

## U.S. Claims of Illegal Russian Nuclear Testing: Myths, Realities, and Next Steps

By Daryl G. Kimball

Executive Director, Arms Control Association

August 16, 2019

In prepared remarks delivered at the [Hudson Institute May 29](#), the Director of the Defense Intelligence Agency (DIA), Lt. Gen. Robert Ashley, Jr., charged that “Russia probably is not adhering to its nuclear testing moratorium in a manner consistent with the ‘zero-yield’ standard outlined in the [1996 Comprehensive Test Ban Treaty \(CTBT\)](#).”

Russia has vigorously denied the allegation. Russian Foreign Minister Sergey Lavrov [called](#) the accusation “a crude provocation” and pointed to the United States’ failure to ratify the CTBT.

On June 12, Deputy Foreign Minister Sergei Ryabkov said, “we are acting in full and absolute accordance with the treaty ratified by Moscow and in full accordance with our unilateral moratorium on nuclear tests.”

The DIA director’s remarks, and a subsequent June 13 statement on the subject, are quite clearly part of an effort by Trump administration hardliners to suggest that Russia is conducting nuclear tests to improve its arsenal, and that the United States must be free of any constraints on its own nuclear weapons development effort, and, indirectly, to try to undermine the CTBT itself—a treaty the Trump administration has already said it will not ratify.

The challenges posed by the new U.S. allegations are significant and they demand a proactive plan of action by “friends of the CTBT” governments for a number of reasons.

### HIGHLIGHTS

- Any violation of the CTBT by Russia, which has signed and ratified the agreement, or any other signatory, would be a serious matter.
- Thus far; however, the Trump administration has not presented any credible information to back up its allegation.
- The most effective way to verify and enforce compliance is to bring the CTBT into force.
- The DIA allegations falsely suggest there are different national interpretations of what activities the CTBT prohibits.
- The Treaty’s Article I prohibition on “any nuclear weapons test explosion, or any other nuclear explosion” bans all nuclear test explosions, no matter what the yield.
- Governments that support the CTBT should:
  - reaffirm their support for entry into force of the “zero-yield” CTBT;
  - develop and advance a multilateral plan for resolving charges of noncompliance; and
  - clarify the costs of any attempt by the United States (or any other signatory state) to “un-sign” the treaty.

First, any violation of the CTBT by Russia, which has signed and ratified the agreement, or any other signatory, would be a serious matter. But thus far, the Trump administration has not presented any credible information to back up the allegation. As late as December 2015, it was the view of the United States government that the only state in recent years that has tested nuclear weapons in a way that produced a nuclear yield is North Korea. This begs the question of what, if anything, has changed since then that would support a different conclusion.

The most effective way, of course, to enforce compliance is to bring the CTBT into force, which would allow for intrusive, short-notice, on-site inspections to detect and deter any possible cheating. In response to the recent U.S. allegations, CTBT states parties should encourage the U.S. government, if it believes it has credible evidence that Russia is violating its CTBT commitments, to negotiate arrangements for mutual confidence-building visits to the respective U.S. and Russian test sites, involving technical experts, to address any compliance concerns.

Second, the DIA allegations falsely suggest there are different national interpretations of what activities the CTBT prohibits. According to the U.S. State Department, the United States, Russia and China and all of the other NPT nuclear-weapon states have publicly affirmed that the Treaty's Article I prohibition on "any nuclear weapons test explosion, or any other nuclear explosion" bans all nuclear test explosions, no matter what the yield.

Third, even if Russia or other advanced nuclear-armed states are conducting very low-yield nuclear test explosions, it is technically incorrect for the DIA to suggest that low-yield nuclear explosions are militarily significant for states that have extensive experience with nuclear weapons testing when, in reality, they are not militarily useful.

Finally, the allegations could prompt some officials in the Trump administration to advocate for the "removal" of the U.S. signature from the list of 184 states parties to the treaty—an action that Trump's National Security Adviser, John Bolton, once advocated when he held a senior position at the State Department in 2002. Such a move could have a ripple effect that could undermine necessary financial and political support for the CTBT Organization's International Monitoring System, and over time, weaken the taboo against nuclear weapons testing itself.

