percent expended for both A6367 and A6368 reflect an increase in work scope and the anticipated addition of $200K in new funding for A6367 and part of A6368. A meeting with the NRC and DOE-ID Technical Monitors during January is expected to result in resolution of differences in funding and work scope.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Task 1: The revised draft test plan will be submitted to the NRC Technical Monitor. Pending NRC approval, work will be started on performing the tests.

Task 2: Two members of the EG&G NDE Engineering Branch will travel to St. Lucie Nuclear Power Station to collect pertinent pressurized water reactor data required for completion of portions of the task. These data will be evaluated and recorded in a manner suitable for inclusion in a final report.

Task 3: All requested On-Call Technical Assistance tasks are complete; no additional work is anticipated unless a new request is made by the NRC Technical Monitor.

General: Progress of tasks will be discussed during a visit of the NRC Technical Monitor to the INEL.

6. Problems and Potential Problems

None

189a A6369

1. 189a A6369 Nuclear Power Plant Instrumentation Evaluation

2. Scheduled Milestones for December 1981

Node	Description	Due Date	Actual Date
N/A	Complete time share data management system and terminal lease Implementation Plan (I.P.) and send to DOE for review.	12/18/81	12/14/81C

3. Summary of Work Performed in December 1981

Discussions are underway with Pennsylvania Power and Light to gain permission to visit their Susquhananna power plants for the purpose of gathering information on current state of the art I&C system designs. EG&G expects to be granted permission and to visit the plant in January 1982.

Preparation of PWR system data collection forms has been started.

4. Scheduled Milestones for January 1982

Node	Description	Due Date	Actual Date
N/A	Time share data management system and terminal lease I.P. final approval by DOE and EG&G	1/29/82	N/A
N/A	Transmit list of "typical" plants and data collection forms to NRC for review	1/15/82	N/A

5. Summary of Work to be Performed in January 1982

The I.P. for the time share data management system will be approved by DOE-ID, and signed by EG&G. This will clear the way for negotiating a contract with an appropriate time share system company.

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

A list of power plants whose systems are considered to be typical of a large group of plants will be transmitted to the NRC for review. This will involve the criteria for selection of particular plants. In addition, the standard data collection forms which have been generated will be sent to the NRC for review.

6. Problems and Potential Problems

If approval of the data system is not forthcoming by the agreed to schedule, program research and data ananalysis efforts could be adversly affected.

189a A6370

1. 189a A6370 Microprocessing Based Design and Plant Control Automation

2. Scheduled Milestones for December 1981

Formal milestones have not been established for this program. The FY-1982 program brief was received on November 20, 1981. Funding reduced from the $200K shown in the program assumptions to $175K.

3. Summary of Work Performed in December 1981

The 189a was rewritten based upon the revised program brief received in November. NRC is currently reviewing this 189a.

A draft of The Program Management Plan was started and is about 80% complete.

The major Nuclear Steam System Suppliers (NSSS) were contacted and requests for isolation equipment information were made. A first draft of an Isolation Device Test Plan was prepared.

The study of the Westinghouse microprocessor based plant protection and control system was continued.

Reviewed the report, "Reliability of Computer Software," at the request of the NRC Technical Monitor.

Reviewed the International Electrotechnical Commission draft report on software for the computers in the Safety System of Nuclear Power Stations.

Approximately 19% of the budget funding has been expended. While schedule and milestones are not yet formalized, this is compatible with task progress.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Complete the writing of the Program Management Plan.

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

Meet with our NRC Technical Monitor in Washington to review: status, program plan, next objectives and approach to obtaining needed information. Schedule, with NRC, a series of technical interchange meetings with NRR, Westinghouse, and ORNL.

Continue the study of the Westinghouse microprocessor based plant protection and control system.

Continue our efforts to obtain technical information from the NSSS.

6. Problems and Potential Problems

It is becoming apparent that the supplier response to our requests for information will not be prompt and in some cases nonexistent. NRC assistance will be necessary to facilitate these requests.

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

A meeting was held at EG&G December 3 and 4th with the IREP Quality Assurance (QA) review team to discuss comments concerning the first-cut draft report, "Risk Assessment for Browns Ferry Nuclear Plant Unit 1".

The list of items generated by the QA team during the discussion of the draft report was reviewed to determine which items should be accomplished first in order to determine possible impact to system and sequence frequencies. Of these items, component unavailabilities and single passive system failures were addressed per the QA team's direction.

Estimated Completion of the planned FY-1982 work--60%

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Other contributors which could affect system and sequence probabilities will be accounted for.

Sequence frequencies based on systemic event trees will be requantified.

The sensitivity and uncertainty analyses may be initiated, pending completion of the final systemic sequence values.

A rewrite of Appendix A concerning the event tree methodology will be initiated per the QA team's direction.

6. Problems and Potential Problems

Additional funding will be required in January in order to continue the planned work through April 1982.

CODE ASSESSMENT AND APPLICATION DIVISION

CAPITAL EQUIPMENT

The Capital Equipment for the Code Assessment and Application Division will not be presented in December 1981 monthly report. The Capital Equipment will be included in the January 1982 monthly report and, thereafter, on the regular quarterly basis.

MONTHLY REPORT FOR

DECEMBER 1981

CODE DEVELOPMENT DIVISION

CODE ASSESSMENT AND APPLICATION DIVISION

(NRR)

F. Aguilar, Manager
Code Development Division

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

E. L. Pierson
Plans and Budget Representative

CODE DEVELOPMENT DIVISION

PROGRAM MANAGER'S

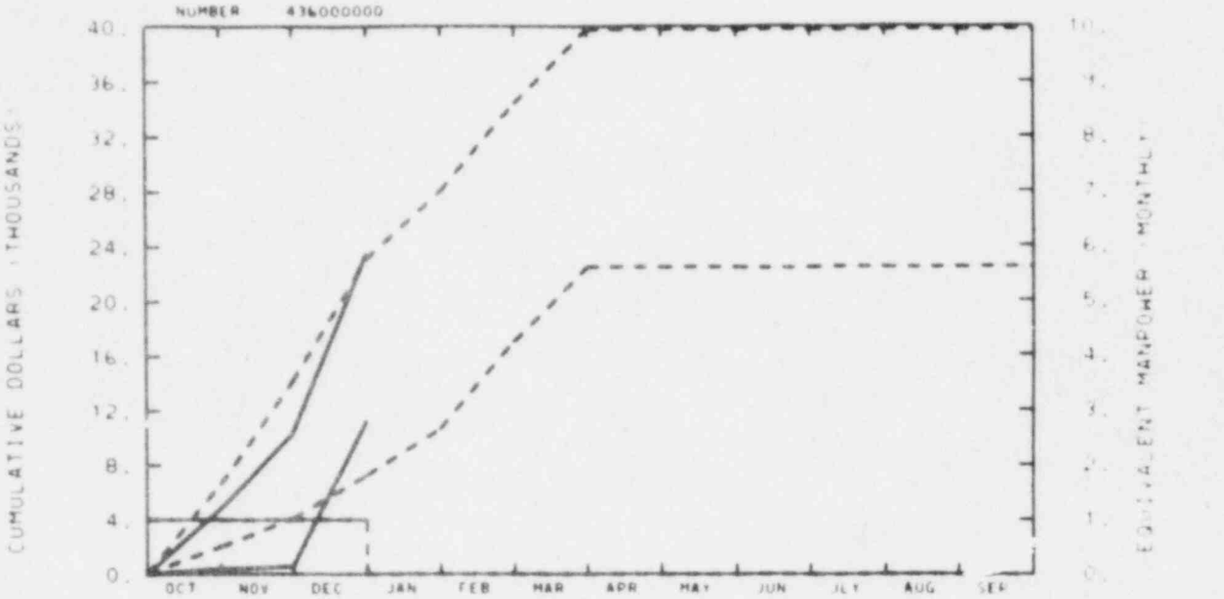
SUMMARY AND HIGHLIGHTS

CONTEMPT4/MOD3 was released to the National Energy Software Center. Final EGG-CD interim reports on the developmental assessment and on the ice condenser corrections were published. The CONTEMPT4/MOD3 user's manual is in the publication process and is ahead of schedule.

RESPONSIBLE MANAGER
F. AGUILAR

EG&G IDAHO INC.

CONTAINMENT ANALYSIS II A6439



TOTAL PROGRAM

BUDGET	7	14	23	28	34	40	40	40	40	40	40	40
ACTUAL	5	10	23									

MATERIAL

BUDGET	2	4	7	11	17	22	22	22	22	22	22	22
ACTUAL	0	1	11									

MANPOWER

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

A6439

YTD VARIANCE: 0

1. 189a A6439 - Containment Analysis II

2. Scheduled Milestones for December 1981

None

3. Summary of Work Performed in December 1981

CONTEMPT4/MOD3 was released to the NESC. Interim reports EGG-CD-5675, "CONTEMPT4/MOD3 Assessment" and EGG-CD-5640, "CONTEMPT4 Ice Condenser and Sump Drain Models - Corrections and Assessment" were published. The CONTEMPT4/MOD3 user's manual is in the publication process.

4. Scheduled Milestones for January 1982

Node	Description	Due Date	Actual Date
Marx-256-81	Release Draft CONTEMPT4/MOD3 User's Manual	1/15/82	1/8/82E

5. Summary of Work to be Performed in January 1982

The draft user's manual will be provided to NRC ahead of schedule. A minor code modification (provide input option of wall condensate factor for the compartment heat sink model) requested by NRC will be made. The user's manual will be changed accordingly, if possible, and a new version created.

6. Problems and Potential Problems

None

CODE ASSESSMENT AND APPLICATION DIVISION

PROGRAM MANAGER'S

SUMMARY AND HIGHLIGHTS

A6152: Per NRC direction, all effort on this task has been terminated and the $15K unused funding is available for NRC use.

A6270: The final TER for Byron/Braidwood was completed and transmitted to NRC.

A6401: The NDE/PSI final SER and Relief Request evaluation for the Grand Gulf plant were formally transmitted to NRC.

A6425: The following TERs were issued to NRC:

Plant	Topic	Comment
La Crosse	VI-7.A.3	Initial Draft
La Crosse	VI-	

Lack of response or slow response in providing requested information and reviewing drafts is preventing completion of revised and final TERs on schedule.

A6427: Preliminary TERs regarding review of plant shielding modifications (Lessons Learned Item II.B.2) were completed for Surry Units 1 and 2 and North Anna Units 1 and 2. If licensee submittals are not received as scheduled in January 1982, or the on-site audits are not conducted for 10-15 multiunit plants, then it is unlikely that Item II.B.2 can be completed during FY-1982.

A6429: The following TERs were completed:

TAC	Plant	Task	Project	Report Type	Cost
10017	Crystal River 3	DGA	1	Preliminary TER	--
10031	La Crosse	DGA	1	Preliminary TER	--
10030	Kewanee	DGA	1	Preliminary TER	--
12994	Kewanee	DGA	2	Preliminary TER	--
10008	Big Rock Point	DGA Revision	4	Final TER	$ 550
42105	Zion 1	PWR DHR	3	Final TER	3000
42106	Zion 2	PWR DHR	3	Final TER	3000

Delays in receiving initial packages on assigned tasks and information from licensees is requiring manpower to be temporarily shifted from A6429 to other NRC work.

A6430: Review of the IST program for San Onofre, Units 1 and 2 was completed and resulting questions transmitted to NRC.

A6434: CESSAR Section 3.9.3.2 (Draft) was reviewed and review comments transmitted to the NRC Technical Monitor.

A6442: Review of the fault trees for Big Rock Point systems was completed.

A6451: Preliminary evaluation of the PWR feedwater and BWR core spray systems was completed and documented by the subcontractor.

A6452: A final letter report documenting EG&G's estimate of the costs of modifications needed to mitigate boron dilution events in PWRs during cold shutdown was submitted to NRC and DOE-ID.

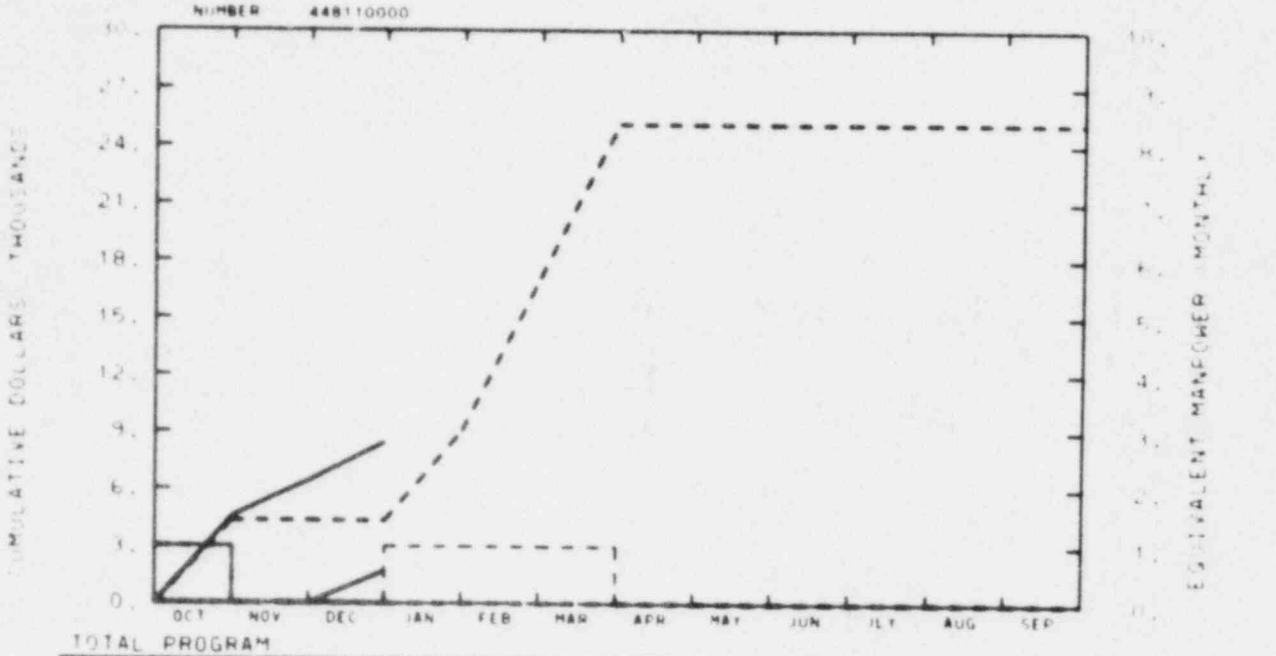
A6453: The final TER for the Grand Gulf Nuclear Station EQ audit was completed.

A6456: The final letter report on Project 1 was completed and transmitted to NRC.

EG&G IDAHO INC.

FUEL ASSEM SETS/LOCA A6157

NUMBER 448110000



TOTAL PROGRAM

BUDGET	4	4	4	9	17	25	25	25	25	25	25	25
ACTUAL	5	6	8									

MATERIAL

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

MANPOWER

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

A6157

YTD VARIANCE: <4> (100%)

1. 189a A6157 - Fuel Assembly Seismic and LOCA Reponse

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

Question set 2 of EG&G's review of Babcock and Wilcox (B&W) report BAW-10133P, Rev. 1 was transmitted to the NRC Technical Monitor. Also transmitted with question set 2 was a request for additional information from B&W. This information is required to perform the independent sample problem and audit analyses. The overall project is approximately 22% complete and 22% expended (FY-1982 scope and FY-1982 funding).

4. Scheduled Milestones for January 1982

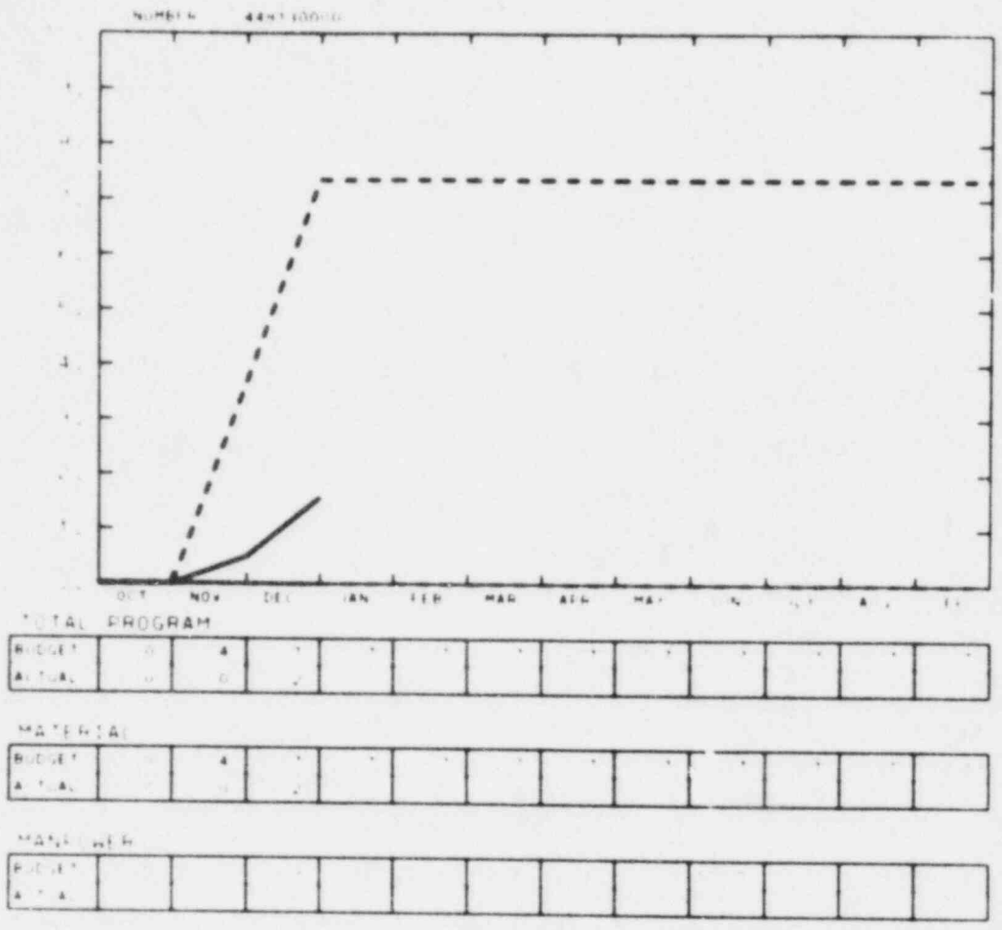
None.

5. Summary of Work to be Performed in January 1982

It is anticipated that the sample problem analysis will be started.

6. Problems and Potential Problems

The additional information requested from B&W is required for EG&G to perform the sample problem and audit analysis. Timely receipt of this information is required to prevent delay of these tasks.



A6159

YTD VARIANCE: 5 (71%)

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

The NRC Technical Monitor was sent a revised draft of the final report in early December. Final review comments are expected by January 8, 1982. This task remains at 99% complete and 97% expended with a $5K surplus forecast at task completion.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

NRC final review comments will be incorporated into the final report. Task completion is estimated by February 1, 1982.

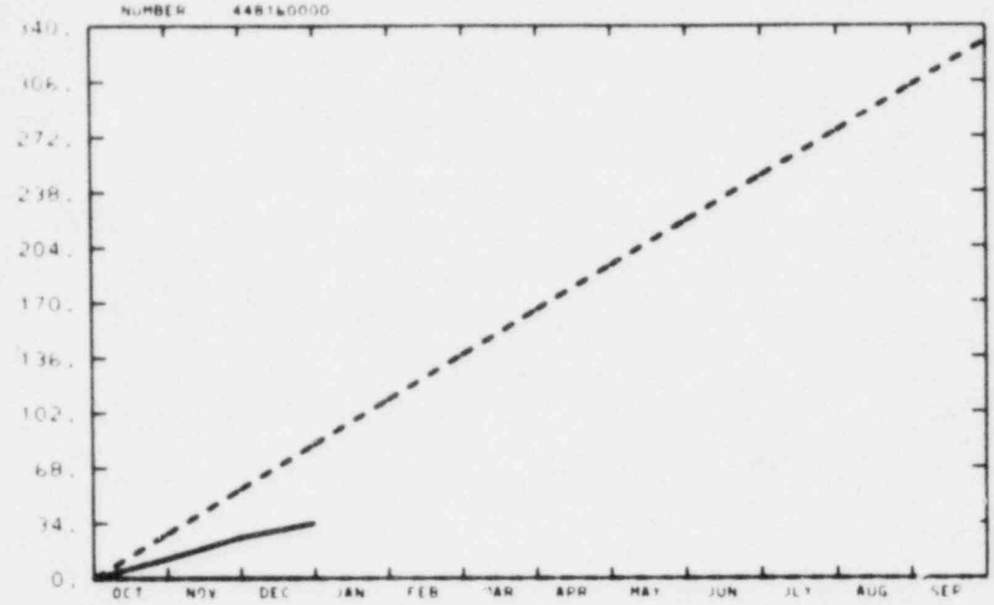
6. Problems and Potential Problems

None.

EG&G IDAHO INC.

