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**GENERIC ENVIRONMENTAL IMPACT STATEMENT FOR LICENSE
RENEWALS SUPPLEMENT 38 INDIAN POINT NUCLEAR POWER STATION**

**COMMENTS OF RICHARD BLUMENTHAL, ATTORNEY GENERAL OF
CONNECTICUT**

SUMMARY

The proposed 20-year license extension for the Indian Point Nuclear Power Station threatens significant adverse consequences to human health and safety and the environment. The Nuclear Regulatory Commission ("NRC") has not taken the "hard look" required by the National Environmental Policy Act ("NEPA") in the draft supplemental environmental impact statement for the Indian Point Nuclear Power Station released December, 2008. NRC must thoroughly and accurately reevaluate the impacts resulting from a fire, accident or attack on the facility and especially on the stored spent nuclear fuel ("SNF") at the site, as those risks will be profoundly increased by the continued operation of the facility over an additional twenty years. In addition, since Indian Point was originally licensed, there has been a major increase in population in the potential emergency evacuation zone. As a result, the NRC must reanalyze the impact of an accident or attack in the context of a realistic evacuation plan covering areas of both Connecticut and New York. Finally, the draft supplemental impact statement itself clearly acknowledges that important data on potential impacts to natural resources is

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missing. Until all relevant data is made available and thoroughly reevaluated, NRC will not have met the terms of NEPA.

NEPA

The National Environmental Policy Act, 42 U.S.C § 4321, *et seq.* (“NEPA”), mandates that federal agencies involved in activities that may have a significant impact on the environment must complete a detailed statement of the environmental impacts and project alternatives. NEPA provides, in pertinent part, as follows:

The Congress authorizes and directs that, to the fullest extent possible . . .

(2) all agencies of the Federal Government shall -- . . .

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on --

(i) the environmental impact of the proposed action,

(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,

(iii) alternatives to the proposed action,

(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

42 U.S.C. § 4332.

NEPA directs that federal agencies, such as the NRC, must study certain issues and that the reviewing agency must take a “hard look” at these issues, but does not direct what result an agency must reach. Federal appellate courts have been very clear, that NEPA is an important federal law and compliance is mandatory. “NEPA was

created to ensure that agencies will base decisions on detailed information regarding significant environmental impacts and that information will be available to a wide variety of concerned public and private actors. *Morongo Band of Mission Indians v. Federal Aviation Administration*, 161 F.3d 569, 575 (9th Cir. 1998)” (quoted in *Mississippi River Basin Alliance v. Westphal*, 230 F.3d 170, 175 (5th Cir. 2000)).

Thus, the fundamental goal of an evaluation under NEPA is to require responsible government agencies involved with a given project to undertake a careful and thorough analysis of the need for that project and its impacts before committing to proceed with the project. As the Tenth Circuit has held:

The purpose of NEPA is to require agencies to consider environmentally significant aspects of a proposed action, and, in so doing, let the public know that the agency's decisionmaking process includes environmental concerns. *Baltimore Gas & Elec. Co. v. Natural Resources Defense Council*, 462 U.S. 87, 97, 76 L. Ed. 2d 437, 103 S. Ct. 2246 (1983); *Sierra Club v. United States Dep't of Energy*, 287 F.3d 1256, 1262 (10th Cir. 2002).

Utahns For Better Transportation v. United States Dept. of Transp., 305 F.3d 1152, 1162 (10th Cir. 2002).

As the District of Columbia Circuit has held:

"NEPA was intended to ensure that decisions about federal actions would be made only after responsible decision-makers had fully adverted to the environmental consequences of the actions, and had decided that the public benefits flowing from the actions outweighed their environmental costs." *Jones v. District of Columbia Redevelopment Land Agency*, 162 U.S. App. D.C. 366, 499 F.2d 502, 512 (D.C. Cir. 1974). . . .

Illinois Commerce Com. v. Interstate Commerce Com., 848 F.2d 1246, 1259 (D.C. Cir. 1988).

