

UNCLASSIFIED



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-516



SSN 774 Virginia Class Submarine (SSN 774)

As of FY 2019 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

UNCLASSIFIED

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Sensitivity Originator

No originator info Available at this time.

Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance
ACAT - Acquisition Category
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
\$B - Billions of Dollars
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FOC - Full Operational Capability
FMS - Foreign Military Sales
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
IOC - Initial Operational Capability
Inc - Increment
JROC - Joint Requirements Oversight Council
\$K - Thousands of Dollars
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
\$M - Millions of Dollars
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
O&S - Operating and Support
PAUC - Program Acquisition Unit Cost

PB - President's Budget
PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting
U.S. - United States
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Information

Program Name

SSN 774 Virginia Class Submarine (SSN 774)

DoD Component

Navy

Responsible Office

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References

SAR Baseline (Production Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated September 3, 2010

Approved APB

Component Acquisition Executive (CAE) Approved Acquisition Program Baseline (APB) dated February 13, 2017

Mission and Description

The VIRGINIA Class (SSN 774) Submarine Program is bringing forward a critical national security asset designed to flexibly address the unique multi-mission requirements of the post-Cold War era. Capable of performing traditional submarine missions, dominating the littoral battle space and adapting to future requirements, the VIRGINIA Class Submarine satisfies any assigned role well into the Twenty-First Century. Replacing the fleet of SSN 688 Class submarines, the VIRGINIA Class Submarine is characterized by state-of-the-art stealth, enhanced features for special operations forces, and cost effective Command, Control, Communication and Intelligence capability. With an array of armament including the MK48 Advanced Capability torpedo and cruise missile vertical launch capability, the VIRGINIA Class Submarine maintains total undersea superiority at an affordable cost.

Executive Summary

Program Highlights Since Last Report

The VIRGINIA Class Submarine Program is at FRP delivering two submarines per year at two shipyards. Build span has been reduced by two years. With the delivery to the Navy of COLORADO (SSN 788) on September 21, 2017, 15 VIRGINIAs are in service today, 12 are under construction and one is under contract. The PB 2019 added a second VIRGINIA Class Submarine in FY 2024.

A Request for Proposal for a Block V Multi-Year Procurement construction contract was released on August 25, 2017 for 10 ships (FY 2019-FY 2023). Award is planned for early FY 2019. The Block V Construction Contract will incorporate the Block IV design with Acoustic Superiority (AS) and VIRGINIA Payload Module (VPM).

The VPM design is progressing with design products completing near schedule. Payload Tube manufacturing and material procurement are in progress to support Block V construction start. The design is expected to be greater than 80% complete at construction start as compared to the Block III Design for Affordability redesign which was approximately 60% complete at construction start.

AS supports the Chief of Naval Operation's (CNO) undersea dominance mandate and represents the first significant investment in VIRGINIA acoustic capability since initial design. The SOUTH DAKOTA Insertion Program is a near-term AS concept demonstration on a VIRGINIA Class platform to be installed during SOUTH DAKOTA (SSN 790) Post Shakedown Availability.

Recent milestones in the construction and testing of VIRGINIA Class Submarines are highlighted by the completion of Block III Follow-on Operational Test and Evaluation in the first quarter, FY 2018.

Other near term VIRGINIA Class program events include the projected delivery of INDIANA (SSN 789) in spring 2018 and SOUTH DAKOTA (SSN 790) in August 2018.

There are no significant software-related issues with this program at this time.

History of Significant Developments Since Program Initiation

History of Significant Developments Since Program Initiation	
Date	Significant Development Description
August 1992	Milestone 0 for Centurion Submarine, "the first submarine designed with affordability considerations paramount". Conceptualized as a lower cost alternative to SEAWOLF Class.
August 1994	Milestone I was approved for the New Attack Submarine (NSSL) following two years of extensive review of requirements and rigorous systems definition effort.
December 1994	Milestone I APB established.
June 1995	The New Attack Submarine Program successfully passed Milestone II with the signing of an ADM.
June 1995	A waiver from full-up, system-level live fire testing was approved jointly by USD (A&T&L) and the Director, Operational Test & Evaluation with notification letters sent to Congressional Defense Committees on June 29, 1995.
April 1996	Contract award for the New Attack Submarine Command, Control, Communications and Intelligence (C3I) System was executed to Lockheed Martin Federal Systems.
May 1996	The Integrated Process and Product Development (IPPD) 1996 Design/Build Contract with Electric Boat (EB) Corporation was definitized.
October 1997	The revised APB (Change 1 to the Development Baseline of June 30, 1995) was signed to reflect the co-construction teaming arrangement between EB and Newport News Shipbuilding (NNS) as mandated in the FY 1998 Authorization and Appropriations Acts.
September 1998	The IPPD 96 Design Build contract with EB was modified to include construction of the first four VIRGINIA Class Submarines.
January 2001	Systems testing and integration started on the first Command and Control Systems Module (CCSM) at the Off-hull Assembly and Test Site (COATS). The COATS facility is used to test VIRGINIA Class CCSM units prior to shipyard delivery.
August 2003	In pursuit of the lowest possible future program costs, the Navy awarded the Block II construction contract with clauses to transition to a multi-year contract in FY 2004.
January 2004	The transition to multi-year procurement for hulls six through ten was completed in January 2004 following approval by Congress in the FY 2004 Defense Appropriations and Authorization Acts.
October 2004	Lead Ship delivery (USS VIRGINIA SSN 774). Delivery occurred within the original baseline schedule threshold set ten years earlier, in 1994.
June 2006	USS TEXAS, which was essentially the second lead ship of the class, was the first submarine delivered at Northrop Grumman, Newport News in nearly ten years.
March 2007	The program achieved IOC although USS VIRGINIA first deployed operationally in the fall of 2005 in support of the Global War on Terror.
December 2008	The Navy awarded the Block III construction contract to General Dynamics Electric Boat and Northrop Grumman Newport News for the construction of eight VIRGINIA Class submarines from FY 2009 through FY 2013.
September 2010	The program achieved Milestone III. The ADM was signed by the USD (AT&L) and included a declaration of Full Operational Capability and authorization of Full Rate Production.
October 2010	The program accelerated to Full Rate Production of two ships per year.
January 2012	The initial Concept Design for the Virginia Payload Module (VPM) was completed.
April 2014	The Navy signed a Block IV Construction Contract to build ten VIRGINIA Class Submarines with General Dynamics Electric Boat and Huntington Ingalls Industries-Newport News. Under the five-year

	agreement, Electric Boat and Newport News Shipbuilding would jointly build two ships per year from FY 2014 - FY 2018.
February 2017	On February 13, 2017, an APB was signed by the acting Assistant Secretary of the Navy (Research, Development & Acquisition) reflecting an increase in the number of submarines from 30 to 48. The baseline update includes the VIRGINIA Payload Module (VPM) and Acoustic Superiority (AS) on Block V and follow ships.

