

November 1, 2002

Mr. Norm Cohen, Coordinator  
The UNPLUG Salem Campaign  
Coalition for Peace and Justice  
321 Barr Avenue  
Linwood, NJ 08221

Dear Mr. Cohen:

This letter responds to the petition you filed on behalf of the UNPLUG Salem Campaign pursuant to Section 2.206 of Title 10 of the *Code of Federal Regulations* (10 CFR 2.206) on September 17, 2001, as supplemented on January 9 and 10, 2002. In your petition, you requested that the U.S. Nuclear Regulatory Commission (NRC) take the following actions:

- Order either the closure of, or an immediate security upgrade at, the Salem Nuclear Generating Station, Unit Nos. 1 and 2 (Salem), Hope Creek Generating Station (Hope Creek), and Oyster Creek Nuclear Generating Station (Oyster Creek).
- Order the plants' defenses to be upgraded to withstand a jet crash similar to that which occurred at the World Trade Center (WTC) on September 11, 2001.
- Require all spent fuel pools to be brought into the containment buildings, or a new containment building, able to withstand a jet crash, should be built for them.
- Cancel all plans for a dry cask storage at any of New Jersey's plants until a jet-bomber-proofed containment is built for them.
- Triple the number of Operational Safeguards Response Evaluation (OSRE) security inspections.
- Cancel proposals to allow nuclear plants to conduct their own security inspections.

As a basis for your request, you cited the terrorist attacks on September 11, 2001, stating that New Jersey's four nuclear power plants are vulnerable to terrorist threats, including a suicide airplane attack similar to the attack on the WTC.

In a telephone call on December 7, 2001, the NRC staff informed you that the Commission had decided to treat your September 17, 2001, letter as a petition pursuant to 10 CFR 2.206. In addition, the NRC staff informed you that because the September 17, 2001, letter raised sensitive security issues, the Commission was deferring application of certain public aspects of the process described in Management Directive 8.11, "Review Process for 10 CFR 2.206 Petitions," pending further developments related to the NRC's security review. Accordingly, the NRC staff did not offer you the opportunity to provide, in a public forum, additional information to support the September 17, 2001, letter before the NRC's Office of Nuclear Reactor Regulation Petition Review Board. Rather, the staff requested that you forward any additional information related to the petition directly to the assigned petition manager.

By an acknowledgment letter dated December 20, 2001, the NRC staff formally notified you that the letter dated September 17, 2001, met the criteria for review under 10 CFR 2.206, and that the NRC staff would act on the request within a reasonable time. The acknowledgment letter further stated that the Commission had, in effect, partially granted your request for immediate actions in that the NRC took action immediately after September 11, 2001, to enhance security at all nuclear facilities, including the four nuclear power plants located in New Jersey. The NRC staff also informed you in the acknowledgment letter that the issues raised in the petition were being referred to NRR for appropriate action.

You responded to the acknowledgment letter by electronic mail on January 9 and 10, 2002, and provided additional information that the staff considered in its evaluation of the petition. When we received your original letter and additional information, the NRC was determining the criteria for releasing security-related information in light of the events of September 11, 2001. As such, this correspondence was initially withheld from the public document room due to the potential for sensitive, security-related information to be contained in these documents. With the exception of the report titled „Vulnerabilities of New Jersey’s Nuclear Plants to Radiological Sabotage,” your incoming letter and subsequent correspondence are now publicly-available.

The staff sent a copy of the proposed Director’s Decision to you, PSEG Nuclear LLC (PSEG) and Exelon Generation Company LLC (Exelon) for comment on May 16, 2002. You responded with comments on August 4, 2002. The Union of Concerned Scientists also provided input on your behalf by letter dated August 7, 2002. PSEG, the licensee for Salem and Hope Creek, responded to our May 16, 2002, letter on June 21, 2002, and Exelon, the licensee for Oyster Creek, informed the petition manager by telephone that it did not have any comments. The comments and the staff’s response to them are included in the Director’s Decision.

The events of September 11, 2001, affected virtually every citizen and economic sector within our society, including the nuclear power industry. You raised a number of important issues associated with protecting our nation’s nuclear power plants from acts of terrorism. Over the past year, the NRC responded by issuing threat advisories and ordering security improvements at every nuclear power plant, as well as at other licensed facilities. These actions, taken to further enhance security programs that were already in place on September 11, 2001, are described in more detail in the Director’s Decision. While the Commission considers these actions to be appropriate, the NRC staff continues to take further steps to improve security at all licensed facilities. For example:

- The staff has reduced the backlog and is expediting the processing of nuclear power plant worker background checks. This has been achieved by improving communications between licensees, the Federal Bureau of Investigation, and the NRC.
- The NRC’s Incident Response Program has been enhanced to address the current threat environment, with additional improvements being considered.
- The staff is evaluating the vulnerabilities and potential effects as a result of: (1) a large commercial aircraft impacting a nuclear facility, (2) internal and external fires, (3) the use of radiological sources as radiological dispersal devices (commonly referred to as “dirty bombs”), and (4) cyber threats.

- Planning is underway for additional research on terrorist attack scenarios and protective strategies, small arms conflict situations, spent fuel pool testing, and insider threats. The results of this research will be applied, as appropriate, to strengthening the requirements for licensees.
- Research is being considered to enhance licensees' ability to identify suspicious individuals.

The Commission has, in effect, partially granted certain elements of your request for increased security at Salem, Hope Creek, and Oyster Creek to the extent that many of your requests are included within the scope of Orders issued to all nuclear power plants on February 25, 2002, or are a part of the NRC staff's comprehensive review to evaluate the agency's security and safeguards programs. The remainder of your requests are denied for the reasons provided in the enclosed Director's Decision.

A copy of the Director's Decision (DD-02-03) will be filed with the Secretary of the Commission for the Commission to review in accordance with 10 CFR 2.206(c). As provided for by this regulation, the decision will constitute the final action of the Commission 25 days after the date of the decision unless the Commission, on its own motion, institutes a review of the decision within that time. The documents cited in the enclosed decision are available in ADAMS or for inspection at the Commission's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland, and from the ADAMS Public Library component on the NRC Web site, <http://www.nrc.gov/reading-rm.html> (the Public Electronic Reading Room).

I have also enclosed a copy of the notice of "Issuance of Director's Decision Under 10 CFR 2.206" that has been filed with the Office of the Federal Register for publication. Please feel free to contact Mr. Robert Fretz at 301-415-1324 ([rxf@nrc.gov](mailto:rxf@nrc.gov)) to discuss any questions related to this petition. I thank you for your time and interest in nuclear power plant security.

Sincerely,

*/RA/*

Jon R. Johnson, Deputy Director  
Office of Nuclear Reactor Regulation

Docket Nos. 50-219, 50-272, 50-311,  
and 50-354

Enclosures: 1. Director's Decision (DD-02-03)  
2. Comments on Proposed Director's Decision  
3. Staff's Response to Petitioner's Comments  
4. *Federal Register* Notice

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Sincerely,

/RA/

Jon R. Johnson, Deputy Director  
Office of Nuclear Reactor Regulation

Docket Nos. 50-219, 50-272, 50-311,  
and 50-354

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4. *Federal Register* Notice

DISTRIBUTION: See next page

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\*\* Concurrence via e-mail

\* See previous concurrence

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**ENCLOSURE 1**

**DIRECTOR'S DECISION DD-02-03**

UNITED STATES OF AMERICA  
 NUCLEAR REGULATORY COMMISSION  
 OFFICE OF NUCLEAR REACTOR REGULATION  
 Samuel J. Collins, Director

In the Matter of	)	
	)	
PSEG NUCLEAR LLC	)	Docket Nos. 50-272, 50-311,
	)	50-354, and 50-219
(Salem Nuclear Generating Station,	)	
Unit Nos. 1 and 2, and Hope Creek	)	License Nos. DPR-70, DPR-75,
Generating Station)	)	NPF-57, and DPR-16
	)	
AMERGEN ENERGY COMPANY, LLC	)	
	)	
(Oyster Creek Nuclear Generating Station)	)	(10 CFR 2.206)
	)	

DIRECTOR'S DECISION UNDER 10 CFR 2.206

I. Introduction

By letter dated September 17, 2001, Mr. Norm Cohen, on behalf of the UNPLUG Salem Campaign (Petitioner), requested that the U.S. Nuclear Regulatory Commission (Commission or NRC) take the following actions:

- Order either the closure of, or an immediate security upgrade at, the Salem Nuclear Generating Station, Unit Nos. 1 and 2 (Salem), Hope Creek Generating Station (Hope Creek), and Oyster Creek Nuclear Generating Station (Oyster Creek).
- Order the plants' defenses to be upgraded to withstand a jet crash similar to that which occurred at the World Trade Center (WTC) on September 11, 2001.
- Require all spent fuel pools to be brought into the containment buildings, or a new containment building, able to withstand a jet crash, should be built for them.
- Cancel all plans for a dry cask storage at any of New Jersey's plants until a jet-bomber-proofed containment is built for them.