NRC USE OF INEL CDC A6209

NUMBER 448160000



TOTAL PROGRAM

BUDGET	28	55	83	110	138	165	193	221	248	276	303	331
ACTUAL	12	25	34									

MATERIAL

BUDGET	28	55	83	110	138	165	193	221	248	276	303	331
ACTUAL	12	25	34									

MANPOWER

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

BUDGET

ACTUAL

A6209

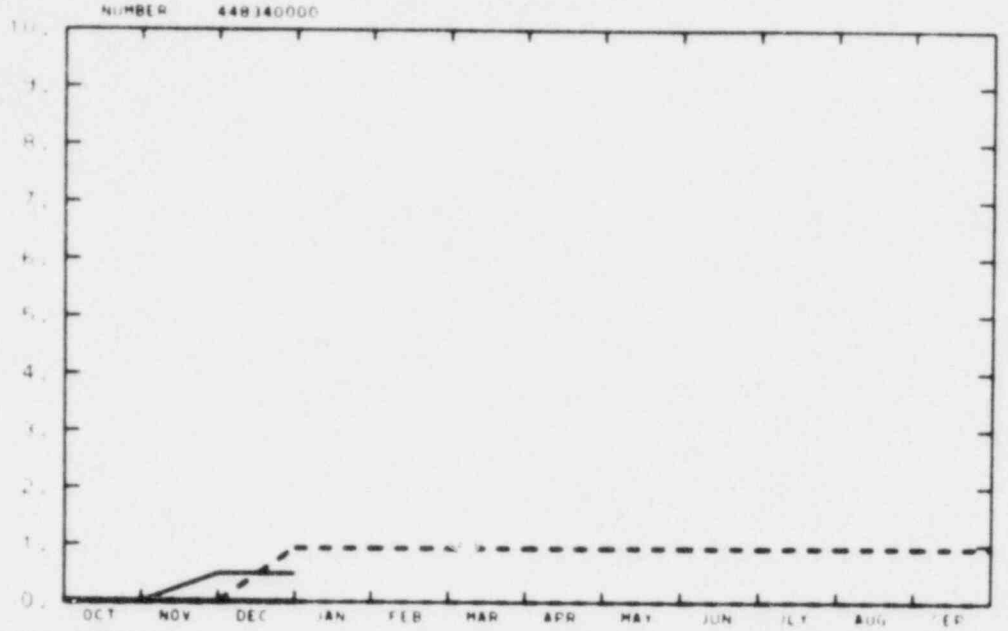
YTD VARIANCE: 49 (59%)

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

EG&G IDAHO INC.

SYSTEM ENGINEERING SUPPORT A6258

NUMBER 448140000



TOTAL PROGRAM													
BUDGET	0	0	1	1	1	1	1	1	1	1	1	1	1
ACTUAL	0	0	0										

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

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

BUDGET

ACTUAL

A6258

YTD VARIANCE: 1 (100%)

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

2. Scheduled Milestones for December 1981

   None.

3. Summary of Work Performed in December 1981

   No effort was expended on this task.

4. Scheduled Milestones for January 1982

   None.

5. Summary of Work to be Performed in January 1982

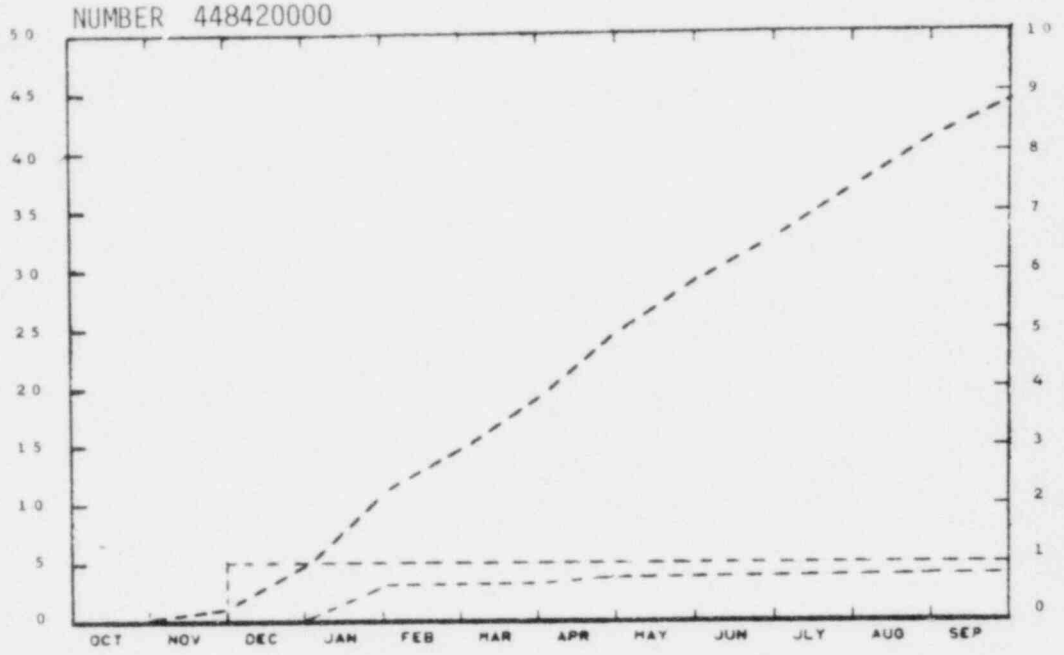
   Completion of the Oyster Creek and Nine Mile Point SERs will be dependent upon resolution of outstanding issues by the licensee.

6. Problems and Potential Problems

   None.

RESPONSIBLE
MANAGER
B F Saffell

EG&G IDAHO, INC.
INSERVICE TESTING
NUMBER 448420000



TOTAL PROGRAM

BUDGET	0	1	5	11	15	19	25	29	33	37	41	44
ACTUAL	0	0	0									

MATERIAL

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

MANPOWER

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

BUDGET - - - - -
ACTUAL ———

A6265

YTD VARIANCE: 5 (100%)

1. 189a A6265 - Inservice Testing - DSS

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

No effort was expended on this task.

FIN A6265 work scope is approximately 1% completed and FY-1982 budget is 1% expended.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

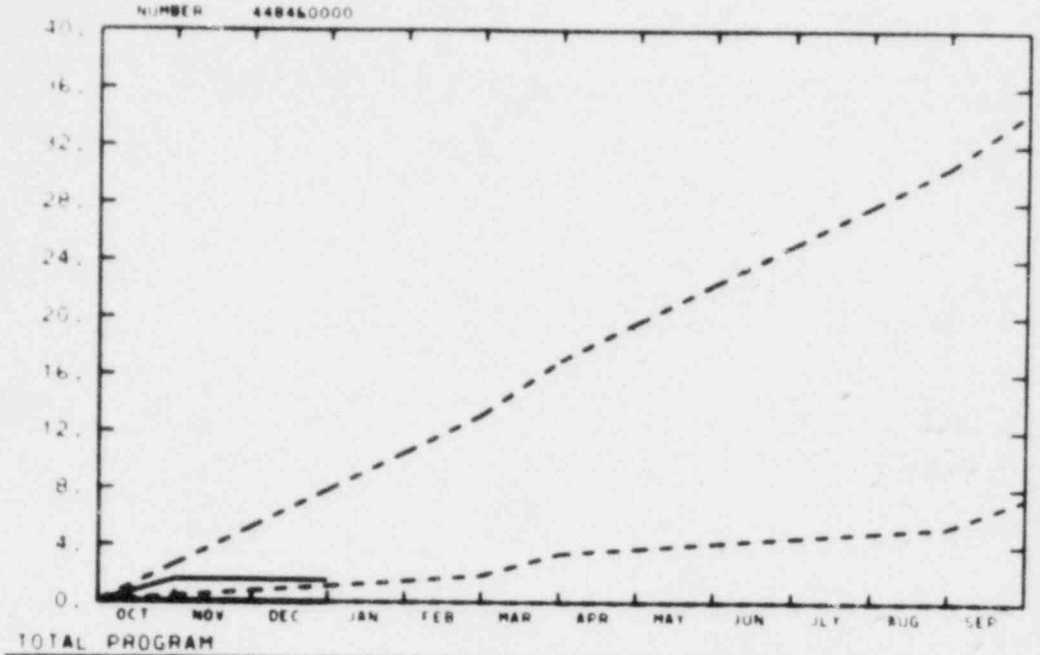
Further work on this task will be dependent upon receipt of additional information from the utilities. Completion of the D.C. Cook Units 1 and 2 and Arkansas Nuclear One, Unit 2, reviews requires submittal of a revised program to complete the SER. Piping and instrument diagrams for the Sequoyah program are required to complete the Sequoyah review.

6. Problems and Potential Problems

None.

EG&G IDAHO INC.

FUEL PERF CODE APP II A6268



TOTAL PROGRAM

BUDGET	3	5	8	11	14	17	20	22	25	28	30	34
ACTUAL	2	2	2									

MATERIAL

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

MANPOWER

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

BUDGET

ACTUAL

A6268

YTD VARIANCE: 6 (75%)

189a A6268

1. 189a A6258 - Fuel Performance Code Applications II

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

None.

4. Scheduled Milestones for January 1982

No work was scheduled or performed on this task during December.

5. Summary of Work to be Performed in January 1982

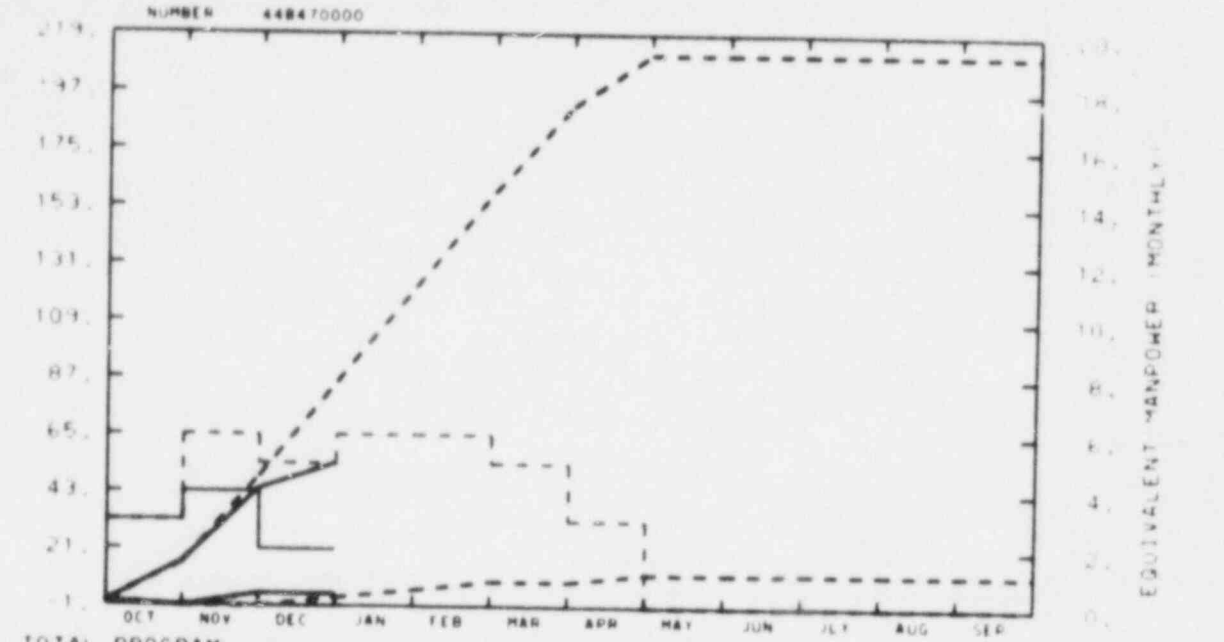
No work is scheduled.

6. Problems and Potential Problems

None.

EG&G IDAHO INC.

REAC SYS CASE REVIEW III A6270



TOTAL PROGRAM

BUDGET	15	49	85	121	158	191	211	211	211	211	211	211
ACTUAL	16	44	54									

MATERIAL

BUDGET	0	0	2	5	8	8	11	11	11	11	11	11
ACTUAL	0	3	3									

MANPOWER

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

A6270

YTD VARIANCE: 31 (36%)

Due to delays in licensee response to questions and extension of NRC schedules, manpower has been diverted to higher priority tasks. Remaining scope and dollars are consistent.

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

The final TER for Byron/Braidwood was completed and transmitted to NRC.

FIN A6270 work scope is approximately 23% completed and FY-1982 budget is 18% expended.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

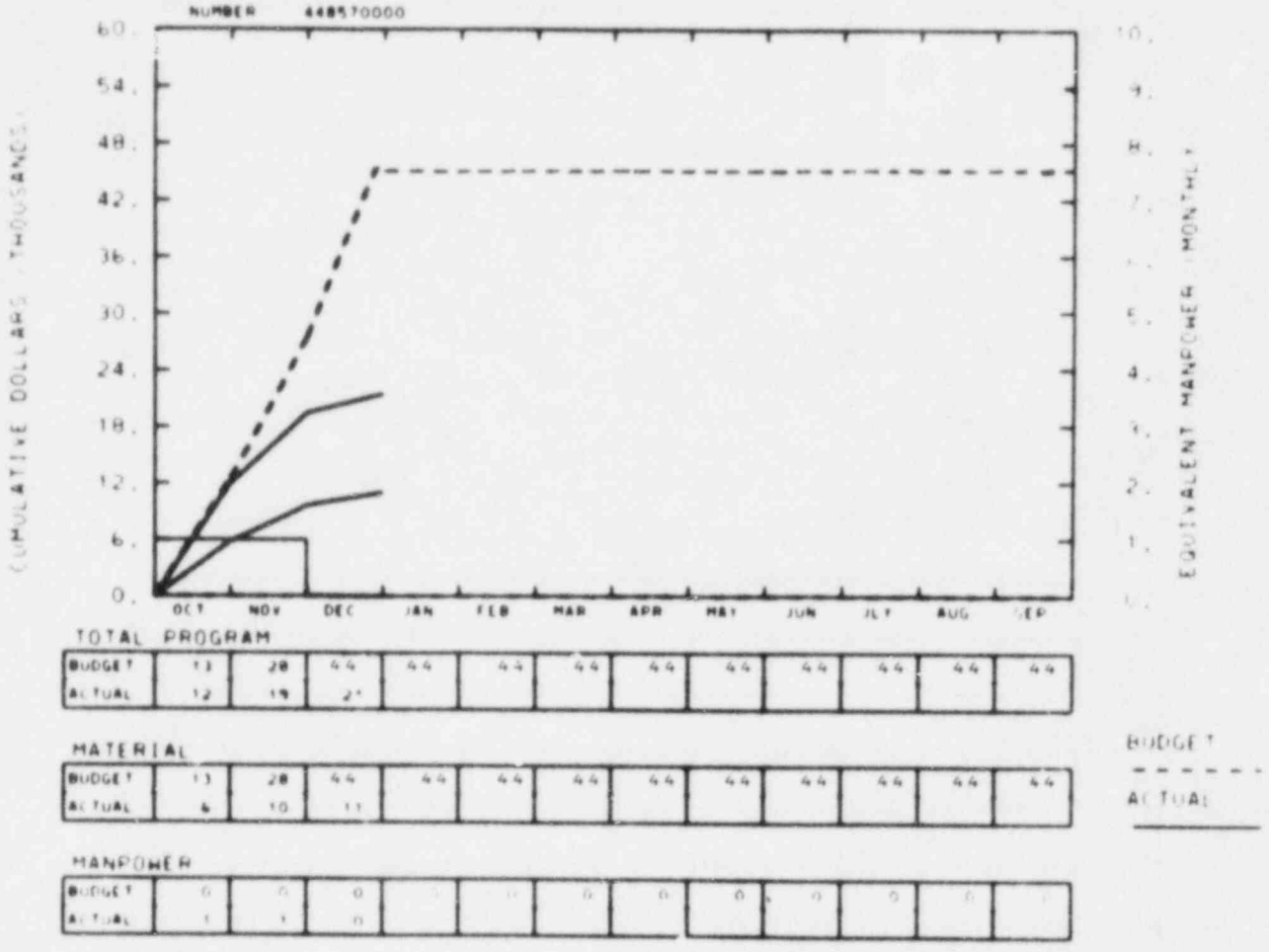
Review of the Shearon Harris FSAR will continue. Pending receipt of the applicant response to questions, preparation of the draft TER for Catawba will be started.

6. Problems and Potential Problems

None.

EG&G IDAHO INC.

MATERIAL ENG'G CASE REV 1 A6401



TOTAL PROGRAM

BUDGET	13	28	44	44	44	44	44	44	44	44	44	44
ACTUAL	12	19	21									

MATERIAL

BUDGET	13	28	44	44	44	44	44	44	44	44	44	44
ACTUAL	6	10	11									

MANPOWER

BUDGET	0	0	0									
ACTUAL	1	1	0									

A6401

YTD VARIANCE: 23 (52%)

Late vendor responses have caused a $23K variance between budget and actuals. With receipt of the needed data, work will proceed, bringing budget and actuals in line.

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

NDE/PSI Tasks:

Grand Gulf: The final SER and Relief Request Evaluation were formally transmitted to the NRC. Draft comments on the Applicant's NDE procedures were transmitted to the NRC Technical Monitor for his concurrence and then transmitted to the applicant. This task is 100% complete.

WNP-2: No work was performed this month. FY-1982 work planned for this task is approximately 33% complete.

General: Progress of the tasks was discussed with visiting NRC staff.

Overall, the FY-1982 tasks planned on PSI (Shoreham, Grand Gulf, and WNP-2) are approximately 50% complete and 52% expended based upon $17K as the NDE FY-1982 budget.

Materials Tasks:

Byron/Braidwood: On December 10, 1981, the applicant submitted the response to the request for information in the draft SER. The final SER for Byron 1 was written during a December 13-17, 1981 trip to the NRC. The final SERs for Byron 2 and Braidwood 1 and 2 will be written as soon as the applicant responds to the request for information in the draft SER.

WNP 2: The final SER for this plant will be written after the applicant has submitted response to the requests for more information. The NRC Technical Monitor has notified the applicant and anticipates a reply during late December or January. The final SER will be completed five weeks after receipt of data.

No work was performed on the Materials Tasks listed below during December but the current state of completion of each of these tasks is listed as a matter of record.

Plant	Percent Complete
Byron 1	100
Byron 2	40
Braidwood 1	20
Braidwood 2	20
WNP 2	60

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

Materials Tasks: (continued)

The Materials tasks are about 48% complete overall and 46% expended based upon a $27K budget for FY-1982 for the Materials Tasks.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

NDE/PSI Tasks:

Grand Gulf: No work is anticipated for this task during January.

WNP-2: A draft SER will be prepared.

Midland 2: The NRC Technical Monitor requested INEL personnel to review NUREG-0744 with respect to Midland 2 limiting materials. This is not strictly within the the A6458 work scope.

Perry 1: A list of the limiting materials in the reactor coolant pressure boundary was requested by the NRC Technical Monitor. This list will be sent to the NRC.

WNP 2; Byron 2; Braidwood 1 & 2; Wolf Creek: The NRC Technical Monitor will contact EG&G personnel when the applicant response is received. EG&G personnel will probably travel back to NRC at that time.

Materials Tasks:

Work on the WNP-2 plant was requested by the NRC.

6. Problems and Potential Problems

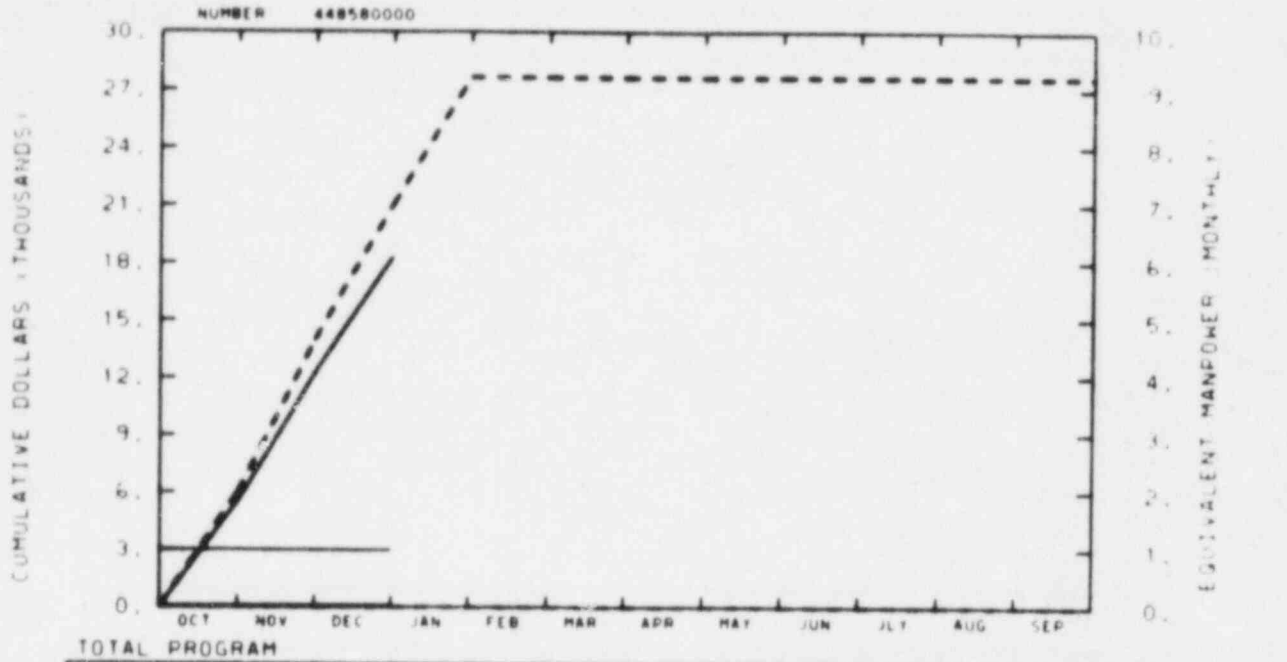
Midland 2: The cost impact of reviewing NUREG-0744 will be determined after completion of the Midland final SER; this review was not included in the original work scope.

