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**GAO**

United States General Accounting Office  
Washington, DC 20548

Logistics and  
Communications  
Division

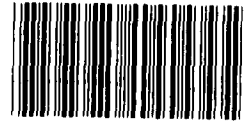
B-200866

The Honorable Charles F. Dougherty  
House of Representatives

OCTOBER 24, 1980

Dear Mr. Dougherty:

Subject: [Review of the Costs Related to the  
Decontamination Contract for the  
Frankford Arsenal] (LCD-81-11)



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In your July 10, 1980, letter, you asked us to review certain aspects of the contract awarded by the Department of the Army to Rockwell International Corporation for the decontamination of the Frankford Arsenal in Philadelphia.

On June 24, 1980, the Comptroller General issued a decision in a bid protest that resulted from the award of the decontamination contract. He recommended the remaining contract work not be recompeted due to the progress of work already performed, even though there had been some shortcomings on the part of the Army during the contract's award process.

You questioned whether the work had actually progressed beyond the point where the contract could not be recompeted, and you asked us to verify data regarding the status of the contract. Specifically, you asked the following questions:

- What percentage of the work has actually been completed?
- What subcontracts have been awarded, to whom, and on what date, and for work starting when and to be completed on what date?
- What percentage of funds have been expended (itemized by specific item)?
- Whether or not buildings in the arsenal's 400 area are being scraped and painted, as part of decontamination, when in fact they are scheduled to be demolished? Why?
- What would be the actual costs to renegotiate a new contract?



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As a result of our September 10, 1980, meeting with you, we also inquired into an estimated contract cost increase and specifically:

- The basis for the decontamination estimates used by each of the contract bidders.
- The reason for the increase in the amount of radiological waste material at the arsenal.
- The reason for the increased cost to dispose of radiological material.

In summary, we found that:

- The contract with Rockwell consists of three phases. Phases I and II are each 100 percent complete. As of June 27 and August 29, 1980, Phase III was 40-percent completed and 70-percent completed, respectively. Rockwell is scheduled to complete its decontamination fieldwork at the arsenal by November 28, 1980, and to submit a final report by February 1981.
- Rockwell considers the specific subcontractor information requested to be proprietary in nature. However, Rockwell gave us a list which showed the number of subcontractors, the location of each subcontractor by State, and the subcontract cost and percentage of total subcontract cost by State as of August 20, 1980. Rockwell estimates that all subcontracts will total \$2.93 million. As of June 27, 1980, Rockwell had awarded about \$1.27 million, or about 43 percent of the \$2.93 million.
- As of June 27, 1980, Rockwell had expended \$2.9 million, or 50 percent of the \$5.8 million contract cost. Rockwell, through August 29, 1980, had expended \$5.07 million, or 87 percent, of the \$5.8 million in contract reimbursable costs. However, Rockwell estimates the cost will increase by \$1.8 million because the quantity of radiologically contaminated material to be removed from the arsenal is approximately six times greater than Rockwell originally estimated.
- The buildings in the 400 area are not being scraped and painted before they are demolished.

--Rockwell estimated termination costs, as of June 27, 1980, were \$524,000. The Army estimated the monthly continuation costs 1/ were \$200,000. Our tests of Rockwell's estimated termination costs disclosed no discrepancies. However, we believe the monthly continuation costs are about \$48,000 less than estimated by the Army.

#### OBJECTIVES, SCOPE, AND METHODOLOGY

In making our review, we discussed the contract with Army and Rockwell officials and inspected buildings to verify the decontamination efforts at the arsenal. To verify the accuracy of financial information, we reviewed the Army's and Rockwell's documents. We examined the data Rockwell used to support the termination costs and the data the Army used to compute monthly continuation costs. Some of the information provided to us was verified by officials working with the Defense Contract Administrative Services Region, Los Angeles, California, which is responsible for administering the contract with Rockwell. We also relied on certifications by the Nuclear Regulatory Commission on the extent of radiological decontamination of buildings at the arsenal.

