DD-02-XX

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION

Samuel J. Collins, Director

In the Matter of	)	Docket Nos. 50-003, 50-247,
	)	and 50-286
ENTERGY NUCLEAR OPERATIONS, INC.	)	License Nos. DPR-5, DPR-26,
	)	and DPR-64
	)	
(Indian Point Nuclear Generating Unit Nos. 1, 2, and 3)	)	(10 CFR 2.206)

PROPOSED DIRECTOR'S DECISION UNDER 10 CFR 2.206

I. Introduction

By letter dated November 8, 2001, as supplemented on December 20, 2001, Riverkeeper, Inc., et al. filed a Petition pursuant to Title 10 of the *Code of Federal Regulations*, Section 2.206 (10 CFR 2.206). The Petitioners requested that the U.S. Nuclear Regulatory Commission (NRC) take the following actions: (1) order the licensee to suspend operations, revoke the operating license, or adopt other measures resulting in a temporary shutdown of the Indian Point Nuclear Generating Unit Nos. 2 and 3 (IP2 and 3); (2) order the licensee to conduct a full review of the facility's vulnerabilities, security measures, and evacuation plans; (3) require the licensee to provide information documenting the existing and readily attainable security measures which protect the IP facility against land, water, and airborne terrorist attacks; (4) immediately modify the IP2 and 3 operating licenses to mandate certain specified security measures sufficient to protect the facility; and (5) order the revision of the licensee's emergency response plan and Westchester County's radiological emergency response plan (RERP) to account for possible terrorist attacks and prepare a comprehensive response to multiple, simultaneous attacks in the region, which could impair the efficient evacuation of the

area. In addition, the Petitioners requested that the NRC take prompt action to permanently retire the facility if, after conducting a full review of the facility's vulnerabilities, security measures, and evacuation plans, the NRC finds that the IP facility cannot be adequately protected against terrorist threats. Further, separately from the above issues, the Petitioners requested that the NRC order the licensee to undertake the immediate conversion of the current water-cooled spent fuel storage system to a dry cask system. The bases for the requests are that (1) the IP facility is a plausible target of future terrorist actions, (2) actual threats against nuclear power plants have been documented, (3) IP is currently vulnerable to a catastrophic terrorist attack, (4) a terrorist attack on IP2 and 3 would have significant public health, environmental, and economic impacts, and (5) the Westchester County's RERP is inadequate because it is based on erroneous assumptions.

In a letter dated December 20, 2001, the NRC informed the Petitioners that their request for a full review of the facility's vulnerabilities, security measures, and evacuation plans at IP2 and 3 were approved, in part, because the NRC had already taken action to require licensees to enhance security and the Commission had directed the staff to undertake a comprehensive review of plant security. In light of the facility's defense-in-depth, the heightened security measures implemented in response to the events of September 11, and the NRC's ongoing reevaluation of its safeguards regulations and programs, the NRC did not consider the immediate closure of IP2 and 3 to be necessary to provide adequate protection of the public health and safety. Further, the NRC informed the Petitioners that the issues in the Petition were being referred to the Office of Nuclear Reactor Regulation (NRR) for appropriate action.

In its December 20 letter, the NRC told the Petitioners that a public meeting or telephone conference with the NRR Petition Review Board (PRB) was not necessary or appropriate at the time since the Petitioner's request was already being treated as a 2.206

Petition and because of the sensitive nature of the information. Under normal circumstances, the NRC would closely follow Management Directive (MD) 8.11, "Review Process for 10 CFR 2.206 Petitions," when reviewing requests for enforcement action; however, since the Petition involved sensitive security information, the NRC deferred application of certain public aspects of the MD 8.11 process pending further developments of our security review.

On December 20, 2001, the Petitioners provided a declaration from Dr. Gordon Thompson dated December 7, 2001, and requested that the declaration be included as a supplement to their Petition. The NRC treated the declaration as a supplement to the Petition. Although the NRC had initially withheld the Petition from public distribution pending Commission guidance about public dissemination of potential security information, the NRC has now determined that the Petition can be made publicly available. Therefore, the documents are available in the NRC's Agencywide Documents Access and Managment System (ADAMS) for inspection at the Commission's Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records are also accessible from the ADAMS Public Electronic Reading Room on the NRC Web site http://www.nrc.gov/reading-rm/adams.html. Persons who do not have access to ADAMS or have problems in accessing the documents located in ADAMS should contact the NRC PDR reference staff by telephone at 1-800-397-4209 or 301-415-4737 or by e-mail to pdr@nrc.gov.

