

February 11, 2002

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

Before the Director, Office of Nuclear Reactor Regulation

In the Matter of)	
)	
ENERGY NUCLEAR INDIAN POINT 2, LLC,)	Docket Nos. 50-247
ENERGY NUCLEAR INDIAN POINT 3 LLC,)	and 50-286
and ENERGY NUCLEAR OPERATIONS, INC.)	(License Nos. DPR-26
)	and DPR-64)
)	

**LICENSEES' RESPONSE TO RIVERKEEPER, INC.'S SECTION 2.206
REQUEST FOR EMERGENCY SHUTDOWN
OF INDIAN POINT UNITS 2 AND 3**

I. INTRODUCTION

Licensees Entergy Nuclear Indian Point 2, LLC, Entergy Nuclear Indian Point 3, LLC, and Entergy Nuclear Operations, Inc. (collectively, "Entergy") file this response in opposition to the request ("Request") filed by Riverkeeper, Inc., et al. (collectively, "Petitioners"), pursuant to 10 C.F.R. §§2.206 and 2.202, for the emergency shutdown of the Indian Point Units 2 and 3 nuclear power plants (collectively, the "Indian Point Units" or the "Units").¹ Based on the tragic events of September 11, 2001, Petitioners seek immediate shutdown of the Indian Point Units, among other measures.

¹ Entergy Nuclear Indian Point 2, LLC and Entergy Nuclear Indian Point 3, LLC are the respective owners of Indian Point 2 and Indian Point 3. Entergy Nuclear Operations, Inc. (hereinafter "ENO") is the licensed operator of both units.

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The extreme relief requested by Petitioners is based on speculative concerns, lacks an adequate legal foundation, and is factually unsupported. Therefore, Entergy submits that it must be denied.²

As more fully discussed below, Petitioners neither allege nor cite a legal basis for their Request. In particular, Petitioners advance no claim that the design or operation of the Indian Point Units violates the Atomic Energy Act or applicable Nuclear Regulatory Commission (“NRC” or the “Commission”) regulations. Rather, Petitioners mount an impermissible collateral attack on the NRC regulations relating to terrorist acts, as they apply to the Indian Point Units.

Petitioners ignore that the NRC is conducting a full review of security requirements for nuclear reactors in light of the September 11 events. It is settled that generic issues, such as plant protection against terrorist acts, are best addressed through rulemaking; indeed, NRC precedent clearly prohibits granting a §2.206 petition where the Commission is already addressing on a generic basis the issues which are the subject of the petition. Since there is an ongoing generic review by the NRC of nuclear power plant security, there should not be concern that, if the Request is denied, Petitioners will be left without an adequate forum. In a generic rulemaking proceeding, Petitioners would be afforded a full opportunity to participate in the rulemaking, consistent with applicable NRC regulations. *See* 10 C.F.R. §2.805(a).

Moreover, Petitioners’ Request lacks a credible factual basis. Petitioners’ Request rests solely on postulated “terrorist attacks” directed against the Indian Point Units, which Petitioners contend may lead to radioactive releases from the Units. The

² The portion of the Request that seeks the immediate shutdown of the Indian Point Units has already been denied by the NRC Staff. See letter from Samuel J. Collins (NRC) to Alex Matthiessen (Riverkeeper, Inc.) dated December 20, 2001 (“Collins letter”).

proffered scenarios are based on erroneous assumptions or are so improbable as to lack credibility. Further, the Request ignores the heightened state of alert that currently prevails in the U.S. society at large, and at nuclear power plants in particular. It also ignores the considerable measures already taken at the Indian Point Units to reduce the reasonably foreseeable threat of malevolent acts against the Units. Thus, the Request does not provide a factual predicate on which a potential shutdown of the Indian Point Units could be based.

In short, no legal basis exists for granting the extraordinary relief Petitioners seek, and they have come forward with no credible factual information supporting NRC action against Indian Point. Their Request, therefore, must be denied.

II. FACTUAL BACKGROUND

A. THE INDIAN POINT UNITS ARE IN FULL COMPLIANCE WITH CURRENT NRC SECURITY REQUIREMENTS

The NRC has established stringent physical security requirements for commercial nuclear plants, with which the Indian Point Units must comply. Under 10 C.F.R. § 73.55, a security organization and plant physical protection systems must be in place that provides adequate protection against attacks from external armed groups and internal saboteurs, as defined by the "design basis threat" set forth in 10 CFR §73.1(a)(1). The plant security measures must be able to prevent unauthorized access of personnel, vehicles, and materials; ensure only authorized activities are conducted; permit only authorized handling of nuclear material; and detect and respond to unauthorized penetrations. The perimeter must be monitored both visually and electronically with electronic alarms sounding at two independent continuously staffed stations. Entry points must be guarded and monitored and access must be strictly controlled. All plants must have armed response forces whose qualifications and tactical training are dictated by 10

C.F.R. Part 73, Appendix B. Each armed responder must be capable of maintaining continuous communication with each of the continuously staffed alarm stations.

A written Safeguards Contingency Plan must be developed and maintained by nuclear plants in accordance with 10 C.F.R. Part 73, Appendix C, identifying a predetermined set of threat response actions, their means of implementation, and the personnel responsible for responding to the threats.³ Further, nuclear plants are required to establish and document a working liaison with local law enforcement authorities, whom they can summon for assistance in the event of an attack.

Threats at nuclear plants are to be countered by an armed tactical force permanently stationed at the plant, whose mission is to quickly ascertain the threat's existence, assess its magnitude, and interpose itself between the threat and specific key plant areas. The capability of security response forces and systems to defend against threats is tested in live exercises monitored by the NRC using mock attack forces. *See* NRC Inspection Manual, Inspection Procedure 81110, Operational Safeguards Response Evaluation ("OSRE") (July 1, 1997). If weaknesses are identified, the plant must institute additional defensive countermeasures.

The Indian Point Units have in place formal, documented Physical Security Protection Programs and Safeguards Contingency Plans. These documents have been reviewed and approved by the NRC.⁴ The existence and implementation of these plans and their approval by the NRC assure that appropriate levels of security exist at Indian Point, in accordance with current regulatory requirements.

³ The contents of the Safeguards Contingency Plan are confidential information protected from public disclosure. 10 C.F.R. §73.21(b)(1)(viii).

⁴ *See, e.g.*, April 10, 2001 NRC Supplemental Inspection Report 05000247/2001-002 (Indian Point Unit 2).

B. HEIGHTENED SECURITY MEASURES HAVE BEEN IMPLEMENTED BY THE UNITED STATES, THE NRC AND THE NUCLEAR INDUSTRY SINCE THE SEPTEMBER 11, 2001 TERRORIST ATTACKS

Immediately following the attacks of September 11, 2001, the NRC issued a threat advisory asking all nuclear plants to implement a heightened state of alert. In response, as reported by NRC Chairman Richard Meserve, nuclear plants have augmented security forces and patrols, increased coordination with law enforcement and military authorities, imposed additional site access limitations for personnel and vehicles, and taken other short-term and long-term actions to strengthen plant capability to respond to terrorist attacks, all as provided by an October 6, 2001 "safeguards advisory" issued by the NRC.⁵

The NRC has described its own post-September 11 initiatives with regard to the security of nuclear facilities as follows:

In response to the September 11, 2001 terrorist attacks, the Commission has taken a number of actions to ensure the security of NRC-licensed facilities and materials, including activation and staffing the NRC Operations Center on a 24-hour-a-day basis. Immediately following the attacks, the NRC advised nuclear power plant licensees and fuel facilities to go to the highest level of security, and all promptly did so. In addition, the Commission has had continuous and close coordination with the Federal Bureau of Investigation, other intelligence and law enforcement agencies, the Office of Homeland Security, NRC licensees, and military, state and local authorities. The Commission has issued security advisories to licensees to update them on the available threat information and to recommend additional security measures. The Commission continues to monitor the situation, and is prepared to make any adjustments to security measures for NRC-licensed activities as may be deemed appropriate.

Private Fuel Storage L.L.C. (Independent Spent Fuel Storage Installation), CLI-01-26, 54 NRC ___, ___ (December 28, 2001), slip op. at 2-3. *See also*, Collins letter, *supra*.

⁵ See Letter from NRC Chairman Richard Meserve to Senator James Jeffords (December 17, 2001).

As noted by the NRC, since September 11, 2001 the Indian Point Nuclear Power Plant has assumed a heightened level of security based on a series of threat advisories issued by the NRC.⁶ The steps recommended by the NRC included increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with local law enforcement and military authorities, and limited access of personnel and vehicles to the site.⁷ These steps have been implemented and are being maintained, since the NRC also recommended that the heightened level of security be kept in effect due to the uncertainty about the possibility of additional terrorist attacks..

