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U.S. Department of Energy
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INTRODUCTION

Thank you, Mr. Chairman and members of this Committee, for the opportunity to appear before you today to present this statement for the record on the work of the Office of Nonproliferation and National Security. I look forward to working with you, Chairman Roberts, and with the rest of the members of this new subcommittee on Emerging Threats, as we work together to address some of the many serious challenges facing our nation today.

It has been stated many times, but it bears repeating: the world we face today is vastly changed from the one we lived in during the cold war. These challenges are more varied and less predictable. None of these are more serious than the proliferation of weapons of mass destruction to rogue states and, even more worrisome, terrorist organizations. The President has declared the threat of weapons of mass destruction proliferation to constitute a national emergency and I am proud of the role the Department of Energy, and my Office in particular, is playing in responding to that emergency.

Within the Department, the Office of Nonproliferation and National Security is unique in the range of our contributions to national security. The Office is responsible for national security missions in both domestic and international settings. In Russia, Department of Energy employees and laboratory experts are on the ground and actively working to improve the security of hundreds of tons of plutonium and highly enriched uranium at dozens of facilities. Our programs are part of the broader Clinton Administration's nonproliferation efforts and have been fully coordinated as part of the President's Expanded Threat Reduction Initiative. Moreover, they have been coordinated and prioritized within the inter-agency, including the Departments of State and Defense. We are also working with thousands of former Soviet Union weapons scientists to provide them with non-weapons jobs and prevent them from straying into work with countries of proliferation concern. Here at home, we are accelerating our efforts to harness the skills of the national laboratories to meet the growing threats of chemical and biological weapons and the very serious risk that such weapons will be used on U.S. territory. In addition, my staff is ensuring the protection of U.S. nuclear materials and of DOE sites.

FY 2000 BUDGET REQUEST

The Office's FY 2000 budget request is \$747.3 million, representing an 11% increase over our fiscal year 1999 appropriation. This increase reflects the ever growing challenges our nation faces in the international, as well as domestic arenas.

INITIATIVES FOR PROLIFERATION PREVENTION/NUCLEAR CITIES INITIATIVE

Let me first turn to the Department of Energy's programs to reduce the risk of **Brain Drain** in the former Soviet Union. Our efforts to engage and orchestrate alternative employment for underemployed and unemployed ex-Soviet weapons scientists is a critical part of the Clinton administration's approach to the threat posed by the break up of the former Soviet Union's nuclear complex. Through our Initiatives for Proliferation Prevention program, we have worked with over 170 institutes and sponsored collaborative scientific efforts with over 6000 ex-Soviet nuclear, chemical and biological weapons experts. This work has helped keep these experts in Russia and the Newly Independent States, as opposed to selling their know how to rogue regimes, criminal groups or terrorist organizations.

We are embarking on a much more challenging enterprise which also seeks to develop alternative, non-weapons jobs for weapons scientists, this time as part of our Nuclear Cities Initiative. The ten closed nuclear cities in Russia are the jewels in the Russian nuclear crown. We are pleased that Russia is finally taking steps to reassess and restructure their nuclear complex and has approached us about helping to develop new jobs for weapons scientists who will lose their defense work as weapons facilities close. We are approaching this endeavor with a mixture of commitment and pragmatism, realizing that such efforts will take time. But the goals of keeping the Russian weapons scientists at home, and helping to reduce the size of the Russian nuclear infrastructure, contribute directly to U.S. security.

The Initiatives for Proliferation Prevention is a classic **brain drain** program, focused on the elite of the Russian scientific establishment and working to keep them at work in their scientific laboratories. It is geared toward projects with a high science and technology content, increasingly with an emphasis on commercial application. By contrast, the Nuclear Cities Initiative is building off a Russian government decision to downsize and restructure its own nuclear weapons complex. It is designed for scientists and technicians who are losing their jobs in the weapons complex and are at risk of long-term unemployment in the crisis ridden Russian economy. This program is focused on creating new jobs in the Russian nuclear cities, whether technology-based or not. Both programs share the goal of keeping ex-Soviet weapons know how from aiding the weapons of mass destruction acquisition programs in other countries.

