



Pacific Northwest Laboratories

P.O. Box 999

Richland, Washington 99352

Telephone (509) 376-3392

Telex 32-6345

August 8, 1980

Mr. Darrell G. Eisenhut, Director
Division of Operating Reactors
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Darrell:

Enclosed are ten copies of the Pacific Northwest Laboratory's bimonthly activities report for distribution to the appropriate technical program monitors. The next report will cover the months of August and September 1980.

Best regards,

A handwritten signature in dark ink, appearing to read "W.A. Glass", with a long horizontal flourish extending to the right.

W. A. Glass, Manager
Radiological Sciences Department

WAG:jms

Enclosures

cc: T. Telford (NRC-DOR)
M. Tokar (NRC-DOR)
H. E. Ransom (DOE-RL)

X003
S
/ / /

8008120476

Pacific Northwest Laboratory
Bimonthly Activities Report
June - July 1980

Radioactivity Control and Radiation Safety^(a)
L. G. Faust, Project Manager

PROGRAM OBJECTIVE

The objective of the Radioactivity Control and Radiation Safety Program is to provide technical assistance and support to the Environmental Evaluation Branch, Division of Operating Reactors, in areas related to control of radioactivity and radiation safety such that licensing actions can proceed in an expeditious manner.

The work scope for FY 1980 addresses the following specific areas that require technical assistance:

Task 1 - Technical Evaluation of ESF Filter Performance - This task will include the review and evaluation of proposals by five licensees to change plant technical specifications for engineered safety feature (ESF) filter ventilation systems. Included in each evaluation will be an examination of the impact of the proposed changes on the system's ability to function as intended.

Task 2 - Review of Non-Power-Reactor License Renewal Applications - Included in this task is the technical review and evaluation of approximately 30 applications for renewal of non-power-reactor licenses. Two areas will be examined and evaluated: safety and radiological environmental impact.

Task 3 - Review of Decontamination Experience and Technology - Under this task, state-of-the-art decontamination processes will be reviewed. Specifically, the latest information about new techniques and methods for decontaminating reactor systems and components, the containment, and the area immediately surrounding the reactor will be collected. A literature survey will be performed for information pertaining to reactor systems and components. Ongoing decontamination projects will also be scrutinized for applicable information. The most extensive information on new techniques for containment cleanup and local decontamination will be obtained through interviews with individuals who are currently applying the techniques. Finally, the currently available techniques will be tabulated and the prime contenders for applicability will be identified.

(a) FIN No. B-2313 (TDO-1227)

PROGRESS THIS BIMONTHLY PERIOD

Task 1 - ESF Filter Performance Evaluation

B. V. Andersen

No requests for reviews were received during this bimonthly period.

Task 2 - Review of Non-Power-Reactor License Renewal Applications

R. L. Kathren

This task took a change in direction. Millard Wohl, NRC, the new contract administrator for this project, indicated in a telephone call that the thrust of the project was to become the development of accident scenarios and related information for non-power reactors, especially TRIGA reactors. Specific information about our capabilities and expertise in these areas and about time commitments over the balance of this fiscal year and next year was requested.

Over the course of several conversations, Mr. Wohl was advised of the existing PNL staff's specific capabilities with regard to TRIGA reactors and the anticipated addition of a new staff member with capabilities in this area who would be available on a half-time basis beginning in September or October 1980. A visit will be made to NRC headquarters to discuss with NRC management (including M. Wohl and J. Miller) the new direction of the project as well as potential additional funding. The meeting has been tentatively scheduled for mid-August.

Task 3 - Review of Decontamination Experience and Technology

G. R. Hoenes, J. R. Divine and L. D. Perrigo

Efforts on review and summarization of documents located in the literature search have been minimal because of commitments on other programs. However, the computer code for analyzing occupational dose has been written and implemented on the HP-1000 computer. Testing and debugging operations are currently under way.

PLANS FOR NEXT BIMONTHLY PERIOD

Task 1 - ESF Filter Performance Evaluation

Reviews will be conducted as the proposed revisions are received.

Task 2 - Review of Non-Power-Reactor License Renewal Applications

A meeting will be held with NRC management to discuss the future direction of and funding for this task. Efforts for the next reporting period will be dependent on the outcome of this meeting.

Task 3 - Review of Decontamination Experience and Technology

With the addition of staff to the literature review portion of this task, the progress made should be substantial enough to put the task back on schedule.