Entergy Nuclear Operations, Inc., responded to the Petition on February 11, 2002, and the staff considered the information in reviewing the Petition.

II. Discussion

Full Review of Vulnerabilities and Security Measures

In the Petition, as supplemented, the Petitioners requested that the NRC order the licensee to conduct a full review of the facility's vulnerabilities, security measures, and

evacuation plans. The Petitioners stated that the reactor, spent fuel, control rooms, and electrical switching were vulnerable to terrorist attack. The Petitioners' request was based on the following assertions: (1) IP2 and 3 are a plausible target because of the population density of the surrounding area and the proximity to New York City, (2) news releases have documented threats against nuclear facilities, (3) an operational plant is more vulnerable, (4) an attack could damage cooling to the spent fuel pools and/or drain the pools, leading to fuel cladding oxidation, fire, and release of radioactive materials, and (5) the design-basis threat did not consider a terrorist attack. The Petitioners also stated that the facility is not currently equipped to defend itself from terrorist attacks, the licensee has a poor record in security and emergency preparedness, and nuclear industry security forces have repeatedly failed to repell mock attacks. The Petitioners also believe that an attack on an operating reactor would force plant operators to face competing interests from safe operations and physical security.

Staff Response

The NRC and its licensees have dealt with the issue of protection of licensed facilities against sabotage or attack for a number of years. Security against sabotage has been an important part of the NRC's regulatory activities, with defense-in-depth as the guiding principle. NRC regulations ensure that nuclear power plants 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, professional security forces, and NRC regulatory oversight provide an effective deterrence against potential terrorist activities that could target equipment vital to nuclear safety.

The NRC requirements for the defense of nuclear power plants are defined by the "design basis threat" (DBT). The DBT is specified in general terms in 10 CFR 73.1 and in greater detail in sensitive documents. The DBT was prepared by safeguards experts on the

basis of information from the Department of Energy and the intelligence community about terrorist-related information both abroad and in the United States. Before September 11, the DBT defined the licensee's defense obligation and the NRC's assessment of the reasonably likely sabotage threat.

In 10 CFR Part 73, "Physical Protection of Plants and Materials," the NRC provides detailed requirements designed to protect nuclear power plants against acts of radiological sabotage, prevent the theft of special nuclear material, and protect safeguards information against unauthorized release. The requirements of Part 73 are as follows:

1. The licensee permits only authorized activities and conditions within established protected areas, material access areas, and vital areas by using controls and procedures, defined boundaries, detection, communication and surveillance subsystems, and by establishing schedules of authorized operations.
2. The licensee prevents unauthorized access of persons, vehicles and objects into protected and vital areas by using detection and barrier systems.
3. The licensee provides for authorized access and assures detection of and response to unauthorized penetrations of the protected area.
4. The licensee permits only authorized control and movement of special nuclear material.
5. The licensee provides response capabilities to assure that NRC requirements are achieved.
6. The licensee maintains a well-equipped and highly trained security organization.
7. The licensee installed physical barriers to protect vital equipment and material.
8. The licensee installed detection, surveillance, and alarm systems capable of sensing unauthorized penetrations of isolation zones and ensuring a prompt response action.

9. The licensee provides access authorization (e.g., background checks, routine worker screening, badging, etc.) programs and procedures.

10. The licensee ensures that all guards and armed response individuals have the ability to communicate with a continuously manned alarm station.

11. The licensee established an effective testing and maintenance program to verify that all physical barriers, and detection and alarm systems are capable of meeting NRC requirements.

The current NRC regulations require all licensees to establish a physical protection system and a security organization. These requirements are necessary to prevent the unauthorized access of persons, vehicles, and materials into protected and vital areas and ensure that security personnel respond to unauthorized penetrations of the protected area. Licensees are also required to develop physical security plans (PSPs) and submit these plans to the NRC for approval before implementing them. (NRC regional security teams conducted routine inspections for 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.) Performance testing has been done by the staff through the Operational Safeguards Response Evaluation, which have been done at all sites. In addition, the licensees are required to establish a liaison with local law enforcement organizations for added assistance in the event of an attack.

Shortly after September 11, the NRC recognized the need to reexamine the basic assumptions underlying the current nuclear facility security and safeguards programs.

