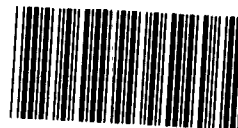


November 1992

# NAVY SHIPS

## Plans and Anticipated Liabilities to Terminate SSN-21 Program Contracts



148105

**RESTRICTED--Not to be released outside the General Accounting Office unless specifically approved by the Office of Congressional Relations.**

555981

RELEASED

.....

.....

**National Security and  
International Affairs Division**

B-250714

November 27, 1992

The Honorable Edward M. Kennedy  
Chairman, Subcommittee on Projection  
Forces and Regional Defense  
Committee on Armed Services  
United States Senate

The Honorable John Conyers, Jr.  
Chairman, Legislation and National  
Security Subcommittee  
Committee on Government Operations  
House of Representatives

As requested, we reviewed the Navy's plans and anticipated liabilities to terminate the Seawolf class nuclear-powered attack submarine (SSN-21) program contracts. On August 20, 1992, and September 10, 1992, we briefed your offices on the results of our review. This report summarizes and updates the information provided in those briefings. Specifically, this report addresses (1) key cost elements of the administration's rescission proposal and resulting Public Law 102-298: An Act Rescinding Certain Budget Authority, Fiscal Year 1992 (see app. I), (2) Navy actions to carry out Public Law 102-298 and the congressional conferees' guidance (see app. II), and (3) current submarine shipbuilding industrial base<sup>1</sup> capacity and work load (see app. III).

---

**Background**

In January 1992, the President proposed rescinding appropriated funds and canceling planned spending for all SSN-21 class submarines except the first submarine—the SSN-21.<sup>2</sup> Subsequently, Congress debated the merits of building one, two, or three SSN-21 class submarines. The debate focused on (1) termination versus completion costs for SSN-21 class submarine construction, nuclear reactor, combat control system, and other contracts and (2) the effects on the nuclear submarine shipbuilding industrial base.

---

<sup>1</sup>The U.S. nuclear-powered submarine shipbuilding industrial base consists of General Dynamics' Electric Boat Division (Electric Boat), Groton, Connecticut; Tenneco's Newport News Shipbuilding and Dry Dock Company (Newport News Shipbuilding), Newport News, Virginia; nuclear component vendors; and thousands of other related supporting suppliers operating in all 50 states. Newport News Shipbuilding also builds nuclear-powered aircraft carriers (CVNs).

<sup>2</sup>Funds had been appropriated for six SSN-21 class submarines—SSN-21 through SSN-26. The proposal was to rescind appropriated funds for SSN-22 through SSN-26.

---

This debate culminated in Public Law 102-298: An Act Rescinding Certain Budget Authority, Fiscal Year 1992 (June 4, 1992), which implicitly rejected the administration's proposal to rescind funds appropriated for the SSN-22 through SSN-26.<sup>3</sup> Specifically, the law rescinded \$1,150 million appropriated for the SSN-23 and effectively restored \$1,615.9 million. According to the accompanying conference report,<sup>4</sup> the restoration provided \$1,075.7 million to construct the SSN-22 and \$540.2 million to preserve the submarine industrial base. The conference report also directed the Secretary of the Navy to use the \$540.2 million for (1) SSN-23 advance procurement, (2) restart of the Los Angeles class nuclear-powered submarine (SSN-688) program, or (3) any other approach he deems to be most beneficial in preserving the current submarine industrial base.

---

## Results in Brief

Final termination costs may not be known for years. However, the Navy's cost to terminate SSN-23 through SSN-25 contracts<sup>5</sup> is significantly below the estimated cost to build those submarines. The Navy's estimated cost to build one SSN-21 class submarine is more than \$2 billion, but its estimated cost to complete some SSN-23 through SSN-25 contracts and to terminate the rest is \$714 million. Ending the SSN-21 class submarine construction program with the second submarine (SSN-22) will save about \$15 billion in costs identified in the Future Years Defense Plan (fiscal years 1993 through 1997).

The Navy did not terminate all SSN-23 contracts. The Navy decided to complete contracts for major subsystems such as the third AN/BSY-2 combat system, a spare nuclear core, and a main propulsion unit and to keep other nuclear reactor plant component contracts in a stop work status. Thus, if a decision is made to build the third SSN-21 class submarine, its construction will be facilitated. DOD officials stated that while they agree these contract actions will facilitate construction of the third SSN-21 class submarine, the decision to complete the SSN-23 contracts was based on financial and business practice considerations.