#### BACKGROUND

On September 21, 1979, the Department of the Army entered into a cost-plus-fixed-fee contract with Rockwell for the decontamination and cleanup of the arsenal. The contract cost was \$6,302,187, including a fixed fee of \$467,578. The contract provides that the Government can increase the level of effort by as much as 25 percent of the estimated 206,000 man-hours with no additional fee. The contract also provides for a final written report to be completed in 510 days, by February 1981. Decontamination fieldwork at Frankford is to be completed by November 28, 1980.

Generally, Rockwell is to decontaminate those areas at the arsenal that are radiologically contaminated above applicable guidelines, to demolish structures in the 400 area, to clean up areas which contain explosive and heavy metal residues, and to remove platform No.329 (where explosives were located).

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1/Continuation costs are additional costs to operate and maintain the arsenal from the time work is stopped until a new contract is awarded.

The program was generally divided as follows:

- Phase I. The contractor would review documentation the Government provided which identified contaminated areas while performing some onsite work to obtain information to use in the decontamination and cleanup operations.
- Phase II. The contractor would prepare detailed operating plans and standard operating procedures for the decontamination and cleanup operations.
- Phase III. The actual decontamination and clean-up operations.
- Additional tasks. Other Army approved and directed work.

Enclosure I illustrates the layout of the arsenal and the locations of some of the work to be carried out under the decontamination and cleanup operations.

#### STATUS OF DECONTAMINATION WORK

Rockwell officials stated, and Army officials verified, that as of June 27, 1980, 100 percent of Phases I and II was completed and at least 40 percent of Phase III was completed. As of August 29, 1980, Rockwell estimated Phase III was 70-percent completed.

Rockwell plots the status of work completed by the percentage of work finished on the individual tasks completed in each phase. During our visit to the arsenal in August 1980, we inspected a sample of facilities where these individual tasks were either underway or completed.

To verify the percentage of work completed, we made a physical examination of some of the buildings at the arsenal. We checked the actual status as it appeared to us (work not yet started, work underway, and work completed) to the status reported by Rockwell. In no case did we find any discrepancies. For example, we observed that (1) the painting of building 64 had not started, (2) the flaming (for explosive decontamination) of building 214 had just begun, and (3) buildings 316 and 521 were still undergoing radiological decontamination. We agreed with the status as reported by Rockwell in all three situations.

SUBCONTRACTS AWARDED BY ROCKWELL

Your request asked that we obtain detailed information concerning subcontracts awarded by Rockwell. Rockwell officials informed us they considered the specific information you requested as proprietary in nature and preferred not to have it released in our report. However, Rockwell did provide us, through Army officials, a list of its subcontracts showing the States subcontractors were located in, the number of subcontracts per State, and the subcontract cost and percentage of total subcontract cost for each State listed. (See enc. II.)

Rockwell estimates that the costs of subcontracts will ultimately total about \$2.93 million. As of June 27, 1980, Rockwell had awarded about \$1.27 million, or about 43 percent of the total subcontracts. Through August 20, 1980, Rockwell had awarded about \$1.66 million, or about 57 percent of the total.

Rockwell's list indicates it has awarded 322 of 695 subcontracts to Pennsylvanian subcontractors. The total cost of these subcontracts amounted to \$1,343,900, or 80.8 percent, of all subcontracts awarded (\$1,662,994). Californian subcontractors received \$103,786 in subcontracts, or 6.2 percent of the cost of all subcontracts awarded.

PERCENTAGE OF FUNDS EXPENDED

Rockwell estimated that the decontamination and clean-up operations would cost \$5,834,609 (exclusive of fee). As of June 27, 1980, Rockwell had expended \$2.9 million, or about 50 percent of the estimated contract cost. As of August 29, 1980, Rockwell had expended or obligated 87 percent, or \$5,074,700, of the cost. The contract also included a fee of \$467,578, and through August 29, Rockwell had earned 73 percent, or \$342,793, of the fee. Enclosure III provides details on the overall funds expended, while enclosure IV shows the funds expended through August 29, 1980, itemized by program category.

