

STATEMENT OF BETHANN ROONEY
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ON
DETECTING NUCLEAR WEAPONS AND RADIOLOGICAL MATERIALS:
HOW EFFECTIVE IS AVAILABLE TECHNOLOGY?

BEFORE
SUBCOMMITTEE ON PREVENTION OF NUCLEAR AND BIOLOGICAL ATTACKS AND
SUBCOMMITTEE ON EMERGENCY PREPAREDNESS, SCIENCE AND TECHNOLOGY
THE HOUSE COMMITTEE ON HOMELAND SECURITY
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Mr. Chairmen, members of the Committee, thank you for the opportunity to testify on the important issue of radiation detection as it relates to our nation's ports. I am Bethann Rooney and I am the Manager of Port Security at the Port Authority of New York & New Jersey.

I appreciate the invitation to speak on the steps that have been taken since 9/11 to secure our ports and maritime industry from terrorist acts, specifically our ability to detect nuclear weapons and radiological materials that may attempt to enter the country through our Port. The tragic events of September 11th have focused our collective attention on the need to protect our borders at major international gateways like the Port of New York and New Jersey and small ports alike.

This morning I would like to briefly discuss the vital nature of ports and the risk associated with them; the importance of supply chain security, the status of Radiation Portal Monitor deployment in the Port; our experience with the Department of Homeland Security Countermeasure Test Bed and finally some recommended next steps.

THE VITAL ROLE OF PORTS

Ninety-five percent of the international goods that come into the country come in through our nation's 361 ports; twelve percent of that volume is handled in the Port of New York and New Jersey alone, the third largest port in the country. The Port generates 229,000 jobs and \$10 billion in wages throughout the region. Additionally, the Port contributes \$2.1 billion to state and local tax revenues and \$24.4 billion to the US Gross Domestic Product. Cargo that is handled in the Port serves 80 million people or thirty-five percent of the entire US population. In 2004 the port handled over 5,200 ship calls, 4.478 million twenty-foot equivalent units (TEUs), which is approximately 7,300 containers each day, 728,720 autos and 80.6 million tons of general cargo. Today international trade accounts for 30 percent of the US economy. Considering all this, it is

easy to see how a terrorist incident in our nation's ports and along the cargo supply chain would have a devastating effect on our country and its economy.

THE TERRORIST RISK

When describing the potential impact of a terrorist event, the words "risk", "threat" and "vulnerability" have generally been used interchangeably. The fact, however, is that in the standard risk equation, risk is a factor of threat, vulnerability and consequence. Therefore, any discussion of the terrorist risk to ports and other elements of the marine transportation system (MTS) must include each of those three areas.

The most difficult area to understand is the threat, mostly because it is a moving target and we must assume that terrorists are devising new tactics everyday. There are a number of threat scenarios however that are believed to be more likely and therefore are those that most maritime security programs today are built around. These include the use of vessels and ports as a means to smuggle weapons of mass destruction or terrorist operatives into the United States, the use of ships as a weapon, the scuttling of ships in major shipping channels, and attacks on ships such as ferries or oil tankers. Since 9/11, we have seen a number of these tactics used around the globe in events such as suicide bombings using containers in the Port of Ashdod, small boat attacks on an oil platform in Al Basra and the French oil tanker Limberg, and the transportation of suspected terrorist operatives via containers in Italy.

The maritime transportation system's vulnerability or the likelihood that the safeguards will fail is complicated by the general nature and openness of ports, with hundreds of miles of shorelines and facilities that have historically been public access areas. Additionally, the movement of cargo has been built on the tenets of speed, reliability and cost, not security. Therefore, the sheer volume of containers that move through US ports on a daily basis makes them potentially attractive as a potential Trojan horse ...62,000 of them.

The consequences of a terrorist attack by means of the maritime industry could have an overwhelming and lasting effect. Not only would there potentially be significant death and destruction but the national and global economies could be devastated. It is estimated that for every day that a port is shut down, it takes seven days for full recovery. The West Coast labor strikes last year demonstrated that a ten day shut down can cost an estimated one billion dollars a day.

While our ability to directly influence the threat is limited we can use our understanding of the threat, to make infrastructure improvements, and create policies, programs and procedures that can help reduce our vulnerability and the consequences and thereby mitigate our overall risk.

