

**Statement from Dr. Matthew Bunn, Associate Professor; Co-Principal Investigator, Project on Managing the Atom, Harvard University**

Thank you, Senator Graham and all the members of the commission. I want to join Senator Nunn in thanking you for your work on this very important subject, and it's an honor to be here today to talk about what I think are one of the most critical threats to our nation's security.

I endorse all of what Senator Nunn said about the broader nuclear threat. I'm going to zero in on the particular threat of nuclear weapons in the hands of terrorists. My message is basically simple. I think this is a real possibility, but I think it's a preventable possibility, and there are actions that we can take that can drastically reduce that risk. Indeed, the next president, I think, has an historic opportunity. With sustained leadership and a credible plan and sufficient resources, I think the next president could reduce the risk of nuclear terrorism to a fraction of its current level, even in the first presidential term. And the proof of the potential for reducing the risk is the progress that's already being made, as Sam mentioned.

There are thousands of bombs' worth of material that has been permanently destroyed and will never again pose a threat to humankind as part of the U.S.-Russian Highly Enriched Uranium Purchase Agreement. There are scores of sites where the security is demonstrably radically improved compared to what it was 15 years ago. There are dozens of sites that no longer have any nuclear material at that site to steal. These represent, in a very real sense, bombs that will never go off, and I think we owe a debt of gratitude to all of the hundreds of men and women who have struggled to make that happen.

Nonetheless, there remain major gaps in our efforts. There is today no binding global standards that says if you've got a nuclear weapon or some highly enriched uranium or some plutonium, this is the minimum level that you have to secure it to. Most of the highly enriched uranium that the United States itself distributed to other countries over the decades, we have no plan to take back or to otherwise remove and destroy. And I could go on. I think, with all due respect, Mr. Chairman, that the good-plus rating that you offered in the press the other day is not yet justified. I hope that it will be justified after this commission makes its recommendations and those recommendations are implemented.

Now, let me talk for a moment about the facts that frame this danger. First, as we've heard, al Qaeda is seeking nuclear weapons and has done so, determinedly, over a period of years. Secondly, unfortunately repeated government studies have concluded that if terrorists could get the requisite nuclear material, it is potentially within the capabilities of a sophisticated terrorist group to make at least a crude nuclear bomb. It's a very different thing from making a safe, reliable weapon that can fit on a missile or be delivered by an aircraft, that a state would want to have in its arsenal, and it's a very much simpler thing. And unfortunately, al Qaeda's reconstitution in the mountains of

Pakistan is making it – increasing the risk that they would be able to manage that kind of complex operation.

Third, some of the stockpiles of this material remain dangerously insecure. We have seen multiple cases of real theft of real weapons-usable nuclear material. The most recent significant seizure was in Georgia as recently as 2006. Every country where these materials exist has more to do to make sure that they are secure as the recent incidents in our own Air Force made clear – most recently, among other things, in a security inspection at Minot, a nuclear guard playing video games on his cell phone while on duty.

But I think three categories of these stockpiles stand out in my mind as posing the highest risk. First, Russia. Russia has the world's largest stockpiles and the world's largest number of buildings and bunkers, security that has improved dramatically over the last 15 years. There are stockpiles that 15 years ago were in the equivalent of a high school gym locker with a padlock that could be snapped with a bolt cutter from any hardware store that are today in secure vaults behind heavy steel doors. But nonetheless, significant weaknesses, under-funding, poorly paid and under-motivated and poorly trained guards, deep corruption remain in the Russian nuclear establishment.