Further, since the September 11 attacks, our nation has greatly increased its vigilance on all fronts against terrorism. In particular, airport security has been greatly enhanced and more stringent inspections and weapon detection procedures have been instituted. Law enforcement is on an extremely high state of alert and major efforts have been undertaken to track down potential terrorists and thwart any future attacks. This effort goes far beyond our borders. Countries around the world have also joined the fight against terrorism and taken measures analogous to those in effect in the United States.

The implementation of heightened facility, local, state, federal and international security provisions reduces the likelihood of occurrence of a terrorist act against such facilities, including the Indian Point Units. Thus, whatever level of risk remains of an act of sabotage or terrorism against Indian Point, that level is indisputably lower than it was before September 11, 2001.

⁶ Letter from G. Scott Barber (NRC) to J. Barrett (Entergy) dated December 31, 2001, enclosing NRC Inspection Report 50/286/01-09) at 1.

⁷ Id. at 1-2.

C. THERE IS AN ONGOING, COMPREHENSIVE NRC GENERIC REVIEW OF NUCLEAR PLANT SECURITY REQUIREMENTS

The Commission has announced that it is undertaking a review of nuclear power plant security requirements in light of the September 11 events:

The Commission believes that its response to these unsettling events has been expeditious and that the current safeguards and physical security programs provide for a very high level of security at NRC-licensed facilities. However, in the aftermath of the terrorist attacks and the continuing uncertainty about future terrorist intentions, we have commenced a thorough review of our safeguards and physical security programs, from top to bottom, including those applicable to independent spent fuel storage installations. The review will involve a comprehensive examination of the programs' basic underlying assumptions.

Historically, the NRC has drawn a distinction between requiring its licensees to defend their facilities against sabotage and requiring them to protect against attacks and destructive acts by enemies of the United States. Even NRC-licensed facilities that are required to meet the most stringent security requirements (because the potential consequences of sabotage are greatest) are not required to protect against enemies of the United States. . . . The top-to-bottom review of our physical protection regulations will consider these distinctions, which have been underlying principles of the Commission's regulations in this area, and apply them as appropriate. The consideration of any adjustments to licensee, federal, state, and local response capabilities is being conducted in consultation with the appropriate authorities.

Private Fuel Storage L.L.C., *supra*, slip op. at 3-4. These statements by the Commission denote a clear intention on the part of the agency to review, in a thorough and comprehensive manner, the existing security arrangements at nuclear power plants and other nuclear facilities.

III. THERE IS NO LEGAL BASIS FOR THE RELIEF REQUESTED

A. SECTIONS 2.206 AND 2.202 PROVIDE NO BASIS FOR THE REQUESTED SHUTDOWN OF THE INDIAN POINT UNITS

Petitioners seek immediate shutdown of the Indian Point Units pending a "full review" of the Units' "vulnerabilities, security measures and evacuation plans." Request

at 1.⁸ Petitioners ground their requested relief in 10 C.F.R. §§2.206 and 2.202.⁹

However, as discussed below, the Request fails to satisfy §§2.206 and 2.202 and must be rejected.

The institution of proceedings pursuant to §2.206 is appropriate only where substantial health and safety issues have been raised. See Consolidated Edison Co. of New York (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 175-76 (1975); Northern Indiana Public Service Co. (Bailly Generating Station, Nuclear-1), CLI-78-7, 7 NRC 429, 433 (1978), aff'd, Porter County Chapter v. NRC, 606 F.2d 1363 (D.C. Cir. 1979); Yankee Atomic Electric Co. (Yankee Nuclear Power Station), CLI-96-6, 43 NRC 123, 128 (1996). Compliance with NRC requirements provides reasonable assurance of adequate protection of the public health and safety. See, e.g., 10 C.F.R. Part 50 Specific Exemptions; Clarification of Standards, 50 Fed. Reg. 50,764, 50,768, 50,771 (1985); Thermo-Lag Fire Barrier Material, DD-96-3, 43 NRC 183, 195 (1996); Ohio Citizens for Responsible Energy, DPRM-88-4, 28 NRC 411, 415 (1988). Where, as here, there is no allegation of violation of NRC regulations, there can be no basis for asserting that a

⁸ The Request also seeks that Entergy be required to provide information on the existing and readily attainable security measures which provide the Indian Point facility protection against terrorist attacks; that the operating licenses for Indian Point Units 2 and 3 be amended to incorporate specified security provisions; that the Emergency Response Plans of Entergy and Westchester County be revised to “account and prepare for possible terrorist attacks”; that the Commission promptly order the retirement of the Indian Point facility if “the NRC cannot sufficiently ensure the security of the Indian Point facility against terrorist threats”; and that the Commission order Entergy “to undertake the immediate conversion of the current spent fuel storage technology from a water cooled system to a dry cask system in a bunkered structure.” Id. at 1-2. As will be discussed below, there is no legal basis for any of these requested actions, nor are they warranted by current conditions at Indian Point or elsewhere.

⁹ 10 CFR §2.206(a) reads, in relevant part: “Any person may file a request to institute a proceeding pursuant to §2.202 to modify, suspend or revoke a license, or for any other action as may be proper ... The Request must specify the action requested and set forth the facts that constitute the basis for the Request.” 10 C.F.R. §2.202(a) states, in relevant part: “The Commission may institute a proceeding to modify, suspend, or revoke a license or to take such other action as may be proper ... [I]f the Commission finds that the public health, safety, or interest so requires or that the violation or conduct causing the violation is willful, the order may provide, for state reasons, that the proposed action be immediately effective pending further order.”

substantial health and safety issue exists that warrants action under §2.206.¹⁰ *See, e.g., Connecticut Yankee Atomic Power Co. (Haddam Neck Plant), DD-01-2, 53 NRC 333, 337 (2001) (“NRC will not take action to suspend or revoke [licensee’s] license as no violations [of NRC regulations] occurred”).*¹¹

B. THE OTHER RELIEF REQUESTED BY PETITIONERS AMOUNTS TO AN IMPERMISSIBLE COLLATERAL ATTACK ON COMMISSION REGULATIONS

Petitioners seek to impose on Entergy the obligation to address enemy or terrorist attacks in excess of the requirements of the Atomic Energy Act and the Commission’s implementing regulations. In so doing, the Request is an impermissible collateral challenge to NRC regulations and, on that basis alone, must be rejected. Dominion Nuclear Connecticut Inc. (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC ___, ___ (Dec. 5, 2001), slip. op. at 21; Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999); Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), CLI-89-8, 29 NRC 399, 416-17 (1989); Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), CLI-87-12, 26 NRC 383, 395 (1987). The proper vehicle for challenging NRC regulations is a rulemaking petition. *See, e.g., Metropolitan Edison Company* (Three Mile Island Nuclear

¹⁰ As further discussed below, the proper vehicle for raising a potential health and safety issue not contemplated by existing NRC regulations is the filing of a rulemaking petition under 10 C.F.R. §2.802, not an action against an individual licensee under 10 CFR §2.206 to enforce existing regulations.

¹¹ Nor is there credible evidence that requires, as Petitioners seek, the *immediate* shutdown of the Indian Point Units. An order to modify, suspend or revoke a license may be immediately effective, in accordance with 10 C.F.R. §2.202(a)(5), if NRC “finds that the public health, safety, or interest so require” Such summary action is a drastic measure, not to be granted except in exceptional circumstances, where it is “warranted by compelling safety considerations.” Consumers Power Co. (Midland Plant, Units 1 and 2), CLI-73-38, 6 AEC 1082, 1083 (1973). To meet this standard, Petitioners must provide credible evidence that a threat exists of sufficient magnitude to warrant summary action. Petitioners have provided no credible evidence that an enemy or terrorist attack against the Indian Point Units is probable, let alone imminent. Thus, no compelling considerations exist that would justify the immediate relief sought in the Request, as has already been ruled by the NRC staff. *See Collins letter, supra.*

Station, Unit No. 1), 11 NRC 674, 675 (1980). Indeed, as further discussed below, an appropriate disposition of a §2.206 petition that seeks a change in NRC regulations is to treat it as a petition for rulemaking. NRC Office of Nuclear Reactor Regulation, Directive 8.11, “Review Process for 10 C.F.R. 2.206 Petitions” (October 25, 2000) (“Directive 8.11”) at 12; 10 C.F.R. §2.802(a) (“Any interested person may petition the Commission to issue, amend or rescind any regulation.”).

1. The Requested Actions Are Not Required by the Regulations, the Licensing Basis or the Licensing Commitments

Petitioners’ first request for relief seeks immediate temporary suspension of operations at Indian Point, and asks that NRC conduct a “full review” of the Units’ purported vulnerabilities, security measures and evacuation plans, among other things.