RESPONSIBLE
MANAGER
R. F. SAFFELL

EG&G IDAHO INC.

STRUC ENG'G CASE REVIEW II A6402

NUMBER 448580000



TOTAL PROGRAM

BUDGET	6	14	21	28	28	28	28	28	28	28	28	28
ACTUAL	6	12	18									

MATERIAL

BUDGET	6	14	21	28	28	28	28	28	28	28	28	28
ACTUAL	0	0	0									

MANPOWER

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

BUDGET

ACTUAL

A6402

YTD VARIANCE: 3 (14%)

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

Grand Gulf: Whereas this task was reported as 100% complete last month, the NRC Technical Monitor has requested additional work. The cost impact of performing additional work per the request of the Technical Monitor is estimated to be $7K.

Byron/Braidwood: The conceptual model for the Byron Auxiliary Building complex was completed. Preliminary calculations required to compute section properties and masses were started. These calculations will provide input to a computer program for determining section properties of the elements. This phase should be completed in early January. An additional $24 K funding was requested from the NRC Technical Monitor. A letter will be sent to document requests and suggestions during January.

This project is approximately 33% complete and 31% expended based upon a FY-1982 budget of $28KK plus $31K of requested additional funding.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Grand Gulf: The time to complete the additional work requested by the NRC Technical Monitor will be determined.

Byron/Braidwood: If additional funding is received, the effort for January will concentrate on determining section properties for input to the mathematical model. The coding of the mathematical model and "debug" runs of the model will be started.

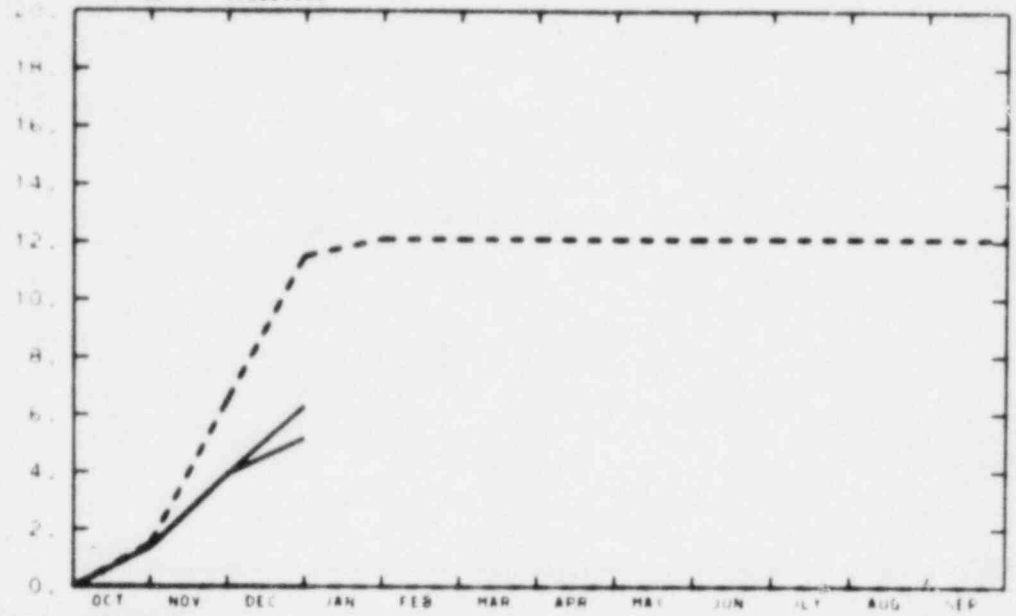
6. Problems and Potential Problems

The additional work scope requested by the NRC Technical Monitor will add to the $24K requested earlier to complete the Byron/Braidwood task.

EG&G IDAHO INC.

INSERVICE INSPECTION A6405

NUMBER 4486J0000



TOTAL PROGRAM

BUDGET	2	7	12	12	12	12	12	12	12	12	12	12
ACTUAL	1	4	6									

MATERIAL

BUDGET	2	7	12	12	12	12	12	12	12	12	12	12
ACTUAL	1	4	5									

MANPOWER

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

BUDGET

ACTUAL

A6405

YTD VARIANCE: 6 (50%)

1. 189a A6405 - Inservice Inspection

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

Two EG&G nondestructive examination (NDE) engineers spent the week of December 14 at the Pacific Northwest Laboratories (PNL) to gather data on progress of a round robin pipe inspection program and to evaluate procedures on a variety of cracked pipe test specimens. FY-1982 work planned for this task is estimated to be 25% complete and 15% expended.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Data from the PNL trip will be compiled and preparation of the final report will be started.

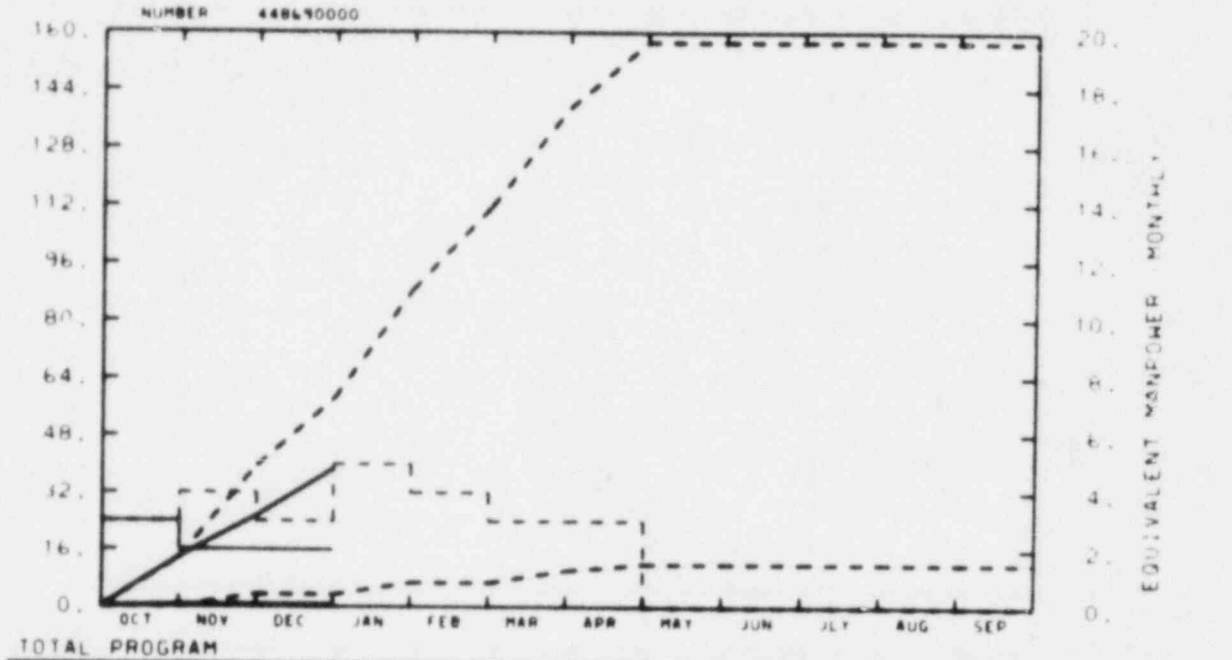
6. Problems and Potential Problems

None

RESPONSIBLE
MANAGER
P. T. APPELL

EG&G IDAHO INC.

DYNAMIC QUAL ELEC & MECH A6415



TOTAL PROGRAM

BUDGET	14	40	58	88	112	139	157	157	157	157	157	157
ACTUAL	14	26	39									

MATERIAL

BUDGET	0	3	3	7	7	10	12	12	12	12	12	12
ACTUAL	1	1	1									

MANPOWER

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

BUDGET
ACTUAL

A6415

YTD VARIANCE: 19 (33%)

Lack of receipt of information has delayed progress on this task. With the arrival of the needed data, work will proceed; however, a corresponding variance in actuals and budget is expected.

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

2. Scheduled Milestones for December 1981

Node	Description	Due Date	Actual Date
JJ23	Waterford Report Site Visit	12/1/81T	11-13-81C Saff-306-81

3. Summary of Work Performed in December 1981

San Onofre - This task is 100% complete; no work was performed this month.
La Salle - The final report for La Salle was partially completed.
Zimmer - No work was performed on this task this month.
Grand Gulf - Data submittals for this plant were reviewed.
Waterford-3 - Data submittals for Waterford 3 were reviewed.
Palo Verde - No work was performed on this task this month.
Washington Nuclear - Data submittals for Washington Nuclear Unit 2 were reviewed.
St. Lucie 2 - Twelve volumes of data were received and partially reviewed.
Watts Bar - This task has not been started yet (0% complete).
Catawba - This task has not been started yet (0% complete).
General - The overall project is estimated to be 9% complete and 10% expended.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Work on the final report on La Salle Units 1 and 2 will continue.

Work on resolution of outstanding issues will continue on the Grand Gulf and Waterford 3 plants.

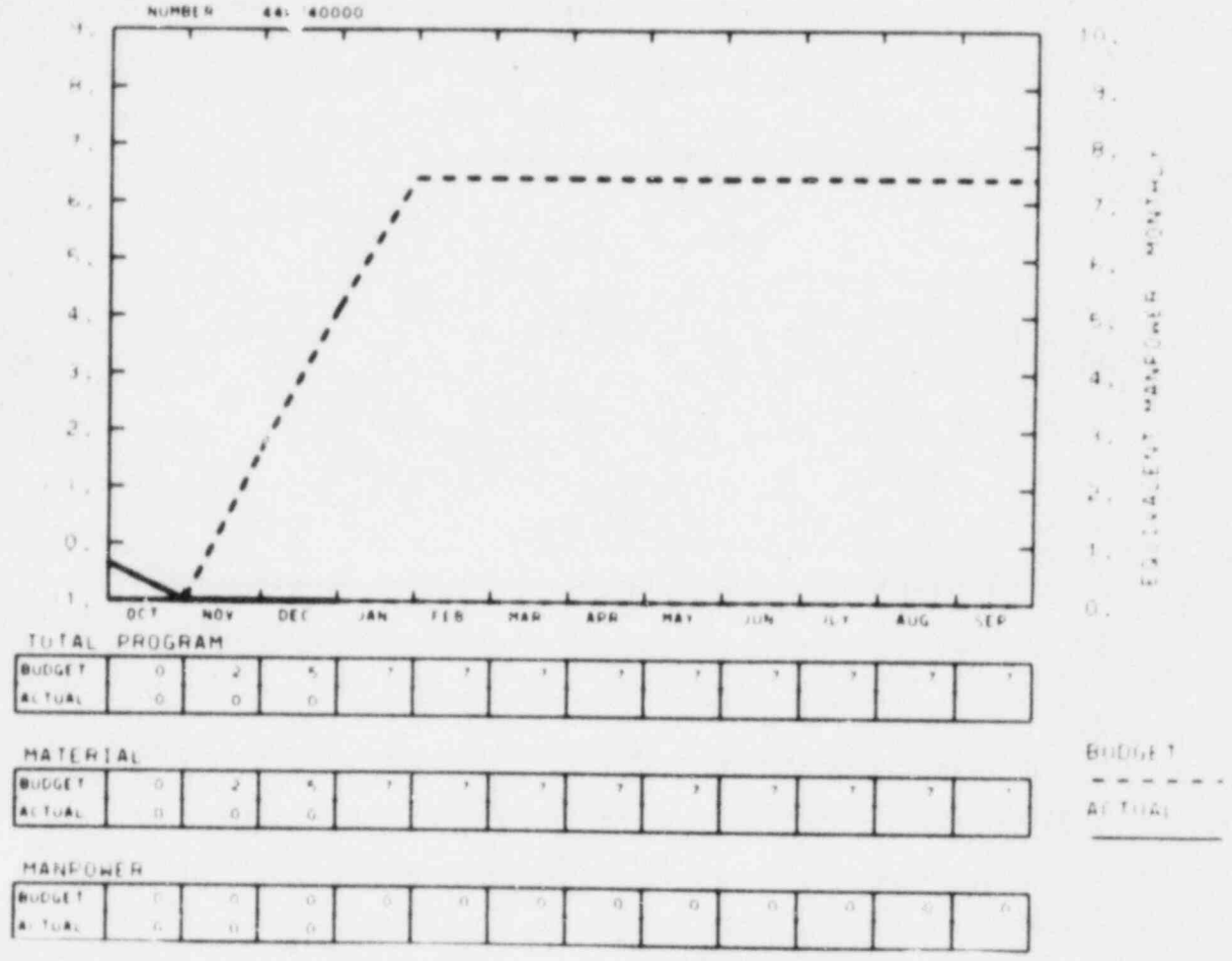
No work is anticipated on the San Onofre, Zimmer, Palo Verde, Washington Nuclear 2, Watts Bar, and Catawba plants.

6. Problems and Potential Problems

None.

EG&G IDAHO INC.

PIPE CRACK STUDY GROUP A6420



TOTAL PROGRAM

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

MATERIAL

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

MANPOWER

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

A6420

YTD VARIANCE: 5 (100%)

1. 189a A6420 - Pipe Crack Study Group Analysis

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

There was no activity on this task by EG&G Idaho. EG&G personnel are still awaiting receipt of Dr. Paul Paris's draft NUREG which is due January 1, 1982. The FY-1982 work scope is 0% complete and 0% expended.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

EG&G technical personnel anticipate receipt of the draft NUREG report from Dr. P. Paris no later than January 8, 1982. The final version of this report is expected to be completed by EG&G technical personnel by February 8, 1982.

6. Problems and Potential Problems

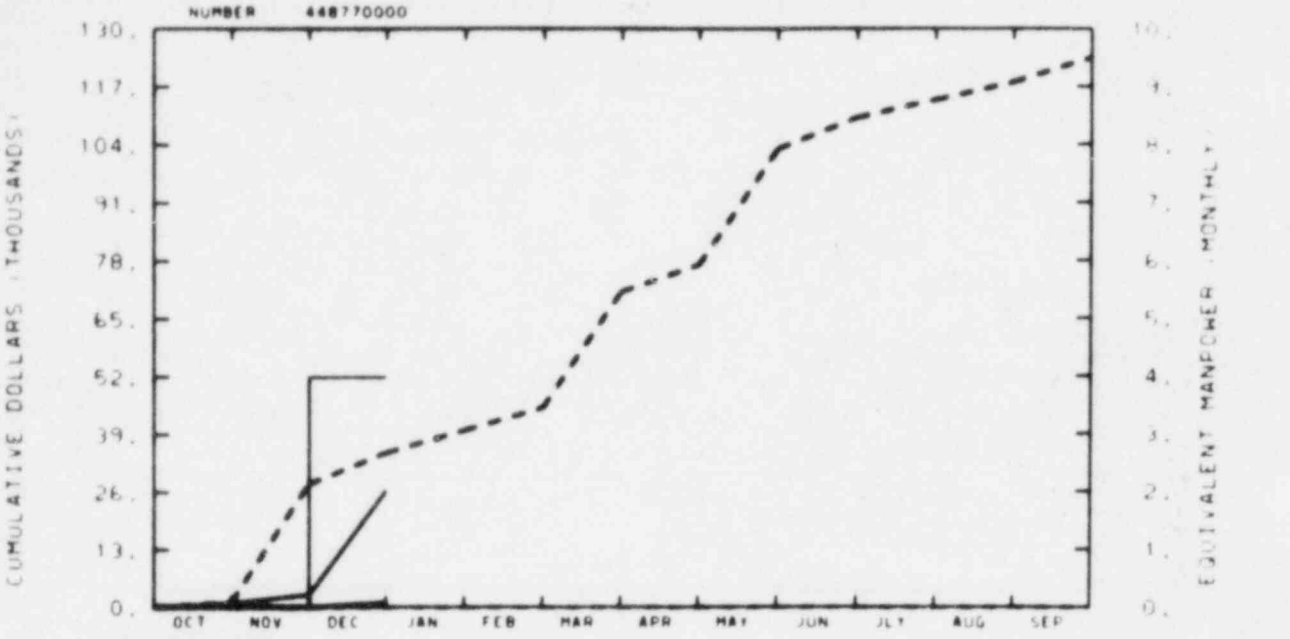
EG&G program management personnel contacted Dr. P. Paris again on December 24, 1981 inquiring about Dr. Paris's progress on the draft NUREG report. Dr. Paris indicated that he had the report partially completed and fully expected to meet his January 1, 1982 due date.

RESPONSIBLE
MANAGER
R. F. APFELL

EG&G IDAHO INC.

OPER LIC FSAR AC RV A6422

NUMBER 448770000



TOTAL PROGRAM

BUDGET	1	28	35	40	45	71	77	103	110	114	118	124
ACTUAL	1	3	26									

MATERIAL

BUDGET	1	28	35	40	45	71	77	103	110	114	118	124
ACTUAL	0	0	1									

MANPOWER

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

BUDGET

ACTUAL

A6422

YTD VARIANCE: 9 (26%)

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

2. Scheduled Milestones for December 1981

   None.

3. Summary of Work Performed in December 1981

   Review of the WNP, Units 1 and 4 was completed. The resulting questions are in final review.

   FIN A6422 work scope is approximately 30% completed and FY-1982 budget is 21% expended.

4. Scheduled Milestones for January 1982

   None.

5. Summary of Work to be Performed in January 1982

   Questions resulting from our review of the WNP, Units 1 and 4 will be transmitted to NRC.

6. Problems and Potential Problems

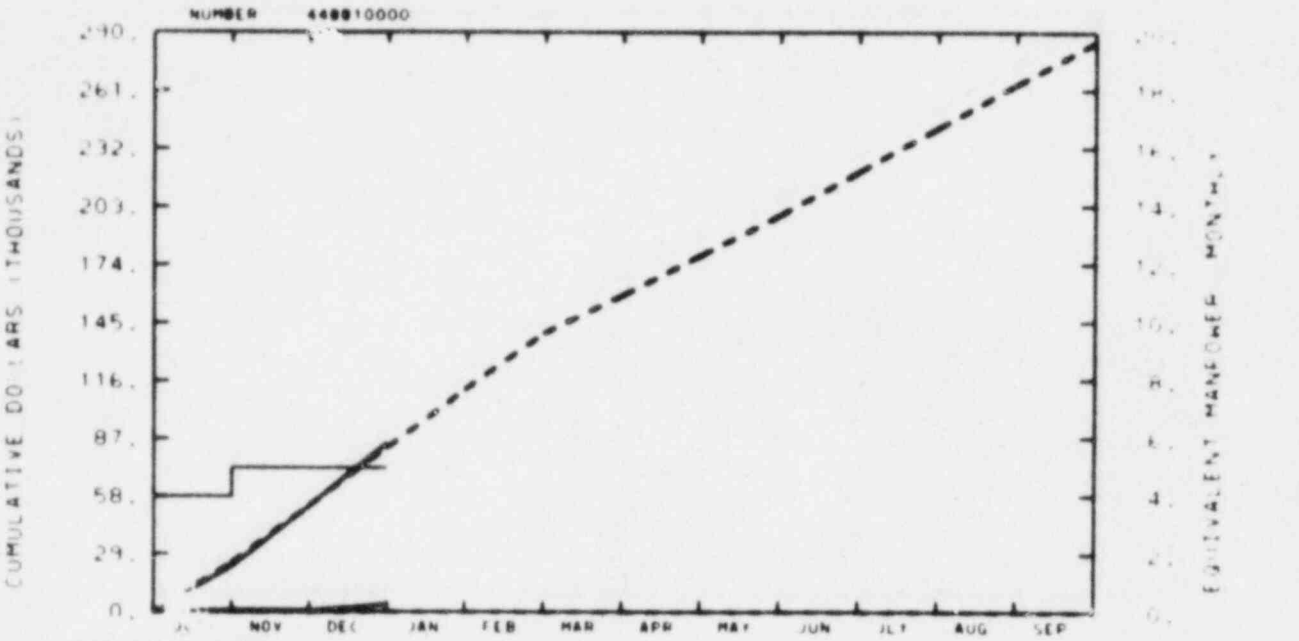
   None.