The Department of Energy, and my Office in particular, has taken note of the concerns expressed in the General Accounting Office's recent report on our Initiatives for Proliferation Prevention program. We are working aggressively to implement their recommendations and believe that adoption of their comments will greatly improve what is already a successful enterprise. These include a strengthened review process to further ensure that no Initiative for Proliferation Prevention projects have any potential benefits for Russian military programs and an increased effort to refocus available funds so that more money reaches Russian and Newly Independent State scientists.

The Department of Energy also contributes to other science-based engagement programs in the former Soviet Union, specifically those run by the Department of State. The International Science

and Technology Centers rely on the technical expertise of the Department of Energy's national laboratories to review and assess proposed projects with ex-Soviet weapons scientists. This interaction is a clear example of how the United States Government agencies are working together and pooling U.S. assets to achieve the greatest possible security benefit for the American people.

MATERIAL PROTECTION, CONTROL AND ACCOUNTING

Next I will turn to the situation in Russia with regards to the protection of nuclear materials. The members of this committee are keenly aware of the importance Russia plays in our overall nonproliferation strategy. For several years, we have been building up a legacy of trust and personal relationships that has allowed us to cooperatively pursue security upgrades throughout the Russian nuclear complex. The importance of this work, carried out under our Material Protection, Control and Accounting program, cannot be overstated. Our programs have been key to international efforts to prevent the acquisition of nuclear weapons by terrorists or would-be nuclear states. In this goal, we have made considerable progress, but we have recognized that the task before us is much greater than we understood when this program began in 1994. Russia's economic collapse in August has forced us to re-evaluate our methods and priorities and brought, from the Russians themselves, a renewed sense of urgency to our cooperation. This now includes an increased awareness of the *insider threat* of nuclear materials diversion and an understanding that the size, and geographic scope of the nuclear enterprise is larger than had been appreciated in 1994.

A word, if I may, about the absolutely incredible men and women who have been working on this problem night and day for the past several years. The image of the civil servant and government bureaucrat has been impugned for years in our society. I know that the members of this committee are well aware that the average civil servant is motivated and hardworking, but I have been struck since I became director of the Nonproliferation and National Security office by the absolute dedication of our material protection, control and accounting task force and the almost superhuman level of their efforts. Their travel includes some of the most remote and least hospitable locations in the world, spending weeks away from family and basic comforts and making repeated trips to such locations in order to facilitate and complete their assignments. The work load for the average Task Force member is extreme, as we had sought to limit the task force size to one appropriate for a limited duration project. This is an issue that we are examining extremely closely at the present time, in the expectation that the team will become larger and longer range in its organizational outlook.

While we still have considerable work in ahead of us to upgrade security around Russian nuclear materials, we are also striving to address other sources of proliferation risk and concern in the former Soviet Union. We consider our work at nuclear sites to be the first line of defense against the proliferation of nuclear weapons. The second line of defense is the internal borders of Russia, and helping to ensure that any stolen or misappropriated materials cannot leave the country. Our Second Line of Defense program has already installed nuclear material detectors at the main international airport in Moscow and at the Caspian seaport of Astrakhan. We have identified 22 additional border crossings that for tactical or strategic reasons warrant the installation of similar equipment. This is yet another example of how a relatively small investment can help protect ourselves and our friends

against the greatest of threats.

DOE'S ROLE IN THE INTER-AGENCY PROCESS

The Department of Energy is an active and full participant in the U.S. Governmental inter-agency process. Working together with the Departments of State, Defense, Commerce, the intelligence community and the National Security Council, DOE provides critical technical and policy inputs into the development of U.S. arms control, nonproliferation and national security policy.

DOE is able to bring its considerable technical and policy assets to bear on acute national security threats in the international arena. In the former Soviet Union, the implementation of effective security over nuclear materials and our work to support inter-agency efforts to end the production of plutonium, construct a storage facility for nuclear materials released from weapons, ensure the disposal of 50 metric tons of weapons-usable plutonium, and pursue new and more effective means for reducing the nuclear legacy of the cold war are indicators of the integral role DOE plays in the inter-agency process.