OUR PROGRESS SINCE 9/11

As a result of significant legislative action, capital investments and operational improvements on the part of the public and private sectors in the nearly three and a half years since 9/11, the Maritime Transportation System (MTS) is more secure today than ever before. While significant progress has been made and much has been accomplished, work still remains to be done.

A Multifaceted Approach

Enhancing maritime security is a complex problem which requires a multi-faceted and layered approach. Maritime security is so much more than just the physical security of our ports and terminals and the vessels that use them. We must also enhance security of the supply chain and the cargo that moves through our ports.

Cargo and Supply Chain Security

America's consumer-driven market now depends upon a very efficient logistics chain, of which the nation's ports are just a single link. US ports provide the platform to transfer imported goods from ships to our national transportation system—primarily trucks and trains—that ultimately deliver those products to local retail outlets or material to manufacturing plants. Historically, that goods movement system has had one overall objective: to move cargo as quickly and cheaply as possible from point to point. Today, a new imperative —national security—has imposed itself onto that system. As such, we know that ports themselves are not the lone point of vulnerability. Rather, the potential for terrorist activity stretches from where cargo is stuffed into a container overseas to any point along the cargo's route to its ultimate destination.

We believe that through programs like Operation Safe Commerce, a Federally supported study of international supply chain security, of which the Port Authority of New York & New Jersey is a part, efforts must be taken to verify the contents of containers before they are even loaded on a ship destined for a US port. The process must include certification that the container was packed in a secure environment, sealed so that its contents cannot be tampered with, transported under the control of responsible parties, and screened for dangerous substances before it is loaded on a ship. This will be accomplished through the identification and evaluation of new technology, business processes, policies and procedures that could improve supply chain security, and minimize disruption to commerce. The solutions must also be economically and commercially viable.

The many programs that the Departments of Energy and Homeland Security have implemented in the last three years—MegaPorts, the 24-Hour Rule, the Customs-Trade Partnership Against Terrorism (C-TPAT), the Container Security Initiative (CSI), the increase in VACIS exams, and the deployment of Radiation Portal Monitors (RPMs) at terminals are all valuable elements of a layered security system and have gone a long way toward ensuring supply chain security.

RADIATION PORTAL MONITORS

One of the many layers of cargo security is Radiation Portal Monitors (RPMs). In response to a Congressional mandate to preclude nuclear weapons and radiological materials from entering the United States, Customs and Border Protection (CBP) established a strategy in early 2003 to deploy RPMs at twenty-two ports throughout the country, including the Port of New York and New Jersey. RPMs are a passive, non-intrusive means to screen containers for the presence of nuclear and radiological materials, including special nuclear material (SNM), naturally occurring radiation and common medical and industrial isotopes.

We fully support the deployment of radiation detectors in our Port and believe they serve an important function as the absolute last layer of the defense in depth strategy. Of course,

detecting a Weapon of Mass Destruction after it arrives in our Port, or anywhere in the US, is too late. The placement of RPMs in US ports must be coupled with the installation of RPMs or other suitable radiation detection technology in foreign ports through programs like MegaPorts and the Container Security Initiative.

Our experience with the RPM initiative has been nothing but positive and the level of coordination and cooperation with local CBP officials and staff from the Pacific Northwest National Laboratory staff exceptional. In July 2003, CBP brokered a meeting with all of our port stakeholders to introduce them to the RPM program, describe the technology and the environment in which it works, and address concerns of different stakeholder groups and layout the timeline for deployment. CBP later met with each of the individual terminal operators, their executive management, traffic engineers and other employees to discuss each terminal operator's specific issues, with the goal of integrating the RPMs into each terminal's operation and not creating disruptions to the normal flow of commerce.

To date, a total of 22 RPMs have been deployed in the Port of New York and New Jersey (Global -5, PNCT-5, APM-12), with the first coming on line in February 2004. Another 8 RPMs (Maher-7, NYCT - 1) are expected to be deployed by year-end. We are also expecting to receive 2 mobile RPMs that will be employed during the vessel discharge process at one of our smaller terminals. At this time, we do not have a confirmed schedule for when these mobile RPMs will be available.