Chairman Richard A. Meserve, with the full support of the Commission, directed the staff to undertake a top-to-bottom review of the NRC's security regulations and programs. The security review includes the NRC's participation with the Office of Homeland Security, the Federal Bureau of Investigations (FBI), Departments of Transportation and Energy, and others to keep the NRC advised of the current threat environment. The NRC's participation with these agencies allows the NRC to communicate its actions to other Federal agencies, ensuring an appropriate and balanced response throughout the nation's entire critical energy infrastructure.

Attacks like September 11 were of a type that have not been part of the NRC's planning (or that of any other agency with similar responsibilities). Moreover, there are other aspects of the September 11th attack and the subsequent assessments that require the NRC and its licensees to reevaluate the type of assault that might be mounted against a nuclear power plant. As a result, on February 25, 2002, the NRC issued Orders to all operating power reactor facilities to require that certain interim compensatory security measures be taken beyond those called for by current regulations. These interim measures are the result of the NRC's initial review of current safeguards and security plan requirements and a review of information provided by the intelligence community. Although licensee responses to the prior Threat and Safeguards Advisories Safeguards (which provided information about potential threats and possible prompt actions for the licensee to consider implementing) were adequate to provide reasonable assurance of adequate protection of public health and safety, the NRC also determined that certain compensatory measures were prudent to address the generalized high-level threat environment in a consistent manner throughout the nuclear reactor industry. 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 and added certain security enhancements. For security reasons, the details of the security requirements cannot be made

public. In general, the requirements include additional personnel access controls; enhanced requirements for guard forces; new requirements for searches of vehicles approaching nuclear facilities; enhanced capability to respond to and mitigate any large fires or explosions on site; and heightened coordination with appropriate local, State, and Federal authorities. The Order also directed licensees to evaluate and address potential vulnerabilities to maintain or restore cooling to the core, containment, and spent fuel pool and 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 security strategies are intended to help identify and utilize any remaining equipment and capabilities to maintain or restore core, containment, and spent fuel pool cooling, including both onsite and offsite resources. These requirements will remain in effect until The NRC notifies licensees that the threat environment has significantly changed or until the NRC determines, as a result of the ongoing comprehensive reevaluation of current safeguards and security programs, that other changes are needed. In addition, pursuant to 10 CFR 2.202, the NRC concluded that in the circumstances described above, the public health, safety, and interest require that these Orders be made effective immediately.

As part of the comprehensive review of safeguards vulnerabilities, the NRC will reexamine the DBT and modify it as appropriate. As in the past, the NRC will coordinate its evaluation with various other Government agencies and discuss resource commitments with the military, the States, and local law enforcement. If a credible vulnerability is identified that is not addressed by the actions of another Federal agency, the NRC staff will consider additional physical protection, material control, and other appropriate requirements. The NRC will continue to be assisted by the Office of Homeland Security and other Federal agencies in evaluating threats beyond the defensive capabilities of NRC licensees. Because of the budgetary obligations that might be associated with any new responsibilities, the Office of

Homeland Security will be a central player in discussions to define the appropriate boundary between the private and public sector in the defense of nuclear facilities.

Although the NRC cannot rule out the possibility of future terrorist activity directed at a licensee's site before implementing any further enhancements to its safeguards programs, the NRC believes that these facilities can continue to operate safely. Nuclear power plant design is based on defense-in-depth principles, and includes many features to protect public health and safety. For example, reinforced containment buildings and redundant safety systems would help trained operators prevent or limit the release of radioactive material in the event of a terrorist attack. In addition, NRC requirements for coping with fires and station blackout (loss of offsite and onsite power) provide added capability to bring the plant to safe shutdown conditions assuming such aspects as loss of the control room to fire or failure of the emergency diesel generators. (The control rooms for IP2 and 3 are also located in separate buildings.)

The NRC requires careful background checks (to minimize the risk of insider assistance) and facility access controls, delay barriers, and intrusion detection systems (to detect potential attackers). The NRC also requires licensees to be able to respond with force to a group of armed attackers, using protective strategies involving layers of defense. Therefore, the NRC believes that the facilities are adequate to withstand many of the challenges from safety or safeguards events, such as armed assaults.

Regarding the issue of whether a terrorist could gain employment at a nuclear power plant, the regulations require that every employee who will have access to safety equipment have passed various background checks (past employment, references, credit history, and an FBI criminal record check) and have undergone psychological testing. During the course of employment, each employee is also subject to fitness-for-duty requirements, including random drug and alcohol testing. Behavioral monitoring of employees is also required to ensure that

aberrant actions receive appropriate attention. As in the past, access to the plants is controlled, and there are portal detectors for metals and explosives. As part of the ongoing review, the NRC is considering whether to supplement these requirements.

