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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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RULEMAKINGS AND
ADJUDICATIONS STAFF

In the Matter of)

ENTERGY NUCLEAR OPERATIONS, INC.)

(Indian Point Nuclear Generating
Units 2 and 3)
_____)

Docket Nos. 50-247- LR and
50-286-LR

February 8, 2008

TOWN OF CORTLANDT'S REPLY TO (1) NRC STAFF'S RESPONSE TO
TOWN OF CORTLANDT'S REQUEST FOR HEARING AND LEAVE TO INTERVENE
AND (2) ANSWER OF ENTERGY NUCLEAR OPERATIONS, INC. OPPOSING TOWN
OF CORTLANDT'S REQUEST FOR HEARING AND LEAVE TO INTERVENE

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February 8, 2008

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PRELIMINARY STATEMENT

The following constitutes the Town of Cortlandt ("Cortlandt") reply to the Staff of the U.S. Nuclear Regulatory Commission ("NRC Staff") Answer and to Entergy Nuclear Operations, Inc. ("Entergy" or "Applicant") Answer to Cortlandt's Request for Hearing and Leave to Intervene in the above-captioned matter, pursuant to 10 C.F.R. § 2.309(h)(2). As both the NRC Staff and Entergy conceded, Cortlandt has established standing to intervene in the proceeding. However, the NRC Staff and Entergy argue that Cortlandt failed to proffer an admissible contention in accordance with 10 C.F.R. § 2.309(a). Contrary to these allegations, Cortlandt has proffered admissible contentions, as detailed below.

While the Town Supervisor, Linda Puglisi, and the members of the Town Board do not oppose the relicensing, per se, they are constrained to intervene because the submissions in this proceeding do not ensure the safety and welfare of the Town's residents. Cortlandt's residents live in close and surrounding proximity to the Indian Point facility. Therefore, it is understandable that its residents have a heightened concern that Indian Point is "safe." Indeed,

their concern over the safety of Indian Point reflects the general public's primary concern over the continued and expanded use of nuclear energy in America. Because Cortlandt has standing and has offered an admissible contention, Cortlandt's request to intervene should be granted.¹

ARGUMENT

I.

NRC Pleading Standards Should be Construed to Allow Unreviewed Safety Concerns to be Adjudicated

The purpose of the public hearing process is to adjudicate safety and environmental issues. Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 N.R.C. 328, 334 (1999) ("Oconee"). In furtherance of this purpose, a potential intervener must set forth at least one admissible contention sought to be litigated in the hearing. See 10 C.F.R. §2.309(a). However, a contention must only proffer some minimal factual or legal foundation to support it with respect to safety. Id. Moreover, the "contention rule should not be turned into a 'fortress to deny intervention.'" Oconee, 49 N.R.C. at 335 (quoting Philadelphia Elec. Co. (Peach Bottom Atomic Power Station, Units 2 & 3), 8 AEC 13, 21 (1974)). Cortlandt's contentions, when viewed under normal administrative circumstances, are supported by reasonably specific factual and legal allegations, and therefore must be admitted. Oconee, 49 N.R.C at 335. However, there are several extenuating circumstances that warrant a liberal construction of this procedural rule.

¹ Cortlandt has standing to intervene under the requirements of 10 C.F.R. § 2.309(d). Cortlandt is located on the northwestern corner of Westchester County, bounded on the west by the Hudson River, on the north by Putnam County, on the east by the Town of Yorktown, and on the south by the Towns of New Castle and Ossining. It is comprised of two incorporated villages, Croton-on-Hudson and Buchanan, and several hamlets, including Montrose, Crugers and Verplanck. Cortlandt has a total area of 34.5 square miles and an estimated 1998 population of about 28,672 persons. Indian Point Nuclear Generating Unit Nos. 2 and 3 are located within the Village of Buchanan.

There are critical safety issues, not previously considered, relating to the storage of spent fuel rods as set forth in the accompanying affidavit of George Sansoucy, P.E..

The apparent opposition to considering this critical safety issue is based on the concept that it has already been reviewed in a Generic Environmental Impact Statement. This administrative legerdemain only cloaks a central issue of concern for the expressed Cortlandt community. (See Point I., infra.)

Moreover, Cortlandt has argued that the Nuclear Regulatory Commission (the "NRC") should suspend its license renewal review for Indian Point pending an investigation of NRC Staff's review process and correction of deficiencies in that process, and for a waiver of the NRC rule that ongoing safety issues will not be considered during a license renewal proceeding.² Letter from Thomas Wood, Town Attorney, & Sive, Paget & Riesel, P.C., Town of Cortlandt, to Dale E. Klein, Chairman, Gregory B. Jaczko, Commissioner, & Peter B. Lyons, Commissioner, NRC (Jan. 29, 2008) (on file with author) ("Cortlandt Letter"). In support of these arguments, Cortlandt submitted the NRC Office of the Inspector General, Audit of NRC's License Renewal Program (OIG-07-A-15) ("OIG Report"), which found that in over 97% of NRC safety reports that OIG sampled, NRC Staff reviewers did not conduct an independent safety review. Additionally, in over one-third of the reports sampled, NRC staff copied statements by licensees without providing independent verification. Because of the issues raised in the Cortlandt Letter and OIG Report, the pleading standards under § 2.309 should be construed in a manner that does not prevent the public's opportunity for a realistic adjudication of these safety issues.