CONCERNS WITH THE RPM PROGRAM

High Level of False Alarms

At the outset of this program, we were advised by Pacific Northwest Labs that we could expect the alarm rate to be 1 in every 400 containers. In the Port of New York and New Jersey, we are now averaging about 150 alarms a day from the RPMs, which is approximately 1 in 40 containers, ten times more than was expected. In order to detect nuclear and radiological devices, the RPMs must be calibrated at a low threshold. This results in a high level of innocent or nuisance alarms from commodities with naturally occurring radiation such as bananas, kitty litter, fire detectors and ceramics that move through the port, even truck drivers who not long before had medical tests or treatments with radioactive isotopes.

Customs personnel are stationed at the exit gates of each of the container terminals. In each instance that a container sets off an alarm, they are immediately directed to a secondary inspection point when the container is scanned again, verified with a Radiological Isotope Identifier Device (RIID) and compared to the manifest. CBP follows strict protocols to determine whether the alarm is a potential terrorist threat, a natural source or legitimate medical source of radiation. In the vast majority of the cases, CBP is able to resolve the alarm in approximately ten minutes or less and release the truck without causing any undue delays to the flow of commerce.

In the sixteen months that the RPMs have been operational in New York and New Jersey, there only twice have RPMs detected a neutron source, which would be indicative of either Plutonium or Uranium. In these instances, the container was isolated and CBP worked with the Port

Authority Police and various Federal and state agencies, under established response protocols, to render the container safe, which takes up to 24 hours.

Ability to Screen All Intermodal Cargo

In the Port of New York and New Jersey, 13 percent of our cargo volume moves by rail and another 2 percent moves by barge. We expect these percentages to significantly increase in the next 10-15 years. While the current deployment schedule does not include RPMs at our on-dock rail facility (670,000 TEUs), CBP recognizes that this area has not yet been fully addressed and discussions are underway to develop a way to effectively screen these containers. CBP, Pacific Northwest Labs and the terminal operators are collaborating to devise options to screen intermodal cargo in the least disruptive way. This could include the installation of RPMs at choke points where containers enter the rail facility from other container terminals or screening the entire train as it exits the terminal. One concern would be delaying the entire train schedule while an alarm from one or more of the containers on that train is resolved. We expect to conduct a trial of scanning the entire train later this year.

A process to screen containers that will be transferred by barge to another US port must also be developed. In many instances, these barges traverse congested waterways adjacent to densely populated urban areas. We need the same level of assurance that these containers are free of nuclear or radiological devices as we have about the containers that are being delivered to inland destinations by truck.

Ability of CBP to Fully Staff RPM Operations

In some ports around the country, the RPMs are manned not by CBP but by a local law enforcement agency. In these cases, CBP has committed to responding to an alarm within a specified period of time. As ports and terminals across the country move toward expanding their gate hours, we need to ensure that CBP will have the adequate resources to staff and monitor all of these devices and analyze the high volume of alarms that they will be receiving. Provision must also be made to reimburse the local jurisdiction for assuming responsibilities under a federally mandated program.

Ability to Scan Roll On Roll Off Cargo

Given the heavy focus on containerized cargo since 9/11, we remain concerned about the ability to use Roll On / Roll Off (RoRo) cargo, such as automobiles, buses and subway cars to deliver weapons of mass destruction to the United States. Absent any other programs and initiatives to ensure the integrity of RoRo cargo and inspect it upon arrival in the United States, we believe that steps must be taken to work with the auto terminal operators to devise a method of screening all RoRo cargo with RPM's or other suitable technology upon discharge from the vessel.

COUNTER MEASURE TEST BED

Under an agreement with the Department of Homeland Security, Science and Technology Directorate, the Port Authority is involved with a very productive program of testing radiation sensor technologies at various transportation facilities including our river crossings, airports and the seaport, including the New York Container Terminal on Staten Island and the Customs and Border Protection VACIS facility in Port Elizabeth.

Since most commercial off-the-shelf radiation detection devices use gross counters, a large number of alarms for innocent sources are generated when the detection threshold is set sufficiently low in order to detect nuclear weapons or radiological materials. The Countermeasures Test Bed (CMTB) explores operational methodologies and tests advanced radiation sensor systems that have spectroscopic identifiers that have been developed at various Department of Energy laboratories in a real world environment at fully operational transportation facilities.

Under the leadership of the Department of Homeland Security's Environmental Measurements Laboratory in New York, potential devices are first bench tested with a variety of radiation sources and under various operating conditions at the Brookhaven National Laboratory before being deployed at our facilities.