During our review, we learned that an increase in decontamination and cleanup costs would occur. Rockwell estimated the increase would be approximately \$1,825,200 mainly because the quantity of radiologically contaminated material to be removed is approximately six times larger than Rockwell originally estimated. Rockwell believes the decontamination and cleanup costs now to be about \$7,659,800, exclusive of fee. The fee will remain at \$467,578, bringing the total contract value to an estimated \$8,127,378.

Rockwell determined in mid-1980 that there was more radiologically contaminated waste at the arsenal than it had estimated in its contract proposal. All bidders underestimated the amount of waste. This unexpected increase in waste volume and a rise in the waste disposal price caused an increase in the estimated contract cost of over \$2.8 million. This increase has been partially offset by estimated cost reductions of just over \$1 million in other segments of the decontamination and cleanup program to account for the net cost increase of \$1.8 million. Enclosure IV shows these figures in detail.

According to the Army, the increase in waste volume was caused mainly by:

- The estimates of radiologically contaminated waste were based on a study which did not identify in detail all areas of contamination.
- The Nuclear Regulatory Commission did not have firm or established limits or guidelines covering radiological soil contamination until July 1980.

The Army contracted for a study in March 1978 to survey the arsenal to determine the areas requiring decontamination and/or cleanup. Army officials stated that, because of the amount of dirt and residue at the arsenal during this survey, some of the areas of radiological contamination might not have been fully detailed. Bidders for the decontamination and cleanup contract used this study to prepare their proposals. Rockwell estimated there were 7,000 cubic feet of radiological waste at the arsenal. Army officials stated that at the time this was considered a reasonable estimate. Other volume estimates submitted by principal bidders were 2,200 and 22,000 cubic feet. As of August 29, 1980, Rockwell had removed 31,000 cubic feet of waste, and it is estimated that 40,000 cubic feet will be removed from the arsenal at completion.

Army officials said, and a Nuclear Regulatory Commission official verified, that when the contract was awarded in September 1979 the Nuclear Regulatory Commission did not have firm or established limits or guidelines for allowable radiological soil contamination and that, in July 1980, the Commission provided these guidelines. However, these guidelines, according to Army and Rockwell officials, were more than twice as stringent as estimated guidelines applied by the bidders in their contract proposals.

Another factor which contributed to the cost increase was a doubling of the cubic foot charge for disposing of radiological waste. There are only three approved disposal facilities in the United States--South Carolina, Nevada, and Washington. Low-level waste, which is the majority of the arsenal waste, is sent to the designated facility in Barnwell, South Carolina. Costs at the Barnwell disposal facility were increased on February 14, 1980, to \$7.71 per cubic foot, more than twice the \$3.60 per cubic foot quoted when the contract was awarded and on which all bidders based their estimates.

Rockwell officials gave us estimates of the final costs of the decontamination and cleanup program as compared to planned costs under the contract. Enclosure V shows this by program segment and notes the areas of increased or reduced costs.

#### BUILDINGS IN THE 400 AREA

The map in enclosure I shows a series of buildings near the eastern boundary of the arsenal numbered in the 400 series. These buildings were primarily used to manufacture primer mixes and pyrotechnical material. We were requested to determine if the buildings were scraped and painted and then demolished.

We found that buildings were being prepared for demolition, but they were not being painted or scraped before they were demolished. Specifications describing the work to be performed call for using heat and fire on the interior of the buildings to remove all explosive substances, demolishing the buildings, disposing of all debris off site in an approved landfill, and backfilling all the disturbed areas.

The expected cost of the cleanup and demolition of the 400 area is approximately \$377,500. This work is scheduled for completion in late November 1980.

#### COSTS CONNECTED WITH RECOMPETING PHASE III OF THE CONTRACT

The Department of the Army, in response to the bid protest, provided us estimates of costs connected with recompeting Phase III of a contract should Rockwell employees stop working on June 27, 1980. The Army estimated that termination costs were \$524,000 and monthly continuation costs were \$200,000.