Most recently, for example, earlier this year a colonel in the Russian NVD was arrested for soliciting bribes to overlook violations of security rules at the closed nuclear city of Snezhinsk. Corruption, not only in Russia but in Pakistan and other countries around the world, is a fundamental issue that has to be addressed. It greatly adds to the dangers to security. Pakistan is another top priority risk, in my view. They have a relatively small stockpile, believed to be heavily guarded, but it faces immense threats, both from insiders with extremist sympathies and a demonstrated willingness to sell practically anything to practically anyone, but also from potentially huge outsider threats. This is, after all, al Qaeda's world headquarters. There were at least two cases during President Musharraf's reign when serving Pakistani military officers worked with al Qaeda to come within a hair's breadth of killing the Pakistani president. If the people guarding the president can't be trusted, how much confidence can we have that the people guarding the nuclear weapons will not cooperate with al Qaeda in a similar way?

Finally, there are still some 130 research reactors around the world that use highly enriched uranium as their fuel. In many cases, they have almost incredibly modest security in place, in some cases literally a chain link fence, a night watchman, and at least some cases of which I am aware, an unarmed night watchman. Much of this material is in forms that would require some chemical processing for it to be used in a bomb, but it's not processing that's likely to be beyond the capabilities of a group that would otherwise be capable of making a nuclear bomb.

Given these vulnerabilities, the next fact that frames our dangerous – particularly distressing, and that is that nuclear terrorism is hard – nuclear smuggling is very difficult to stop. The amount of material that is required for a bomb is small. The amount of radiation releases is modest, and, particularly in the case of highly enriched uranium, is easy to shield. In particular, it's worth remembering that the detectors that we're

installing all over the world – that at our own borders would not be able to detect highly enriched uranium metal with even a modest level of shielding, nor would the Advanced Spectroscopic Portals that are now proposed. The immense lengths of our borders, the myriad routes across them, the immense legitimate traffic that goes across them every year all conspire to make the smuggler's job easier and our job more difficult.

What then must we do? It seems to me these facts lead directly to an inescapable conclusion that we need to act quickly to secure nuclear stockpiles around the world. I submitted to the commission a 12-step program for reducing the risk of nuclear terrorism, so I'll be very brief in summarizing that here. First we need a broad, integrated effort to reduce the risk, but there's one part of that effort that really is the chokepoint, and that is controlling the nuclear material and making sure that that doesn't fall into terrorist hands. So the first thing we need to do is launch a fast-paced global campaign to lock down every cache of nuclear weapons, of plutonium and highly enriched uranium, wherever it may be, whether it's in a rich country or a poor country. That needs to be a top priority of our diplomacy, something we address with every country that has stockpiles to secure or resources to help at every opportunity.

We need to work out effective global security standards so that all countries where these materials reside are committed to protecting them against the kinds of threats that terrorists and criminals have shown they can pose. We need to drastically expand our efforts to consolidate these nuclear stockpiles in fewer locations so that we can achieve higher security at lower costs. That means we need a broader set of approaches and incentives to convince countries to give up the HEU and send it away to secured locations elsewhere, to convert research reactors that don't use highly enriched uranium anymore, to shut down unneeded research reactors. We have no program today to give unneeded research reactors incentives to shut down and allow their scientists to be users at another reactor elsewhere.

We need to radically step up our efforts to convince policy-makers and nuclear managers in other countries around the world that this is a real threat and it's a real threat to them, deserving of their time and resources. Many of them are not convinced of that today. If they stay unconvinced, we are not going to succeed in these efforts.

And all of this is going to be difficult. The easy things have been done already. There are deep secrecy, national sovereignty, complacency, political and bureaucratic impediments to getting this job done. It's going to require sustained leadership from the top, and as we heard from Carrie this morning, one of the first things we need to do is make sure that we have somebody in charge of all of these efforts to prevent nuclear terrorism, someone who is in a position where they have the president's ear. I believe it has to be a deputy national security advisor in the next administration. We need a comprehensive plan to address these threats that we then modify as we go, that's prioritized. Now we have lots of individual plans for dozens of different programs, and we need to assign the resources to make sure that no critical program that really offers promise for reducing the risk of nuclear terrorism is slowed just because it doesn't have enough money to get its job done.

And with that, I apologize for going on so long, and I will stop and answer questions.