² On December 10, 2007, Concerned Residents Opposed to Relicensing of Indian Point filed a waiver of the NRC rule that ongoing safety issues are not considered in a relicensing petition. On January 3, 2008, Riverkeeper et al. petitioned the NRC to suspend its license renewal review for Indian Point, inter alia.

II.

Entergy's License Renewal Application does not Adhere to the Standards Set Forth in 10 C.F.R. Part 54

Both NRC Staff and Entergy oppose the admission of this contention. (NRC Answer, at 128.) Contrary to the statements of NRC and Entergy, this contention shows that a genuine dispute exists, more than satisfies the minimal pleading requirements of 10 C.F.R. § 2.309, and is supported by facts or expert opinion.

As stated in Cortlandt's Petition, Applicant fails to justify the methods used for performing an "integrated plant assessment." 10 C.F.R. § 54.21. NRC may not issue a renewed license unless the activities the license authorizes will continue to be conducted in accordance with the current licensing basis ("CLB"). 10 C.F.R. § 54.29(a). NRC's standards for licenses state that the use of the facility and the facility itself must not endanger the health and safety of the public. 10 C.F.R. § 50.40(a). Issuance of a license must not "be inimical to the common defense and security or to the health and safety of the public." § 50.40(c). Aging, leaking spent fuel pools are inimical to the common defense and security of the health and safety of the public. This Commission has recently stated with regard to litigable issues that Indian Point petitioners "have a real and legitimate interest in the safe operation of the Indian Point facility and a need to know that, if it will continue to operate, it will operate safely." Licensing Board Order (Granting the NRC Staff's Motion to Strike FUSE's Superceding Request for Hearing) at 6 (Feb. 1, 2008) (unpublished).

Foremost among those safety issues is the temporary storage facilities for spent nuclear fuel rods at Indian Point. However, the NRC Staff and the Applicant oppose the consideration of

this pertinent issue by invoking the 1996 Generic Environmental Impact Statement (“GEIS”)³ for the proposition that the GEIS’s findings foreclose the issues of appropriateness and safety of these temporary nuclear waste facilities in a licensing proceeding. This argument is critically flawed. A 12-year old GEIS is patently dated and inadequate, and therefore requires supplementation in these proceedings, pursuant to 40 C.F.R. § 1502.9(c).⁴ The NRC apparently recognizes this fact, but the public will not have access to Entergy’s preliminary draft Supplemental Environmental Impact Statement (“SEIS”) until August 2008,⁵ almost one year after parties have submitted petitions for leave to intervene and the opportunity to be heard. Accordingly, NRC Staff must recede from its obdurate position that issues central to the safety of the Cortlandt community cannot be considered in this relicensing proceeding or agree to stay these proceeding until the draft Supplement is published and receives public scrutiny.

Lest there be any doubt that the 1996 GEIS is an invalid prop for foreclosing review of spent fuel rod storage, the intervening parties’ contentions should be considered: Indian Point is uniquely located within a 50-mile radius of the densely populated areas of New York City and its surrounding suburbs.⁶ NRC’s generic considerations pre-date September 11, 2001 and predate NRC literature detailing the risk of a spent fuel pool fire at a nuclear plant. (Aff. of George Sansoucy, sworn to Feb. 8, 2008, (“George Sansoucy Aff.”) at ¶6.) An attack on a spent fuel pool could lead to a zirconium fire which would release large quantities of radioactive material into the surrounding environment. (*Id.*) Additionally, when NRC issued the 1996 GEIS, the

³ Generic Environmental Impact Statement for License Renewal of Nuclear Plants, NUREG-1437 (May 1996).

⁴ This regulation mandates a supplement where there is new information or differing circumstances. See also Vill. of Grandview v. Skinner, 947 F.2d 651, 657 (2d Cir. 1991) (a supplemental EIS is required where “there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impact”).

⁵ Entergy issues its draft SEIS to NRC on July 25, 2008. The Federal Register publishes a notice for comment on Entergy’s draft SEIS on August 4, 2008. The public has until October 20, 2008 to comment on the draft SEIS. See Indian Point Nuclear Generating Unit Nos. 2 & 3 – License Renewal Application, at <http://www.nrc.gov/reactors/operating/licensing/renewal/applications/indian-point.html> (Jan. 9, 2008).

⁶ More than 20 million people live and/or work within a 50-mile radius of Indian Point.

spent fuel from nuclear plants was intended for transfer to a federal repository by the first quarter of the twenty-first century. (Id.) However, Yucca Mountain, the only federal facility currently being considered as the national nuclear waste repository, will most likely not be licensed within the first quarter of the twenty-first century, as NRC previously believed. GOVERNMENT ACCOUNTING OFFICE, YUCCA MOUNTAIN: DOE HAS IMPROVED ITS QUALITY ASSURANCE PROGRAM, BUT WHETHER ITS APPLICATION FOR A NRC LICENSE WILL BE HIGH QUALITY IS UNCLEAR (Aug. 2007). Therefore, spent nuclear waste will have to remain on-site longer than NRC ever intended.

