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Hearing on Radiological Dispersal Devices (RDDs)

Thank you Mr. Chairman and distinguished members of the Senate Committee on Foreign Relations for inviting me here today to discuss the very important problem of potential terrorist attacks using radiological dispersal devices (RDDs), so-called "dirty bombs."

I am Don Cobb, Associate Director for Threat Reduction at Los Alamos National Laboratory. I am responsible for all programs at Los Alamos directed at reducing threats posed by weapons of mass destruction – nuclear, chemical, biological. I personally have more than 30 years experience working to reduce these threats.

Let me begin by saying that one needs to consider the RDD threat in the broader context of threats posed by nuclear terrorism and, in turn, in the even broader context of all types of potential terrorism against the United States and our allies. The events of September 11 show clearly that terrorists want to inflict as much damage as possible on our institutions and thereby strike at our core values.

The spectrum of nuclear terrorist threats – starting with RDDs at the low end of the spectrum of violence and moving up through improvised nuclear explosives or stolen nuclear weapons is a fearsome challenge. We must consider these together in the context of the terrorist's intention to inflict maximum damage.

Unfortunately, there is no silver bullet that will protect us from these threats. Rather we must have a systematic approach that provides us with defense in depth. The good news is that a systematic approach is possible against the spectrum of nuclear terrorist threats, but it will take much hard work and continued investments to achieve. And of course there is ultimately no foolproof system against all possible threats. But the beginnings of such a system against the most pernicious threats is starting to emerge after a decade of effort starting with the Nunn-Lugar program.

Allow me to illustrate what I mean by a few examples. We have been working with the Russians for several years now to secure nuclear weapons and materials through the National Nuclear Security Administration's Materials Protection, Control, and Accounting Program. Experts generally believe that the nuclear weapons in Russia are more secure than the nuclear materials. In any case there are hundreds of tons more weapons-usable materials scattered at sites across the former Soviet Union not in weapons than there are materials in weapons. Of course we can't ignore the security of the weapons, but the materials are perhaps the greater danger. The Baker-Cutler report calls this, "the most urgent unmet national security threat to the United States."

It seems logical to ask, can we extend the MPC&A program to cover radiological sources as well as weapon-usable materials? It is these sources that are least well protected, and have a special concern for RDDs. The answer appears to be yes. At least the NNSA officials responsible for the MPC&A program are working with their Russian counterparts to move in this direction.

Another NNSA program, called the Second Line of Defense (MPC&A being the first line), is working to establish detection systems at borders and transit points in Russia and the former Soviet countries to detect smuggled nuclear material. While the focus is on weapon-usable materials, these same systems with some modest modifications would also be effective against smuggled radiological sources, since the radiation signatures from such sources is generally much stronger than from uranium and plutonium.

There are some major differences however. Nuclear weapons and weapon-usable materials tend to be focused in military applications under tight government oversight. There are international agreements and arrangements governing the authorized export and use of such materials. Radiological sources are more wide spread and have fewer controls. For example, there is not an export control regime for such sources comparable to the Nuclear Suppliers' Group for weapon-usable materials. It seems logical to use and extend these existing arrangements to at least the notification of intent to export large radiological sources.

What is in effect the third line of defense consists of efforts to detect and intercept smuggled nuclear materials at U.S. borders and entry points. Most U.S. customs agents and emergency response teams in large cities have hand-held radiation sensors that can detect large radiological sources generally more easily than weapon-usable materials. But better technology is needed to detect and intercept nuclear materials, including radiological sources, concealed in luggage, packages, or shipping containers.

Perhaps the biggest difference between nuclear weapons and weapon-usable materials and radiological sources is the possibility of a terrorist obtaining radiological sources "at hand", rather than having to smuggle them into the United States. In the U.S., nuclear weapons and weapon-usable nuclear materials are under extremely tight security. Radiological sources, on the other hand, are more susceptible to theft or diversion, possibly by insiders.

If the worst occurs, whether it is a terrorist attack involving an improvised nuclear explosive device using weapon material or an RDD using radiological material, it will be up to the emergency response forces to deal with the consequences. In the U.S. the NNSA's Nuclear Emergency Search Team (NEST) is the group that would be called upon in case of a nuclear-related terrorist attack. NEST actually consists of multiple capabilities ranging from searching for a nuclear device to protection of people and the environment from radiological harm whether the cause is accidental or deliberate. The men and women of NEST largely consist of volunteer experts from the national labs. We're proud of them.

But more capability is needed considering the urgency of the threat post-September 11. We need more practice and training against realistic terrorist scenarios including RDDs. Clean up and wide-area radiological decontamination represent a huge challenge. We need to make investments in related science and technology now. We also need to upgrade our existing forensics and attribution capabilities against a heightened threat of nuclear terrorism.

The Defense Science Board studies of 1997 and 2000 made similar recommendations regarding state-sponsored or trans-national nuclear terrorism. Since September 11 some of these recommendations have begun to be implemented. But the pace remains slow and the scope of the effort is not yet broad enough to cover the spectrum of nuclear threats, including RDDs. This work needs to be expanded and accelerated now.

Finally I would like to point out that implementing these response measures just in the U.S. is not enough. We need to work to make sure that other countries have them as well, and Russia should be at the top of the list. The ability to locate and recover stolen nuclear materials, including weapon-usable or radiological sources, before they get out of the country should be a top priority. Notification that such a theft has occurred should also be a first priority. A Russia "NEST program" would be in our mutual interest. We should work to add this to the current list of successful cooperative programs, while we examine all of these programs from the perspective of their ability to counter the RDD threat.

Thank you.