Full Review of Radiological Emergency Preparedness and Evacuation Planning

In its December 20 supplement, the Petitioners cited a prior NRC study prepared by Sandia National Laboratory and discussed source terms and potential radiological consequences of an attack on IP. The Petitioners were concerned about the economic and environmental consequences of an attack causing a massive release of radioactive materials.

Regarding emergency preparedness planning, the Petitioners believe that the IP onsite and offsite emergency plans did not envision an act of terrorism of the magnitude seen on September 11, 2001. Additionally, the Petitioners state that the Westchester County RERP is inadequate and does not consider the possibility of multiple simultaneous attacks on vital infrastructure relied on in the current plan.

Staff Response

The overall objective of emergency response planning is to minimize the dose to the public for a spectrum of accidents that could produce offsite doses in excess of protective action guidelines. No single accident sequence should be isolated as the one for which to plan because each accident could have different consequences, both in nature and degree. Emergency plans are intended to be broad and flexible enough to respond to a wide spectrum of events. The plans are then designed to manage any radiobiological accident, regardless of the source of the release, types of nuclides released, or magnitude, timing, or duration of release.

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 evaluating the adequacy of onsite emergency plans developed by the utility, while FEMA is responsible for assessing the adequacy of offsite (State and local) radiological emergency planning and preparedness activities. The NRC requires licensees to have detailed procedures for responding to events, making timely notifications to appropriate authorities, and providing accurate radiological information. For the offsite plans, the NRC relies on FEMA's findings in determining whether there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. The licensee, local and county emergency response officials, and State emergency management officials discuss and agree on the facility's emergency response plan.

NRC regulations require the establishment of a plume exposure pathway emergency planning zone (EPZ) about 10 miles in radius and an ingestion exposure pathway EPZ about 50 miles in radius around each nuclear power plant site. The size of the EPZs chosen represents a judgment on the extent of detailed planning which must be performed to ensure an adequate response in the event of a radiological emergency. In one emergency, protective actions may be restricted to a small part of the planning zones. On the other hand, the response measures established within the 10-mile and 50-mile EPZs provide a planning basis for expanding the protective actions if conditions of a particular accident warrant.

In the event of a severe reactor accident with offsite consequences, NRC guidance calls for the prompt evacuation of the population within a 2-mile radius of the plant and about 5 miles in the downwind direction. The guidance states that these protective actions would be expanded, as necessary, based on further assessment of plant conditions, dose assessment, and field monitoring information. At longer distances, shelter is usually the appropriate protective action, followed by relocation of segments of the population if warranted by the results and analysis of radiological measurements taken in the field. The main protective action

planned for the 50-mile EPZ is protection of the public from the ingestion of contaminated food and water. It is considered extremely unlikely that evacuation would be required at a distance of 50 miles even after the most severe accident. The planning established for the 10-mile and 50-mile EPZs, the decreasing consequences and increasing time available for taking protective actions as the distance from the plant increases, and the availability of monitoring data on which to base protective action decisions provide assurance that appropriate protective actions would be taken to protect the population within 50 miles of a site.

NRC regulations also require that the applicant for a nuclear power reactor operating license provide an analysis of the time required to evacuate and take other protective actions within the plume exposure pathway EPZ. This analysis is referred to as the "evacuation time estimate" (ETE). There are no preset minimum evacuation times that a nuclear power plant site must meet. However, the NRC expects that the ETEs for a site are a reasonably accurate reflection of the time it would take to evacuate the site environs under normal and adverse conditions. ETEs are mostly used to identify potential traffic bottlenecks so that appropriate traffic control plans can be developed. Nuclear power reactor licensees are expected to review and revise their ETEs for their sites. The revisions must take into account changes in population, road capacities, potential traffic impediments, and other factors affecting the ETEs. The ETEs are assessment tools used by decision makers for determining whether evacuation is the preferred protective action option for the general public under specific accident and offsite conditions. There are no minimum required evacuations times.