Therefore, the prohibition of reviewing this critical safety issue in a relicensing proceeding is improperly based on the determinations and findings in an aged document, which needs to be supplemented. Where an EIS is required, as the NRC implicitly concedes in the instant proceeding, an agency cannot proceed to resolve the merits until there is a completed and valid EIS, not only before the matter proceeds to decision, but at an early stage of the proceeding to assist the staff and the administrative litigants in developing an informed record. See Weinberger v. Catholic Action of Hawaii/Peace Educ. Project, 454 U.S. 139, 143 (1981); 40 C.F.R. § 1500.1 (environmental information must be available to the public before any decisions are made).

The LRA procedure must be consistent with the mandate of NEPA. See 10 C.F.R. Part 51. A critical aspect of NEPA is the adequacy of an applicant's Draft Environmental Impact Statement ("DEIS"), which must address safety issues. See 42 U.S.C. § 4331(b). The critical safety issue of the aging spent fuel pools at Indian Point must be addressed either in a preceding and properly vetted Supplement or in this hearing. Cf. Vill. of Grand View v. Skinner, 947 F.2d 651, 657 (2d Cir. 1991) (quoting 40 C.F.R. § 1502.9(c)(1)(ii) (applicant must supplement EIS

where “there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impact”) (internal quotations omitted). Accordingly, this relicensing proceeding cannot move forward until such time as a draft SEIS is scoped, developed and subject to public comment. However, if the Commission does continue this proceeding without requiring Entergy to complete a supplemental EIS, then both storage and disposal concerns are relevant. See MN v. U.S. Nuclear Regulatory Comm’n, 602 F.2d 412, 419 (D.C. Cir. 1979).

These concerns are not mere procedural niceties. The abovementioned issues of law are essential to these proceedings because, inter alia leaks in the spent pool liner have been detected resulting in discharges of radioactive material, including tritium, strontium-90, and cesium-36. The Environmental Protection Agency (“EPA”) requires an Applicant to prepare an adequate management plan for spent fuel pools and storage of spent fuel that will be sufficient for the extended 20-year license renewal period. Letter from Grace Musumeci, Chief Environmental Review Section, Environmental Protection Agency, to Chief, NRC Rules and Directives Branch (Oct. 10, 2007) (ADAMS Accession No. ML 072960360) (“Musumeci Letter”). The possibility of losing water in the spent fuel pools, resulting in a zirconium fire, is a very real threat to the health and safety of the public and environment. Therefore, the integrity of the spent fuel pools should be reviewed in Applicant’s Environmental Report prior to license renewal. (George Sansoucy Aff., at ¶5.)

III.

Entergy's License Renewal Application does not Specify an Adequate Aging Management Plan in Accordance with the Law

NRC Staff oppose the admission of this contention. (NRC Answer, at 128.) Entergy also opposes this contention. (Entergy Answer, at 35.) Contrary to NRC's and Entergy's statements, this contention does show that a genuine dispute exists, satisfies the pleading requirements of 10 C.F.R. § 2.309, and is supported by facts and/or expert opinion.

a. Applicant Needs to Address Alternatives to Spent Fuel Storage Pools in this Proceeding

As stated in the Petition, ongoing and unmonitored leaks of liquid radioactive effluents, including tritium, strontium-90, and cesium-36 are leaking from the spent fuel pools. (See Cortlandt Petition, at 6.) Spent fuel pools are "systems, structures and components" within aging management review for a license renewal proceeding, and the Applicant must justify the methods used in properly maintaining the spent fuel pools. See 10 C.F.R. § 54.21(a)(2). However, Applicant's LRA fails to provide a detailed and workable aging management plan to deal with known leaks.

Applicant's Environmental Report concludes that degradation to groundwater is not an applicable issue it must address because Indian Point uses a once-through cooling system and not a cooling pond. (Environmental Report, at 4-26.) This non sequitor overlooks the fact that it is Cortlandt's groundwater that is nevertheless being contaminated.

The Environmental Report fails to address or recommend mitigating measures for the leaking spent fuel pools and their impact on groundwater. This omission must be addressed in Applicant's LRA because failure to address the impact of leaking spent fuel pools will likely result in harm to the health and safety of the public or environment. See Dominion Nuclear Connecticut, Inc. (Millstone Nuclear Power Station, Units 2 & 3), LBP-04-15, 60 NRC 81, 89, aff'd, CLI-04-36, 60 NRC 631 (2004) ("Millstone").

Corlandt only needs to show that there is some nexus between the alleged omission and the protection of the health and safety of the public. See Millstone. Entergy's failure to include a detailed and workable aging management plan for the spent fuel pools will likely lead to deleterious effects to the groundwater, which terminates in the Hudson River. Therefore, Entergy needs to address an alternative to spent fuel pools for spent fuel waste storage.

