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Draft Environmental Assessment and Finding of No Significant Impact

**Comment On:** NRC-2013-0063-0002  
Entergy Nuclear Operations, Inc., Indian Point Nuclear Generating Unit No. 3; Extension of Public Comment Period

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## Submitter Information

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## General Comment

See attached file(s)

## Attachments

Fire Exemption Draft EA FONSI - State Comments to NRC 6-3-2013

SUNSI Review Complete

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June 3, 2013

Cindy Bladey, Chief  
Rules, Announcements, and Directives Branch (RADB)  
Office of Administration  
Mail Stop: TWB-05-B01M  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Re: Docket ID NRC-2013-0063

Dear Ms. Bladey:

The State of New York welcomes the opportunity to provide comments on the NRC's Draft Environmental Assessment and Finding of No Significant Impact (EA/FONSI) for an exemption from certain fire safety regulations. The Draft EA/FONSI was published for comment in the April 3, 2013 Federal Register (78 Federal Register 20144).

The State's comments are attached. If you have any questions, please contact me.

Sincerely,



Alyse Peterson  
Senior Project Manager  
State Liaison Officer – Designee

New York State Energy Research and Development Authority

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The State of New York urges the Nuclear Regulation Commission (“NRC”) to conduct a full environmental review as part of its reconsideration of an existing exemption, requested by Entergy Nuclear Operations, Inc. (“Entergy”), the owner, operator, and licensee of Indian Point, from the federal fire safety regulations, contained in 10 C.F.R. Pt. 50, App. R, III. G.2, based on the risk to public health and safety created by the conditions, at Indian Point’s Unit 3, which will exist if such exemption is allowed to remain. The requested exemption is a device to excuse Entergy from a long-standing violation of federal fire safety regulations.

On September 28, 2007, NRC staff granted the exemption to Indian Point’s Unit 3, which reduces the amount of time the fire barrier around certain cables and electrical equipment is required to withstand fire from one hour to as little as twenty-four minutes. 72 Fed. Reg. 56,798 (Oct 4, 2007). This exemption was granted without an opportunity for public review and comment. On April 3, 2013, the NRC published its Draft Environmental Assessment and Finding of No Significant Impact (“FONSI”) and requested public comment on this action. 78 Fed. Reg. 20144 (April 3, 2013). The NRC’s FONSI, without a thorough environmental review and relying on the fire safety proclamations and conclusions asserted by Entergy, without public input or challenge causes a great public safety concern to the State of New York.

Needless to say, the State of New York has a compelling interest in protecting its citizens from the health and safety risks posed by the nuclear reactors at Indian Point, especially given their location just north of the most densely populated area of the State and the country. The Indian Point reactors are located 24 miles north of New York City. More than 17 million people live, work, or travel within 50 miles of Indian Point. According to the Atomic Energy Commission, the NRC, and the Federal Emergency Management Agency, more people live within 10 and 50 miles of the Indian Point reactors than at any other operating power reactor in the nation. A fire incident at Indian Point has the potential to affect more people than an incident at any other nuclear reactor in the country.

NRC regulations require separation of cables and equipment by: (1) a fire barrier having a 3-hour rating; (2) separation of more than 20 feet with no intervening combustibles or fire hazards with fire detectors and an automatic fire suppression system in the fire area; or (3) enclosure of cables and equipment in a fire barrier having a one hour rating with fire detectors with an automatic fire suppression system in the fire area. 10 C.F.R. Part 50, Appendix R.

NRC’s regulations authorize the granting of an exemption when the proposed exemption is “authorized by law, will not present an undue risk to the public health and safety, and [is] consistent with the common defense and security”. 10 C.F.R. § 50.12. In addition, NRC should not grant exemptions unless “special circumstances are present”, which exists where an “[a]pplication of the regulation in the particular circumstances would not serve the underlying

purpose of the rule or is not necessary to achieve the underlying purpose of the rule.” 10 C.F.R. § 50.12 (a)(2)(ii).

NRC’s granting of the aforementioned fire safety exemption to Indian Point Unit 3 from its prescriptive regulations did not evaluate the full scope of potential impacts of an exemption from a failure of the fire systems under review. The record is devoid of the consideration of the risk of fire, which could result in the loss of these control systems, and if the plant were to lose other systems, such as backup power, passive cooling system and the three primary fission product barriers, this could result in the loss of reactor core cooling capabilities, which could potentially cause significant radiological environmental impacts.