In response, governments that support the CTBT should:

- reaffirm that CTBT states parties agree that the CTBT's prohibition on nuclear weapon test explosion bans nuclear explosions of any yield;

- develop and advance a multilateral plan for resolving charges of noncompliance based on the treaty's provisions for confidence-building measures; and
- clarify the costs of any attempt by the United States (or any other signatory state) to "un-sign" the treaty.

## **The Myths and Realities of the DIA Allegations**

When pressed in the question and answer session of the May 29 event by *Wall Street Journal* reporter Michael Gordon about whether Russian officials have simply set up the Novaya Zemlya test site "in such a way that they could conduct experiments in excess of a zero-yield ban in the CTBT" or are actually conducting nuclear test explosions, Ashley would only say that Russia had the "capability" to conduct very low-yield supercritical nuclear tests in contravention of the treaty.

Ashley also implied that China may not be complying with the CTBT. He claimed that "China's lack of transparency on their nuclear testing activities raise questions as to whether China could achieve such progress without activities inconsistent with the Comprehensive Nuclear-Test-Ban Treaty," but he did not provide any evidence that China has violated the treaty.

Tim Morrison, senior director for weapons of mass destruction and biodefense at the National Security Council who spoke on a panel following Ashley at the May 29 Hudson Institute event tried to clarify Ashley's remarks. "I think General Ashley was clear," Morrison said, "that we believe Russia has taken actions to improve its nuclear weapons capabilities that run counter or contrary to its own statements regarding the scope of its obligations under the treaty."

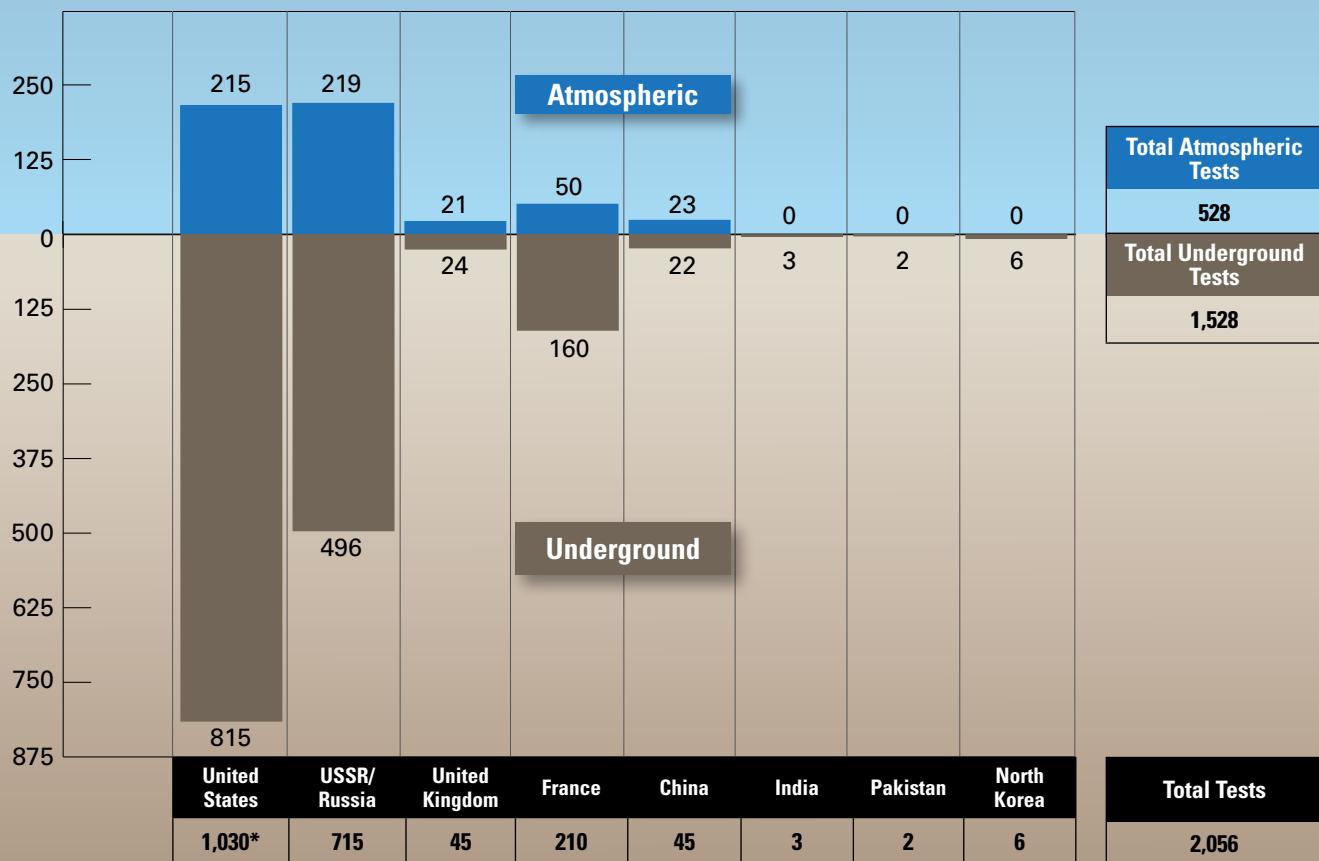
Ashley's statement was anything but clear. On June 13, in response to numerous press inquiries about the ambiguous charges, the DIA issued another statement, which said: "The U.S. government, including the intelligence community, has assessed that Russia has conducted nuclear weapons tests that have created nuclear yield."