A NRC application must contain a discussion of alternatives to major federal actions that will significantly affect the environment. 42 U.S.C. § 4332(2)(C)(iii); 10 C.F.R. § 51.53(c)(3)(ii). However, Entergy fails to discuss alternatives to spent fuel storage in its LRA or Environmental Report even though it confirmed the presence of known leaks from the IP2 spent fuel pool and radioactive effluent in Indian Point groundwater. (Entergy Answer, at 36.) The presence of aging-induced leaks is a stated objective of a relevant aging management plan and must be adequately addressed in a license renewal application. Entergy Nuclear Generation Co. (Pilgrim Nuclear Power Station), LBP-07-12 (slip op. at 17) (Oct. 17, 2007).

One alternative to storing nuclear waste in spent fuel pools is to use dry cask storage, which is much more protective of the health and safety of the public and the environment than spent fuel pool storage. Dry cask storage provides a leak-tight containment of spent fuel. (George Sansoucy Aff., at ¶6.) Dry cask systems are designed to resist floods, tornadoes, and

other scenarios. In the past twenty years there have been no radiation releases from dry cask storage which have affected the public, nor any suspected or known attempts to sabotage spent fuel casks.⁷ (Id.)

Dry cask storage needs no water circulation or filtration, eliminating the production of “low-level” radioactive waste, which occurs in fuel pools and is capable of leaking into the groundwater, which has been evident at Indian Point. In addition, the absence of water eliminates the possibility of a nuclear reaction causing a chain reaction. Passive dry storage also eliminates mechanical apparatus which are susceptible to wear, breakdown, and malfunction. (George Sansoucy Aff., at ¶6.)

Robert Alvarez, Senior Scholar at the Institute for Policy Studies, also analyzed the results of loss-of-coolant from spent fuel pools and the likelihood of spent fuel pool fires that could result. Robert Alvarez, Reducing the Hazards from Stored Spent Power-Reactor Fuel in the United States, 11 SCIENCE & GLOBAL SECURITY 1 (2003) (“Alvarez Report”). A sudden loss in water from the pools, where spent fuel is densely packed, would likely heat up to a level where the zircaloy cladding would burst and then catch fire. See Alvarez Report, at 2; (George Sansoucy Aff., at ¶5.) A spent fuel pool fire’s release of cesium-137 would likely lead to property losses as high as hundreds of billions of dollars. Alvarez Report, at 3. Entergy’s spent fuel pool is housed in an auxiliary building, susceptible to attack from an outside source (e.g., tornadoes, earthquakes, or terrorism), which would significantly affect the environment. Entergy’s failure to address these relevant safety issues renders its Environmental Report inadequate; Entergy must discuss alternatives to the spent fuel pools in this proceeding.

⁷ U.S. Nuclear Regulatory Commission Backgrounder, Dry Cask Storage of Spent Nuclear Fuel.

b. Metal Fatigue on Key Reactors is an Appropriate Contention which should be Heard in this Proceeding

In addition to the claims set forth in its Petition, Cortlandt adopts Contention 26 of the New York State Notice of Intention to Participate and Petition to Intervene (“NYS Petition”). See 10 C.F.R. § 2.309(f)(3); Consol. Edison Co. (Indian Point, Units 1 & 2), CLI-01-19, 54 NRC 109, 132 (2001) (where both petitioners have independently established standing, Presiding Officer may permit petitioners to adopt the others’ contentions early in the proceeding).⁸ Entergy’s LRA does not include an adequate plan to monitor and manage the effects of aging due to metal fatigue on key reactor components. (NYS Petition, at 227.) Based on the NYS Petition, Entergy’s data reflects that “(a) the pressurizer surge line piping for IP2 and IP3, (b) the reactor coolant system piping charging system nozzle for IP2, and (c) the pressurizer surge line nozzle for IP3 have exceeded the applicable CUF criterion and thus are at a higher risk for failure due to metal fatigue.” (NYS Petition, at 228.) The issue of metal fatigue of plant systems falls within the purview of aging plant management review and is within the scope of this license renewal proceeding. Cortlandt designates the New York State Attorney General as representative for this contention.

We note that Entergy has tacitly conceded the inadequacy of this issue by filing a letter dated February 4, 2008 containing an explanation of how Entergy would address metal fatigue issues. This tardy document should either be precluded or additional time be given to the parties for review and comment.

⁸ New York has standing under 10 C.F.R. § 2.309(d)(2) (“a State . . . that wishes to be a party in a proceeding for a facility located within its boundaries need not address the standing requirements”).

IV.