- Triple the number of Operational Safeguards Response Evaluation (OSRE) security inspections.
- Cancel proposals to allow nuclear plants to conduct their own security inspections.

As a basis for the request described above, the Petitioner cited the terrorist attacks on September 11, 2001, stating that New Jersey's four nuclear power plants are vulnerable to terrorist threats, including a suicide airplane attack similar to the attack on the WTC.

On December 7, 2001, the NRC staff informed the Petitioner in a telephone call that the Commission had decided to treat the letter dated September 17, 2001, as a petition pursuant to Section 2.206 of Title 10 of the *Code of Federal Regulations* (10 CFR 2.206). In addition, the NRC staff informed the Petitioner that because the September 17, 2001, letter raised sensitive security issues, the Commission was deferring application of certain public aspects of the process described in Management Directive (MD) 8.11, "Review Process for 10 CFR 2.206 Petitions," pending further developments related to the NRC's security review. Accordingly, the NRC staff did not offer the Petitioner the opportunity to provide, in a public forum, additional information to support the September 17, 2001, letter before the NRC's Office of Nuclear Reactor Regulation Petition Review Board. Rather, the NRC staff requested that the Petitioner forward any additional information related to the petition to the assigned petition manager.

By an acknowledgment letter dated December 20, 2001, the NRC staff formally notified the Petitioner that the letter dated September 17, 2001, met the criteria for review under 10 CFR 2.206, and that the NRC staff would act on the request within a reasonable time. The acknowledgment letter further stated that the Commission had, in effect, partially granted the Petitioner's request for immediate actions in that the NRC took action immediately after September 11, 2001, to enhance security at all nuclear facilities, including the four nuclear power plants located in New Jersey. The NRC staff also informed the Petitioner in the

acknowledgment letter that the issues raised in the petition were being referred to NRR for appropriate action.

The Petitioner responded to the acknowledgment letter by electronic mail on January 9 and 10, 2002, and provided additional information that the staff considered in its evaluation of the petition.

In a January 9, 2002, letter forwarded by electronic mail described as "Supplemental Additions to the 2.206 Petition," the Petitioner identified additional individuals and organizations who wished to sign the petition, including: Bill Smirnow, representing Nuclear Free New York, Huntington, NY; Len and Rena Amada, Parkway Whiting, NJ; Jennifer Ann Vickers, Point Pleasant Beach, NJ; Mike and Janet Turco, Absecon, NJ; William deCamp Jr., Mantoloking, NJ; Karin Westdyk, representing MothersAlert.org, Hewitt, NJ; Mary Jo Christian (no address provided); John Guyon, representing NJ PIRG, Trenton, NJ; Laura Cayford, Asbury Park, NJ; Alan Muller, representing Green Delaware, Port Penn, DE; and Michael Mariotte, Director, Nuclear Information and Resource Service (NIRS). The Petitioner also further clarified his original request to close all nuclear power plants in New Jersey, as follows:

- The NRC should halt and reverse all permits associated with Oyster Creek that have allowed the construction of dry cask storage of nuclear waste. No dry cask storage should be allowed to be built without the NRC first holding an adjudicatory public hearing, and without all of our security requests being met. Dry cask storage, which will be placed within 400 feet of U.S. Route 9, is an obvious terrorist target. Because Oyster Creek failed an OSRE test, and because of the nearness of the waste storage to a busy highway, all dry cask storage plans should be halted.

- Oyster Creek and Salem must demonstrate that they have viable security plans to protect the water intake systems from terrorist attack, and Salem must demonstrate a viable plan in the event of a commando attack from the Delaware Bay.
- Oyster Creek must demonstrate that its containment will withstand an Oklahoma City-type truck bomb.
- Salem must demonstrate that it has a viable plan to protect the nuclear plant in the event of a terrorist attack that cuts off electric power to the plant, in conjunction with an attack on the diesel generators.
- The NRC must require PSEG Nuclear LLC (PSEG) to replace all questionable electrical raceway fire barriers and combustible fire seals at Salem. In addition, the NRC must require that the licensee replace all wiring that violates NRC rules for cable separation. The NRC must reverse any recent changes in these rules.
- The NRC shall direct the New Jersey Department of Emergency Management and the State Police to allow citizen stakeholder groups such as UNPLUG Salem and Jersey Shore Nuclear Watch to observe and comment upon emergency planning and evacuation drills. The NRC must direct the above to include nuclear terrorism as a subject of evacuation drills and emergency planning.
- The NRC shall agree to reopen the entire NRC website to stakeholder groups like UNPLUG Salem and Jersey Shore Nuclear Watch, with acceptable means of security involved.

In separate electronic mail transmissions dated January 9 and 10, 2002, UNPLUG Salem forwarded three reports prepared by the Union of Concerned Scientists (UCS) after September 11, 2001, titled "Nuclear Reactor Security," "Spent Fuel Security," and "Vulnerabilities of New Jersey's Nuclear Power Plants to Radiological Sabotage." The UCS

“Nuclear Reactor Security” report raised concerns and offered recommendations regarding the NRC’s OSRE program. Among the short-term solutions, this report recommended that potassium iodide be readily available to persons living in the vicinity of all nuclear reactors. The UCS “Spent Fuel Security” report raised issues associated with protecting fuel assemblies that are stored in a plant’s spent fuel pool or dry cask storage facilities. The UCS report on “Vulnerabilities of New Jersey’s Nuclear Power Plants to Radiological Sabotage” claimed that the spent fuel pools at Oyster Creek and Hope Creek have certain associated vulnerabilities, and there is the potential for sabotage by fire at Oyster Creek, Salem, and Hope Creek.

In two other electronic mail transmissions, both dated January 9, 2002, the Petitioner forwarded copies of information associated with Salem and Oyster Creek. One of these transmissions forwarded a copy of NRC Inspection Report 0500219/2001-011, which discusses the results of the Oyster Creek OSRE that was completed on May 10, 2001. The Petitioner stated that the report shows that the Oyster Creek security response team was unable to prevent the simulated intruders from destroying all of the equipment that is necessary to cool the reactor core.

The Petitioner also provided comments on selected excerpts taken from an NRC report entitled “Safety Evaluation Report Related to Operation of Salem Nuclear Generating Station,” dated October 1974. In particular, the electronic mail transmission questioned the ability of the Salem plant to withstand the impact of an aircraft.

Following its initial review of the Petition, the NRC staff sent a copy of the proposed Director’s Decision to the Petitioner, PSEG, and Exelon Generation Company LLC (Exelon) for comment on May 16, 2002. The Petitioner responded with comments on August 4, 2002. The UCS also provided input on the Petitioner’s behalf in a letter dated August 7, 2002. PSEG, the licensee for Salem and Hope Creek, responded by letter dated June 21, 2002, and Exelon, the

licensee for Oyster Creek, informed the petition manager by telephone that it did not have any comments. The comments and the staff's response to them are available in ADAMS or for inspection at the Commission's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland, and from the ADAMS Public Library component on the NRC Web site, <http://www.nrc.gov/reading-rm.html> (the Public Electronic Reading Room). The applicable ADAMS Accession Nos. are ML022480149, ML022480163, ML022480173 and ML022470402.

## II. Discussion

### Physical Protection of Nuclear Power Plants

The Petitioner raised a number of issues associated with protecting our nation's nuclear power plants from terrorism. However, long before the tragic events of September 11, 2001, the Commission had recognized the need for strict safeguards and security measures at these facilities. When Congress first authorized the civilian use of atomic power through the Atomic Energy Act of 1954 (the Act), it recognized that public health and safety must be protected. The Act, as amended, gives the NRC the responsibility and authority to determine the requirements, including rules governing security, that are necessary to ensure that public health and safety are protected when commercial nuclear power plant licenses are issued.