It is not only the government decision-makers who are to be served by an EIS, but the citizens of this nation as well. As one court noted: “The purpose of an EIS is to ‘compel the decision-maker to give serious weight to environmental factors’ in making choices, *and to enable the public to* ‘understand and consider meaningfully the factors involved.’ *County of Suffolk [v. Secretary of Interior]*, 562 F.2d at 1375 (citing *Sierra Club v. Morton*, 510 F.2d 813, 819 (5th Cir. 1975)).” *Town of Huntington v. Marsh*, 859 F.2d 1134, 1141 (2d Cir. 1988)(emphasis added.)

Indian Point

The Indian Point Energy Center (“Indian Point”) is located in the Town of Buchanan, New York. The Indian Point facility currently is owned by Entergy Nuclear Northeast, a licensee of the NRC.

The Indian Point nuclear compound contains three reactors: Indian Point Unit 1 (“IP1”), completed in 1962, but retired in 1974 after spending over half the time out of service for repairs; Indian Point Unit 2 (“IP2”), which received an operating license in 1973; and Indian Point Unit 3 (“IP3”), licensed in 1975. The Indian Point Unit 2 and Unit 3 reactors remain in operation today, as do the two separate spent fuel pools for Unit 2 and Unit 3. Indian Point is located in one of the most densely populated regions of the United States. On any given day, approximately, 20 million Americans live, work, or travel within 50 miles of the Indian Point facility.

Draft Supplement 38 Generic Environmental Impact Statement

The NRC released a draft of Supplement 38 to the Generic Environmental Impact Statement for License Renewals for Nuclear Plants regarding Indian Point Nuclear Power Station (“Draft Supplement”) in December, 2008. The Draft Supplement purports to

evaluate the site specific environmental impacts associated with the proposed 20-year license extension sought by Entergy Nuclear Operations, Inc. (“Entergy”) for its facility.

The Connecticut Attorney General offers the following comments on the Draft Supplement that reflect primarily potential impacts to the State of Connecticut from relicensing.

Failure to Evaluate Severe Accidents

Section 5.1.2 of the Draft Supplement acknowledges that “[s]evere nuclear accidents . . . such as . . . floods, earthquakes, fires, and sabotage, traditionally have not been discussed in quantitative terms in [past environmental documents] and were not specifically considered for IP2 and IP3 in the GEIS.” This section continues, however, to note that NRC did evaluate impact assessments at 44 *other* nuclear plants and concluded that the risk from these types of events at those plants is small. *Id.*

This approach is not consistent with NEPA. The purpose of an environmental review is, as described above, to allow decision makers to know and understand the full range of potential impacts to public health and safety and the environment from a proposed action. Ignoring major impacts simply because there is a tradition of doing so is a flat violation of federal law. Evaluating a potential impact at one facility and then extrapolating that impact to another without detailed consideration of the differences between the facilities is also manifestly insufficient under NEPA.

Further, Indian Point is unique in many ways. The population density around Indian Point is much higher than that around any other nuclear power station in the country. An accident or attack at Indian Point would have a potentially much greater impact on human health and safety than a similar event at a nuclear power station in a

less urbanized part of the country. Until a site-specific analysis of all reasonably foreseeable threats is made, the Draft Supplement will not meet the requirements of NEPA.

In this regard, it is important to recognize that the threat of attack or sabotage to Indian Point is ongoing. It remains clear that terrorists are still attempting to create a “dirty bomb” or otherwise cause a deliberate release of radioactive material.

On October 28, 2008, Dr. Mohamed ElBaradei, Director General of the International Atomic Energy Agency (IAEA), addressed the United Nations General Assembly and warned the world about nuclear terror: “The possibility of terrorists obtaining nuclear or other radioactive material remains a grave threat.”¹

In December 2008, the Commission on the Prevention of WMD Proliferation and Terrorism (the “WMD Commission”) reported: “Terrorist organizations are intent on acquiring nuclear weapons or . . . material, . . .”² On September 10, 2008, New York City Police Commissioner Raymond Kelly testified to the WMD Commission that:

Everything we know about al Qaeda tells us that they will try to hit us again, possibly the next time with a weapon of mass destruction. We must do everything in our power to stop them before it’s too late.³

It is clear that the threat of terrorism is very real and, particularly for a facility as vulnerable as Indian Point, the possibility of an attack or sabotage needs to be considered in any NEPA analysis.