On August 1, 2001, the NRC issued Regulatory Issue Summary (RIS) 2001-16, "Update of Evacuation Time Estimates," to all holders of operating licenses for nuclear power plants. In this RIS, the NRC alerted licensees of the possible need to update ETEs as the results of the

2000 Census are published. The licensee is currently preparing a new ETE report for IP2 and 3.

The Petitioners refer to the 1982 Sandia National Laboratory (SNL) report "Calculation of Reactor Accident Consequences" (CRAC-2 Report). The reactor siting studies in the CRAC-2 report were performed as part of research on the sensitivity of various plant siting parameters. The studies used generic postulated releases of radioactivity from a spectrum of severe (core melt) accidents, independent of probabilities or mitigation mechanisms. The studies were never intended to be realistic assessments of accident consequences. The estimated deaths and injuries resulted from assuming the most adverse condition for each parameter in the analytical code. In the cited studies, the number of resulting deaths and injuries also reflected the assumption that no protective actions were taken for the first 24 hours. The studies did not, and were never intended to, reflect reality or serve as a basis for emergency planning. The CRAC-2 report analyses used more simplistic models than current technologies. The two basic conclusions from the SNL siting studies were that the mean estimated number of health effects from the assumed releases for all reactor sites varied by up to more than 4 orders of magnitude and that the financial costs of the releases were dominated by clean-up costs and replacement power costs. The SNL studies provided a useful measure to compare sites, not to analyze plant-specific accident consequences.

FEMA has established the Radiological Emergency Preparedness Program to (1) ensure that the health and safety of citizens living around commercial nuclear power plants can be adequately protected in the event of a nuclear power plant accident, (2) inform and educate the public about radiological emergency preparedness, and (3) make findings and determinations as to the adequacy of State and local plans and the capability of State and local governments to effectively implement these plans and preparedness measures. Such findings

and determinations, where appropriate, are submitted to the NRC for use in licensing proceedings. In accordance with a Presidential Directive and Federal mandates, FEMA issues policy and guidance to assist State and local governments in developing and implementing their radiological emergency response plans and procedures. Federal agencies also have plans in place to coordinate their response activities and share their resources in support of State and local officials during an emergency. Coordination of activities includes joint planning and training sessions and exercise participation.

The emergency planning and preparedness framework, which is set forth in the emergency plans, integrates a number of key elements, including division of responsibilities and authorities, management controls, provisions for timely and informed decision making, coordination of response organizations, adequate primary and backup communication systems, adequate assessment capabilities, adequate notification capabilities, written procedures to guide emergency response personnel, adequate public radiological emergency information and the dissemination of information to the public, and training for emergency response personnel. These key elements apply to any type of emergency, including terrorist initiated events. Emergency planning and preparedness also makes emergency workers more aware of the complex nature of emergency response and fosters a better understanding not only of individual response tasks but also of how the separate tasks combine to form diverse response capabilities. Trained responders are extremely flexible in handling the disruptions caused by natural phenomena, such as severe weather, and flexibility implicitly extends to handling disruptions from potential terrorist activities. Further, emergency planning and preparedness is a dynamic process. Emergency plans are continually improved based on experience gained through plan implementation and as a result of exercises, drills, and actual events.

In late January 2002, the State of New York issued its annual letter of certification to FEMA. By this letter, the State informed FEMA that specific preparedness activities have been completed including training and the updating of State and local plans. However, the updating of State and local plans is an ongoing activity. The NRC staff understands that the State and counties are presently addressing the adequacy of evacuation plans through their required review process in preparation for the scheduled exercise in September 2002 and, in doing so, will review evacuation-related procedures in light of changes in demographics and conditions.

Regarding the Petitioners' assertion that the emergency plans do not contemplate multiple attacks on the infrastructure, the NRC finds that the existing emergency response plans allow considerable flexibility to respond to a wide variety of adverse conditions, including the results of a terrorist attack. The NRC advisories and the Order issued since September 11 directed licensees to take specific actions to improve existing emergency response plans, including heightened coordination with local, State, and Federal authorities.

Information about Security Measures to Protect Against Terrorist Attacks

The Petitioners requested that the NRC require the licensee to provide information documenting the existing and readily attainable security measures which provide IP with protection against land, water, and airborne terrorist attacks. This information should provide sufficient basis for the NRC to determine that physical barriers, intrusion alarms, and other measures are in place or constructed and are sufficient to meet realistically expected threats.

Staff Response

The NRC and its licensees have taken a number of steps since September 11 to increase security at NRC-licensed facilities, including safeguards advisories. At IP, the Entergy security force was augmented by the New York State Police and the National Guard (including Hudson River patrols) and local law enforcement personnel.