Threshold Breaches

APB Breaches

Schedule		<input checked="" type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
O&S Cost		<input type="checkbox"/>
Unit Cost	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

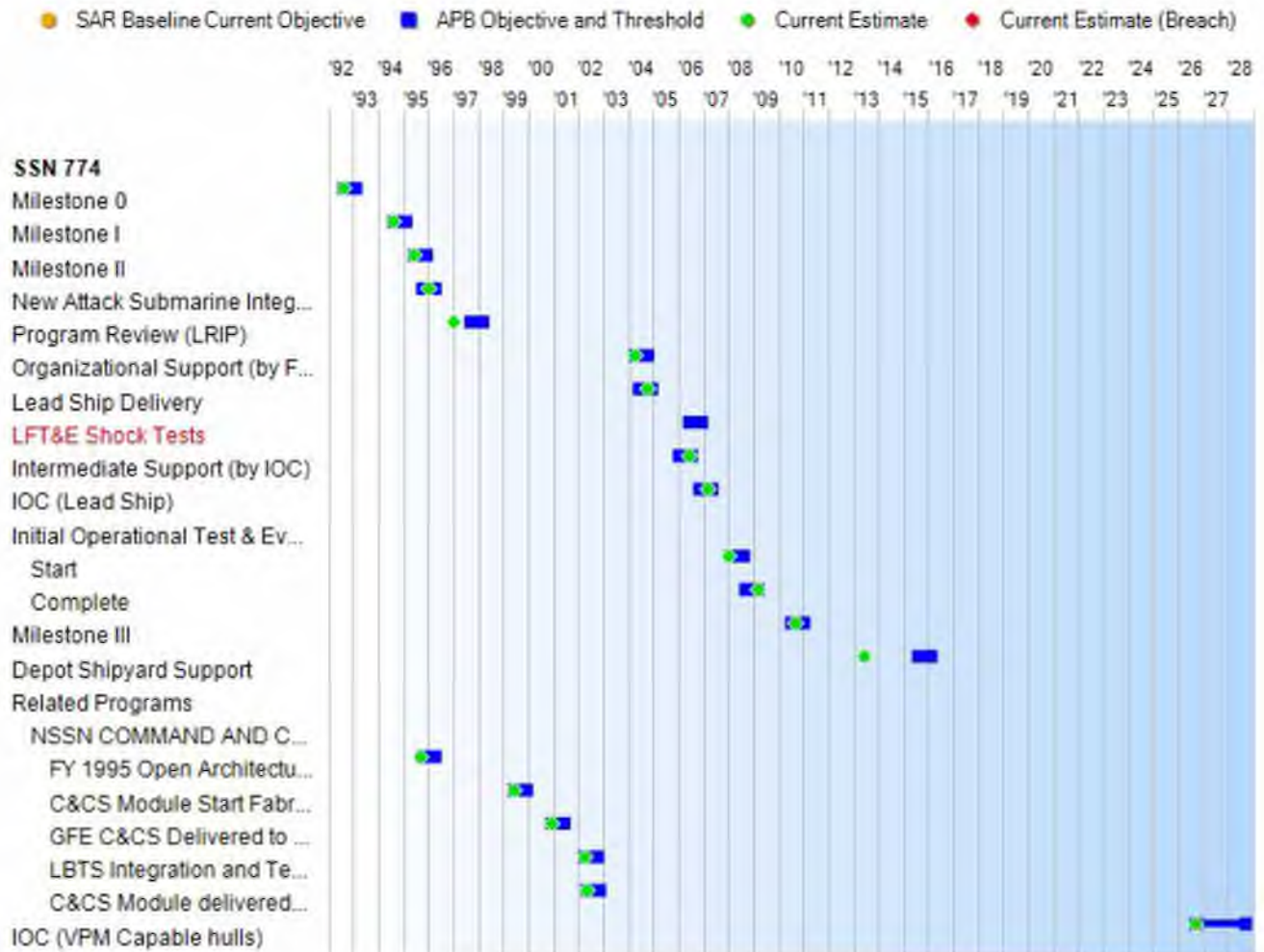
Explanation of Breach

Schedule -- This schedule breach was previously reported in the December 2006 SAR. On December 4, 2006, the USD(AT&L) notified Congress of the decision to eliminate the VIRGINIA Class Ship Shock Test from the Live Fire Test and Evaluation portion of the VIRGINIA Class Test and Evaluation Master Plan.

Nunn-McCurdy Breaches

Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Schedule



Schedule Events				
Events	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate
Milestone 0	Aug 1992	Aug 1992	Feb 1993	Aug 1992
Milestone I	Aug 1994	Aug 1994	Feb 1995	Aug 1994
Milestone II	Jun 1995	Jun 1995	Dec 1995	Jun 1995
New Attack Submarine Integrated Product and Process Development Contract Award	Oct 1995	Oct 1995	Apr 1996	Jan 1996
Program Review (LRIP)	Sep 1997	Sep 1997	Mar 1998	Jan 1997
Organizational Support (by Fast Cruise)	Apr 2004	Apr 2004	Oct 2004	Apr 2004
Lead Ship Delivery	Jun 2004	Jun 2004	Dec 2004	Oct 2004
LFT&E Shock Tests	Jun 2006	Jun 2006	Dec 2006	N/A ¹
Intermediate Support (by IOC)	Jan 2006	Jan 2006	Jul 2006	Jun 2006
IOC (Lead Ship)	Nov 2006	Nov 2006	May 2007	Mar 2007
Initial Operational Test & Evaluation				
Start	Feb 2008	Feb 2008	Aug 2008	Jan 2008
Complete	Sep 2008	Sep 2008	Mar 2009	Mar 2009
Milestone III	Jul 2010	Jul 2010	Jan 2011	Sep 2010
Depot Shipyard Support	Aug 2015	Aug 2015	Feb 2016	Jun 2013
Related Programs				
NSSN COMMAND AND CONTROL SYSTEM				
FY 1995 Open Architecture Demo Complete	Oct 1995	Oct 1995	Apr 1996	Sep 1995
C&CS Module Start Fabrication	Jun 1999	Jun 1999	Dec 1999	Jun 1999
GFE C&CS Delivered to Shipyard	Dec 2000	Dec 2000	Jun 2001	Dec 2000
LBTS Integration and Test Complete	Apr 2002	Apr 2002	Oct 2002	Apr 2002
C&CS Module delivered to ship	May 2002	May 2002	Nov 2002	May 2002
IOC (VPM Capable hulls)	N/A	Sep 2026	Sep 2028	Sep 2026

¹ APB Breach

Classified Schedule information is provided in the classified annex to this submission.

Change Explanations

None

Notes

On December 4, 2006, the USD(AT&L) notified Congress of the decision to eliminate the VIRGINIA Class Ship Shock Test from the Live Fire Test and Evaluation portion of the VIRGINIA Class Test and Evaluation Master Plan.

Projected delivery dates for ships under construction:

FY12-2 - SSN 789 - PCU INDIANA – 4 May 2018

FY13-1 - SSN 790 – PCU SOUTH DAKOTA – 19 Aug 2018
FY13-2 - SSN 791 – PCU DELAWARE – 28 Apr 2019
FY14-1 - SSN 792 – PCU VERMONT - 30 Jun 2019
FY14-2 - SSN 793 – PCU OREGON – 30 Nov 2019
FY15-1 - SSN 794 – PCU MONTANA – 31 May 2020
FY15-2 - SSN 795 – PCU HYMAN G. RICKOVER – 30 SEP 2020
FY16-1 - SSN 796 – PCU NEW JERSEY – 28 Feb 2021
FY16-2 - SSN 797 – PCU IOWA – 31 Aug 2021
FY17-1 - -SSN 798 – PCU MASSACHUSETTS – 28 Feb 2022
FY17-2 - SSN 799 – PCU IDAHO – 31 Aug 2022

Acronyms and Abbreviations

C&CS - Command and Control System
GFE - Government Furnished Equipment
LBTS - Land Based Test Site
LFT&E - Live Fire Test and Evaluation
NSSN - New Attack Submarine

Performance

Classified Performance information is provided in the classified annex to this submission.

