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BEFORE THE
SUBCOMMITTEE ON OVERSIGHT OF GOVERNMENT MANAGEMENT, THE FEDERAL WORKFORCE, AND THE DISTRICT OF COLUMBIA AND THE SUBCOMMITTEE ON STATE, LOCAL, AND PRIVATE SECTOR PREPAREDNESS AND INTEGRATION
COMMITTEE ON HOMELAND SECURITY AND GOVERNMENT AFFAIRS
UNITED STATES SENATE

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Good morning. Mr. Chairman and Members of the committee, I am Thomas P. Dunne, Associate Administrator of Homeland Security at the U.S. Environmental Protection Agency (EPA). Thank you for inviting me here today to discuss EPA's efforts to prepare for a response to an attack with a radiological dispersion device (RDD).

Since the September 11, 2001 attacks on the World Trade Center, EPA has made a significant effort to improve its emergency response and homeland security functions, including the creation of my office of Homeland Security. Additionally, EPA reorganized emergency response coordination under a single office -- the Office of Emergency Management, which focuses on emergency planning, preparedness and response.

We increased the specialized, dedicated emergency response staff to improve preparedness and response capabilities. The Agency hired 50 additional On-Scene Coordinators specifically trained to deal with incidents of national significance and issues relating to Weapons of Mass Destruction. EPA expanded and extended the capabilities of our existing Environmental Response Team (ERT) responsible for technological support and training through the establishment of an additional ERT office in Las Vegas, NV. We established a National Decontamination Team dedicated to providing decontamination expertise related to biological, chemical, and radiological agents used as Weapons of Mass Destruction (WMD).

In addition to strengthening our organizational structure, EPA strengthened its policy as well. EPA's National Approach to Response (NAR) was established in June 2003 to complement the government-wide National Response Plan and National Incident Management System (NIMS). This policy ensures efficient use of emergency response assets within the Agency, creates the necessary consistency across the regions, and highlights priorities for further policy development and coordination.

We recognize that more needs to be done. Preparedness and response challenges remain. Much of the expertise and many of the assets within the Agency regarding nuclear and radiological decontamination were developed for a different purpose— the decontamination of legacy sites and small, accidental releases or spills. We have been refocusing our efforts to meet the present-day challenge of a potential large scale terrorist attack in an urban setting.

The following sections of my testimony address EPA's role and capabilities to respond to an RDD attack as part of a coordinated federal response in support of state and local agencies under the NRP. I will also discuss EPA's efforts to effectively adapt our techniques and technologies, which were developed for traditional cleanups, to meet the challenge presented by an RDD terrorist attack in populated settings. We recognize that the American people expect a speedy response to such incidents, and I will address both the actions EPA has taken to help improve our ability to meet their expectations, as well as the gaps in the Federal government's current capabilities to respond in the aftermath of a dirty bomb.

NATIONAL REPONSE PLAN: EPA'S RADIOLOGICAL EMERGENCY RESPONSE RESPONSIBILITY

As with other federal agencies, EPA's response pursuant to a disaster declared by the President is facilitated through the NRP. EPA's responsibilities begin even before a terrorist attack, as we work with our Federal, state, and local responders to ensure readiness. If a RDD (also known as dirty bomb) attack were to occur, EPA would respond immediately, working in support of the State and local responders to assess the impacts and take action to protect the public. These efforts are coordinated under the NRP, through EPA's role as the Coordinator and Primary Agency for Oil and Hazardous Materials Response, under Emergency Support Function (ESF) #10. Our primary activities under ESF #10 include: efforts to detect, identify, contain, clean-up or dispose of oil or hazardous materials (including radiological materials); removal of drums and other bulk containers; collection of household hazardous waste; monitoring of debris disposal; air and water quality monitoring and sampling; and protection of natural resources. EPA is also a support agency for a number of other Emergency Support Functions and we work with other Federal agencies under the Nuclear/Radiological Incident Annex to the NRP.

As I stated earlier, EPA's response under the NRP begins from the moment a terrorist attack occurs. Under the Homeland Security Act of 2002, the Secretary of the Department of Homeland Security (DHS) may choose to undertake operational control of Department of Energy (DOE) and EPA assets that respond to incidents such as dirty bombs. DHS would coordinate the overall Federal response, while DOE would be the technical Coordinating Agency during the early phase of the dirty bomb response. EPA, as well as other agencies, such as the Department of Defense's Army Corps of Engineers, the Department of Health and Human Services, and the U.S. Department of Agriculture, would bring their technical expertise and assets to bear in support of the response.