¹ World At Risk – The Report of the Commission on the Prevention of WMD Proliferation and Terrorism, Graham & Talent (December 2008), <http://www.preventwmd.gov>, at 43.

² *Id.* at 43-44.

³ *Id.* at 112.

Spent Nuclear Fuel

Section 6.0 of the Draft Supplement purports to consider the environmental impacts of stored nuclear fuel at Indian Point. At present, the two operating nuclear power reactors at Indian Point store decades of accumulated spent fuel in water-filled storage pools located on-site. This situation is a result of the continuing failure of the Department of Energy (DOE) and NRC to license and build a national permanent repository for spent fuel at Yucca Mountain, Nevada. Further, even if it is ever built, Yucca Mountain is designed to contain only 77,000 metric tons of spent fuel. At current estimates, that amount will have been generated by 2010 and, if re-licensed, Indian Point will continue to produce spent fuel many more years after that.

Over the years, in order to store more fuel rods, Entergy and its predecessors have placed them in an extremely dense configuration within the spent fuel pools. As a consequence, the majority of the radioactive material at Indian Point is not located within the containment structures protecting the operating reactors, but within the poorly protected spent fuel pools. The danger created by these high-density storage pools in the event of an accident or terrorist attack is obvious. Indian Point is located in one of the most densely populated areas of the country, an area which includes not only New York City and much of southern New York and northern New Jersey, but also much of the State of Connecticut, within its potential exposure zone.

In recent years, many experts have recommended moving spent fuel that has cooled for at least five years from fuel storage pools into dry cask storage. Such storage is viewed as safer and more protective than the highly vulnerable fuel pools. While Entergy has proposed a dry cask plan for Indian Point, the plan would not move all of the

older fuel into dry cask storage, but only enough to make room for additional spent rods created by continuing reactor operation. Thus, the plan will not result in any decrease in the density of the spent fuel rods stored in the pools, nor otherwise reduce the unacceptable risks of the existing spent fuel pool. The plan will merely allow Entergy to *increase* the total available fuel storage capacity at Indian Point while keeping the fuel pools full. The plan has significant economic benefits for Entergy, but significant safety disadvantages, because the amount of fuel in relatively unprotected pool storage will not be reduced. In fact, the problem will be gravely exacerbated by 20 years' additional accumulation of highly radioactive fuel rods.

Furthermore, NRC has not properly evaluated the consequences of terrorist attack on the spent fuel storage area and it must do so now. In an October, 2000, study, the NRC admitted that:

“the risk analysis in this study did not evaluate the potential consequences of a sabotage event that could directly cause off-site fission product dispersion, for example, a vehicle bomb driven into or otherwise significantly damaging the SFP [Spent Fuel Pool]. . . .”⁴

An accident or attack damaging a spent fuel pool could release deadly amounts of radiological material and toxic fumes. The NRC October 2000 report stated:

This reaction of zirconium and air, or zirconium and steam is exothermic (i.e., produces heat). The energy released from the reaction, combined with the fuel's decay energy, can cause the reaction to become self-sustaining and ignite the zirconium. The increase in heat from the oxidation reaction can also raise the temperature in adjacent fuel assemblies and propagate the oxidation reaction. The zirconium fire would result in a significant release of the spent fuel fission products which would be dispersed from the reactor site in the thermal plume from the zirconium fire. Consequence assessments have shown that a

⁴ NRC Report February, 2001, NUREG -1738, at 4-15. This report is respectfully incorporated by reference.

zirconium fire could have significant latent health effects and resulted (sic) in numbers of early fatalities.⁵

A Department of Energy report indicates that such a fire would release considerable amounts of cesium-137, an isotope that accounted for most of the offsite radiation exposure from the 1986 Chernobyl accident.⁶ Another report, authored by NRC, concludes that, in the event of a pool fire, approximately 100 percent of the pool's inventory of cesium would be released to the atmosphere.⁷

The emission of radioactive particles from a spent fuel pool accident would lead to horrific consequences. The NRC study stated that human fatalities within the first year of such an event "can be as large as for a severe reactor accident even if fuel has decayed several years."⁸ The radioactive fallout from this type of release could also make tens of thousands of acres of land uninhabitable.

