



## W93 Warhead and Other Future New-Design Nuclear Weapons: Estimated Costs and Schedules

The W93 warhead is a proposed new-design submarine-launched nuclear weapon for the Navy. Its need is not clear given that the Navy’s W76 warhead recently completed a major “Life Extension Program” that extended its service life by at least 30 years and increased its accuracy through a new arming, fuzing and firing set. The Navy’s other sub-launched warhead, the W88, is entering a major “Alteration” which will refresh its conventional high explosives and give it a new arming, fuzing and firing set (presumably increasing its accuracy as well).

The National Nuclear Security Administration’s (NNSA’s) FY 2023 Congressional Budget Request clearly links the United Kingdom with the W93. For example, “The UK is participating as observers in the US W93/Mk7 warhead program” and “W93 Program . . . • Coordinate with the UK on their Replacement Warhead.”<sup>1</sup> The United Kingdom is known to be a key driver behind the W93 and has explicitly lobbied Congress for it. As background, the UK reportedly has a parts problem for its version of the American W76 warhead, but obviously a new-design warhead is not necessarily needed to solve a parts problem.<sup>2</sup>

### Proposed funding for the W93 in FY 2023 is more than doubled:<sup>3</sup>

DEPARTMENT OF ENERGY  
Comparative Appropriation by Congressional Control  
Compare FY 2023 Presidents Budget vs. FY 2022 Enacted  
FY 2023  
(Dollars in Thousands)

	FY 2021	FY 2022	FY 2023	FY 2023 Presidents Budget vs. FY 2022	
	Enacted Final	Enacted Final	Presidents Budget Requested Total	Enacted \$	Enacted %
<b>Total, National Nuclear Security Administration</b>					
<b>Weapons Activities</b>					
B61-12 LEP	815,710	771,884	672,019	-99,645	-12.91%
W88 ALT 370	256,922	207,157	162,057	-45,100	-21.77%
W80-4 LEP	1,000,314	1,080,400	1,122,451	+42,051	+3.89%
W80-4 ALT-SLCM	0	10,000	0	-10,000	-100.00%
W87-1 Modification Program	541,000	691,031	680,127	-10,904	-1.58%
W93 Program	53,000	72,000	240,509	+168,509	+234.04%

<sup>1</sup> NNSA FY 2023 Congressional Budget Request, Weapons Activities, PDF pages 31 and 32, <https://www.energy.gov/sites/default/files/2022-04/doe-fy2023-budget-volume-1-nnsa-wa-v2.pdf>

The Mk7 will be the aeroshell housing the W93.

<sup>2</sup> It is also questionable how U.S.-UK nuclear weapons cooperation comports with the 1970 NonProliferation Treaty’s Article I mandate that “Each nuclear-weapon State Party to the Treaty undertakes not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly...”

<sup>3</sup> DOE Comparative Appropriation by Congressional Control FY 2023, PDF page 6, <https://www.energy.gov/sites/default/files/2022-04/doe-fy-23-budget-stat-by-appropriation-enacted-v2.pdf>

This is used here because it gives enacted FY 2022 funding levels, whereas the NNSA’s FY 2023 Congressional Budget Request gives “FY 2022 Annualized CR [Continuing Resolution]” funding levels which generally are the same as FY 2021 enacted funding levels.

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## Exploding Costs for the W93 in Future Years: <sup>4</sup>

Weapons Activities Appropriation Stockpile Management	Weapons Activities Outyear Funding  (Dollars in Thousands)			
	FY 2024 Request	FY 2025 Request	FY 2026 Request	FY 2027 Request
B61-12 LEP	501,744	242,424	12,892	0
W88 ALT 370	148,823	78,700	17,700	0
W80-4 LEP	1,009,929	1,009,929	966,090	808,900
W80-4 ALT-SLCM	0	0	0	0
W87-1 Modification Program	797,377	880,908	920,000	1,002,724
W93 Program	323,000	471,372	625,000	814,000
Future Strategic Warhead	0	0	0	70,000
<b>Total, Stockpile Major Modernization</b>	<b>2,780,873</b>	<b>2,683,333</b>	<b>2,541,682</b>	<b>2,695,624</b>