During the early phases of the response, EPA's primary roles under the NRP's Nuclear/Radiological Incident Annex would include assisting DHS and DOE in characterizing the environmental impacts of the attack and providing recommendations to state and local decision-makers about the actions that may be needed to protect the public. EPA's role is focused on protecting the public; as such, most of our assets are designed to detect and characterize radiation towards the perimeter of a contaminated area, where the public will need health and safety guidance. Other Federal departments and agencies have responsibilities for attributing the incident to the attackers and assessing the strength of the initial device. EPA has two roles during the long-term recovery phase of incidents involving dirty bombs or Improvised Nuclear Devices (INDs): the Agency will take over leadership of the radiological environmental characterization and it will assume responsibility for managing the federal technical radiological clean-up activities. Since the Federal Radiological Monitoring and Assessment Center (FRMAC) conducts only radiation monitoring, it will be just one part of the concerted effort led by EPA during the recovery phase.

Under NRP's Nuclear/Radiological Incident Annex, DOE coordinates federal radiological monitoring and assessment activities for the initial phases of a response to a radiological incident. Coordination occurs through FRMAC, a DOE led interagency organization. The FRMAC has representatives from various federal, state, and local radiological response organizations, including EPA. The FRMAC provides an operational framework for coordinating all federal radiological monitoring and assessment activities during a response to support DOE, state(s), local, and/or tribal governments. The FRMAC works with the Interagency Modeling and Atmospheric Assessment Center, or IMAAC, to produce predictive plots of plume dispersion and dose rates and collects radiological monitoring data. It develops radiation contours showing where contamination is located and the associated radiation levels, which are used to recommend appropriate protective actions. In the event of a Presidentially-declared major disaster or emergency, the FRMAC also provides its information to the Federal Emergency Management Agency's (FEMA's) Federal Coordinating Officer to assure appropriate and adequate additional resources are available to the state and local authorities.

FRMAC leadership responsibility is transferred to EPA, per the Nuclear/Radiological Incident Annex to the NRP, at a mutually agreeable time, and after consultation with DHS and its coordination entities, as well as state, local, and tribal governments. When the FRMAC is transferred to EPA, EPA assumes responsibility for coordination of radiological monitoring and assessment activities. The FRMAC will provide long-term environmental monitoring, as well as verification of site clean-up procedures and may continue perimeter monitoring of the affected site. The FRMAC may also provide personnel and work site monitoring to assure that health and safety standards are met during clean-up activities.

Because our earlier EPA guidance primarily addressed nuclear power plant accidents, DHS, EPA, and the interagency community, developed the 2006 Guides to ensure all phases of the response and long-term recovery from RDDs and INDs are addressed. Specifically, EPA worked with the DHS and other federal partners to develop a framework for helping decision-makers and stakeholders jointly determine site-specific clean up goals for the long-term recovery phase. DHS published interim guidance on the application of Protective Action Guides (PAGs) for RDD and IND incidents in January 2006 which is available for use by federal agencies, state and local governments, emergency responders, and the general public. This guidance incorporates earlier guidance issued by EPA (1992), which covers the early or emergency phase i.e.., first four days, and intermediate phase, i.e., source is controlled and field data become available.

The interim guidance proposes a site-specific optimization process in which potential actions to reduce radiation dose are evaluated within the context of a broad range of societal goals. The interagency working group that developed this guidance determined that the nature and range of potential impacts that may occur from RDDs and INDs was extremely broad, and that a site-specific process that incorporates local needs, health risks, costs, technical feasibility, and other factors is critical for establishing clean-up levels.

Site-specific clean-up planning is a flexible process. As soon as practicable after an incident, site-specific decision makers should begin the selection of key stakeholders and subject matter experts, planning, analyses, contractual processes, and clean-up activities. The process is designed to ensure that the basis for clean-up decisions is transparent. The process should make information readily available to stakeholders and the public, and would include representative stakeholders in decision-making activities, assess various technologies in order to identify the most effective solution, and ensure shared accountability for the final decision to proceed which will be made jointly by federal, state and local officials.

EPA CAPABILITIES: PERSONNEL, EQUIPMENT AND LAB CAPACITY

EPA provides resources for defining and delineating the environmental impact of the radiological incident throughout the entire response effort, whether under DOE or EPA leadership. With our Federal, state and local partners, EPA would apply existing policies, procedures, human resources, equipment, intelligence and a readiness status to carry out our mission and NRP responsibilities.

