

Can the United States Immediately Return to Nuclear Testing?

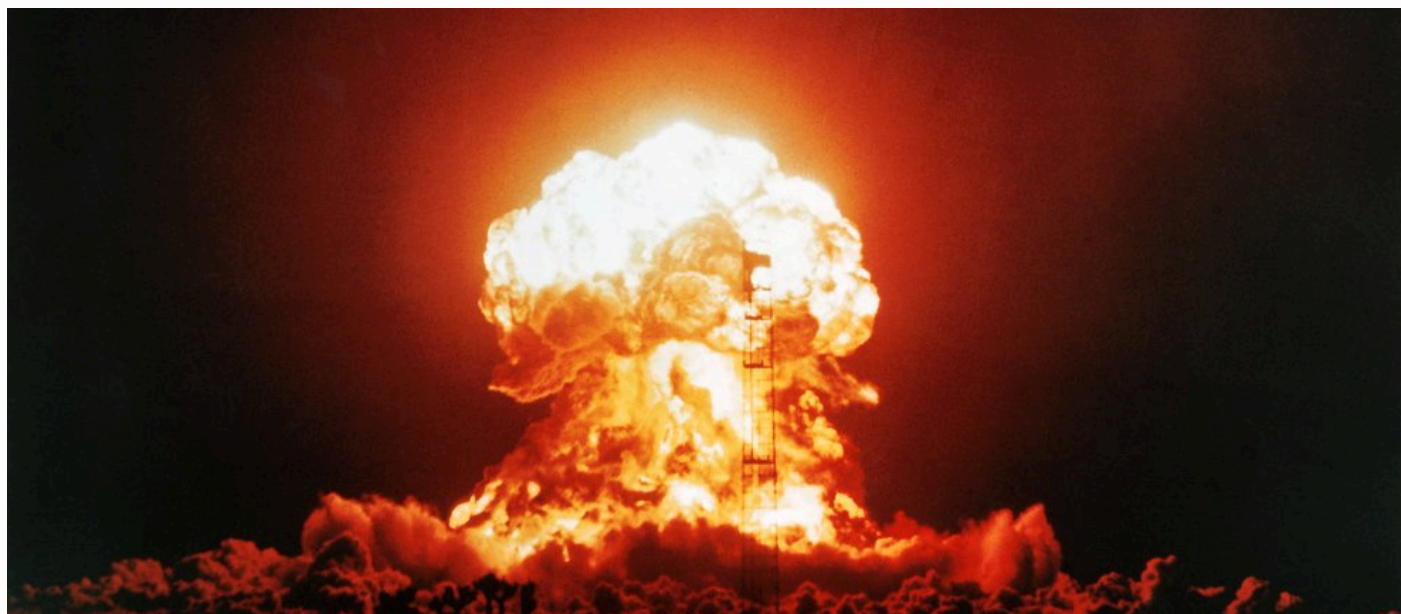


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Critical Questions by **Heather Williams**

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Hours prior to his meeting with Chinese President Xi Jinping, U.S. President Donald Trump posted on social media, “Because of other countries testing programs, I have instructed the Department of War to start testing our Nuclear Weapons on an equal basis. That process will begin immediately.” Other than North Korea, no country has

tested nuclear weapons since the late 1990s, and the 1997 Comprehensive Test Ban Treaty (CTBT) has been signed by 187 states. Trump's post raises technical questions about how and if the United States could "immediately" return to nuclear testing, and political considerations about the signaling behind nuclear testing and who would benefit most from a return to testing.

For both technical and political reasons, the United States is unlikely to return to nuclear explosive testing any time soon; however, Trump's post does point to increasing nuclear competition between the United States, Russia, and China. Despite numerous bipartisan reports and senior leader recommendations, the Trump administration has been slow to seriously invest in this nuclear competition. Nuclear testing is not the best step forward in that competition, but it should raise alarm within the administration about the state of the United States' nuclear enterprise and the urgency of investing in nuclear modernization.

Q1: Can the Trump administration immediately resume testing U.S. nuclear weapons?

A1: It depends on how Trump is defining "testing." Nuclear testing could refer to above-ground explosive testing, underground explosive testing, or extremely low-yield nuclear testing. In 1963, the United States, the United Kingdom, and the Soviet Union banned nuclear testing in the atmosphere, outer space, and underwater through the Partial Test Ban Treaty in response to devastating environmental effects and in the aftermath of the Cuban Missile Crisis. This was followed by the Threshold Test Ban Treaty in 1974 that limited the yield of underground testing to below 150 kilotons. And finally, the 1997 CTBT banned all nuclear testing. Russia "de-ratified" the treaty in 2023, and the United States and China have signed but not ratified.