This statement, though still vague, represents a significant shift from other very recent U.S. government and intelligence community assessments that suggest Russia has *not* violated the CTBT.

In December 2015, former Undersecretary of State for Arms Control and International Security Rose Gottemoeller told the House Armed Services Committee that "within this

# Nuclear Testing Tally 1945–2017

Arms Control Association



\*The United States total does not include the atomic bombings of Hiroshima and Nagasaki.

century, the only state that has tested nuclear weapons ... in a way that produced a nuclear yield is North Korea.” No charge of a Russian violation of the “zero-yield” nuclear test moratorium was reported by the State Department in its *Annual Report on Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*, until the [August 2019 edition](#), which simply repeats the June 13 DIA statement.

Furthermore, this June 13 DIA statement does not clarify whether the assessment is a joint intelligence community assessment, what the confidence level is, whether it only represents the view of the DIA and the National Security Council staff.

## A Familiar Charge Based on Old Information?

Given the lack of specificity of the DIA allegations, it may be a case of the new administration’s political appointees interpreting older intelligence data points differently.

The DIA assessment that “Russia probably is not adhering” to the CTBT echoes charges by test ban

opponents inside and outside the government that have surfaced intermittently over the years that Russia may be conducting nuclear test detonations at extremely low yields in a containment structure at its Soviet-era nuclear test site on the arctic island of Novaya Zemlya.

In 2002, *The New York Times* reported that George W. Bush “administration officials have briefed Congress on what they described as disturbing intelligence indicating that Russia is preparing to resume nuclear tests.”

In 2009, the Republican appointees of the *Congressional Commission on the Strategic Posture of the United States*, led by former defense secretary James Schlesinger cited earlier intelligence assessments to argue Russia was not complying with the CTBT. Like Lt. Gen. Ashley of the DIA, they also erroneously charged that Russia does not agree with the United States on what the CTBT prohibits.

They ignored or else were not aware of statements by Russian officials during the process for approval for ratification of the CTBT by the State Duma in 2000 that

# **Today, for the first time since 1945, no nuclear-armed state has an active nuclear-testing program.**

made it clear that Russia agrees that the CTBT prohibits all test explosions, including “hydronuclear experiments,” whatever the level of energy released.

In their section of the report, which was not endorsed by the Democratic appointees, the Republican members of the commission asserted that: “With no agreed definition [on the scope of the CTBT or of what a nuclear explosion is] U.S. relative understanding of these capabilities would fall further behind over time and undermine our capability to deter tactical threats against allies.”

The 12-member bipartisan commission was split on whether the United States should seek ratification but agreed that “the United States should seek clarification—and a clear understanding—on what tests are banned by this treaty, since there seems to be some ambiguity and confusion on that point.”

Such an approach may sound appealing to some. However, given that the states parties believe they have a common understanding that the CTBT is a “zero-yield” prohibition, such an option is unnecessary. Rather, a simple reiteration of previous statements is more practical and just as effective.

**“Zero-Yield” Understanding:** In his May 29 remarks, Ashley also said the DIA assessment was based, in part, on the view that Russia “has not affirmed the language of zero-yield.” This assertion is wrong.