RESPONSIBLE MANAGER
R. F. APFEL

EG&G IDAHO INC.

EICS SUPPORT SEP A6425

NUMBER 448810000



TOTAL PROGRAM

BUDGET	25	54	83	112	140	159	179	199	220	242	264	286
ACTUAL	23	53	85									

MATERIAL

BUDGET	25	54	83	112	140	159	179	199	220	242	264	286
ACTUAL	1	1	4									

MANPOWER

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

A6425

YTD VARIANCE: <2> (2%)

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

The following TERs were issued to NRC:

Plant	Topic	Comment
La Crosse	VI-7.A.3	Initial draft
(INEL Milestone--PP06-25, INEL Due Date--11/81)		
La Crosse	VI-10.A	Initial draft
(INEL Milestone--PP11-25, INEL Due Date--11/81)		

To date, 22 (15%) of the initial, revised and final reports scheduled for FY-82 have been completed The project is approximately 28% complete overall and 28% expended.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Work will continue on assigned topics.

6. Problems and Potential Problems

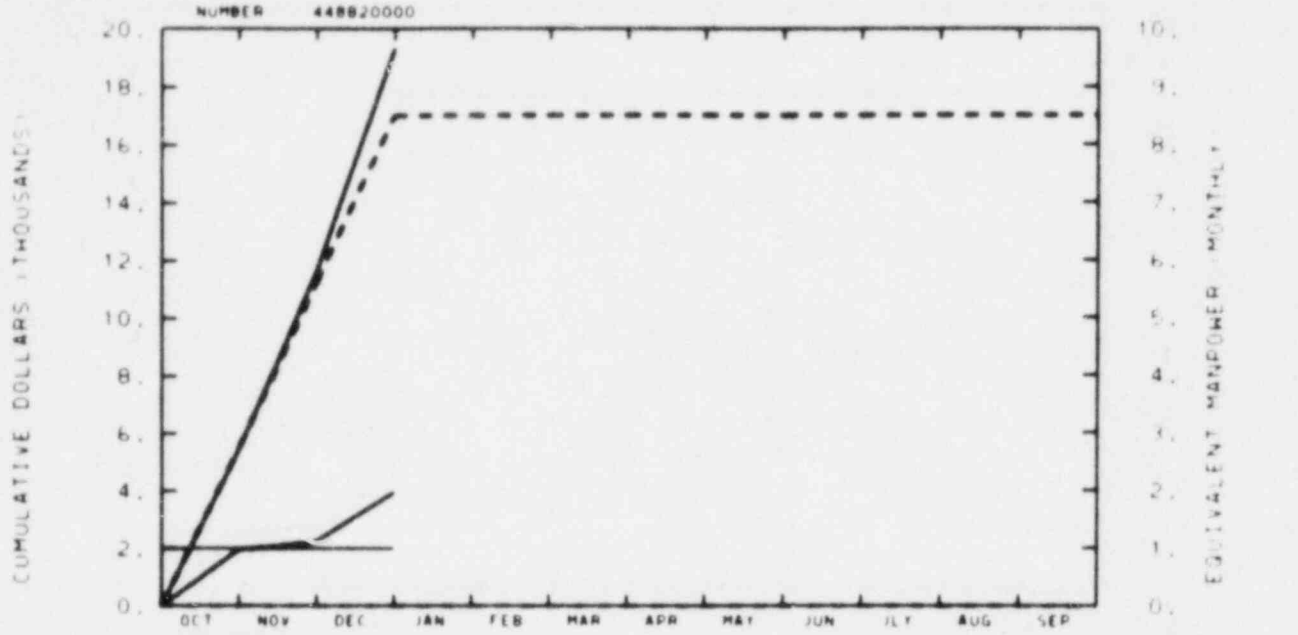
Slow or no licensee response in providing requested information and reviewing drafts is preventing completion of the revised and final drafts for topic reviews on time.

RESPONSIBLE MANAGER
R. L. AFFELT

EG&G IDAHO INC.

SEIS RVW PIP SYS SEP A6426

NUMBER 448820000



TOTAL PROGRAM

BUDGET	6	11	17	17	17	17	17	17	17	17	17	17
ACTUAL	5	12	19									

MATERIAL

BUDGET	6	11	17	17	17	17	17	17	17	17	17	17
ACTUAL	2	2	4									

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6426

YTD VARIANCE: <2> (12%)

Additional funding of $30K has been received and will be budgeted.

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

A presentation concerning Task A6426 was made to the Deputy Director of NRC's Division of Licensing by the cognizant engineer at EG&G. The purpose of the presentation was to inform the Director of the achievements and current progress on the A6426 work being performed at the INEL.

The EG&G cognizant engineer attended a meeting at Northeast Utilities Services Company (NUSCO) headquarters in Berlin, Connecticut concerning the open items remaining for the SEP efforts on the Millstone piping and equipment. The results of this meeting will be covered in a separate trip report.

Each of the three remaining plants (Dresden, Oyster Creek, and Millstone) have 10% of the work completed. The overall project is 10% completed and 41% of the budget has been expended. However, present estimates indicate that current funding is adequate to complete this task; project management personnel will continue to closely monitor progress to assure that this job is completed within allotted funding. There are two reasons for the deviation between work accomplished and funding spent. First of all, the various meetings which have been attended consume manhours and travel expenses. However, the benefits of these meetings have not yet been realized. Little information has been received to date. Secondly, time has been spent reaquainting the replacement engineer with details concerning the SEP analyses and reviewing the remaining tasks with the NRC Technical Monitor. It should be noted that the effect estimated to complete this task is speculative until licensee information does arrive and that the 10% complete figure may in fact be overly pessimistic.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

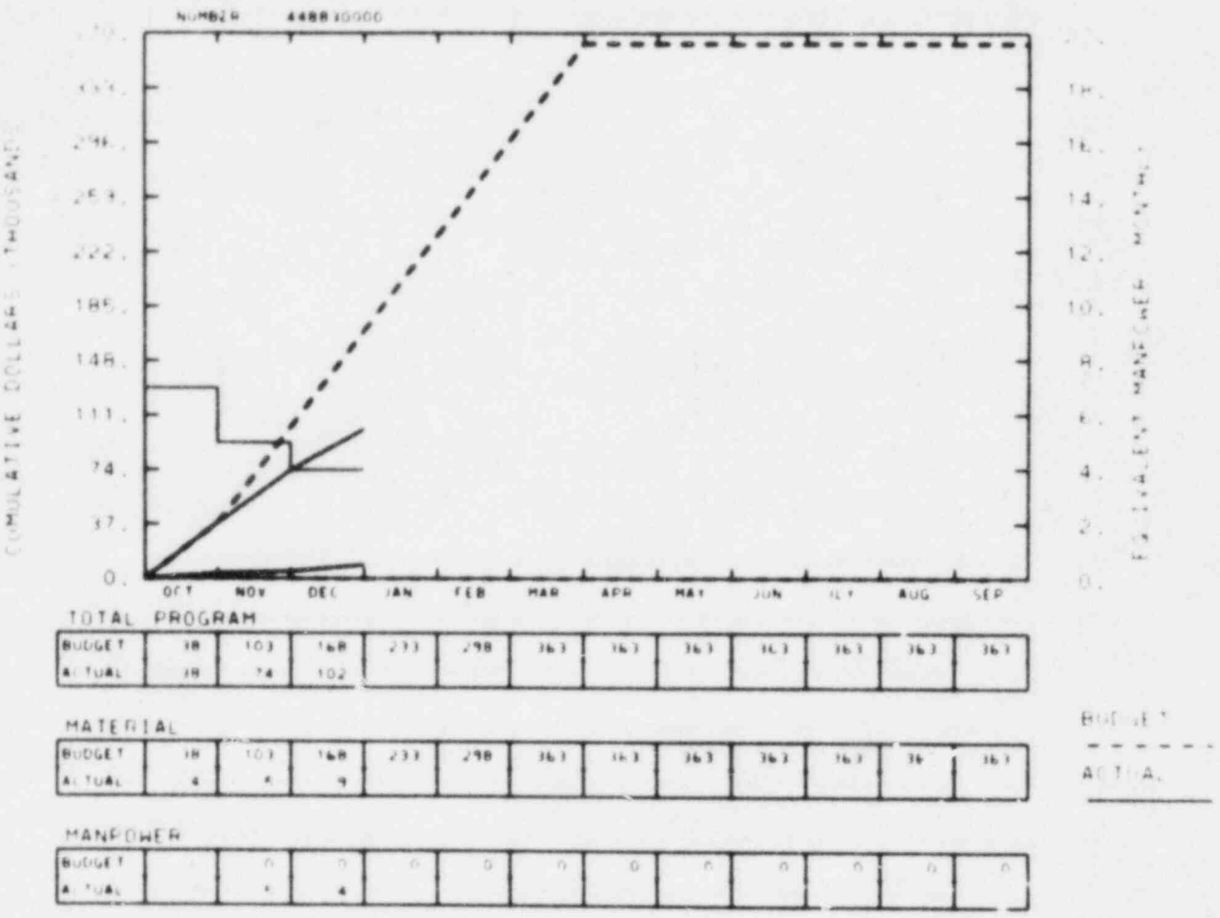
Both NUSCO (for Millstone) and the Oyster Creek personnel expect to submit a significant portion of the piping system information during January. When it becomes available, this information will be reviewed and incorporated into the analyses. The Dresden work is expected to be completed once the EG&G cognizant engineer receives appropriate data from the NRC Technical Monitor.

6. Problems and Potential Problems

The completion of this project still depends upon receiving appropriate information from the licensees in a timely manner. At this time, the final completion date of March 31, 1982 appears to be possible if input is received by January 15, 1982.

EG&G IDAHO INC.

TMI LESSONS LEARNED A6427



TOTAL PROGRAM

BUDGET	18	103	168	233	298	363	163	363	363	363	363	363
ACTUAL	18	74	102									

MATERIAL

BUDGET	18	103	168	233	298	363	163	363	363	363	36	363
ACTUAL	4	*	9									

MANPOWER

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

A6427

YTD VARIANCE: 66 (39%)

Lack of licensee submittals and delay on on-site audits have resulted in a $66K budget variance. Continued delay may result in work scope and associated funding being carried into FY-1983.

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

2. Scheduled Milestones for December 1981

   None.

3. Summary of Work Performed in December 1981

   (a) Review of Plant Shielding Modifications (Item II.B.2) Preliminary technical evaluation reports (TER) were completed for Surry Units 1 and 2, and North Anna Units 1 and 2. This task is approximately 10% complete.

   (b) Depressurization Other Than Full ADS (Item II.K.3.45) A task description, including scope and acceptance criteria was prepared and was reviewed by the EG&G Code Assessment Branch. The task description will be transmitted to the NRC for their approval in January 1982. Initial transient runs were completed. This task is approximately 40% complete.

   (c) Core Spray and Low Pressure Coolant Injection (Item II.K.3.21) This task is on hold awaiting a new submittal from Oyster Creek. The task is 50% complete.

4. Scheduled Milestones for January 1982

   None.

5. Summary of Work to be Performed in January 1982

   (a) Review of Plant Shielding Modifications (Item II.B.2) Preliminary TERs will be completed for Hatch Units 1 and 2. Preliminary discussions with the NRC lead engineer and plant project managers will determine a proposed schedule for on-site audits of 10 to 15 multiunit plants. A NRC letter authorizing these audits is expected in January.

   (b) Depressurization Other Than Full ADS (Item II.K.3.45) The task description will be transmitted to the NRC for their approval. Arrangements will be made for a meeting with General Electric to obtain setpoint and fatigue information on licensees analysis.

   (c) Core Spray and Low Pressure Coolant Injection (Item II.K.3.21) No work is projected.

189a A6427 (continued)

6. Problems and Potential Problems

If licensee submittals are not received as planned in January 1982 or the on-site audits are not conducted for 10 to 15 multiunit plants, then it is unlikely that Item II.B.2 can be completed during FY-1982.

PROJECT TASK PROGRESS REVIEW

Date: 12-Jan-82

SUMMARY

SEARCH RESULTS FOR SET NO. 1

MILESTONE SUMMARY	No.of Tasks as of Date Planned	Actual
A. INFO REQUEST DRAFT MAILED TO NRC---	25	32
B. INFORMATION RECEIVED----------	30	10
C. FINAL REVIEW STARTED----------	8	10
D. TER DRAFT MAILED TO NRC----------	8	9

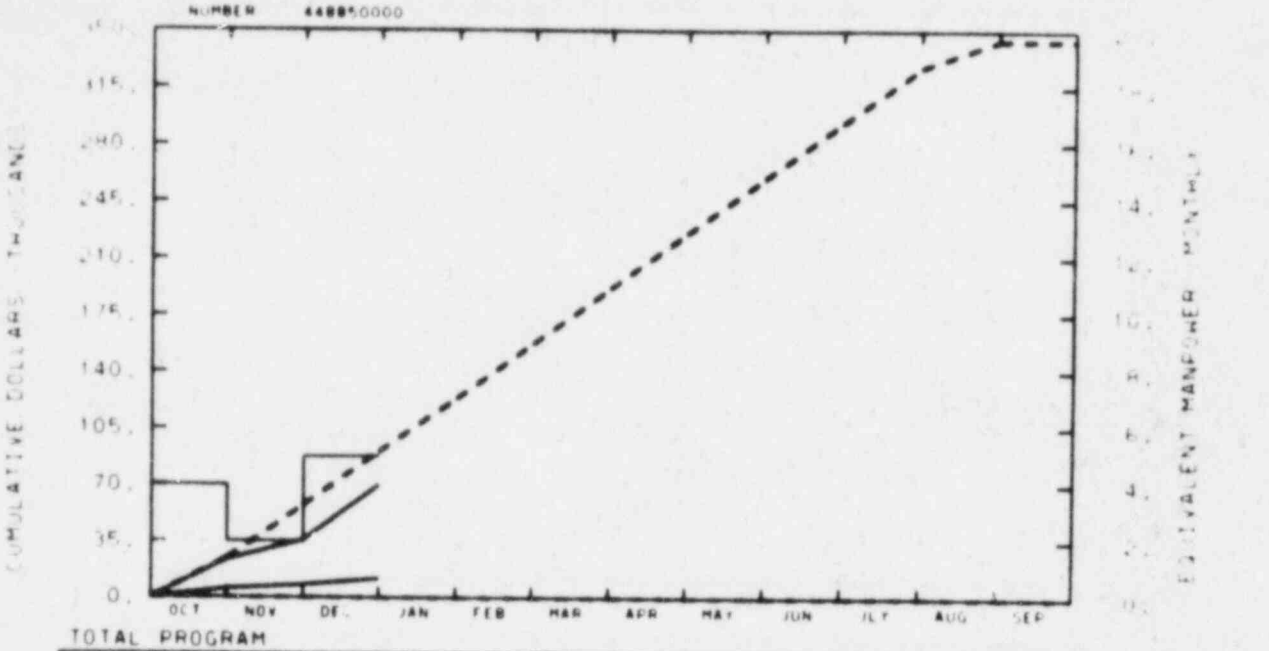
DETAILED STATUS OF TASKS

	NO.of Tasks	Task identification Numbers
1. Work not Started----------	59	361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 379 380 381 382 383 384 385 386 390 391 392 393 394 396 397 397 398 402 403 404 406 407 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431
2. Reviewing Package for Completeness-	0	
3. Waiting for Documents Requested---	0	
4. Ready for Initial Review----------	0	
5. Initial Review in Progress--------	0	
A. INFO REQUEST DRAFT MAILED TO NRC------	0	
6. NRC Reviewing Draft----------	0	
7. CBM Revision Letter----------	0	
8. Formal Letter Mailed to NRC--------	0	
9. RFI to NRC Project Manager--------	0	
10. Letter Mailed to Licensee----------	22	384 385 386 387 388 389 390 391 392 393 394 395 396 398 400 401 402 403 404 405 406 407
B. INFORMATION RECEIVED----------	0	
11. Reviewing Info. for Adequacy------	0	
12. Waiting for Add'l Information-----	0	
13. Ready for Final Review----------	0	
C. FINAL REVIEW STARTED----------	0	
14. Final Review in Progress----------	0	
15. Delayed Awaits Add'l Information---	1	277
16. Draft TER in Preparation----------	0	
D. TER DRAFT MAILED TO NRC----------	0	
17. NRC Reviewing TER Draft----------	7	266 387 389 399 400 408 408
18. CBM Revising TER Draft----------	0	
19. Final TER Mailed to NRC----------	0	
20. NRC SER To Project Manager--------	1	401
21. NRC Lic. Action Complete----------	1	405
Total Discrete Tasks:	91	

EG&G IDAHO, INC.

SL OP REAC ISS A6429

NUMBER 448850000



TOTAL PROGRAM

BUDGET	24	57	90	123	157	191	225	259	293	327	144	144
ACTUAL	24	36	70									

MATERIAL

BUDGET	24	57	90	123	157	191	225	259	293	327	144	144
ACTUAL	5	8	12									

MANPOWER

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

BUDGET

ACTUAL

A6429

YTD VARIANCE: 20 (22%)

Delays in receiving initial packages on assigned tasks and information from licensees is requiring manpower to be temporarily shifted from A6429 to other NRC work.

1. 189a A6429 - Selected Operating Reactors Issues

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

The LATS program tape was received. The system will be utilized by all of the INEL contractors for NRC work. Methods for program protection and insertion of information are being studied.

The following TERs were completed:

INEL Node	TAC	Plant	Task	Project	Type Report	Cost
WW1-06	10017	Crystal River 3	DGA	1	Preliminary TER	--
WW1-10	10031	La Crosse	DGA	1	Preliminary TER	--
WW1-19	10030	Kewanee	DGA	1	Preliminary TER	--
WW1-07	12994	Kewanee	DGB	2	Preliminary TER	--
WW4-08	10008	Big Rock Point	DGA Revision	4	Final TER	$ 550
--	42105	Zion 1	PWR DHR	3	Final TER	3000
--	42106	Zion 2	PWR DHR	3	Final TER	3000

To date, 8 TERs (15% of FY-1982 requirements) have been completed in FY-1982. Attached is the detailed status (LATS Executive Summary) of tasks for FIN A6429.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

It is projected that five preliminary or final TERs will be completed in January.

6. Problems and Potential Problems

Delays in receiving initial packages on assigned tasks and information from licensees is requiring manpower to be temporarily shifted from A6429 to other NRC work.

A4429.FOR.Data

PROJECT TASK PROGRESS REVIEW Date: 13-Jan-82

SUMMARY

SEARCH RESULTS FOR SET NO. 1

MILESTONE SUMMARY	No. of Tasks as of Date	
	Planned	Actual
A. INFO REQUEST DRAFT MAILED TO NRC---	114	114
B. INFORMATION RECEIVED---	113	107
C. FINAL REVIEW STARTED---	109	95
D. TER DRAFT MAILED TO NRC---	98	84

DETAILED STATUS OF TASKS	NO. of Tasks	Task identification Numbers
1. Work not Started---	7	131 132 133 134 135 136 137
2. Reviewing Package for Completeness-	0	
3. Waiting for Documents Requested---	2	22 23
4. Ready for Initial Review---	0	
5. Initial Review in Progress---	1	104
INFO REQUEST DRAFT MAILED TO NRC---	0	
6. NRC Reviewing Draft---	1	108
7. CDR Revising Letter---	0	
8. Formal Letter Mailed to NRC---	0	
9. RFI to NRC Project Manager---	0	
10. Letter Mailed to Licensee---	6	5 10 11 28 50 51
B. INFORMATION RECEIVED---	0	
11. Reviewing Info. for Adequacy---	6	95 99 100 102 103 111
12. Waiting for Add'l Information---	6	8 9 19 20 41 114
13. Ready for Final Review---	0	
C. FINAL REVIEW STARTED---	0	
14. Final Review in Progress---	1	101
15. Reviews Awaiting Add'l Information---	4	49 52 53 54
16. Draft TER in Preparation---	7	79 98 140 141 142 143 144
D. TER DRAFT MAILED TO NRC---	0	
17. NRC Reviewing TER Draft---	6	6 13 14 15 16 25 40 46
18. CDR Revising TER Draft---	0	
19. Final TER Mailed to NRC---	23	2 18 24 29 30 42 43 45 47 56 57 58 69 78 80 83 92 93 106 112 113 138 139
20. NRC RER To Project Manager---	20	7 12 17 26 27 34 35 36 44 55 59 60 67 68 72 84 85 86 90 91
21. NRC Lic. Action Complete---	32	3 4 21 31 32 33 37 38 39 48 61 62 63 64 65 66 70 71 73 74 75 76 77 116 118 119 120 121 122 123 124 125

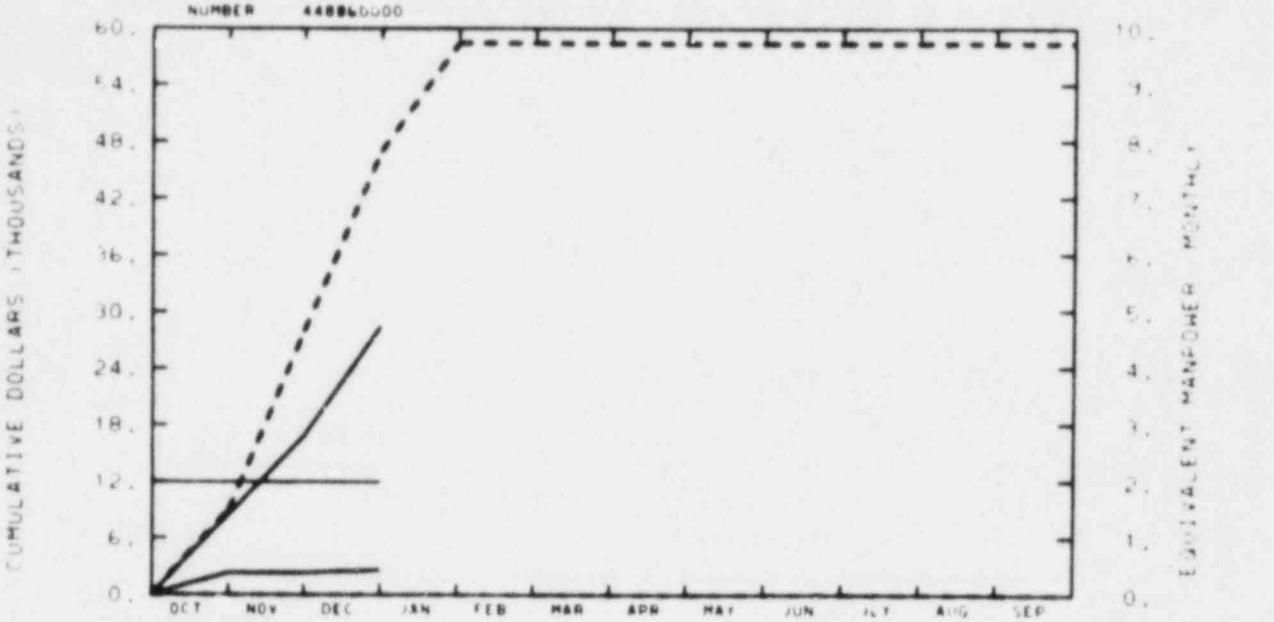
Total Discrete Tasks: 124

RESPONSIBLE MANAGER: [illegible]

EG&G IDAHO INC.