Track to Budget

General Notes

A new APB, signed February 13, 2017, expanded the program to 48 submarines. As part of the restructure, Military Construction, Navy and Marine Corps (MILCON 1205) funding was added to the acquisition program in FY 2019-FY 2026. Information for this funding line is not yet available.

RDT&E

Appn	BA	PE		
Navy	1319	03	0603561N	
	Project		Name	
	2177		NEW DESIGN SSN HM&E (NSSL UNIQUE)	(Sunk)
Navy	1319	03	0603564N	
	Project		Name	
	2200		Ship Preliminary Design	(Sunk)
Navy	1319	03	0603570N	
	Project		Name	
	2158		NUCLEAR PROPULSION	(Sunk)
Navy	1319	05	0604558N	
	Project		Name	
	1947		New Design SSN HM&E	
	1950		New Design SSN Combat Sys Dev	
	2429		NEW DESIGN SSN HM&E and Combat Systems	(Sunk)
	2430		NEW DESIGN SSN HM&E and Combat Systems	(Sunk)
	2644		NEW DESIGN SSN HM&E and Combat Systems	(Sunk)
	2645		NEW DESIGN SSN HM&E and Combat Systems	(Sunk)
	2887		NEW DESIGN SSN HM&E and Combat Systems	(Sunk)
	2888		NEW DESIGN SSN HM&E and Combat Systems	(Sunk)
	3062		NEW DESIGN SSN HM&E and Combat Systems (Shared)	(Sunk)
	4500		VIRGINIA Payload Module	(Sunk)
	Notes:		VIRGINIA Payload Module funding shifted to Program Element 0604580N beginning in FY 2014.	
	9231		NEW DESIGN SSN HM&E and Combat Systems	(Sunk)
	9232		NEW DESIGN SSN HM&E and	(Sunk)

			Combat Systems	
	9386		NEW DESIGN SSN HM&E and	(Sunk)
			Combat Systems	
	9387		NEW DESIGN SSN HM&E and	(Sunk)
			Combat Systems	
	9999		Congressional Adds	(Sunk)
Navy	1319	04	0604567N	
	Project		Name	
	2199		Ship Contract Design	(Sunk)
Navy	1319	05	0604580N	
	Project		Name	
	4500		VIRGINIA Payload Module	

Notes

FYDP funding includes the following projects from BA 05 PE 0604558: Project 1947 New Design Hull Mechanical & Electrical (HM&E) and Project 1950 New Design Combat Systems. PE 0604558, Project 3062, Multi-mission Team Trainer, is not included as part of the VIRGINIA Class baseline acquisition cost for RDT&E. Project 4500 VIRGINIA Payload Module shifted to PE 0604580 beginning in FY 2014.

Procurement

Appn	BA	PE		
Navy	1611	02	0204281N	
	Line Item		Name	
	2013		Virginia Class Submarine	
Navy	1611	05	0204281N	
	Line Item		Name	
	5110		Outfitting	(Shared)
	5300		Completion of Prior Year Shipbuilding Programs	(Shared) (Sunk)
Navy	1810	01	0204281N	
	Line Item		Name	
	0942		Virginia Class Support Equipment	(Shared)
	9020		Spares and Repair Parts	(Shared) (Sunk)

Notes

VIRGINIA Class program acquisition costs include a portion of the Other Procurement, Navy (OPN) budget Project Line Item 0942. Programs included in VIRGINIA Class acquisition costs are: VA Class Special Operations Forces Support, Test and Evaluation Measuring Equipment, Exterior Communication System Trainer, VIRGINIA Ship Control Operator Trainer and Major Shore Spares. The balance of the OPN budget is captured in program O&S Costs.

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 1995 \$M			BY 1995 \$M	TY \$M		
	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Production Estimate	Current APB Production Objective	Current Estimate
RDT&E	5420.4	6498.8	7018.9	6609.2	6351.2	8192.7	8375.7
Procurement	58933.2	87455.7	97035.7	87301.3	86856.1	157493.5	155260.2
Flyaway	--	--	--	86379.5	--	--	153557.9
Recurring	--	--	--	84710.0	--	--	151625.6
Non Recurring	--	--	--	1669.5	--	--	1932.3
Support	--	--	--	921.8	--	--	1702.3
Other Support	--	--	--	0.0	--	--	0.0
Initial Spares	--	--	--	921.8	--	--	1702.3
MILCON	0.0	348.8	383.7	347.8	0.0	570.8	570.8
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	64353.6	94303.3	N/A	94258.3	93207.3	166257.0	164206.7

Current APB Cost Estimate Reference

SCP dated November 04, 2016

Cost Notes

In accordance with Section 842 of the National Defense Authorization Act for FY 2017, which amended title 10 U.S.C. § 2334, the Director of Cost Assessment and Program Evaluation, and the Secretary of the military department concerned or the head of the Defense Agency concerned, must issue guidance requiring a discussion of risk, the potential impacts of risk on program costs, and approaches to mitigate risk in cost estimates for MDAPs and major subprograms. The information required by the guidance is to be reported in each SAR. This guidance is not yet available; therefore, the information on cost risk is not contained in this SAR.

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E	0	0	0
Procurement	30	48	48
Total	30	48	48

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2019 President's Budget / December 2017 SAR (TY\$ M)									
Appropriation	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
RDT&E	5884.1	190.3	145.6	115.8	192.0	230.1	274.3	1343.5	8375.7
Procurement	72798.3	5369.0	7318.7	7341.5	6653.8	6180.6	6308.3	43290.0	155260.2
MILCON	0.0	0.0	37.0	133.4	190.8	140.6	55.5	13.5	570.8
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2019 Total	78682.4	5559.3	7501.3	7590.7	7036.6	6551.3	6638.1	44647.0	164206.7
PB 2018 Total	78687.2	5559.3	7466.8	7611.4	6991.1	5672.5	6493.6	45841.5	164323.4
Delta	-4.8	0.0	34.5	-20.7	45.5	878.8	144.5	-1194.5	-116.7

Quantity Summary										
FY 2019 President's Budget / December 2017 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Development	0	0	0	0	0	0	0	0	0	0
Production	0	26	2	2	2	2	2	2	10	48
PB 2019 Total	0	26	2	2	2	2	2	2	10	48
PB 2018 Total	0	26	2	2	2	2	2	2	10	48
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding							
1319 RDT&E Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1992	--	--	--	--	--	--	22.7
1993	--	--	--	--	--	--	66.3
1994	--	--	--	--	--	--	363.7
1995	--	--	--	--	--	--	453.4
1996	--	--	--	--	--	--	429.0
1997	--	--	--	--	--	--	452.3
1998	--	--	--	--	--	--	382.4
1999	--	--	--	--	--	--	308.4
2000	--	--	--	--	--	--	275.4
2001	--	--	--	--	--	--	237.3
2002	--	--	--	--	--	--	218.8
2003	--	--	--	--	--	--	242.2
2004	--	--	--	--	--	--	155.4
2005	--	--	--	--	--	--	153.1
2006	--	--	--	--	--	--	166.3
2007	--	--	--	--	--	--	191.2
2008	--	--	--	--	--	--	233.5
2009	--	--	--	--	--	--	180.5
2010	--	--	--	--	--	--	172.8
2011	--	--	--	--	--	--	161.5
2012	--	--	--	--	--	--	105.7
2013	--	--	--	--	--	--	78.7
2014	--	--	--	--	--	--	115.4
2015	--	--	--	--	--	--	189.6
2016	--	--	--	--	--	--	305.1
2017	--	--	--	--	--	--	223.4
2018	--	--	--	--	--	--	190.3
2019	--	--	--	--	--	--	145.6
2020	--	--	--	--	--	--	115.8
2021	--	--	--	--	--	--	192.0
2022	--	--	--	--	--	--	230.1
2023	--	--	--	--	--	--	274.3
2024	--	--	--	--	--	--	136.3
2025	--	--	--	--	--	--	163.7
2026	--	--	--	--	--	--	141.2

