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Nuclear-Armed Sea-Launched Cruise Missile (SLCM-N)

In its FY2023 budget request, the Navy eliminated funding for research and development into a new nuclear-armed sea-launched cruise missile (SLCM-N). The Navy indicated that the program was "cost prohibitive and the acquisition schedule would have delivered capability late to need." According to the Navy, this cancellation would save $199.2 million in FY2023 and $2.1 billion over the next five years. The Biden Administration's 2022 Nuclear Posture Review (NPR) announces the SLCM-N program's cancelation.

Background

The United States first deployed a nuclear-armed version of the Tomahawk land-attack cruise missile (TLAM-N) in the mid-1980s. The missiles were deployed on both surface ships and attack submarines. With a range of 2,500 kilometers (around 1,550 miles), the missiles were not considered part of the U.S. strategic nuclear forces (see CRS In Focus IF10519, *Defense Primer: Strategic Nuclear Forces*, by Amy F. Woolf) and, therefore, did not count under the limits on warheads or delivery vehicles in U.S.-Soviet arms control agreements.

In September 1991, at the end of the Cold War, President George H.W. Bush announced that the United States would withdraw all land-based tactical nuclear weapons (those that could travel less than 300 miles) from overseas bases and all sea-based tactical nuclear weapons from U.S. surface ships, submarines, and naval aircraft. The Navy withdrew the TLAM-N missiles by mid-1992. It eliminated the nuclear mission for U.S. surface ships but could have returned TLAM-N to attack submarines. Many viewed the U.S. ability to return these missiles to deployment on short notice as a part of the U.S. effort to reassure allies in Asia of the U.S. commitment to their security.

In 2010, the Obama Administration's NPR recommended that the Navy retire the TLAM-N missiles. It indicated that "this system serves a redundant purpose in the U.S. nuclear stockpile" as one of several weapons the United States could deploy in support of U.S. allies. It concluded that because "the deterrence and assurance roles of TLAM-N can be adequately substituted by these other means," the United States could continue to support allies in Asia without maintaining the capability to redeploy TLAM-N missiles. The Navy completed the retirement of these missiles by 2013.

The Trump Administration, in effect, reversed this decision, noting in the 2018 NPR that a nuclear-armed sea-launched cruise missile (now known as SLCM-N) would provide the United States with "a needed non-strategic regional presence" that would address "the increasing need for flexible and low-yield options." This is intended to strengthen deterrence of regional adversaries and assure allies of the U.S. commitment to their defense. The NPR also indicated that SLCM-N could serve as a response to Russia's violation of the 1987 Intermediate-Range Nuclear Forces (INF) Treaty and provide Russia with an incentive to negotiate reductions in its nonstrategic nuclear weapons.

SLCM-N was one of two systems that the 2018 NPR identified as a way to "strengthen deterrence of regional adversaries." The Navy deployed a low-yield version (with less than 10 kilotons, rather than 100 kilotons, of explosive power) of the W76 warhead on its long-range submarine-launched ballistic missile in 2019 (see CRS In Focus IF11143, *A Low-Yield, Submarine-Launched Nuclear Warhead: Overview of the Expert Debate*, by Amy F. Woolf). The Navy conducted an Analysis of Alternatives in support of the SLCM-N from 2019-2021, and expected to begin the development of the missile in 2022 and achieve operational capability late in the 2020s.

In its FY2022 budget request, the Biden Administration sought $5.2 million in DOD funding for research and development into the missile and $10 million for the National Nuclear Security Administration (NNSA) to work on a warhead that would be carried by the SLCM-N. At the same time, the Administration indicated that it would review the program as a part of its NPR.

After the Navy eliminated funding for SLCM-N in its FY2023 budget request, some Members of Congress asked General Milley, the Chairman of the Joint Chiefs of Staff, and Secretary of Defense Austin whether they supported the decision. General Milley said he continued to support SLCM-N because the President "deserves to have multiple options to deal with national security situations." But he later noted that the United States has "lots of options and we have a significant nuclear capability." Secretary Austin also recognized the value of the SLCM-N but stated that "the marginal capability that this provides is far outweighed by the cost."

The 2022 NPR explains that the SLCM-N is "no longer necessary" because of the W76-2 low-yield SLBM warhead's "deterrence contribution." Officials from the Departments of Defense and State subsequently argued that the capabilities of the W-76-2, as well as other U.S. nuclear weapons, obviate the need for the SLCM-N. The Biden Administration's October 2022 statement on the FY2023 National Defense Authorization Act (NDAA) asserts that continuing the SLCM-N program "would divert resources and focus from higher [U.S. nuclear] modernization priorities." The NDAA authorizes $25 million for continued research and development for a SLCM-N.

Issues in the SLCM-N Debate

Deterrence Rationale

According to a 2019 paper prepared by the Office of the Undersecretary of Defense for Policy, SLCM-N would serve as a response to developments in Russian and Chinese nuclear forces and doctrine that could undermine regional deterrence. The paper argued that the SLCM-N would be "capable of proportional, discriminate response based on

survivable, regionally present platforms, and with the necessary range, penetration capability, and effectiveness to hold critical adversary targets at risk."