In addition, the Department of Energy works continually with the other national security agencies within the government to design, evaluate and implement effective policies to control the export of materials and technology useful in the acquisition and use of weapons of mass destruction. Our role in maintaining the Nuclear Suppliers Group, the Zangger Committee, and the Wassenaar Arrangement is a vital piece of the inter-agency's role in these effective international export control arrangements.

In the international negotiation and verification of arms control agreements, DOE is again a key participant. Our unparalleled understanding of nuclear materials and weapons will become increasingly important as the United States and Russian continue to pursue lower levels of deployed nuclear weapons in the strategic arms reduction (START) process, and as START begins to consider more challenging areas of monitoring, including those related to actual warhead dismantlement. Moreover, our contributions in the area of arms control verification, including but not limited to our work on the Comprehensive Test Ban Treaty and efforts to negotiate an ban on the production of fissile materials for nuclear weapons, have been critical additions to the negotiation and policy formulation processes.

I am very proud of the role that DOE plays within the Clinton administration's overall nonproliferation and national security activities. As the main repository of technical skills and capabilities within the government, in many cases DOE is where the rubber meets the road. DOE contributes its technical skill in numerous areas, including the protection of nuclear materials in Russia, the canning of spent fuel in Kazakhstan and North Korea, the transshipment of abandoned highly enriched uranium in Georgia or Kazakhstan, development of verification tools for the Comprehensive Test Ban Treaty, and detection equipment for chemical and biological agents, and assessment of proposed export licenses and recommendations for modifying international export control lists.

By providing a technical set of skills to the inter-agency discussion of key security issues, the

Department helps define what is possible and helps expand the envelope of what can be achieved in the international field. This is a critical component to defining and implementing effective policy decisions. In addition, as an experienced party on the ground in many of the countries the United States is focusing on with regards to security and nonproliferation, DOE can bring a special understanding to inter-agency discussion on international policy.

INTERNATIONAL NUCLEAR SAFETY AND COOPERATION

Elsewhere in the former Soviet nuclear complex, my office is now actively engaged in the area of international nuclear safety. The transfer of the Department's international nuclear safety activities into NN is now complete and has gone extremely well. There is a very strong natural connection between various Russian and Newly Independent State activities within our already existing projects and the nuclear safety initiatives. We continue to make excellent progress in improving the safety to Soviet-designed nuclear reactors and establishing self-sustaining nuclear safety infrastructures. We are addressing the most serious risks at these reactors by improving the plants' physical operating conditions, installing safety equipment, developing improved safety procedures, establishing regional centers for training reactor personnel, and conducting in-depth safety assessments of the operating plants.

NATIONAL SECURITY CHALLENGES

Our work in Russia, as important as it is, must not and does not distract our attention from our critical and considerable domestic activities. The changed situation abroad is matched by a changing picture at home. The President highlighted his concerns about new domestic threats in January at a National Academy of Sciences event in which he stated that "The enemies of peace realize they cannot defeat us with traditional military means. So they are working on two new forms of assault: cyber attacks on our critical computer systems, and attacks with weapons of mass destruction -- chemical, biological, potentially even nuclear weapons. We must be ready -- ready if our adversaries try to use computers to disable power grids, banking, communications and transportation networks, police, fire and health services -- or military assets."

President Clinton, and his entire national security team, are increasingly concerned about these threats. We are, at the President's direction, making concerted and coordinated efforts to meet these growing challenges. Let me explain what DOE and NN are doing in this area.

CHEMICAL AND BIOLOGICAL THREATS

Among the Secretary's top priorities is responding to the growing threat of chemical and biological attacks inside the United States. The Department of Energy, drawing upon the diverse and extensive expertise of the national laboratories, has extraordinary assets in the fields of biology and chemistry, pursued for both the pure and applied scientific value. With relatively modest sums of money, the Department is seeking to leverage these skills and experience to improve our ability to detect and identify biological and chemical agents.