Congressional conferees made \$540.2 million available to help preserve the industrial base for submarine construction. The Navy plans to use these

---

<sup>3</sup>Funds appropriated for SSN-26 were to buy a reactor, but the Department of Defense (DOD) never released those funds to the Navy.

<sup>4</sup>H.R. Conf. Rept. No. 102-530, 102d Cong., 2d sess. (1992).

<sup>5</sup>Although funds were appropriated for the SSN-26 reactor, no SSN-26 related contracts were in effect when the program was terminated.

---

funds to partially fund SSN-21 and SSN-22 cost growth and to purchase spare parts. The plan does not provide for advance procurement for the SSN-23, restart the SSN-688 program, or provide any additional work to the submarine shipbuilding industrial base. DOD officials stated that DOD will not release the \$540.2 million to the Navy until a final decision has been made on the use of these funds. The final decision will not be made until January or February 1993, after an ongoing DOD shipbuilding industrial base study is completed in November 1992.

Ending the SSN-21 program, whether after constructing one or two SSN-21 class submarines, will likely result in a reduced U.S. nuclear-powered submarine construction capacity and/or capability. Electric Boat and Newport News Shipbuilding are scheduled to complete nuclear-powered submarine construction in August 1997 and October 1995, respectively. No new nuclear-powered submarine construction contracts<sup>6</sup> are projected until fiscal year 1998. Likewise, the projected work load for each submarine shipbuilder will not sustain each shipbuilder's current nuclear-powered submarine construction capacity and/or capability. As a result, costs for the two SSN-21 class submarines and other ships now being constructed by the two submarine shipbuilders will probably increase because of reallocating overhead costs over a smaller production base; a smaller, more senior, higher paid work force; and higher vendor costs.

---

## Scope and Methodology

We obtained and analyzed SSN-21 program documents to identify rescission, cost, and termination estimates. In addition, we discussed the termination process and Navy actions to carry out Public Law 102-298 with responsible SSN-21 program office, AN/BSY-2 Combat Control System program office, Naval Nuclear Propulsion program office, Navy contract office, and Office of the Secretary of the Navy officials, Washington, D.C. Further, we discussed the termination process with Navy officials from other programs that were ended and had to terminate contracts.

We obtained the shipbuilder's projected work load from Electric Boat and Newport News Shipbuilding. We also met with Electric Boat officials and discussed their position on potential SSN-21 contract termination costs and the effect ending the SSN-21 program could have on the company.

---

<sup>6</sup>The only new nuclear-powered submarine construction program planned by the Navy is its new attack submarine, commonly referred to as the Centurion. The Navy plans to begin construction of the Centurion in fiscal year 1998.

---

We did not develop independent termination cost estimates, nor did we identify the cost effect ending the SSN-21 program may have on other current or planned submarine programs.

As requested, we did not obtain written agency comments on this report. However, we discussed our findings with responsible Department of Defense and Navy officials and included their comments where appropriate. The officials generally agreed with the facts presented in this report.

We conducted our review between June 1992 and September 1992 in accordance with generally accepted government auditing standards.

---

As agreed with your offices, we plan no further distribution of this report until 7 days from its issue date. At that time, we will send copies to the Chairmen and Ranking Minority Members, Senate Committee on Governmental Affairs, House Committee on Government Operations, Senate and House Committees on Appropriations and on Armed Services; the Director, Office of Management and Budget; and the Secretaries of Defense and the Navy. Copies will be made available to others on request.

Please contact me on (202) 275-6504 if you or your staffs have any questions. Other major contributors are listed in appendix IV.



Richard Davis  
Director, Navy Issues



---

# Contents

---

Letter		1
Appendix I		8
Administration's Rescission Proposal and Public Law 102-298	Administration's Termination Proposal Public Law 102-298: An Act Rescinding Certain Budget Authority	8 10
Appendix II		11
Navy Actions to Implement Public Law 102-298	SSN-21 And SSN-22 Cost Growth Potential Government Liability Effects on the SSN-21 Effects on the SSN-22 Effects on the SSN-23 Effects on the SSN-24 and SSN-25 Status of Nuclear Contracts	11 11 12 12 13 14 15
Appendix III		16
Submarine Industrial Base Capacity and Work Load	U.S. Nuclear-Powered Submarine Construction Capability Prospects for Future SSN Construction Contracts Electric Boat Overview Newport News Overview	16 16 16 17
Appendix IV		18
Major Contributors to This Report		
Tables	Table II.1: SSN-21 and SSN-22 Cost Growth by Category Table II.2: Potential Cost to the Government for SSN-23 Contracts Table II.3: Status of Nuclear Cores and Reactor Plant Components	11 13 15
Figures	Figure I.1: SSN-21 Class Submarines to be Completed Under the Administration's Termination Proposal Figure I.2: SSN-21 Through SSN-25 Contracts Awarded at Time of Termination Proposal	8 9