As documented in a series of CTBT fact sheets published by the State Department in September 2011, Russia and China and all of the other NPT nuclear weapon states have publicly affirmed publicly that the treaty’s Article I undertakings “not to carry out any nuclear weapons test explosion, or any other nuclear explosion” prohibit all nuclear test explosions, no matter what the yield.

“At the time the treaty opened for signature, all parties understood that the treaty was a “zero-yield” treaty as advocated by the United States in the negotiations,” according to a Sept. 28, 2011 fact sheet from the State Department’s Bureau of Arms Control, Verification and Compliance titled “Scope of the CTBT.”

The “United States led the efforts to ensure the treaty was a ‘zero-yield’ treaty, after the parties had negotiated for years over possible low levels of testing that might be allowed under the agreement,” the document notes. “Public statements by national leaders, confirmed that all parties understood that the CTBT was and is, in fact, a ‘zero-yield’ treaty.”

As the State Department’s paper on “Key P-5 Public Statements on CTBT Scope” notes:

“Some countries prefer to use the term “no threshold,” meaning there is no line (or threshold) below which any amount of yield from a nuclear weapon test explosion would be allowed, and this usage is reflected in statements by senior P-5 government officials. The expression is translated into English in various ways: prohibition of ‘tests at whatever level,’ ‘without any threshold,’ ‘without threshold values,’ ‘regardless of the power,’ ‘any release of nuclear energy,’ or ‘regardless of the level.’ All of these formulations refer to the same concept: zero yield.”

Under this “zero-yield” interpretation, supercritical hydronuclear tests (which produce a self-sustaining fission chain reaction) are banned by the treaty, but subcritical hydrodynamic experiments, which do not produce a self-sustaining fission chain reaction, are permitted.

Ambassador Stephen Ledogar, chief U.S. negotiator of the CTBT, testified under oath to the Senate Foreign Relations Committee on October 7, 1999 that Russia and the rest of the P-5 had committed to this zero-yield standard.

In a March 1996 statement from China’s lead CTBT negotiator, Ambassador Sha Zukang, “the Chinese delegation proposed at the outset of the negotiations its scope text prohibiting any nuclear-weapon test explosion which releases nuclear energy. The future CTBT, he said, will without any threshold prohibit any nuclear-weapon test explosion.”

More recently, Russia has publicly reaffirmed its commitment to this standard. Former Russian President Dmitry Medvedev said on July 29, 2009 that: “Under the global ban on nuclear tests, we can only use computer-assisted simulations to ensure the reliability of Russia’s nuclear deterrent.”

Furthermore, Russia reasserted its position in an April 2017 commentary co-authored by Ryabkov and CTBTO Executive Secretary Lassina Zerbo, who wrote that the treaty “prohibits ‘any nuclear weapon test explosion or

any other nuclear explosion,' anywhere on Earth, whatever the yield."

Lt. Gen. Ashley acknowledged at the May 29 Hudson Institute event that he was not aware of Ryabkov's essay.

**"Un-signing" the Treaty?** According to *The Washington Post*, Republican Senators Tom Cotton (Ark.), Marco Rubio (Fla.), John Cornyn (Tex.) and James Lankford (Okla.) sent a March letter to President Donald Trump asking him whether he would consider "un-signing" the CTBT.

Similarly, back in 2002, *The New York Times* reported that: "Officials at the Departments of Defense, Energy and State, and at the National Security Council have discussed whether President Bush should renounce Mr. Clinton's signature on the test-ban treaty." The chief advocate for un-signing at the time was John Bolton, who was then the Undersecretary of State for Arms Control and International Security, and who is now the National Security Advisor to the President.

Formally withdrawing the U.S. signature from the CTBT would be self-defeating and profoundly counterproductive. If the United States were to formally withdraw its signature from the treaty, it would lose access to the nuclear test monitoring provided by the IMS, which even CTBT opponents acknowledge is valuable for the United States.

According to the Trump administration's budget request to Congress in 2017: "The U.S. receives the data the IMS provides, which is an important supplement to U.S. National Technical Means to monitor for nuclear explosions (a mission carried out by the U.S. Air Force). A reduction in IMS capability could deprive the U.S. of an irreplaceable source of nuclear explosion monitoring data."

According to the rules of the CTBT, only state signatories can have access to the IMS monitoring information, and only state signatories have voting rights in the CTBT Organization meetings.

