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143

THE THRESHOLD TEST BAN TREATY: VERIFICATION IS THE SOLE STUMBLING BLOCK

One of the first orders of business of the 100th Congress will be Senate consideration of ratification of the 1974 Threshold Test Ban Treaty (TTBT). It would limit the size of underground nuclear tests for military purposes to 150 kilotons of explosive power. In an October 10, 1986, letter to Congress, Ronald Reagan pledged to support ratification only if Moscow agreed to measures ensuring compliance with the treaty's terms. Some Members of Congress, however, want to rush to TTBT ratification without first ensuring that compliance can be verified. The risk is that in the haste to ratify, adequate verification procedures will be ignored and agreements become law that could impair U.S. security.

The Threshold Test Ban Treaty is unacceptable in its present form because its verification protocol requires only that the each side present the other with technical information on underground nuclear explosions. This means that the U.S. would be unable to confirm or validate the information provided by Moscow. As the treaty is currently written, the U.S. would have to accept the Soviet Union's word that the information it provides on the threshold levels of underground nuclear tests is accurate.

Without tighter verification procedures the U.S. would be unable to monitor the levels of Soviet test yields with sufficient accuracy to detect violations. With current test measuring capabilities the U.S. can detect the accuracy of a Soviet underground nuclear test only by a factor of two. For example, a test at 150 kilotons could in reality be either 75 kilotons or 300 kilotons. This means that the U.S. can detect a Soviet violation of the TTBT only if the yield exceeds the 150 kiloton limit by 100 percent or more. This is clearly too inaccurate a measurement.

The capability to measure Soviet test yields accurately is particularly necessary because of likely Soviet violations of the 150 kiloton limit. The 1986 President's Report to the Congress on Soviet Noncompliance with Arms Control Agreements concludes that Soviet tests over the past 10 years have "exceeded 150 kt in a number of instances."

Adequate verification is essential for a number of reasons. First, it is necessary to verify Soviet compliance with the treaty. While the U.S. has held to the TTBT's 150 kiloton limit, Soviet violations may have enabled the USSR to learn more than the U.S. about higher yield warheads that are ideal for a first strike against U.S. land-based missiles. Second, U.S. military planners must know the relative strength and weaknesses of the American and Soviet arsenals. An inadequate verification scheme for the TTBT could leave the U.S. in the dark about how effective the Soviet arsenal really is.

To make the TTBT acceptable requires:

1) Insistence that Soviet underground nuclear tests be verified by a factor of at least 1.3. This means that test measurements be within at least a 30 percent range of accuracy. Experts say that measuring capabilities of less accuracy could allow the Soviet Union to make militarily significant gains by surreptitiously exceeding the 150 kiloton limit.

2) Allowing the U.S. to obtain independently verified data regarding Soviet test yields. This could be achieved if the Soviets would agree to the U.S. proposal for inserting a cable into the emplacement hole in the vicinity of the nuclear explosion. This technique would provide for a relatively accurate measure of the explosion's yield.

3) Insistence that the Soviets allow on-site inspection of test sites. Implementation of the cable verification system would require that the U.S. and USSR have personnel at each other's test site to monitor the system.

With such verification procedures, TTBT could serve U.S. security interests. The directors of the Lawrence Livermore and Los Alamos nuclear weapons laboratories believe that nuclear underground tests at or below the 150 kiloton level are sufficient for all U.S. military needs. In any event, the U.S. has no plans to test above the 150 kiloton level. Thus a verifiable TTBT could be used to keep the Soviets from testing nuclear weapons at high yields that the U.S. would forgo even if the TTBT were not ratified.

Improved verification procedures must be added to the treaty before ratification. To ensure this, the Senate could endorse the TTBT with the proviso that the accord remains unratified until a verification protocol acceptable to the U.S. has been added. If no agreement is reached, then, as stated in the verification protocol, the treaty would not be considered legally binding.

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For further information:

"Why the U.S. Must Test," National Security Record No. 89, March 1986.

U.S. Arms Control and Disarmament Agency, Soviet Noncompliance, February 1, 1986, pp. 15-16.