

Good morning Chairman Lieberman, Ranking Member Collins and distinguished members of the committee. My name is Bob Nesbit, I am employed by the MITRE Corporation and have been a member of the Defense Science Board for 10 years.

The Defense Science Board conducted a study to examine the best strategies to employ against the threat of terrorist use of WMD. Larry Lynn and I served as the study co-chairs with members from industry, academia, the FFRDCs and the National Labs. The findings and recommendations of the DSB are advisory. They do not represent the official position of the Department of Defense.

We examined potential attacks in three distinct time frames – during the planning and preparation, while the attack is in progress, and in the aftermath of the event.

For the nuclear terror topic of today's hearing, one finding stands out. If a terrorist or rogue state somehow gains possession of a nuclear device and intends to use it against the United States, we are in big trouble. Our recommendations, therefore, stressed doing everything possible to prevent acquisition since once this happens it would be very difficult to detect in transit, stop and secure the device prior to detonation.

We recommend increased effort in three pre attack areas.

1. Improve intelligence on these threats to include:

- Greater emphasis on tracking key individuals with specific technical expertise
- Increased fielding of deep penetration and close access intelligence sources and methods
- More persistent surveillance assets to include tagging tracking and locating capabilities
- In depth analysis to create a better understanding of adversary motives and intentions

2. Develop diplomatic, economic and military response options to serve as a deterrent against the original source of the nuclear device or material. To make these response options credible will require improved forensics to be able to identify the original source. Extended planning and publication of the outline of the response options will make U.S. intentions perfectly clear to all.
3. Strengthen and broaden international cooperative efforts in non-proliferation and increased security of nuclear materials to include the Proliferation Security Initiative, Nunn-Lugar and other special diplomatic efforts.

For example, the take down of the AQ Khan network and Libyan program was a remarkable success based on intelligence, diplomacy and international cooperation. It is likely the highest value counter nuclear terrorism operation in the last 10 years.

As a second priority we recommend increased emphasis in consequence management following an attack. There is little that can be done for those unfortunate enough to be at the point of the blast, but there is much that can be done to limit total casualties – some estimate by as much as one-half. Radically increased medical surge capabilities are needed to treat the radiation exposure itself, and deal with trauma and burn injuries. Large numbers of people with first-level disaster training are needed to stabilize the injured until professional medical care is available. DoD personnel may be required to deal with quarantine of affected areas and eventual decontamination.

Finally, detecting a nuclear device in transit can be very difficult. The physics of the situation makes the sensor technology quite challenging and if the perpetrator is clever and uses shielding, non obvious entry paths and transit means, or employs salvage fuzing to initiate the weapon upon detection; it would make detection prior to detonation even less likely. A terrorist group that was adept enough to acquire a nuclear device should be assumed to have a similar skill level in carrying out the attack.

While we did not endorse deploying a very large number of fixed, pre-emplaced radiation detectors throughout the U.S., we did conclude that we ought to make terrorist planning more difficult and uncertain by selectively deploying detectors.

- To small areas cued by intelligence or heightened alerts
- Near certain key portals, high value targets or special events
- In a mobile randomized non overt manner, but the existence of such publicized, to add complexity to the offense.

Probing for these defenses by the terrorists may increase the likelihood of their apprehension.

We derived these results, priorities and rankings using a fairly quantitative approach. DHS produced 14 potential scenarios in which terrorists might use WMD against the U.S. We estimated the most probable beneficial impact in terms of lives saved and injuries and economic loss avoided if each defensive alternative were employed against each of the scenarios. The sum of those benefits over all 14 scenarios provided a measure of impact. The individual approaches were ranked based on their value, a combination of the impact and the cost of implementing the defensive approach.

This concludes my prepared statement. With the committee's permission, I request it be submitted for the record. I thank you for your attention and will be happy to answer any questions you may have.