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**From:**  
John Sipos

**TACs:**  
MD6055 MD6056

**To:**  
Bo Pham

\*\*\* YELLOW \*\*\*

**For Signature of:**

**Routing:**  
Dyer  
Wiggins  
Mitchell  
Boger  
Grobe  
NRR Mailroom

**Description:**  
"Tendered" Application for Relicensure by Entergy Nuclear IP LLCs for Operating Licenses Nos. DPR-26 & DPR-64

**Assigned To:**  
DLR

**Contact:**  
KUO, PAO-TSIN T

**Special Instructions:**

*Called DLR (Teressa) on 7/17 at 1:53 PM for pick.*



STATE OF NEW YORK  
OFFICE OF THE ATTORNEY GENERAL

ANDREW M. CUOMO  
ATTORNEY GENERAL

DIVISION OF SOCIAL JUSTICE  
ENVIRONMENTAL PROTECTION BUREAU

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Mr. Bo Pham  
Environmental Project Manager  
Division of License Renewal  
U.S. Nuclear Regulatory Commission  
Mail Route O-7B1  
11555 Rockville Pike  
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July 13, 2007

Re: *"Tendered" Application for Relicensure by Entergy Nuclear Indian Point LLCs  
for Operating Licenses Nos. DPR-26 and DPR-64*

Dear Mr. Pham:

The State of New York respectfully requests that the NRC determine that Entergy's recently-filed application to renew its operating licenses for the Indian Point nuclear reactors does not comply with 10 C.F.R. § 54.13. Accordingly, the State of New York requests that the NRC not docket or process this application and require Entergy to supplement the application.

**Background**

The Indian Point nuclear compound contains three reactors: Indian Point 1 ("IP 1"), completed in 1962 but retired in 1974 after spending over half the time out of service for repairs; Indian Point 2 ("IP 2"), licensed in 1973; and Indian Point 3 ("IP 3"), licensed in 1976. Both IP 2 and IP 3 are pressurized water reactors. The fuel has been removed from IP 1 but the other plants contain highly radioactive uranium and fission by-products such as plutonium in their reactor cores. In addition, all three plants have spent fuel pools outside the plants' protective containment shells that contain large quantities of highly radioactive material.

Indian Point is on the east bank of the Hudson River, 24 miles north of the New York City line and 35 miles from mid-Manhattan. This puts Indian Point in the most densely populated area in the United States (approximately 20 million people, about 6% of the nation's population, live or work within 50 miles of Indian Point) and near the City's reservoirs. Lyman, Ph.D., *Chernobyl on the Hudson?: The Health and Economic Impacts of a Terrorist Attack at the Indian Point Nuclear Plant*, at 23 (Union of Concerned Scientists,

Sept. 2004) (hereinafter "*UCS Study*"). Indian Point is on or close to the Ramapo Fault, a significant seismic feature running from North Jersey to the Hudson Highlands. See Yash P. Aggarwal et al., *Earthquakes, Faults, and Nuclear Power Plants in Southern New York & Northern New Jersey*, Science, Jan. 1, 1978.

The original 40-year operating licenses for IP 2 and IP 3 expire in September 2013 and December 2015, respectively, the maximum period authorized by the Atomic Energy Act. If issued, the requested operating licenses will supersede and displace the original operating licenses.

### **The 2007 Combined License Renewal Application**

On April 30, 2007, two separate, but related, limited liability corporations, Entergy Nuclear Indian Point 2, LLC and Entergy Nuclear Indian Point 3, LLC (collectively, "Entergy") filed a single License Renewal Application ("Application" or "LRA") for the renewal of two separate Operating Licenses, Nos. DPR-26 and DPR-64, for the Indian Point Nuclear Generating Unit Nos. 2 and 3, respectively. The present licenses were issued 34 and 32 years ago. As required by 10 C.F.R. § 51.53(c) Entergy included an Environmental Report (or "ER") as part of the License Renewal Application. The Application also included a Final Safety Analysis Report (or "FSAR") as part of its application.