Recent reports by NRC’s own Office of the Inspector General (“OIG”) and the Government Accountability Office (“GAO”) found significant deficiencies in the NRC’s exercise of its responsibilities with respect to fire protection issues. *NRC’s Oversight of Hemyc Fire Barriers*, (Jan. 18, 2008) ML080250003; GAO Report to Congressional Requesters, *NUCLEAR SAFETY, NRC Oversight of Fire Protection at U.S. Commercial Nuclear Reactor Units Could Be Strengthened*, GAO-08-747 (June 30, 2008).

According to the GAO Report:

NRC has not resolved several long-standing issues that affect the nuclear industry’s compliance with existing NRC fire regulations, and NRC lacks a comprehensive database on the status of compliance. These long-standing issues include (1) nuclear units’ reliance on manual actions by unit workers to ensure fire safety (for example, a unit worker manually turns a valve to operate a water pump) rather than “passive” measures, such as fire barriers and automatic fire detection and suppression; (2) workers’ use of “interim compensatory measures” (primarily fire watches) to ensure fire safety for extended periods of time, rather than making repairs; (3) uncertainty regarding the effectiveness of fire wraps used to protect electrical cables necessary for the safe shutdown of a nuclear unit; and (4) mitigating the impacts of short circuits that can cause simultaneous, or near-simultaneous, malfunctions of safety-related equipment (called “multiple spurious actuations”) and hence complicate the safe shutdown of nuclear units.

Compounding these issues is that NRC has no centralized database on the use of exemptions from regulations, manual actions, or compensatory measures used for long periods of time that would facilitate the study of compliance trends or help NRC’s field inspectors in examining unit compliance.

GAO-08-747, preface. NRC Chairman Dale Klein has acknowledged that the response of NRC and industry to the continuing problems in the fire safety area “has not been a stellar

performance.” NRC Briefing on Fire Protection Issues, (July 17, 2008), at 4, ML08203067. Indeed, today, more than thirty years after the NRC promulgated the fire safety regulations, most of the nation’s commercial nuclear power plants have not yet come into compliance with these Appendix R regulations,<sup>1</sup> including Indian Point.

NRC’s supported its granting of the exemptions to IP Unit 3 through its safety evaluation which concluded that “the configuration of fire zones provide reasonable assurance that a severe fire is not plausible and the existing fire protection features adequate.” The NRC also found that there is a low probability of a fire occurring and the consequences of the fire would not be significantly increased by the use of substandard Hemyc fire barriers. These deductions were the basis for the NRC’s conclusion, through their environmental assessment, that the exemption “will not have a significant effect on the quality of the human environment.” 78 Fed. Reg. 50-286 (April 3, 2013). In matters of nuclear safety, NRC should account even for low probability events.

The State of New York asserts that to assure the highest level of safety, it should be assumed a fire will occur and prepare for the consequences of a worst case scenario. Assuming a fire will be a rare event, and making fewer preparations for it, results in a lower level of overall safety. Therefore, actual compliance with the prescriptive engineered design fire protective requirements of 10 C.F.R. 50, Appendix R, is the best approach.

The leading risk factors for a U.S. nuclear plant meltdown is fire. Approximately one-half of the core damage risk at operating reactors results from accident sequences that initiate with fire events.<sup>2</sup> Between January 1995 and December 2007, 125 fires at 54 sites were reported to the NRC, 13 of which were classified as “alerts”.<sup>3</sup> GAO-08-747 at 4, 11-12. A primary cause of radiological environmental impacts that could result from a significant fire in a light water nuclear power reactor would be the possible loss of the redundant electrical control systems, and the increase potential for the loss of reactor core cooling capabilities.

In order for the NRC to meet its federal obligations under the National Environmental Policy Act (“NEPA”) for conducting an environmental review, it must consider every significant impact of a proposed action and compile a record demonstrating that it has taken those impacts into consideration. This same consideration is pointed out in NRC regulations that provide for a thorough environmental impact review even when a license has requested an exemption. Whereas the Court of Appeals’ decision in this matter accepted, *inter alia*, the NRC’s FONSI, the burden placed on the NRC actually requires greater examination of the increased probability of accidents arising from the proposed exemption. See below. *See Brodsky, et al. v. NRC*, 2013

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<sup>1</sup> U.S. Government Accountability Office Report - <http://www.gao.gov/products/GAO-08-747>

<sup>2</sup> NRC Briefing on Fire Protection Issues, at 58-59 (July 17, 2008), Statement of Jack Grobe, NRC Associate Director, Office of Nuclear Reactor Regulation for Safety Systems and Engineering.

