

TO: Frank von Hippel
FR: Karen Current (202-624-9353) for Tom Cochran. Tom asks if you would make any changes you think necessary and send this on to S. Kortunov. Thank you.

E-Mail

To: Sergei Kortunov, Foreign Ministry, Moscow
From: Tom Cochran, Frank von Hippel, and Cris Paine
Date: October 3, 1991

Dear Sergei:

In response to President Bush's initiative, we believe it would be in everyone's interest if President Gorbachev would insist that the warheads removed from the U.S. and Soviet stockpiles be put under international safeguards as soon as possible. One possible approach would be along the lines outlined in the enclosed procedures for tactical warhead elimination developed by Dick Garwin and Cochran. The enclosed draft was developed at the recent Pugwash meeting in Beijing in consultation with Academician Vitalii Goldanskii and other Soviet representatives, and is based largely on the ideas developed by the Federation of American Scientists in collaboration with the Committee of Soviet Scientists (see "Ending the Production of Fissile Materials for Weapons; Verifying the Dismantlement of Nuclear Warheads," FAS, June 1991).

Declaring inventories, tagging and placing the tactical weapons under bilateral or international safeguards has the advantages of reducing future verification uncertainties if a subsequent decision is made to verify tactical warhead destruction and place fissile materials under safeguards. It will make it politically more difficult to reverse the decision and redeploy the warheads.

Placing the safeguards under the authority of the five members of the Security Council will put pressure on the other members to place their tactical nuclear weapons under the same regime. It will serve as a basis for universal inspection regime under the United Nations and truly radical arms cuts down to a few hundred weapons in each nuclear weapon state. It will also establish a precedent for that will be valuable in gaining adherence of threshold nuclear powers to increase inspections under the Nonproliferation Treaty.

9/2/91 Draft 2, 11:21 (Beijing, R.L. Garwin)

A PROCESS FOR THE ELIMINATION OF TACTICAL NUCLEAR WEAPONS

In general, U.S. and Soviet tactical nuclear weapons are distributed over many military bases and storage sites, and can be moved rapidly. For the present purpose, we define tactical nuclear weapons (for the U.S. and the former Soviet Union) as all nuclear weapons other than those limited under the START Treaty -- that is, all except a declared number of specific types of warheads and bombs compatible with obligations under START.

Some 10,000 - 20,000 nuclear charges on each side fall into this category of nuclear weapons we propose be eliminated promptly. When such elimination has occasionally been mentioned in the past, the objection has been raised of the necessity of building a vast nuclear-weapons infrastructure capable of destroying some 10,000 or more nuclear weapons in the required short time. But such cost and delay is in reality unnecessary.

If there is a commitment to eliminate tactical nuclear weapons, it might be done in the following manner (specialized toward the most difficult case of the U.S. and the Soviet Union):

- 1) Within one month following the commitment, each participant should independently declare the various types, models, numbers, and locations (if possible) of their nuclear charges to be denuclearized, as well as the means to be used initially to identify an object as one of the charges to be destroyed (for example, name plate and serial number).

- 2) At the same time, each participant will identify and begin modifying a suitable number of warehouses and other facilities for the safeguarded storage of all of the tactical nuclear weapons. The host country military will provide physical security, aided by barriers and other suitable measures, against the maximum conceivable armed attack on the site. Continuous international supervision would ensure that weapons or components are not removed clandestinely, and that the guarding forces themselves do not pose a threat to retaining the nuclear weapons in the storage facility.

Within one or two months following the declaration of the tactical nuclear weapons stockpiles, all of these weapons should be removed to the identified secure weapons storage facilities. Subsequent measures could be employed to make the rapid removal of large numbers of the stored weapons a slow task. Initially this might be achieved by the

employment of multi-ton slabs or barriers around the individual weapons, and gradually by the casting of appropriate massive concrete shields to entomb each weapon.

As each weapon enters its safeguarded storage, or preferably at the deployment site, it might be inserted into a sack or pouch equipped with adequate seal and tag to enable standardized monitoring. Over a period of 3 months, no tactical nuclear weapons could legitimately be present outside safeguarded storage, except for the START-accountable nuclear weapons.

3) Over a period of years, the stored weapons should be first demilitarized and then destroyed. Demilitarization would involve the transfer of a weapon to a safeguarded workshop, from which would emerge 3 streams of material -- (1) crushed metal including the weapons case, electronics, firing and fuzing, etc., (2) high-explosive components to be transferred under safeguard to disposal by burning; (3) fissile material enclosed in tough plastic and crushed to a thickness less than 5 centimeters, for example.

Ultimately, the fissile material U-235 should be diluted with natural uranium metal for future use as fuel in civil nuclear reactors. Plutonium should be transferred to IAEA-safeguarded storage for eventual deep geologic disposal, or consumption in civil nuclear reactors as mixed-oxide or other fuel.

4) If one nation should begin the process of declaration and storage in advance of another, it might be on condition that the process cease and even be reversed if another major holder of nuclear weapons did not do the same by a specified date.

(Agreed by T.B. Cochran and R.L. Garwin 09/21/91 at 11:18)