As the NRC Staff has recognized, it must first ascertain whether an applicant "has submitted sufficient information in accordance with 10 C.F.R. §§ 54.19, 54.21, 54.22, 54.23, and 51.53(c)," before it can determine that "the application is acceptable for docketing." Additionally, 10 C.F.R. § 54.13 mandates that information submitted by an applicant for a renewed license "must be complete and accurate in all material respects." Furthermore, 10 C.F.R. § 2.101(a)(4) requires that the NRC determine whether or not an application is complete. That regulation also anticipates that license applications may be incomplete and "therefore not acceptable for processing." *Id.*

The NRC already has identified one inadequacy in the application. In a June 18, 2007 letter, the NRC informed Entergy that the current licensing basis for Unit 2 was not fully represented in accordance with 10 C.F.R. § 54.4(a)(3). Specifically, during its acceptance review, the NRC staff determined that Entergy's application did not include information concerning those systems, structures, and components relied on in the safety analyses or plant evaluations to comply with the requirements for station blackout ("SBO") required by 10 C.F.R. § 50.63 and safe shutdown required by 10 C.F.R. § 50.48. In this regard, the LRA did not include information on the gas turbines that Entergy currently represents it relies upon as an alternate power supply for the Appendix R and SBO events.

In several additional respects the Application, the ER, and the FSAR are seriously incomplete or inaccurate. Until these deficiencies are corrected, the NRC should not accept the Tendered Application for docketing or processing.

## Identification of Inadequacies

In addition to the deficiency identified in the NRC's June 18, 2007 letter, a preliminary review conducted by our Office has revealed the following inadequacies:

1. THE APPLICATION DOES NOT IDENTIFY WHICH VERSION OF THE GENERAL DESIGN CRITERIA APPLIES TO THE INDIAN POINT UNIT 2.

The State is concerned that the Application does not properly reflect or commit to the General Design Criteria (or "GDC") established by the NRC. The General Design Criteria establish minimum requirements for the principal design criteria for water-cooled nuclear power plants similar in design and location to plants for which construction permits have been issued by the Commission. In turn, the principal design criteria establish the necessary design, fabrication, construction, testing, and performance requirements for structures, systems, and components important to safety. Compliance with the General Design Criteria ensures that a nuclear plant's structures, systems, and components provide reasonable assurance that the facility can be operated without undue risk to the public's health and safety. 10 C.F.R. Part 50, Appendix A. The General Design Criteria were initially proposed in 1967 and revised in 1971.

As the NRC has recognized, the General Design Criteria constitutes one of the basic regulatory standards for a nuclear power plant. Absent a definitive representation as to which version of this core regulation applies, the public is left to speculate as to this point. Similarly, clarification of this central issue would provide Entergy, its employees, investors, and insurers as well as Federal and State inspectors and emergency service personnel with an objective standard by which to conduct their activities.

The LRA and the FSAR should be revised to make clear which version of the General Design Criteria applies to the Indian Point Unit 2. In its current form, the LRA and the FSAR do not comply with 10 C.F.R. § 54.13.

2. IN CERTAIN INSTANCES, WHERE THE APPLICATION DOES MENTION THE GENERAL DESIGN CRITERIA, IT REVISES THE TERMINOLOGY TO AVOID THEIR REQUIREMENTS.

Instead of applying the General Design Criteria as written in the Code of Federal Regulations, Entergy's application provides a watered-down version of certain criteria or modifies their substance.

In a number of instances, the LRA and the FSAR adds the phrase "where practical" when purporting to describe the General Design Criteria. The addition of this qualifying language changes the criteria.