Request at 1. The Petitioners advance five theories for their Request, as follows:

- a. While operational, Indian Point is unnecessarily vulnerable to risks from take-over of or damage to control rooms;
- b. The reactor walls were not designed to withstand the “accidental or intentional crash of fuel-laden jetliners”;
- c. The operating facility has multiple vulnerable points in security;
- d. NRC and Indian Point personnel “confront dual challenges when ensuring security at an operational facility” and as a result the resources of “both the agency and the licensee are stretched thin by this double-taking”; and
- e. “Shutting down the Indian Point Reactors creates a more secure environment. . . . Security of spent fuel has never been demonstrated at Indian Point.”

Request at 6-8.

The “vulnerabilities” alleged by Petitioners, if accepted as valid and deemed to require being addressed, would impose on Entergy obligations exceeding those set by the licenses for the Indian Point Units and NRC regulations. Petitioners’ Request thus seeks

to alter existing applicable security and emergency planning requirements for Indian Point and require Entergy to provide protection against a terrorist “act of war” against the Indian Point Units.

In so doing, Petitioners ignore applicable law and precedent holding that NRC licensees are not required to provide specific protection against attacks by enemies of the United States:

[A license applicant] is not required to provide for design features or other measures for the specific purpose of protection against the effects of ... *attacks and destructive acts, including sabotage, directed against the facility by an enemy of the United States, whether a foreign government or other person ...*

10 C.F.R. §50.13 (emphasis supplied).¹² See also Florida Power & Light Co. (Turkey Point Nuclear Generators Units 3 and 4), 4 AEC 9, 13 (1967), aff'd, Siegel v. AEC, 400 F.2d 778 (D.C. Cir. 1968) (“It bears emphasis that... neither [NRC] regulations nor [NRC] decisions indicate any requirement that an applicant provide for special design features or other measures for the specific purpose of protection against the effects of enemy attacks and destructive acts.”).

The Commission has enunciated sound policy reasons for this rule:

It would appear manifest, as an initial proposition, that the protection of the United States against hostile enemy acts is a responsibility of the nation’s defense establishment and of the various agencies of our Government having internal security functions.

Turkey Point, supra, 4 AEC at 9. The Commission has further explained:

¹² “Attacks and destructive acts” are those above and beyond the threats against which the reactor’s physical protection system must defend under the Commission’s specific security requirements in 10 C.F.R. Part 73. Commonwealth Edison Co. (Braidwood Nuclear Power Station, Units 1 and 2), LBP-85-27, 22 NRC 126, 137-138 (1985).

One factor underlying [the Commission's] practice in this connection has been a recognition that [facility] design features to protect against the full range of the modern arsenal of weapons are simply not practicable and that the defense and internal security capabilities of this country constitute, of necessity, the basic "safeguards" as respects possible hostile acts by an enemy of the United States.

The circumstances which compel [the Commission's] recognition are not, of course, unique as regards a nuclear facility; they apply also to other structures which play vital roles within our complex industrial economy. The risk of enemy attack or sabotage against such structures, like the risk of all other hostile acts which might be directed against this country, is a risk that is shared by the nation as a whole. This principle, we believe, is rooted in our political history and we find no Congressional indication that nuclear facilities are to be treated differently in the subject regard.

Id. In Consolidated Edison Co. of New York, Inc. (Indian Point Station, Unit No. 2), ALAB-202, 7 AEC 825, 829-30 (1974), the Appeal Board held that an attack by "an armed band of trained saboteurs" – the type of scenarios Petitioners postulate – would constitute an enemy attack under 10 C.F.R. §50.13, regardless of the actual nature or allegiance of the attackers. The Appeal Board further held that, "an applicant should be entitled to rely on settled and traditional governmental assistance in handling [such an] attack." Id. at 830.

In another Commission licensing proceeding, it was held that a scenario involving terrorists commandeering a large aircraft and flying it into the containment structure of a nuclear power plant falls squarely within the prohibition in 10 C.F.R. §50.13. Carolina Power & Light Co. (Shearon Harris Nuclear Power Plant, Units 1 and 2), LBP-82-119A, 16 NRC 2069, 2098 (1982). The Atomic Safety and Licensing Board in the Harris proceeding confirmed that the security of nuclear power plants against hostile attacks of the nature the Request contemplates is the primary responsibility of the nation's defense and internal security establishments, not the NRC.

More recently, during the 1991 Gulf War, the Director of the Office of Nuclear Material Safety and Safeguards rejected a request for emergency action analogous to the one made by Petitioners here. *See All Nuclear Facilities*, DD-91-1, 33 NRC 53 (1991). In that case, the NRC was asked to require that “existing licensee contingency plans against truck bombs be put into effect immediately and that immediately thereafter, the NRC undertake an evaluation of the adequacy of the plans and require any such improvements as it deems necessary.” 33 NRC at 54. The Director denied the §2.206 request because the requested action went beyond then existing requirements and the NRC, while reviewing the postulated threat, had not determined that any credible threat of terrorist action against NRC-licensed facilities warranted implementation of the actions sought by the petitioners. *Id.* The same result should be reached here.¹³

Finally, only a few weeks ago, the Commission reiterated its position that nuclear power plants are not required to be protected against terrorist acts by enemies of the United States:

Even NRC-licensed facilities that are required to meet the most stringent security requirements (because the potential consequences of sabotage are greatest) are not required to protect against enemies of the United States. For example, reactor licensees are required to protect against a prescriptive list of possible threats, referred to collectively as the “design basis threat.” However, our regulations stipulate that power reactors are not required to be designed or to provide other measures to counteract destructive acts by “enemies of the United States.” The basis for this distinction is that the national defense establishment and various agencies having internal security functions have the responsibility to address this contingency, and that requiring reactor design features to protect against the full range of the modern arsenal of weapons is simply not practical.

Private Fuel Storage L.L.C., *supra*, slip op. at 3-4.

¹³ Subsequently, protection against truck bombs was added to the design basis threat requirements. *See* 59 Fed. Reg. 38889 (1994).

In Siegel v. AEC, the U.S. Court of Appeals for the District of Columbia Circuit explained the underpinnings of the policy illustrated by the above decisions. The court cited the following factors as providing the rationale for excluding consideration of potential military attacks by foreign enemies in establishing the design basis for nuclear reactors:

- (1) The impracticability, particularly in the case of civilian industry of anticipating accurately the nature of enemy attack and designing defenses against it, (2) the settled tradition of looking to the military to deal with this problem and the consequent sharing of its burdens by all citizens, and (3) the unavailability, through security classification and otherwise, of relevant information and the undesirability of ventilating what is available in public proceedings.

Siegel v. AEC, *supra*, 400 F.2d at 750.

This policy does not leave a gap in the safety of nuclear reactors. Existing NRC regulations (at 10 C.F.R. Part 73) already address the “physical protection of nuclear plants and facilities,” including reasonably foreseeable and addressable industrial security risks, as distinct from the threats, attacks or sabotage by enemies of the United States whose consideration is precluded by 10 C.F.R. §50.13.

NRC regulations require that each licensee “provide physical protection at a fixed site ... where licensed activities are conducted, against radiological sabotage ... in accordance with the applicable sections of this Part” 10 C.F.R. §73.40. According to 10 C.F.R. §73.55(a), the physical protection requirements for nuclear power reactors include a specified “design basis” threat (“DBT”), which must address “radiological sabotage,” including:

- (i) A determined violent external assault, attack by stealth, or deceptive actions, of several persons with the following attributes, assistance and equipment:

- (A) Well-trained (including military training and skills) and

dedicated individuals,

(B) 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,

(C) suitable weapons, up to and including hand-held automatic weapons, equipped with silencers and having effective long range accuracy,

(D) 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, and

(E) a four-wheel drive land vehicle used for transporting personnel and their hand-carried equipment to the proximity of vital areas, and

(ii) An internal threat of an insider, including an employee (in any position), and

(iii) A four-wheel drive land vehicle bomb.

10 C.F.R. §73.1(a)(1). Pursuant to the DBT definition, a station's security plan must be designed to cope with a violent external assault by a discrete number of persons equipped with light, portable weapons, as distinct from the military-style attacks to which the prohibition in 10 C.F.R. §50.13 applies. *See Carolina Power & Light Company* (Shearon Harris Nuclear Power Plant, LBP-82-119A, 16 NRC 2069, 2098 (1982)). While providing protection against the DBT, "[licensees] are not required to design against such things as artillery bombardments, missiles with nuclear warheads, or kamikaze dives by large airplanes, despite the fact that such attacks would damage and may destroy a commercial reactor." *Id.* (emphasis supplied).