PUMP & VALVE TESTING A6430

NUMBER 4488b0000



TOTAL PROGRAM

BUDGET	9	28	47	58	58	58	58	58	58	58	58	58
ACTUAL	9	17	28									

MATERIAL

BUDGET	9	28	47	58	58	58	58	58	58	58	58	58
ACTUAL	2	2	3									

MANPOWER

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

BUDGET

ACTUAL

A6430

YTD VARIANCE: 19 (40%)

A new program letter, adding scope and dollars and revising schedules and expenditure rates is in preparation. Remaining scope and dollars are consistent.

1. 189a A6430 - Pump & Valve Inservice Testing Operating Reactors (IST) (OR)

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

Review of the San Onofre, Units 2 and 3, IST program was completed and resulting questions transmitted to NRC. Review of the Summer IST program was started. A conference call was held with personnel from the Zimmer plant to clear up several outstanding issues. Some items still remain open.

FIN A6430 work scope is approximately 15% complete and FY-1982 budget is 11% expended.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

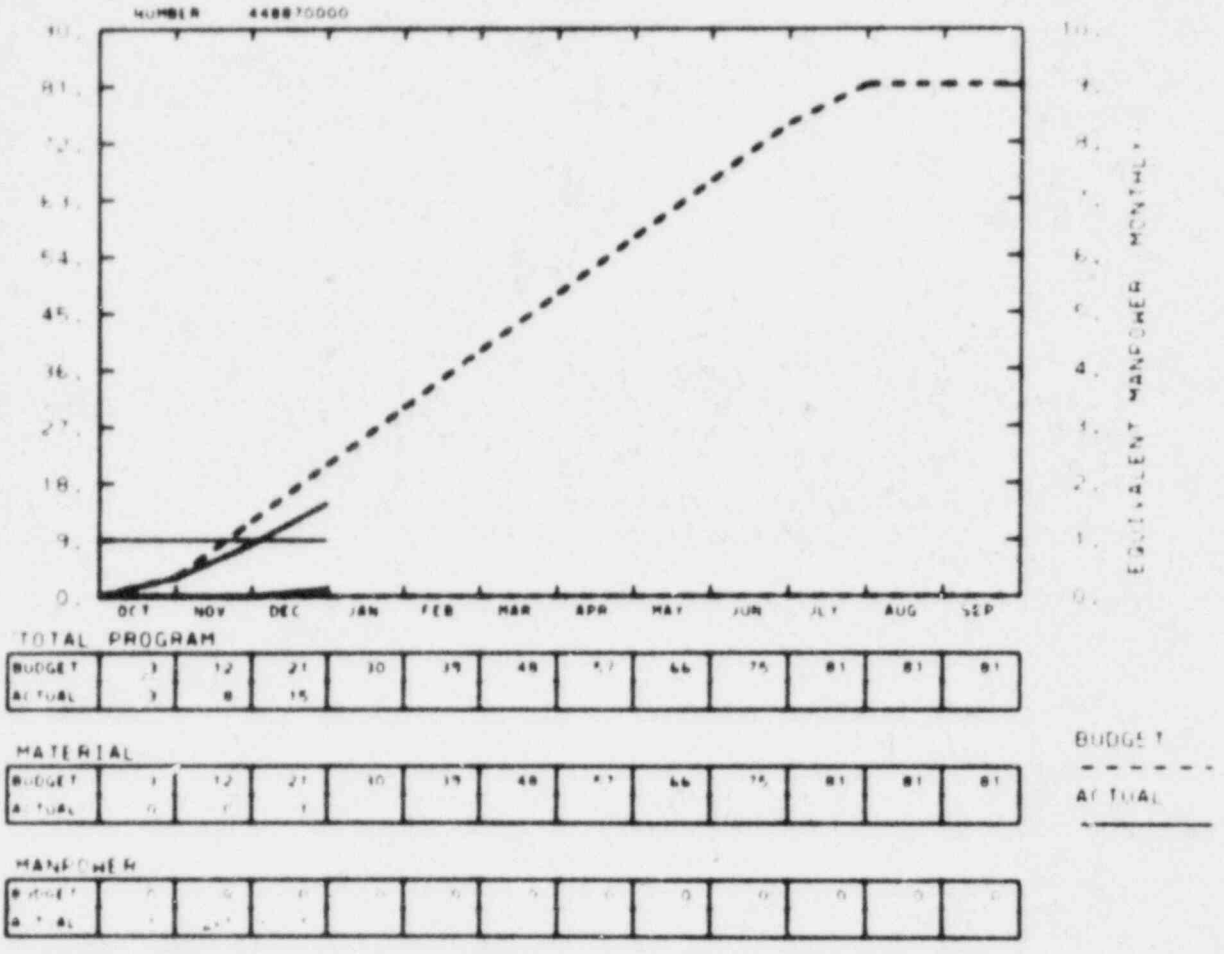
Pending resolution of outstanding issues, the SER for the Zimmer IST program will be completed. Review of the Summer IST program will be completed and resulting questions transmitted to NRC. Review of the La Salle, Units 1 and 2 IST program will be started.

6. Problems and Potential Problems

None.

EG&G IDAHO INC.

ASYM LOCA LOADS A6431



TOTAL PROGRAM

BUDGET	3	12	21	30	39	48	57	66	75	81	81	81
ACTUAL	3	8	15									

MATERIAL

BUDGET	3	12	21	30	39	48	57	66	75	81	81	81
ACTUAL	0	0	1									

MANPOWER

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

A6431

YTD VARIANCE: 6 (29%)

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

Work continued on the preparation of the status summary requested by the NRC Technical Monitor. A draft of the summary was telecopied to the NRC Technical Monitor to receive his initial comments on its contents. The draft copy was only a partial summary since it contained the status of only one plant as an example. Since the time of the telecopy, the status of several more plants has completed in the same format. EG&G technical personnel are waiting for review comments fom the Technical Monitor. This task is approximately 7% complete and is 6.7% expended based on $221K total anticipated FY-1982 funding.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Once comments are received from the NRC Technical Monitor, the status summary will be finalized and transmitted to the Technical Monitor. An evaluation will begin on the initial review responses from the B&W Owners Group plants, leading to the preparation of SERs for these plants.

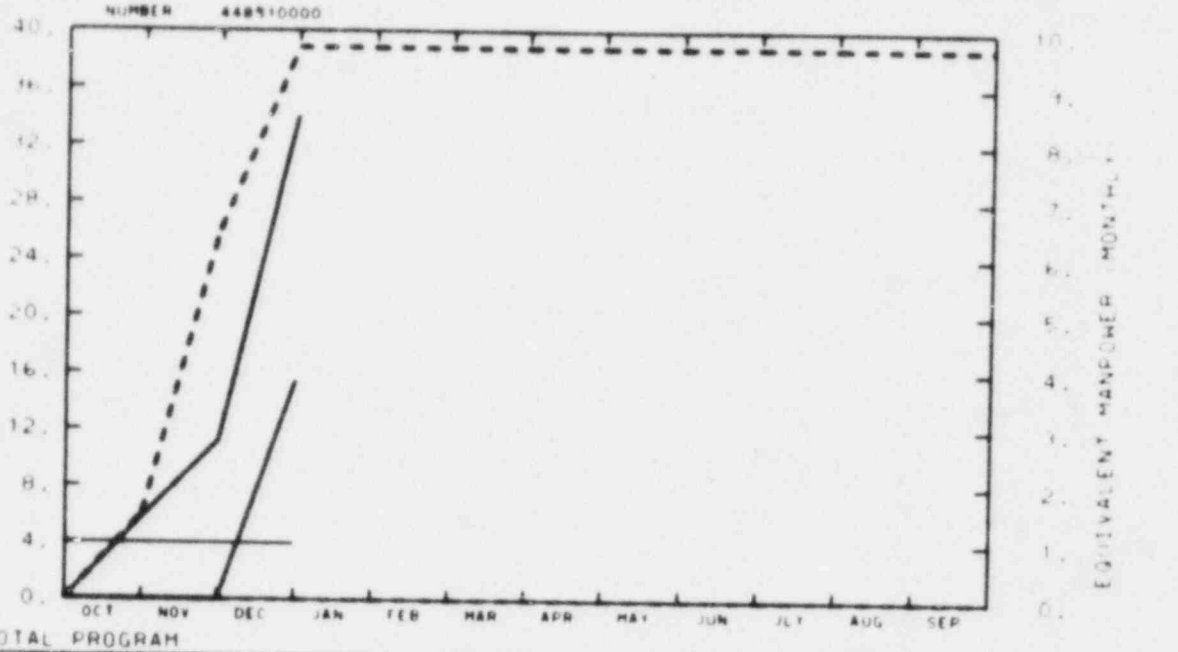
6. Problems and Potential Problems

None.

EG&G IDAHO INC.

REVIEW PUMP & VALVE OP A6434

NUMBER 448910000



TOTAL PROGRAM

BUDGET	6	26	39	39	39	39	39	39	39	39	39	39
ACTUAL	6	11	34									

MATERIAL

BUDGET	6	26	39	39	39	39	39	39	39	39	39	39
ACTUAL	0	0	15									

MANPOWER

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

BUDGET

ACTUAL

A6434

YTD VARIANCE: 5 (13%)

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

EG&G technical personnel completed and transmitted to the NRC Technical Monitor a cover letter for the "Pump and Valve Operability Assurance Review" form.

CESSAR Section 3.9.3.2 (Draft) was reviewed and comments concerning the review were transmitted to the NRC Technical Monitor.

Wyle testing laboratories in Huntsville, Alabama and Norco, California have both agreed to provide both EG&G and NRC Technical Personnel with a presentation and guided tour relating to pump and valve equipment qualification.

EG&G technical personnel attended a meeting with NRC personnel, December 15, to discuss current status and future project scope.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

EG&G Technical Personnel will review pertinent documentation pertaining to pump and valve qualification in preparation for a plant visit.

NRC has tentatively scheduled a visit to the INEL for the second week in January. EG&G Technical Personnel will prepare to meet with NRC personnel and make arrangements with Wyle Labs if NRC personnel decide to visit Wyle during this same week.

It is estimated that work for this FIN number is approximately 43% completed and 43% of FY-1981 funding has been expended (project-to-project). Deviation between the percentage complete and expenditures is due to the plants not being complete enough to have us perform the on-site audit.

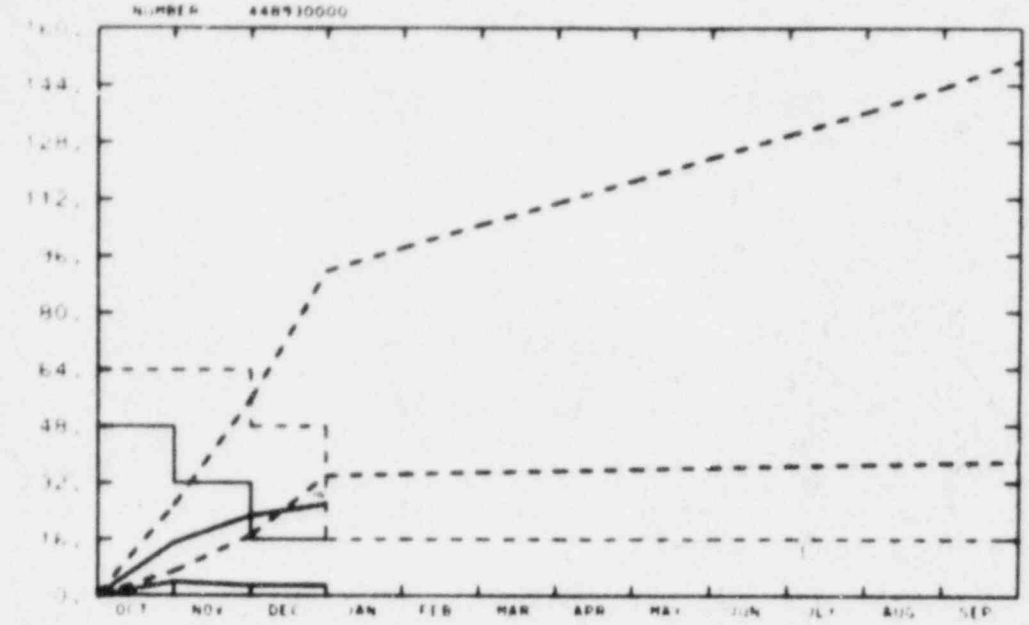
6. Problems and Potential Problems

None.

EG&G IDAHO INC.

RELOAD GL & OP EVAL A6436

NUMBER 4489 10000



TOTAL PROGRAM

BUDGET	26	56	92	98	105	111	117	124	130	136	143	151
ACTUAL	15	23	26									

MATERIAL

BUDGET	7	17	14	14	15	15	16	16	17	17	17	18
ACTUAL	4	1	3									

MANPOWER

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

BUDGET

ACTUAL

A6436

YTD VARIANCE: 66 (72%)

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

Task 1: Discussions with the NRC/NRR indicated that the requested information from North Anna Unit 2 will be received by the NRC on February 15, 1982 and received by the INEL by March 1, 1982. The funded portion of this task (through Task 1.c.(5)) will be completed by July 1, 1982.

Task 2: A second rough draft of the Applications Manual format was prepared.

Estimated Percent Complete: 30%

Task 3: No on-call assistance was requested. (Funds were used for Task 1 due to increased travel).

Overall task funding expended 70%.

Task 4: A limited amount of effort was expended on developing a format for the SERs for Task 4.

4. Scheduled Milestones for January 1982

None.

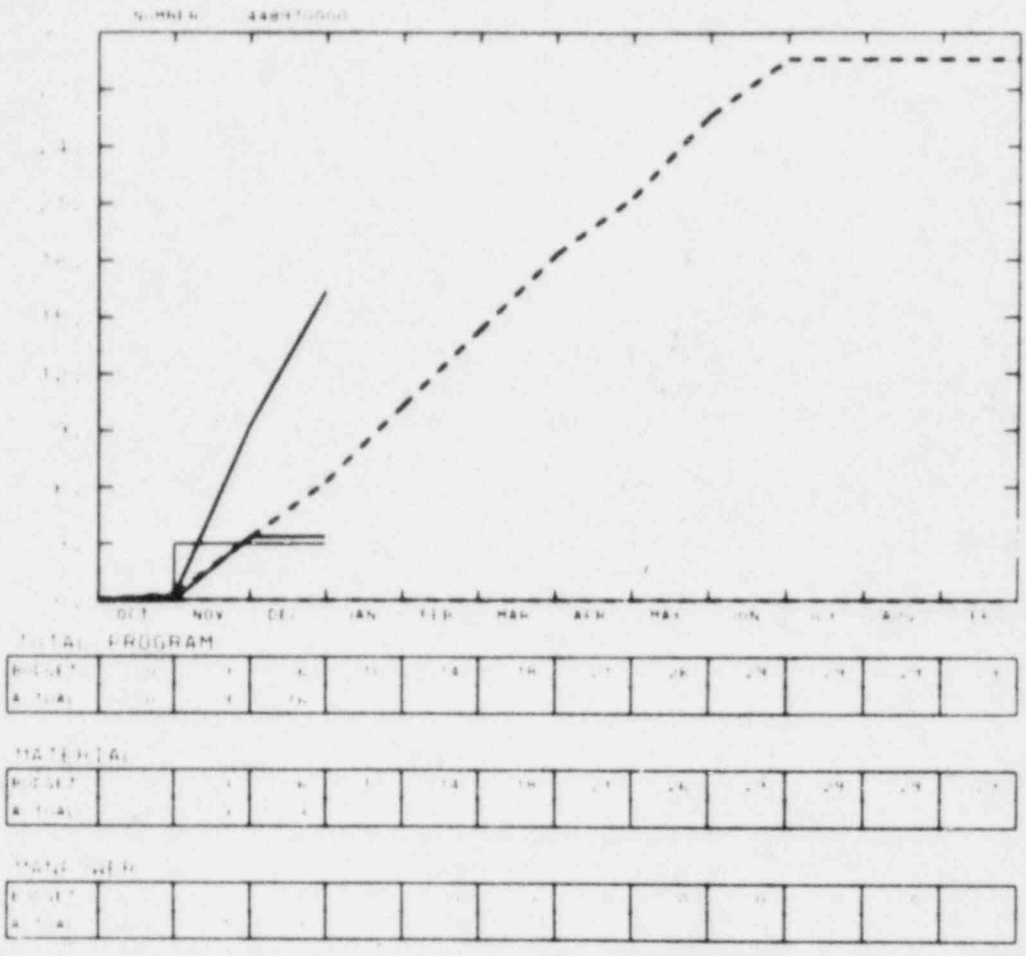
5. Summary of Work to be Performed in January 1982

A draft of the Applications Manual will be transmitted to the NRC.

Task 4: Future work on Task 4 is dependent on receipt of responses to questions, at which time SERs will be prepared.

6. Problems and Potential Problems

None.



A6440

YTD VARIANCE: <10> (167%)

Additional funding has been requested to correspond with expanded work socpe.

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

Review of CENPD-172 (Task 1) was approximately 90% completed this month. An informal report of this review was completed and transmitted to the NRC Technical Monitor for review and comment. The remaining tasks of this project have not been started. This project is approximately 20% complete and 22% expended based upon FY-1982 budget of $29K plus $45.4K in additionally requested funding..

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Pending receipt of NRC comments on the draft report of the review of CENPD 178, the final report will be issued.