The Systematic Hardening of Entergy's Assets to Prevent or Minimize the Potential Impact of Terrorism is an Appropriate Contention for this Proceeding

Both NRC Staff and Entergy oppose the admission of this contention on the grounds that NEPA does not require NRC to consider the impact of malevolent attacks. (NRC Answer, at 132; Entergy Answer, at 48.) Entergy also argues that the contention is inadmissible because "it impermissibly challenges NRC environmental regulations." (Entergy Answer, at 50.) But Applicant analyzes external events in its Environmental Report, including, *inter alia*, the effect of tornadoes and nearby facility incidents, without analyzing the impact of a systematic hardening of the facility's assets to prevent or minimize the potential impact of terrorism or an accident or to make Indian Point a less tempting target. (Entergy Environmental Report, at 4-52.) This omission from Entergy's Environmental Report is detrimental to the health and safety of the public and environment. See Millstone, 60 NRC at 89. Contrary to the Answers of NRC Staff and Entergy, this contention is supported by legal authority and is material to findings that must be made in this license renewal proceeding. 10 C.F.R. § 2.309(1)(i).

a. An Applicant's EIS for License Renewal must Analyze the Environmental Impact of Intentional Acts

The Court of Appeals for the Ninth Circuit has held that an agency cannot avoid its statutory responsibility under NEPA merely by asserting that an activity it wishes to pursue will have an insignificant effect on the environment. See, e.g., Twp. of Lower Alloways Creek v.

Pub. Serv. Elec. & Gas Co., 687 F.2d 732, 741 (3d Cir. 1982) (“Lower Alloways Creek”). The U.S. Environmental Protection Agency also requires Entergy to include an analysis of intentional destructive acts like terrorism in its EIS for license renewal. See Musumeci Letter. Entergy fails to include an analysis of terrorism in its Environmental Report, contrary to legal authority.

NEPA authorizes NRC to require an environmental study of the environmental impact of a proposed action if such action would significantly affect the quality of the human environment. 42 U.S.C. § 4332(2)(C). An application for license renewal for an additional twenty years is a significant and major action under NEPA. The Applicant’s environmental report must include “any new and significant information regarding the environmental impacts of license renewal of which the applicant is aware.” 10 C.F.R. §51.53(c)(3)(iv). As stated in the Cortlandt Petition, the potential for a terrorist attack on Indian Point is “new and significant information” of which Applicant is aware. (Petition, at 11.)

NRC considered the impacts of an intentional attack on a nuclear facility in its 1996 GEIS for license renewal. See NUREG-1437. This review is over ten years old, during which time new and significant information has developed. NRC itself stated it is undergoing a “top to bottom” security review against threats of sabotage. See San Luis Obispo Mothers for Peace v. Nuclear Regulatory Comm’n, 449 F.3d 1016, 1031 (9th Cir. 2006), cert. denied Pac. Gas & Elec. Co. v. San Luis Obispo Mothers for Peace, 127 S. Ct. 1124 (2007) (“Mothers for Peace”). NRC contradicts itself by “insist[ing] on its preparedness and the seriousness” of its response to post-September 11, 2001 terrorist threats “while concluding, as a matter of law, that all terrorist threats are ‘remote and highly speculative’ for NEPA purposes.” Id. NRC fails to “conduct its domestic licensing and related regulatory functions in a manner which is both receptive to environmental concerns and consistent with the Commission's responsibility as an independent

regulatory agency for protecting the radiological health and safety of the public.” 10 C.F.R § 51.10(b).

It is “unreasonable for the NRC to categorically dismiss the possibility of terrorist attack . . . as too ‘remote and highly speculative’ to warrant consideration under NEPA.” Mothers for Peace, 449 F.3d at 1030. In its brief to the Ninth Circuit, NRC reasoned that it did not have to consider terrorism under NEPA because Diablo Canyon was “not a particularly vulnerable or attractive terrorist target” and “given that the attacks of September 11, 2001, were in highly populated and visible areas while Diablo Canyon is on a remote area of the coast and not readily available to public scrutiny, it could be argued that this particular facility is an unlikely target.” (NRC Brief, at 27 n.7.)

Indian Point is in a highly populated and visible area. Indian Point is within 25 miles of the major metropolitan city, New York City, which has been the target of two terrorist attacks. Unlike the facility at Diablo Canyon, Indian Point is particularly vulnerable and a highly attractive terrorist target. Over 20 million people, or 8% of the population, live and/or work within a 50-mile radius of Indian Point. Additionally, a nuclear plant’s location will have a direct effect on the probability of risk of terrorist attack. See Limerick Ecology Action, 869 F.2d at 738. “[T]he population distribution in the vicinity of the site affects the magnitude and location of potential consequences from radiation releases.” Id. (quoting 48 Fed. Reg. at 16,020) (internal quotations omitted). Because of Indian Point’s unique siting, NRC must minimize “the environmental aftermath of its actions.” Metropolitan Edison Co. (Three Mile Island Nuclear Station, Unit 1), LBP-80-8, 11 N.R.C. 297, 307 (1980) (“Three Mile Island”).

“[I]t is in the best interest of the agency and its stakeholders to move forward with a discussion of the best way to address [the impacts of terrorism under NEPA].” AmerGen Energy

Co. (License Renewal for Oyster Creek Nuclear Generating Station), CLI-07-08, 2007 WL 595084, at *6 (Feb. 26, 2007) (Jaczko, Comm'r dissenting). NRC "must . . . find a way to consider the impacts of terrorism in a NEPA analysis." Id. at *7. NRC stated that "the agency has long required analysis of means and methods of hypothetical attacks against specific facilities." Mothers for Peace, 449 F.3d at 1031.