<u>Leases, services, and associated costs</u>	<u>Termination costs</u>
Termination of the service contracts valued at \$302,000	\$120,000
Report on status of work completed at termination, estimated at 2,362 man-hours (the same hours estimated for reporting at contract completion)	95,000
Termination of equipment leases valued at \$92,000 written with strong cancellation charges	80,000
In-house personnel and overhead costs to terminate contract	75,000
Termination of a painting contract valued at \$427,000	50,000
Relocation of approximately 30 Rockwell employees to California	46,000
Costs associated with accounting for property and audit of property records	40,000
Termination of material contracts and purchase orders totaling \$82,000	<u>18,000</u>
Total	<u>\$524,000</u>

We reviewed the supporting data provided by Rockwell and the Army and verified that (1) the estimated termination costs were reasonable and (2) the Army's estimated monthly continuation costs were overstated by about \$48,000. We believe \$152,000 is a more reasonable monthly continuation cost. The table shows where we disagree with the Army's estimated monthly continuation costs.

Army's Monthly Estimated Costs to Continue Care of Frankford Arsenal During Recompetition of the Contract

	<u>Army</u>	<u>GAO</u>	<u>Difference</u>
Arsenal caretaker costs	\$ 58,000	\$ 54,000	-\$4,000
Arsenal utility costs	65,000	21,000	-44,000
Government work force salary costs	30,000	30,000	-
Fringe benefits, overhead general and administrative costs, and miscellaneous repair costs	<u>47,000</u>	<u>47,000</u>	<u>-</u>
Monthly continuation costs	<u>\$200,000</u>	<u>\$152,000</u>	<u>-\$48,000</u>



The differences in caretaker and utility costs occurred because the Army applied different data. Our review of the arsenal continuation costs showed Army officials calculated monthly caretaker costs of \$58,000, and they informed us these were based on an independent cost estimate because a caretaker contract had not been signed. However, the actual contract cost is \$649,000 annually, which equates to about \$54,000 a month rather than \$58,000 a month. The Army also improperly based its monthly utility costs on actual fiscal year 1978 costs, whereas we used the actual fiscal year 1980 utility costs for 9 months to arrive at our estimate.

The Army estimated 11 months would be required to award a new contract and to bring decontamination and cleanup operations up to the level they were when the Rockwell contract was terminated. This would be the time frame the Army estimated protection and maintenance of the arsenal would have to be extended (at a cost to the Army) before it was turned over to the General Services Administration. According to the Army, 3 months would be required by technical personnel to prepare a new request to procurement personnel for a follow-on contract, 5 months would be required to issue a solicitation and award a contract, and 3 months would be needed for the successful contractor to prepare to fully start work. The Army did not believe any of these steps could be performed adequately if done concurrently. The 5 months for solicitation and award was based on current published procurement standards which we examined. The 6-month estimate was based on the experience and expertise of Army technical and contracting officers. We were unable to verify this estimate. The Army told us it took approximately 15 months to undertake a similar scope to prepare a bid, to solicit an award, and to start up work when the Rockwell contract was negotiated, but information needed to verify this was not readily available.

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We discussed a draft of this report with Army and Rockwell officials, and they concurred with its contents.

B-200866

As you agreed, we are sending copies of this report to the Director, Office of Management and Budget; the Secretaries of Defense and the Army; and Rockwell and other parties who have expressed an interest in it.

Sincerely yours,

A handwritten signature in black ink, appearing to read "R. W. Gutmann". The signature is written in a cursive style with a long horizontal stroke at the end.