Besides adding conditional and qualifying language, the FSAR also appears to revise other general design criteria by restating their very substance. By way of example, Section 5.1.1.1.7 of the Unit 2 USFAR states: "*The selection and use of containment materials shall be in accordance with applicable engineering codes. (GDC 50).*" In comparison, Criterion 50 of the GDC's as published in 1967 reads: "*Principal load carrying*

*components of ferritic materials exposed to the external environment shall be selected so that their temperatures under normal operating and testing conditions are not less than 30 degrees F above nil ductility transition (NDT) temperature.”* The LRA’s descriptions of other GDC’s reflect similar departures from the actual text of the GDC.

In its current form, the LRA and the FSAR do not comply with 10 C.F.R. § 54.13. The LRA and FSAR should be revised to remove such qualifying and conditional language and to quote the actual text of the General Design Criteria. This is particularly important because it is through these filings with the NRC (which are subject to the requirements of 18 U.S.C. § 1001) that Entergy represents the commitments it accepts and will meet during its operation of IP 2 and IP 3. The commitments need to be unequivocal to facilitate later reviews to determine whether Entergy is operating IP 2 and IP 3 in compliance with its commitments.

3. IN CERTAIN INSTANCES, THE APPLICATION DOES NOT ADDRESS CRITERIA CONTAINED IN THE GENERAL DESIGN CRITERIA.

The Application and the FSAR do not mention or address General Design Criteria numbers 8, 21, 22, 35, 51, 53, 64, and 65. Accordingly, the LRA and the FSAR do not comply with 10 C.F.R. § 54.13.

The LRA and FSAR should be revised to specifically reference, accurately quote, and substantively discuss these criteria. As noted, this is important because it is through these filings with the NRC that Entergy represents the commitments it accepts and will meet during its operation of IP 2 and IP 3. The commitments need to be unequivocal to facilitate later reviews to determine whether Entergy is operating IP 2 and IP 3 in compliance with its commitments.

4. THE ENVIRONMENTAL REPORT CALCULATES THE OFF-SITE IMPACT OF A RELEASE OF RADIATION IN THE EVENT OF A SEVERE ACCIDENT WITHOUT CONSIDERING THE SUBSTANTIAL INCREASE IN POPULATION IN THE IMMEDIATE VICINITY OF THE PLANT AND THE SUBSTANTIAL REDUCTION IN THE ABILITY OF LOCAL AUTHORITIES OR OTHERS TO ADEQUATELY EVACUATE THIS INCREASED POPULATION IN THE EVENT OF A SEVERE ACCIDENT DURING THE PROPOSED 20 YEARS OF ADDITIONAL OPERATION.

Relying on outdated analyses of population density and evacuation effectiveness, the ER understates the radiation impact on the human population in the event of a severe accident during the proposed 20 years of additional operation.<sup>1</sup> It ignores recent analyses that demonstrates that should a severe accident occur at the Indian Point site, there would be no effective way to evacuate the potentially affected population in time to avoid substantial radiation exposure.

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<sup>1</sup>Because any new operating license issued by the NRC will “supersede” the original 1973 or 1975 operating licenses on a going forward basis, 10 C.F.R. § 54.31(c), any NEPA environmental impact review of a new operating permit should examine the potential environmental impacts to be experienced during the entire term of the renewed permit, which, in this case, could extend for 28 years from the present date.

A 2003 report prepared by the consulting firm headed by James Lee Witt, former director of FEMA, the agency to whom NRC delegates primary responsibility for reviewing the adequacy of such plans, concluded that the radiological emergency plan for Indian Point is not adequate to protect the people from an unacceptable dose of radiation in the event of a release. James Lee Witt Associates, *Review of Emergency Preparedness of Areas Adjacent to Indian Point and Millstone*, viii (2003) ("Witt Report"). The Witt Report observed that it is questionable whether those at risk will have as much warning as NRC assumes, and that the narrow roads and hilly terrain within the 10 mile Emergency Planning Zone would make safe evacuation highly unlikely, if not impossible. Further, the Witt Report determined that the NRC-approved Indian Point plan fails to consider the reality that many essential personnel will take care of their families, rather than focus on their response activities, the possible ramifications of a terrorist-caused event, and the reality and impacts of spontaneous or "shadow" evacuation. A number of the problems identified by the Witt Report were confirmed by the shortcomings experienced during the evacuations in response to Hurricanes Ivan (2004) and Katrina (2005). However, the License Renewal Application does not address this definitive report.

