

**UNITED STATES
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSIONERS**

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In re: Docket Nos. 50-247-LR; 50-286-LR

License Renewal Application Submitted by ASLB No. 07-858-03-LR-BD01

Entergy Nuclear Indian Point 2, LLC, DPR-26, DPR-64
Entergy Nuclear Indian Point 3, LLC, and
Entergy Nuclear Operations, Inc. March 30, 2015
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**CONNECTICUT'S RESPONSE TO THE COMMISSION'S MEMORANDUM AND ORDER OF
FEBRUARY 18, 2015 (CLI-15-2), REGARDING CONTENTION NYS-12C**

Pursuant to Nuclear Regulatory Commission (Commission or NRC) Memorandum and Order CLI-15-02, the State of Connecticut files this brief in support of the State of New York's petitions for Commission review of the Atomic Safety and Licensing Board (ASLB) November 27, 2013 Partial Initial Decision LBP-13-13 and April 1, 2014 Order concerning Contention NYS-12C. Connecticut further respectfully requests that the Commissioners vacate and reverse the two ASLB decisions.

Interests of the State of Connecticut

As chief legal officer of the State of Connecticut, the Attorney General has long supported efforts to protect the Connecticut citizens and natural resources from the adverse impacts associated with a potential release of radionuclides from a severe accident at a nuclear power station. Connecticut is a densely populated state with approximately three and a half million residents. It contains both operating and decommissioned nuclear power facilities; in addition, the multi-reactor Indian Point site is located close to the western boarder of Connecticut.

On behalf of the State of Connecticut, the Attorney General has participated as an interested

governmental body in the relicensing proceedings for the Indian Point nuclear power plant, *see* In the Matter of Entergy Nuclear Operations, Inc., ASLBP No. 07-858-03-LR-BDO 1, Memorandum and Order at 4 (July 31, 2008), Memorandum and Order at 2 (Dec. 18, 2008), and has attended conferences, oral arguments, and evidentiary hearings in this proceeding. In addition, Connecticut acknowledges and appreciates the Commission's permission to submit this brief. CLI-15-2 at 4. States hold a special place in the federal system, *see e.g., Massachusetts v. Env't Protection Agency*, 549 U.S. 497, 520 (2007) (States "entitled to special solicitude" in standing analysis), *New York v. United States*, 505 U.S. 144, 188 (1992) (Constitution leaves to the States a "residuary and inviolable sovereignty"), and States should be able to make their views known to NRC Commissioners, much like amici States are permitted to present their views to the U.S. Supreme Court, *see* Sup. Ct. Rule 37.4.

Indian Point Unit 2 and Unit 3 are located in New York, close to the border with Connecticut, and fully one-third of Connecticut's citizens reside within the 50-mile emergency planning zone (or EPZ). *See* GEIS NUREG-1437, Supp. 38, p. 2-3, Figure 2-1 (Location of IP2 and IP3, 50-mi (80-km) radius). As the NRC, the Federal Emergency Management Agency (FEMA), and the Department of Homeland Security (DHS) have recognized, the Indian Point site is located in one of the most densely populated regions of the United States. On any given day, approximately, more than 17 million Americans live, work, or travel within 50 miles of the Indian Point facilities. The number of potentially affected people will increase as the Indian Point facilities proceed through the requested 20-year license period. The areas within a 50-mile radius of the Indian Point site contain some of the most intensely developed and expensive real estate in the country along with many unique or "iconic" sites and infrastructure systems. Any accident at Indian Point that resulted in a release of radioisotopes could result in a major plume of wind driven radioactive debris that would

immediately impact human health and safety, as well as the economy and environment, in Connecticut. Therefore, the State of Connecticut has a direct interest in this case and in the Commission granting New York's petitions to review the ASLB's decisions concerning contention NYS-12C.

Position of the State of Connecticut

In 1989, the United States Court of Appeals for the Third Circuit required NRC to examine such impacts and alternatives on a site specific basis. *Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719 (3d Cir. 1989). As part of its 1996 rulemaking for the renewal of operating licenses, NRC promulgated a regulation requiring the analysis of severe accidents and the means to mitigate the environmental impacts of such accidents on the different communities that surround each nuclear power plant. 10 C.F.R. § 51.53(c)(3)(ii)(L) (1996). This analysis, known as a severe accident mitigation alternatives (or SAMA) analysis, is conducted on a site specific basis for each nuclear power plant that applies for a renewed operating license. *Id.*; 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1 (designating severe accident mitigation alternatives as a "Category 2" site specific inquiry). No other nuclear power station in the Nation has a 50-mile emergency planning zone that approaches Indian Point's in terms of density of people, infrastructure assets, residential and commercial improvements, landmarks, or drinking water resources. Given the unique features within the 50-mile radius of the Indian Point site, Connecticut's position is that the severe accident mitigation alternatives analysis in this proceeding must be based on an accurate site specific analysis with verifiable, accurate, and up-to-date inputs concerning the site specific efforts and costs to decontaminate the communities and ecosystems within 50 miles of the specific site.

The importance to the State of Connecticut of this appeal cannot be overstated. As Connecticut has made clear in its earlier filings in this proceeding, two of the State's counties,

Fairfield and Litchfield, lie within the 50 mile EPZ. Fully one third of the population of the state is within the 50 mile EPZ. The Indian Point site is 23 miles from Greenwich, 26 miles from Stamford, 27 miles from Danbury, and 37 miles from Bridgeport. The State's principal concern is the health and safety of its citizens. Any significant airborne release of radioisotopes from an accident at Indian Point which was deposited in Connecticut would directly affect Connecticut residents.