The SLCM-N would, the paper asserted, thus bolster deterrence by providing "additional limited employment capabilities that an adversary will have to consider if contemplating the coercive use of nuclear weapons." The paper argued that such capabilities would "give an adversary pause" and, if a crisis were to nonetheless escalate, U.S. leaders would "have a wider range of options available in the event that the use of nuclear weapons is necessary to restore deterrence." The paper also emphasized the benefits a sea-launched cruise missile could provide in reassuring U.S. allies, noting, "a regional nuclear presence signals a high degree of resolve and readiness in a crisis," and argued that "restoring that capability with SLCM-N will bolster allied confidence in U.S. nuclear security guarantees."

Critics have argued that the capabilities highlighted by advocates of SLCM-N deployment—regional presence, lower yield, and discriminate attack options—would lower the threshold for nuclear use and increase the likelihood of nuclear war. They argue that by adding those capabilities to its nuclear force posture, the United States would be adopting a war-fighting posture rather than pursuing a doctrine based on deterrence.

Some analysts outside government have also argued that the deployment of both nuclear-armed and conventional cruise missiles could create misperceptions and increase the risk of inadvertent nuclear war. Some have noted that nuclear and conventional SLCMs could be "virtually indistinguishable" when launched and that this ambiguity could "heighten the chance of miscalculation" and increase the risk "that a state leader assumes an attack is nuclear and retaliates with nuclear weapons."

The 2019 paper refuted these concerns, noting the SLCM-N did not "signal a shift toward a strategy emphasizing nuclear warfighting or a lower threshold for nuclear employment." It was, instead, designed to "ensure that nuclear war is less rather than more likely by demonstrating to adversaries that the United States is fully prepared to deter nuclear threats at every stage of an escalating crisis or conflict." Moreover, some supporters have noted that the United States has long employed conventional cruise missiles in conflict—launched from both aircraft and naval vessels—without ever creating the misperception that the attack involved the use of nuclear weapons.

Arms Control Rationale

Several analysts and officials who support the SLCM-N have argued that its development could contribute to U.S. arms control objectives by providing Russia with an incentive to both reverse its development of a new land-based cruise missile and negotiate limits on other types of shorter-range nonstrategic nuclear weapons. In this view, the SLCM-N would provide the United States with negotiating leverage that it lacks now, because it does not possess any shorter-range nuclear missiles that it could trade for limits on Russian or Chinese missiles.

The 2018 NPR highlighted the potential arms control benefits of the SLCM-N by linking it to U.S. concerns with Russia's violation of the 1987 INF Treaty. Although the United States has since withdrawn from the treaty, the NPR indicated the SLCM-N not only provided the United States with a treaty-compliant response to Russia's violation, but also noted that the United States "may reconsider the pursuit of a SLCM" if Russia "returns to compliance with its arms control obligations, reduces its non-strategic nuclear arsenal, and corrects its other destabilizing behaviors."

While many critics of SLCM-N have supported efforts to engage Russia in negotiations on its nonstrategic nuclear weapons, few of these experts believe that the SLCM-N could affect this process. Because the Navy would deploy the missile in the late 2020s, some argue its development would be unlikely to affect Russia's arms control calculus in the near term. In addition, the United States could be unwilling to trade the missile for Russian concessions, as doing so would be inconsistent with the case made in the NPR that the SLCM-N was critical to bolstering U.S. extended deterrence and assurance of allies in Europe and Asia.

Operational Concerns

Critics of the SLCM-N have questioned whether the deployment of nuclear armed missiles on multipurpose vessels might strain the Navy's resources. The Navy would likely have to adopt strict security protocols to protect the nuclear warheads, possibly diverting time and training resources to maintain nuclear safety and surety standards. The SLCM-N would also replace conventional missiles, thus limiting the numbers of conventional weapons available for use in regional conflicts. Since the Navy has employed conventional cruise missiles in the past (including in retaliation for the use of chemical weapons in Syria), they argue this could reduce the Navy's ability to deter and respond to challenges in the future.

Some have also questioned whether nuclear-armed SLCMs could interfere with the Navy's ability to operate in cooperation with U.S. allies. Several countries ban port calls from ships carrying nuclear weapons. Although the U.S. Navy has long refused to confirm or deny the presence of nuclear weapons on specific naval vessels, it is commonly understood that the only U.S. Navy ships that carry nuclear weapons are ballistic missile submarines. The presence of SLCM-N in the Navy could end the presumption in the eyes of foreign countries that a visiting Navy ship other than a ballistic missile submarine is not carrying nuclear weapons.

Supporters of the SLCM-N recognize that the missile could affect Navy operations if they replace conventional capabilities on Navy vessels. However, they dispute that the missiles will necessarily detract from Navy operations. The Pentagon's 2019 report noted that DOD expected Navy platforms to have "the capacity to deploy a large number of cruise missiles, and that other naval platforms not assigned the SLCM-N mission will be able to deliver a significant amount of conventional firepower." The report concluded it would be difficult to assess the specific tradeoffs between nuclear and conventional weapons until the Navy conducted an evaluation of the deployment options for the SLCM-N, considering both the concept of operations and the numbers of weapons that would be needed.

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