Since the analysis of the economic cost of a severe accident is driven, in part, by the expected number of people exposed to a given amount of radiation, this failure to analyze the full extent of population growth and evacuation inefficiency results in the ER substantially underestimating the costs of such an accident and thus in a failure to consider, without valid justification, important mitigation measures that should be given serious consideration.

A 1982 study by Sandia National Laboratories ("Sandia") for NRC, using 1970 census data, found that a major radiation release at one of the two operating nuclear plants at Indian Point could kill as many as 50,000 people in the near term and cause 14,000 latent cancer fatalities. See Subcommittee on Oversight and Investigations, Committee on Interior and Insular Affairs, U.S. House of Representatives, *Calculation of Reactor Accident Consequences ("CRAC2") for U.S. Nuclear Power Plants Conditioned on an "SST1" Release*, at 6 (Nov. 1, 1982). The 2004 follow-up study prepared by the Union of Concerned Scientists concluded that a major release by one of the Indian Point plants could kill between 3,500 and 44,000 people within a week and from about 100,000 to over 500,000 people over time. See *UCS Study, supra*, at 5-6. The *UCS Study* estimated that just a portion of the direct economic loss, *i.e.*, the cost of decontamination, compensation for lost real estate, and lump sum payments to enable those displaced to restart their lives, would be between \$1.1 trillion and \$2.1 trillion. *Id.* at 6. The *UCS Study* used 2000 census data and Sandia's then current update of its radiological release computer model. *Id.* at 17. However, the License Renewal Application does not take these calculations into account.

The LRA and ER are incomplete in this respect. Even if Entergy does not agree with the conclusions of the cited reports, its obligations under 10 C.F.R. § 51.53(c) require it to disclose this new and significant information (not previously evaluated with respect to Indian Point) and provide its analysis of the significance of this information to its proposed license renewal.

5. THE ENVIRONMENTAL REPORT AND THE FINAL SAFETY ANALYSIS REPORT UNDERSTATE THE PROBABILITY OF A SEVERE ACCIDENT BY FAILING TO CONSIDER NEW INFORMATION REGARDING THE POTENTIAL IMPACT OF AN EARTHQUAKE AT THE SITE AND THE PROBABILITY THAT SUCH AN EARTHQUAKE WILL OCCUR DURING THE TERM OF THE RENEWED OPERATING LICENSE.

When Unit 2 and Unit 3 were originally licensed by the NRC, the understanding of the risk of an earthquake in this area and its possible magnitude was far less than current information now reveals. Thus, Unit 2 and Unit 3 were designed to withstand only this less severe earthquake risk.

Since the initial license proceedings some thirty years ago, new seismic data and scientific analysis have come to the fore – for the lower Hudson River area, the New York City metropolitan area, and Eastern North America. This new information should be acknowledged, discussed in the LRA, and taken into account by Entergy and the NRC. The LRA contains a document entitled “Updated Final Safety Analysis Report.” However, the “Updated” FSAR contained in Entergy’s current April 2007 LRA essentially is a copy of the 30-year-old FSARs.

In addition, with the new information, the ER and the “Updated” FSAR must either assess the probability of a severe earthquake occurring during the 20 to 28 years of operation authorized by any renewed license and consequences of an earthquake-induced severe accident and calculate new economic costs or explain the technical and scientific bases upon which Entergy relies for rejecting the implications of this new information. Indeed, the ER and FSAR should examine such issues for the entire term of any renewed operating license. These costs must then be used to better evaluate alternatives to mitigate or eliminate the consequences of an earthquake induced severe accident. The ER and FSAR must reference and discuss up-to-date seismic information.