The Indian Point Units have security plans in place that meet the requirements of 10 C.F.R. §73.55 and are capable of responding to a design basis threat. Entergy is in

compliance with those plans and, therefore, with current NRC regulations. Accordingly, there is no basis for the relief sought by Petitioners.

2. The Request that the NRC Require Entergy to Provide Information Documenting that Existing Security Measures Are Sufficient against Threats of Terrorist Attacks Seeks Actions Not Required by the Regulations, the Indian Point Units' Licensing Basis, or their Licensing Commitments

Petitioners' second request for relief asks that Entergy supply information to the NRC showing that it has provided the Indian Point facility "with protection against land, water, and airborne terrorist attacks." Request at 21. Moreover, Petitioners assert that "the design-basis threat for Indian Point did not consider the possibility of an intentional terrorist attack from the air or water, or a suicide attack from any front." *Id.*

Again, Petitioners seek to require Entergy to show it meets a beyond design basis threat, thus their request constitutes an impermissible attack on the Commission's regulations. A four-wheel drive land vehicle bomb is specifically provided as part of the design basis threat, but the regulations presume that only land-based vehicles are used in the attack. This was noted by the Commission in adopting 10 CFR §73.51, which sets forth the specific requirements for the physical protection of stored spent nuclear fuel at Independent Spent Fuel Storage Installations. There, the Commission responded to a comment requesting that §73.51 address both land based and airborne vehicle attacks by pointing out that 10 CFR §73.1 did not include an airborne vehicle attack as part of the design basis for nuclear power plants:

Inclusion of an airborne vehicle was assessed for possible inclusion into the protection goal for this rule. However, protection against this type of threat has not yet been determined appropriate at sites with greater potential consequences than spent fuel storage installations.

“Final Rule: Physical Protection for Spent Nuclear Fuel and High-Level Radioactive Waste” 63 Fed. Reg. 26955, 26956 (1998).¹⁴

On the other hand, to the extent that Petitioners are seeking that Entergy confirm to the NRC that it meets current security requirements, such an action is unnecessary. As discussed above, the Indian Point Nuclear Power Station has an approved security plan in place that meets the requirements of 10 C.F.R. §73.55.¹⁵ Entergy is in compliance with present NRC regulations, and there is no basis for the relief sought by Petitioners.

3. The Request that the NRC Create a System to Protect Against Air and Water Based Attacks Seeks Actions that the NRC cannot Take and Which Are not Required by the Regulations

Petitioners’ third request for relief asks the Commission to create a permanent no-fly zone around the Units, to establish a defense and security system to enforce the no-fly zone, and to establish a defense and security system sufficient to protect the Indian Point Units from a land- or water-based attack. Request at 22. This request is improper for several reasons. First, it ignores that the Indian Point Units already has in place a security system that provides protection against land-based attacks, in compliance with NRC regulatory requirements. Second, it seeks that the Commission undertake actions that are not within its jurisdiction, such as instituting a no-fly zone around the Units (an action

¹⁴ Two recent decisions by NRC Atomic Safety and Licensing Boards have again confirmed that nuclear power plants need not make provisions to counter the malevolent use of airborne vehicles. Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), LBP-01-37 (Memorandum and Order, December 13, 2001), slip op. at 12-14; Dominion Nuclear Connecticut, Inc. (Millstone Nuclear Power Station, Unit 3), LBP-02-05 (Memorandum and Order, February 5, 2002), slip op. at 13-18. The Commission has accepted referral of these and other recent licensing board decisions on terrorism, but its review is mainly focusing on whether the NRC has the obligation under the National Environmental Policy Act to consider intentional malevolent acts such as those directed against the United States on September 11, 2001 in its review of facility license applications. *See, e.g., Private Fuel Facility, L.L.C. (Independent Spent Fuel Storage Installation)*, CLI-02-03 (Memorandum and Order, February 6, 2002), slip op. at 3.

¹⁵ *See note 4, supra.*

that could only be taken by the Federal Aviation Administration [(“FAA”)], and establishing a defense system in the plant’s vicinity (an action that could only be implemented by the U.S. Air Force.) Third, Petitioners’ request is outside the scope of §2.206, because establishing a no-fly zone and a defense system around the Indian Point site are not actions to “modify, suspend or revoke” the Indian Point Units’ licenses. Fourth, it seeks modifications of Indian Point’s security plan, *e.g.*, to institute anti-aircraft defense system, a request that is inappropriate for the reasons discussed in Subsections 1 and 2 above.

The NRC has limited jurisdiction and lacks statutory authority to unilaterally impose a no-fly zone around the Indian Point facility. Congress has given the Administrator of the FAA jurisdiction over the use of navigable airspace, including the establishment of flight paths and no-fly zones to protect property and national security.¹⁶ 49 USC § 40103(b) (2001). The NRC does not have any such statutory authority. *See* 42 USC § 2201 (2001). At most, the NRC can use information received from the FAA when

¹⁶ 49 USC § 40103(b) provides:

- (1) The Administrator of the Federal Aviation Administration shall develop plans and policy for the use of the navigable airspace and assign by regulation or order the use of the airspace necessary to ensure the safety of aircraft and the efficient use of airspace. The Administrator may modify or revoke an assignment when required in the public interest.
- (2) The Administrator shall prescribe air traffic regulations on the flight of aircraft (including regulations on safe altitudes) for--
 - (A) navigating, protecting, and identifying aircraft;
 - (B) protecting individuals and property on the ground;
 - (C) using the navigable airspace efficiently; and
 - (D) preventing collision between aircraft, between aircraft and land or water vehicles, and between aircraft and airborne objects.
- (3) To establish security provisions that will encourage and allow maximum use of the navigable airspace by civil aircraft consistent with national security, the Administrator, in consultation with the Secretary of Defense, shall--
 - (A) establish areas in the airspace the Administrator decides are necessary in the interest of national defense; and
 - (B) by regulation or order, restrict or prohibit flight of civil aircraft that the Administrator cannot identify, locate, and control with available facilities in those areas.

determining potential aircraft risks associated with the operation of a nuclear power plant. *See, e.g., Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 2), ALAB-692, 16 NRC 921 (1982).¹⁷ It is the FAA, however, the agency that regulates aircraft flight paths. *See, e.g., Consumers Power Co.* (Big Rock Point Plant), DD-80-34, 12 NRC 711 (1980). Thus, the NRC could not grant the relief requested by Petitioner, even if such relief were warranted. By the same token, it is the U.S. Air Force, not the NRC, that has the statutory mandate to provide anti-aircraft protection measures.¹⁸

In sum, imposing and maintaining a no-fly zone around a nuclear power plant is not within the jurisdiction of the NRC, nor is an appropriate responsibility for the agency to undertake. Likewise, a licensee may not be charged with addressing such risks, for the reasons discussed in Subsections 1 and 2.

The same can be said with respect to Petitioners' request that the Indian Point site be protected against water-based attacks. It is the Coast Guard that has the responsibility to: "enforce U.S. laws on, under, and over the high seas and waters subject to the jurisdiction of the United States"; "engage in maritime air surveillance or interdiction to enforce or assist in the enforcement of the laws of the United States"; "administer laws and promulgate and enforce regulations for the promotion of safety of life and property on and under the high seas and waters subject to the jurisdiction of the United States"; and "maintain a state of readiness to function as a specialized service in

¹⁷ The NRC Standard Review Plan ("SRP"), NUREG-0800, calls for the performance at each nuclear power plant site of a probabilistic analysis of aircraft hazards to determine whether such hazards should be taken into account in the plant's design basis. NUREG-0800, §3.5.1.6. Such an analysis has been conducted for the Indian Point site, and is set forth in the FSARs for the Indian Point Units. The analyses conducted pursuant to the SRP guidance, however, address the probability of an accidental aircraft impact, not a deliberate act of terrorism.

¹⁸ The Secretary of the Air Force has the responsibility for establishing and developing air defense installations and facilities that are necessary in the interest of national security. 50 USC § 491 (2001).

the Navy in time of war, including the fulfillment of Maritime Defense Zone command responsibilities.” 14 USC § 2. There is no authority for the NRC to order the establishment of defenses against a potential water-based attack against the Indian Point Units, nor is there a need for such NRC action in light of the Coast Guard’s explicit responsibilities.