The mere assertion of "unquantifiability" does not immunize the NRC from considering an issue as serious as sabotage of a nuclear facility. Limerick Ecology Action, Inc. v. U.S. Nuclear Regulatory Comm'n, 869 F.2d 719, 744 (3d Cir. 1989) ("Limerick Ecology Action"). An asserted lack of quantifiable risk does not necessarily preclude further consideration under NEPA. Three Mile Island, 11 N.R.C. at 307; see also Potomac Alliance v. U.S. Nuclear Regulatory Comm'n, 682 F.2d 1030, 1036-37 (D.C. Cir. 1982) ("while an agency cannot be asked to engage in a 'crystal ball' inquiry or to 'foresee the unforeseeable,' neither can it be allowed to abjure 'informed prediction' of possibilities"). Protective measures against the risk of attacks are prudent even if they are not quantifiable or predictable. (Brief for the Federal Respondents, at 10) ("NRC Brief.") If the petitioner sets forth some method or theory, NRC must analyze the risk of sabotage in the contention. See Limerick Ecology Action, 869 F.2d at 744. One possible test for Applicant to use to estimate the hypothetical impacts of severe accidents on the surrounding environment and members of the public is Level 3 model using MACCS2 consequence analysis software code. (See Environmental Report, at 4-52.)

Sandia National Laboratory researchers found that if a plane traveling at speeds greater than 135 miles per hour hit a spent fuel pool, the liquid in the pool would evaporate and create a fireball, leading to large radioactive releases. Alvarez Report, at 14. The planes which hit the World Trade Center on September 11, 2001 were traveling at speeds of approximately 590 mph,

and the plane that hit the Pentagon was traveling at a speed of approximately 350 mph. Alvarez Report, at 15. NRC disagreed with the Alvarez Report because it based much of its data on a 1997 Brookhaven National Laboratory (“BNL”) study “which was performed for a reactor site location that represents an extremely high surrounding population density.” Nuclear Regulatory Comm’n, Nuclear Regulatory Comm’n (NRC) Review of ‘Reducing the Hazards from Stored Spent Power-Reactor Fuel in the United States’ 11 SCIENCE & GLOBAL SECURITY 203, 204 (2003) (“NRC Review of Alvarez Report”). Indian Point is surrounded by an extremely high population density of 20 million people. The BNL study addresses the exact issue that is in dispute from Applicant’s license renewal application.

Entergy’s LRA does not address the environmental impacts of an act of terror under NEPA, which the Ninth Circuit held must be considered and Commissioner Jaczko stated must be analyzed in a license renewal application. The mere fact that a terrorist act may not be quantifiable does not preclude NRC’s analysis under NEPA. See Limerick Ecology Action, 869 F.2d 719. Therefore, Applicant must address this issue in its LRA prior to NRC issuing Applicant a license renewal for an additional 20 years.

b. Applicant’s Analysis of the Probability and Scope of Severe Accidents is Inadequate

Entergy’s failure to completely and accurately analyze severe accident mitigation alternatives (“SAMAs”) renders its Environmental Report insufficient under NEPA. Entergy has failed to address significant causes of severe accidents, including spent fuel pool fires and acts of sabotage, because of its underestimation of the off-site costs of severe accidents. NRC should require Entergy to redo its SAMA analysis more rigorously and accurately so that the purposes

of NEPA are satisfied. See 42 U.S.C. § 4331(b)(2) (the federal government must ensure the public's safety).

NEPA requires an EIS to be searching and rigorous, assessing the environmental impacts of the proposed action on the surrounding environment. Marsh v. Or. Natural Res. Council, 490 U.S. 360, 370-71 (1989) (“Marsh”). A nuclear power plant's EIS must examine “alternatives for reducing or avoiding adverse effects.” 10 C.F.R. § 51.71(d). An applicant in its license renewal application must address SAMAs in its Environmental Report. 10 C.F.R. § 51.53(c)(3)(ii)(L). Entergy addressed some SAMAs using a present value of cost risk analysis. It determined the present value of cost risk for Indian Point by monetizing the estimated consequences of radioactive releases, multiplying that figure by their estimated probabilities, and summing the resulting value over time by discounting to the present value. Environmental Report Section 4.21. Using these steps, Entergy estimated that the value of averted consequences was \$1,337,939 for IP2 and \$1,340,515 for IP3. Environmental Report, at 4-62. However, these figures do not account for external events and uncertainty. Id. Two significant areas Entergy failed to analyze were the contribution to severe accident costs by a fire in the spent fuel pools or by an intentional act. Because Entergy did not analyze these events, it did not identify any SAMAs to avoid or mitigate the costs of such accidents. See Mothers for Peace, 449 F.3d at 1031 (“[T]he agency has long required analysis of means and methods of hypothetical attacks against specific facilities”).

