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United States General Accounting Office  
Washington, DC 20548

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June 23, 2003

The Honorable Jerry Lewis  
Chairman  
Subcommittee on Defense  
Committee on Appropriations  
House of Representatives

Subject: *Multiyear Procurement Authority for the Virginia Class Submarine Program*

Dear Mr. Chairman:

On May 29, 2003 we briefed your staff on the fiscal year 2004 budget request for the Virginia class submarine program. This letter summarizes the information we provided in that briefing on the advantages that multiyear procurement authority offers the Virginia class submarine program as well as the risks of actually realizing these advantages.

### **Background**

The Virginia class submarine program is currently the Navy's largest shipbuilding program. The attack submarine will replace the Los Angeles class submarines to provide battle space dominance across a broad spectrum of missions. The Navy already has four ships in various stages of construction and under contract with General Dynamics Electric Boat and Northrop Grumman Newport News. The lead ship, the SSN 774 (*Virginia*), will be delivered in June 2004, and the SSN 775 (*Texas*) will be delivered in 2005. The SSN 776 (*Hawaii*) and SSN 777 (*North Carolina*) are 36 percent and 18 percent complete, respectively. Two ships will be launched from each yard. Each shipyard has about 50 percent of the work, with both responsible for certain segments of each submarine. The Navy is currently in contract negotiations for submarines beyond the four under contract.

In its fiscal year 2004 budget submission, the Navy requested \$2.8 billion for the Virginia class program. The Navy estimates that the total cost for the program will be \$64.7 billion in base year (1995) dollars for 30 submarines. The estimated cost for the ship to be authorized in fiscal year 2004 is \$2.15 billion. As part of its fiscal year 2004 budget submission, the Navy requested \$390 million in support of a potential multiyear procurement contract. If multiyear procurement authority is approved, the fiscal years 2005 and 2006 budget submissions will also include funding requests of about \$390 million and \$195 million respectively, to support the multiyear procurement contract. These funds will be used to procure components and

materials in economic order quantities for ships authorized in future years. This advance funding will reduce needed funds in later years.

The Navy has asked Congress for authority to enter into a multiyear procurement contract for seven submarines to be authorized in fiscal years 2004 through 2008.<sup>1</sup> Multiyear procurement contracts enable the contractor and the Navy to realize savings from economies of scale or manufacturing efficiencies. Programs awarding a multiyear procurement contract are required by law to show that substantial savings will accrue, cost estimates are realistic, funding is stable for the period covered by the contract, and the design is stable. A program using multiyear procurement authority must also show that the requirement for the system is stable and the program is needed for national security. Expected savings will be eroded if costs increase or if the design of the system changes substantially.

### **Advantages and Risks of Multiyear Procurement Authority for the Virginia Class Submarine**

The main advantage of multiyear procurement authority for the Virginia class submarine is its potential to reduce the program's future costs by \$805 million (\$115 million per submarine). Program documents indicate that these savings would be derived from reduced inflation, vendor procurement efficiencies, and greater manufacturing efficiencies. According to program officials, should Congress approve multiyear procurement authority, the contract currently under negotiation would transition into a multiyear procurement contract for fiscal year 2004 through 2008 ships. Program officials stated that without multiyear procurement authority, the program's funding would be able to support the ships to be authorized in fiscal years 2005 and 2006, but additional funding would be needed to cover the higher costs for the ships to be authorized in fiscal years 2007 and 2008.

Several factors could offset the potential cost savings, which should also be considered along with the Navy's request for multiyear procurement authority.

- *Stable funding for the Virginia class submarine program may not be assured.* The Navy stated in its justification for multiyear procurement authority that the program is a high priority and that the Navy is committed to funding the program at required levels. But, competing demands from other programs for acquisition funding may result in instability in the program's funding. For example, according to program officials, the Navy cut \$270 million in Research, Development, Test, and Evaluation (RDT&E) funds across fiscal years 2004 through 2007, and an additional \$40 million per ship in technology insertion funds across the same time period partly to help fund higher Navy priorities. These cuts will delay core RDT&E efforts such as: continued development of an information assurance solution for the sonar and combat control networks, correction of high priority deficiencies noted in the operational assessment of

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<sup>1</sup> Multiyear procurement authority would allow the Navy to contract for seven ships authorized over 5 years, thus committing future budgets to support these acquisitions. Contract terms require the Navy to pay certain charges if the contract is terminated or quantities reduced. A multiyear contract of \$500 million or more for a Defense weapon system may not be awarded unless the contract is specifically authorized by law in an appropriations act and a law other than an appropriations act, such as an authorization act.

the non-propulsion electronics systems, and evaluating causes and developing fixes for acoustic performance deficiencies. Technology insertion efforts will also be delayed until the later years of the current defense plan. Finally, the Navy recently cut \$600 million from the program's procurement account and \$2 million per year in RDT&E funds across the 2004 to 2009 defense plan due to Defense-wide inflation adjustments.