2027	--	--	--	--	--	--	126.5
2028	--	--	--	--	--	--	99.2
2029	--	--	--	--	--	--	118.1
2030	--	--	--	--	--	--	135.5
2031	--	--	--	--	--	--	134.9
2032	--	--	--	--	--	--	125.4
2033	--	--	--	--	--	--	112.2
2034	--	--	--	--	--	--	8.2
2035	--	--	--	--	--	--	8.5
2036	--	--	--	--	--	--	8.1
2037	--	--	--	--	--	--	8.3
2038	--	--	--	--	--	--	8.6
2039	--	--	--	--	--	--	8.8
Subtotal	--	--	--	--	--	--	8375.7

Annual Funding							
1319 RDT&E Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 1995 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1992	--	--	--	--	--	--	23.8
1993	--	--	--	--	--	--	68.0
1994	--	--	--	--	--	--	365.9
1995	--	--	--	--	--	--	447.5
1996	--	--	--	--	--	--	416.4
1997	--	--	--	--	--	--	433.7
1998	--	--	--	--	--	--	363.7
1999	--	--	--	--	--	--	289.9
2000	--	--	--	--	--	--	255.1
2001	--	--	--	--	--	--	216.9
2002	--	--	--	--	--	--	198.0
2003	--	--	--	--	--	--	216.0
2004	--	--	--	--	--	--	134.8
2005	--	--	--	--	--	--	129.4
2006	--	--	--	--	--	--	136.3
2007	--	--	--	--	--	--	153.0
2008	--	--	--	--	--	--	183.5
2009	--	--	--	--	--	--	140.0
2010	--	--	--	--	--	--	132.1
2011	--	--	--	--	--	--	120.6
2012	--	--	--	--	--	--	77.6
2013	--	--	--	--	--	--	57.2
2014	--	--	--	--	--	--	82.7
2015	--	--	--	--	--	--	134.2
2016	--	--	--	--	--	--	212.4
2017	--	--	--	--	--	--	153.0
2018	--	--	--	--	--	--	128.1
2019	--	--	--	--	--	--	96.2
2020	--	--	--	--	--	--	75.0
2021	--	--	--	--	--	--	122.0
2022	--	--	--	--	--	--	143.3
2023	--	--	--	--	--	--	167.5
2024	--	--	--	--	--	--	81.6
2025	--	--	--	--	--	--	96.1
2026	--	--	--	--	--	--	81.3
2027	--	--	--	--	--	--	71.4
2028	--	--	--	--	--	--	54.9
2029	--	--	--	--	--	--	64.0
2030	--	--	--	--	--	--	72.0
2031	--	--	--	--	--	--	70.3

2032	--	--	--	--	--	--	64.1
2033	--	--	--	--	--	--	56.2
2034	--	--	--	--	--	--	4.0
2035	--	--	--	--	--	--	4.1
2036	--	--	--	--	--	--	3.8
2037	--	--	--	--	--	--	3.8
2038	--	--	--	--	--	--	3.9
2039	--	--	--	--	--	--	3.9
Subtotal	--	--	--	--	--	--	6609.2

Annual Funding 1611 Procurement Shipbuilding and Conversion, Navy							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1996	--	571.0	--	219.3	790.3	--	790.3
1997	--	532.9	--	242.5	775.4	--	775.4
1998	1	1625.0	--	840.9	2465.9	--	2465.9
1999	1	1881.6	--	165.6	2047.2	--	2047.2
2000	--	743.7	--	--	743.7	--	743.7
2001	1	1589.8	--	90.8	1680.6	0.2	1680.8
2002	1	2407.5	--	60.8	2468.3	15.9	2484.2
2003	1	2402.0	--	14.3	2416.3	8.3	2424.6
2004	1	2715.2	--	6.9	2722.1	11.0	2733.1
2005	1	2601.5	--	--	2601.5	4.3	2605.8
2006	1	2563.9	--	--	2563.9	15.1	2579.0
2007	1	2580.8	--	--	2580.8	8.4	2589.2
2008	1	3157.6	--	--	3157.6	19.5	3177.1
2009	1	3652.5	--	--	3652.5	17.9	3670.4
2010	1	4034.3	--	--	4034.3	9.8	4044.1
2011	2	5164.0	--	--	5164.0	18.7	5182.7
2012	2	4735.8	--	--	4735.8	12.3	4748.1
2013	2	4686.1	--	--	4686.1	16.9	4703.0
2014	2	6523.4	--	--	6523.4	26.2	6549.6
2015	2	5912.9	--	--	5912.9	24.6	5937.5
2016	2	5388.3	--	--	5388.3	34.7	5423.0
2017	2	5058.6	--	93.7	5152.3	22.4	5174.7
2018	2	5237.9	--	90.5	5328.4	16.3	5344.7
2019	2	7142.7	--	107.0	7249.7	41.8	7291.5
2020	2	7269.3	--	--	7269.3	55.4	7324.7
2021	2	6582.5	--	--	6582.5	61.5	6644.0
2022	2	6126.8	--	--	6126.8	43.8	6170.6
2023	2	6253.5	--	--	6253.5	44.7	6298.2
2024	2	7472.2	--	--	7472.2	46.5	7518.7
2025	2	7027.4	--	--	7027.4	42.6	7070.0
2026	1	4067.8	--	--	4067.8	53.0	4120.8
2027	1	3833.6	--	--	3833.6	51.8	3885.4
2028	1	4059.6	--	--	4059.6	42.6	4102.2
2029	1	5511.2	--	--	5511.2	55.4	5566.6
2030	1	5227.4	--	--	5227.4	55.0	5282.4
2031	1	4571.1	--	--	4571.1	40.1	4611.2
2032	--	126.8	--	--	126.8	50.5	177.3
2033	--	86.7	--	--	86.7	34.6	121.3
2034	--	90.1	--	--	90.1	35.9	126.0
2035	--	95.4	--	--	95.4	38.0	133.4

2036	--	94.2	--	--	94.2	37.5	131.7
2037	--	92.0	--	--	92.0	36.6	128.6
2038	--	75.3	--	--	75.3	30.0	105.3
2039	--	53.7	--	--	53.7	21.4	75.1
Subtotal	48	151625.6	--	1932.3	153557.9	1201.2	154759.1