A return to above-ground testing would receive widespread public criticism, including from many members of Congress whose constituencies and states would be directly impacted, including by second- and third-order effects. For example, since 1990, the Department of Justice has awarded \$2.6 billion to over 41,000 claimants under the Radiation Exposure Compensation Act (RECA) from states including Nevada, Colorado, New Mexico, Utah, and Texas. RECA was reinstated in the One Big Beautiful Bill Act after a year-long lapse. The former nuclear test site, now the Nevada National

Security Site, has been the focus of extensive cleanup efforts by the Department of Energy while also continuing to serve as the site for a return to underground explosive testing if necessary.

Underground testing would likely not be possible “immediately” or even within a few months. Since 2003, the Department of Energy, specifically the National Nuclear Security Administration (NNSA), has been responsible for maintaining a readiness to return to “underground nuclear explosive [testing]” in order “to assess safety and performance characteristics of the Nation’s stockpile, or if otherwise directed by the President.” According to the 2024 Stockpile Stewardship and Management Plan, the NNSA was responsible for being ready to perform an underground nuclear test within 36 months; however, NNSA has not requested funding for test readiness as a separate program since 2010. It’s also worth noting that the NNSA is responsible for nuclear test readiness, not the Pentagon.

Q2: Are Russia and China testing nuclear weapons?

A2: A 2020 Department of State compliance report concluded that the United States cannot rule out the possibility that China could have conducted activities at its test site that are inconsistent with its moratorium commitment as interpreted in accordance with the U.S. “zero-yield” standard.” Satellite imagery also indicates increased activity at China’s Lop Nor test site between 2020 and 2024.

A 2022 Department of State compliance report accused Russia of conducting supercritical nuclear tests in violation of the zero-yield standard. Additionally, a 2019 Defense Intelligence Agency report alleged that, “Russia is probably not adhering to the nuclear testing moratorium in a manner consistent with the zero-yield standard.” And in 2023, Mikhail Kovalchuk, a close adviser to Russian President Vladimir Putin, suggested Russia should test “at least” one nuclear weapon at the former nuclear testing site, Novaya Zemlya. A week before Kovalchuk’s statement, CNN released satellite imagery showing an expansion of Novaya Zemlya facilities over the past three years.

The threshold for when a nuclear test counts as a “test” has been hotly debated; specifically, the “zero-yield” threshold has been a point of contention between

Washington, Moscow, and Beijing. Since the opening of CTBT negotiations in 1995, the United States has insisted that it is a zero-yield treaty. Whereas some extremely small nuclear tests might not produce any noticeable seismic yield, they could still produce a nuclear chain reaction that would provide data about weapons designs or the behavior of fissile material over time, albeit in violation of the CTBT.

The suggestion of “nuclear testing” immediately evokes images of mushroom clouds and explosions in remote locations; however, research on nuclear weapons has moved well beyond those experiences of the early decades of the Cold War. The United States has been able to rely on high-energy lasers and supercomputing at the national labs to confirm the safety, security, and efficacy of its nuclear arsenal without testing. Russia has taken a different path and instead replaces plutonium pits while it develops a “Tsar Laser,” which has fallen behind schedule and may not be operational until the end of the decade.

Q3: Who would benefit from a return to nuclear testing?

A3: China. The United States has conducted 1,054 tests, and Russia has conducted 715. China only conducted 47 nuclear tests, both above-ground and underground. This asymmetry in test data has been a sore spot for Chinese officials who felt disadvantaged by arms control agreements such as the Partial Test Ban Treaty. If one country returns to nuclear testing, others are likely to follow. In which case, China would stand to gain the most in terms of weapons design and warhead information, further contributing to its nuclear buildup.

According to political and scientific leaders, the United States has no technical need to return to nuclear testing. In his April 2025 confirmation hearing, NNSA Administrator Brandon Williams answered a direct question about nuclear testing:

The United States continues to observe its 1992 nuclear test moratorium; and, since 1992, has assessed that the deployed nuclear stockpile remains safe, secure, and effective without nuclear explosive testing. Each year, the national security lab directors and the Commander of U.S. Strategic Command assess the stockpile

and determine if there is anything that would require a need to return to underground nuclear explosive testing. If confirmed, I will continue to support the annual assessment process and will ensure NNSA continues to comply with these readiness requirements while also supporting a robust Stockpile Stewardship Program.