The NRC issued Orders on February 25, 2002, to all operating commercial nuclear power plants to implement interim compensatory security measures for the current threat environment. Some of the requirements made mandatory by the Orders formalized the security measures that NRC licensees had taken in response to advisories issued by the NRC in the aftermath of the September 11th terrorist attacks. The Orders also imposed additional security enhancements, which have emerged from our ongoing security review. The requirements will remain in effect until the NRC determines that the level of threat has diminished, or that other security changes are needed. The NRC views these compensatory measures as prudent interim measures to address the current threat environment in a consistent manner throughout the nuclear reactor industry. The specific actions are sensitive, but generally include requirements for increased patrols, augmented security forces and capabilities, additional security posts, installation of additional physical barriers, enhanced coordination with law enforcement and military authorities, more restrictive site access controls for all personnel, and enhanced capability to respond to and mitigate any large fires or explosions on site. The Orders also require additional security measures pertaining to the owner-controlled land outside of the plants' protected areas. Currently, the New York State Naval Militia provides security measures to detect and deter watercraft access from entering the exclusion area around the IP plants.

In its report on security, the State of New York Office of Public Security (OPS) provided recommendations to enhance security at IP. Many of the measures suggested have been implemented by the licensee and others are currently under advisement. The measures are recommendations by OPS to further enhance security and are not requirements in current NRC regulations. As stated in the NRC's letter of March 13, 2002, the NRC cannot release this information because of the sensitivity of the material.

The NRC understands that there must be a balance between security and openness. The NRC has sought to achieve public confidence through a variety of methods. The most effective method is NRC's policy of transparency. The NRC's open decision-making processes enable the public to be fully informed of the issues before the NRC. However, the events of September 11 have made clear the need to rethink just how open the NRC can and should be with respect to physical security issues. In this process, there are two vital, but competing, interests. The public's right to know is grounded in law and is one of the most cherished principles of our democracy. On the other hand, the NRC needs to keep sensitive information away from those whose purpose is to destroy that democracy. The NRC is striving to strike an appropriate balance between openness and security.

As stated in its letter to the Petitioners of March 13, 2002, the NRC is currently reviewing documents related to security to judge whether any of the information could provide a level of assistance to a potential adversary. In general, if a terrorist could use the information for threat analysis, target identification, or vulnerability analysis, the information will be redacted from the public record or withheld. The NRC believes that it is to no one's benefit to discuss perceived vulnerabilities and current or planned security measures in the public domain.

Mandate Security Measures Sufficient to Protect the Facility

The Petitioners requested the NRC to mandate, at a minimum, the following security measures sufficient to protect the facility:

1. Obtainment of a permanent no-fly zone from the Federal Aviation Administration (FAA) in the air space within 10-nautical miles of the IP facility.
2. A defense and security system sufficient to protect and defend the no-fly zone.
3. A defense and security system sufficient to protect the entire facility, including the containment and spent fuel storage buildings, control room and electrical equipment.

The Petitioners also believe that a terrorist attack on an operating unit would force the plant operators to face competing interests from both safe operations and physical security.

Staff Response

Since September 11, the NRC's safeguards analysts have been working continuously with the intelligence and law enforcement agencies to assess the general threat environment. The NRC, with assistance from Federal, State, and local law enforcement, has examined unusual incidents, such as flyovers and unsubstantiated threats.

Both the NRC and the FAA have provided direction regarding flyovers of nuclear power plants to NRC licensees and general aviation pilots. On September 26, 2001, the FAA issued a Notice to Airmen (NOTAM) that advised pilots to avoid the airspace above or in the proximity to various structures, including nuclear power plants. It also indicated that pilots "should not circle as to loiter in the vicinity of such facilities." This NOTAM was reissued on December 19, 2001, to include military facilities. On October 6, 2001, the NRC advised licensees to report any flyovers that are considered too close to their sites or that are of a suspicious nature to the local FAA, local FBI, local law enforcement, and the NRC. This direction remains in effect today.

The NRC is also reviewing measures to bolster defenses and to establish new antiterrorism strategies in a thorough and systematic manner. The NRC is taking a realistic and prudent approach toward assessing the magnitude of the potential threat and the strength of licensee defenses.

Since September 11, there have been no specific credible threats of a terrorist attack on a nuclear power plant. In light of the high general threat environment, the NRC and facility licensees have maintained a high security posture. The NRC has started a comprehensive review of its security program to ensure that the right protections are in place for the long term.