It is also expected that the computer code will be completely debugged and ready for use by the end of the next bimonthly period.

PROGRAM COSTS

<u>Task Designation and Title</u>	<u>Budget, \$</u>	<u>Cost to Date, \$ (7/27/80)</u>	<u>Remaining Funds, \$</u>	<u>Percent Expended</u>
<u>Task 1</u>				
ESF Filter Performance Evaluation	25,000	7,006	17,994	28
<u>Task 2</u>				
Review of Non-Power- Reactor License Renewal Applications	45,000(a)	670	44,330	1
<u>Task 3</u>				
Review of Decontamination Experience and Technology	81,000	40,299	40,701	50
	<u>151,000(b)</u>	<u>47,975</u>	<u>103,025</u>	<u>32</u>

- (a) The initial funding for this task was \$60,000. As discussed in a letter dated May 12, 1980, \$15,000 was transferred from this task to another project (FIN No. B-2315) to provide funding for completion of that project. This funding also includes subcontracts to the University of Washington and Reed College for assistance with this project.
- (b) This total is for committed funds only. The actual budgeted total is \$180,000, \$29,000 of which is not committed at this time.

Pacific Northwest Laboratory
Bimonthly Activities Report
June - July 1980

Fuel Operational Performance^(a)
W. J. Bailey, Program Manager

PROGRAM OBJECTIVE

The objective of the Fuel Operational Performance Program is to provide technical assistance to the Division of Operating Reactors on safety-related fuel problems as outlined in task descriptions. The assistance is to be in the form of technical consultation in the area of operating reactor fuel performance, including short-term on-call assistance and long-term studies. Performance of fuel in operating reactors is examined under both steady state and transient operation, and nuclear fuel performance in domestic and foreign reactors is compiled and analyzed.

The work scope for FY 1980 includes these elements:

- providing on-call assistance to the staff of the Reactor Safety Branch regarding safety-related problems associated with LWR fuel systems. This task covers short-term consultation work on nuclear fuel-related problems, which was not anticipated at the beginning of the fiscal year. The task includes review of topical reports, calculations, and attendance at meetings when requested by the technical contact.
- incorporating the NRC reviewers' suggestions in the assessment of current onsite (poolside) techniques for inspecting fuel systems (the Phase I report), and completing the nonproprietary camera-ready report.^(b)

PROGRESS THIS BIMONTHLY PERIOD

On-Call Assistance Task

Subtask - Corrosion Calculations
D. D. Lanning and W. N. Rausch

(a) FIN No. B-2151 (TD0874)

(b) This assignment is to be completed using only carryover funds from FY 1979.

This assignment was completed in November 1979 and no additional work has been requested by NRC.

Subtask - Mixed-Oxide Fuel Temperature Calculations
F. E. Panisko, M. E. Cunningham, D. D. Lanning, and W. N. Rausch

This assignment was completed in February 1980 and no additional work has been requested by NRC.

Phase 1 Report - Assessment of Current Onsite Inspection Techniques for Light Water Reactor Fuel Systems
W. J. Bailey, C. J. Morris, F. R. Reich, and K. L. Swinth

The camera-ready material for Volume 1 of the report, NUREG/CR-1380 (PNL-3325), was transmitted to the NRC on June 25. Volume 1, the executive summary, contains four sections: Summary, Introduction, Overview, and Experience with Onsite Inspection of Fuel Systems (General Comments, Time and Personnel Requirements, and Space Requirements). Volume 2, which contains the discussion of the inspection techniques, is being carefully re-examined to prevent disclosure of proprietary material and to recheck the identification of more than 100 references in the text.

PLANS FOR NEXT BIMONTHLY PERIOD

On-Call Assistance Task

Subtask - Corrosion Calculations

No further work is planned unless a request for additional calculations is received from NRC.

Subtask - Mixed-Oxide Fuel Temperature Calculations

No further work is planned unless a request for additional calculations is received from NRC.

Phase 1 Report - Assessment of Current Onsite Inspection Techniques for LWR Fuel Systems

The camera-ready material for Volume 2 of the report will be transmitted to NRC.