The multiyear procurement strategy calls for the acquisition rate to increase to two ships per year for fiscal years 2007 and 2008. Should funding pressures continue and prevent realization of this increase, savings would be eroded.

- *To date, the program's cost estimates have not proven realistic.* According to program documents, the cost estimates are based on historical shipbuilding and submarine program experience and actual performance on the first submarines under construction, among other factors. Nonetheless, the Navy reported that, as of December 31, 2002, costs had exceeded baseline estimates by 24 percent. This calculation included savings from the yet-to-be-authorized multiyear. Had the Navy not included these savings, the cost overrun would have been 31 percent.<sup>2</sup> Program officials stated that they subsequently revised the baseline estimate in April 2003. Recent contract negotiations for the acquisition of additional ships raised further questions about the realism of the Navy's cost estimates. According to the program officials, the contractor's bid exceeded the Navy's estimate by \$1 billion. Officials reported that a tentative agreement has been reached that has resulted in a price within the program's budget, but the Navy altered the scope of the contract to reach that price.

This experience with the program's cost estimates raises questions regarding the realism of potential savings estimates. Moreover, should costs exceed estimates, the program would need additional funding or would have to make additional tradeoffs to program scope.

- *Changes in the program's test plan could affect stability of design.* Changes to the ship's design are still likely because the program is early in the acquisition cycle. The lead ship, which will be delivered in June 2004, will undergo only a pier-side review of the total ship survivability trial and will not undergo a full ship shock test. The second ship, the SSN 775, is expected to undergo both the total ship survivability trial and the full ship shock test in 2006. These tests, as well as sea trials, are likely to identify necessary design changes that may affect the components and materials already purchased as well as the cost and schedule of the program.

In contrast, the Arleigh Burke class (DDG-51) destroyer program, the last shipbuilding program to enter into a multiyear procurement contract, was well into its acquisition cycle when multiyear procurement authority was approved.

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<sup>2</sup> A 31 percent increase would have triggered the requirement in 10 U.S.C. 2433 (known as Nunn-McCurdy), applicable to cost increases exceeding 25 percent, that the Secretary of Defense submit to Congress a certification that (1) the program is essential to national security, (2) no alternatives exist which will provide equal or greater military capability at less cost, (3) the new cost estimates are reasonable, and (4) the program's management structure is adequate to manage and control cost.

Twenty-one ships had already been commissioned and an additional 17 were under construction.

### **Agency Comments and Our Evaluation**

The Department of Defense provided oral comments on a draft of this letter. The department agreed that several factors could impact the magnitude of savings it reported, but did not agree with our comments concerning the realism of cost estimates and the stability of design. The department underscored the importance of the requirement for the attack submarine and implications for national security. It also stated that the program is given priority by the Navy when allocating planned resources.

Regarding cost estimates, the department said that it has accepted the Navy's cost estimates and that these estimates reflect cost experience on the first four ships. However, based on recent experience, we do not believe that the Navy has demonstrated that its cost estimates are reliable. The program is currently overrun by over 24 percent (assuming savings if multiyear procurement authority is granted) and initial bids for the next buy of ships were \$1 billion over the Navy's estimates.

Regarding stability of design, the department emphasized that it believes the design is stable based on completion of 99.8 percent of the drawings and low engineering changes. It also said that improved design and modeling technologies mitigate the risk of design changes. We recognize and strongly support the effort the Navy is undertaking to mitigate the risk of design changes. However, it is reasonable to expect that changes to the design will be necessary as a result of launching and testing the first ships. Design changes could erode expected savings.

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### **Scope and Methodology**

In the course of our review of the fiscal year 2004 defense budget, we reviewed the Virginia class submarine program's request for multiyear procurement authority. At your request, we also assessed the advantages and risks associated with the multiyear procurement proposal. Specifically, we identified issues related to the following criteria: substantial savings, stability of funding, realism of cost estimates, and stability of design. To assess the Navy's request, we reviewed the Navy's budget submission, the Navy's justification document for multiyear procurement authority, the fiscal year 2004-2009 defense plan, the Virginia class submarine Selected Acquisition Report, and documents relating to planned test events. We also discussed the Navy's request with Virginia class submarine program officials.

We conducted our work from April 2003 through June 2003 in accordance with generally accepted government auditing standards.

We are sending copies of this letter to the Honorable John P. Murtha, Ranking Minority Member; the Honorable Donald H. Rumsfeld, Secretary of Defense; the Honorable Hansford T. Johnson, Acting Secretary of the Navy; and interested congressional committees. We will make copies available to other interested parties upon request. In addition, the letter will be available at no charge on the GAO Web site at <http://www.gao.gov>.

Please contact me at (202) 512-4841 or Karen Zuckerstein at (202) 512-6785 if you or your staff have any questions concerning this letter. Other major contributors to this letter were Rick Hensley, J. Kristopher Keener, Julie Leetch and Adam Vodraska.

Sincerely,

A handwritten signature in cursive script that reads "Paul L. Francis".

Paul L. Francis  
Director  
Acquisition and Sourcing Management

(120264)

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