NRC licensees must defend nuclear power plants against the DBT. September 11 showed that the NRC and its licensees must reevaluate the scope of potential assaults of all types. However, there are limits to what can be expected from a private guard force, even assisted by local law enforcement. Even if it is determined that nuclear power plants should be defended against aircraft attack, the NRC cannot expect licensees to acquire and operate antiaircraft weaponry. Protection against this type of threat may be provided by other means within the Federal government. Similarly, there might be other types of attacks which should properly involve governmental response because of the size of the assumed attacking force or the equipment that must be employed in defense. As a result, in developing policy, the NRC must differentiate between the licensee's defensive obligation and that which must be undertaken by the government. Any gap between licensee capability and the assumed threat must be assumed by the government, and the government must prepare for this. As noted by the licensee in its February 11, 2002, response to the Petition, prior NRC proceedings have concluded that a licensee is entitled to rely on settled and traditional governmental assistance in handling an attack or sabotage by enemies of the state. In light of the difficulty in protecting the numerous specific potential targets of an aircraft attack, the NRC believes that the Nation's resources devoted to protection against terrorist attacks by air should be primarily directed toward enhancing security at airports and within airplanes in flight.

As part of the ongoing comprehensive security review, the NRC is examining the new threat environment in coordination with the new Office of Homeland Security, the FBI, FEMA, the FAA, the military, the intelligence community, and the Department of Energy, among others. The NRC will need to discuss government support with the military, the States, and local law enforcement organizations about the provision of governmental assets at appropriate times. These organizations will define the appropriate boundary between the public and private sector

in the defense of nuclear facilities. The NRC has communicated with the Governors of New York and about 40 States to ensure that any state defensive assets (National Guard or State police) are used as needed to augment licensee defensive strategies.

Dry Cask Spent Fuel Storage System

The Petitioners request that the NRC order the licensee to immediately convert the current spent fuel storage from water-cooled spent fuel pools to a dry cask storage system in a bunkered structure. As the basis for the request, the Petitioners state that this action would reduce the long-term risk of potential exothermic oxidation in the existing fuel storage facility. The Petitioners state that the NRC has never established that the spent fuel storage facility at IP is secure against foreseeable attacks nor can the NRC be certain that the spent fuel storage facility is sufficiently sound to preclude the possibility of a spent fuel fire in the event of an airborne, land, or water-based assault. The Petitioners' concerns were based, in part, on information in an NRC report, "Final Technical Study of Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants," dated October 2000, and on the Petitioners' evaluation of the consequences of a terrorist attack on the spent fuel pool buildings. In their December 20, 2001, supplement, the Petitioners state that the NRC has not performed an environmental impact statement or probabilistic risk analysis assuming all modes of water loss from the spent fuel pools, including terrorist attack, and the Petitioners further discuss the probability and consequences of exothermic oxidation of the spent fuel cladding.

Staff Response

The NRC staff believes that spent fuel can be safely stored at the IP reactor site in the current system of spent fuel pools. Although the spent fuel storage buildings at IP are not as hardened as the reactor containment structures, the spent fuel pools themselves are robust, and relatively small structures, that are partially below ground level. The spent fuel is stored in

racks resting on the floor of the pools and is covered by more than 20 feet of water. The pools are designed to prevent a rapid loss of water with the structure intact, and the pool water level and cooling system are monitored and alarmed in the control rooms. Thus, the response time for events involving the SFP is significantly longer. It is also easier to add water to the SFP from various sources because it is an open pool. The robust design and small size of the pools minimize the likelihood that a terrorist attack would cause damage of a magnitude sufficient to result in an offsite release of radioactive material. Further, offsite resources can be brought onsite to assist the response to an event.

When the NRC staff completes its reevaluation of the physical security requirements, the NRC will be able to judge whether modifications to the spent fuel pool structures and enclosures are warranted and whether additional safeguards measures should be established. If so, the NRC will act accordingly. In the meantime, the NRC has issued Orders to all operating nuclear power plants requiring certain interim compensatory measures to augment security and strengthen mitigation strategies. The spent fuel pools are within the protected area of the facility and therefore protected from certain external threats under the security provisions identified in the physical security plans (PSPs).

During the NRC review of the transfer of the licenses for IP1 and 2, the licensee indicated that it was evaluating the possible construction of an independent spent fuel storage facility. In a public meeting on March 14, 2002, the licensee stated that it was expediting its engineering review for this facility.

The regulations in 10 CFR Part 72, “Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste,” establish requirements, procedures, and criteria for the issuance of licenses to receive, transfer, and possess power reactor spent fuel, power reactor-related greater-than-class C waste, and other radioactive

materials associated with spent fuel storage in an independent spent fuel storage installation (ISFSI).