PROGRAM COSTS

<u>Task Designation and Title</u>	<u>Budget, \$</u>	<u>Cost to Date, \$ (7/27/80)</u>	<u>Remaining Funds, \$</u>	<u>Percent Expended</u>
<u>Task A</u>				
On-Call Assistance	30,000(a)	10,534	19,466	35
<u>Phase 1 Report</u>				
Assessment of Current Onsite Inspection Techniques for LWR Fuel Systems	19,298(b)	19,117	181	99
	<hr/>	<hr/>	<hr/>	<hr/>
	49,298	29,651	19,647	60

(a) Order No. 20-80-60 (NRC Form 173); TD0874, Supplement No. 9.

(b) FY 1979 carryover.

Pacific Northwest Laboratory
Bimonthly Activities Report
June - July 1980

Fuel Operational Performance -- Generic^(a)

W. J. Bailey, Program Manager

PROGRAM OBJECTIVE

The objective of the Fuel Operational Performance -- Generic Program is to provide technical assistance to the Division of Operating Reactors in the area of nuclear reactor fuel safety. The work scope for FY 1980 involves one task:

Preparing and publishing an annual fuel experience report that would include information such as appears in licensee event reports, transmittals to NRC, and fuel experience data sources.

This task is to provide a report on the performance of nuclear fuel in operating U.S. reactors, with an emphasis on abnormal conditions. Pertinent foreign experience will be included. Publication of the joint PNL/NRC report was planned for July 1980.

The report will provide a review of significant abnormal behavior in light water reactor fuel during the previous year. It will include a description of the problem, a summary of the NRC response, and an analysis of the event. The analysis should place the event into perspective in terms of its impact on reactor safety and operation and whether the event has occurred before or is first of a kind. The NRC has furnished a suggested outline for the report. The outline will be refined and the exact events to be included will be established on consultation with the technical contact.

PROGRESS THIS BIMONTHLY PERIOD

Task A - Annual Report on Operating Reactor Fuel Performance
C. Nealley and W. J. Bailey

The effort to search for and critically review pertinent sources of data on fuel experience in CY 1979 is continuing, but at a reduced pace as suggested by NRC on April 22. At that time, NRC indicated that there would be some change in how this joint NRC/PNL report is assembled and in PNL's role. As these changes are still under study at NRC, PNL suggested to M. Tokar on June 16 that NRC consider shifting the task milestone from July to September.

(a) FIN No. B-2320 (TD1255)

In the latter part of June, NRC indicated that approximately half of the remaining funds on this task are to be diverted to support another NRC study at PNL. At that time, the effort on this task was reduced to a very low level to conserve the remaining funds until further guidance is received from NRC.

PLANS FOR NEXT BIMONTHLY PERIOD

Task A - Annual Report on Operating Reactor Fuel Performance

The effort on this task will be increased when guidance on the preparation of this report is received from NRC.

PROGRAM COSTS

<u>Task Designation and Title</u>	<u>Budget, \$</u>	<u>Cost to Date, \$ (7/27/80)</u>	<u>Remaining Funds, \$</u>	<u>Percent Expended</u>
Task A(a) Annual Report of Operating Reactor Fuel Performance	30,000(b)	9,407	20,593	31

- (a) Previously listed as Task B under the Fuel Operational Performance Program.
(b) Order No. 20-80-62 (NRC Form 173); TD 1255.

Pacific Northwest Laboratory
Bimonthly Activities Report
June - July 1980

In-Service Inspection and In-Service Testing^(a)
T. T. Taylor, Project Manager

PROGRAM OBJECTIVES

The objectives of this program are to assist NRC staff in reviewing in-service testing programs to assure conformance with 10 CFR 50.55a (g), and to develop procedures for reviewing in-service testing programs.

These objectives will be accomplished through the following tasks:

- Task 1: Analyze appropriate codes, regulations and NRC staff positions pertaining to in-service testing programs.
- Task 2: Review in detail each facility's inspection program for compliance with the intent of 10 CFR 50.55a (g), including request for relief from the requirements of 10 CFR 50.55a.
- Task 3: Submit to NRC QI questions on the facility's inspection program and evaluate licensee's response to QI questions.
- Task 4: Provide input and recommendations to NRC on in-service testing programs.

PROGRESS THIS BIMONTHLY PERIOD

The following Safety Evaluation Reports were completed and forwarded to NRC:

- LaCrosse Boiling Water Reactor
- Brunswick Units 1 and 2

Discussions about ISI programs were concluded with the following utilities:

- Quad Cities Units 1 and 2
- Trojan Nuclear Power Plant

Data acquisition related to the program for evaluating various DAC (distance amplitude curve) recording level criteria has been completed.