EPA maintains personnel and other assets ready to respond to radiological emergency response situations and provides technical expertise and support when needed. We have approximately 350 emergency response personnel including 250 On-Scene Coordinators and Special Teams under the National Oil and Hazardous Substances National Contingency Plan, such as the National Decontamination Team (NDT), the Radiological Emergency Response Team (RERT), the Environmental Response Team (ERT), and the National Counterterrorism Evidence Response Team (NCERT). We are also building a Response Support Corps to expand our response capacity. EPA currently has 3,773 field ready contractors ready to respond to an emergency event or INS. According to an EPA survey recently conducted with the contracting community, EPA contractors could provide an additional 4,549 field ready emergency response contractors if needed, bringing that total up to approximately 8,300.

Each of these resources brings specialized personnel, equipment, and expertise in protecting human health and the environment, including everyday emergency response experience. For example, the RERT can deploy scientists and engineers, health physicists, laboratory staff, and other emergency response specialists to the field or to support roles during a radiological emergency. The NDT can provide technical expertise to Federal, state and local authorities in order to identify technologies and methods for decontamination of outside areas, buildings, building contents, public infrastructure (including waste/drinking water plants, chemical plants, power plants, food processing facilities and subways), agriculture, and associated environmental media (e.g., air, soil and water). Throughout the year as part of its emergency planning and preparation activities, the NDT provides decontamination training to EPA responders and is developing a Decontamination Portfolio which will include comprehensive analytical, sampling, and decontamination methods, as well as health and safety information for chemical, biological and radiochemical agents.

The Agency's radiation health and safety and detection equipment assets include personnel dosimeters to measure dose to protect response personnel, and emergency response/assessment equipment to detect alpha, beta, or gamma radiation. EPA has developed guidance for Agency personnel on radiation turnback levels which help incident responders know how far they can go into a radiation area. Turnback levels provide exposure rates and dose limits which, when met, require responders to turn back and seek further guidance. The levels we developed are specific to EPA's mission and capabilities, but can be adapted to meet the needs of other organizations.

Equipment also includes mobile laboratories, a scanner van, and field based equipment that can identify specific gamma sources. In addition to personnel and equipment, EPA's NRP responsibilities include maintaining and enhancing RadNet, the nation's most comprehensive ambient radiation monitoring network. RadNet currently consists of 50 stationary and 40 portable near-real time air monitors, 40 additional non-real time air monitors, milk collection at 37 locations, drinking water collection at 77 locations and precipitation collection at 44 locations. The stationary near real-time monitors collect a beta and gamma spectrum of the particulates on an air filter hourly, and transmit data to the National Air and Radiation Environmental Laboratory (NAREL), where a determination of contaminants can be quickly made. The portable monitors collect ambient gamma radiation readings through the use of air filters which can be sent to a laboratory for radionuclide specific analyses.

In the area of environmental laboratory capabilities and capacity, EPA has begun a demonstration study aimed at improving national radiological laboratory capacity through enhancing state laboratories and is developing tools, such as rapid radiochemistry methods, lab incident response analysis guidance documents for environmental media (water, air filters, and swipes and related solids), and radiochemistry training for laboratory personnel, to enhance capacity of commercial laboratories throughout the United States. To help determine the national environmental radiological laboratory capacity needs associated with an incident of national significance involving radiochemical or nuclear agents, EPA conducted an assessment of the environmental sample demand for the National Homeland Security Planning Scenario #11 which involves the detonation of RDDs in three major urban business districts.

EPA's analysis of the Nation's existing radiological laboratory capacity revealed a significant capacity gap. This capacity gap will result in a lack of timely, reliable, and interpretable data and will delay national and local response and consequence management activities. In addition to the capacity gap, EPA's national environmental radiological gap assessment also revealed capability and competency gaps, specifically a lack of "tools" specifically designed for response to radiological or nuclear incidents, and an overall national declining infrastructure for radiological laboratories. Although these gaps may affect remediation and clean up activities, they will not hinder protective action decision-making such as evacuation and sheltering-in-place.

Recognizing the real need to increase national lab capacity in response to large scale emergency events, EPA is establishing an all media, e.g., soil, air, and water, environmental Laboratory Response Network (eLRN) to address environmental laboratory analytical gaps for chemical warfare, biological and radiological agents. The eLRN will leverage existing laboratory networks and capabilities, and upgrade and expand additional capabilities to ensure that EPA has sufficient capacity and capability to meet its responsibilities for an incident of national significance, such as a terrorist attack involving radiological or nuclear materials.

EPA'S CURRENT RADIOLOGICAL CLEAN-UP TECHNOLOGIES

A successful long-term decontamination effort following a large scale RDD incident, such as the TOPOFF 4 exercise, is achieved through a coordinated process that accounts for environmental risks to the public; health and safety; public information; social, economic, political issues; and infrastructure impacts. EPA, with our Federal, state and local partners would draw upon a cache of specialized tools, equipment, and technologies that exists to conduct radiological decontamination. During the decontamination effort, the choices will be considered by EPA in coordination with our Federal, state and local partners. Factors that would affect the selection of a particular technology include the actual radionuclides used in the RDD, the media and surface characteristics, waste streams and waste management issues, operating characteristics, performance, capital and operating costs, and commercial availability.