---

**Contents**

---

Figure I.3: SSN-21 Class Submarines That Will Be Constructed Under Public Law 102-298	10
Figure II.1: Status of SSN-23 Contracts	13
Figure II.2: Status of SSN-24 and SSN-25 Contracts	14

---

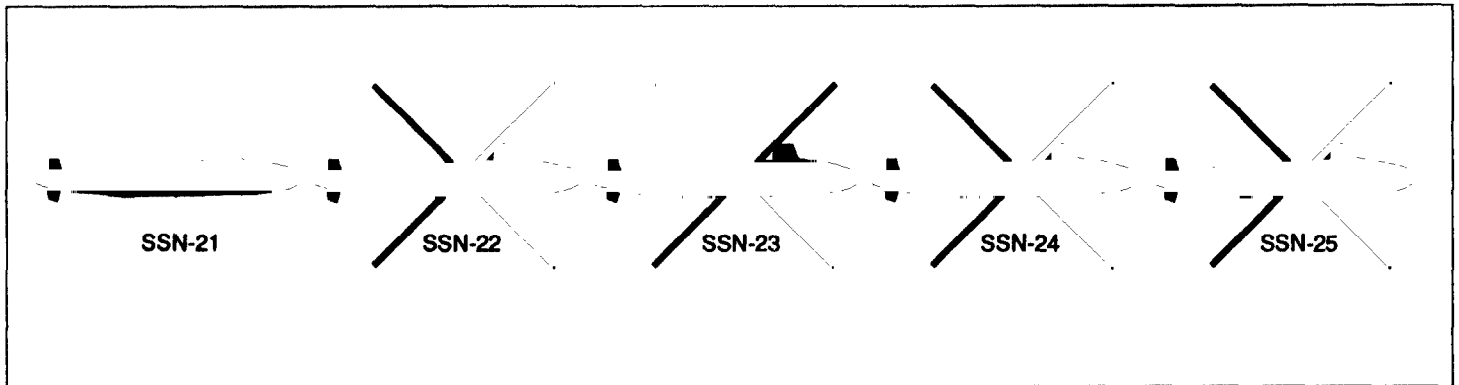
**Abbreviations**

CVN	nuclear-powered aircraft carrier
DOD	Department of Defense
GAO	General Accounting Office
SSN	nuclear-powered attack submarine

# Administration's Rescission Proposal and Public Law 102-298

## Administration's Termination Proposal

Figure I.1: SSN-21 Class Submarines to be Completed Under the Administration's Termination Proposal



Note: Although Congress appropriated \$331.7 million in advanced procurement funds to buy the SSN-26 reactor, no SSN-26 related contracts had been awarded because the Department of Defense (DOD) never released the funds to the Navy.

Program termination after the SSN-21 was expected to result in the following:

- A cost avoidance of about \$15 billion in planned funding identified in the Future Years Defense Plan (fiscal years 1993 through 1997).
- A rescission of more than \$2.9 billion in fiscal years 1991 and 1992 appropriated funds
  - \$189.4 million in other procurement funds and
  - \$2,765.4 million in shipbuilding funds for construction of SSN-22 and SSN-23 and advanced procurement for SSN-24 through SSN-26.
- Retention of \$915.3 million in fiscal years 1991 and 1992 shipbuilding funds to continue SSN-21 design efforts, pay for work completed, and terminate SSN-22 through SSN-25 contracts.