Annual Funding 1611 Procurement Shipbuilding and Conversion, Navy							
Fiscal Year	Quantity	BY 1995 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1996	--	548.1	--	210.6	758.7	--	758.7
1997	--	503.9	--	229.2	733.1	--	733.1
1998	1	1502.6	--	777.6	2280.2	--	2280.2
1999	1	1712.7	--	150.7	1863.4	--	1863.4
2000	--	660.2	--	--	660.2	--	660.2
2001	1	1364.3	--	77.9	1442.2	0.2	1442.4
2002	1	2054.3	--	51.8	2106.1	13.6	2119.7
2003	1	1937.5	--	11.5	1949.0	6.7	1955.7
2004	1	2113.5	--	5.4	2118.9	8.5	2127.4
2005	1	1939.0	--	--	1939.0	3.2	1942.2
2006	1	1845.9	--	--	1845.9	10.9	1856.8
2007	1	1776.4	--	--	1776.4	5.8	1782.2
2008	1	2101.9	--	--	2101.9	13.0	2114.9
2009	1	2359.1	--	--	2359.1	11.6	2370.7
2010	1	2518.3	--	--	2518.3	6.1	2524.4
2011	2	3123.7	--	--	3123.7	11.3	3135.0
2012	2	2803.6	--	--	2803.6	7.2	2810.8
2013	2	2722.7	--	--	2722.7	9.8	2732.5
2014	2	3726.0	--	--	3726.0	15.0	3741.0
2015	2	3318.0	--	--	3318.0	13.8	3331.8
2016	2	2971.9	--	--	2971.9	19.1	2991.0
2017	2	2740.7	--	50.8	2791.5	12.1	2803.6
2018	2	2785.4	--	48.1	2833.5	8.7	2842.2
2019	2	3725.4	--	55.9	3781.3	21.8	3803.1
2020	2	3717.3	--	--	3717.3	28.4	3745.7
2021	2	3300.1	--	--	3300.1	30.9	3331.0
2022	2	3011.4	--	--	3011.4	21.6	3033.0
2023	2	3013.4	--	--	3013.4	21.6	3035.0
2024	2	3530.1	--	--	3530.1	22.0	3552.1
2025	2	3254.9	--	--	3254.9	19.7	3274.6
2026	1	1847.1	--	--	1847.1	24.1	1871.2
2027	1	1706.7	--	--	1706.7	23.0	1729.7
2028	1	1771.8	--	--	1771.8	18.6	1790.4
2029	1	2358.2	--	--	2358.2	23.7	2381.9
2030	1	2192.9	--	--	2192.9	23.1	2216.0
2031	1	1880.0	--	--	1880.0	16.5	1896.5
2032	--	51.1	--	--	51.1	20.4	71.5
2033	--	34.3	--	--	34.3	13.7	48.0
2034	--	34.9	--	--	34.9	13.9	48.8
2035	--	36.2	--	--	36.2	14.5	50.7

2036	--	35.1	--	--	35.1	14.0	49.1
2037	--	33.6	--	--	33.6	13.4	47.0
2038	--	27.0	--	--	27.0	10.7	37.7
2039	--	18.8	--	--	18.8	7.6	26.4
Subtotal	48	84710.0	--	1669.5	86379.5	579.8	86959.3

Cost Quantity Information		
1611 Procurement Shipbuilding and Conversion, Navy		
Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned With Quantity) BY 1995 \$M
1996	--	--
1997	--	--
1998	1	2141.8
1999	1	2356.4
2000	--	--
2001	1	1910.7
2002	1	2021.3
2003	1	1824.4
2004	1	1813.2
2005	1	1745.2
2006	1	1771.4
2007	1	1836.1
2008	1	1781.3
2009	1	1899.5
2010	1	1773.0
2011	2	3355.0
2012	2	3155.7
2013	2	3076.6
2014	2	3166.7
2015	2	3033.0
2016	2	3044.2
2017	2	3015.5
2018	2	3005.4
2019	2	3437.6
2020	2	3363.2
2021	2	3355.6
2022	2	3310.3
2023	2	3326.9
2024	2	3654.5
2025	2	3478.9
2026	1	1838.4
2027	1	1752.1
2028	1	1859.6
2029	1	2524.6
2030	1	2538.4
2031	1	2543.5
2032	--	--
2033	--	--
2034	--	--

2035	--	--
2036	--	--
2037	--	--
2038	--	--
2039	--	--
<hr/>		
Subtotal	48	84710.0

Annual Funding 1810 Procurement Other Procurement, Navy							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2005	--	--	--	--	--	12.5	12.5
2006	--	--	--	--	--	44.1	44.1
2007	--	--	--	--	--	47.0	47.0
2008	--	--	--	--	--	39.7	39.7
2009	--	--	--	--	--	48.0	48.0
2010	--	--	--	--	--	13.8	13.8
2011	--	--	--	--	--	21.7	21.7
2012	--	--	--	--	--	5.3	5.3
2013	--	--	--	--	--	1.8	1.8
2014	--	--	--	--	--	14.7	14.7
2015	--	--	--	--	--	9.3	9.3
2016	--	--	--	--	--	2.0	2.0
2017	--	--	--	--	--	9.0	9.0
2018	--	--	--	--	--	24.3	24.3
2019	--	--	--	--	--	27.2	27.2
2020	--	--	--	--	--	16.8	16.8
2021	--	--	--	--	--	9.8	9.8
2022	--	--	--	--	--	10.0	10.0
2023	--	--	--	--	--	10.1	10.1
2024	--	--	--	--	--	10.4	10.4
2025	--	--	--	--	--	10.7	10.7
2026	--	--	--	--	--	11.1	11.1
2027	--	--	--	--	--	11.4	11.4
2028	--	--	--	--	--	11.7	11.7
2029	--	--	--	--	--	12.1	12.1
2030	--	--	--	--	--	12.5	12.5
2031	--	--	--	--	--	12.8	12.8
2032	--	--	--	--	--	13.2	13.2
2033	--	--	--	--	--	13.6	13.6
2034	--	--	--	--	--	2.7	2.7
2035	--	--	--	--	--	2.8	2.8
2036	--	--	--	--	--	2.9	2.9
2037	--	--	--	--	--	3.0	3.0
2038	--	--	--	--	--	3.1	3.1
Subtotal	--	--	--	--	--	501.1	501.1

Annual Funding 1810 Procurement Other Procurement, Navy							
Fiscal Year	Quantity	BY 1995 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2005	--	--	--	--	--	10.4	10.4
2006	--	--	--	--	--	35.6	35.6
2007	--	--	--	--	--	37.2	37.2
2008	--	--	--	--	--	30.9	30.9
2009	--	--	--	--	--	36.9	36.9
2010	--	--	--	--	--	10.4	10.4
2011	--	--	--	--	--	16.1	16.1
2012	--	--	--	--	--	3.9	3.9
2013	--	--	--	--	--	1.3	1.3
2014	--	--	--	--	--	10.5	10.5
2015	--	--	--	--	--	6.5	6.5
2016	--	--	--	--	--	1.4	1.4
2017	--	--	--	--	--	6.1	6.1
2018	--	--	--	--	--	16.2	16.2
2019	--	--	--	--	--	17.8	17.8
2020	--	--	--	--	--	10.8	10.8
2021	--	--	--	--	--	6.2	6.2
2022	--	--	--	--	--	6.2	6.2
2023	--	--	--	--	--	6.1	6.1
2024	--	--	--	--	--	6.2	6.2
2025	--	--	--	--	--	6.2	6.2
2026	--	--	--	--	--	6.3	6.3
2027	--	--	--	--	--	6.4	6.4
2028	--	--	--	--	--	6.4	6.4
2029	--	--	--	--	--	6.5	6.5
2030	--	--	--	--	--	6.6	6.6
2031	--	--	--	--	--	6.6	6.6
2032	--	--	--	--	--	6.7	6.7
2033	--	--	--	--	--	6.8	6.8
2034	--	--	--	--	--	1.3	1.3
2035	--	--	--	--	--	1.3	1.3
2036	--	--	--	--	--	1.4	1.4
2037	--	--	--	--	--	1.4	1.4
2038	--	--	--	--	--	1.4	1.4
Subtotal	--	--	--	--	--	342.0	342.0

Annual Funding 1205 MILCON Military Construction, Navy and Marine Corps	
Fiscal Year	TY \$M
	Total Program
2019	37.0
2020	133.4
2021	190.8
2022	140.6
2023	55.5
2024	10.7
2025	2.1
2026	0.7
Subtotal	570.8

Annual Funding 1205 MILCON Military Construction, Navy and Marine Corps		
Fiscal Year	BY 1995 \$M	
	Total Program	
2019		23.5
2020		83.1
2021		116.6
2022		84.2
2023		32.6
2024		6.2
2025		1.2
2026		0.4
Subtotal		347.8

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	6/30/1995	6/30/1995
Approved Quantity	14	14
Reference	MS II ADM	MS II ADM
Start Year	1998	1998
End Year	2007	2011

The Current Total LRIP Quantity is more than 10% of the total production quantity due to this being a shipbuilding program for which this is standard practice.