Additionally, directors of the national labs and previous NNSA Administrator Jill Hruby repeatedly confirmed there was no need to return to nuclear testing.

Q4: If these allegations have been around for a while, why would Trump make this announcement now?

A4: The timing of Trump’s post could be about both China and Russia, but this is all highly speculative. The post went live hours before his meeting with Xi. Trump may want to generate leverage or a strongman impression before negotiating with Xi, whether the topic is trade or nuclear weapons. It might indicate that Trump wants to discuss nuclear arms control with Xi, which he has indicated in previous comments about prioritizing negotiations for “denuclearization” with Russia and China. For example, in August, Trump indicated, “One of the things we’re trying to do with Russia and with China is denuclearization, and it’s very important.”

The post also comes just weeks after Putin offered to continue to observe the limits of the 2010 New Strategic Arms Reduction Treaty (New START) if the United States reciprocated. On October 28, Russian Foreign Minister Sergey Lavrov expressed his “hope” that Trump would positively respond to Putin’s offer and the principles discussed at the Anchorage Summit, saying, “President Trump has repeatedly spoken positively about this initiative put forward by President Putin, so we are actually hoping that these positive reactions will be translated into some kind of official announcement.” Other than an off-handed remark by Trump that it sounded “like a good idea,” there has been no official announcement from the White House on the future of New START, which expires in February 2026 and is the last remaining bilateral strategic arms control agreement of its kind. Trump’s post could also be an effort to generate negotiating leverage with Moscow.

And finally, it's also possible that the president was responding to Russia's recent tests of nuclear delivery platforms, rather than nuclear warheads. On October 21, Putin claimed that Russia had successfully tested the nuclear-powered nuclear-capable cruise missile Burevestnik, which could be capable of long-range strikes and long-loiter times. Putin alleged the recent test was a 14,000-kilometer range. Trump called the test "inappropriate." Russia also recently tested the nuclear-powered Poseidon torpedo—sometimes referred to as an "underwater drone"—which can also carry nuclear weapons. Additionally, Belarus is planning to deploy the Russian-made Oreshnik intermediate-range ballistic missile capable of carrying multiple nuclear warheads in December. All to say, Trump's reference to "start testing" on an "equal basis" might be a call to move forward more decisively with new nuclear-capable platforms, and to demonstrate those capabilities through trials, rather than to ready the nuclear test site.

Q5: What comes next for nuclear testing and the strategic arsenal?

A5: Trump's statements could be interpreted as a call for a return to underground nuclear testing, which would require a rapid and massive investment in the nuclear enterprise, likely to include diverting personnel and resources away from nuclear modernization, to prepare the nuclear test site and the stockpile. But it could also be interpreted as a call for the United States to diversify and expand the strategic arsenal in response to ongoing Russian and Chinese quantitative and qualitative nuclear buildups. For example, the 2023 bipartisan Strategic Posture Commission concluded that the United States needed a strategic force that was "either larger in size, different in composition, or both." The commission did not recommend that the United States return to nuclear explosive testing. In a further display of bipartisanship, both senior Biden administration officials and the Heritage Foundation called for expanding the U.S. strategic arsenal, albeit to different degrees of ambition.

While from a technical and political perspective a return to explosive testing of nuclear warheads does not appear to be in the United States' interest, capitalizing and strengthening the nuclear enterprise is very much in the U.S. national interest. The administration can take immediate steps in this direction. First and foremost would be confirming the findings of the bipartisan Strategic Posture Commission in the forthcoming National Defense Strategy, to include a full commitment to the sea-

launched cruise missile and establishing a strategy that will shape requirements for nuclear deterrence capabilities going forward, such as developing new regional nuclear capabilities and expanding the existing program of record to include more B-21 bombers.

Additionally, Trump's post has created an opportunity to clarify how Russia and China are expanding their strategic arsenals. The Pentagon has historically published a China Military Power Report, which revealed important data about China's nuclear buildup. These reports are an important tool for demonstrating the difference in degrees of magnitude between Russian and Chinese buildups and U.S. modernization plans.

Finally, the administration should also take the opportunity to clarify Trump's statements and recommit to nuclear agreements that are in U.S. interests. Washington would be worse off if states, particularly China, return to nuclear testing, which it likely would in response to U.S. test plans. This would undermine the norm against nuclear testing and could result in a reverse normative cascade, with implications for other rules of the road, such as nuclear nonproliferation.

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