**Figure I.2: SSN-21 Through SSN-25 Contracts Awarded at Time of Termination Proposal**

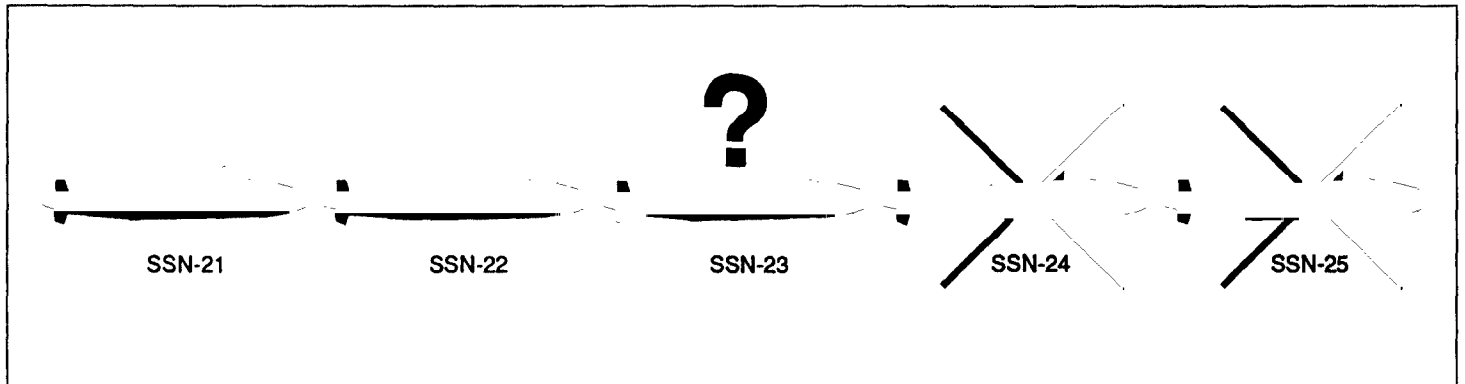
	<b>Basic construction</b>	<b>AN/BSY-2</b>	<b>Nuclear cores</b>	<b>Nuclear components</b>	<b>Other government furnished equipment</b>
SSN-21	●	●	●	●	●
SSN-22	●	●	●	●	●
SSN-23		●	●	●	●
SSN-24			●	●	●
SSN-25			●	●	

In February 1992, as a result of the administration's proposal, the Navy

- issued stop work orders for SSN-22 through SSN-25 contracts and
- identified a total research, development, test, and evaluation funding shortfall of \$732 million for fiscal years 1993 through 1997 (\$150 million in fiscal year 1993).

## Public Law 102-298: An Act Rescinding Certain Budget Authority

Figure I.3: SSN-21 Class Submarines That Will be Constructed Under Public Law 102-298



### Public Law 102-298

- rescinded \$189.4 million in other procurement funds and \$1,150 million in SSN-23 shipbuilding funds and
- implicitly rejected the administration's proposal to rescind
  - \$1,075.7 million in fiscal year 1991 shipbuilding funds to build the SSN-22 and
  - \$540.2 million in fiscal year 1992 shipbuilding funds.
- The conference report directed the Secretary of the Navy to use the \$540.2 million to
  - provide advance procurement for the SSN-23,
  - restart the SSN-688 program, or
  - provide for any other approach deemed beneficial to preserve the current submarine industrial base.

# Navy Actions to Implement Public Law 102-298

As a result of Public Law 102-298, the Navy

- plans to revise the SSN-21 shipbuilding program's acquisition baseline and the delivery schedules for SSN-21 and SSN-22 pending Electric Boat's anticipated request for equitable adjustment due to SSN-22 stop work orders and subsequent contract negotiations;
- has proposed to use the \$540.2 million to support SSN-21 and SSN-22 by providing
  - \$95.8 million for spares, including a main propulsion unit, ship service turbine generator, and propulsor components, and
  - \$444.4 million for cost growth on SSN-21 and SSN-22 construction; and
- has terminated selected nuclear and SSN-23 contracts and all SSN-24 and SSN-25 contracts.

## SSN-21 and SSN-22 Cost Growth

The Navy identified \$646.2 million in cost growth for the SSN-21 and SSN-22 that it planned to fund with

- \$444.4 million of the funds provided under Public Law 102-298,
- \$179.4 million surplus in fiscal year 1991 SSN-23 through SSN-25 advance procurement funds, and
- \$22.4 million funds to be identified.

**Table II.1: SSN-21 and SSN-22 Cost Growth By Category**

Dollars in millions		
Growth category	SSN-21	SSN-22
Cost over contract target	\$129.8	\$96.1
Escalation	66.7	46.3
HY-100 steel welding problem	58.8	0
Change orders	23.3	0
Government furnished equipment/other	52.2	14.1
Design and construction plans	0	100.4
Stop work impact	0	37.9
Newport News material costs	0	20.6
<b>Total</b>	<b>\$330.8</b>	<b>\$315.4</b>

## Potential Government Liability

The potential government liability for SSN-21 program contract terminations probably will not be known for years because

- contractors are allowed a year to file for termination settlements,

- 
- the Navy faces potential litigation if the contractors and government do not reach negotiated settlements, and
  - the Navy faces potential protracted litigation if termination of the SSN-21 program causes contractors to go out of business.