Foreign Military Sales

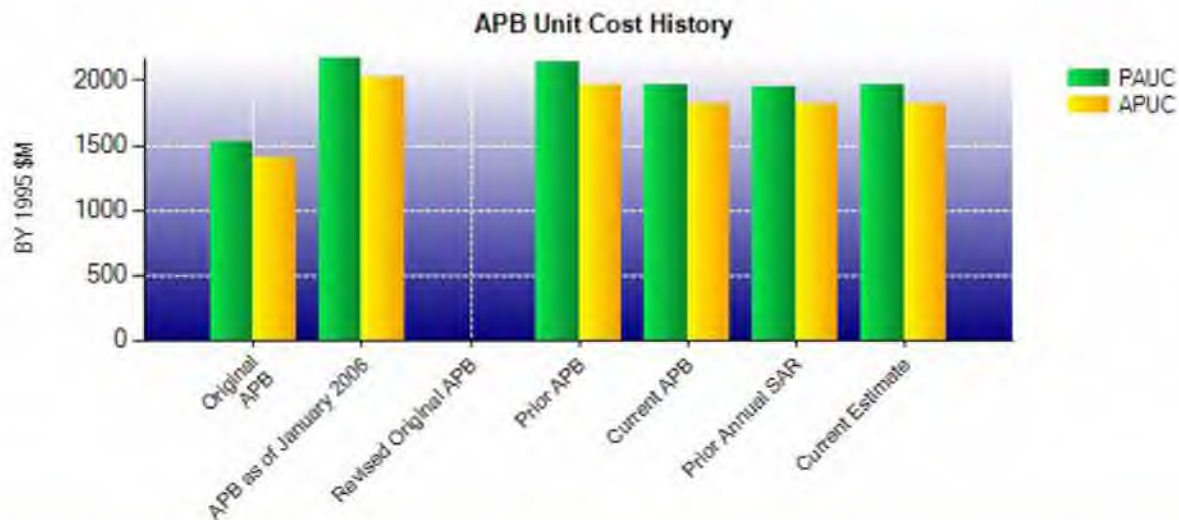
None

Nuclear Costs

These costs are for reactor propulsion plant equipment and are included in the Shipbuilding and Conversion, Navy costs in this report. Department of Energy costs are excluded from this report.

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 1995 \$M	BY 1995 \$M	% Change
	Current UCR Baseline (Feb 2017 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	94303.3	94258.3	
Quantity	48	48	
Unit Cost	1964.652	1963.715	-0.05
Average Procurement Unit Cost			
Cost	87455.7	87301.3	
Quantity	48	48	
Unit Cost	1821.994	1818.777	-0.18
Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 1995 \$M	BY 1995 \$M	% Change
	Original UCR Baseline (Jun 1995 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	45633.1	94258.3	
Quantity	30	48	
Unit Cost	1521.103	1963.715	+29.10
Average Procurement Unit Cost			
Cost	42228.1	87301.3	
Quantity	30	48	
Unit Cost	1407.603	1818.777	+29.21



APB Unit Cost History					
Item	Date	BY 1995 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Jun 1995	1521.103	1407.603	2369.360	2242.227
APB as of January 2006	May 2005	2174.943	2021.430	2749.060	2578.850
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	Sep 2010	2145.120	1964.440	3106.910	2895.203
Current APB	Feb 2017	1964.652	1821.994	3463.688	3281.115
Prior Annual SAR	Dec 2016	1948.817	1810.781	3423.404	3247.669
Current Estimate	Dec 2017	1963.715	1818.777	3420.973	3234.588

SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY \$M)									
Initial PAUC Development Estimate	Changes								PAUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
2369.360	-166.403	0.000	259.820	42.410	564.303	9.333	28.087	737.550	3106.910

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
3106.910	100.904	373.042	-176.796	145.402	-143.227	0.000	14.738	314.063	3420.973

Initial SAR Baseline to Current SAR Baseline (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
2242.227	-160.064	0.000	259.820	36.360	479.440	9.333	28.087	652.976	2895.203

Current SAR Baseline to Current Estimate (TY \$M)									
APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
2895.203	101.304	452.432	-176.796	117.938	-170.231	0.000	14.738	339.385	3234.588

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone I	N/A	Aug 1994	Aug 1994	Aug 1994
Milestone II	N/A	Jun 1995	Jun 1995	Jun 1995
Milestone III	N/A	Oct 2007	Jul 2010	Sep 2010
IOC	N/A	Oct 2005	Nov 2006	Jun 2006
Total Cost (TY \$M)	N/A	71080.8	93207.3	164206.7
Total Quantity	N/A	30	30	48
PAUC	N/A	2369.360	3106.910	3420.973

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	6351.2	86856.1	--	93207.3
Previous Changes				
Economic	-0.3	+5765.9	--	+5765.6
Quantity	--	+73830.4	--	+73830.4
Schedule	--	-8100.3	--	-8100.3
Engineering	+798.0	+5661.0	--	+6459.0
Estimating	+715.6	-8830.0	+570.8	-7543.6
Other	--	--	--	--
Support	--	+705.0	--	+705.0
Subtotal	+1513.3	+69032.0	+570.8	+71116.1
Current Changes				
Economic	-14.0	-903.3	-4.9	-922.2
Quantity	--	--	--	--
Schedule	--	-385.9	--	-385.9
Engineering	+520.3	--	--	+520.3
Estimating	+4.9	+658.9	+4.9	+668.7
Other	--	--	--	--
Support	--	+2.4	--	+2.4
Subtotal	+511.2	-627.9	--	-116.7
Total Changes	+2024.5	+68404.1	+570.8	+70999.4
CE - Cost Variance	8375.7	155260.2	570.8	164206.7
CE - Cost & Funding	8375.7	155260.2	570.8	164206.7

Summary BY 1995 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	5420.4	58933.2	--	64353.6
Previous Changes				
Economic	--	--	--	--
Quantity	--	+33418.9	--	+33418.9
Schedule	--	-3742.2	--	-3742.2
Engineering	+556.6	+2612.6	--	+3169.2
Estimating	+303.9	-4571.1	+344.8	-3922.4
Other	--	--	--	--
Support	--	+266.1	--	+266.1
Subtotal	+860.5	+27984.3	+344.8	+29189.6
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	+65.6	--	+65.6
Engineering	+325.7	--	--	+325.7
Estimating	+2.6	+316.7	+3.0	+322.3
Other	--	--	--	--
Support	--	+1.5	--	+1.5
Subtotal	+328.3	+383.8	+3.0	+715.1
Total Changes	+1188.8	+28368.1	+347.8	+29904.7
CE - Cost Variance	6609.2	87301.3	347.8	94258.3
CE - Cost & Funding	6609.2	87301.3	347.8	94258.3