The LRA, ER, and FSAR are incomplete and inaccurate in this respect and do not comply with 10 C.F.R. § 54.13.

6. THE ENVIRONMENTAL REPORT FAILS TO DISCLOSE OR DISCUSS THE SUBSTANTIALLY INCREASED LIKELIHOOD, DURING THE TERM OF THE RENEWED OPERATING LICENSE, THAT A MAJOR RELEASE OF RADIATION FROM THE SITE MAY OCCUR AS THE RESULT OF AN INTENTIONAL ACT.

NRC regulations require that the ER “contain sufficient data to aid the Commission in its development of an independent analysis.” See 10 C.F.R. § 51.45 (c). Specifically, “the analyses for environmental reports shall, to the fullest extent practicable, quantify the various factors considered.” *Id.* Moreover, the ER “should not be confined to information supporting the proposed action but should also include adverse information.” See 10 C.F.R. § 51.45 (e).

Relying on probability analyses that were developed without consideration of the substantially increased threat of a terrorist attack in the United States, particularly in the area of New York where Indian Point 2 and 3 are located, Entergy engages in an analysis of the economic cost of a catastrophic event at the plant. Since the final economic cost of

such an event is driven primarily by the probability of the event occurring during the 20-28 years of proposed operation, its failure to factor in the substantially increased risk of an intentional act directed against one or both of these reactors or their spent fuel storage facilities, particularly an aerial attack of the type that occurred on September 11, 2001, makes its economic analysis seriously deficient. It is common knowledge now that two of the jets hijacked on September 11, 2001 flew over or near Indian Point. See Nat'l Comm'n on Terrorist Attacks Upon the U.S., *The 9/11 Commission Report*, 32 (2004).

A properly conducted analysis would include (a) consideration of the likelihood of such an event occurring during the proposed 20-28 years of authorized operation, (b) the consequences of such an event, including an analysis of the capability of the existing structures to withstand an attack from the air either in the form of a missile or a large airplane, diverted from one of the nearby airports and loaded with fuel, and (c) the economic costs of implementing protective measures, such as barriers, to deflect the attack and mitigation measures to ameliorate the consequences of a release of radiation in the event of a successful or partially successful attack. However, the License Renewal Application does not contain such an analysis. In its current form, it does not comply with 10 C.F.R. § 54.13.

The License Renewal Application is incomplete in this respect and should be revised accordingly.

7. THE ENVIRONMENTAL REPORT FAILS TO CONDUCT A COMPREHENSIVE EVALUATION OF THE ALTERNATIVES TO APPROVAL OF THE REQUESTED LICENSE EXTENSION BECAUSE IT DOES NOT CONTAIN A SYSTEMATIC OR SCIENTIFICALLY COMPETENT DISCUSSION OF THE POTENTIAL FOR ENERGY CONSERVATION DURING THE 20 TO 28 YEARS OF OPERATION AUTHORIZED BY SUCH PERMIT.

Numerous studies have demonstrated, particularly since the price of electricity has risen dramatically in the last few years, that saving a MW hour of electricity is far less expensive than generating one. Entergy merely notes that such programs, to date, are driven by what the utilities want to do and that, for Entergy, it will not pursue an aggressive energy conservation program in any state, like New York, where electricity generators are deregulated. Regardless of Entergy's corporate intentions, it is obligated under NRC regulations to provide a full and fair assessment of any viable alternative to the proposed action. In particular, such an assessment should be based on the recognition that any alternative to Indian Point reactors does not need to be available until 6 or 8 years from now when the initial operating licenses expire. Thus, there is substantial lead time for such energy conservation strategies and alternative power sources to come on line. Furthermore, New York State is pursuing various actions to implement additional energy efficiency standards and encourage alternative energy sources within the next few years. In addition, a full and fair assessment also should take into account that such strategies and sources will be in use during Indian Point's proposed 20 additional years of operation beyond 2013 and 2015. Entergy has failed to provide such an analysis and relies, at best, on the current status of energy conservation (and other benign alternatives like wind turbines, solar power, biomass, etc.) rather than on the potential for full deployment of these alternatives if, within the next two years, it were determined that Indian Point Unit 2 and/or Unit 3 would cease operation when their current licenses expired in 2013 and