The regulations for protecting all nuclear power plants, including those located in New Jersey, are provided in 10 CFR Part 73, "Physical Protection of Plants and Materials." These rules represent an important cornerstone of the NRC's regulatory oversight responsibilities. In particular, the regulations include detailed, specific requirements designed to protect nuclear power plants against acts of radiological sabotage, prevent the theft of special nuclear material, and protect safeguards and classified information against unauthorized release.

In order to provide high assurance that the operation of a nuclear power plant does not constitute an unreasonable risk to public health and safety, licensees are required to implement

the NRC's safeguards and security regulations described in 10 CFR 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors Against Radiological Sabotage." Specifically, licensees are to design a physical protection system to provide the following means of protection against the design-basis threat (DBT) of radiological sabotage:

- maintain a well-equipped and highly trained physical security organization
- install physical barriers to protect vital equipment
- implement access requirements to control all points of personnel and vehicle access into a protected area. These requirements include the identification and search of individuals and vehicles for firearms, explosives, and incendiary devices
- provide access authorization programs and procedures (e.g., routine worker screening, badging, etc.)
- install detection, surveillance, and alarm systems with the capability to detect unauthorized penetrations into protected areas
- ensure that all guards and armed response individuals have the ability to communicate with a continuously manned alarm station
- establish effective testing and maintenance programs to verify that all physical barriers, detection, and alarm systems are capable of meeting NRC requirements
- provide a safeguards contingency plan to respond to threats, thefts, and radiological sabotage related to the nuclear facility

#### Security Organization

All operating nuclear power plant licensees are required to establish and maintain a site security organization. Such site security organizations include the designated managers, guard force, and personnel for checking worker backgrounds and issuing badges, as well as detailed access control and response procedures. To become a member of the security organization at

a nuclear power plant, an individual must meet several stringent requirements, including satisfactorily performing qualification and requalification training. Specifically, 10 CFR 73.55(b)(4) expressly states that “licensee[s] may not permit an individual to act as a guard, watchman, armed response person, or other member of the security organization unless the individual has been trained, equipped, and qualified to perform each assigned security job duty” in accordance with NRC-established criteria for security personnel. Furthermore, each licensee shall establish, maintain, and follow an NRC-approved training and qualifications plan outlining the processes by which guards, watchmen, armed response persons, and other members of the security organization will be selected, trained, equipped, tested, and qualified to ensure that these individuals meet NRC requirements. These qualifications include specific requirements to demonstrate competence in the use of assigned weapons. In addition, guards, watchmen, armed response persons, and other members of the security organization are subject to the NRC’s medical examination, physical fitness, and fitness-for-duty requirements. These security organizational requirements exist in order to implement the defense-in-depth philosophy for safeguarding vital plant areas, and are designed to help provide an effective deterrence against potential terrorist activities directed at nuclear power plants.

#### Access Authorization and Control

In order to ensure that only authorized individuals are able to enter vital and other protected areas of a nuclear plant, licensees are required to implement and maintain access authorization and control programs. The objective of these programs is to provide high assurance that individuals who are allowed unescorted access to a nuclear power plant are trustworthy and reliable, and do not constitute an unreasonable risk to public health and safety including the potential to commit radiological sabotage. In order to achieve this objective, NRC regulations require licensees to: (1) perform background checks on workers who are granted

unescorted access to the plant; (2) implement a picture badge identification system to identify those persons who are authorized to enter specific plant areas; (3) search personnel, packages, and vehicles entering the protected area; (4) search for firearms and explosives; (5) monitor entry into identified areas of the plant; and (6) maintain a detection and alarm system.

Worker background checks include an investigation to verify an individual's true identity and to develop information concerning the individual's employment, education, and credit history; military service; and character and reputation, including a psychological assessment, to evaluate trustworthiness and reliability. The checks also include a criminal history check conducted via fingerprint cards submitted to the Federal Bureau of Investigation (FBI). These requirements are designed to prevent unauthorized access of persons, vehicles, and materials into protected areas, and to ensure that only persons who are deemed trustworthy are authorized to have unescorted access to vital plant equipment.

#### Protection of Vital Equipment

Paragraph (a)(1) of 10 CFR 73.1 defines the design-basis threat from which vital areas must be protected. The regulation requires licensees to assume that potential terrorists have the following characteristics:

- are dedicated and well-trained (including military training and skills)
- have inside assistance, which may include a knowledgeable individual who attempts to participate in a passive role (e.g., provide information), an active role (e.g., facilitate entrance and exit, disable alarms and communications, participate in violent attack), or both
- possess suitable weapons, up to and including hand-held automatic weapons, equipped with silencers and having effective long-range accuracy

- possess hand-carried equipment, including incapacitating agents and explosives for use as tools of entry or for otherwise destroying reactor, facility, transporter, or container integrity, or features of the safeguards system
- have a four-wheel drive land vehicle available for transporting personnel and their hand-carried equipment to the proximity of vital areas

NRC regulations in 10 CFR 73.1(a)(1)(iii) also require licensees to protect against a four-wheel drive land vehicle bomb. In order to safeguard a nuclear plant against this threat, 10 CFR 73.55 requires all licensees to: (1) establish vehicle control measures, including vehicle barriers, to protect against the use of a land vehicle as a means of transportation to gain unauthorized proximity to vital areas; (2) compare the vehicle control measures established in accordance with 10 CFR 73.55(c)(7) for protection against a land vehicle bomb; or (3) develop a process to use alternative measures for protection against a land vehicle bomb (i.e., for those licensees with a particularly difficult site configuration). The alternative measures must provide substantial protection against a land vehicle bomb and must be supported by a licensee analysis.

In brief, Congress understood the inherent need for strict security measures at commercial nuclear power plants, and NRC regulations have ensured that these are among the most hardened and secure industrial facilities in our nation. The many layers of protection offered by robust plant design features, sophisticated surveillance equipment, a professional security force, and regulatory oversight are an effective deterrence against a spectrum of potential terrorist activities that could target equipment that is vital to nuclear safety.

#### NRC Response to the September 11, 2001, Terrorist Attacks

When the events of September 11, 2001, unfolded, U.S. nuclear power plants already possessed a strong capability to prevent and respond to many types of terrorist acts that could

be directed at them. Consequently, the NRC determined that certain actions, such as ordering the immediate closure of nuclear power plants, including Salem, Hope Creek, and Oyster Creek, were not necessary to provide adequate protection of public health and safety.

However, the NRC did take other immediate actions and advised all nuclear power plants to go to the highest level of security. The NRC also issued more than 30 threat advisories to address specific concerns or vulnerabilities in the aftermath of September 11, 2001. In addition, NRC security specialists performed numerous onsite physical security vulnerability assessments at licensed facilities to evaluate the effectiveness of the enhanced security measures that were put into place. These assessments demonstrated that the industry responded promptly and appropriately to the NRC threat advisories. To this day, all nuclear power plant facilities remain at a heightened security level.

The events of September 11, 2001, were unprecedented, and since that time, the NRC has taken appropriate steps to protect public health and safety. For example, the NRC quickly recognized the need to reexamine basic assumptions underlying the current civilian nuclear facility security and safeguards programs. Chairman Richard A. Meserve, with the full support of the rest of the Commission, directed the staff to undertake a comprehensive review of the NRC's security and safeguards programs. This is an ongoing review and as results become available, they will be evaluated and, if appropriate, incorporated into NRC's regulatory processes. The comprehensive review takes advantage of insights gained by the NRC in consultation with the Office of Homeland Security, FBI, Department of Transportation (DOT), Department of Energy (DOE), and others. This cooperation further allows the NRC to keep abreast of the current threat environment, and communicate its actions to other Federal agencies to ensure an appropriate response to security concerns throughout the nation's entire critical energy infrastructure.

In light of the current threat environment, the Commission concluded that specific security measures, including those outlined in threat advisories and voluntarily implemented by nuclear power plant licensees, should be embodied in an Order consistent with the NRC's established regulatory framework. On February 25, 2002, the NRC issued Orders to all operating power reactor licensees to require that certain interim compensatory measures (ICMs) for security be taken beyond that called for by current regulations. These new requirements will remain in effect pending notification from the Commission that a significant change in the threat environment has occurred, or until the Commission determines that other changes are needed following the comprehensive review of current safeguards and security programs. The Orders were effective immediately upon issuance. For the most part, the Orders formalized a series of steps that nuclear power plant licensees had been advised to take by the NRC in the aftermath of the terrorist attacks on September 11, 2001; however, the Commission included certain additional security enhancements in the Orders. Details of certain new security requirements cannot be made public, but some of the specific measures implemented by the licensees in response to the advisories and ICMs included increased patrols, augmented security forces and capabilities, additional security posts, installation of additional physical barriers, vehicle checks at greater stand-off distances, enhanced coordination with law enforcement and military authorities, and more restrictive site access controls for all personnel. The Orders also required that licensees provide a schedule for their implementation of the ICMs, and that all ICMs be implemented by August 31, 2002. Based on the NRC staff's review of the responses to the reporting requirements of the Order, the staff concludes that licensees have taken adequate measures to comply with the requirements of the Order by the required date of August 31, 2002. The staff is verifying that licensees are in compliance with the ICMs by conducting independent inspections at licensee sites.

