STATEMENT
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UNITED STATES NUCLEAR REGULATORY COMMISSION
TO THE
SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
SUBCOMMITTEE ON CLEAN AIR AND NUCLEAR SAFETY

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Mr. Chairman and Members of the Committee, it is a pleasure to appear before you today along with my colleagues, Commissioners Jaczko and Lyons. On behalf of the Commission, I would like to thank you for your continued support of the NRC's work to protect public health and safety, common defense and security, and the environment. We are particularly grateful to the Members of the Committee for your help in securing the language granting us the additional office space we badly need as we grow to accommodate our increasing work load.

This is a busy time for the NRC. Over the last several months, we have received five complete and one partial combined license (COL) application for new nuclear power plants, including one that was just received last week As a consequence of industry's expressed desire to build new plants, there is renewed interest in uranium mining, milling, and processing operations. Therefore, the NRC is faced with a substantial increase in licensing activity. The Commission would be pleased to provide Congress with detailed information on these activities at any time. I want to assure you that our preparations to review new license applications has in no way decreased our focus on security at nuclear power plants. Since the terrorist attacks of September 11, 2001, we have required licensees to make numerous security enhancements at the nation's nuclear facilities. We have devoted significant resources to nuclear security, but recent events demonstrate there is still more work to be done. Today, I would like to update the Members of the Committee on some of the most significant security-related issues confronting the agency.

Peach Bottom Inattentive Security Officers

As the Members of the Committee are no doubt aware, security officers at the Peach Bottom plant were found to be inattentive, apparently sleeping in a security staging area called a "ready room". I want to make it very clear that this behavior is unacceptable. The NRC requires that security personnel, along with other personnel, be attentive at all times. The NRC has taken actions to address the specific issues at Peach Bottom and is taking appropriate action aimed at precluding similar incidents from occurring at other nuclear plants.

The issue of security officer inattentiveness at the Peach Bottom Atomic Power Station came to the NRC's attention on March 27, 2007, when the NRC received an allegation that some security officers at Peach Bottom were sleeping on duty while in security watch towers and other areas. When NRC received the allegation, we convened an Allegation Review

Board, which reviewed the allegation and determined that Exelon, the company that operates the reactor, needed to investigate the allegation and provide the results of its investigation to the NRC for review. The NRC did not contact the person who made the allegation for additional information because the individual clearly stated in the allegation letter that he did not want to be contacted by the NRC about the matter. Although not directly related to the allegation, our Region I office conducted a scheduled baseline security inspection at Peach Bottom from April 30 to May 4, 2007. During this inspection, four regional inspectors made unannounced tours of security posts, including several watch towers, and did not find any security officers to be inattentive.

In June, Exelon reported to the NRC that its investigation did not uncover instances of inattentive security personnel. The NRC reviewed the information provided by Exelon regarding their investigation of the allegation and asked Exelon to respond to a follow-up question. Based on Exelon's initial response and its response to the follow-up question, we could not substantiate the allegation regarding sleeping security officers in watch towers.

In September 2007, when videotaped footage provided verifiable information of inattentive security officers in the ready room, NRC promptly addressed the issue at Peach Bottom and sought to prevent similar incidents at other sites. NRC senior managers discussed this with the plant Chief Nuclear Security Officers, and NRC issued a Security Advisory to emphasize the importance of security officer attentiveness. We also issued a Security Bulletin to gather information about licensees' programs to prevent and correct inattentiveness and complicity in other's inattentiveness, and to ensure that employees report security concerns. NRC Resident Inspector oversight of the security forces at power plants has been enhanced through additional random checks and unannounced inspections at security posts, including inspections on nights and weekends. The NRC continues to monitor security force performance at all sites.

Let me emphasize that during this entire time we were confident—and we remain confident—that overall security at the Peach Bottom plant was adequate. Nuclear power plants have redundant and overlapping security measures based on defense-in-depth principles, and the security program at Peach Bottom continued to ensure that the health and safety of the public was adequately protected at all times.

