

# Scientists Warn U.S. Running Out of Time to Modernize Nuclear Weapons Systems

America's current nuclear deterrent force is safe, secure and effective, but the nation is running out of time to modernize the weapon systems in the nuclear triad and the infrastructure that produces and sustains them, three senior military commanders and a group of civilian managers and scientists warn.

Potential adversaries have modernized, increased and diversified their nuclear capabilities, while the United States has failed to make the necessary investments to counter the emerging threat, the officers and civilian experts said Dec. 12.

As a result, the missiles, strategic submarines and bombers in the nuclear deterrent triad are aging and approaching the end of their effective service lives and the nuclear warheads they employ are suffering from natural decay and obsolescent components, they said.

A prime example of that emerging crisis is the tight time line the Navy faces to have the new Columbia-class ballistic missile submarines operational before the current Ohio-class boomers can no longer submerge for their strategic missions.

The Ohio-class boats were designed for a 30-year service

life, but extended to 40 years and “we have no more margin,” said Vice Adm. Johnny R. Wolfe, director Navy Strategic Systems Programs. “We have to get Columbia out there to replace Ohio.”

Asked about meeting that deadline, Wolfe would not specify how much leeway they have but said the Columbia program managers “do have a margin to get to that operational date.”

Wolfe said he was “confident” the program had corrected the problems of faulty welding in the Columbia missile tubes, which badly reduced the program time margin. But, he said, “we can’t allow anything to push (the program) to the right.”

Wolfe is responsible for the strategic systems that arm the boomers, including the Trident D-5 missiles, which have aged rocket engines and guidance systems that are being updated. The Navy test fired five unarmed Tridents this year, two with the new electronics, and all worked as expected, he said. But they will not be able to continue to keep the D-5s flying forever, he added.

Vice Adm. David M. Kriete, deputy commander of Strategic Command, said the command’s primary challenges are “understanding the threat, so we can stay ahead, and modernizing the nuclear forces.” On the threat, Kriete said, “Russia, has continued to develop a whole range of nuclear weapons outside the New Start treaty,” but the United States “has

not.” And, “China is moving very aggressively to field new capabilities.” They also are watching North Korea, which has tested nuclear warheads and long-range missiles, and Iran, which currently has no nuclear weapons.

The current nuclear deterrent “is safe, secure and effective. ... We go to great length to ensure those weapons can get the job done. But we can’t maintain those standards in the future,” Kriete said, citing the age of the Minuteman III intercontinental ballistic missiles, the nuclear-capable B-52 bombers and the nuclear weapons they employ. Despite questioning of the need for the triad, Kriete insisted that the combination of the responsive land-based ICBMs, the survivable ballistic missile submarines and the flexible bombers give national leaders options and create problems for any adversary.

Lt. Gen. Richard Clark, deputy Air Force Chief of Staff for strategic deterrence and nuclear integration, noted that numerous studies, including the 2018 Nuclear Posture Review, confirmed the need for the triad, for which the Air Force provides the ICBMs, the bombers and the nuclear command and control system. They all must be modernized, he said.

Charles Verdon, deputy administrator of the National Nuclear Security Agency, and officials from the nuclear laboratories said a major challenge to sustaining and modernizing the deterrent capabilities is the badly aged infrastructure and the need to rapidly replace the nu