4. The Request that the NRC Order the Revision of the Emergency Response Plans of Indian Point and Westchester County Goes Beyond the NRC Regulatory Authority and the Actions Sought Go Beyond those Required by the Regulations

Petitioners’ fourth request for relief seeks to require Entergy and Westchester County to revise their emergency response plans to take into account and prepare for “possible terrorist attacks” on the Indian Point Units, including “comprehensive response to multiple attacks in the region which may impair efficient evacuation of the area.” Request at 22-23. Again, this request asks the NRC to take actions beyond its authority and, to the extent that Petitioners seek to require Entergy to expand its existing emergency response plan beyond what is required by NRC regulations, amounts to an impermissible collateral attack on Commission regulations.

NRC regulations governing emergency response plans are set forth at 10 C.F.R. §50.47. *See* 10 C.F.R. §50.47 (“... no initial operating license for a nuclear power reactor will be issued unless a finding is made by the NRC that there is a reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency”).¹⁹ Petitioners’ Request clearly goes beyond the requirements

¹⁹ Further, NRC’s review occurs in coordination with that of the Federal Emergency Management Agency (“FEMA”), which reviews a licensee’s plan in conjunction with available municipal and state plans. *See* 10 C.F.R. §50.47(a)(2). These multiple levels of review provide assurance that suitable emergency response programs for a nuclear power plant and the surrounding communities are developed.

set forth in that regulation in two respects. First, it would require that Westchester County's Radiological Emergency Preparedness Plan (the "County Plan") be amended to address a number of contingencies, including terrorist attacks against the Indian Point Units, "Class 9 events", spent fuel storage releases, spent fuel assembly fires, and explosions at the Indian Point Units. Second, Petitioners would require Entergy to expand its emergency response plan to address not only terrorist attacks against Indian Point, but also multiple terrorist attacks at locations other than the Indian Point site, such as "destruction or blockage of the Tappan Zee bridge." Id.

As to the first issue, the Commission lacks authority to require Westchester County to make changes to the County Plan. Indeed, the provisions of 10 C.F.R. §50.47 apply only to licensees, such as Entergy, not to state or local governments. Moreover, 10 C.F.R. §50.47(c)(1)(iii) sets forth the Commission's well-settled "rule of realism," which recognizes that state and local government officials may not participate in emergency planning for a nuclear reactor. NRC regulations allow a licensee's emergency response plan to be deemed adequate despite this lack of participation, rather than requiring the state and local authorities to participate. *See, e.g., Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), LBP-89-32, 30 NRC 375 (1989). In so doing, the regulations implicitly recognize that the NRC lacks authority to direct the formulation, let alone the content, of emergency plans by local governments.

As to the second issue, Petitioners' request exceeds the requirements of NRC regulations by demanding that Entergy take into account possible acts of terrorism against other facilities in the region, and the manner in which such acts may affect the Indian Point emergency response plan. Again, the NRC regulations impose emergency response requirements on nuclear power plant licensees with respect to their facilities, and those alone. *See* 10 C.F.R. §50.47. Other agencies are responsible for developing

emergency plans for external facilities. See, e.g., NUREG-0645/FEMA-REP-1 (Rev. 1), "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."²⁰

The multiple terrorist attacks in the Indian Point region that Petitioners would have Entergy address are hostile acts against the United States. Therefore, under the Commission's long-standing policy discussed above (in Subsections 1 and 2), such attacks are expected to be addressed by the national security authorities and need not be part of the Units' design basis.

To the extent that Petitioners are seeking that Entergy confirm to the NRC that it meets current emergency response planning requirements, such an action is unnecessary. Emergency response plans for the four counties contiguous to the Indian Point site have been developed and approved by the Federal Emergency Management Agency in May 1996. The plans are regularly tested during drills and exercises. The licensee's Emergency Response Plans are periodically reviewed by the U.S. Nuclear Regulatory Commission and their compliance with the requirements of 10CFR Part 50.47 is verified.²¹ Thus, Entergy is in compliance with NRC regulations, and there is no basis for the relief sought by Petitioners.

²⁰ NUREG-0654, Rev. 1, Supp. 1, provides that the offsite response organizations' plans to implement protective measures for the plume exposure pathway shall include, for example, the identification of and means for dealing with potential impediments (e.g., seasonal impassability of roads) to use of evacuation routes, and contingency measures. It also provides that the plant licensee is not responsible for providing emergency response measures (e.g., evacuation plans) for such contingencies where the state or local government has emergency response plans in place.

²¹ See, e.g., NRC Inspection Report No. 05000286/2000-10 (December 8, 2000).

5. The Request that the NRC Order Entergy to Convert the Current Spent Fuel Technology from a Spent Fuel Pool to a “Bunkered” Dry Cask System Seeks Actions not Required by the Regulations

Petitioners’ fifth request for relief seeks an NRC order to convert the existing Indian Point spent fuel storage facilities to “bunkered” dry cask systems, on the grounds that the NRC has “never established that the Indian Point spent fuel storage facility is secure against foreseeable attacks,” including a land, water and airborne “assault.” Request at 24. This request is without basis in NRC regulations. Spent fuel pools are NRC-approved, “design basis” facilities, subject to continuous NRC regulation and oversight, and their protection against external threats is part of a nuclear facility’s safeguards contingency plan. Further, there are currently no regulations requiring that dry storage systems be selected over spent fuel storage pools; indeed, Petitioners concede that no approved dry storage facilities exist with the design features called for in their Request, and no basis in the NRC regulations for requiring that such facilities be developed.²²

In short, Petitioners’ fifth request must be rejected as an effort to compel Entergy to take action beyond existing legal requirements.

6. The Request that the NRC Order the Retirement of the Indian Point Units is Unripe and Unwarranted

Petitioners’ sixth request for relief asks the NRC to permanently shut down the Indian Point facility. *Id.* at 2. This request for relief is inappropriate and unwarranted,

²² The dry cask system proposed in the Request was apparently defined only in a telephone conversation between an unnamed representative of Petitioners and one Ed Lyman, described as a “Nuclear Physicist at Nuclear Control Institute.” Request at 24. The system would consist of dry storage of the fuel in “robust steel casks that are cooled by natural circulation of air,” with each cask “surrounded by an earth and gravel berm, with substantial spacing between the casks.” Petitioners do not define the design requirements for such a system, other than indicating vaguely that the design basis for this storage arrangement “could include a requirement, among other things, that the impact of a fuel-Laden aircraft on the storage facility would not lead to a release of radioactive material from more than one cask.” *Id.*

given Petitioners' lack of any legally cognizable basis for even seeking *suspension* of the Indian Point Units' respective operating licenses, as discussed in Subsection 1 above.

Moreover, even if any of the Petitioners' allegations were legitimate -- which they are not -- Petitioners' request should be denied as premature. Before permanent shutdown could result, Entergy would have to have an opportunity, pursuant to 10 C.F.R. §2.202, to address Petitioners' allegations, and to request a hearing, among other procedures. *See* 10 C.F.R. §2.202. Permanent shutdown of the Indian Point Units could only be achieved after the issues leading to the potential suspension of the Units' respective licenses had been addressed, the NRC had occasion to examine the actions taken by Entergy, and a determination could be made whether continued operation of the Units was consistent with public health and safety. None of those circumstances exist at the present time; thus, the request is not ripe for consideration. *See, e.g., General Public Utilities Nuclear Corporation (Oyster Creek Nuclear Generating Station), DD-97-14, 45 NRC 472 (1997)* (a petitioner's request for 2.206 relief during transfer of spent fuel before licensee requested authorization to transfer the fuel was premature).

IV. THE RELIEF REQUESTED IS UNNECESSARY

A. THE COMMISSION IS ALREADY LOOKING AT TERRORISM ISSUES ON A GENERIC BASIS

As discussed earlier, the Commission has announced that it is conducting a "thorough review" of its safeguards and physical security programs, "from top to bottom." *Private Fuel Storage L.L.C., supra*, slip op. at 3-4. Out of that review, new requirements may emerge that would be applicable to all nuclear power plants, including the Indian Point Units. Any action that could be taken at this point with respect to Indian Point could be repetitive, or even inconsistent, with the results of the Commission's considered review of nuclear power plant safety issues. Therefore, any relief granted in

response to Petitioners' Request would be unnecessary, inappropriate, and potentially counterproductive.

B. THE ISSUES RAISED IN THE REQUEST ARE BEST ADDRESSED IN RULEMAKING

In the last several months, the NRC has repeatedly stated that it is performing a thorough, generic review of nuclear power plant security. See, e.g., Private Fuel Storage L.L.C., supra, CLI-01-26, slip op. at 3-4. It is well-established that generic safety questions should be resolved in a rulemaking rather than adjudicatory proceedings. See Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), CLI-74-40, 8 AEC 809, 814-15, clarified, CLI-74-43, 8 AEC 826 (1974). When an issue affects nuclear reactors generally, the proper approach is to petition the Commission to promulgate an amendment to its rules under 10 CFR § 2.802. See, e.g., Cleveland Electric Illuminating Co. (Perry Nuclear Power Plant, Units 1 and 2), LBP-81-57, 14 NRC 1037, 1038-1039 (1981); Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1), 11 NRC 674, 675 (1980).