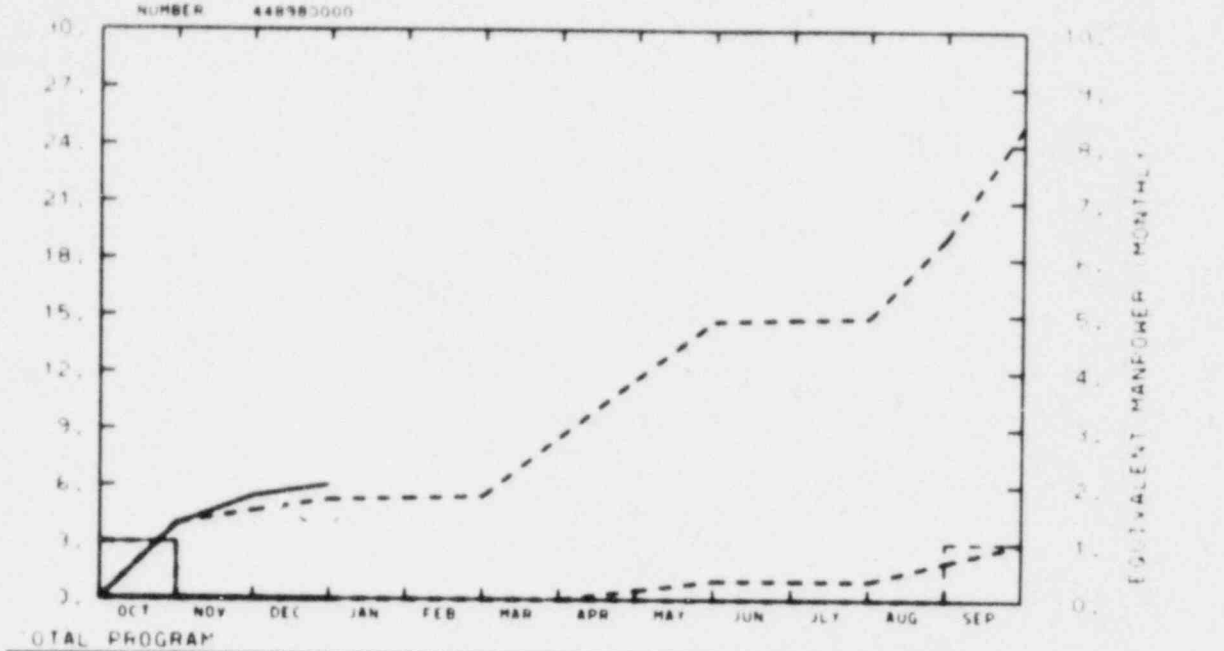
6. Problems and Potential Problems

Additional funding in the amount of $45.4K has been verbally requested from the NRC Technical Monitor; a formal letter documenting this request will be transmitted to the NRC during January. This additional funding request is partially compensated by excess funding of $23k from FIN A6448 to be addressed as refundable in the same letter.

EG&G IDAHO INC.

TRANS FUEL CODE II A6441

NUMBER 44898000



TOTAL PROGRAM

BUDGET	4	5	5	5	5	9	12	15	15	15	19	25
ACTUAL	4	5	6									

MATERIAL

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

MANPOWER

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

A6441

YTD VARIANCE: <1> (20%)

1. 189a A6441 - Fuel Performance Code Applications III

2. Scheduled Milestones for December 1981

Node	Description	Due Date	Actual Date
AG-02	Task 2 Prerupture Strain Model	12-1-81T	11-30-81C Saff-327-81

3. Summary of Work Performed in December 1981

No work was scheduled or performed on this task during December.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

No work is scheduled for January.

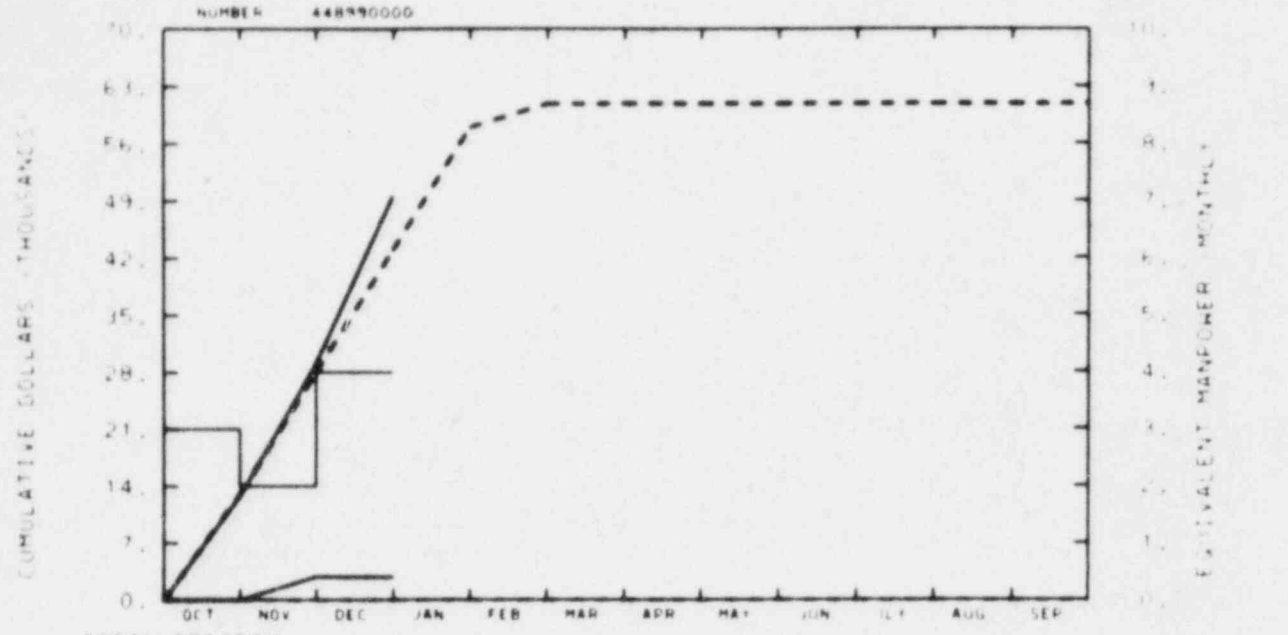
6. Problems and Potential Problems

None.

EG&G IDAHO INC.

BIG ROCK RISK STUDY A6442

NUMBER 448990000



TOTAL PROGRAM

BUDGET	13	28	41	58	61	61	61	61	61	61	61	61
ACTUAL	13	29	50									

MATERIAL

BUDGET	13	28	41	58	61	61	61	61	61	61	61	61
ACTUAL	0	1	1									

MANPOWER

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

A6442

YTD VARIANCE: <7> (16%)

1. 189a A6442 - Big Rock Point

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

Review of the fault trees for Big Rock Point systems was completed. Questions on the fault tree models which came to light during the review were transmitted to NRC and Consumers Power Company for resolution. Similarly, questions regarding the uncertainty analyses were sent for further clarification. Brookhaven National Laboratories (BNL) has completed the consequence portion of the review. A letter summarizing the findings was sent to EG&G. In addition, EG&G technical personnel initiated a review of the remaining areas of the report, namely, equipment qualification, sensitivity analyses of the design modifications, quantification methodology and common cause events.

Estimated completion of the FY-1982 work scope is 50%.

4. Scheduled Milestones for January 1982

Node	Description	Due Date	Actual Date
AB11	Complete Tasks A-D	1-29-82T	

5. Summary of Work to be Performed in January 1982

The remaining areas of the report described in Item 3 above will be addressed. BNL will transmit their input to the draft report detailing their findings on the consequence analysis.

A draft report of the findings of Tasks A-D as well as Task E (which addresses the overall reasonableness and validity of the report) will be initiated.

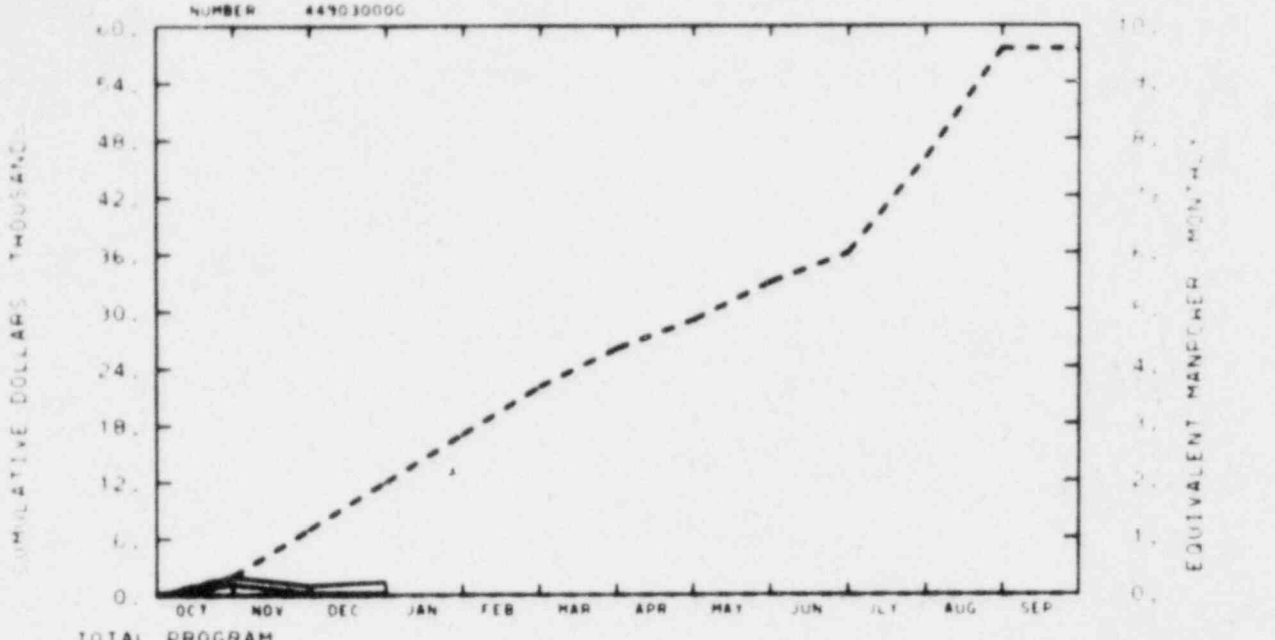
6. Problems and Potential Problems

None.

EG&G IDAHO INC.

PUMP/VALVE ITP OP II A6445

NUMBER 449030000



TOTAL PROGRAM

BUDGET	2	7	12	17	22	26	29	33	36	46	58	58
ACTUAL	2	1	1									

MATERIAL

BUDGET	2	7	12	17	22	26	29	33	36	46	58	58
ACTUAL	1	0	0									

MANPOWER

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

BUDGET

ACTUAL

A6445

YTD VARIANCE: 11 (92%)

Delays in receipt of licensee response to questions and initial submittals have resulted in diversion of personnel to other tasks. Remaining scope and schedule are consistent.

1. 189a A6445 - Review of Pump and Valve Inservice Testing Program for Operating Plants II

2. Scheduled Milestones for December 1981

   None.

3. Summary of Work Performed in December 1981

   No effort was expended on this task.

   FIN A6445 work scope is approximately 1% completed and the budget is 1% expended.

4. Scheduled Milestones for January 1982

   None.

5. Summary of Work to be Performed in January 1982

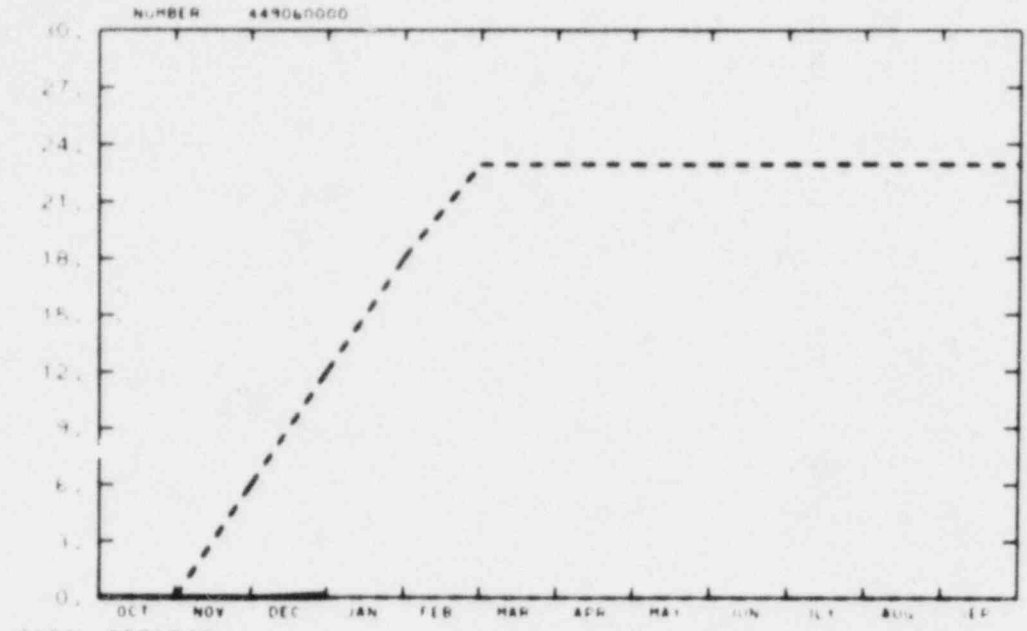
   Review of the Palisades IST program will be completed and the resulting questions transmitted to NRC.

6. Problems and Potential Problems

   None.

EG&G IDAHO INC.

FUEL MECH EVAL OP RE A6448



TOTAL PROGRAM

BUDGET	0	6	12	18	23	23	23	23	23	23	23	23
ACTUAL	0	0	0									

MATERIAL

BUDGET	0	6	12	18	23	23	23	23	23	23	23	23
ACTUAL	0	0	0									

MANPOWER

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

A6448

YTD VARIANCE: 12 (100%)

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

There was no activity for this task this month. This task is 0% complete and 0% expended.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

No activity is planned for this task. By mutual agreement with the NRC Technical Monitor, plans call for cancellation of this entire task and refund of the $23K in unused funding. A letter summarizing this suggested letter will be transmitted to the NRC during January.

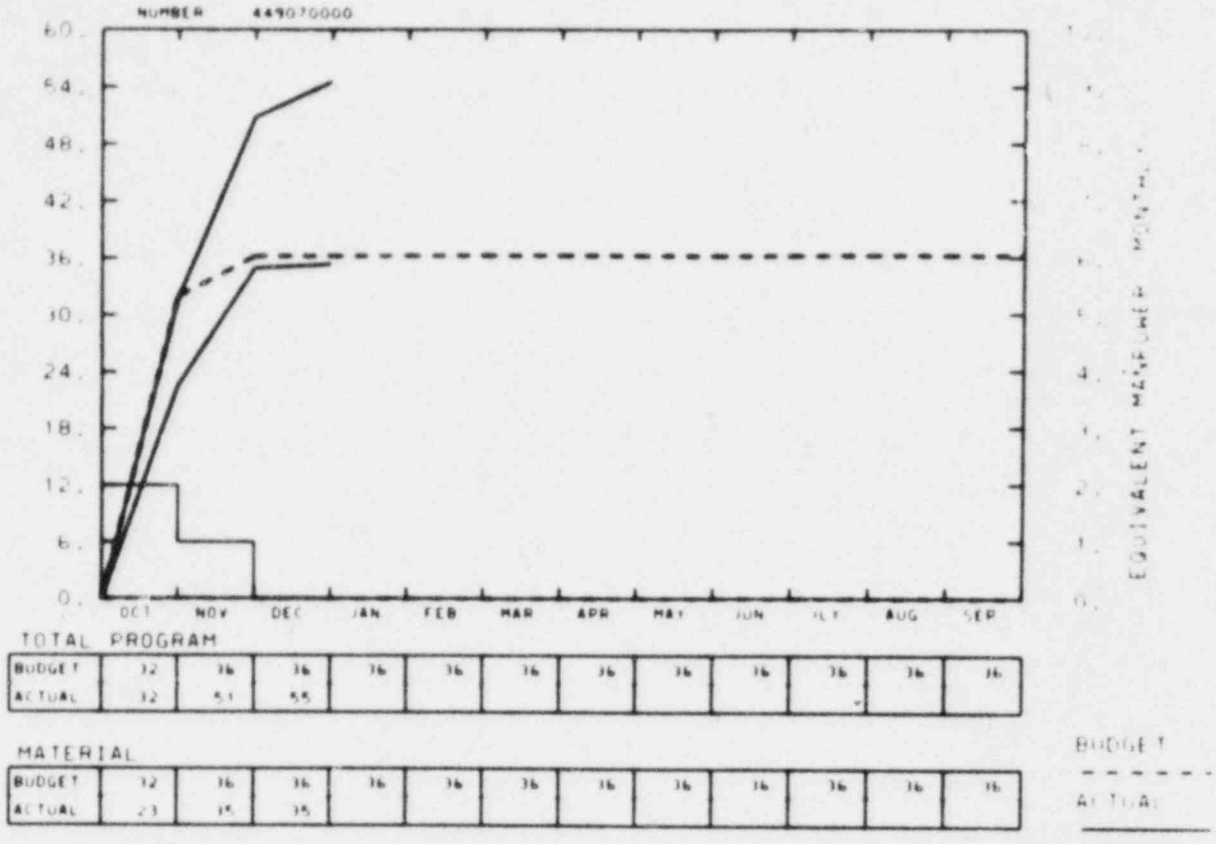
6. Problems and Potential Problems

None

RESPONSIBLE MANAGER

EG&G IDAHO INC.

PIPE CRACK REVIEW GROUP II A6449



TOTAL PROGRAM

BUDGET	32	36	36	36	36	36	36	36	36	36	36	36
ACTUAL	32	51	55									

MATERIAL

BUDGET	32	36	36	36	36	36	36	36	36	36	36	36
ACTUAL	23	19	35									

MANPOWER

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

A6449

YTD VARIANCE: <19> (53%)

An additional $20K has been received. With the new funding budgeted in this task, budget and actuals will agree.

1. 189a A6449 - Pipe Crack Study Group Analysis

2. Scheduled Milestones for December 1981

Node	Description	Due Date	Actual Date
Y02-B	Task 2 Report	12-1-81T	12-1-81C Saff-325-81

3. Summary of Work Performed in December 1981

Work was begun on Task 4. Specifically candidate power hardening stress-strain material models were selected and implemented in the ADINA computer code. The power hardening models are necessary to compare with experimental results.

Tasks 1 and 2 are now 100% complete and Task 3 is 60% complete. The work completed this month brings Task 4 to approximately 20% completion (±5%). Tasks 5 and 6 have not been started yet. The project is now 25% complete overall and 27% expended.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

If funding is received from the NRC, work will continue on Task 4. Specifically a meeting may be held with the subcontractor to discuss the technical aspects of the work scope. The nonhardening M-O tearing curve generation will be completed to compare to closed form solutions.

6. Problems and Potential Problems

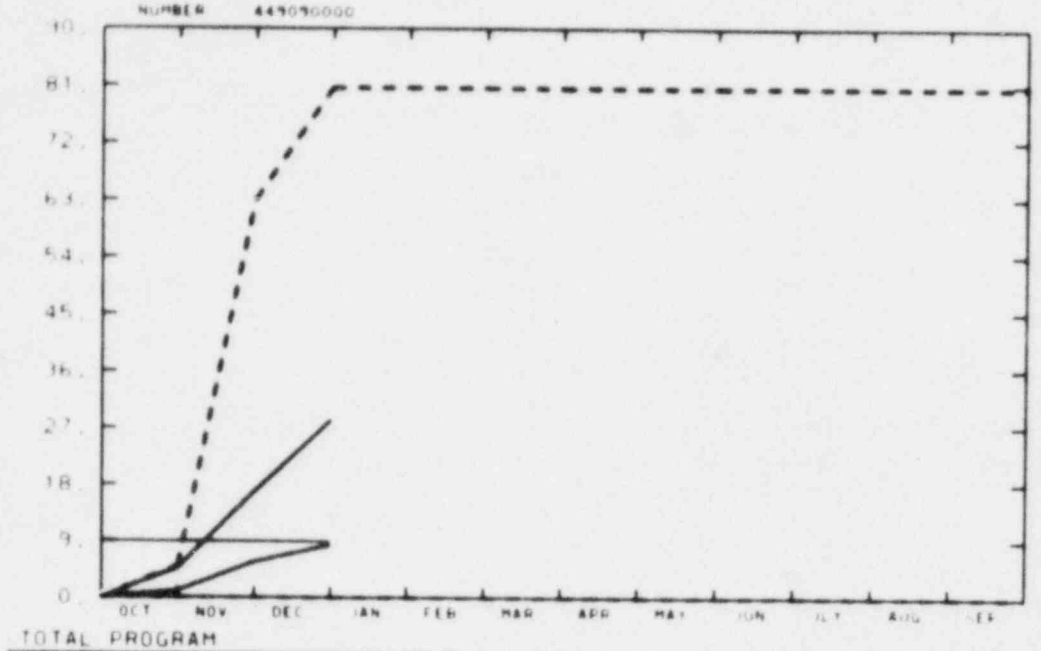
Receipt of the final funding allotment of $175K is required by January 15, 1982 in order to avoid a work stoppage.

RESPONSIBLE MANAGER

EG&G IDAHO INC.

WATER HAMMER A6451

NUMBER 449090000



TOTAL PROGRAM

BUDGET	5	63	81	81	81	81	81	81	81	81	81	81
ACTUAL	5	17	28									

MATERIAL

BUDGET	5	63	81	81	81	81	81	81	81	81	81	81
ACTUAL	1	6	8									

MANPOWER

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

BUDGET

ACTUAL

A6451

YTD VARIANCE: 53 (65%)

The Quadrex charges are projected to be approximately $50K by the end of December. To date, the billings have not yet been received. With the outstanding commitment, this task is on budget. Additional funding of $160K is anticipated.

1. 189a A6451 - Technical Assistance for Waterhammer

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

The revised CAAP-TR-042 (Rev. 2) report (body only) was informally transmitted to NRC. Preparation of the final draft of this report was completed and was in final typing at month's end.

Preliminary evaluation of the PWR feedwater and BWR core spray systems was completed by Quadrex and reported in a draft report documenting Plahse I of the Qaadrex subcontract.