The NRC staff has similarly issued Orders to all Independent Spent Fuel Storage Installation (ISFSI) licensees on October 16, 2002, to require implementation of ICMs designed to enhance security at these facilities.

The NRC continues to reexamine its activities to determine any significant safeguards vulnerabilities. If a vulnerability is identified, the NRC staff will revise physical protection, material control, and other requirements, as appropriate. Also, the NRC will continue to assist the Office of Homeland Security and other Federal agencies to evaluate threats beyond the feasible response capabilities of NRC licensees in order to consider the need to augment the site security organization with public assets, such as local law enforcement personnel.

#### Evaluation of Petitioner's Concerns

The Petitioner presented certain general and specific concerns about the vulnerability of nuclear power plants to terrorism. In addition, the Petitioner provided suggestions to improve security readiness oversight, and identified issues related to emergency planning and the availability of information to the public. The following is the NRC staff's evaluation of the Petitioner's concerns.

#### A. Vulnerabilities to Specific Threats

The Petitioner raised several concerns regarding the following possible threats to nuclear power plants:

- Oklahoma City-type truck bomb
- waterborne terrorist attacks
- airborne attacks
- sabotage by fire
- spent fuel security
- sabotage that results in a complete loss of AC power

1. Explosive Devices Transported by Vehicles (Truck Bomb)

Petitioner's Concerns

In the supplemental information provided on January 9, 2002, the Petitioner stated that Oyster Creek must be able to demonstrate that its containment could withstand an Oklahoma City-type truck bomb.

NRC Response

As previously stated, 10 CFR 73.55 requires licensees to, among other things, establish vehicle control measures to protect vital equipment from damage due to a land vehicle bomb. NRC regulations require all vital areas to be located within a protected area such that access to vital equipment requires passage through at least two physical barriers. Because the explosive effects of a land vehicle bomb diminish with distance, protected area barriers are located at a distance to provide an appropriate buffer between vital area barriers and a potential land vehicle bomb. The distance between a vital area and the potential explosive blast at the protected area barrier is referred to as the "standoff distance."

Notwithstanding the measures that were in place on September 11, 2001, to protect plants from the DBT vehicle bomb in effect at that time, the NRC issued Orders to all nuclear power plant licensees on February 25, 2002, to address the changing threat environment. The Orders formalized steps that licensees had voluntarily taken in response to NRC threat advisories, and included additional measures to further protect nuclear power plants. These measures included a review of the adequacy of existing vehicle barrier systems and increasing standoff distances to ensure sufficient protection from a land vehicle bomb based on the current threat environment. The size of the bomb used to calculate standoff distances is determined by various Federal agencies involved in threat assessment, and the NRC cannot publicly disclose specific information or other similar details included in the Orders issued on February 25, 2002.

Therefore, to the extent that the licensee has taken measures in response to the Orders issued on February 25, 2002, the NRC has, in effect, granted the Petitioner's request that Oyster Creek be able to withstand the effects of an explosive device transported by a vehicle.

## 2. Waterborne Attack

### Petitioner's Concerns

In the supplemental information provided on January 9, 2002, the Petitioner stated that Oyster Creek must demonstrate that it has viable security plans to protect the water intake systems from terrorist attack. In addition, the Petitioner stated that Salem must be able to demonstrate that it has a viable plan to protect its water intake system from a terrorist or commando attack from the Delaware Bay.

### NRC Response

Water intake structures are generally located inside the protected area, which is the case for Oyster Creek and Salem. As previously stated, 10 CFR 73.55 requires that licensees must prevent the unauthorized access of persons, vehicles, and materials into protected and vital areas by using detection and barrier systems, and security personnel must be able to respond to unauthorized penetrations of the protected area. In addition, 10 CFR 50.63, "Loss of All Alternating Current Power," requires that licensees have procedures in place to maintain adequate cooling for a period of time if alternating current (ac) power is lost. In the short term, these procedures would ensure adequate core cooling. Therefore, on September 11, 2001, nuclear plants already had measures in place to address a potential waterborne attack. However, in order to address the current threat environment, the NRC issued Orders to all nuclear power plant licensees on February 25, 2002. The Orders included additional measures to evaluate potential vulnerabilities to a loss of the intake structure, and to implement additional protective measures, as appropriate. Details of the additional actions taken by the licensees is considered Safeguards Information and cannot be made available to the public.

Therefore, to the extent that the licensees have taken measures to meet current regulatory requirements and have implemented additional steps in response to the Orders issued on February 25, 2002, the NRC has, in effect, granted the Petitioner's request that Salem and Oyster Creek have a plan to protect their respective water intake systems from a terrorist or commando attack.

### 3. Airborne Attack

#### Petitioner's Concerns

The Petitioner requested that the NRC order plant defenses to be upgraded to withstand a jet crash similar to that which occurred at the WTC on September 11, 2001. The Petitioner also raised concerns that a large aircraft filled with jet fuel could strike a nuclear power plant and start a fire in more than a single room or area, thus rendering certain safe shutdown equipment inoperable. The Petitioner concluded that the Oyster Creek, Hope Creek, and Salem nuclear power plants are vulnerable to radiological sabotage from the air.

#### NRC Response

In the aftermath of September 11, 2001, the Federal government took a number of steps to improve aviation security and minimize the threat of terrorists using airplanes to damage facilities critical to our nation's infrastructure. The Commission views that the efforts associated with protecting our nation from terrorist attacks by air should be directed toward enhancing security at airports and on airplanes. Thus, the Commission endorses the prompt response by the Congress to strengthen aviation security under the Aviation and Transportation Security Act of 2001, because this legislation provides for improved protection against air attacks on all industrial facilities, both nuclear and non-nuclear. The NRC further supports the steps taken by the Federal Aviation Administration (FAA) to improve aircraft security, including enhanced passenger and baggage screening, strengthening of cockpit doors, and the Air

Marshal program. The U.S. intelligence community and various Federal law enforcement agencies have also increased efforts to identify potential terrorists and prevent potential attacks before they occur. For example, the FAA and DOD have acted more than once to protect airspace above nuclear power plants from what were thought to be credible threats against certain specific sites. These potential threats were later judged to be non-credible.

The FAA and DOD also concluded that a Notice To Airmen (NOTAM) was an appropriate means to help protect the air space above sensitive sites. Accordingly, the FAA issued a NOTAM strongly urging pilots to:

“not circle or loiter over the following sites: Nuclear/Electrical power plants, power distribution stations, dams, reservoirs, refineries, or military installations, unless otherwise authorized by air traffic control or as required to land or depart at towered/non-towered airports.”

This notice is still in effect. Should additional restrictions be deemed appropriate as a result of changing or more specific threats, our communication with the other Federal agencies will allow a prompt and coordinated response.

Since September 11, 2001, there have been no specific credible threats against any NRC-licensed facility. However, in view of the intelligence information at hand, enhancements to site security, and steps taken to improve aviation security, the NRC has concluded that it is appropriate to allow nuclear power plants to continue to operate without modifying the facilities to withstand an aircraft attack. Therefore, the NRC is denying the Petitioner's request that the NRC immediately order plant defenses to be upgraded to withstand a jet crash.

In denying the Petitioner's request, the NRC staff acknowledges that nuclear plants were not specifically designed to withstand a deliberate aircraft crash. Prior to September 11, 2001, the U.S. intelligence community and the NRC did not consider a deliberate aircraft attack against a nuclear power plant to be a credible threat.

Nevertheless, the staff recognizes that design and construction considerations could contribute to a nuclear power plant's survivability in the event of an aircraft impact. The NRC requires that these facilities be designed with a defense-in-depth philosophy to withstand events such as tornadoes (and missiles generated by tornadoes), hurricanes, fires, floods, and earthquakes. This has resulted in nuclear power plant designs that afford a measure of protection against deliberate aircraft impacts because the defense-in-depth philosophy requires plants to have hardened containments, and redundant and separated systems in order to ensure safety. Ultimately, the capability of a plant to successfully cope with an aircraft crash will depend upon a number of factors, including the plant's specific design features, the design and flight characteristics of the aircraft, the point of impact, the ability of the licensees' staff to utilize remaining backup systems, and the response of onsite and offsite resources.