In addition, such a release could result in the airborne deposition of radionuclides in drinking water resources used by Connecticut residents. In this regard, there are significant surface water resources in Fairfield County including the Housatonic and Naugatuck Rivers, Candlewood Lake, and public water supply reservoirs and well fields that directly serve Connecticut citizens and that are of great importance to the State.¹ In fact, at least one Connecticut municipality is served by public water supply reservoirs owned by Connecticut companies but located just over the border in New York State and exceedingly close to Indian Point.

Such a release with its attendant environmental impacts could also result in significant off site economic consequences to Connecticut. Western Connecticut contains very important economic resources that could be impacted by a radiological release at Indian Point. Specifically, Stamford, Connecticut, is home to numerous major corporate headquarters for national and international corporations. The potential economic impact of even a temporary shutdown of these offices due to dispersed radiation from a fire or other accident at Indian Point would be immense. In addition, there would be potential impacts to lost manufacturing facilities, such as the Sikorsky helicopter plant in Stratford, Connecticut, and severe losses to real estate values in one of the most expensive regions of the country. None of these site specific impacts have been adequately analyzed to date in this matter.

The State of Connecticut shares the concerns expressed by the State of New York concerning

¹ Connecticut law prohibits disclosure of certain information relating to public drinking water resources and therefore the names and locations of important reservoirs cannot be publicly provided. Conn. Gen. Stat. 1-210(b)(19)

the integrity of that input values used in the MACCS2 computer analysis for the required site specific review of consequences, and mitigation alternatives. Connecticut submits that the inputs do not begin to adequately account for the cost and time to effectively decontaminate, for example, the commercial and residential areas of Stamford, Greenwich, or Danbury, or the Sikorsky facilities in Stratford. The input values appear to lack primary support or are based on out-of-date assumptions and documents. Further, as the evidentiary hearing confirmed, various natural resource damage impacts, such as the cost of replacement or remediation of drinking water resources critical to human life or the remediation of surface water resources, were not considered. Hearing Transcript at 2278, 2285.

Connecticut submits that the social, environmental and economic consequences will likely persist for extended periods of time, as will decontamination work. As demonstrated by the 1986 disaster at the Chernobyl nuclear power station in the Ukraine and the 2011 multi-reactor accident at the Fukushima station in Japan, decontamination efforts and adverse impacts can continue for many years after the precipitating radiation release. The 60/120-day decontamination time used in the underlying MACCS/SAMA analysis here for an off-site release of radiation following a severe accident at an Indian Point reactor is disconnected from real world experience.

The State of Connecticut agrees with the position set out by the State of New York in its petitions for review concerning Contention NYS-12C and its responses to the Commission's questions in CLI-15-2. Connecticut briefly addresses three of the questions posed by the Commissioners.

1. The Board in LBP-13-13 stated that the "genesis" of the decontamination time values used in the Indian Point SAMA analysis can be traced to a 1984 report (NUREG/CR-3673) that concluded that a 90-day decontamination time period represents "an

average time to complete decontamination efforts following the most severe reactor accident."

Address the underlying support and reasoning (if available) behind the report's conclusion that a 90-day time period is an "average" period of time for completing decontamination for "the most severe type of reactor accident."

The 1984 NUREG/CR-3673 report contains only a passing statement that 90 days represented an average time to complete decontamination efforts for severe accidents. That document did not lay out how the 90-day "average" was arrived at. Hearing Transcript at 2249.

2. Identify from the record any peer review or similar vetting of the NUREG-1150 values for the decontamination cost inputs for nonfarm land and property (CDNFRM) and the decontamination time inputs (TIMDEC) used in the MACCS2 computer code.

The 1990 NUREG-1150 report did not describe any vetting of the values for the TIMDEC or CDNFRM inputs.

6. Discuss whether, and, if so, how, the SAMA analysis should account for the possibility of potential decontamination times longer than one year.

Connecticut submits that the SAMA analysis should account for the possibility of potential decontamination times lasting longer than one year following an off-site release of radiation. Following the 2011 Fukushima accident, NRC Staff initiated a Spent Fuel Pool Consequence Study that utilized the MACCS2 code. There, NRC Staff and Sandia personnel used 365 days as the input for decontamination time (TIMDEC) instead of the 60 and 120 days they used in

the underlying Indian Point analysis. (Their use of 365 days was a change in position and in contrast to their position and testimony to the ASLB in this proceeding). Moreover, in light of the multi-year decontamination efforts following the Chernobyl and Fukushima accidents, the site specific severe accident mitigation alternatives analysis for the 50-mile region around Indian Point should use a decontamination period of longer than one year.

Conclusion

The issues raised in New York's appeals concerning Contention NYS-12C directly implicate important issues involving human health and safety and the potential damage to natural resources, residential and commercial infrastructure, and iconic features in Connecticut and the New York metropolitan area. The interests of the State of Connecticut are clear and unequivocal in this regard. The underlying MACCS/SAMA analysis is neither realistic nor specific for the area surrounding the Indian Point site. The State of Connecticut therefore urges the Commissioners to vacate and reverse the ASLB's November 27, 2013 and April 1, 2014 decisions concerning Contention NYS-12C.

Respectfully submitted,

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