In this case, Petitioners could wait for the Commission to complete its review. If that review results in additional requirements, the Commission will likely initiate a proposed rulemaking on further nuclear power security measures. Petitioners could participate in such a proceeding as provided in 10 C.F.R. §2.805. Alternatively, they could file a rulemaking petition with the NRC pursuant to 10 C.F.R. §2.802 to seek institution of specified measures. Because these avenues for raising their concerns are available, Petitioners do not need relief under §2.206. Their Request is, therefore, unnecessary.

V. NO EVIDENCE HAS BEEN PRESENTED BY PETITIONERS THAT PLANT SHUTDOWN IS NECESSARY TO ADDRESS THE THREATS THEY POSTULATE

A. THERE IS NO IMMINENT THREAT TO THE INDIAN POINT UNITS THAT REQUIRES PLANT-SPECIFIC ACTIONS BEYOND ADDRESSING THE DESIGN BASIS THREAT

1. Alleged General Plant Vulnerability

a. Alleged Vulnerability of Control Room to Attack, Fire; Diesel Generator Vulnerability/Reliability

Petitioners allege that the Indian Point Units' respective control rooms "are a likely and vulnerable target for terrorist attack," and also that "[s]eizure or disability of the control rooms would dramatically increase the potential for the intentional or accidental destruction of the reactor core." Request at 6, 20. However, Petitioners provide no factual basis for their claim that there is a significant risk of terrorist seizure of the control room of either Indian Point Unit, or that such takeover would result in the destruction (either deliberate or accidental) of the reactor core.

As to the first claim regarding a control room seizure by terrorists, Petitioners fail to recognize that the control room of a nuclear power plant is defended by the same security measures that protect the entire plant. Thus, the control rooms are no more vulnerable than any other element of the Units to attack by terrorists. Also, each control room is contained within a building on site. Therefore, not only do the security barriers and the security force have to be overcome; the attackers must also successfully break into the building and seize the control room. Thus, a series of offensive actions would have to be accomplished successfully, by knowledgeable terrorists, before any damage related to the control rooms could occur.

Notwithstanding Petitioners' claims, the control rooms for the Indian Point Units are adequately protected against terrorist attacks. Unsupported allegations about their

vulnerability provide no basis for shutting down the Indian Point Units or instituting any of the other measures Petitioners seek.

Even assuming that the control room of one of the Indian Point Units were seized, it is very unlikely that Petitioners' predictions of damage to or destruction of the reactor would materialize. Nuclear reactors (including those at the Indian Point Units) must be designed so that if the controls are manipulated to an unsafe position or damaged, and reactor instrumentation detects that the reactor is entering a dangerous operating regime, the reactor will automatically shut down through the insertion of the reactor control rods into the core. (These requirements are specifically incorporated into the licensing bases of Indian Point Units 2 and 3, as set forth in the respective Final Safety Analysis Reports ("FSARs").) Core cooling systems will then ensure that the core is adequately cooled and maintained in a safe condition. The Indian Point Unit 2 and Unit 3 FSARs describe how the plants were designed to physically meet the aforementioned requirements.

Petitioners further claim—also without factual basis—that a terrorist attack might result in the failure of the control room functions due to a loss of off-site power, the failure of backup diesel generators, or the evacuation of the control room due to fire. Request at 6. None of these allegations is meritorious. Reactors are required to have redundant on-site and off-site power systems so that power to the reactor is maintained if one of the systems fails. Reactors also are required to be designed so that in the event of a "station blackout," in which the plant loses off-site and on-site power for a specified period of time, the reactor will automatically shut down and plant safety systems will maintain the core in a safe condition. *See* 10 C.F.R. §50.63(a) (loss of all alternating current power). The Indian Point Units satisfy these regulatory requirements. One of the Indian Point Units uses a gas turbine and the other, a separate diesel generator (apart from the emergency diesel generators) to provide electric power to critical plant facilities in the

unlikely event of a “station blackout”. The FSARs for the Indian Point Units discuss how the plants address the “station blackout” rule.

It is unclear whether Petitioners’ claim about diesel generators being “vulnerable and sometimes unreliable” (Request at 6) is directed at diesel generators in general or specifically at the diesel generators for the Indian Point Units. In either case, the claim is invalid. Diesel generators are safety systems subject to stringent NRC requirements, including those regarding quality control, maintenance, and testing. The Indian Point Units diesel generators have been demonstrated to meet all NRC regulatory requirements. Redundancies exist in the diesel generator configurations for the Indian Point Units so that, in the unlikely event their operation is needed but one failed, the Units would still have sufficient diesel generator capability. A variety of periodic tests, some weekly, some monthly, some quarterly, are performed on the diesel generators. These tests ensure that the diesel generators will be capable of operating when required.

To the extent that Petitioners are asserting that the Indian Point diesel generators are “vulnerable” in the sense of being subject to a terrorist attack, the diesel generators are provided the same degree of security protection as other plant safety-related structures, and as such are guarded against a terrorist attack. Also, the diesel generators are contained within a building onsite. Access to the diesel generator building is controlled and limited to specific personnel. Therefore, as with the control rooms, not only would the access barriers to the site and the security force have to be overcome, but entry into the building would have to be accomplished by knowledgeable terrorists before any damage could occur. In addition, Petitioners appear to be postulating the simultaneous loss through terrorist action of all off-site and on-site redundant sources of electric power, a threat without credibility or factual basis.

Finally, Petitioners' claim about the control rooms' vulnerability to fire is also unsupported and fails to recognize that NRC fire protection requirements specifically mandate that the reactor controls and the systems necessary to shut down the reactor must be protected from fire. 10 C.F.R. Part 50, App. R, Sec. III.G.1.a. Furthermore, control rooms must remain habitable so that reactor operators have time to shut down the reactor in the event of an onsite emergency, including a fire. *See* General Design Criterion 19; Assumptions for Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release, AEC Regulatory Guide 1.78 (June 1974). The FSARs for the Indian Point Units describe the control room habitability features that exist to meet the applicable requirements and also describe how the Indian Point Units comply with fire protection requirements. The regulations further require that nuclear power plants have the capability to bring the reactor to a safe shutdown condition from outside the control room, so that in the event the control room has to be evacuated, safe shutdown of the plant can be achieved. The Indian Point Units meet these requirements. The FSARs for the Indian Point Units describe the Units' alternate shutdown capabilities from outside the control room.

As the preceding discussion demonstrates, the concerns by Petitioners about the potential damage to the Indian Point reactors from a terrorist attack that affects the control rooms are without basis and do not reflect any potential conditions that are not adequately addressed in the current plant design and operation.

**b. Alleged Potential Breach of Containment Caused
by Accidental or Intentional Crash of Fuel
Laden Jetliners**

Petitioners contend that the Indian Point reactors should be shut down because "the reactor containment walls were not designed to withstand the accidental or intentional crash of fuel laden jetliners." Request at 6. In particular, Petitioners rest their

claim on a 1982 Argonne National Laboratory (“ANL”) study, which Petitioners claim showed that a crashing jetliner could breach the containment building of a nuclear plant and cause severe fire and explosion damage to the reactor. Id. at 12.

Contrary to Petitioners’ allegations, the ANL study, Evaluation of Aircraft-Crash-Hazards Analyses for Nuclear Power Plants, NUREG/CR-2859 (June 1982) (“ANL Study”), does not show that a crashing jetliner could breach the containment building walls of reactors such as the Indian Point Units. The ANL study cites an estimate of the speed at which an airliner would have to impact the outer containment wall of a boiling water reactor (“BWR”) in order to penetrate it.²³ The Indian Point units, however, are pressurized water reactors (“PWRs”) with different containment design characteristics than those addressed in the ANL study. As described in the respective FSARs, the side walls of the containment cylinder and the dome are a minimum of 4-ft 6-in and 3-ft 6-in, thick, respectively, for Indian Point 2 and Indian Point 3.. Petitioners identify no evidence that a crashing aircraft would breach such thick walls. Therefore, the ANL study is not appropriately applicable to the Indian Point Units.

A crashing aircraft that breached the containment wall would be unlikely to cause damage to the reactor through an aircraft fuel fire.²⁴ In any event, the ANL study notes that fires would probably burn quickly, in minutes or tens of minutes, and the hazard from them would “appear to be tolerable in many instances.” Id. at 75. While the study

²³ While the ANL study addresses the consequences of aircraft crashes, it does not analyze them; rather, it summarizes and sometimes synthesizes other analyses that had been performed at the time of the study. See ANL Study at 61-78. Thus, in some cases, data important to assessing the applicability of the study to a real situation are missing. The thickness of the containment wall and the weight of the aircraft are examples of the missing data.