In its Orders issued to all operating nuclear power plants on February 25, 2002, the Commission also directed licensees to develop specific guidance and strategies to respond to an event resulting in damage to large areas of the plant due to explosions or fire. These strategies are intended to assist in identifying and utilizing any remaining equipment and capabilities to maintain or restore reactor core, containment and spent fuel cooling, including both onsite and offsite resources.

The staff further notes that the NRC, in conjunction with DOE laboratories, is continuing a major research and engineering effort to evaluate the vulnerabilities and potential effects of a large commercial aircraft impacting a nuclear power plant. This effort also includes consideration of possible additional preventive or mitigative measures to further protect public health and safety in the event of a deliberate aircraft crash into a nuclear power plant or spent fuel storage facility. The final results from that analysis are not yet available. If the ongoing research and security review recommends any other security enhancements, the NRC will take appropriate action.

#### 4. Sabotage by Fire

##### Petitioner's Concerns

The Petitioner raised concerns about fires in multiple rooms and areas, and that fire hazards analysis (FHA) information developed by licensees in response to the Browns Ferry fire could be used by saboteurs to disable critical emergency systems that are needed to cool the reactor core.

In addition, the Petitioner stated that “the NRC must cancel it’s [sic] plans to allow PSE&G to not replace all of it’s [sic] bogus raceway fire barriers, and instead require PSE&G to indeed replace ALL the fire wrap in question” at Salem. The Petitioner added that Salem should not be allowed to operate with combustible fire seals, and instead, the NRC should require PSEG to replace all its combustible fire seals.

##### NRC Response

The Petitioner referred to a scenario in which saboteurs could use FHA information to start multiple fires and disable critical emergency systems that are needed to cool the reactor core. The NRC staff recognizes that it could contemplate a variety of plausible scenarios that result in a broad spectrum of damage and potential adverse consequences at a nuclear facility. Each scenario would involve varying elements of complexity: (1) number of saboteurs, (2) potential target(s), (3) weapons and/or devices necessary to carry out the terrorist mission, and (4) various tactical considerations. In order for the specific scenarios presented by the Petitioner to be carried-out, saboteurs would have to successfully penetrate and/or circumvent a number of defense-in-depth security practices that currently exist, including:

- access authorization measures
- routine searches of personnel entering controlled areas of the plant
- routine searches for explosives and weapons entering controlled areas

- multiple physical barriers, sophisticated surveillance equipment, and access control systems
- routine maintenance work control practices
- routine radiological area access controls
- other “barriers” (e.g., plant workers observing suspicious behavior on the part of potential terrorists)

In addition, the defense-in-depth design philosophy has resulted in plants having redundant fire detection and suppression systems and other fire barriers in order to ensure safety. Consequently, the saboteurs would have to also be successful at preventing these fire mitigation systems, fire brigade personnel, and plant operators from responding to and/or extinguishing the fires in a timely manner. As previously stated, the Commission directed licensees to develop specific guidance and strategies to respond to scenarios resulting in damage to large areas of the plant due to explosions or fire. These strategies are now in place, and will support those responsible for maintaining and/or restoring reactor core, containment, and spent fuel cooling in the event of a large fires or terrorist attack.

Therefore, to the extent that appropriate measures are now in place to limit the accessibility of vital plant areas to terrorists, and that mitigative measures are in place to address potential fires or explosions, the NRC has, in effect, partially granted the Petitioner’s request that action be taken to protect nuclear power plants from large-scale or multiple fires.

With respect to the Petitioner’s concerns about fire wrap materials at Salem, the staff is aware that PSEG is implementing various corrective actions in response to a 1997 violation associated with the failure to adequately qualify certain electrical raceway fire barrier systems installed at the plant. The NRC staff concludes that the defense-in-depth protection afforded by

fire detection and suppression systems and other fire protection measures is adequate to ensure public health and safety while the licensee corrects items identified in the violation.

## 5. Spent Fuel Security

### Petitioner's Concerns

The UCS report on spent fuel security recommends that the NRC address the issue of spent fuel storage at all U.S. nuclear power plants. The Petitioner contends that the storage of spent fuel presents “a softer target that could yield graver consequences than an aircraft crashing through the reactor containment structure.” As a result, the Petitioner concludes that „all of the spent fuel pools must be brought into the containment building, or a new containment building, able to withstand a jet crash, should be built for them.” The Petitioner also states that the NRC should cancel any plans for dry cask storage at any of New Jersey's plants, until a jet-bomber-proofed containment is built for them. Similarly, the Petitioner requests that: (1) the NRC should halt and reverse all permits that have allowed the construction of dry cask storage of nuclear waste at Oyster Creek; and (2) no dry cask storage should be allowed to be built without the NRC first holding an adjudicatory public hearing, without all of the Petitioner's security requests being met.

The basis for the Petitioner's concerns with respect to spent fuel pool security is related to the ability of the spent fuel pool structure to withstand the impact of a large jet aircraft. The requests associated with the Oyster Creek interim spent fuel storage facility are partially based upon concerns about the proximity of this facility to a nearby highway, and that dry cask systems are above-ground instead of buried.

### NRC Response

As previously stated, the NRC staff concluded that, in view of the intelligence information at hand, enhancements to site security, and steps taken to improve aviation

security, nuclear power plants should continue to be allowed to operate. The NRC staff's determination considered spent fuel pools since the pools are located within the protected area and are afforded protection under the same physical security protection program as the nuclear power plant.

The staff notes that certain spent fuel pool design features could contribute to ensuring public health and safety in the event of a deliberate attempt to crash an aircraft into a spent fuel pool. Specifically, spent fuel pools are small in size relative to the rest of the plant. This characteristic would make the pools difficult to target. In addition, the NRC's requirements that spent fuel pools be designed to withstand a variety of design-basis events such as tornadoes (and missiles generated by tornadoes), hurricanes, fires, floods, and earthquakes have resulted in nuclear plant designs that afford a measure of protection against deliberate aircraft impacts. Spent fuel pools are massive structures with thick walls constructed of reinforced concrete. Furthermore, the defense-in-depth design philosophy used in nuclear facilities means that systems critical to the safety of stored fuel have redundant and separated systems in order to ensure safety.

Notwithstanding the defense-in-depth design features of the Salem, Hope Creek and Oyster Creek facilities, including the spent fuel pools, the NRC identified additional physical protection measures that all licensees should implement given the current threat environment. These measures were first communicated to licensees in safeguards advisories. NRC inspectors subsequently verified that plants had implemented the enhanced requirements outlined in the advisories. On February 25, 2002, the Commission issued Orders to all operating nuclear power plants requiring compliance with specified ICMs involving spent fuel pools.

The staff recognizes that additional requirements beyond those provided by existing regulations and the ICMs may be warranted. The comprehensive review of the NRC's safeguards and physical security programs initiated by Chairman Meserve following the September 11, 2001, terrorist attacks includes specific studies on the impacts of aircraft on nuclear power plant facilities, including the spent fuel pool. The review also includes an evaluation of the potential consequences of terrorist attacks using various explosives or heat-producing devices on spent fuel pools and spent nuclear fuel dry casks at spent nuclear fuel storage sites. The staff will use the insights gained from these studies as it considers the need for further security enhancements.

However, during this intervening period, the NRC concludes that, based on the intelligence information at hand, additional measures implemented by the licensees to enhance spent fuel pool security, and steps taken to improve aviation security, there is reasonable assurance that nuclear power plants can continue to operate safely without the need to construct containments around spent fuel pools. Therefore, the NRC staff denies the Petitioner's request that all spent fuel pools be brought into the containment, or that a new containment building be constructed for spent fuel.

The Petitioner also requested that: (1) the NRC halt and reverse all permits associated with Oyster Creek that have allowed the construction of dry cask storage of nuclear waste; and (2) no dry cask storage should be allowed to be built without the NRC first holding an adjudicatory public hearing, without the Petitioner's security requests being met.