**Military Significance of Very Low-Yield Nuclear Test Explosions:** The May 29 presentation by the DIA director sought to connect Russia's ongoing effort to replace and upgrade its nuclear weapons delivery systems with his allegation that "Russia probably is not adhering to" the CTBT.

It is well-documented, however, that from a technical perspective, very low-yield nuclear test explosions, including hydronuclear experiments, are useful only for unboosted nuclear warhead designs with yields of less than 10 tons. There is no mission for such a warhead that conventional warheads could not accomplish with less collateral damage. (See: *Technical Issues Related to the Comprehensive Nuclear Test Ban Treaty*, Report of the



**Chief U.S. negotiator for the Comprehensive Nuclear Test Ban Treaty, Amb. Stephen Ledogar, testifies before the Senate Foreign Relations Committee on Oct. 7, 1999.** He stated under oath that: "I have heard some critics of the Treaty seek to cast doubt on whether Russia ...committed itself ... to a truly comprehensive prohibition of any nuclear explosion, including an explosion...of even the slightest nuclear yield. In other words, did Russia agree that hydronuclear experiments, which do produce a nuclear yield, although usually very, very slight, would be banned and that hydrodynamic explosions, which have no yield because they do not reach criticality, would not be banned? The answer is a categorical 'yes.' The Russians as well as the rest of the P-5 did commit themselves." (Image: C-SPAN)

National Academy of Sciences Committee on International Security and Arms Control, 2002.)

Furthermore, an earlier *August 1995 report on "Nuclear Testing"* conducted by the independent JASON scientific advisory group for the U.S. Department of Energy determined that:

"So-called hydronuclear tests, defined as limited to a nuclear yield of less than 4 lbs. TNT equivalent, can be performed only after making changes that drastically alter the primary implosion. A persuasive case has not been made for the utility of hydronuclear tests for detecting small changes in the performance margins for current U.S. weapons. At best, such tests could confirm the safety of a device against producing detectable nuclear yield if its high explosive is detonated accidentally at one point."

Siegfried S. Hecker, former director of the Los Alamos weapons laboratory told *The New York Times* he is skeptical of the charges that Russia was conducting low-yield tests to create new weapons.

If Russia was engaged in any low-yield testing at Novaya Zemlya, where Moscow conducted nuclear tests until it declared a testing moratorium in October 1991, he said it would most likely relate to experiments to enhance the safety and reliability of Russia's nuclear arsenal—not the development of new types of nuclear warheads. Therefore,



**Comprising nearly a mile and a half of underground tunnels and alcoves, the U1a facility is a state-of-the-art laboratory dedicated to subcritical experiments and other physics experiments in support of science-based stockpile stewardship.**

(Photo: Nevada National Security Site)

Hecker said, if there is very low-yield nuclear testing, “I don’t think it’s militarily significant.”

## Next Steps

### Pursue Options for Resolving the Compliance Dispute.

Under Article VI of the treaty, which addresses the settlement of disputes before or after treaty entry into force, “the parties concerned shall consult together with a view to the expeditious settlement of the dispute by negotiation or by other peaceful means of the parties’ choice, including recourse to appropriate organs of this Treaty.” Such measures could, for instance, involve mutual confidence-building visits to the respective U.S. and Russian test sites by technical experts to address concerns about compliance.

At the November 2002 Conference on Facilitating the Entry into Force of the CTBT, Igor Sergeev, adviser to the Russian president on the issues of strategic stability, suggested “examining the possibility of elaborating additional monitoring measures for nuclear test sites, going far beyond the framework of the provisions of the treaty; such measures might include exchanging geological data and the results of certain experiments, the installation of additional sensory devices, and other measures.”

This proposal was originally made by Russian authorities with the hope and understanding that such steps could

be pursued after U.S. ratification and entry into force of the CTBT. Given the passage of time and the nature of the new U.S. allegations, such an approach would be useful to consider *before* CTBT entry into force.

Because the United States and Russia both engage in subcritical experimental activities in underground containment structures at their Cold War-era test sites—the Nevada National Security Site (formerly the Nevada Test Site) and at Novaya Zemlya—it is in the interest of both countries, as well as the international community, to develop and implement transparency measures to increase confidence that neither state is conducting low-yield explosions that are the result of a self-sustaining nuclear chain reaction.