The above W93 costs are for design and feasibility studies. NNSA has not yet said whether the W93 will require new plutonium pits, which it probably will. To date the costs for new pit production has not been included in the W87-1 warhead, the first to require new pits. NNSA’s last publicly available cost estimate for pit production over 30 years was in 2018 for \$42 billion. However, since then the estimated costs for the Savannah River Plutonium Processing Facility has more than doubled to \$11 billion. Given typical cost overruns, NNSA’s pit production over 30 years will likely cost around \$60 billion. So far, pit production costs are not included in NNSA’s cost estimates for new-design warheads, which is illogical given that the plutonium pit is the all-important primary or “trigger” for modern thermonuclear weapons.

Further, no future pit production is scheduled to maintain the safety and reliability of the existing nuclear weapons stockpile – instead it is all for speculative new designs. Independent experts have found that pits have reliable lifetimes of at least a hundred years and more than 15,000 existing pits are already stored. Future pits will likely be heavily modified from tested designs. These new pits cannot be full-scale tested because of the existing testing moratorium, thereby perhaps eroding confidence in stockpile reliability. Or, perhaps worse yet, it could prompt the U.S. back into testing, which would have severe international proliferation consequences.

### Other Future New-Design Warheads:

The National Nuclear Security Administration makes clear the range of new-design nuclear weapons that it is planning for in its congressionally-required annual Stockpile Stewardship and Management Plan:

#### “2.2.8 Future Warheads

DOE/NNSA is coordinating with DoD to define the appropriate ballistic missile warheads to support threats anticipated in 2030 and beyond. These warheads currently include the Future Strategic Land-Based Warhead, the Future Strategic Sea-Based Warhead, the Future Air-Delivered Warhead, and a Submarine-Launched

<sup>4</sup> NNSA FY 2023 Congressional Budget Request, Weapons Activities, PDF page 18, <https://www.energy.gov/sites/default/files/2022-04/doe-fy2023-budget-volume-1-nnsa-wa-v2.pdf>



Notes: NNSA estimated costs are usually low to begin with and generally do not include all costs. This is particularly significant when it comes to the exclusion of plutonium pit production costs.

How NNSA completes its aggressive schedule for refurbished and new-design warheads remains to be seen. Cost overruns and scheduling delays are endemic. Department of Energy Environmental Management and Defense Programs (to which NNSA is now the successor) have been on the Government Accountability Office's High Risk List for project mismanagement since 1990.<sup>8</sup>

**Recommendations:** Congress should delete funding for the W93 program because of costs, the incompleteness of projected costs, the uncertain risks inherent to new designs and the U.S. Navy's lack of compelling need. If indeed the United Kingdom has a parts problem for its existing W76 warheads, the United States does not need to design and manufacture a wholly new-design nuclear weapon to fix the problem of a different country. The existing U.S. stockpile has been extensively tested and proven to be reliable. Future new-design nuclear weapons should be viewed with skepticism. Congress needs to ask whether they are in large part "make work" for NNSA's nuclear weapons complex and defense contractors' profits.

Congress should demand an independent new estimate of the cost of pit production over 30 years. Related, Congress should demand that NNSA include pit production costs in its overall cost estimates for any new-design warhead. Congress should also demand that NNSA complete updated pit lifetime studies, which are already overdue and not likely to support the need for new pit production.

Finally, the W93 and other future new-design nuclear weapons are contrary to the NonProliferation Treaty's mandate for global nuclear disarmament and the new Treaty on the Prohibition of Nuclear Weapons. New-design nuclear weapons should be foresworn in order to discourage the increasing risks of nuclear war, more evident today than at any other time since the end of the Cold War some thirty years ago.

*This fact sheet is available online at <https://nukewatch.org/the-w93-warhead-and-other-new-design-nuclear-weapons/>*

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<sup>8</sup> See *Department of Energy's Contract and Project Management for the National Nuclear Security Administration and Office of Environmental Management*, GAO, <https://www.gao.gov/highrisk/department-energys-contract-and-project-management-national-nuclear-security-administration-and-office-environmental-management>