(a) FIN No. B-2157

PLANS FOR NEXT BIMONTHLY PERIOD

The Safety Evaluation Reports for Quad Cities Units 1 and 2 and Trojan Nuclear Power Plant will be completed. The final technical report for evaluation of DAC recording level criteria will also be completed.

PROGRAM COSTS

<u>Budget, \$</u>	<u>Cost to Date, \$</u>	<u>Remaining Funds, \$</u>	<u>Percent Expended</u>
385,000	249,685	135,315	64.8

Pacific Northwest Laboratory
Bimonthly Activities Report
June - July 1980

Cost/Benefit Analysis of Steam Generator In-Service Inspection^(a)
G. E. Zima, Project Manager

PROGRAM OBJECTIVE

The objective of this program is to analyze the cost effectiveness of various strategies for the inspection of in-service PWR steam generators. This analysis will be performed under the constraint of keeping radiation exposure at as low a rate as is reasonably achievable.

The work scope for FY 1980 comprises the following study areas:

- Quantification of the time required, expected personnel exposure, and associated costs for the various phases of in-service inspection and for the tube-plugging operation.
- Calculation, for a range of parameters, of the increased costs associated with in-service inspection programs that are more comprehensive than those in current practice.
- Calculation of the costs of unscheduled outages for the principal parameters affecting unscheduled outage costs.
- Analysis of possible trade-offs between an expanded in-service inspection strategy and the number and associated costs of unscheduled outages attributable to steam generator failure.
- Collection and analysis of foreign in-service inspection strategies for PWR steam generators; the impact of these inspection practices on unscheduled outages that are attributable to steam generator failure.

PROGRESS THIS BIMONTHLY PERIOD

General Information

Following completion early in June of the draft for the first formal report summarizing the work under this program, there has been no additional activity on this program. Supplementary funding in the amount of \$15K has been requested to satisfy the current deficit in program funding, which was incurred pursuant to accomplishing the scope for the first formal report desired by the sponsor.

(a) FIN No. B-2315

Task I Activity

A draft of the first formal report under this program, Some Aspects of Cost/Benefit Analysis for Inservice Inspection of PWR Steam Generators, NUREG/CR-1490, was completed and review copies were distributed to the sponsor, cognizant PNL personnel, and industrial organizations early in June. Pending receipt of review comments, there has been no further work on this program.

Task II Activity

Program budget limitations have excluded any work on this task apart from the preliminary contacts with the Battelle-Frankfurt laboratory noted in previous bimonthly reports.

PLANS FOR NEXT BIMONTHLY PERIOD

Task I

Assuming that only minor changes in the first formal report will be required, a final draft of NUREG/CR-1490 will be submitted to the sponsor. If the final draft is acceptable, a printing-ready master of the report will be sent to NRC's TID for publication and distribution. Sponsor-requested report changes requiring PNL action outside the scope of the expected supplementary funding of \$15K will require further funding negotiation with the sponsor.

Task II

Any Task II work would be performed under second stage sponsorship of this program during the remainder of FY 1980 or during FY 1981.

PROGRAM COSTS

<u>Task Designation and Title</u>	<u>Budget, \$</u>	<u>Cost to Date, \$ (8/1/80)</u>	<u>Remaining Funds, \$</u>	<u>Percent Expended</u>
<u>Task I</u>				
SG ISI C/B Analysis for USA PWR Units	80,000	94,000(a)	(14,000)(b)	
<u>Task II</u>				
SG ISI Analysis for Foreign Units	0(c)			

(a) Estimated costs by 8/1/80.

(b) Estimated deficit as of 8/1/80.

(c) The accelerated report schedule for Task I work permitted virtually no budget allotment to Task II under current funding.

Pacific Northwest Laboratory
Bimonthly Activities Report
June - July 1980

Thermal-Hydraulic Evaluation of PWR Steam Generator Tube Rupture^(a)
G. M. Hesson, Project Manager

PROGRAM OBJECTIVE

The objective of this program is to develop a means for analyzing fission product transport for this accident case: a main steam line break coincident with the rupture of one or more steam generator tubes. Source terms to the primary coolant, which are supplied by NRC, and thermal-hydraulic conditions in the primary and secondary loops, which are supplied by Brookhaven National Laboratory, will be used in this analytical method to determine atmospheric source terms for NRC.