NRC takes allegations very seriously. To provide some perspective, let me note that our agency receives between 500 and 600 allegations every year, a number of which raise multiple concerns. Only about one out of ten is substantiated and warrants enforcement action. Nevertheless, our procedures regarding handling allegations and conducting inspections can undoubtedly be improved. We are reviewing our own procedures and are taking actions to position us to detect inattentiveness better, and to evaluate the adequacy of licensee responses to allegations.

The NRC staff has completed two of four ongoing internal assessments that have identified a number of lessons learned from this event, and has developed several recommendations for improving the way we handle allegations and conduct inspections. Those recommendations are currently under review as part of our strategy to make meaningful

improvements. The areas we are examining include how we deal with allegations that come to us, how we work with the individual who raises the concern, and how we work with a licensee and evaluate the licensee's response. Some enhancements to the NRC's allegation program have already been made. We are also examining how we can improve the NRC inspection process to detect inattentiveness better and make certain our on-site resident inspectors, as well as region-based inspectors, are kept aware of allegations that a regional office may be reviewing.

In addition, this event at Peach Bottom, and other security-related incidents at some nuclear plants in recent years, suggest that there may be a disconnect between safety and security culture. NRC staff has been reviewing how best to modify the oversight process for security functions to ensure that establishing and maintaining a sound safety culture also encompasses a healthy security culture. Furthermore, the Commission has decided to expand its policy on safety culture to explicitly address security and to widen its scope of applicability to all NRC licensed facilities.

I want to assure you that the Commission shares your concern about the implications of this incident, that the NRC is addressing this issue at Peach Bottom, and that the agency is taking appropriate action to ensure that our licensees take steps to preclude similar incidents from occurring at other nuclear power plants.

Post-9/11 Aircraft Impact Research

Since 9/11, the NRC has ordered nuclear power plant licensees to develop specific plans and strategies to mitigate or prevent the effects of a wide range of events, including an aircraft crash. Even before these actions, nuclear power plants were designed to protect public health and safety. The plants achieved this through their robust structural designs, redundant safety systems, and highly trained operators. Nuclear power plants are designed to withstand extreme events, such as hurricanes, tornadoes, and earthquakes.

As part of a comprehensive review of security for NRC-licensed facilities, the NRC conducted detailed site-specific engineering studies of a limited number of nuclear power plants to assess potential vulnerabilities to deliberate attacks involving large commercial aircraft. In conducting these studies, the NRC drew on national experts from several Department of Energy (DOE) laboratories using state-of-the-art structural and fire analyses. The agency also enhanced its ability to predict accident progression and radiological consequences realistically. For the facilities analyzed, the vulnerability studies confirm that the likelihood of both damaging the reactor core and releasing radioactivity that could affect public health and safety is low. Even in the unlikely event of a radiological release due to terrorist use of a large aircraft, there would be time to implement mitigating actions and off-site emergency plans such that the NRC's emergency planning basis remains valid.

The NRC has used defense-in-depth to define both its safety and security philosophies at nuclear power plants. Defense-in-depth means there are multiple measures that could prevent an accident or lessen the effects of damage if a malfunction or accident occurs at a nuclear

facility, and multiple layers of defense in securing the facility from radiological sabotage. The NRC's safety philosophy is designed to protect the public. In that regard, NRC-licensed nuclear power plants and other licensed facilities have detailed, well-coordinated, and tested emergency response plans. These plans are designed to minimize the impact on the public in the unlikely event of an accident that would result in a radiation release.

In response to Orders from the NRC requiring licensees to improve their capability to mitigate the effects from events involving explosions or fires that can affect a large area of the plant, operating plant owners have implemented mitigating strategies that further reduce the probability that an aircraft impact could result in a release of radioactivity that would affect public health and safety. In addition, proposed amendments to NRC regulations would require new nuclear plant designers to perform a rigorous assessment of the design features to avoid or mitigate, to the extent practicable, the effects of aircraft impact.

The proposed rulemaking on aircraft impact assessments was published in the *Federal Register* in October 2007. The comment period closed on December 17, 2007. The staff is currently reviewing the comments and expects to provide the Commission with a draft final rule for its review in summer 2008.