2015. Entergy needs to evaluate in the ER the impact of such an incentive on the development and deployment of non-nuclear, carbon-neutral, energy alternatives. Thus, the ER does not comply with 10 C.F.R. § 54.13.

The LRA and ER are incomplete in this respect and should not be docketed or processed until this inadequacy is corrected.

8. THE ENVIRONMENTAL REPORT IMPROPERLY LIMITS THE "NO ACTION" ALTERNATIVE TO CONSIDERATION OF EITHER BOTH INDIAN POINT 2 AND 3 OR NEITHER OF THEM.

The License Renewal Application's crabbed analysis of alternatives ignores the possibility that one license renewal might be approved and the other rejected. Such an analysis might impact on the feasibility of alternative technologies, such as wind, solar, biomass, or energy conservation, in terms of their capabilities to meet the need created by turning off only one of the plants. The ER also fails to consider which unit might be better shut down and which might be better left to run an additional twenty years. The mere fact that the two plants are now owned by the same company -- a situation that has existed only for the last few years -- is not a justification for failing to separately evaluate each unit, mitigation measures for each unit, and alternatives to each unit.

The LRA and ER are incomplete in this respect and should not be docketed or processed until this inadequacy is corrected.

9. THE ENVIRONMENTAL REPORT FAILS TO INCLUDE A CONSIDERATION OF THE ENVIRONMENTAL IMPACTS OF LAND USE, BOTH ON-SITE AND OFF-SITE, WHICH WILL OCCUR IF THE SPENT NUCLEAR FUEL GENERATED BY THESE PLANTS DURING THE ADDITIONAL YEARS OF PROPOSED OPERATION REMAINS AT THE SITE INDEFINITELY BECAUSE THERE IS NO AVAILABLE OFF-SITE STORAGE OR DISPOSAL FACILITY FOR SUCH SPENT FUEL.

Indian Point's three spent pools were never intended to serve as medium- or long-term storage facilities for spent radioactive fuel. Rather, the federal government and the nuclear energy industry expected to dispose of spent radioactive fuel at the proposed nuclear waste disposal facility located at Yucca Mountain in Nevada beginning in 1998. However, no long term disposal site yet exists for radioactive spent fuel. *Entergy Nuclear Generating Co. v. U.S.*, 64 Fed.Cl. 336 (2005) (discussed below). Indeed, to date, construction of the facility has not yet even begun. A Department of Energy official has recently stated that, under a very optimistic scenario, the Yucca Mountain disposal site could not begin receiving waste until 2017, and that slippage beyond that date was likely. *See Hearing Before the House Energy and Water Development Appropriations Subcommittee*, (Mar. 28, 2007) (statement of Edward F. Sproat III, Director for Civilian Radioactive Waste Management, DOE). In addition, even if completed in accordance with this delayed schedule, Yucca Mountain cannot accommodate the additional wastes that will be generated by the approximately 45 plants whose licenses have already been extended beyond their initial 40 year operating licenses or any new plants licensed in the future.

Given the significant and on-going delays concerning the Yucca Mountain facility, it appears increasingly likely that spent nuclear fuel will be stored on site for many years at the 103 nuclear power plants located throughout the country. This on-site storage will have significant impacts on present and future land use in the area around the Indian Point plant. However, the ER and FSAR do not address this issue.