The rule that established the process for the general licensing of independent spent fuel storage installations (ISFSIs) at operating reactors became effective in 1990, and implemented the requirements of the Nuclear Waste Policy Act of 1982 (NWPA). Before the rule became effective, the public was offered the opportunity to comment on the rulemaking for this general

licensing process. Also, under this process, the NRC approves and certifies spent fuel storage casks for use under the general licensing provisions. As each cask design is certified, it is added to the list of certified casks in 10 CFR 72.214 through a separate rulemaking effort. The rulemaking process for cask certification includes opportunities for public comment.

AmerGen Energy Company, LLC (AmerGen) is licensed by the NRC to operate the Oyster Creek nuclear power reactor under the provisions of 10 CFR Part 50. The licensee has also been granted a general license under the provisions of 10 CFR Part 72 to operate an ISFSI at the Oyster Creek reactor site. AmerGen will be using dry storage cask designs at Oyster Creek that the NRC has already approved for use. Because there are no pending licensing or other agency actions before the Commission, there is no additional process available to the Petitioner for which an adjudicatory hearing might be appropriate. Consequently, the Petitioner's request for an adjudicatory hearing is denied.

The Petitioner also raised concerns about the proximity of the Oyster Creek ISFSI to U.S. Route 9, stating that it was vulnerable to a terrorist attack. The Petitioner is also concerned that, since ISFSIs are located above ground, they are more exposed to the possibility of a successful terrorist attack. Security requirements for the Oyster Creek ISFSI are outlined in 10 CFR 73.51, "Requirements for the Physical Protection of Stored Spent Nuclear Fuel and High-level Radioactive Waste." This section requires the licensee to establish and maintain a physical protection system with the objective of providing high assurance that activities involving spent nuclear fuel and high level radioactive waste do not constitute an unreasonable risk to public health and safety. This is accomplished, in part, by:

- storing spent nuclear fuel and high level radioactive waste only within a protected area
- granting access to the ISFSI's protected area only to individuals who are authorized to enter the protected area

- providing barriers, systems and procedures necessary to detect and assess unauthorized penetration of, or activities within, the protected area
- providing timely communication to a designated response force whenever necessary

The licensee has taken additional security measures in response to threat advisories issued following September 11, 2001, and the facility remains at a heightened security level. Furthermore, the dry cask storage containers used at Oyster Creek are designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, lightning, hurricanes, floods, tsunamis, and seiches. The NRC requires that all ISFSI components important to safety must be designed and located so that they can continue to perform their safety functions effectively under credible fire and explosion exposure conditions. As a result, dry cask storage containers inherently afford a high level of protection. Therefore, based upon the additional security measures being taken by the licensee, and the inherent level of protection already provided by the dry cask storage container design, the Petitioner's request to halt and reverse all permits associated with the Oyster Creek ISFSI is denied.

Although the enforcement action requested by the Petitioner is denied, the NRC staff has determined that additional measures should be taken to enhance ISFSI security and, on October 16, 2002, issued Orders to all licensees of ISFSIs requiring compliance with interim safeguards and security compensatory measures. In addition, the NRC's comprehensive review includes the potential consequences of terrorist attacks using various explosives or heat-producing devices on spent nuclear fuel dry casks at ISFSIs. As the results of this review become available, the NRC will determine if additional safety or physical protection actions or requirements need to be taken at ISFSIs and will take appropriate actions to implement those measures.

## 6. Complete Loss of AC Power

### Petitioner's Concerns

The Petitioner stated that Salem must demonstrate that it has a viable plan to protect the plant in the event of a terrorist attack that cuts off all electric power, in conjunction with an attack on the diesel generators. The concern is that equipment that is vital to plant safety would not be available when necessary.

### NRC Response

Section 50.63 of 10 CFR, "Loss of All Alternating Current Power," requires that each nuclear power plant be able to withstand and recover from a station blackout (SBO) for a specified period of time. SBO is defined as the complete loss of ac electric power to the essential and nonessential switchgear buses in a nuclear power plant. A plant's specified SBO duration is based on an engineering evaluation that considers the following factors:

- redundancy of the onsite emergency ac power sources
- reliability of the onsite emergency ac power sources
- expected frequency of loss of offsite power
- probable time needed to restore offsite power

NRC rules further require that the reactor core and associated coolant, control, and protection systems, including station batteries and any other necessary support systems, must also provide sufficient capacity and capability to ensure that the core is cooled and appropriate containment integrity is maintained in the event of an SBO. The minimum SBO coping time for Salem Unit Nos. 1 and 2, based on the licensee's conservative analysis, is 4 hours.

Hot shutdown is generally the mode that plants are designed to achieve following a design-basis event (such as a large earthquake or loss-of-coolant accident.) If offsite power is lost, but the emergency diesel generators are unaffected, a plant can stay in a hot shutdown

condition for an extended period of time. If an SBO condition exists, the time in which the reactor core could be damaged would depend upon the status of important parameters such as station battery capacity, environmental effects, water inventory in emergency tanks, and reactor coolant pump seal leakage. During an SBO, plant operators could employ certain strategies (i.e., use steam-driven auxiliary feedwater pumps and atmospheric dump valves) to cool the reactor. Provided that the operators retain the capability to replenish water in tanks, and station batteries have sufficient charge for control and instrument power, nuclear power plants can operate for extended periods at hot shutdown while ac power is being restored.

The NRC staff considers that, even under the current threat environment, there is a very low likelihood that saboteurs would be able to successfully damage all offsite and onsite sources of ac power at Salem. This conclusion is based on the separate and redundant sources of offsite and onsite ac power that are available at the plant, as well as the heightened security measures that the licensee is taking in conjunction with the Orders issued on February 25, 2002. Therefore, to the extent that the licensee is implementing additional measures in response to the Orders, the NRC is partially granting the Petitioner's request that action be taken to protect nuclear power plants from the loss of ac power resulting from postulated acts of sabotage.

## B. Other Concerns and Recommendations

### 1. Operational Security Readiness Evaluation (OSRE) Requirements

#### Petitioner's Concerns

The Petitioner raised several concerns about the NRC's program to verify security readiness through inspections and tests conducted under the OSRE program. The concerns included an observation that the NRC does not use force-on-force exercises to demonstrate security compliance at reactors that have permanently shut down, non-power reactors, spent

fuel storage at operating reactors and reactors that have permanently shut down, and “operating reactors during outages where dozens of temporary workers, with minimal background checks, are allowed onsite.”

On the basis of a report prepared by the UCS, the Petitioner also contends that NRC force-on-force tests have revealed serious security problems at approximately half of the operating plant sites, and that the majority of plant sites have only been tested once. The UCS report concluded that there is “little assurance that sites failing an OSRE several years ago have adequate security today.” As a result, the Petitioner recommends that: (1) the NRC should conduct OSRE tests at all operating nuclear power plants, reactors that have permanently shut down with onsite spent fuel storage, and non-power reactors; (2) OSRE tests must be expanded to include spent fuel as a sabotage target; (3) OSRE tests must account for an active role by multiple insiders; (4) the frequency of the OSRE tests must be no less than once every 4 years; (5) OSRE tests should be administered by NRC headquarters rather than by its regional offices to ensure consistent quality; and (6) the NRC should cancel the proposal to allow nuclear plants to conduct their own security inspection.

#### NRC Response

As previously stated, 10 CFR 73.55 requires all licensees to establish a physical protection system and a security organization with the objective of providing high assurance that activities involving special nuclear material are not inimical to the common defense and security, and do not constitute an unreasonable risk to the public health and safety. The physical protection system is required to protect against the DBT of radiological sabotage.

Licensees are also required to develop physical security plans (PSPs) in accordance with 10 CFR 73.55(a), and these plans must be submitted to the NRC for approval before they are implemented. Prior to establishing the OSRE program, NRC regional security teams

conducted routine inspections that were designed to evaluate compliance with commitments made in approved PSPs and to assess the capabilities of the licensees' security programs. Although these commitments were intended to ensure that the security organizations were able to protect against the DBT, the inspections carried out to evaluate compliance with these commitments did not provide for performance testing of tactical response capabilities or evaluation of the effectiveness of these commitments to protect against the DBT.

As a result, the NRC established the OSRE program in 1991. The OSRE program, which is performance-based, was designed to enhance regional inspection efforts by using force-on-force exercises conducted by licensees as a method of evaluating their response capabilities, and it included the validation of licensees' target sets. A target set consists of interrelated equipment or components that if disabled or destroyed would result in core damage, assuming no credit for operator intervention or emergency response action. Between August 1991 and August 2001, the NRC conducted 81 OSRE inspections. During these inspections, OSRE teams identified weaknesses at 37 plants. In general, these weaknesses were attributed to deficiencies in the licensees' contingency response plan, training, or execution of the plan. No one issue dominated the weaknesses found. The staff also notes that for the 15 OSREs conducted between April 2000 and August 2001, weaknesses were identified in 9 of 59 exercises or 15 percent of the time; hence the attacking force was not able to accomplish its objective and commit radiological sabotage 85 percent of the time.