Entergy's SAMA analysis does not satisfy NEPA because it did not take a “hard look” at environmental impacts or alternatives, Marsh, 490 U.S. at 374, and failed to address several significant factors to costs of severe accidents. There is no discussion in the Environmental Report of any SAMAs that would avoid or mitigate the costs of severe accidents by a fire in the

spent fuel pools. See Gordon Thompson, Risk-Related Impacts from Continued Operation of the Indian Point Nuclear Power Plants 51 (Nov. 28, 2007) (unpublished report, on file with Riverkeeper, Inc.) (“Thompson Report”).⁹ There is also no discussion of SAMAs that address the severe accident costs from intentional attacks on the Indian Point reactors or spent fuel pools. Id. at Section 7. Using low-probability assumptions from NUREG-1353, the present value cost risk for a non-intentional accident at Indian Point’s spent fuel pool would be \$27.7 million. Id. at 49. The present value of cost risks from a terrorist attack on both the reactor and the spent fuel pools exceeds half a billion dollars. Id. However, Entergy does not account for this in its Environmental Report and does not include SAMAs for these possible situations. Because Entergy has not considered severe accident mitigation alternatives that will have a significant effect on the environment, its license renewal application is inadequate. 10 C.F.R. § 51.53(c)(3)(ii).

CONCLUSION

The bases for Cortlandt’s contentions from its Request for Hearing and Petition to Intervene are incorporated herein. For the reasons set forth above, Cortlandt has established that it has standing and has proffered an admissible contention. Therefore, Cortlandt’s Request for Hearing and Petition to Intervene should be granted.

⁹ The Thompson Report is Attachment 2 of Riverkeeper, Inc.’s Request for Hearing and Petition to Intervene in the License Renewal Proceeding for the Indian Point Nuclear Power Plant (Nov. 30, 2007).

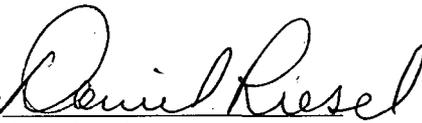
On Behalf of Linda D. Puglisi, Supervisor of the Town of Cortlandt, and the Town of Cortlandt

Dated:

February 8, 2008
New York, New York

Respectfully Submitted,

Thomas F. Wood
Town Attorney
Town of Cortlandt
And
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
ENTERGY NUCLEAR OPERATIONS, INC.)	Docket Nos. 50-247- LR and 50-286-LR
(Indian Point Nuclear Generating Units 2 and 3))	February 8, 2008

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1. Affidavit of George E. Sansoucy, P.E.Exhibit A

EXHIBIT A

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
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In the Matter of)	
ENTERGY NUCLEAR OPERATIONS, INC.)	Docket Nos. 50-247- LR and
(Indian Point Nuclear Generating)	50-286-LR
Units 2 and 3))	February 8, 2008

AFFIDAVIT OF GEORGE E. SANSOUCY, P.E.

1. I am a consulting engineer for private and public institutions regarding projects throughout the United States ranging from regulatory issues, utility valuation, environmental, real estate development policy, power engineering and civil engineering. I graduated from the University of New Hampshire in 1974, with a Bachelor of Science and Masters of Science Degree in Civil Engineering. I have served as a Project Manager working in the municipal and industrial wastewater and water treatment fields, and planning and civil engineering. Since 1980, I have managed my own consulting engineering and construction firm, developing hydroelectric plants throughout New England and New York State as well as development and construction of commercial and industrial real estate, utility valuations, regulatory consulting and policy development.

2. I have over 25 years experience working at the local, state and federal level advising clients regarding aspects of various civil engineering project design, construction, and economics for power related facilities before a variety of state and federal agencies including the NRC, the Federal Energy Regulatory Commission and before the Environmental Protection Agency, etc. My expertise includes environmental policy, regulatory policy, power related valuations and project design as well as a variety of other civil engineering activities which are governed by various local, state and federal codes.

3. I have had the opportunity and have experience in advising clients such as the U.S. Government, namely the U.S. Navy, states such as the State of Massachusetts, counties such as Lake County regarding the Perry Nuclear Plant in Ohio and communities such as Plymouth, Massachusetts regarding the Pilgrim Nuclear Power facility

4. I have worked with the Town of Cortlandt through the nuclear collaborative sponsored by the New York Public Service Commission which cleared the regulatory pathway for the sale of the Indian Point Nuclear Plant from Consolidated Edison to Entergy. As such, I am familiar with the facts stated herein.

EXHIBIT A

5. I am providing the following testimony to discuss why the spent fuel pool at the Indian Point Nuclear Generating Units 2 and 3 Facility (Facility) should be reviewed on a plant-specific basis and not as part of the "Generic Environmental Impact Statement for License Renewal of Nuclear Plants."

The Nuclear Regulatory Commission's (NRC) regulations in 10 CFR Part 51, as amended on December 18, 1996, specify the environmental impacts of a license renewal of a nuclear reactor, pursuant to the requirements of the National Environmental Policy Act (NEPA). Impacts designated as belonging to Category 2 must be considered in a plant-specific Environmental Review (ER) and a plant-specific Environmental Impact Statement (EIS). Only Category 1 issues do not require re-consideration in each license renewal, but rather are considered generic. Environmental impacts which constitute Category 2 are the result of severe accidents. The NRC defines severe accidents as follows: "the class of events, not attributable to deliberate, malicious acts, in which nuclear fuel located within a reactor core experiences a substantial loss of physical integrity." The NRC's historic interpretation of severe accidents excludes events in which the integrity outside of the reactor, including the spent fuel pool or on-site dry cask storage facility, is impacted.