The radiological decontamination methods EPA could employ today in response to an RDD event are generally classified as natural, physical or chemical removal processes. Decisions on the methods employed would be determined by the coordinated response effort in consultation with the local authorities and would take into account the specific factors of the event and the impacted area.

A natural removal process would entail storing the contaminated materials in a safe storage facility until the radiation contamination decays and is stable and no longer hazardous. This option is being used by the United Kingdom following the Polonium-210 incident to save precious materials or items of historical significance that cannot be physically or chemically decontaminated without potential damage to the items.

Physical decontamination employs a range of simple, such as dry vacuuming; high pressure water cleaning; steam vacuum cleaning; to more complex technologies such as blasting. As always, the type of technology used would be determined by the specific needs of the situation, such as amount of contamination, types of surfaces, and cost.

Chemical decontamination technologies manipulate the chemical properties of the contaminants. Some of these methods include using organic acids, strong mineral acids, chemical foams and gels.

RESEARCH TO IMPROVE EPA'S RDD CAPABILITIES

EPA's National Homeland Security Research Center is currently focusing its RDD decontamination and disposal research on materials commonly found in urban areas, such as concrete, asphalt and glass, which are contaminated with cesium chloride. EPA chose cesium chloride for this research because it represents one of the highest threats and is the most difficult radioisotope to decontaminate due to its physical and chemical properties. Because the physical and chemical interactions of cesium chloride with building materials varies strongly with weather conditions, EPA is studying this interaction closely and its implications on choosing a decontamination approach. EPA is also determining the performance of several commercially-available decontamination technologies to aid remediation decision-making, while adding radiological information to the Agency's disposal information tool, a software tool that rapidly feeds information to risk managers on transportation, packaging, and disposal facilities capable of accepting the waste.

The Agency is also aware of emerging decontamination technologies such as bio-decontamination that uses bacteria, microwave energy, and laser lights to selectively remove contamination.

ROLE IN TOPOFF IV

EPA participation in the DHS-led TOPOFF IV was extensive. EPA's focus remains on the Long Term Recovery table top exercise, which will occur in December 2007. During this exercise, we expect to discuss the role of EPA in support of the recovery phase of the attack. In the response phase, EPA deployed more than 250 participants to the three exercise venues—Portland, Oregon; Mesa, Arizona; and Guam. Participants included EPA's On-Scene Coordinators, members of our four special teams (the RERT, ERT, NDT, and NCERT), as well as personnel from headquarters and EPA's regional offices. We also deployed monitoring and analytical equipment such as our mobile radiation laboratory. Additionally, the EPA Emergency Operations Center was staffed and EPA participated in various interagency coordination and support entities, such as the Domestic Emergency Support Team (DEST), the Incident Management Planning Team (IMPT), and the National Response Coordination Center (NRCC). EPA personnel filled critical positions within FRMAC, working in support of DOE, DHS, and the affected State and local governments to assess potential contamination. EPA staff also served as controllers and evaluators at the various exercise venues.

Once the table top exercise has been completed and assessed, DHS will publish a final report that will provide a summary of conclusions and lessons learned. We will be happy to provide you with additional information in the future once we've had the opportunity to review the feedback from the exercise.

CONCLUSION

Under the NRP, EPA has responsibility to lead the cleanup and recovery phase of a radiological incident for which no other department or agency has responsibility, including terrorist incidents such as a dirty bomb. EPA and others have gained important experience and capabilities in cleaning up the legacy sites that remained from the U.S. effort to develop and maintain nuclear weapons. However, the challenge today is to transform that capability in the face of a new threat: radiological terrorism against urban areas.

To minimize the impacts of a radiological terrorist attack, we must be prepared to quickly respond and cleanup affected areas. If there were multiple, large scale attacks, the system we currently have in place would be strained. Today's technology and trained personnel are simply not sufficient to meet the needs of such a response. In the case of an RDD event, this is magnified by the dose limits we enforce in order to protect our responders from radiation. In addition, while field detection capabilities can quickly be used to take action to evacuate or relocate the public following an incident, more extensive and time-consuming fixed-lab analyses will be needed to allow EPA and others to assess whether the public can return to their homes. Therefore it is likely that the public expectations for quick reoccupation of the impacted areas would not be met.

EPA will continue to increase its preparedness for radiological incidents that threaten homeland security through training, equipment purchases, increased laboratory capacity and expedited response procedures.