²⁴ The ANL Study discusses the potential for aircraft fuel explosions damaging the reactor only in the context of fuel vapor being trapped between the inner and outer containment of a BWR after the aircraft has penetrated the outer containment. ANL Study at 75-76. PWRs such as the Indian Point Units do not have double containment systems.

suggests examining crashes and the local impact areas for “unique situations which may cause an unacceptable hazard,” id. (emphasis added), the remaining discussion of what would happen in the event of an aircraft crash is largely speculative, and is of doubtful applicability to Indian Point.²⁵

In short, the ANL study does not support Petitioners’ allegations that the Indian Point Units cannot sustain an aircraft crash. Therefore, neither the Study, nor any other materials referenced by Petitioners, support their position that the Indian Point Units should be shut down.

c. Alleged Need for Shutdown to Test Security of Spent Fuel

Petitioners call for “provisional” shutdown of the operating Indian Point Units to test “critical security provisions” with respect to their spent fuel pools (“SFPs”). Request at 8. This request, however, fails to consider the design and operating features of the SFPs.

The pools themselves are passive structures housing fuel elements in arrays of fixed racks. Pool cooling and makeup systems operate based on the amount of spent fuel in the pool and in accordance with established regulatory requirements, without regard for the operating status of the associated reactors. Therefore, no change in pool operations would result from a shutdown of the Units. There is, likewise, no change in either the type or extent of security protection for the SFPs of operating reactors such as the Units based on the reactors’ operating status.

The spent fuel pool facility’s operational and security requirements, therefore, are independent of the operating status of the reactor units. Petitioners’ implications

²⁵ See id. at 76-78 (noting, e.g., at 76, that “the dissemination of the fuel and its partial mixing with the surrounding air to form an explosive cloud are virtually impossible to predict with any acceptable degree of accuracy”).

otherwise are unfounded. Thus, no basis exists for a plant shutdown to “test” spent fuel pool security, since there is nothing to test and, even if something needed testing, such a test would not require a plant shutdown.

2. Alleged Vulnerability of Spent Fuel Pool

Petitioners’ request for the shutdown of the Indian Point Units rests, in large measure, on the unsupported factual assertion that “[t]errorist action against the spent fuel storage facility could result in a catastrophic failure of the containment system.” Request at 8. This argument, however, rests on a mischaracterization and improper use of an NRC Staff Technical Study and on incomplete understanding of the physical characteristics and features of the SFPs for the Units.

a. The NRC Staff’s Technical Study of Spent Fuel Accident Risks Does Not Support Petitioners’ Allegations Regarding SFP Vulnerability

Apparently the sole source of Petitioners’ assertions with regard to SFP vulnerability to terrorist attacks is an October 2000 NRC Staff Technical Study of SFP accidents.²⁶ Petitioners, however, overlook that the Technical Study evaluates the risks from SFP operations at *plants undergoing decommissioning* to “identify the design and operational features necessary to ensure that the risks to the public from these *shutdown facilities* are sufficiently small.”²⁷ Thus, the analyses in the Technical Study are not applicable to the Indian Point facility because, as the study makes clear, “as-operated SFP cooling systems [at decommissioning facilities] were different from those in operation

²⁶ U.S. NRC, “Technical Study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants” (Oct. 2000) (“Technical Study”).

²⁷ Id. at 1-1 (emphasis added).

when the plants were in power operation."²⁸ The Technical Study points out that, at a facility undergoing decommissioning,

[t]he operating plant pool cooling and makeup systems generally have been removed and replaced with portable, skid-mounted pumps and heat exchangers. In some cases there are redundant pumps. In most cases, physical separation, barrier protection, and emergency onsite power sources are no longer maintained.²⁹

Such conditions, which may reduce a licensee's ability to respond to an event resulting in damage to an SFP, are not allowed at operating plants and do not exist at Indian Point Units 2 and 3. Thus, Petitioners' reliance on the Technical Study is misplaced from the start.

In contrast to the limited SFP support systems assumed in the Technical Study to be available at a decommissioned plant, the Indian Point SFP support systems are fully operational and compliant with Commission safety regulations. The FSARs for Indian Point 2 and Indian Point 3 provide a description of the respective Fuel Handling Systems, including the SFPs, and their support systems.

b. Vulnerability of the Indian Point SFP to Aircraft-Induced Zirconium Fires

Petitioners allege that "a likely result" of an aircraft crashing into a SFP, or a truck bomb explosion, "would be a precipitous loss of cooling water in the spent fuel pools." Request at 9.³⁰ No support is given for this conclusory statement, which is contradicted in the Request itself by the assertion that the potential consequences of an attack against a SFP have not been evaluated. Id. at 8. Instead of offering any analysis,

²⁸ Id. at 3-2.

²⁹ Id.

³⁰ Truck bomb explosions are discussed separately below.

Petitioners transform a Technical Study definition of the term "catastrophic damage" (i.e., what would have to occur for damage to a SFP to be considered catastrophic) into an allegation as to what would happen if an aircraft crash occurred.³¹ Id. at 11 ("probability is based on the occurrence of catastrophic damage to the spent fuel pool"). Petitioners also reference the Technical Study to support their assertion that the Indian Point "spent fuel storage area is highly vulnerable to an air attack and mitigation and control of damage from such an attack is highly improbable." Id. at 10. However, the Technical Study does not contain any basis for these conclusions, which are unfounded.

Petitioners speculate that the inevitable effect of a terrorist attack using an aircraft against a spent fuel pool would be an uncontrolled zirconium exothermic reaction (i.e., a zirconium "fire"). Id. at 9. However, a zirconium "fire," if possible at all, requires specific conditions highly unlikely to result from an aircraft crash into the spent fuel pool. The Technical Study identifies that the onset of a zirconium "fire" is dependent on heat generation and losses.³² Normally, water in the spent fuel pool maintains the fuel rods well below the temperature for the postulated zirconium reaction to occur. Only if the water is lost from the spent fuel pool and the fuel remains uncovered for an extended time is it possible for the zirconium cladding of some spent fuel elements to heat up sufficiently to initiate an exothermic reaction. The Technical Study states that, assuming a *complete* and *instantaneous* draining of a spent fuel pool, approximately 10 hours is required for a spent fuel element to heat up to the minimum reaction temperature.³³ If the postulated aircraft crash does not drain the pool below the top of the fuel, a zirconium

³¹ Catastrophic damage means such damage that "the pool ... rapidly drains and cannot be refilled from either onsite or offsite resources."

³² Technical Study at A1B-1.

³³ Id.

“fire” is not possible at all. Without the thermal plume from a large self-sustaining zirconium fire, the fission products in the spent fuel are not dispersed offsite and would only be of onsite concern.³⁴ The sequence of unlikely events required to cause a zirconium fire that leads to offsite radiation releases is, at best, a highly improbable result of a highly improbable aircraft crash.

Indeed, it is difficult to conceive of the manner in which an aircraft crash could produce the specific conditions required for an exothermic reaction to occur in a SFP. As described in the Technical Study, spent fuel pools at nuclear power plants are structures constructed of thick, reinforced concrete walls. (As set forth in the FSARs for the Indian Point Units, the concrete walls of the Indian Point Units’ spent fuel pools are 3 to 6 feet thick, and the pools are lined with stainless steel liners .25 inches thick.) The pools are approximately 40 feet deep, are partially embedded in the ground, and are designed to withstand severe earthquakes. Because of these and other design features, the Indian Point spent fuel structures, like similar “structures at [other] nuclear power plants, are able to withstand loads substantially beyond those for which they were designed.”³⁵

Any aircraft impact must breach these robust structures in order to cause a loss of pool water. An aircraft would have to penetrate all the way through the interior steel liner, not just crack the concrete, to cause a leak. The breach of either barrier is unlikely; both breaches occurring as a result of a single event is highly unlikely. Moreover, even if a breach of the pool did occur, the leak rate would have to exceed the capacity of all of the redundant makeup water systems in order to drain the pool.

³⁴ Id. at 3-1.

³⁵ Technical Study at 3-19.

Petitioners also ignore the Technical Study's very conservative *assumption* that the SFP is a point target that sustains a "direct hit." These assumptions are crucial because, if "instead of a direct hit, the aircraft skids into the pool or a wing clips the pool, catastrophic damage may not occur."³⁶ The Indian Point SFPs are housed in the fuel handling buildings, which are relatively small structures shadowed by the respective containment buildings, which are located right next to them. Other buildings near the fuel handling buildings also provide sheltering, making the flight path for a direct hit on the fuel pool, if possible at all, a difficult feat for even the most experienced pilot.