However, the possibility of losing the water in the spent fuel pools at the Facility, which results in a zirconium fire, is a potential threat to the health and safety of the public and the environment. Therefore, the integrity of the spent fuel pool and fuel storage options should be reviewed with a plant-specific ER and EIS.

6. Spent Fuel Pool Fire

The NRC and others have published technical literature on the potential for a spent fuel pool fire. Three of these documents, which were published by the NRC and made available for public input, meet the standards of NEPA and are cited below;

- (i) NRC's August 1979 Generic Environmental Impact Statement (GEIS) on Handling and Storage of Spent Light Water Power Reactor Fuel (NUREG-0575);
- (ii) NRC's May 1996 GEIS for License Renewal of Nuclear Plants (NUREG-1437); and
- (iii) NRC's September 1990 review of its Waste Confidence Decision (55 Fed. Reg. 38,474).

A review of the literature cited above demonstrates that the information relating to spent fuel pool fires predates the 1996 GEIS for License Renewal of Nuclear Plants. However, subsequent literature published by the NRC in February 2001 addresses the risk of a pool fire at a nuclear plant and demonstrates the potential of a spent fuel pool fire. In addition, the National Academy of Science (NAS) published a 2004 report addressing the risk of a spent fuel pool fire and found that under some conditions, a terrorist attack that partially or completely drained a spent fuel pool could lead to a zirconium fire and release large quantities of radioactive material.

This body of more recent literature and studies relative to spent fuel pool accidents and fires demonstrates the need for the NRC to review spent fuel pool issues on a plant-by-plant basis, especially since when the 1996 GEIS was developed, the Department of Energy (DOE) was to

EXHIBIT A

begin removing fuel from commercial reactors and transferring this fuel to a central repository, which is clearly behind schedule resulting in the use of dry cask storage systems at the nuclear plant sites to ensure a safe and environmentally sound alternative to spent fuel pools.

Dry cask systems are designed to resist floods, tornadoes, and other scenarios. In the past twenty years there have been no radiation releases which have affected the public, nor any suspected or known attempts to sabotage spent fuel casks.¹

Dry cask storage needs no water circulation or filtration, eliminating the production of "low-level" radioactive waste, which occurs in spent fuel pools and as demonstrated at Indian Point is capable of leaking into the groundwater. In addition, the absence of water eliminates the possibility of a nuclear reaction causing a chain reaction. Passive dry storage also eliminates mechanical apparatus which are susceptible to wear, breakdown, and malfunction.

7. I recommend that as much fuel as practical be moved as quickly as possible from the spent fuel pools to dry cask storage to minimize the risk of spent fuel pool fires.

8. In the event that the NRC believes it cannot require Entergy to move fuel from the spent fuel pools to dry cask storage quicker than otherwise, the NRC should require a thorough and detailed investigation through the appropriate regulatory mechanism to begin the process of hardening the fuel pool building roof, walls and systems from terrorist activity, leakage, sabotage, error or mishandling so that the public is more adequately protected than it would otherwise be under the generic license renewal proposed

9. When one considers the unique position the Town of Cortlandt is in and the fact that Indian Point is located in one of, or the most densely populated areas in a 50-mile radius of the plant, certain generic considerations by the NRC, especially those which pre-date 9/11, and the obvious propensity for terrorist attacks on areas of high population, the NRC should reconsider its position denying Category 1 contentions for Indian Point itself. In short, as a matter of sound regulatory and environmental policy, Indian Point Units 2 and 3 should not be viewed as business-as-usual for license renewal consideration.

George E. Sansoucy
GEORGE E. SANSOUCY, C.E.

Sworn to before me this
8th day of February, 2008

Susan Spearin
NOTARY PUBLIC

SUSAN SPEARIN, Notary Public
My Commission Expires June 1, 2010



¹ U.S. Nuclear Regulatory Commission Backgrounder, Dry Cask Storage of Spent Nuclear Fuel.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
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In the Matter of _____)
ENTERGY NUCLEAR OPERATIONS, INC.) Docket Nos. 50-247- LR and
(Indian Point Nuclear Generating) 50-286-LR
Units 2 and 3) February 8, 2008
_____)

CERTIFICATE OF SERVICE

I hereby certify that on February 8, 2008 a true copy of the foregoing TOWN OF CORTLANDT'S REPLY TO (1) NRC STAFF'S RESPONSE TO TOWN OF CORTLANDT'S REQUEST FOR HEARING AND LEAVE TO INTERVENE AND (2) ANSWER OF ENTERGY NUCLEAR OPERATIONS, INC. OPPOSING TOWN OF CORTLANDT'S REQUEST FOR HEARING AND LEAVE TO INTERVENE, were served by electronic mail and by first class mail upon all parties, upon the following parties and participants:

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