The concerns raised by these reports find further support in a National Academy of Sciences ("NAS") study regarding the risks posed by spent fuel pools.⁹ As the NRC is aware, the NAS Study concluded that a successful terrorist attack on spent fuel pools was possible and recommended an independent assessment of current security measures.

Accordingly, the environmental evaluation must study the consequences to human health and safety and the environment from an accident or attack on the accumulated

⁵ NRC Report February, 2001, NUREG 1738 at 3-1 (internal citation omitted).

⁶ See US Department of Energy, Health and Environmental Consequences of the Chernobyl Nuclear Power Plant Accident, DOE/ER-0332 (Washington, DC: DOE, June 1987). This report is incorporated by reference.

⁷ See V L Sailor et al, Severe Accidents in Spent Fuel Pools in Support of Generic Safety Issue 82, NUREG/CR-4982 (Washington, DC: NRC, July 1987). This report is incorporated by reference.

⁸ See NRC Report February, 2001, NUREG 1738 at 3-34.

⁹ National Research Council of the Nat'l Academies, Safety and Security of Commercial Spent Nuclear Fuel Storage: Public Report 17, 40 (2006). This report is incorporated herein by reference.

stored fuel in a storage system, because those possibilities pose obvious risks that were not discussed in the Draft Supplement. Until this evaluation is complete, NEPA has not been met.

Emergency Evacuation Impacts Not Considered

Emergency planning for Indian Point includes plans covering both a 10-mile radius emergency planning zone (“EPZ”) and a separate 50-mile radius ingestion pathway EPZ. The 50-mile radius EPZ includes substantial portions of the State of Connecticut, including its largest city, Bridgeport, and its most populous county, Fairfield. The immediate consequences of an evacuation order would affect approximately one-third of the population of Connecticut.

In 2003, James Lee Witt, the former director of the Federal Emergency Management Agency (FEMA), issued a report detailing the deficiencies in the emergency evacuation plan for the Indian Point EPZ. Mr. Witt concluded that safe evacuation of the area surrounding Indian Point is highly unlikely, if not impossible.¹⁰

In the past, the NRC has failed to evaluate evacuation protocols as part of the NEPA process for a license extension application. This omission is unacceptable, and would constitute a patent violation of NEPA, if it were allowed in the consideration of Indian Point’s relicensing application.

Under NEPA, a reviewing agency is required to consider the impact on the environment resulting from the total effects of the contemplated action and other past, present, and “reasonably foreseeable” future actions. See 40 C.F.R. 1508.7 (1990). Furthermore, NEPA mandates that federal agencies contemplating “major federal actions

¹⁰ James Lee Witt Associates, Review of Emergency Preparedness of Areas Adjacent to Indian Point and Millstone (2003). This report is incorporated by reference.

significantly affecting the quality of the human environment," 42 U.S.C. § 4332(2)(C), are obligated to include in the recommendation or report on the anticipated action an environmental impact statement ("EIS"), as "evidence that an agency has considered the reasonably foreseeable environmental effects of a proposed major action before making a decision to take the action." *Town of Orangetown v. Gorsuch*, 718 F.2d 29, 34 (2d Cir. 1983), *cert. denied*, 465 U.S. 1099 (1984).

To meet the mandates of NEPA, the Draft Supplement was required to identify and discuss all anticipated adverse impacts in a clear and comprehensive fashion, including any adverse unavoidable environmental effects resulting from the implementation, alternatives to the proposed action, the relationship between short-term uses and the long-term maintenance of the environment, and any irretrievable commitments of resources involved in the proposed action. Such a detailed statement "insures the integrity of the agency process by forcing it to face those stubborn, difficult-to-answer objections without ignoring them or sweeping them under the rug" and serves as an "environmental full disclosure law so that the public can weigh a project's benefits against its environmental costs." *Sierra Club v. United States Army Corps of Eng'rs* (Sierra Club II), 772 F.2d 1043, 1049 (2d Cir. 1985); *see also Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349, (1989).