---

## **Effects on the SSN-21**

### **The Navy**

- is revising the program's acquisition baseline and ship delivery schedule and
- anticipates ship construction costs to be higher than previously estimated for the SSN-21 and other ships/submarines under construction due to (1) reallocating overhead over the reduced business base, (2) increased labor rates for a smaller, more senior work force, and (3) higher vendor costs.

---

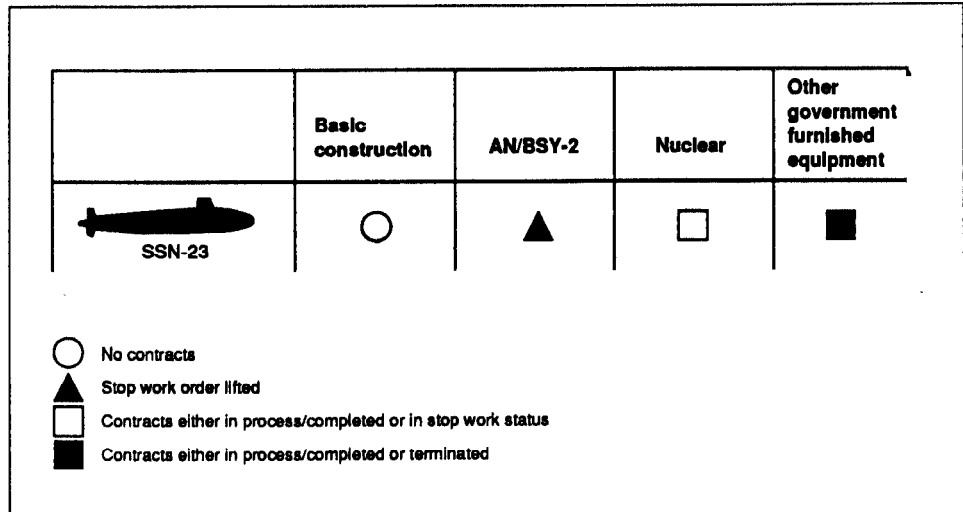
## **Effects on the SSN-22**

### **The Navy**

- lifted the stop work orders on all SSN-22 contracts;
- anticipates ship construction costs to be higher than previously estimated for the SSN-22 and other ships/submarines under construction due to (1) reallocating overhead over the reduced business base, (2) increased labor rates for a smaller, more senior work force, and (3) higher vendor costs; and
- anticipates some contractors will file requests for equitable adjustment for delay and disruption due to stop work orders, but it does not have a cost estimate for these adjustments.

## Effects on the SSN-23

Figure II.1: Status of SSN-23 Contracts



Completed items will be used to meet test and integration schedules or as spares.

Table II.2: Potential Cost to the Government for SSN-23 Contracts

Dollars in millions

Contracts	Contract value	Estimated value of work completed <sup>a</sup>	Termination costs	Estimated total cost <sup>b</sup>
Terminated contracts	\$12.8	\$2.6	\$1.8	\$4.4
Contracts in stop work status <sup>c</sup>	153.3	107.2	4.6	111.8
Contracts in process/completed <sup>d</sup>	294.7	129.9	0.0	294.7
<b>Total</b>	<b>\$460.8</b>	<b>\$239.7</b>	<b>\$6.4</b>	<b>\$410.9</b>

<sup>a</sup>As of September 30, 1992.



<sup>b</sup>Estimated total cost is the sum of estimated value of work completed plus termination costs, except for contracts in process/completed where the estimated total cost equals the contract value.

<sup>c</sup>Items in stop work status include nuclear reactor plant components.

<sup>d</sup>Items in process/completed include a AN/BSY-2 tactical system (\$151 million total contract value), a main propulsion unit (\$46.5 million), a ship service turbine generator (\$16.2 million), a spare nuclear core (\$60.8 million), and other items (\$20.2 million).

## Effects on the SSN-24 and SSN-25

Figure II.2: Status of SSN-24 and SSN-25  
 Contracts

	Basic construction	AN/BSY-2	Nuclear	Other government furnished equipment
 SSN-24	○	○	■	■
 SSN-25	○	○	■	■

○ No contracts  
 ■ Terminated

The total value of the terminated contracts is about \$436.7 million. The total estimated cost to the government for these contracts is \$303.1 million—about \$275.6 million for completed work plus termination costs estimated at \$27.5 million.