The performance of licensees in OSRE exercises is sometimes mischaracterized. OSRE exercises are tough commando-style raids, designed to identify shortcomings in security personnel performance or strategy. Prior to the exercise, the attacking force is made aware of the licensee's defensive strategies as well as its methods and provisions for protecting target sets and critical equipment. In addition, plant operators and emergency response personnel

are not allowed to intervene during the exercise to mitigate the consequences of the attacking force's actions. The NRC staff is not aware of any comparable performance testing of security measures for any other type of commercial industrial facilities. Identification of a weakness during an exercise leads to immediate corrective or compensatory measures to ensure that the security programs remain effective.

Following the events of September 11, 2001, the NRC temporarily discontinued force-on-force exercises under the OSRE program because the conduct of these exercises would be a significant distraction from actual site security and could elicit inappropriate responses by armed security personnel. The NRC had also diverted its limited security inspection resources to staff response centers to monitor and evaluate licensees' heightened security posture. The NRC has recently reinitiated OSRE-type tests by initially implementing the table-top component of these exercises. For the first time, these tests involve a wide array of Federal, State and local law enforcement and emergency planning officials. The NRC expects to expand the exercises to include a force-on-force component at the beginning of next year. Full security performance reviews, including force-on-force exercises, are planned to be carried out at each nuclear power plant on a 3-year cycle instead of the 8-year cycle that had been used prior to September 11, 2001.

Moreover, the staff notes that actions associated with the Safeguards Performance Assessment (SPA) task force were also affected by the events of September 11, 2001. The SPA task force was created in 1998 to study the lessons learned from the OSRE program, and make recommendations for future tactical response evaluations. One recommendation included a proposal for the industry to assume a greater role in assessing licensee tactical response capability. However, further developments associated with this proposed program have been suspended pending completion of the NRC's comprehensive security review.

Finally, the other recommendations raised by the Petitioner (items 1, 2, 3 and 5) concerning the current OSRE program, such as the administration, frequency, assumed threat scenarios, and types of plants (e.g., decommissioned plants and ISFSIs) within the scope of these programs, have been included as a part of NRC's comprehensive security program review. Thus, the NRC has, in effect, partially granted the Petitioner's requests to the extent that: (1) table-top drills have resumed; (2) force-on-force drills will resume in the near future on a planned 3-year cycle; and (3) the other issues raised by the Petitioner concerning the OSRE program are being examined as a part of the NRC's comprehensive security review.

## 2. Availability of Potassium Iodide

### Petitioner's Concerns

On the basis of a report prepared by the UCS, the Petitioner requested that the NRC require potassium iodide (KI) be readily available for people living in the vicinity of all nuclear reactors. The Petitioner stated that this step would ensure that people would be protected to the fullest extent possible in the event of a successful sabotage attack against a nuclear reactor.

### NRC Response

Potassium iodide is a salt, similar to table salt. Its chemical symbol is KI, and it is routinely added to table salt to make it "iodized." If taken as a pill within the appropriate time and at the appropriate dosage, KI blocks the uptake of radioactive iodine by the thyroid gland, thereby reducing the risk of thyroid cancers and other diseases that might otherwise be caused by thyroid uptake of radioactive iodine that could be dispersed in a severe reactor accident.

On April 19, 2001, the NRC revised its regulations to permit States or Tribes with a population within the 10-mile emergency planning zone of commercial nuclear power plants to consider including KI as a protective measure for the general public to supplement sheltering

and evacuation in the unlikely event of a severe nuclear power plant accident. Concomitant with this action, the Commission decided to provide funding for an initial supply of KI for a State or Tribe that chose to incorporate KI for the general public in its emergency plans. Individual States and Tribes were given the responsibility to further decide how best to stockpile and/or distribute KI to affected localities and citizens.

Following the events of September 11, 2001, the NRC expedited its process for providing KI to the States. On December 20, 2001, the Commission showed its continued support for the KI program by announcing its intent to supply KI to requesting States within approximately 30 days.

As of October 21, 2002, 17 States; Massachusetts, Connecticut, Maryland, Vermont, Delaware, Florida, Alabama, Arizona, New York, New Jersey, North Carolina, South Carolina, Pennsylvania, California, Ohio, Virginia, and New Hampshire have requested and/or received KI tablets. Delaware and New Jersey have received their requested amounts of KI. Each State is developing an implementation program to ensure that KI will be readily available should the need arise. Therefore, to the extent that KI will be available to the general public in the States of Delaware and New Jersey residing within 10 miles of Salem, Hope Creek, and Oyster Creek, the Petitioner's request regarding the distribution of KI has been satisfied.

### 3. Emergency Planning Oversight

#### Petitioner's Concerns

The Petitioner recommended that the NRC direct the New Jersey Department of Emergency Management and the State Police to allow citizen stakeholder groups such as UNPLUG Salem and Jersey Shore Nuclear Watch to observe and comment upon emergency planning (EP) and evacuation drills. In addition, the Petitioner suggested that the NRC should

direct the above to include nuclear terrorism as a subject of evacuation drills and emergency planning.

*NRC Response*

The response to a radiological emergency at a nuclear facility involves a number of interrelated functions performed by onsite and offsite components of each site's emergency response organization. The effectiveness of this organization is critical to ensure the health and safety of the public. In recognition of this important function, 10 CFR 50.47(b)(14) requires that licensees must conduct periodic drills and exercises. This regulation is further supported by Appendix E to 10 CFR Part 50, "Emergency Planning and Preparedness for Production and Utilization Facilities." Appendix E requires that EP drills and exercises must be conducted as close to actual accident conditions as practical, and must involve the principal functional areas of the licensees' emergency response capabilities.

The stated purpose for EP drills and exercises is to develop and maintain key skills, including: (1) testing the adequacy of timing and content of implementing procedures and methods; and (2) testing emergency equipment, communication networks, and public notification systems. Appendix E further directs that: (1) the EP training program provide for the training of employees through periodic drills and exercises to ensure that employees of the licensee are familiar with their specific emergency response duties; and (2) other persons whose assistance may be needed in the event of a radiological emergency must participate in the training and drills. The licensee's emergency response training program must comprise the following categories of plant workers:

- directors and/or coordinators of the plant emergency organization
- personnel responsible for accident assessment
- control room shift personnel

- radiological monitoring teams
- fire control (fire brigades) and damage control (repair) teams
- first aid and rescue teams, and medical support personnel
- licensee's headquarters support personnel
- security personnel

In addition, a radiological orientation training program should be made available to local services personnel (e.g., local emergency services/Civil Defense, local law enforcement personnel, and local news media).

The NRC's regulations further address the need for licensees to promptly rectify problems identified during drills and exercises. This is accomplished, in part, through formal critiques conducted by licensees in order to identify any weak or deficient areas in need of correction. Consequently, licensees are expected to perform an effective performance evaluation following a drill or exercise, and NRC inspectors scrutinize the licensees' critique process. Any deficiency or observation noted by NRC inspectors is processed through the Significance Determination Process under the Reactor Oversight Process (ROP), and these findings will be formally documented in an Inspection Report. Inspection Reports are available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records (PARS) component of NRC's electronic records system (ADAMS). ADAMS is accessible from the NRC Web site at: <http://www.nrc.gov/reading-rm.html> (the Public Electronic Reading Room).

The NRC uses inspection findings together with objective performance indicators (PIs) to assess plant performance within a regulatory framework of seven cornerstones of safety: (1) initiating events; (2) mitigating systems; (3) integrity of barriers to release of radioactivity; (4) emergency preparedness; (5) occupational radiation safety; (6) public radiation safety; and

(7) physical protection. PIs and inspection findings are evaluated and given a color designation based on their safety significance. Green inspection findings or PIs indicate a very low risk significance and therefore have little or no impact on safety. White, yellow, or red inspection findings or PIs each, respectively, represent a greater degree of safety significance. The performance indicators, inspection findings, and the assessment letters describing plant performance, including emergency preparedness performance, are posted on the NRC Web site at: <http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/index.html>.

