

expected from cheating; and estimates of the Soviet propensity to cheat.³

The utility of this statement is borne out by President Bush's announcement unilaterally to withdraw U.S. nuclear SLCMs with no special provisions to monitor a similar countermove from the Soviets (U.S. withdrawals were not made contingent on Soviet withdrawals, but such actions were anticipated).

OVERVIEW AND FINDINGS

During the START negotiations, some defense analysts had argued that a mutual ban by the United States and the Soviet Union on the production and deployment of all nuclear SLCMs, or on all naval tactical⁴ nuclear weapons, would be of net security benefit to the United States. The Reagan and Bush administrations, with the strong support of the Navy, had opposed this position. However, following the attempted overthrow of President Gorbachev in August 1991, President Bush announced a series of changes in U.S. nuclear weapons policy. These included the unilateral withdrawal of all tactical nuclear weapons, including nuclear SLCMs, from all U.S. surface ships and submarines deployed at sea.⁵ Shortly thereafter, the Soviet Union responded with a similar pledge to unilaterally withdraw their tactical nuclear weapons at sea.

In the future, both sides might wish to enter into a formal arms agreement that would legally bind each party to SLCM limits. **Even if the United States chooses to forego a formal agreement, it will still want to monitor Russian compliance with their declarations. This summary report assesses the problems associated with monitoring agreed or declared SLCM limitations. It analyzes**

prospective nuclear SLCM arms control options, monitoring techniques, and possible evasion scenarios. With respect to monitoring regimes that would limit or ban nuclear SLCMs, but allow conventionally armed SLCMs, OTA concludes:

- prospective SLCM monitoring regimes could not detect covert nuclear SLCM stockpiles or small numbers of covert deployments; however, they could force a determined cheater to move such activities to clandestine facilities;⁶
- the United States could monitor day-to-day deployments of SLCMs on ships at sea through a combination of monitoring measures that might require shipboard inspections; and
- the United States would have great difficulty in detecting preparations for illegal loading of nuclear SLCMs.

Given these monitoring difficulties, a key decision for policy makers is the appropriate level of effort and expense that should be devoted to monitoring compliance with agreed or declared SLCM limits. In addition to financial costs, the United States must also weigh the advantages and disadvantages of agreements that grant both parties equivalent rights to conduct potentially intrusive onsite inspections, for example, onboard inspections of ships capable of launching or transporting SLCMs.

Reciprocal unilateral declarations have many similarities with more formal arms control agreements. In particular, even though reciprocal unilateral declarations carry no legal obligations, and neither side is explicitly granted monitoring privileges, each is likely to monitor the other side's compliance with their declarations by employing

³ See *Verification Technologies: Measures for Monitoring Compliance With the START Treaty*, summary, OTA-ISC-479 (Washington DC: U.S. Government Printing Office, December 1990), p. 5.

⁴ There is no precise definition of a "tactical" nuclear weapon. Frequently, tactical weapons are distinguished from "strategic" weapons by their shorter range. Strategic nuclear weapons include intercontinental ballistic missiles and long-range or 'heavy' bombers. These weapons have sufficient range to attack an enemy's homeland. Shorter-range tactical weapons usually operate in a particular theater and maybe used to attack an enemy's forces. Examples of tactical naval nuclear weapons are nuclear mines, nuclear depth charges, and short-range nuclear-tipped surface-to-air missiles. Nuclear sea-launched cruise missiles are usually considered tactical rather than strategic weapons, despite their capability to attack targets at ranges up to a few thousand kilometers.

⁵ President Bush announced these changes on September 27, 1991 in an address to the Nation. The President's initiatives regarding tactical nuclear weapons include both land- and sea-based weapons. Weapons scheduled for either destruction or withdrawal to storage sites in the United States include short-range land-based nuclear weapons (nuclear artillery shells, Lance short-range missiles) and tactical sea-based nuclear weapons (nuclear SLCMs, nuclear bombs deployed at sea for carrier-based aircraft, and nuclear depth charges deployed at sea for land-based naval and carrier aircraft). The President's initiatives do not affect tactical air-based nuclear weapons, which includes nuclear bombs stored on land, that are designated for aircraft based overseas.

⁶ Cheating might be attempted in facilities thought to be unknown to the United States, or it might occur in facilities noinspectable under treaty provisions.