Previous Estimate: December 2016

RDT&E		\$M	
Current Change Explanations		Base Year	Then Year
Revised escalation indices. (Economic)		N/A	-14.0
Revised requirement for future technologies and design. (Engineering)		+325.7	+520.3
Revised estimate for core RDT&E program. (Estimating)		-5.6	-9.1
Revised estimate to reflect the application of new outyear escalation indices. (Estimating)		+7.1	+12.4
Adjustment for current and prior escalation. (Estimating)		+1.1	+1.6
RDT&E Subtotal		+328.3	+511.2

Procurement		\$M	
Current Change Explanations		Base Year	Then Year
Revised escalation indices. (Economic)		N/A	-903.3
Acceleration of procurement buy profile due to one ship moving from FY 2032 to FY 2024 (Shipbuilding and Conversion, Navy (SCN)). (Schedule)		0.0	-633.0
Additional Schedule variance due to moving one ship from FY 2032 to FY 2024 (SCN) (Schedule)		+65.6	+247.1
Revised estimate to reflect the application of new outyear escalation indices. (Estimating)		+334.4	+712.7
Adjustment for service reductions for process improvements and procurement efficiencies. (Estimating)		-112.9	-227.0
Adjustment for current and prior escalation. (Estimating)		+95.2	+173.2
Adjustment for current and prior escalation. (Support)		+0.6	+0.9
Increase in Initial Outfitting Spares (Shipbuilding and Conversion, Navy). (Support)		+0.5	+0.4
Increase in Initial Spares (Other Procurement, Navy). (Support)		+0.4	+1.1
Procurement Subtotal		+383.8	-627.9

MILCON		\$M	
Current Change Explanations		Base Year	Then Year
Revised escalation indices. (Economic)		N/A	-4.9
Revised estimate to reflect the application of new outyear escalation indices. (Estimating)		+3.0	+4.9
MILCON Subtotal		+3.0	0.0

Contracts

Contract Identification

Appropriation: Procurement
Contract Name: SSN 789
Contractor: General Dynamics, EB Corporation
Contractor Location: 75 Eastern Point Road
 Groton, CT 06340
Contract Number: N00024-09-C-2104/6
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: December 22, 2008
Definitization Date: December 22, 2008

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1688.8	1796.5	1	1715.1	1796.5	1	1681.7	1682.3

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to authorized contract change orders.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2017)	+40.5	-50.3
Previous Cumulative Variances	+77.7	-90.0
Net Change	-37.2	+39.7

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to shipbuilder performance attributed to final ship delivery issues.

The favorable net change in the schedule variance is due to completion of final assembly and testing activities leading up to ship delivery.

Notes

This contract is more than 90% complete; therefore, this is the final report for this contract.

Contract Identification

Appropriation: Procurement
Contract Name: SSN 790
Contractor: General Dynamics, EB Corporation
Contractor Location: 75 Eastern Point Road
 Groton, CT 06340
Contract Number: N00024-09-C-2104/7
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: December 22, 2008
Definitization Date: December 22, 2008

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1621.3	1738.5	1	1734.7	1796.1	1	1690.5	1693.8

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to authorized contract change orders.

Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2017)	+73.5	-46.6
Previous Cumulative Variances	+72.6	-37.2
Net Change	+0.9	-9.4

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to final assembly and testing performance.

The unfavorable net change in the schedule variance is due to attempting to hold an aggressive schedule to meet contract delivery date.

Notes

This contract is more than 90% complete; therefore, this is the final report for this contract.

Contract Identification

Appropriation: Procurement
Contract Name: SSN 791
Contractor: General Dynamics, EB Corporation
Contractor Location: 75 Eastern Point Road
 Groton, CT 06340
Contract Number: N00024-09-C-2104/8
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: December 22, 2008
Definitization Date: December 22, 2008

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1657.1	1776.9	1	1751.6	1826.3	1	1706.3	1713.3

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to authorized contract change orders.

Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2017)	+79.9	-92.5
Previous Cumulative Variances	+101.8	-57.7
Net Change	-21.9	-34.8

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to final assembly and testing performance.

The unfavorable net change in the schedule variance is due to attempting to hold an aggressive schedule to deliver at contract delivery date.

Contract Identification

Appropriation: Procurement
Contract Name: SSN 792
Contractor: General Dynamics, EB Corporation
Contractor Location: 75 Eastern Point Road
 Groton, CT 06340
Contract Number: N00024-12-C-2115/1
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: April 25, 2014
Definitization Date: April 25, 2014

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1917.2	2068.9	1	1918.5	2074.0	1	1939.4	1946.1

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to authorized contract change orders.

Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2017)	-43.1	-166.6
Previous Cumulative Variances	-26.9	-148.1
Net Change	-16.2	-18.5

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to poor modular performance and out of sequence work inefficiencies due to late material issues.

The unfavorable net change in the schedule variance is due to late material and to a lesser degree, labor resource challenges and tighter construction spans.

Contract Identification

Appropriation: Procurement
Contract Name: SSN 793
Contractor: General Dynamics, EB Corporation
Contractor Location: 75 Eastern Point Road
 Groton, CT 06340
Contract Number: N00024-12-C-2115/2
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: April 25, 2014
Definitization Date: April 25, 2014

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1697.4	1833.0	1	1693.8	1837.6	1	1710.0	1717.5

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to authorized contract changed orders.

Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2017)	-5.5	-132.2
Previous Cumulative Variances	+3.2	-123.1
Net Change	-8.7	-9.1

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to poor modular performance and out of sequence work inefficiencies due to late material issues.

The unfavorable net change in the schedule variance is due to late material and to a lesser degree, labor resource challenges and tighter construction spans.

Contract Identification

Appropriation: Procurement
Contract Name: SSN 794
Contractor: General Dynamics, EB Corporation
Contractor Location: 75 Eastern Point Road
 Groton, CT 06340
Contract Number: N00024-12-C-2115/3
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: April 25, 2014
Definitization Date: April 25, 2014

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1731.7	1870.0	1	1730.4	1870.9	1	1733.4	1751.3

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to authorized contract change orders.

Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2017)	-7.5	-107.8
Previous Cumulative Variances	-1.2	-86.4
Net Change	-6.3	-21.4

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to poor modular performance and out of sequence work inefficiencies due to late material issues.

The unfavorable net change in the schedule variance is due to late material and to a lesser degree, labor resource challenges and tighter construction spans.

Contract Identification

Appropriation: Procurement
Contract Name: SSN 795
Contractor: General Dynamics, EB Corporation
Contractor Location: 75 Eastern Point Road
 Groton, CT 06340
Contract Number: N00024-12-C-2115/4
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: April 25, 2014
Definitization Date: April 25, 2014

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1690.1	1825.4	1	1687.2	1832.9	1	1691.0	1709.3

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to due to authorized contract change orders.

Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2017)	-30.3	-100.6
Previous Cumulative Variances	-15.8	-61.5
Net Change	-14.5	-39.1

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to poor modular performance and out of sequence work inefficiencies due to late material issues.

The unfavorable net change in the schedule variance is due to late material and to a lesser degree, labor resource challenges and tighter construction spans.