PROGRESS THIS BIMONTHLY PERIOD

No progress was made on calculations for the Combustion Engineering plants or Westinghouse four-loop plants for lack of IRT input from Brookhaven National Laboratory. A draft of the final report covering the description of the mathematic modeling was continued.

PLANS FOR NEXT BIMONTHLY PERIOD

Upon receipt of IRT input, further calculations will be made for the Combustion Engineering and Westinghouse four-loop plants.

PROGRAM COSTS

<u>Budget, \$</u>	<u>Cost to Date, \$</u> <u>(7/27/80)</u>	<u>Remaining</u> <u>Funds, \$</u>	<u>Percent</u> <u>Expended</u>
75,000	51,100	23,900	68

(a) FIN No. B-2314.

Pacific Northwest Laboratory
Bimonthly Activities Report
June - July 1980

Thermal Hydraulics Evaluation/Reload^(a)
G. M. Hesson, Project Manager

PROGRAM OBJECTIVE

The objective of this program is to provide on-call technical assistance to the NRC Division of Operating Reactors relating to the thermal-hydraulic performance of operating nuclear power reactors.

PROGRESS THIS BIMONTHLY PERIOD

One last iteration with Exxon calculations bearing on the Fort Calhoun reactor reload was made.

PLANS FOR NEXT BIMONTHLY PERIOD

No work is planned for the next bimonthly period pending direction from the NRC technical sponsor concerning further work on the variable axial R-factor problem.

PROGRAM COSTS

<u>Budget, \$</u>	<u>Cost to Date, \$</u> <u>(7/27/80)</u>	<u>Remaining</u> <u>Funds, \$</u>	<u>Percent</u> <u>Expended</u>
\$59,000	50,500	8,500	85

(a) FIN No. B-2153.

Pacific Northwest Laboratory
Bimonthly Activities Report
June - July 1980

Radiological Assessment of Steam Generator Removal and Replacement^(a)
G. R. Hoenes, Project Manager

PROGRAM OBJECTIVES

There are two objectives in connection with this project:

- to revise the September 1978 report, Radiological Assessment of Steam Generator Removal and Replacement (NUREG/CR-0199). This revision will be based on the work performed at Surry Unit 2 and on plans for replacement and repair submitted to NRC by Turkey Point and Palisades
- to evaluate the radiological impact of steam generator retubing and refurbishment.^(b)

Through these tasks, the Environmental Evaluation Branch will receive technique assistance in the area of radiological assessment of the proposed alternative methods of steam generator removal.

Under Task 1, NUREG/CR-0199 will be revised. This task will include an assessment of the occupational dose incurred during steam generator repair and an evaluation of the radiological impact of effluents resulting from the repair work. The report will include new data on these subjects and a comparison of the new information with data accumulated during the repair effort at Surry Unit 2.

Task 2 will be an assessment of the impact of steam generator retubing and refurbishment, as follows:

- evaluation of the environmental impact resulting from direct radiation and effluents
- estimation of the occupational dose incurred during the repair effort
- assessment of the ability to maintain occupational doses as low as is reasonably achievable
- discussion of alternative ways to reduce doses

(a) FIN No. B-2322

(b) As outlined in the Westinghouse topical report, WCAP-9298.

- estimation of the radiological effluents, including solids, liquids, and gases, that occur during repair.

The report that results from Task 2 may be incorporated in NUREG/CR-0199 or may be issued as a separate report similar to that document.

PROGRESS THIS BIMONTHLY PERIOD

Task 1

During this bimonthly period, the first draft of the report entitled Radiological Assessment of Steam Generator Removal and Replacement: Update and Revision was completed and sent to NRC for comment. All sections discussing steam generator replacement are complete. The appendix that will discuss retubing operations was not included in this draft (see Task 2). Internal review of the report has also been completed.

Task 2

We have started to make time estimates and exposure rate estimates for in-place retubing of a steam generator. The basic outline of operations has been taken from WCAP-9298, Steam Generator Retubing and Refurbishment.

PLANS FOR NEXT BIMONTHLY PERIOD

Task 1

After we receive comments from NRC, the report will be completed and edited, and the final camera-ready masters will be sent to NRC for duplication during September.