The LRA and ER are incomplete in this respect and should not be docketed or processed until this inadequacy is corrected.

10. THE ENVIRONMENTAL REPORT FAILS TO INCLUDE A SUBSTANTIAL AMOUNT OF SIGNIFICANT NEW INFORMATION THAT IS, OR SHOULD BE, KNOWN TO THE APPLICANT.

As noted above there is substantial new and significant information on evacuation, population, intentional acts, earthquakes, energy conservation, and land use that is not discussed or even disclosed in the ER. As the owner of these two and many other nuclear plants, Entergy is particularly well-equipped to provide important information that may not otherwise be available to the NRC Staff or the general public and that bears on the proposed action. Except for disclosures of new information that support the position it is urging or that Entergy does not believe justifies any changed outcome (e.g., the leaks from the spent fuel storage pools and the pipes between Unit 2 and Unit 3), Entergy has chosen to ignore much additional information in its possession that is relevant to the pending application.

For example, in *Entergy Nuclear Generating Co. v. U.S.*, 64 Fed.Cl. 336 (2005), Entergy successfully sued the United States on the theory that the United States Department of Energy had breached a contractual duty to take possession of, and title to, spent nuclear fuel ("SNF") within 63 months after a utility submitted a delivery commitment schedule ("DCS") with regard to such SNF. In that suit, and at the urging of Entergy, the federal Court of Claims, in reliance on the stipulation of the parties and otherwise undisputed facts reached the following conclusion:

This aborted effort in 2004 to reinstitute the DCS process signals that no disposal of SNF will occur during 2010, taking into account the 63-month period between designation and collection, and moreover that disposal may not occur within any foreseeable time in the future. No repository is available.

64 Fed.Cl. at 340 (citation omitted)(the chaotic nature of the entire spent fuel storage management scheme is detailed in the Court's opinion at footnotes 3 and 4). Under principles of collateral estoppel, Entergy and the United States cannot now dispute the federal court's findings of facts or conclusions of law on this point. Yet, Entergy does not disclose the underlying information that it provided to the Court and/or had in its possession to support the finding reached by the Court.

The failure of the ER to disclose new and significant information, particularly where it may be detrimental to the position urged by Entergy, is contrary to the NRC regulations.

11. THE ENVIRONMENTAL REPORT DOES NOT ADEQUATELY ADDRESS THE IMPACT OF THE FACILITIES' "ONCE-THROUGH" COOLING SYSTEM.

Cooling water systems fall into three groups. "Once-through" systems take water in from outside sources such as the Hudson River, use it to absorb heat, and return the water to its source at a higher temperature. "Closed-cycle" systems re-circulate water after it passes through the heat source to a reservoir or tower where the water is cooled and add water to the system only to replace that which is lost through evaporation. Closed-cycle systems withdraw far less water than once-through systems. "Dry cooling" systems use air drafts to transfer heat, and, as their name implies, they use little or no water. See generally *Riverkeeper, Inc. v. United States EPA*, 358 F.3d 174, 182 n. 5 (2d Cir. 2004); *Citizens for the Hudson Valley v. N.Y. State Bd. on Elec. Generation Siting & Emt.*, 281 A.D.2d 89, 99 (3d Dep't 2001) (upholding a New York State Public Service Law Article X permit authorizing the construction of the Athens, New York, power plant utilizing a dry cooling system).

For approximately thirty years, Indian Point Units 1, 2, and 3 have diverted large amounts of water from the Hudson River in order to manage and control the facilities' operations. The chief effects of once-through cooling water intake structures are impingement, which occurs when aquatic organisms are squashed against a facility's intake screens, and entrainment, which occurs when they are extruded through or around the screens and sucked into the facility's cooling water intake structure. Once-through cooling water intake systems, such as those at Indian Point, can injure or kill billions of aquatic organisms each year. *Riverkeeper, Inc. v. EPA*, 475 F.3d 83, 89 (2d Cir. 2007). The alternative technologies, such as closed-cycle cooling or a dry cooling system, would substantially reduce fish mortality.