As a result of the test bed work in which we participated, the Adaptable Radiation Area Monitor (ARAM) and Sensors for the Measurement and Analysis of Radiation Transient (SMART) devices are now ready for commercialization and could be available for use as early as FY06. These devices will be better at detecting things such as highly enriched uranium and plutonium.

Through our participation in this important initiative, we hope to improve the Nation's ability to prevent the illicit entry and movement of nuclear and radiological devices and materials, increase radiation sensor coverage of the region's critical infrastructure and to advance the capacity of technology to be reliable and of practical use in the field. We remain committed to making our many facilities and operations available to the Department of Homeland Security for this and other important demonstrations and test bed projects.

In the coming year DHS S&T will conduct head-to-head operational testing and evaluation of commercially available spectroscopic units at New York Container Terminal (NYCT) to determine operational viability and performance against real cargo in the port environment. Additionally, DHS will evaluate how integrated radiation monitoring systems at a complex intermodal facility such as NYCT (maritime and rail) could improve operational performances of the facility while meeting DHS goals.

RECOMMENDATIONS

With the advent of the new Domestic Nuclear Detection Office (DNDO) at the Department of Homeland Security there is a unique opportunity to recommend a comprehensive research agenda that would specifically benefit the marine transportation system.

While the port itself is generally not thought of as a likely terrorist target but rather a means of delivering a radiological device to a higher priority target, we believe that we should take advantage of opportunities to detect, deter and intercept a radiological or nuclear device well before it passes through a terminal exit gate. Among the ways to do this is to place radiation detection devices on the container gantry cranes and other container handling equipment.

On average, an import container sits in a US port terminal for five to seven days before it is picked up for delivery to the consignee. Under the current design of the RPM program, the nuclear weapon or radiological material could be sitting on the dock for an extended period of

time before it passes through a RPM at the exit gate on its way to the highway system. The Federal government should establish a research and development program focused on identifying a way to scan 100 percent of the containers as they are off loaded from the ship and/or when they are sitting idle in the terminal.

Both we and the Virginia Port Authority have each conducted “proof-of-concept” projects over the last four years to design, fabricate, install and test radiation detectors placed on the spreader bars of gantry cranes. The device would need to be able to be rugged enough to withstand the repeated shock and vibration from handling containers, distinguish between the container that was being lifted and other containers around it, and transmit data to a central monitoring location. The state of the technology was inadequate for this application however, we do believe that the problems can be overcome and should be further evaluated by DNDO.

Another alternative would be to place radiation detection equipment on straddle carriers or rubber tire gantry cranes, which are used to move and stack containers at the marine terminal. That would allow for containers that are stacked three high to be scanned simultaneously and repeatedly during the normal course of business as they dwell on the terminal.

We would also encourage the development of an integrated scanning and detection device that would essentially allow for the RPM and the VACIS exam to occur simultaneously. This approach is a much more holistic solution to provide 100 percent screening of international cargo for both radiation and density, without causing additional delays.

As screening technology is further developed and tested, we must also take into consideration the potential impact that this technology might have on container security devices such as electronic seals and the Advanced Container Security Device.

We experienced in Operation Safe Commerce that the VACIS exam may have interfered with the radio signal generated by electronic seals rendering them unusable. Therefore, the interference of VACIS and RPM inspections must be considered as these technologies are further developed and deployed.

Finally, I'd like to make one last point. Since 9/11 the Federal policy has been to push our borders out and DHS from those very first days has implemented that policy through their various programs such as the 24 Hour Rule, CSI, and CTPAT. As part of both the layered approach to security that I described earlier and the policy to push our borders out, the deployment of RPM's at ports of export should be increased and strengthened so that we can have even greater confidence that the cargo destined for the US is not likely to contain weapons of mass destruction.

CHALLENGES THAT REMAIN

Addressing the issue of port and maritime security is an enormous challenge given the complexity of the international transportation network. Devising a system that enhances our national security while allowing the continued free flow of legitimate cargo through our ports will not be solved with a single answer, a single piece of legislation, or by a single nation. It will require a comprehensive approach with coordination across state lines and among agencies of all

levels of government and the cooperation of the private and public sectors and the international community. Importantly, it will require additional resources for the agencies charged with this awesome responsibility and for the public and private ports and terminals where the nation's international commerce takes place.

I hope my comments today have provided with you some helpful insight on just one aspect of the complex matter of radiation detection. We at the Port Authority of New York & New Jersey are prepared to offer any additional assistance that you may require. Thank you.