Task 2

An appendix on in-place steam generator retubing will be included in the report. The appendix will include information on occupational dose, time estimates to accomplish the operation, and environmental effluents, and a discussion of the wastes generated during the operation.

PROGRAM COSTS

<u>Budget, \$</u>	<u>Cost to Date, \$</u> <u>(7/27/80)</u>	<u>Remaining</u> <u>Funds, \$</u>	<u>Percent</u> <u>Expended</u>
50,000	36,535	13,465	73

Pacific Northwest Laboratory
Bimonthly Activities Report
June - July 1980

Technical Assistance in Implementing Emergency Preparedness Requirements^(a)
A. E. Desrosiers, Project Manager

PROGRAM OBJECTIVE

The objective of this program is to provide technical assistance to the NRC Emergency Preparedness Task Force in its effort to upgrade emergency preparedness at licensed nuclear reactors. PNL staff members serve as consultants to NRC teams that review emergency plans and their implementation at individual reactor sites (Task A). PNL also investigates subjects of generic interest, as requested by the sponsor (Task B).

PROGRESS THIS BIMONTHLY PERIOD

Task A

Technical consultation was provided in connection with the following sites:

TMI	Ft. Calhoun
North Anna	Cooper
Hatch	D. C. Cook
Ft. St. Vrain	Salem
McGuire	Virgil
Sequoyah	Diablo Canyon
Trojan	

Depending upon the particular site involved, the assistance may have included preparation of comments regarding the existing or proposed emergency plan prior to a visit to the site; participation in a fact-finding visit to the reactor site and public meetings with the licensee, state and local government officials, and individual citizens; or assessments of the degree to which revised emergency plans comply with the NRC's regulatory guidance.

(a) FIN No. B2311-TD11210

Task B

A report originally written at Texas Transportation Institute, on criteria for estimating evacuation times in emergency planning zones, was rewritten following NRC comments and is now in press. This report establishes the parameters that should be estimated for emergency planning purposes and presents a methodology for realistically estimating times required for evacuations. The report also recommends revisions on the draft version of NUREG-0654.

A draft report analyzing the evacuation time estimates submitted to date by 27 sites was prepared. A final version of the report, incorporating all available time estimates, will be available in August.

PNL examined a draft of NUREG-0696 and prepared comments for the emergency licensing branch. The document establishes functional criteria for the Technical Support Center, the Emergency Operations Facility, and the Nuclear Data Link.

PNL has been assigned two tasks: to develop staffing requirements for the Technical Support Center and the Emergency Operations Facility, and to prepare a public information package for NRC Emergency Preparedness team leaders who must conduct public meetings. The package will contain a discussion of reactor accidents, levels of environmental radioactivity, the risk of radiation, basic emergency preparedness requirements, and protective actions for nearby residents.

PLANS FOR NEXT BIMONTHLY PERIOD

Task A

Site visits and reviews of upgraded emergency preparedness plans will be conducted as requested by the NRC staff.

Task B

A review and analysis of evacuation time estimates for operating power plant sites will be completed.

A short article detailing PNL's calculations of post-accident radiation fields in a PWR containment structure will be published. Comparisons of these calculations with the measurements obtained during the transient at the Crystal River reactor will be included.

Contracts will be finalized for an acoustic engineering review of the adequacy of proposed emergency notification systems at four operating power reactor sites and for a review of acceptance criteria for such reviews.

The effort to write a generic review of emergency action levels in PWRs and BWRs will continue. A final draft will be completed in the next bimonthly period. Work on tasks identified above will continue.

PROGRAM COSTS

<u>Task Designation and Title</u>	<u>Budget, (a) \$</u>	<u>Cost to Date, (b) \$ (7/27/80)</u>	<u>Remaining Funds, \$</u>	<u>Percent Expended</u>
<u>Task A</u>				
Technical Assistance in Reviewing Plans	548,000	392,790	155,210	72
<u>Task B</u>				
Generic Technical Assistance in Emergency Planning	<u>377,000</u>	<u>251,030</u>	<u>125,970</u>	<u>67</u>
	<u>\$925,000</u>	<u>\$643,820</u>	<u>\$281,180</u>	<u>70</u>

(a) Presently approved FY 1979/1980 budget.

(b) Includes booked costs and unbooked obligations.