The Draft Supplement, however, contains no relevant consideration of the larger scale impacts of an accident or attack on emergency evacuation or response. It is unacceptable for the NRC to say that emergency planning is the domain of another federal agency (FEMA or DHS) and thereby decline to examine the environmental impacts resulting from the need to evacuate millions of citizens from the EPZ or the

impacts of a deficient evacuation plan and process. The emergency evacuation plan is a central and critical element of the NRC's reactor permit and regulatory program. Thus, the NRC's NEPA review of the potential impacts resulting from operation of two nuclear reactors, two spent fuel pools, and a dry cask storage facility for an additional 20 years must include an analysis of the impacts of the emergency evacuation plan for Indian Point, and whether it is meaningful and effective.

This requirement is particularly important because an accident or attack at the Indian Point facility would not only result in a potential catastrophe for the local population, but would have far reaching downwind effects. As was demonstrated by the 1986 disaster at Chernobyl nuclear power station in the Ukraine, not only are people in the immediate vicinity affected by a major release of radioisotopes, but vast areas at great distances can become significantly contaminated, creating disastrous public health and environmental consequences for communities many miles from the actual site. Further, these adverse impacts can continue for many years after the event. Consequently, NRC must evaluate the impacts to human health and safety and the environment of an immediate accident or attack on the entire potentially impacted downwind environment, which includes most of Connecticut, as well as the collateral impacts of the long-term relocation of up to 300,000 people who live in the immediate vicinity of Indian Point, as well as the millions more who live within the 50-mile radius in the event of major downwind contamination.¹¹

Missing Data

An environmental impact statement, at a minimum, must contain an analysis of all relevant potential environmental impacts. "NEPA was created to ensure that agencies

¹¹ Indian Point Independent Safety Evaluation, July 31, 2008, p.5; Draft Supplement, p. 2-1.

will base decisions on detailed information regarding significant environmental impacts and that information will be available to a wide variety of concerned public and private actors. *Morongo Band of Mission Indians v. Federal Aviation Administration*, 161 F.3d 569, 575 (9th Cir. 1998).” *Mississippi River Basin Alliance v. Westphal*, 230 F.3d 170, 175 (5th Cir. 2000). As the Ninth Circuit stated:

When we consider the purposes that NEPA was designed by Congress to serve, what was done here is inadequate. Congress wanted each federal agency spearheading a major federal project to put on the table, for the deciding agency's and for the public's view, a sufficiently detailed statement of environmental impacts and alternatives so as to permit informed decision making. The purpose of NEPA is to require disclosure of relevant environmental considerations that were given a "hard look" by the agency, and thereby to permit informed public comment on proposed action ...

Lands Council v. Powell, 379 F.3d 738 (9th Cir. 2004).

The Draft Supplement does not contain the required impact analysis because important data is missing. For example, one of the major impacts from continued operation of Indian Point is the impact to fish populations in the Hudson River. However, as section 4.1.1. of the Draft Supplement notes, “plant owners did not monitor impingement rates or validate impingement mortality estimates after the new . . . screens were installed at IP2 and IP3 in 1991.” Further, section 4.1.3.2 notes that to determine whether continued operation of the plant has the potential to impact certain fish populations it is necessary to conduct a “connection analysis.” However, this same section of the Draft Supplement notes that “The strength of connection was unknown for five species (Atlantic menhaden, Atlantic and shortnose sturgeon, gizzard shad, and blue crab) because of a lack of available data. For these species, actual strength of

connection could be low, medium, or high, but the lack of data makes a specific determination impossible.”

It is clear that important aquatic impact data is missing. NEPA mandates a full analysis of impacts. Important data is lacking in this case and, until it is made available, this environmental impact document is incomplete.

CONCLUSION

The NRC has not provided a thorough and accurate analysis of all relevant potential impacts and has failed to take a “hard look” at the adverse impacts of this project. Foremost among the critical risks are the problems resulting from an additional 20 years accumulation of spent nuclear fuel and the need to ensure a practically workable evacuation plan. Finally, NRC must provide the missing data regarding impacts to natural resources and evaluate the long-term impact to these resources. NRC must readdress these issues in a satisfactory environmental impact statement before proceeding further in this case.

Respectfully submitted,



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