4. Scheduled Miiestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

The final Water Hammer Experience report (CAAP-TR-042 (Rev. 2) will be completed and submitted to NRC in camera-ready form for issue as a NUREG.

Quadrex Corporation will continue work on PWR and BWR system water hammer evaluations.

6. Problems and Potential Problems

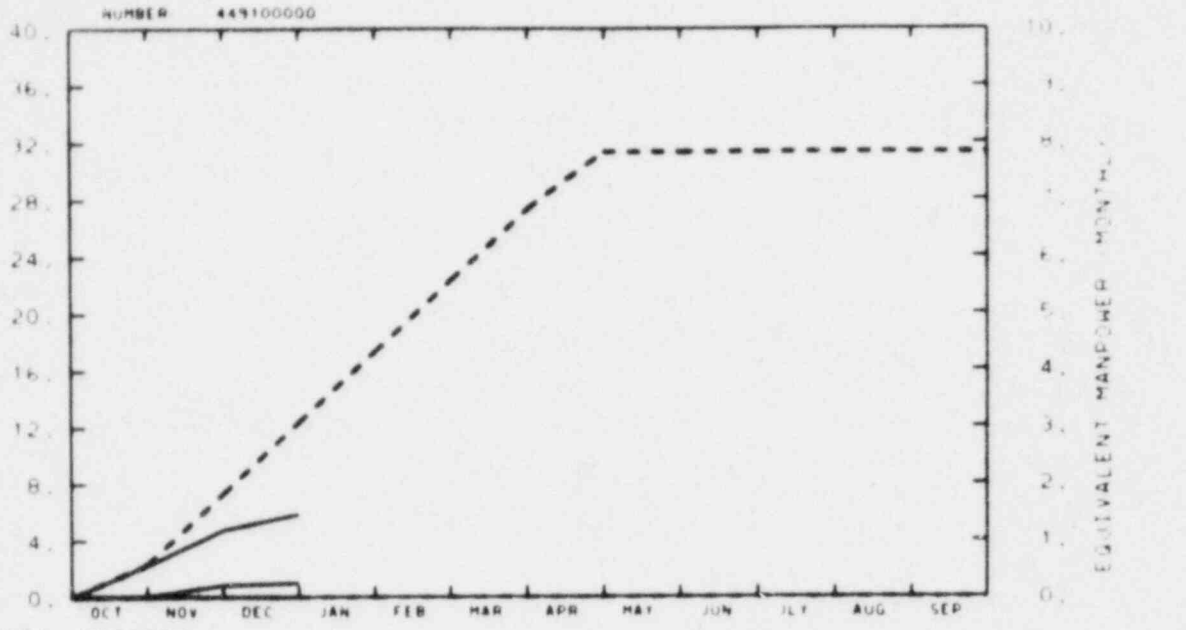
None.

RESPONSIBLE
MANAGER
R.F. AFFELD

EG&G IDAHO INC.

PROG COST EST SAF REQ A6452

NUMBER 449100000



TOTAL PROGRAM

BUDGET	2	7	12	17	22	27	31	31	31	31	31	31
ACTUAL	2	5	6									

MATERIAL

BUDGET	2	7	12	17	22	27	31	31	31	31	31	31
ACTUAL	0	1	1									

MANPOWER

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

BUDGET - - - - - -

ACTUAL ———

A6452

YTD VARIANCE: 6 (50%)

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

A final letter report documenting EG&G's estimate of the costs of modifications needed to mititage boron dilution events in PWRs during cold shutdown was submitted to DOE-ID and NRC. Estimated costs for two separate options were reported. No work was performed on the electrical and mechanical design modification task due to lack of information from the licensee.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

If the required information is received, cost estimation will resume for electrical and mechanical design and plant modification work.

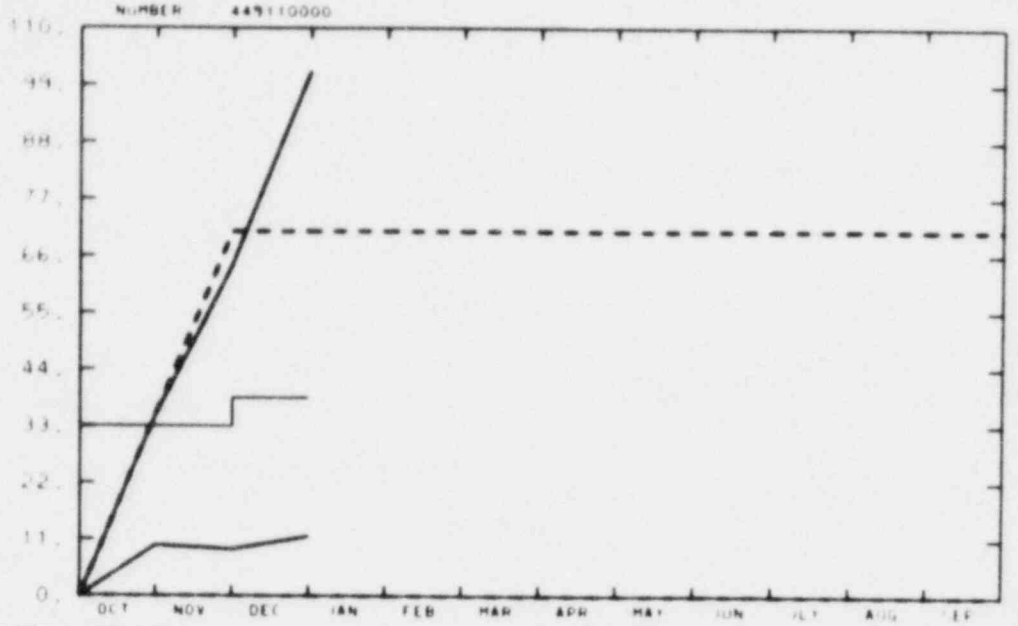
6. Problems and Potential Problems

None.

EG&G IDAHO INC.

EQUIP QUAL CASE REV A6453

NUMBER 449110000



TOTAL PROGRAM

BUDGET	35	71	71	71	71	71	71	71	71	71	71	71
ACTUAL	35	64	102									

MATERIAL

BUDGET	25	71	71	71	71	71	71	71	71	71	71	71
ACTUAL	10	9	12									

MANPOWER

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

A6453

YTD VARIANCE: <31> (44%)

This variance has no significance since this task has been combined with A6415. Additional funding has been received in A6415 and will be graphically displayed next month combining A6415, A6434, and A6453.

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

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

The final Technical Evaluation Report of the Grand Gulf Nuclear Station EQ audit was completed. An audit of the Enrico Fermi Nuclear Station EQ was conducted. After the major Combustion Engineering (CE) responses were received in November, EG&G's comments on them were transmitted to CE. Further responses that were received were also commented on. Work continued on a time-available basis on Westinghouse Topical Report WCAP-8587.

Meetings with NRC personnel were attended on December 15 to discuss present and future work.

It is estimated that the work for this FIN number is 80% completed and 80% of the funding has been expended.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

The preliminary Technical Evaluation Report for the Enrico Fermi Nuclear Station will be issued. Work will continue on review of CE Topical Report CENPD, Rev. 2, and the preliminary review of Westinghouse Topical Report WCAP-8587, Rev. 2.

6. Problems and Potential Problems

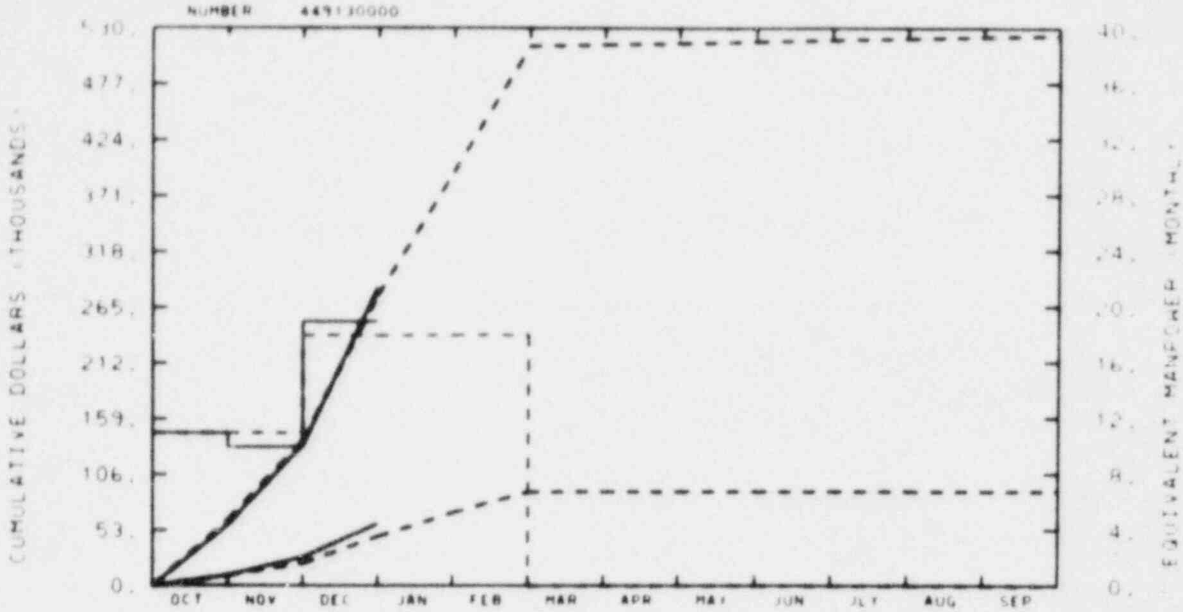
None.

RESPONSIBLE MANAGER
R. T. AFFELL

EG&G IDAHO INC.

OPER & SR OPER EXAM A6455

NUMBER 449130000



TOTAL PROGRAM

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP
BUDGET	63	138	276	393	513	514	516	517	519	520	522	523
ACTUAL	58	134	284									

MATERIAL

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP
BUDGET	10	21	47	70	90	90	90	90	90	90	90	90
ACTUAL	10	27	59									

MANPOWER

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP
BUDGET	11	11	18	18	18	0	0	0	0	0	0	0
ACTUAL	11	10	19									

BUDGET - - - - - -

ACTUAL ————

A6455

YTD VARIANCE: <8> (3%)

1. 189a A6455 - Program for the Administration of Operator and Senior Operator Examinations (III)

2. Scheduled Milestones for December 1981

Node	Description	Due Date	Actual Date
W5	Complete Basic Technology for new personnel	12-18-81T	12-18-81C

3. Summary of Work Performed in December 1981

The PWR section prepared and administered 29 written, 38 oral, and 15 simulator examinations at the Summer, Farley, Salem, and D.C. Cook Nuclear Stations. The section also worked on the preparation of written reactor operator (RO) and senior reactor operator (SRO) examinations to be administered in January at the Zion and Trojan Nuclear Stations.

The BWR section prepared and/or administered 26 written, 13 oral, and 38 simulator examinations at the Brunswick, Duane Arnold, Grand Gulf, and Quad Cities Nuclear Stations. The section also worked on the preparation of written RO and SRO examinations to be administered at the Susquehanna, Duane Arnold, and Nine Mile Point Nuclear Stations.

The new personnel in both the BWR and PWR sections completed the Basic Technology courses at the NRC Reactor Training Center.

The original members of the BWR section were scheduled to take the examiner certification examinations on December 21 and 22. The examinations were mailed from the NRC on December 18 but have not arrived.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

The PWR section will administer written and oral examinations at the Zion and Trojan Nuclear Stations. Simulator examinations will be administered to personnel from the Zion and Diablo Canyon Nuclear Stations.

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

The BWR section will administer oral examinations at the Grand Gulf Nuclear Station. Simulator examinations will be administered to personnel from the Nine Mile Point and Pilgrim Nuclear Stations.

The new personnel in both sections will complete simulator training at the TVA Training Center.

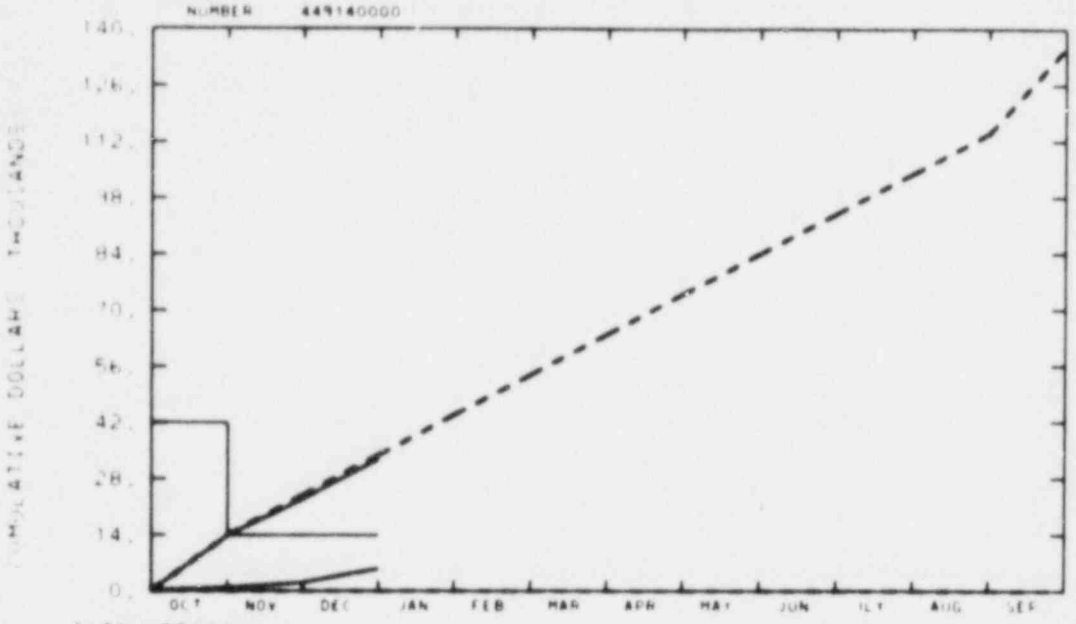
6. Problems and Potential Problems

None.

EG&G IDAHO INC

HIGH ENERGY PIPING A6456

NUMBER 449140000



TOTAL PROGRAM

BUDGET	14	24	34	44	54	64	74	84	94	104	114	124
ACTUAL	14	23	33									

MATERIAL

BUDGET	14	24	34	44	54	64	74	84	94	104	114	124
ACTUAL	1	2	6									

MANPOWER

BUDGET												
ACTUAL												

A6456

YTD VARIANCE: 1 (3%)

1. 189a A6456 - Assessment of the Potential for Unstable Rupture at Selected High Energy Piping Locations at SEP Facilities

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

The final letter report on Project 1 was completed and transmitted to the NRC. A short informal technical document on the leak rate model was also completed and sent informally to the NRC Technical Monitor. Project 1 is 90% complete (preparation time remains for the first licensee submittals). Project 2 is still 0% complete since no submittals were received this month. The entire project is 23% complete and 24% expended for the FY-1982 work scope.

4. Scheduled Milestones for January 1982

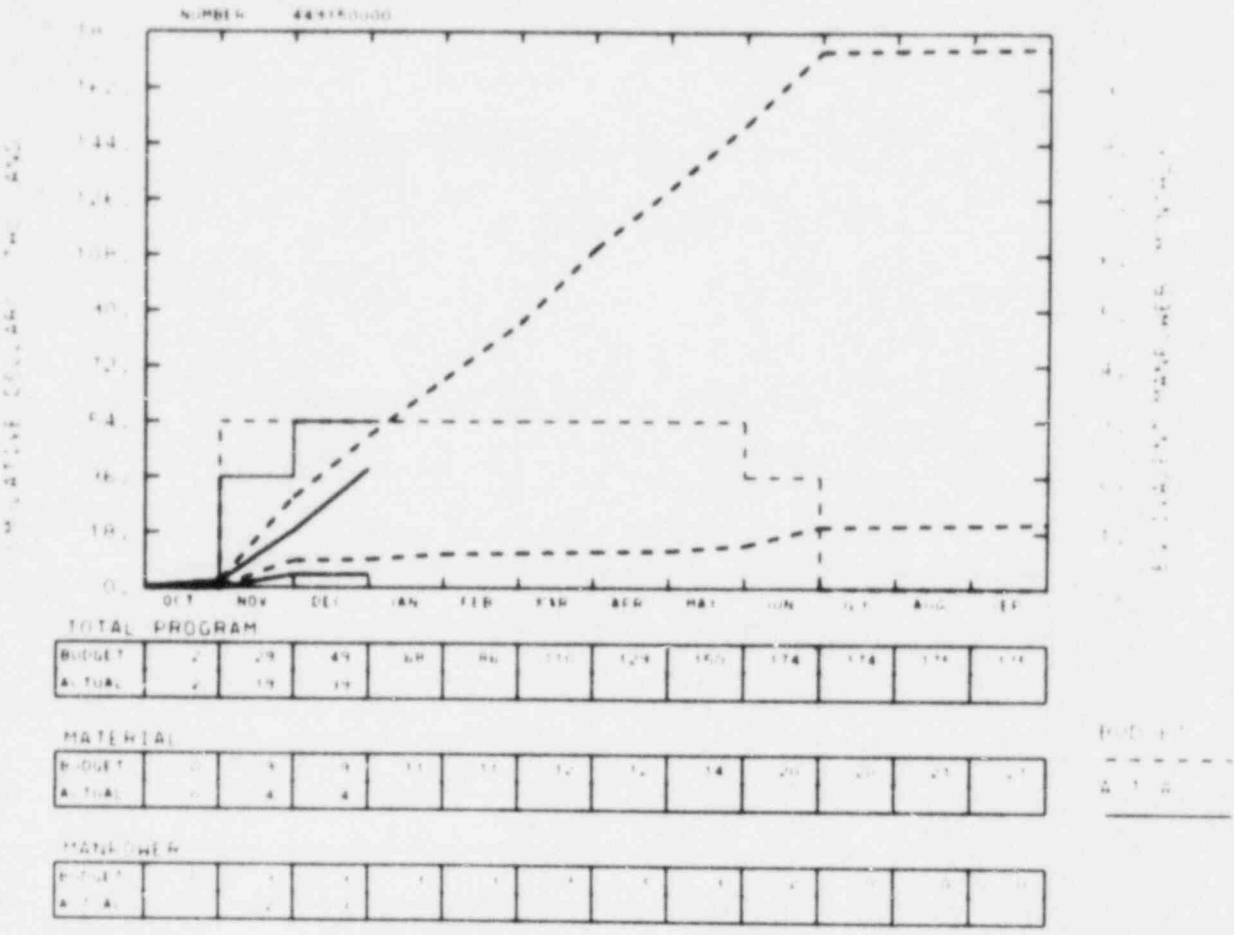
None.

5. Summary of Work to be Performed in January 1982

A meeting in Bethesda is anticipated at which several of the licensees will meet with the Technical Monitor and technical personnel from EG&G (plus their consultant, Dr. Paul Paris). This meeting should help set the schedule for the first licensees' submittals. No licensee submittals were received this last month.

6. Problems and Potential Problems

None.



A6457

YTD VARIANCE: 10 (20%)

Lack of submittals from some of the licensees has delayed work on this task. When information is received, budget and actuals will fall back in line.

1. 189a A6457 - Control of Heavy Loads Case Reviews

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

Twenty of 26 Phase I submissions have been assigned to the EG&G reviewers. Assignments have been made in accordance with the priority list sent by the NRC.

A format that coincides with the Franklin Research Center format has been developed. A goal of transmitting four rough draft TERs per month to the NRC was established.

Letters concerning delinquent and inadequate Phase I submittals were sent to the NRC via DOE-ID.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Reviews will continue in accordance with the priority list.

Four rough draft TERs will be sent to the NRC.

The work scheduled for FY-1982 is about 15% complete and expended, based in an expended FY-1982 funding of $295K.

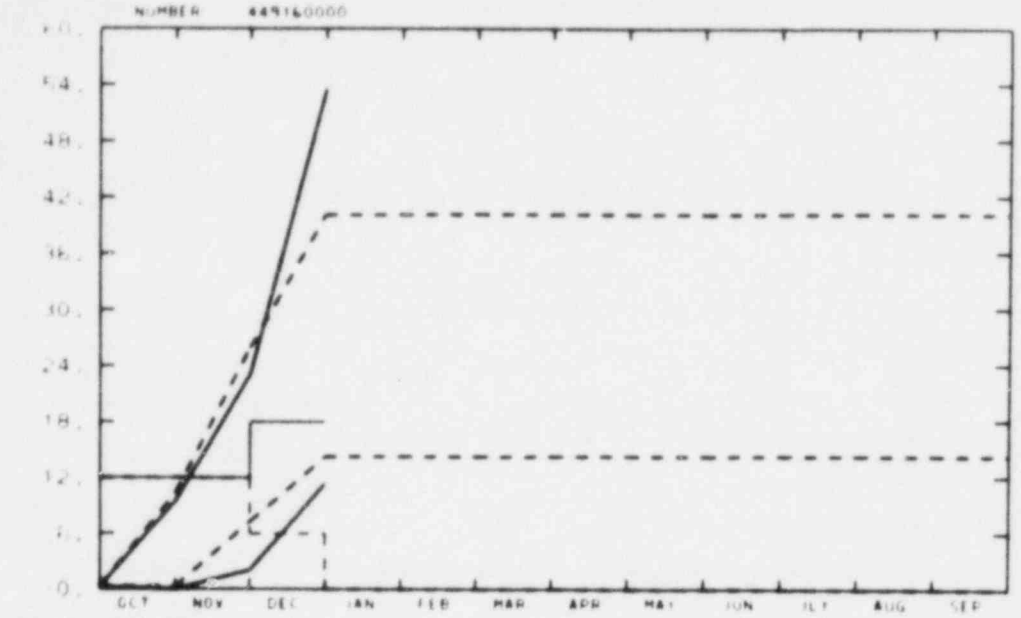
6. Problems and Potential Problems

The inadequate drawings submitted for Callaway 1 and 2 (Saff-357-81) and the delinquent submissions listed in Saff-365-81 make it likely that the projected Phase I completion date (January 31, 1982 for the first 26 plants) will not be met.