## Status of Nuclear Contracts

**Table II.3: Status of Nuclear Cores and  
 Reactor Plant Components**

<b>Nuclear</b>	<b>Percent complete</b>	<b>Planned end-use</b>	<b>Stop work/terminated</b>
#1 Core	95	Spare	
#1 Components	95-100	SSN-21	
#2 Core	80	SSN-22	
#2 Components	75-100	SSN-22	
#3 Core	75		Terminated
#3 Components	75-100		Stop work
#4 Core	50		Terminated
#4 Components	40-70		Terminated
#5 Core	61	SSN-21	
#5 Components	40-70		Terminated

Fuel elements were completed for all five cores, and elements for terminated cores must be stored. The total storage cost is currently unknown.

The third ship set of nuclear components is in a stop work status awaiting DOD's final decision on how the \$540.2 million provided by Public Law 102-298 will be used.

# Submarine Industrial Base Capacity and Work Load

---

## U.S. Nuclear-Powered Submarine Construction Capability

The two U.S. shipyards that build nuclear-powered submarines are

- General Dynamics' Electric Boat Division, Groton, Connecticut,
  - ballistic missile and attack submarines and
- Newport News Shipbuilding Dry Dock Company, Newport News, Virginia,
  - attack submarines.

---

## Prospects for Future SSN Construction Contracts

No new SSN construction contract award(s) is planned until Centurion class—possibly fiscal year 1998.

---

## Electric Boat Overview

- This shipbuilder only constructs submarines.
- Modular construction capability split between two major facilities (Quonset Point, Rhode Island, and Groton, Connecticut).
- Quonset Point facility is the critical path facility for submarine modular construction—the introduction of new submarine construction work is needed about every 2 years.
- This shipbuilder has the capacity to build three-plus SSN-21 equivalent submarines per year.
- Current work load includes building
  - five Tridents (last scheduled to be delivered in August 1997),
  - five SSN-688s (last scheduled to be delivered in March 1995), and
  - SSN-21 and SSN-22 (contract delivery date of June 1997).
- Projected work load includes
  - Centurion (1998 award at earliest),
  - Advanced SEAL Delivery System—40-to 55-ton vehicle (1993 award planned; two possible in 1995),
  - Trident conversions (deferred until at least fiscal year 1998),
  - Trident variant (no current Navy plans), and
  - naval research submarine (no current Navy plans).
- Electric Boat identified likely program termination effects as
  - reducing the size of the work force,
  - canceling leases at the Quonset Point facility,
  - operating shipyard at less than full capacity, and
  - closing facilities without additional new submarine construction beyond SSN-22.

---

## **Newport News Overview**

- This shipbuilder also constructs nuclear-powered aircraft carriers (CVNs).
- Submarine and surface ship construction co-located within one facility.
- This shipbuilder can also build three-plus SSN-21 equivalent submarines per year.
- Current work load includes
  - building eight SSN-688s (last scheduled to be delivered October 1995),
  - building two CVNs (last scheduled to be delivered December 1997), and
  - overhauling of one CVN (estimated completion May 1994).
- Projected work load includes
  - CVN (award proposed for fiscal year 1995),
  - overhauls/refuelings,
  - Centurion (1998 award at earliest), and
  - nonnuclear construction (fast sealift and commercial).
- Newport News identified likely program termination effects as
  - reducing the size of the work force,
  - operating the modular submarine construction facility at less than capacity, and
  - leaving parts of the modular submarine construction facility idle without additional new submarine construction.

---

# Major Contributors to This Report

---

**National Security and  
International Affairs  
Division, Washington,  
D.C.**

Norman J. Rabkin, Associate Director  
Frederick A. Bigden, Assistant Director  
Fred P. Fenstermaker, Advisor  
Jeffrey D. Grant, Evaluator

---

**Boston Regional Office**

Jeffrey V. Rose, Regional Management Representative  
Vincent J. Forte, Evaluator-in-Charge  
Kelly L. Cecil, Evaluator

---

### **Ordering Information**

The first copy of each GAO report and testimony is free. Additional copies are \$2 each. Orders should be sent to the following address, accompanied by a check or money order made out to the Superintendent of Documents, when necessary. Orders for 100 or more copies to be mailed to a single address are discounted 25 percent.

U.S. General Accounting Office  
P.O. Box 6015  
Gaithersburg, MD 20877

Orders may also be placed by calling (202) 275-6241.

**United States  
General Accounting Office  
Washington D.C. 20548**

**Official Business  
Penalty for Private Use \$300**

**First Class Mail  
Postage & Fees Paid  
GAO  
Permit No. G100**