The Technical Study also analyzed the thermal-hydraulic characteristics of spent fuel stored in SFPs to "determine the time available for plant operators to take actions to prevent a zirconium fire" and separated that time into two periods: the time available before fuel uncovering and that available before the zirconium might ignite.³⁷ The Staff determined that, assuming the loss of all SFP cooling and makeup systems, the minimum time to heat up and pool draining through water boil off to within 3 feet of the top of the spent fuel was 100 hours (more than 4 days). Further, the analysis methods used by the Staff were such that "the time available for fuel handler recovery from SFP events before initiation of a zirconium fire is underestimated."³⁸ At least another 10 hours must elapse before any zirconium ignition can occur. If the spent fuel stored in a pool is aged more than 5 years, zirconium ignition is impossible unless air flow to the fuel elements is obstructed and accident management measures are unsuccessful.³⁹

³⁶ Id. at A1B-1.

³⁷ Id. at 2-1.

³⁸ Id. at 3-1 - 3-2.

³⁹ Id. at 2-2.

The Technical Study also identified that the risk from loss of spent fuel pool water was "quite sensitive to the performance of the SFP operating staff in identifying and responding to" the event.⁴⁰ It is unreasonable to assume that the plant staff would fail to recognize and respond to an aircraft crash in the SFP area. The Technical Study modeled a SFP area fire including the conservative assumptions that SFP cooling systems will be irreparably damaged within 20 minutes and any electrically-driven fire pump is unavailable.⁴¹ Despite these conservative assumptions, the Staff calculated the conditional "fuel uncover frequency" for a SFP area fire as 2.3×10^{-5} per year.⁴² In other words, for every 43,000 aircraft crashes into the SFP at a facility undergoing decommissioning, one *might* result in the uncovering of the spent fuel and a potential zirconium fire, even assuming a host of extreme conditions to be present. At operating plants with redundant SFP cooling systems, such as the Indian Point Units, fuel uncovering is even less likely.

In short, Petitioners' claim that a reduction in SFP water level "will lead to a spent fuel rod assembly fire" (Request at 9) is erroneous and unsupported by the Technical Study. To the contrary, the Technical Study – while germane only to units undergoing decommissioning – concluded that even at facilities with reduced SFP support systems, the "results of the study indicate that the risk at SFPs is low and well within the Commission's Quantitative Health Objectives."⁴³ In fact, the Technical Study reached quite the opposite conclusion to that alleged by Petitioners:

⁴⁰ Id. at 3-5.

⁴¹ Petitioners erroneously point to these conservative and restrictive assumptions as the technical bases for their assertion that a zirconium fire in one pool would "quickly cause fires in other pools where water loss is occurring." Request at 10.

⁴² Technical Study at 3-16, A23a-31.

⁴³ Technical Study at viii.

The risk at decommissioning plants is low and well within the Commission's safety goals. The risk is low because of the *very low likelihood of a zirconium fire* even though the consequences from a zirconium fire could be serious.⁴⁴

For these reasons, the threat to the SFP at the Indian Point Units from an aircraft crash into their spent fuel pools is insignificant, and the Petitioners' allegations are without factual basis.

c. A Potential Truck Bomb Attack against the SFP is Addressed as Part of the Design Basis Threat

Existing Commission regulations explicitly describe protective measures licensees must implement against "truck bombs." A four-wheel drive land vehicle bomb is specifically identified in 10 C.F.R. §73.1(a)(1)(E)(iii) as part of the design basis threat. The implementing rules require "vehicle barrier systems must be established to protect against use of a land vehicle" as a "means of transportation to gain unauthorized proximity to vital areas." 10 C.F.R. §73.55(c)(7). These barriers are erected so that a truck can not penetrate to a point where an explosion could damage the reactor or other critical reactor safety systems, including SFPs. In addition, the alarmed fence would have to be penetrated by the intruders. Both the vehicle barrier system and the alarmed fence should slow down any truck long enough for the security force to take appropriate action.

Even if a "truck bomb" could somehow be placed near the Indian Point SFP, the same design and mitigation features discussed above with respect to aircraft crashes make it highly unlikely that such an explosive device could cause sufficient damage to drain the pool, and even more unlikely that a zirconium fire would result.

⁴⁴ Id. at x, 5-3 (emphasis added).

In summary, the threat to the SFP at Indian Point from an aircraft crash or truck bomb on the spent fuel pool is insignificant and the Petitioners' allegations are without factual basis. At most, Petitioners may have raised a possible generic issue, which if found appropriate for study, should be addressed on an industry-wide basis. A shutdown of the Indian Point Units to evaluate the issue is unnecessary and inappropriate.

B. ENERGY, THE STATE AND THE LOCAL AUTHORITIES ARE CAPABLE OF RESPONDING TO A TERRORIST THREAT, AS DEFINED BY REGULATIONS

Petitioners launch unsupported, and largely irrelevant, attacks against Entergy's ability to provide effective security for the Indian Point Site.⁴⁵ However, as described above, the Indian Point Units have security plans that meet regulatory requirements and are capable of responding to a design basis terrorist threat. Likewise, the emergency response plans of Entergy and the counties adjacent to the Indian Point site comply with applicable requirements and have been reviewed and approved by the NRC and FEMA, respectively. Thus, there can be no doubt that the organizations in charge of security and emergency planning activities relating to Indian Point are fully capable of discharging their responsibilities.

⁴⁵ Thus, Petitioners argue that “[a]s recently as August 2000, Entergy was sanctioned by the NRC for failure to maintain adequate physical protection of the Waterford 3 facility in Killona, Louisiana.” Request at 14. Since Petitioners do not allege that the same personnel (or even the same management team) involved in the alleged violations at Waterford is also responsible for security at the Indian Point Units, these accusations, even if correct, would be irrelevant to the adequacy of security provisions at another plant a thousand miles away.

Likewise, Petitioners allege that “[l]ast year, Indian Point 2 became the first nuclear plant in the nation to be given a “red” designation, giving it the highest risk assessment in the nation. The NRC gave the plant its worst rating because of the operators failure to detect flaws in a steam generator tube before a radiation leak in February 2000.” *Id.* Yet, at the time the incidents alleged by Petitioners occurred, the Indian Point Units were not being operated by Entergy, and at any rate failure to detect steam generator tube flaws is not a plant security issue. Therefore, these claims are also irrelevant on their face.

VI. CONCLUSION

In their Request, Petitioners call for the immediate shutdown of the Indian Point Units, the immediate transfer of the fuel in the spent fuel pools into dry cask storage, and drastic expansions of Indian Point's security provisions and the emergency response plans for the site. This extraordinary relief is unjustified.

Petitioners seek this relief, not on the basis of any non-compliance by Entergy with existing law or NRC regulations, but on the theory that Indian Point could be the subject of terrorist attacks such as those conducted on September 11, 2001 by foreign enemies. Petitioners ignore, however, the long-standing Commission policy to rely on our national security apparatus to defend nuclear facilities against attacks by enemies of the United States. The Commission has done so because that is the will of Congress, because it is not practical to turn nuclear facilities into armed fortresses, and because the Commission and nuclear facility licensees should not be required to speculate about enemy threats and the effectiveness of the national security apparatus in defending against them.

The Request ignores the increased security measures that have been implemented since September 11 at our airports, seaports, borders, and coastlines. It ignores the war in Afghanistan and other worldwide efforts against terrorism, and the ongoing law enforcement actions against suspected terrorists here. It also gives no credit to the additional security measures that have been implemented at Indian Point since the attacks. In so doing, the Request improperly exaggerates the extent of the terrorist threat and downplays the ability to defend against that threat.

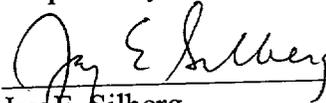
Furthermore, Petitioners ignore that in light of the September 11 attacks, the Commission is conducting a widely publicized, top-to-bottom review of its security requirements. Because security is a generic issue best addressed through rulemaking, it

would be wholly inappropriate to entertain a 2.206 petition on the same subject addressed to a single facility.

Finally, the Petition postulates a series of terrorist attack scenarios leading to hypothetical releases of radioactive materials to the public. Those release scenarios are alarmist, based on erroneous factual assumptions and misinterpreted references, and so improbable as to lack credibility.

In short, Petitioners have asserted no legal grounds and produced no factual information that would warrant emergency action at Indian Point. Their Request, therefore, must be denied.

Respectfully submitted,



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