The NRC regularly communicates with other Federal agencies, including the Department of Homeland Security, the Federal Aviation Administration, and the Department of Defense, which have acted on specific occasions to protect airspace above nuclear power plants. The Aviation and Transportation Security Act of 2001 also provides additional protection against air attacks on all industrial facilities, both nuclear and non-nuclear, by strengthening aviation security.

In addition to these measures, new reactor designs that have not yet been certified by the NRC will have improved engineering measures, such as spatially separated redundant safety systems, passive safety systems that do not require electrical power, and features to mitigate beyond design basis severe accidents. These design features enhance the ability of the plant operators to mitigate an aircraft impact or events involving explosions or fires that can affect a large area of the plant. It is the NRC's understanding that some of the reactor vendors with certified designs also are planning to modify their designs to address aircraft crashes better.

The NRC is also performing aircraft impact studies for new light-water reactor (LWR) designs, based on earlier assessment of operating plants, to provide a realistic assessment of what might happen in the unlikely event of an aircraft impacting a nuclear power plant. NRC staff has completed assessments of aircraft impacts on four of the five new LWR designs expected to be included among the combined license applications over the next few years. These four new LWR designs are the Advanced Passive Reactor, the Advanced Boiling-Water Reactor, the Economic Simplified Boiling-Water Reactor, and the U.S. Evolutionary Power Reactor. The staff is currently assessing the Advanced Pressurized Water Reactor.

Radioactive Source Control

Radiation sources are used in many medical, industrial, and research applications that are critical to the nation's health, safety, and economic strength. Some of these sources could be strong enough to be used by terrorists for malicious purposes and thus require increased regulatory controls.

After 9/11, the NRC worked with Federal, State, and international partners to reach consensus on the radioactive sources that should be the first to receive increased regulation. Orders were issued over several years on a risk-informed basis to ensure that sources with the most risk were addressed first. Specifically, the NRC issued orders in 2003, 2004, and 2005 requiring licensees who possess or have access to large quantities of radioactive sources falling within Categories 1 or 2 of the International Atomic Energy Agency (or IAEA) Code of Conduct on the Safety and Security of Radioactive Sources to implement additional security measures. Initially, these orders were based on our common defense and security authority, which rests solely with the NRC. The Commission used this authority to enable the expedited issuance of the orders to certain affected entities, which included both NRC and Agreement State licensees. The Commission decided to require increased controls on the remaining Category 1 and 2 sources under its public health and safety authority, which is the authority under which our Agreement States operate. The NRC and Agreement States worked cooperatively in establishing the requirements for the increased controls. Both the NRC and Agreement States have aggressively implemented and inspected these increased controls.

In addition, the Energy Policy Act of 2005 (EPACT 2005) provided NRC new authority to require fingerprinting and FBI identification and criminal history records checks of individuals allowed unescorted access to certain radioactive materials. The NRC is pursuing rulemaking to implement this provision of the Act. However, to ensure that the intent of the EPACT 2005 was implemented, the Commission determined that the previously identified affected materials licensees should be covered under this fingerprinting requirement by order while the rulemaking continues. In December 2007, the NRC issued additional orders requiring fingerprinting to its affected materials licensees. We are working closely with our Agreement State partners to get the Agreement States to issue similar requirements.

Furthermore, the NRC is implementing a comprehensive action plan to address the concerns identified by the U.S. Government Accountability Office (GAO), the U.S. Senate Permanent Subcommittee on Investigations, and NRC's Office of the Inspector General regarding the security of radioactive sources. In addition, the interagency task force formed as a result of the EPACT 2005, also identified some concerns that are being considered in this action plan. We are directly involving our Agreement State partners in this effort and have already made some changes to our licensing process. However, we expect that there will be additional security enhancements and changes in regulatory procedures as a direct result of this activity.

The NRC is also considering the recommendations of the National Academy of Sciences February 2008 report on alternative technologies to existing high risk sources and is evaluating what additional actions should be taken to refine and enhance requirements for safe

and secure use of radioactive sources. This report is one of three comprehensive studies that were initiated pursuant to the EPACT 2005 to assess the technological alternatives to radiation sources. The NRC and the Agreement States are working with the radioactive source vendors, the Department of Homeland Security, the Department of Energy, and the interagency Radiation Source Protection and Security Task Force to enhance the security of radioactive sources nationwide.