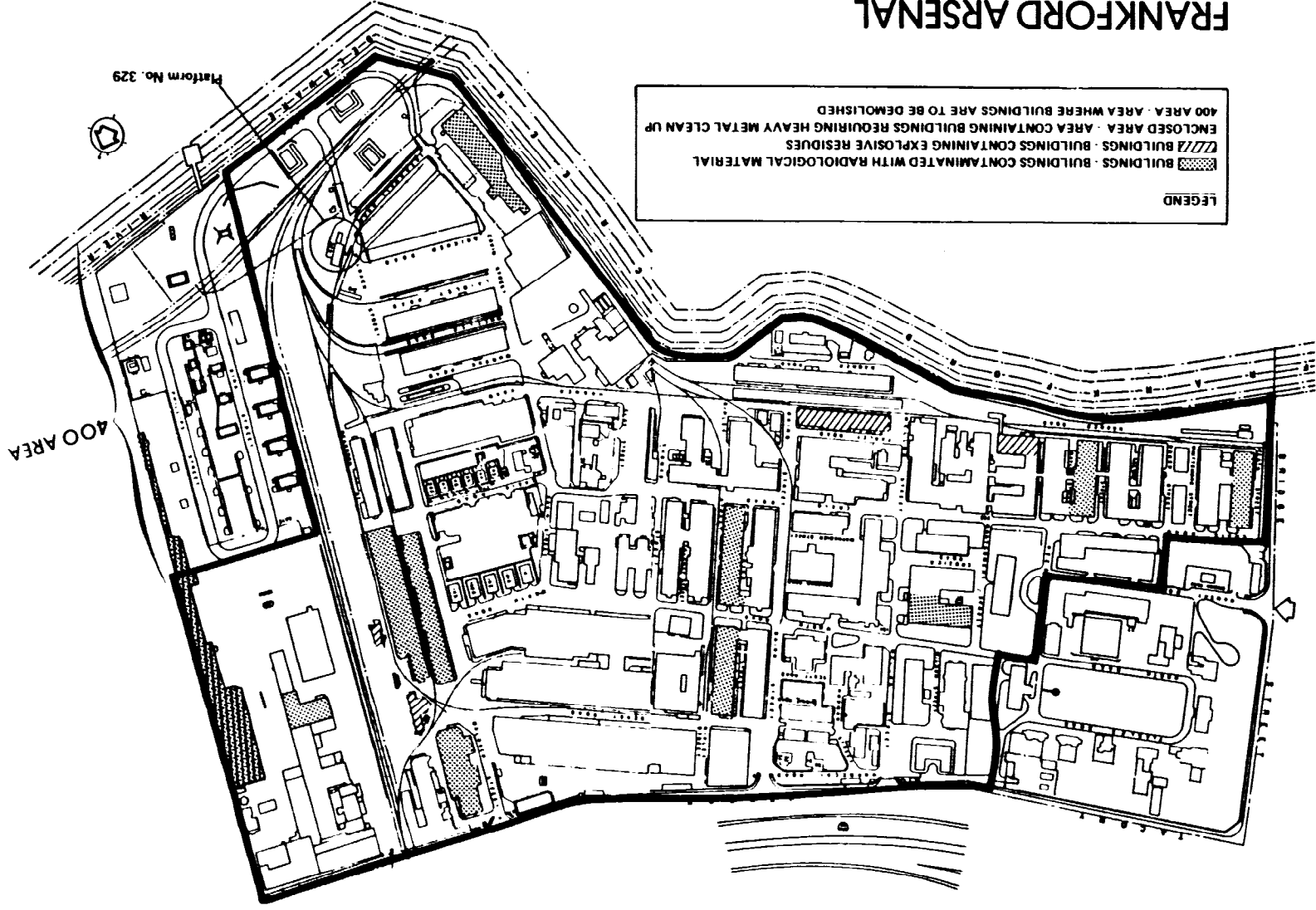
R. W. Gutmann  
Director

Enclosures - 5

ENCLOSURE I

ENCLOSURE I

# FRANKFORD ARSENAL



**LEGEND**

- ▨ BUILDINGS - BUILDINGS CONTAMINATED WITH RADIOLOGICAL MATERIAL
- ▧ BUILDINGS - BUILDINGS CONTAINING EXPLOSIVE RESIDUES
- ▩ ENCLOSED AREA - AREA CONTAINING BUILDINGS REQUIRING HEAVY METAL CLEAN UP
- 400 AREA - AREA WHERE BUILDINGS ARE TO BE DEMOLISHED