Contract Identification

Appropriation: Procurement
Contract Name: SSN 796
Contractor: General Dynamics, EB Corporation
Contractor Location: 75 Eastern Point Road
 Groton, CT 06340
Contract Number: N00024-12-C-2115/5
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: April 25, 2014
Definitization Date: April 25, 2014

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1755.9	1896.2	1	1749.7	1897.1	1	1748.3	1776.0

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to authorized contract change orders.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2017)	+4.1	-116.3
Previous Cumulative Variances	--	--
Net Change	+4.1	-116.3

Cost and Schedule Variance Explanations

The favorable cumulative cost variance is due to modular fabrication and assembly performance.

The unfavorable cumulative schedule variance is due to late material and to a lesser degree, labor resource challenges and tighter construction spans.

Notes

This is the first time this contract is being reported.

Contract Identification

Appropriation: Procurement
Contract Name: SSN 797
Contractor: General Dynamics, EB Corporation
Contractor Location: 75 Eastern Point Road
 Groton, CT 06340
Contract Number: N00024-12-C-2115/6
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: April 25, 2014
Definitization Date: April 25, 2014

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1734.8	1874.4	1	1717.6	1875.8	1	1716.8	1716.8

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to authorized contract change orders.

Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2017)	-0.8	-57.2
Previous Cumulative Variances	--	--
Net Change	-0.8	-57.2

Cost and Schedule Variance Explanations

The unfavorable cumulative cost variance is due to modular fabrication and assembly performance.

The unfavorable cumulative schedule variance is due to late material and to a lesser degree, labor resource challenges and tighter construction spans.

Notes

This is the first time this contract is being reported.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	0	--
Production	15	15	48	31.25%
Total Program Quantity Delivered	15	15	48	31.25%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	164206.7	Years Appropriated	27
Expended to Date	63577.7	Percent Years Appropriated	56.25%
Percent Expended	38.72%	Appropriated to Date	84241.7
Total Funding Years	48	Percent Appropriated	51.30%

The above data is current as of February 12, 2018.

The 15th ship of the VIRGINIA Class, COLORADO (SSN 788), was delivered September 21, 2017.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	November 04, 2016
Source of Estimate:	SCP
Quantity to Sustain:	48
Unit of Measure:	Ship
Service Life per Unit:	33.00 Years
Fiscal Years in Service:	FY 2004 - FY 2065

Sustainment Strategy

The baseline sustainment strategy of 48 SSN 774 VIRGINIA Class submarine is structured to achieve 14 deployments during the 33 year design life for each of the total force. The first deployment occurs after a Post Shakedown Availability (PSA) conducted at the private industry construction yard. The deployment rate is achieved through maintaining material readiness using maintenance periods including three Extended Drydocking Selected Restricted Availabilities (EDSRAs) and one Depot Maintenance Period (DMP) scheduled and planned according to the required maintenance periods for major equipments and systems. The EDRSAs and DMP are expected to be performed at Navy depot maintenance facilities such as the Naval shipyards. Additional routine maintenance and repair are conducted throughout the submarine's life cycle at the homeport Navy intermediate maintenance facility.

Changes to the equipment and system design are considered and implemented on a case by case basis which may increase maintenance periodicities and support an increase to 15 deployments during the life cycle for later submarines of the class.

Antecedent Information

The antecedent system is the SSN 688 LOS ANGELES Class Submarine program. Assembly of an accurate compilation O&S cost estimate for the LOS ANGELES Class using actual cost data going back to 1976 when USS LOS ANGELES was commissioned and then projecting those costs out is problematic based on the availability and detail of the historic data. VIRGINIA Class O&S comparisons with the legacy class are hampered by changes in required attack submarine force size where the LOS ANGELES Class, at one time, had 62 submarines compared to the originally planned class size of 30 VIRGINIA Class submarines.

The source of antecedent data is the Naval Visibility and Management of Operating and Support Cost (VAMOSOC) database for LOS ANGELES Class submarines for the years 1984-2008. This data must be adjusted due to significant differences between the two classes, to achieve a comparable estimate. The LOS ANGELES Class was comprised of 62 ships with major design changes in blocks of ships that had an original planned life of 30 years. Some of these 62 ships were retired at mid-life and, therefore, did not incur normal life of ship maintenance and operating costs.

Annual O&S Costs BY1995 \$M		
Cost Element	SSN 774 Average Annual Cost Per Ship	LOS ANGELES CLASS (Antecedent) Average Annual Cost Per Ship
Unit-Level Manpower	6.942	5.450
Unit Operations	0.849	0.700
Maintenance	20.921	15.030
Sustaining Support	0.491	0.990
Continuing System Improvements	7.352	4.240
Indirect Support	0.000	0.000
Other	0.000	0.000
Total	36.555	26.410

There are several factors contributing to an apparent anomaly between VIRGINIA CLASS and LOS ANGELES Class (SSN 688) per ship Unit Level Manpower costs. The costs for the LOS ANGELES Class are lower than the VIRGINIA Class despite a larger crew size for the LOS ANGELES Class due to the source and timing of the data. LOS ANGELES Class costs are extracted from VAMOSC using class average data 1984 - 2008. Manpower costs for the first several years of the data were approximately 65% of the most recent costs for the LOS ANGELES Class indicating real growth in pay and allowances (i.e., above inflation) over the period. The overall average, however, is significantly influenced by the lower initial costs. Further, LOS ANGELES Class VAMOSC data reflect the average annual cost of ships in the fleet.

VIRGINIA estimates were built using a ramp up/ramp down methodology and reflect the total annual manpower costs for the program from assignment of the first pre-commissioning crew of the lead ship through decommissioning of the last ship.

The total O&S Cost referenced below for the LOS ANGELES Class was derived using the average annual cost per ship, 62 ships in the class and an expected service life of 33 years. The 33-year service life is used for comparative purposes with the VIRGINIA Class as LOS ANGELES Class ships were originally designed for a 30 year service life and subsequently increased to 33 years.

Item	Total O&S Cost \$M			
	SSN 774			LOS ANGELES CLASS (Antecedent)
	Current Production APB Objective/Threshold	Current Estimate		
Base Year	60744.3	66818.7	57903.4	62443.9
Then Year	169852.5	N/A	160906.3	N/A

Disposal Cost is included in the Operating and Support Cost of the current APB objective and threshold for this program.

The BY O&S Current Production APB Objective/Threshold and Current Estimate exclude Indirect Support costs of \$6,159.8M BY 1995, and Acoustic Superiority (AS) Backfit costs of \$1,485.9M BY 1995. The TY O&S Current Production APB Objective/Threshold and Current Estimate include Indirect Support costs of \$16,460.9M and TY AS Backfit costs of \$2,877.6M TY.

Equation to Translate Annual Cost to Total Cost

The average annual cost per ship is derived by dividing total O&S costs by 48 ships and service life of 33 years. This is demonstrated by dividing \$57,903.4 by 48 ships and by a 33 year service life for each ship.

O&S Cost Variance		
Category	BY 1995 \$M	Change Explanations
Prior SAR Total O&S Estimates - Dec 2016 SAR	57903.4	
Programmatic/Planning Factors	0.0	
Cost Estimating Methodology	0.0	
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	0.0	
Current Estimate	57903.4	

Disposal Estimate Details

Date of Estimate: November 04, 2016
Source of Estimate: SCP
Disposal/Demilitarization Total Cost (BY 1995 \$M): Total costs for disposal of all Ship are 2840.9

Total program disposal costs are estimated to be \$8,946.0M TY.