In parallel with the above efforts, the Commission has been developing a National Source Tracking System (NSTS) for high risk sources. The development of the NSTS has been difficult because of the need to ensure adequate cyber security to protect the resulting database from unauthorized access. Considerable progress has been made, and the NRC currently plans to have an operating NSTS implemented by December 2008. These plans depend on the system passing final systems checks mandated by various security requirements. Initially the system will be populated by licensees under NRC authority, and we will be including the Agreement State licensees over the next year. We have already identified enhancements we would like to make to the program, and they are being scheduled for a later date so that the system can be made operational without additional delay.

The NRC is strengthening its regulations in the area of transportation security. From 2003 through 2005, the NRC ordered licensees that ship risk significant quantities of radioactive materials to put in place additional security measures during transport. Currently, we are gathering public input on proposed security measures to be implemented through rulemaking for risk significant radioactive material shipments. This process may result in new and revised regulations for enhancing the security of risk significant materials during transport.

Although I have focused my testimony on domestic measures, we have also worked with our international counterparts on improvements in source security and have revised our regulations covering the import and export of Category 1 and 2 material.

Security Requirements for New Reactors

The Commission is currently experiencing increased licensing activity due to renewed interest in the fuel cycle and numerous COL applications for new nuclear power plants, which we continue to receive. While we remain firmly focused on the safety and security of currently operating plants, we are also attentive to the need to ensure a high level of safety and security for any new plants that may be built. NRC expects that new reactors will provide at least the same degree of protection to the public and the environment that is required for current generation light water reactors.

The NRC is conducting a series of rulemakings to establish a clear regulatory basis for the security of these new plants. The rulemakings most relevant include a significant revision to the Design Basis Threat requirements, which was published as a final rule on March 19, 2007. In addition, an ongoing rulemaking would revise a number of security requirements applicable to both current and future nuclear power plants, including requirements for physical security, access authorization, fitness for duty, and training and qualification of security officers. Among other things, this rulemaking codifies requirements imposed by the Commission in

various orders. The Commission published the proposed power reactor security rule for public comment, and stakeholder comments have been addressed and in many cases incorporated into the draft final rule language. In addition, numerous regulatory guidance documents that support the rulemaking have been published in draft. It is anticipated that the rule will be effective in the first quarter of calendar year 2009.

Allow me to add a word about the security of research and test reactors (RTRs), in light of the recent press coverage of a report prepared by the GAO that raised questions about the adequacy of the security at these facilities. As we communicated to GAO during the preparation of this report, we believe that the GAO report provides a misleading and incomplete picture of our actions to ensure the safe and secure operation of RTRs. Furthermore, the GAO report relied on inaccurate information and unsupported assumptions, which undermined the credibility of the evidence presented in the report, and thus did not provide a sound basis for the report's conclusions and recommendations. In fact, both Idaho National Laboratory and Sandia National Laboratory provided written comments to GAO refuting GAO's characterization of some of their work and key facts in the report. Beyond the precautions established soon after 9/11, additional security measures were implemented at RTRs from 2002 through 2004. Through on-site inspections, the NRC has verified that these facilities have measures in place to protect their nuclear material and to limit the radiological consequences following a potential act of sabotage. NRC's assessment of RTR security is based on well-founded technical and security processes, as well as expertise from outside sources, including the U.S. Department of Homeland Security, Sandia National Laboratories, Los Alamos National Laboratory, the Federal Bureau of Investigations, and the DOE Office of Nuclear Energy and National Nuclear Security Administration. Of course, the NRC will continue to evaluate the threat environment and the effectiveness of these security measures and will take additional steps if necessary.

Mr. Chairman, there are many more topics we could address today, and if we have neglected any topics of the Subcommittee's interest, we would be pleased to respond to any questions you may have. Let me just say in closing that the Commission remains dedicated to ensuring public health and safety, and that the conduct of all of our activities flows from that fundamental commitment. Our new Strategic Plan focuses on two goals – Safety and Security, the agency's core functions. My fellow Commissioners and I look forward to working with the Committee on these and other issues during this session and in the years to come.