The NRC authorizes storage of spent nuclear fuel at an ISFSI under two licensing options: site-specific licensing and general licensing. Under a site-specific license, an applicant submits a license application to The NRC and the NRC performs a technical review of all the safety aspects of the proposed ISFSI. If the application is approved, the NRC issues a license that is valid for 20 years. A spent fuel storage license contains technical requirements and operating conditions (fuel specifications, cask leak testing, surveillance, and other requirements) for the ISFSI and specifies what the licensee is authorized to store at the site.

A general license authorizes a nuclear power plant licensee to store spent fuel in NRC-approved casks at a site that is licensed to operate a power reactor under 10 CFR Part 50. The licensee is required to perform evaluations of its site to demonstrate that the site is adequate for storing spent fuel in dry casks. These evaluations, including analysis of earthquake intensity and tornado missiles, must show that the cask certificate-of-compliance conditions and technical specifications can be met. The licensee must also review its security program, emergency plan, quality assurance program, training program and radiation protection program, and make any necessary changes to incorporate the ISFSI at its reactor site.

Dry cask storage allows spent fuel that has already been cooled in the spent fuel pool to be surrounded by inert gas inside a container called a cask. The casks are typically steel cylinders that are either welded or bolted closed. The steel cylinder provides a leak-tight containment of the spent fuel. Each cylinder is surrounded by additional steel, concrete, or other material to provide radiation shielding to workers and members of the public.

III. Conclusion

As stated in its letter to the Petitioners on December 20, 2001, the NRC has, in effect, partially granted the Petitioners' request for an immediate security upgrade at IP2 and 3. On September 11, 2001, the NRC took action to enhance security at all nuclear facilities, including IP2 and 3. Immediately after the attacks, the NRC advised all nuclear power plants to go to the highest level of security, which they promptly did. These facilities have remained at a heightened security level since. The NRC continues to work with other Federal agencies and is monitoring relevant information it receives on security matters at nuclear facilities. The NRC is prepared to make immediate adjustments as necessary to ensure adequate protection of the public.

On February 25, 2002, the NRC issued Orders to IP and all other operating commercial nuclear power plants to implement interim compensatory security measures for the high-level threat environment. Some of the requirements formalized a series of security measures that NRC licensees had taken in response to advisories issued by the NRC, and others are security enhancements which have emerged from the Commission's ongoing comprehensive security review. The Commission issued the Orders because the generalized high-level threat environment had persisted longer than expected and, as a result, it is appropriate to maintain the security measures within the established regulatory framework. The details of those security requirements are sensitive and will not be provided to the public. In general, the requirements include additional personnel access controls, enhanced requirements for guard forces, enhanced capability to respond to and mitigate any large fires or explosions on site, and heightened coordination with appropriate local, State, and Federal authorities. Therefore, the Petitioners' request that the licensee conduct a full review of the facility's vulnerabilities, security measures, and evacuation plans has been, in effect, granted.

The NRC finds that the existing emergency response plans are flexible enough to respond to a wide variety of adverse conditions, including a terrorist attack. The NRC advisories and the Order issued since September 11 directed licensees to take specific actions deemed appropriate to ensure continued improvements to existing emergency response plans. The Petitioners' concern that the emergency plans do not contemplate multiple attacks on the infrastructure is alleviated by the fact that the emergency plans are intended to be broad and flexible enough to respond to a wide spectrum of events. Further, the Petitioners' request that the applicable emergency plans be revised to account for possible terrorist attacks has been, in effect, granted.

As stated above, the NRC in its February 25, 2002, Order required IP and other plants to implement interim compensatory security measures for the high-level threat environment. The Order also directed licensees to evaluate and address potential vulnerabilities to maintain or restore cooling to the core, containment, and spent fuel pool and to develop specific guidance and strategies to respond to an event that damages large areas of the plant due to explosions or fire. These strategies are intended to help licensees to identify and utilize any remaining onsite or offsite equipment and capabilities to maintain or restore core, containment, and spent fuel pool cooling. If NRC's ongoing security review recommends any other security measures, the NRC will take appropriate action.

The NRC denies the Petitioners' request regarding the defense of a no-fly zone by the licensee. This is the responsibility of the Federal government. Further, the current security requirements, along with the enhancements in the February 25 Order, provide reasonable assurance of the protection of the facility.

The NRC finds that the current spent fuel storage system and the security provisions at IP adequately protect the spent fuel. However, the licensee has stated its intention to install an ISFSI. The Petitioners' request to order the installation is denied.

As provided in 10 CFR 2.206(c), a copy of this Director's Decision will be filed with the Secretary of the Commission for the Commission to review. 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 day of 2002.

FOR THE NUCLEAR REGULATORY COMMISSION

Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

PROPOSED