EG&G IDAHO INC.

MATERIAL ENG'G CAT E REV A6458

NUMBER 449160000



TOTAL PROGRAM

BUDGET	10	26	40	40	40	40	40	40	40	40	40	40
ACTUAL	9	27	53									

MATERIAL

BUDGET			14	14	14	14	14	14	14	14	14	14
ACTUAL			11									

MANPOWER

BUDGET												
ACTUAL												

A6458

YTD VARIANCE: <13> (33%)

An additional $177K has been received. With the new funding budgeted in this task, budget and actuals will agree.

1. 189a A6458 - Materials Engineering Case Reviews IV

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

NDE/PSI Tasks:

Byron 1: A preservice inspection (PSI) plan was received in preparation for a January 5th meeting with the Applicant. This task is approximately 5% complete.

The following plants had no work this month. Their status is as indicated below:

Plant	Percent Complete
Watts Bar 1	30
Watts Bar 2	0
Grand Gulf 2	0
McGuire 2	0
Bellefonte 1	0
Bellefonte 2	0
St. Lucie 2	0
Clinton 1	0
Byron 2	0
Wolf Creek	0
Catawba 1	0
Catawba 2	0

General: Overall, the FY-1982 tasks on PSI are approximately 2% complete and 13% expended based on an assumed budget of $66.2K for FY-1982 and completing 3.2 plants. However, because sister plants (e.g., Byron Units 1 and 2) are not being reviewed simultaneously, separate reviews performed at different times and to different review criteria are increasing both the work scope and cost to complete the project over initial estimates. Resolution of the work scope with DOE-ID and NRC Technical Monitors is anticipated during the month of January; based upon this assumption, the percent complete and percent expended figures for next month are expected to change significantly from those cited here.

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

Materials Tasks:

Perry 1: The draft SER on materials was informally transmitted to the NRC Technical Monitor during a December 13-17, 1981, trip to Bethesda. Questions were raised on the limiting materials in the reactor coolant pressure boundary. The response will be informally transmitted to the NRC Technical Monitor. This task is about 50% complete.

Midland 2: At the request of the NRC Technical Monitor, the draft SER was written during September 20-24, 1981, trip to the NRC in Bethesda. This task is about 60% complete.

Wolf Creek: The final SER for this plant will be written after the applicant has submitted responses to the requests for more information. The NRC Technical Monitor has notified the applicant and anticipates a reply during late December or January. The final SER will be completed five weeks after receipt of data. This task is about 40% complete.

No work was performed on the following plants during December. However, the status for each is listed here as a matter of record.

Plant	Percent Complete
Clinton 1	40
Seabrook 1	70
Catawba	0
S. Texas	0
River Bend	0

The Materials Tasks are about 33% complete overall and 19% expended based upon an assumed Materials budget of $209K.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

NDE/PSI Tasks:

Byron 1: At the request of the NRC Technical Monitor, two EG&G NDE engineers will participate in a January 5th meeting between the Applicant and the NRC in Bethesda. Following the meeting, a draft SER will be prepared.

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

Materials Tasks

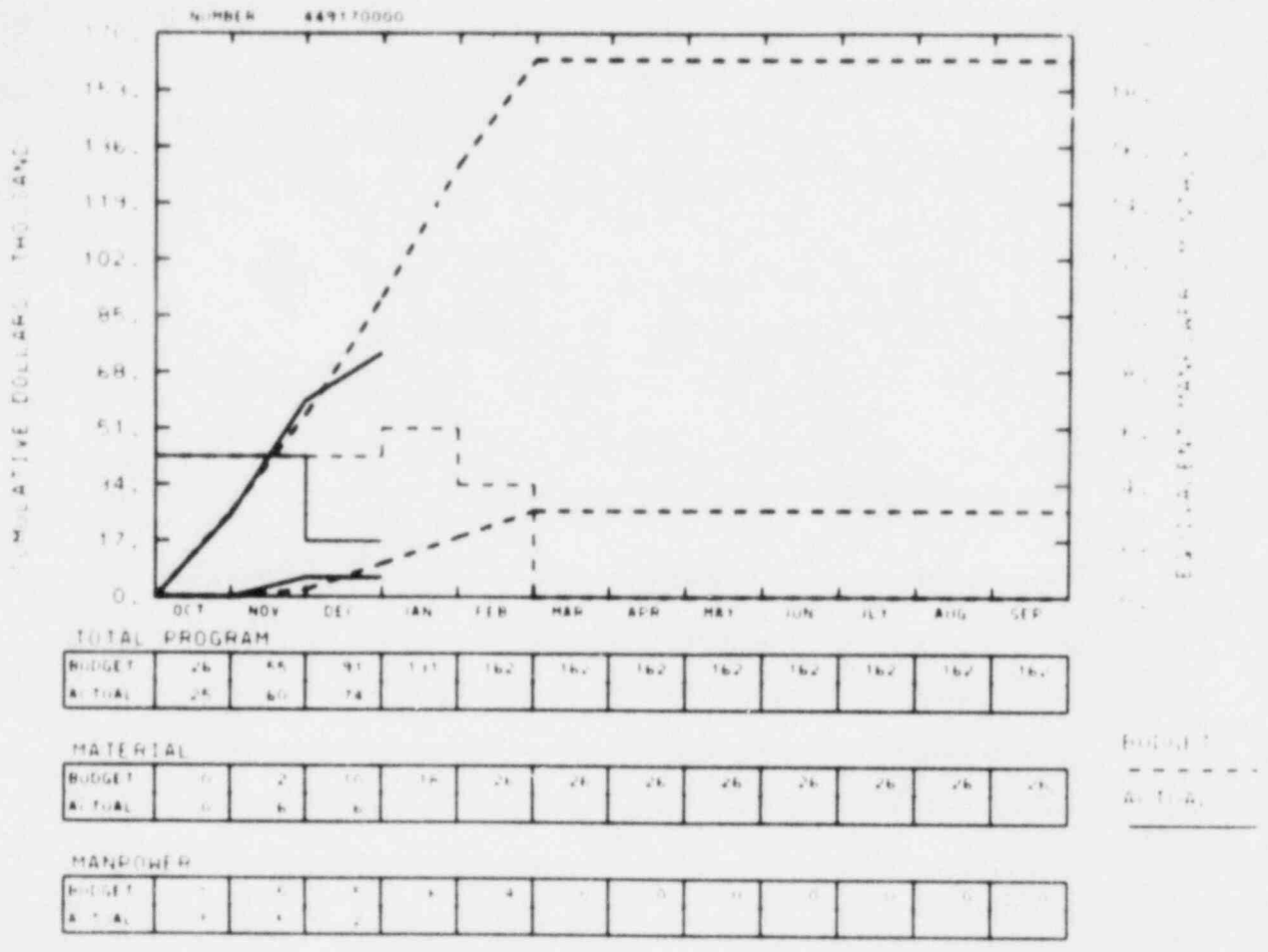
Midland 2 The NRC Technical Monitor requested INEL personnel to review NUREG-0744 with respect to Midland 2's limiting materials. This is not strictly within the 189a A6458's work scope. The cost impact will be determined after completion of the Midland final SER.

Perry 1 A list of the limiting materials in the reactor coolant pressure boundary was requested by the NRC Technical Monitor. This list will be sent to the NRC.

Wolf Creek The NRC Technical Monitor will contact EG&G personnel when the applicant response is received. EG&G personnel will probably travel back to NRC at that time.

6. Problems and Potential Problems

Review of sister units of a given facility (e.g., Watts Bar 1 and 2) at separate times and to different criteria is expected to impact estimated cost to complete these plants; initial estimates were based on simultaneous review of sister plants.



A6459

YTD VARIANCE: 17 (19%)

The inability to schedule plant visits coupled with vacations taken in December have created a budget underrun.

1. 189a A6459 - RETS Implementation for Operating Reactors

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

EG&G technial personnel have performed the following tasks:

The Prairie Island Offsite Dose Calculation Manual (ODCM) and Process Control Program (PCP) were reviewed and a list of questions generated. These questions were submitted to NRC for transmittal to the plant personnel prior to scheduling a visit to the plant.

The Monticello and Fort Calhoun Radiological Effluent Technical Specifications (RETS) and ODCM were reviewed and questions generated and submitted to the NRC for transmittal to the plant personnel.

4. Scheduled Milestones for January 1982

Node	Description	Due Date	Actual Date
	Complete review of first five plants	1-29-82T	

5. Summary of Work to be Performed in January 1982

EG&G technical personnel will meet with Fort Calhoun plant personnel to discuss their RETS document.

The four Commonwealth plants, Zion, Quad Cities, Dresden 1 and 2, and Dresden 3, RETS will be reviewed and questions generated prior to a projected visit to the Corporate Office in February to discuss their RETS documents.

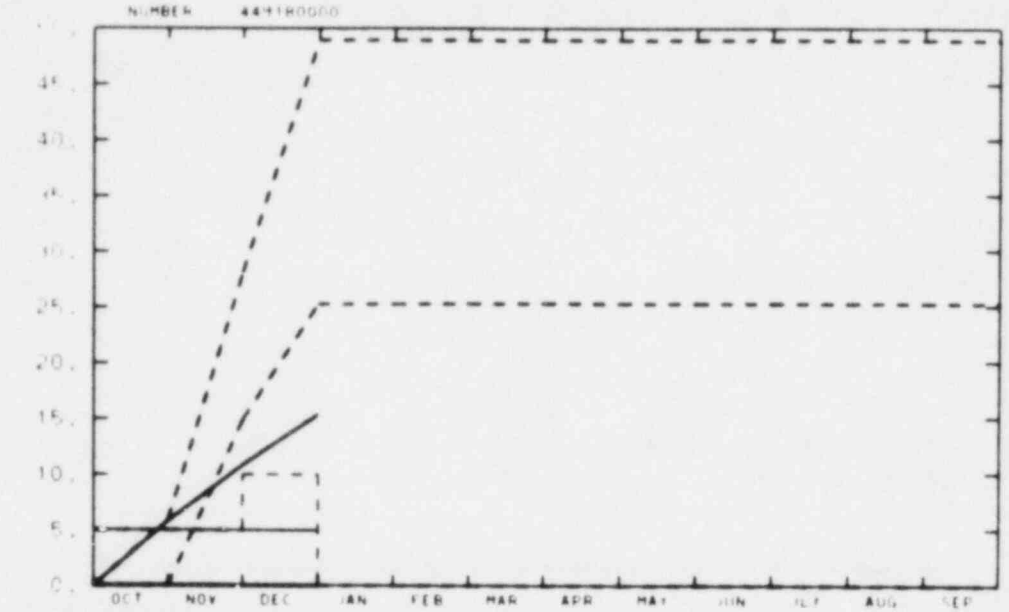
6. Problems and Potential Problems

Because of the inability to schedule plant visits in December and January, the milestone for completing the review of the first five plants will have to be renegotiated. We are still having problems getting visits scheduled to the plants, however it does appear that we are getting better cooperation from the utilities in making these appointments.

EG&G IDAHO INC.

AFF [illegible] TREAT BR TECH PR A6460

NUMBER 4491R0000



TOTAL PROGRAM

BUDGET	6	28	49	49	49	49	49	49	49	49	49	49
ACTUAL	6	11	15									

MATERIAL

BUDGET	0	15	25	25	25	25	25	25	25	25	25	25
ACTUAL	0	0	0									

MANPOWER

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

BUDGET

ACTUAL

A6460

YTD VARIANCE: 34 (69%)

1. 189a A6460 - Effluent Treatment Systems Branch Technical Projects

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

EG&G technical personnel have performed the following tasks:

a. Initial review of the NUREG-0017 has been completed. The table of questions, comments and recommendations has been completed and was submitted to NRC.

b. We have received from the NRC the name of a utility contact for the five plants to be visited on the hydrogen-oxygen task. Telephone contact was made with Mr. Norman Burnett of Connecticut Yankee Atomic Power Company. Arrangements were made to visit the Haddam Neck plant the week of January 25, 1982.

c. Information was received from the NRC for the rview of the Chem Nuclear Waste Solidifaction System topical report. The review of this topical report was initiated.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Await NRC comments on EG&G recommended changes to NUREG-0017. Visit NRC to discuss the recommendations, if requested.

Visit Haddam Neck plant for H_2-O_2 subtask. Arrange visits to other plants when contacts are received from NRC.

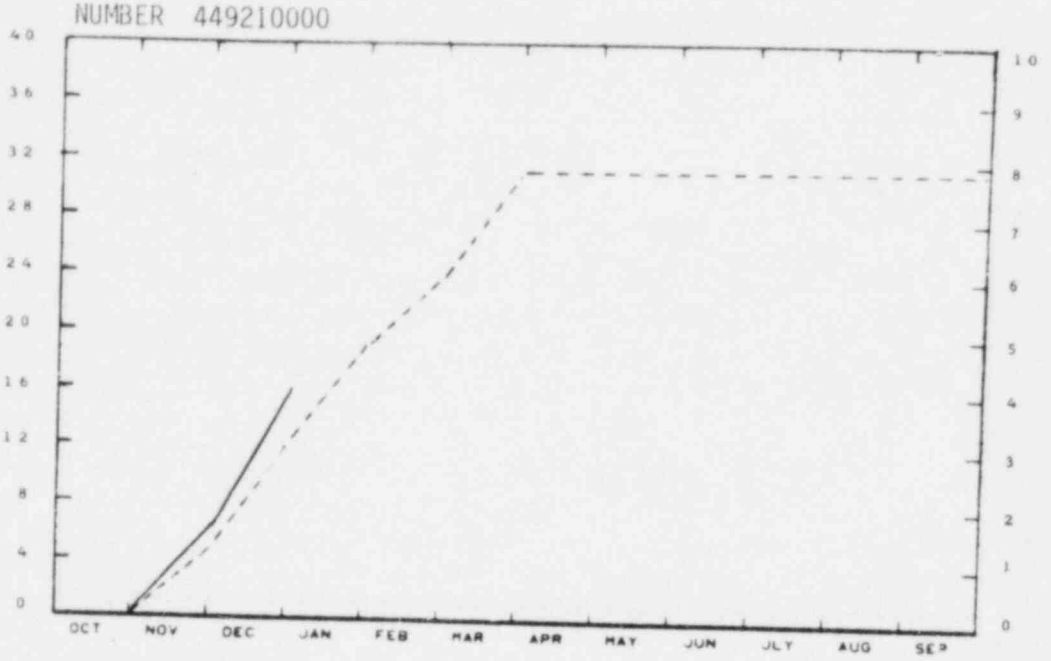
Continue review of Chem Nuclear topical report.

6. Problems and Potential Problems

None.

RESPONSIBLE
MANAGER
B F Saffell

EG&G IDAHO, INC.
DEV OF LICENSING GUIDELINES
NUMBER 449210000



TOTAL PROGRAM

BUDGET	0	5	12	19	24	31	31	31	31	31	31	31
ACTUAL	0	7	16									

MATERIAL

BUDGET	0	5	12	19	24	31	31	31	31	31	31	31
ACTUAL	0	7	16									

MANPOWER

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

BUDGET
ACTUAL

A6463

YTD VARIANCE: <4> (33%)

1. 189a A6463 - Development of Licensing Guidance for DC Power Systems Reliability (A30)

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

Task 1 (Reviews and Evaluations of NUREG-0666) Work on this project was held up pending receipt of NRC comments on the EG&G Idaho, Inc. initial draft report addressing Tasks 1 and 2.

Task 2 (Review and Evaluation of DC Systems Status Monitoring) Same as Task 1 (Included in Task 1 document).

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

The report which includes both Task 1 and 2 requirements will be formally transmitted to the NRC.

6. Problems and Potential Problems

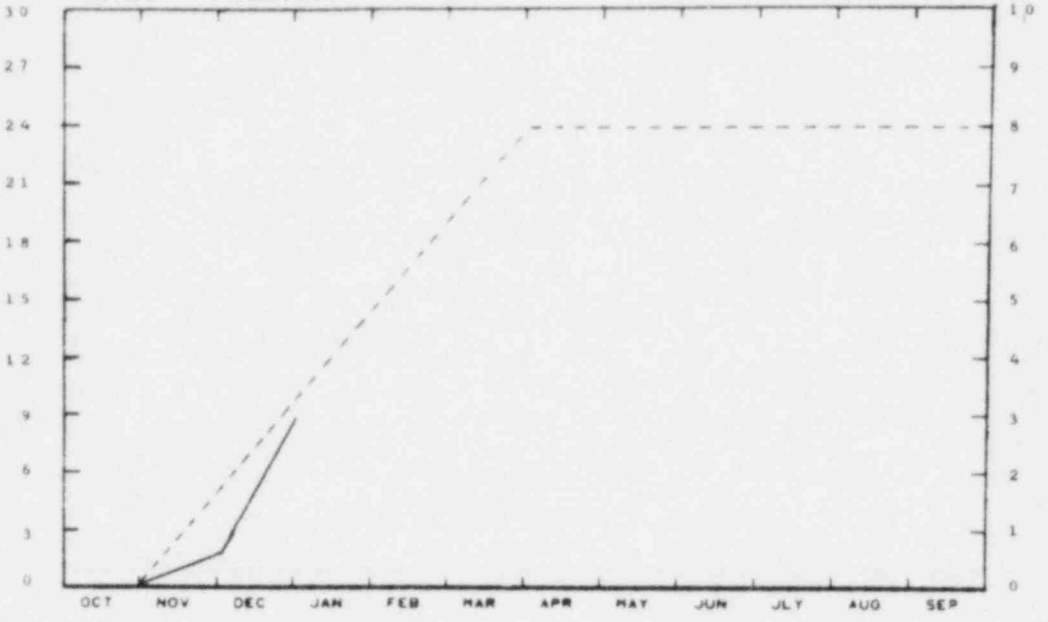
Project may be delayed by one week pending receipt of NRC comments on initial draft report.

RESPONSIBLE
ANAGER
F Saffell

EG&G IDAHO, INC.

CORRELATION OF FRACTURE TOUGH PROP

NUMBER 449220000



TOTAL PROGRAM

BUDGET	0	5	10	15	20	25	25	25	25	25	25	25
ACTUAL	0	2	9									

MATERIAL

BUDGET	0	5	10	15	20	25	25	25	25	25	25	25
ACTUAL	0	2	9									

BUDGET - - - - -

ACTUAL ———

MANPOWER

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

A6464

YTD VARIANCE: 1 (10%)

1. 189a A6464 - Fracture Mechanics Review

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

The NRC Technical Monitor has indicated that it is not possible to fund EG&G's proposal to review a much larger data base. EG&G personnel are continuing to work on analyzing the data they have found so far. A consultant will be used to help EG&G Idaho personnel statistically analyze the Charpy V-notch (CVN) data.

During a December 15, 1981 visit to EG&G, NRC/Division of Engineering personnel questioned whether the completion date for this task was March 1982 or May 1982. The current date is May 31, 1982.

This task is about 10% complete and 15% expended.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

A consultant is scheduled to come to INEL to help EG&G Idaho personnel analyze the CVN data.

6. Problems and Potential Problems

None

189a A6466

1. 189a A6466 - CRBR PSAR Chapter 7 Review

2. Scheduled Milestones for December 1981

None.

3. Summary of Work Performed in December 1981

A meeting was held on December 14, 1981 to discuss CRBRP safety related instrument and control systems with NRC and various design companies. On December 15, 1981 EG&G engineers met with NRC CRBR DSI personnel to discuss the review details.

4. Scheduled Milestones for January 1982

None.

5. Summary of Work to be Performed in January 1982

Review will start on Chapter 7 of the PSAR for the CRBR review. A meeting will be held with NRC personnel to discuss progress.

6. Problems and Potential Problems

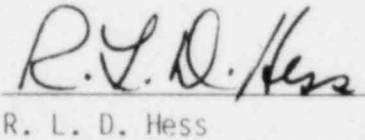
None

MONTHLY REPORT FOR

DECEMBER 1981

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	$ 125	EG&G $ 27.5 M-K $ 44.0

Task Initiated ○
Task Completed △