FRANKFORD ARSENAL DECONTAMINATION AND CLEANUP PROGRAMSUBCONTRACTS AWARDED BY ROCKWELL

<u>Subcontractor's location</u>	<u>Subcontracts</u>	<u>Cost</u>	<u>Percent of total cost</u>
Alabama	2	\$ 1,071	(a)
Arizona	7	5,048	(a)
California	180	103,786	6.2
Connecticut	5	13,112	(a)
Delaware	1	15,000	(a)
Illinois	48	32,553	2.0
Indiana	6	5,473	(a)
Kentucky	5	2,529	(a)
Louisiana	2	1,594	(a)
Massachusetts	17	24,240	1.5
Michigan	2	8,354	(a)
Minnesota	1	384	(a)
Missouri	5	1,802	(a)
North Carolina	3	15,768	(a)
Nebraska	5	3,809	(a)
New Jersey	44	44,377	2.7
New York	17	16,413	(a)
Ohio	10	14,626	(a)
Pennsylvania	322	1,343,980	80.8
Texas	3	2,134	(a)
Virginia	1	167	(a)
Vermont	1	1,775	(a)
Washington	3	3,893	(a)
Wisconsin	5	1,106	(a)
Total	<u>695</u>	<u>\$1,662,994</u>	

a/Less than 1 percent.

FRANKFORD ARSENAL DECONTAMINATION AND CLEANUP PROGRAMCOSTS AND FEES

## Original contract value:

Estimated reimbursable costs	\$5,834,609
Fixed fee	<u>467,578</u>
Total	<u>\$6,302,187</u>

## Financial information through August 29, 1980:

Reimbursable costs (including obligations)	\$5,074,700
--as a percentage of original cost estimate	87%
Fixed fee earned	\$ 342,793
--as a percentage of total fixed fee	73%
Amount invoiced by Rockwell to the Government	\$4,628,932
Amount paid by the Government	\$3,899,834

FRANKFORD ARSENAL DECONTAMINATION AND CLEANUP PROGRAMCOST INCREASE ANALYSIS

Estimated final value of reimbursable costs	\$7,659,800
Less current contract value for reimbursable costs	<u>5,834,600</u>
Cost increase	<u><u>\$1,825,200</u></u>

Explanation of cost increase

Added scope of radiological decontamination work required:		
Additional field crews (personnel)	\$450,000	
Additional support personnel	615,000	
Additional health physics support personnel	306,000	
Additional materials, supplies, equipment, and purchased services	495,000	
Additional fringe benefits	150,000	
Additional waste disposal costs	500,000	
Learning curve costs	<u>130,000</u>	\$2,646,000
Additional tasks requested by the Army		86,000
Other cost factors (primarily materials, supplies, and equipment)		<u>130,200</u>
Total increase		\$2,862,200
Less cost decreases associated with other program elements:		
Painting contract	667,000	
400 area demolition	150,000	
Other program elements	<u>220,000</u>	<u>1,037,000</u>
Net cost increase		<u><u>\$1,825,200</u></u>

Note: This information was based on a preliminary estimate by Rockwell and was not verified by us and has not yet been approved by the Army's contracting officer.

FRANKFORD ARSENAL DECONTAMINATION AND CLEANUP PROGRAMFINANCIAL PERFORMANCE REPORTPlanned Versus Actual Costs Through August 29, 1980

	Funds spent and/or obligated		<u>Difference</u>
	<u>Planned</u>	<u>Actual</u>	
	----- (thousands) -----		
Phase I	\$1,015.2	<u>a/\$1,065.6</u>	\$ 50.4
Phase II	173.2	144.1	-29.1
Phase III	3,701.3	3,764.5	63.2
Additional tasks	<u>-</u>	<u>100.5</u>	<u>100.5</u>
Total	<u>\$4,889.7</u>	<u>\$5,074.7</u>	\$ <u>185.0</u>

Planned Versus Estimated Costs Through the End of the Program

	Funds spent and/or obligated		<u>Difference</u>
	<u>Planned</u>	<u>Estimated</u>	
	----- (thousands) -----		
Phase I	\$1,015.2	<u>a/\$1,058.1</u>	\$ 42.9
Phase II	173.2	144.1	-29.1
Phase III	4,646.2	6,367.4	1,721.2
Additional tasks	<u>-</u>	<u>90.2</u>	<u>90.2</u>
Total	<u>\$5,834.6</u>	<u>\$7,659.8</u>	\$ <u>1,825.2</u>

a/Difference in Phase I charges is due to erroneous charges after August 1, 1980.