The joint statement that will emerge from the upcoming Sept. 25 CTBT Article XIV Conference on Facilitating the Entry Into Force of the CTBT presents a useful opportunity for states parties to:

- “underscore that the most effective way to enforce compliance with the zero-yield standard is to bring it into force, which would allow for intrusive, short-notice, on-site inspections to detect and deter any possible cheating, and
- call upon any signatory or states party that might have credible evidence that one or

another state signatory is taking actions that violate the CTBT to pursue confidence building visits by technical experts for the purpose of addressing concerns about compliance.”

### **Reaffirm that All States Parties Share the “Zero-Yield” Understanding of Article I of the CTBT.**

Russia and the other nuclear weapon state signatories to the CTBT should reiterate their previous statements on the scope of the CTBT.

Other states parties should also publicly reaffirm their view that Article I of the CTBT prohibits all nuclear explosions at any yield, including hydro-nuclear test explosions in experimental containment chambers.

The joint statement that will emerge from the Sept. 25 conference should reiterate CTBT states parties’ common understanding that Article I of the CTBT prohibits all nuclear explosions at any yield, including any hydro-nuclear test explosions in experimental containment chambers.

**Reaffirm Support for Entry Into Force and the Cost of Un-Signing the CTBT.** To help deter a possible decision by the Trump administration to formally exit the CTBT, it is essential to make it clear that such a move would lead to international condemnation and carry tangible costs.

Specifically, CTBT states should reiterate that only state signatories can have access to the IMS monitoring information, and only state signatories have voting rights in the CTBT Organization meetings.

The biennial Article XIV Conference on Facilitating the Entry Into Force of the CTBT, which will convene on Sept. 25, 2019 at the United Nations in New York, is a critical opportunity to do more than simply reiterate calls for prompt action by CTBT hold-out states to sign and/or ratify the CTBT in order to bring it formally into force. The joint statement should also:

- underscore that the most effective way to enforce compliance with the zero-yield standard is to bring it into force, which would allow for intrusive, short-notice, on-site inspections to detect and deter any possible cheating; and
- if there are credible concerns that one or another state signatory is violating the CTBT, states parties should, as suggested in Article VI of the treaty, agree to mutual confidence-building visits by technical experts to address concerns about compliance.

The 2019 debate on the resolution on the CTBT is another crucial opportunity to express support for these points, and to try to win support from North Korea for the resolution.

In November 2018, the UN General Assembly overwhelmingly adopted a resolution on the CTBT (A/C.1/73/L.26) that “urges all States that have not yet signed or ratified, or that have signed but not yet ratified ... to sign and ratify it as soon as possible.” The resolution was approved 183–1–4. Only North Korea, whose recent nuclear tests were condemned in the resolution, voted no. The United States abstained from the vote.

If the drafters of the 2019 UNGA resolution “welcome North Korea’s unilateral nuclear test moratorium” and call upon all remaining Annex 2 states to sign and/or ratify, there would be a much higher chance North Korea might decide to vote “yes.”

## **Conclusions**

The CTBT has established a powerful taboo against nuclear testing. Global support for the treaty, which now has 184 state signatories, is strong, and the treaty’s International Monitoring System is fully operational and more capable than originally envisioned. Today, for the first time since 1945, no nuclear-armed state has an active nuclear testing program.

Yet, the door to further nuclear testing remains ajar. Although the treaty has been signed by 184 states, its entry into force is being held up by eight states, most notably the United States, China, and North Korea, which have refused to ratify the pact, and North Korea’s voluntary nuclear testing halt, announced in 2018, could easily be reversed.

Given their existing nuclear test moratoria and the U.S. and Chinese signatures on the treaty, these states bear some but not all CTBT-related responsibilities. But their failure to ratify has denied them (and others) the full security benefits of the treaty, including short-notice, on-site inspections to better detect and deter clandestine nuclear testing.

For the safety and security of future generations and out of respect for the people harmed by nuclear testing, it is time to close and lock the door on nuclear testing. “Friends of the CTBT” states need to pursue new, more creative, and sustained strategies to encourage the CTBT holdout states to ratify the treaty, address any credible allegations and concerns about noncompliance prior to formal CTBT entry into force, and take other steps to reinforce the norm against nuclear weapons test explosions, no matter what the yield.