To pursue this work, we are requesting a total of \$32 million, which is a \$13 million or 70 percent

increase over our 1999 appropriations. The focus of these efforts is to better equip first responders with the tools to identify and categorize chemical and biological agents. The tools we seek to develop must be portable, fast, accurate and simple, so that they can be put to immediate use in the field, serving to protect the American public from hoaxes or, worse, actual attacks.

Again, Mr. Chairman, defining the challenge is as simple as answering it is complex. There is, on average, one anthrax threat in the United States every day. In January, the shortcomings of our current capabilities were made glaringly clear, when an anthrax threat was directed at the 7th floor of the Department of State. While this, fortunately, turned out to be a hoax, we need to do better in fielding smart systems capable of detecting potential chemical and biological agents. Today, there are no simple, portable and reliable detection and identification tools for biological agents available to those officials who are assigned the role of getting to the scene of a chemical or biological attack first. Delays in assessing the credibility and severity of specific incidents create confusion, waste resources, and, in the event of a real attack, costs lives. In sum, our limited abilities in this area actually increase the Aterror@effect of such attacks or hoaxes, thus inviting additional events. The sooner we can field the types of portable detection equipment we are working on, the sooner we will be able to deter and reduce the number of such attacks.

There are questions raised from time to time about why involve the Department of Energy -- whose weapons expertise is focused in the nuclear arena. To be direct, the Department of Energy and its laboratories have a broad range of ongoing programs in biological and chemical areas which provide it with a unique set of skills to apply to this problem. Although originally developed in the service of our primary nuclear mission, these world-class capabilities can be leveraged for critical chemical and biological detection work. Programs such as the human genome mapping project or chemical spill remediation efforts are also being drawn upon to better protect our citizens against the most insidious of attacks.

The Department recognizes, however, that it does not have operational responsibilities for protecting the public from chemical or biological attack. As a result, our work is focused on meeting the needs of our customers, namely agencies within the government responsible for directly responding to such threats. An example of this close relationship is the work we are engaged in with the Defense Threat Reduction Agency to conduct a joint demonstration of our modeling and detection technologies at the upcoming Winter Olympics in Salt Lake City.

RESEARCH AND DEVELOPMENT

The larger part of our research and development program, for which we are requesting \$221 million in total, is dedicated to other ground breaking and vital efforts to improve our national security. Within my office, our Research and Development activities are working to ensure the early detection of proliferation-related activities and to improve our ability to verify existing or planned international treaties. We are pursuing a number of important avenues which will help detect, with increasing reliability, efforts to produce and refine nuclear materials, as well as new and better ways to detect and characterize nuclear tests and activities contrary to international norms or U.S. security interests. In addition to the our research and development efforts on chemical and biological weapons detection

mentioned above, our program is focused on developing and demonstrating: sensor systems for remote detection of effluent signatures indicative of proliferation activities using active and passive optical techniques; sensor systems for remote detection of physical signatures indicative of proliferation activities using radar, multispectral, optical, and radio frequency techniques; nuclear radiation detection sensor systems to enhance nuclear material accountability and control as well as deter nuclear smuggling activities; and developing and producing ground and satellite-based sensors and systems to enable effective U.S. monitoring of nuclear test ban treaties.

Requirements for the Department of Energy's Nonproliferation Research and Development Program are derived from Presidential and Congressional direction and from our customers within the inter-agency. The program is closely coordinated at the working level with operational users and other developers, and is reviewed at the more senior level by interagency bodies like the Counterproliferation Program Review Committee and the Nonproliferation and Arms Control Technology Working Group. An example of the close interagency cooperation is the program's Multispectral Thermal Imager small-satellite scheduled for launch in early FY 2000. The demonstration satellite developed by the DOE is being launched as part of the Air Force Space Test Program, with the Air Force paying for the launch costs.

CONCLUSION

I would like to end where I began, and thank the Chairman and the entire Committee for their support for the Department and my Office as we address the nation's critical national security missions. I look forward to our continued work together. Thank you.