The NRC and the Federal Emergency Management Agency (FEMA) are the two Federal agencies responsible for evaluating emergency preparedness at and around nuclear power plants. The NRC is responsible for assessing the adequacy of onsite emergency plans developed by the licensee, while FEMA is responsible for assessing the adequacy of offsite emergency planning. Although the NRC regulates its licensees' EP programs, FEMA serves as the lead Federal agency for planning preparedness for all types of peacetime radiological emergencies. The NRC works in consultation with FEMA on a number of emergency preparedness issues. As the lead agency, FEMA issues policy and guidance to assist State and local governments in developing and implementing their radiological emergency response plans and procedures. Much of this guidance is developed with the assistance of the Federal Radiological Preparedness Coordinating Committee (FRPCC) and its member agencies. The exercise demonstration provides an input to the review process in order for the NRC and FEMA to evaluate the state of emergency preparedness. The NRC relies on FEMA's reasonable assurance findings to determine that adequate protective measures can and will be taken in the event of a radiological emergency to protect public health and safety.

Although citizen groups such as UNPLUG Salem and Jersey Shore Nuclear Watch may be key stakeholders within their communities, they are not a part of the licensee's emergency

response organization and do not have a stated or active emergency response role at Salem, Hope Creek, or Oyster Creek. As stated above, FEMA and the NRC are the agencies legally charged with regulatory oversight of nuclear power plant emergency planning. The inclusion of non-participating individuals or groups would, thus, not contribute to the stated purpose of the drills and exercises. Furthermore, the NRC lacks the authority to direct a State or local government agency to permit citizen groups to participate in emergency response drills or exercises. Individuals or groups desiring to observe EP drills need to contact the New Jersey Office of Emergency Management (NJOEM) directly. Therefore, the NRC is denying the Petitioner's request to direct the NJOEM and the State Police to allow citizen stakeholders groups to observe and comment upon EP drills and exercises.

As previously stated, current regulations require that major portions of a licensee's emergency response capabilities must be exercised. The scenarios used during EP exercises, along with minimum frequencies, are developed by licensees in consultation with State emergency planning representatives in order to demonstrate specific response capabilities. The NRC staff expects that the scenarios will vary from exercise to exercise, such that all major elements of the plans and emergency response organizations are tested. The specific details of any particular scenario are best left to the participating organizations to be mutually determined. Because nuclear power plant security is an important cornerstone in protecting public health and safety, some States have included security-related events as one of the emergency plan elements tested.

Therefore, to the extent that security-related events are already considered among other possible EP drill scenarios tested, the Petitioner should consider the request, that the NRC direct the NJOEM and the State Police to include nuclear terrorism as a subject of EP exercises and drills, has been satisfied.

#### 4. Miscellaneous Recommendations

##### Petitioner's Concerns

The Petitioner raised other concerns that were not specific to the nuclear power plants located in New Jersey:

- Existing security regulations do not provide adequate protection against known terrorist threat capabilities. For example, the regulations do not require protection against attacks by aircraft, boats, and trucks. Therefore, the NRC should revise the design-basis threat to include attacks by aircraft, boats, and trucks and ensure that all nuclear reactors are adequately protected against the revised design-basis threat.
- Regulations assume that only a single insider will attempt sabotage. The events of September 11, 2001, demonstrated that terrorists may devote the time and effort necessary to place more than one individual working at a nuclear reactor site.
- The NRC assumes that its regulations governing access control and authorization are fully effective in preventing sabotage by an insider. These regulations require background checks, drug and alcohol screening, and continuing behavior observation. But while background checks and the drug and alcohol screening have resulted in individuals being denied access or having their access privileges withdrawn, the continuing behavior observation has seldom, if ever, identified a potential problem. Thus, all individuals getting past the background checks and screenings have virtually unfettered ability to sabotage the nuclear reactor and spent fuel.
- Existing regulations governing changes to nuclear reactor facilities and their operating procedures require prior NRC approval for changes that reduce safety margins. But nuclear reactor owners routinely make changes without NRC approval even though they have not evaluated whether the proposed changes make it easier for insiders to carry out sabotage. Therefore, the NRC should require all nuclear reactor owners to formally

evaluate the risk of sabotage by an insider when they make physical modifications to facilities and revise procedures.

NRC Response

The Petitioner made a number of recommendations associated with the current DBT, access authorization requirements, and facility changes that could potentially impact plant security. As previously stated, the NRC is conducting a comprehensive review of the agency's security and safeguards programs. This effort includes a thorough review of the adequacy of the DBT described in 10 CFR Part 73, as well as current access authorization requirements. As the results of this on-going effort become available, individual recommendations will be evaluated and, if appropriate, incorporated into NRC's regulatory processes. With respect to modifications to plant facilities and procedures, the site security plan describes the critical features of the plant design necessary to defend against radiological sabotage. Paragraph 50.54(p)(2) to 10 CFR states that the licensee may make changes to the security plan without prior NRC approval if the changes do not decrease the safeguards effectiveness of the plan. Therefore, existing regulations ensure that changes to facility design or procedures that affect the security plan are evaluated for their impact. Changes that would reduce the effectiveness of the security plan need NRC review and approval prior to implementation.

5. Availability of Information to the Public

Petitioner's Concerns

The Petitioner requested that NRC shall agree to reopen its entire web site to stakeholder groups like UNPLUG Salem and Jersey Shore Nuclear Watch, with acceptable means of security involved.

NRC Response

Soon after September 11, 2001, the NRC withdrew information that could be sensitive or useful to potential terrorists from its public web site. On December 3, 2001, the NRC

deployed Release 1 of its redesigned web site, and, since that time, has gradually added new information to the web site as the staff continues to review potential sensitive information. The NRC will continue to make additional information available as it completes more reviews. The NRC considers all members of the public to be stakeholders in its activities, and appreciates the public's patience as the agency proceeds with the task of rebuilding its web site. However, in the NRC's continued effort to ensure the safeguarding of nuclear material and safety at U.S. nuclear power plants, the NRC is denying the Petitioner's request for special access to sensitive information by public interest groups on its web site.

### III. Conclusion

The Petitioner raised a number of issues and policy questions concerning public health and safety associated with the possibility of terrorist activity directed at the four nuclear power plants located in the State of New Jersey. The NRC staff maintains that the immediate closure of Salem, Hope Creek, and Oyster Creek is not necessary to provide adequate protection of public health and safety. The staff considers that current regulations, as augmented by the interim compensatory security measures set forth by the Orders issued on February 25, 2002, and the actions taken by other various Federal agencies, adequately address the current threat environment in a consistent manner throughout the nuclear industry.

Therefore, the NRC concludes that it has, in effect, partially granted the Petitioner's request for increased security at Salem, Hope Creek, and Oyster Creek to the extent that many of the concerns raised by the Petitioner are included within the scope of the Orders issued to all nuclear power plants on February 25, 2002, or are a part of the NRC staff's comprehensive review to evaluate the agency's security and safeguards programs. The Orders required that all commercial nuclear power plant licensees implement interim compensatory security measures for the generalized high-level threat environment. The remainder of the Petitioner's requests are denied for the reasons previously stated in the Director's Decision.

The NRC staff further notes that the Orders do not obviate the need for licensees to continue to implement protective measures in response to changes in the threat environment as described in NRC Regulatory Issue Summary 2002-12A, "NRC Threat Advisory and Protective Measures System," and maintain the effectiveness of existing security measures taken in response to the events of September 11, 2001. The requirements will remain in effect pending notification from the Commission that a significant change in the threat environment has occurred, or until the Commission determines that other changes are needed following a more comprehensive reevaluation of current safeguards and security programs, presently underway.

A copy of this Decision will be filed with the Secretary of the Commission so that the Commission may review it in accordance with 10 CFR 2.206(c). As provided for by this regulation, the Decision will constitute the final action of the Commission 25 days after the date of the Decision unless the Commission, on its own motion, institutes a review of the Decision within that time.

Dated at Rockville, Maryland, this 1st day of November 2002.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

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Jon R. Johnson, Deputy Director  
Office of Nuclear Reactor Regulation

**ENCLOSURE 2**

**DIRECTOR'S DECISION DD-02-03**

**COMMENTS ON PROPOSED DIRECTOR'S DECISION**

**ENCLOSURE 3**

**DIRECTOR'S DECISION DD-02-03**

**NRC STAFF RESPONSE TO PETITIONER'S COMMENTS**

**ENCLOSURE 4**

**DIRECTOR'S DECISION DD-02-03**

***FEDERAL REGISTER* NOTICE**