

Office of the Secretary of Defense

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Reason: 3.3(b)(1)(2)(8)+1.4(C)+3.3(C)+1.4(F)+6.2(A)

MDR: 13 -M- 3474



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UNITED STATES DELEGATION  
TO THE  
U.S. - USSR NUCLEAR TESTING COMMISSIONS  
Washington, D.C. 20451

DECLASSIFIED IN PART  
Authority: EO 13526  
Chief, Records & Declass Div, WH  
Date: MAY 22 2018

~~SECRET (REPRODUCED - DATA)~~

October 29, 1991

TO: NSC - BRIG GEN Gordon  
DOE - Dr. Alessi, Dr. Czajkowski  
OSD - Dr. Barker, DAS Miller, Graham,  
MAJ GEN Watson, Mr. Libby  
JSC - MAJ GEN Lajoie, BRIG GEN Curtin  
State - Dr. Timbie, DAS Walpole, Kauzlerich,  
Mr. Einhorn  
ACDA - A/D Gordon, Koch  
IC - [REDACTED]

FROM: Ambassador Courtney *Wtk*

SUBJECT: Trip Report to Sandia and Los Alamos:  
Near-term Priorities for Talks with the Soviets  
on Safety, Security, and Dismantlement

Last week at Sandia and Los Alamos I asked experts for their ideas on nuclear weapons safety, security, and dismantlement (SSD) topics which the U.S. might discuss with the USSR. Specifically, in what areas could discussion and technical cooperation result in early, significant, and low-cost gains in Soviet SSD practices?

[REDACTED]

Thus, to begin the discussion we might provide an overview of U.S. SSD practices and probe a great deal about Soviet practices. This could [REDACTED] help us to structure discussions and cooperation in the most useful way. Although in some areas Soviet SSD technology and practices may be deficient, in other areas they may be comparable in quality to ours. For instance, the Soviets have experience in security and transport in Europe of radioactive materials for civil purposes, a field in which many IAEA interchanges have taken place.

We may find that, in general, Soviet approaches to SSD issues have been utilitarian, inventive, and ingenious, if less sophisticated and technological than ours. Moreover, the Soviets have probably relied much more than we on separating key components to assure safety and security.

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OSD 3.3(b)(1) / CIA 1.4(c) / 3.3(c)

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Experts also suggested that the U.S. and the Soviets likely approach many SSD issues in different ways. Thus, we may discover at the outset of the dialogue that the sides speak different languages. I noted that we have faced this obstacle in other talks, e.g., in defining in START what are stabilizing systems.

#### Near-Term Priorities

Following are near-term priorities suggested by the experts.

Personnel reliability (or assurance) programs -- useful for screening people with access to weapons and dismantlement facilities; useful to reduce insider threats arising from nationalist, ethnic, and political fissures, employee disgruntlement, and possibly financial offers for stolen weapons; U.S. information is unclassified.

Accident resistant containers (ARCS) -- transport of older weapons can be risky; sharing this technology might be useful at a time when the USSR may be removing lots of weapons from East Europe and non-Russian republics, and moving weapons to dismantlement facilities; the U.S. can provide non-sensitive technology for building containers, which can be critical in high-velocity-impact accidents involving airplanes and helicopters.

Field analysis of nuclear weapons -- if older weapons in the field are of questionable safety, prior to movement they can be X-rayed and assessed; sensitive technologies must be avoided, but technical assistance is possible.

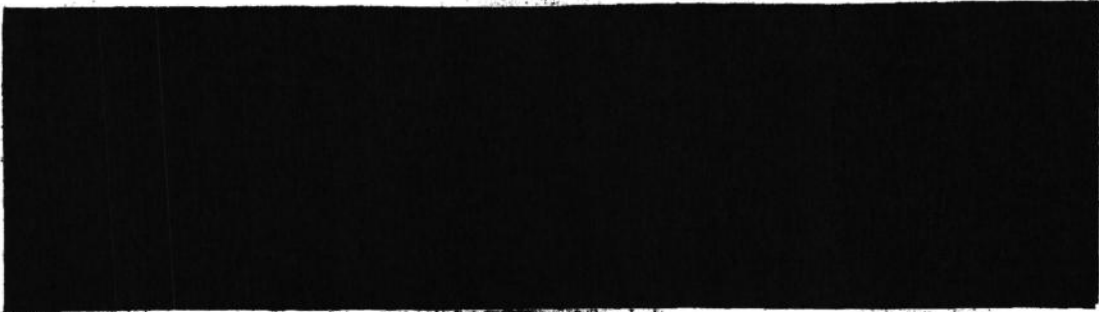
Systems concepts for security -- a "layered approach" (see attachment) is key to high security; Sandia teaches systems concepts in a course for the IAEA on security for civil nuclear activities; systems-level methodologies for Probability Risk Assessment (PRA) are one example; we could teach similar concepts to the Soviets for nuclear weapons security without revealing sensitive data.

Inventory control -- DNA employs a Sandia-designed computerized inventory system to track U.S. nuclear weapons; we could share concepts and technologies if the Soviets needed an effective inventory system; this might be helpful prior to any large-scale weapons movements; DOE uses similar inventory control systems in the dismantlement process and they might be relevant for the Soviets.

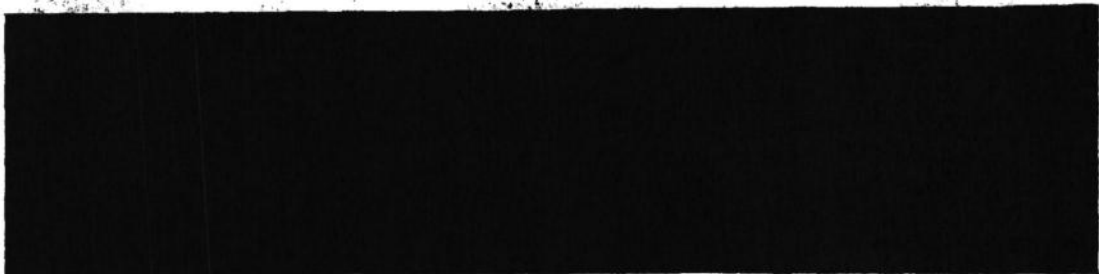
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DOE Section 6.2(a)

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Security for storage sites -- our early INF experience showed that the Soviets have only rudimentary knowledge of perimeter and portal monitoring; the Soviets rely more on guards and guns, and less on technology, than do we; with growing uncertainty about guard reliability, the Soviets may want to bolster their emphasis on technology; we can share a number of barrier technologies but not specific data (e.g., detector sensitivity at our sites).



Accident Response -- U.S. technology and procedures for DOE's Accident Response Groups (ARGs), and similar DoD organizations, could help the Soviets and involve no compromise of sensitive data; accident response involves some planning and execution in coordination with civil authorities, and this may be of special interest to republic representatives in SSD talks.

Emergency search -- although the Soviets are good at radiation detection, the U.S. has collected a lot of data on finding stolen nuclear weapons in urban areas; we could sanitize some NEST data on long range search and share it and certain nonsensitive NEST technologies and procedures.

Longer-Term Priorities

Sandia and Los Alamos experts viewed discussion and cooperation in such areas as PALs, IHE, fire-resistant pits, and electrical safety (arming, fuzing, and firing) as having a longer-term impact, and as being important primarily to the extent the Soviets build new weapons. Retrofitting new technologies in these areas is uncommon and would be expensive. Thus, the dialogue in these areas might be more deliberate.

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DOE 1.4(F) + 6.2(4) Section