Entergy apparently wishes to continue to use the existing once-through cooling systems and has opposed replacing them with closed-cycle or dry-cooling systems. NRC's regulations require a complete analysis on available alternatives for reducing or avoiding adverse environmental effects and such analysis must "include a discussion of whether the alternatives will comply with such applicable environmental quality standards and requirements." See 10 C.F.R. § 51.45(b), (c), (d).

In addition, Entergy's "Entrainment Analysis," the "Impingement Analysis," and the "Heat Shock Analysis" do not evaluate and do not include significant adverse information contained in NYSDEC documents, as required under 10 C.F.R. § 51.45(c), (e) and 10 C.F.R. § 51.53(c). Rather than focus on older environmental impact reports, the LRA and the ER should discuss the most recent environmental studies conducted by the NYSDEC regarding entrainment and impingement.

Given the Second Circuit's recognition of the environmental damage caused by once-through cooling water intake systems, *Riverkeeper, Inc. v. EPA*, 475 F.3d at 89, the LRA's Environmental Report should contain a detailed discussion and analysis of the effects of the continued use of once-through cooling for another 20 to 28 years. Additionally, it should identify the existence of alternative cooling water systems, acknowledge the use of such alternative systems at other nuclear power plants throughout the country and around the world, and evaluate the use of such systems at Indian Point.

12. INCORPORATION OF ADDITIONAL COMMENTS SUBMITTED BY RIVERKEEPER, INC.

The State has received a copy of a June 4, 2007 letter from Riverkeeper identifying other deficiencies and inadequacies in the License Renewal Application. The State hereby adopts and incorporates those comments.

We understand that the NRC staff currently is considering Riverkeeper's comments.

\* \* \*

Conclusion

There are several reasons why the NRC Staff should require that this Application be as complete as possible before it is accepted for docketing.

First, to the extent the Application fails to include information that will eventually be needed, its full review by the Staff will be delayed, and valuable and necessary information critical to the NRC decision-making process will be lacking. Accordingly, the Application should be complete before it is docketed.

Second, the public is compelled to file its contentions based on the Application and any failure to file the contentions within the time provided triggers severe additional filing requirements to prove that a delay in filing the contention was justified. If incomplete applications are accepted for filing, the public is forced to file more of its contentions under the severe restrictions of the "late-filed contentions" provisions of the NRC regulations or to file contentions based solely on an incomplete Application. An incomplete Application can be corrected by Entergy even after a determination of "completeness," but only after forcing all the parties to go through the process of filing contentions based on the lack of information and then filing new contentions, if any, when the missing information finally arrives. This is inefficient and such a result would be contrary to the public interest, essentially rewarding the Applicant for submitting an incomplete application.

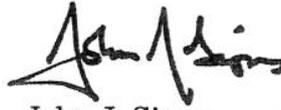
Third, the obligation to file a complete Application is particularly relevant with regard to environmental issues covered by the ER because the NRC is compelled by NEPA to fully investigate environmental implications of proposed major federal actions. This affirmative duty imposed upon the NRC cannot be fulfilled effectively if the party with the best access to the most relevant information is allowed to file an ER with significant gaps in it.

For all the reasons stated, the State of New York urges the NRC Staff to reject the current Application as incomplete and compel Entergy to submit a new or amended Application that fully addresses the significant issues identified in this letter.

We will be happy to discuss our concerns with the Staff at any mutually convenient time. We respectfully request a written response to the concerns expressed in this letter in advance of any final decision by the Staff on whether it will docket the Application.

Thank you for your careful consideration of our concerns.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "John J. Sipos". The signature is stylized with a large initial "J" and a long, sweeping underline.

John J. Sipos  
Assistant Attorney General

cc: Michael Kansler,  
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