<sup>3</sup> U.S. Government Accountability Office Report - <http://www.gao.gov/products/GAO-08-747>

U.S. App. LEXIS 339, \*10 (2d Cir. January 7, 2013). As a consequence of the NRC's not meeting this greater burden in its FONSI, the NRC should complete a full environmental impact assessment prior to determining whether to approve the requested exemption.

The NRC's FONSI attempts to demonstrate satisfaction of the regulatory provisions set forth in 10 C.F.R. § 51.22(c)(9). Section 51.22(c)(9) provides, in pertinent part, that a nuclear power reactor license may be amended to allow the type of exemption under consideration here by the NRC if three things can be demonstrated:

- (i) the amendment involves no significant hazards consideration,
- (ii) there is no significant change in the types of significant increase in the amounts of any effluents that may be released offsite, and
- (iii) there is no significant increase in individual or cumulative occupational radiation exposure.

The NRC appears to address the second and third criteria above by simply restating them in its finding that there will be no significant environmental impacts; however, the NRC does not restate the first criteria in making this finding, nor does it adequately fulfill the requirement for an underlying examination to satisfy that criteria. In other words, the NRC neither stated nor adequately supported a finding that "the amendment involves no significant hazards consideration."

Instead, the NRC states: "the NRC staff finds that the use of this Hemyc fire barrier in these zones will *not significantly increase* the consequences from a fire in these fire zones." And, "[t]he proposed action will not *significantly increase the probability* or consequences of accidents." (Emphasis supplied.) 72 Fed. Reg. 55,254 (September 28, 2007); *see also* 78 Fed. Reg. 20144, 20146 (April 3, 2013). Within these statements it is clear that some increase in the probability or consequences of a fire exists. What compounds the risk inherent in this increase is the problem evident in the NRC's conclusions, to the effect that the NRC has not met its burden to examine the scope of that probability of failure in, for instance, redundant fire retardant or suppression systems; or to fully examine and adequately measure that risk for purposes of finding whether the action constitutes a significant impact on the environment, and, if so, that an environmental impact statement must be prepared. This incomplete step in the environmental impact analysis leaves open the question of whether the NRC has accurately identified the relevant environmental concerns. This incomplete step also fails to demonstrate that the NRC adequately considered alternative measures, for instance other means for ensuring sufficient redundant fire suppression systems, and at what cost.

These are very important decision points with respect to public health, safety and the environment that the FONSI glosses over without adequately examining the probability of failure

in the subjects of the fire safety examination, *e.g.* the redundant systems, upon which public safety and environmental protection are based, and which may lead to a reactor accident. Another example is the lack of inquiry as to the probability that the 24-minute and 30-minute thermal protection for conduits from exposed fire may fail and, if so, what the consequences would be to public health, safety and the environment. The conclusory level of analysis provided by the NRC does not provide the kind of reasonable assurance that is needed to demonstrate that the probability of a fire hazard is so low as to be beyond consideration of risk at Unit 3. Again, the NRC's own findings point to a level of increase, identified as insignificant, without adequately expressing why it is insignificant and what consequences would result if a fire were to occur despite assurances. In a similar context, it has been demonstrated that the NRC's reasonable assurances regarding the potential outcome of a fundamental underpinning of an environmental analysis is inadequate where it "does not describe a probability of failure so low as to dismiss the potential consequences of such failure." *New York v. Nuclear Regulatory Commission*, 681 F. 3d 471, 478 (D.C. Cir. June 8, 2012)(Addressing the Environmental Assessment offered in support of the NRC's Waste Confidence Decision Update, 75 Fed. Reg. 81,037, 81,041 [Dec. 23, 2010] "[T]he EA is insufficient because a finding that 'reasonable assurance exists that sufficient mined geological repository capacity will be available when necessary' [ ] does not describe the probability of failure so low as to dismiss the potential consequences of such failure.") (Citations omitted.)

In *New York v. NRC*, the NRC did not adequately examine the actual probability of harm associated with the failure to thoroughly examine the consequences of fire (in that case, spent nuclear pool fires caused by spent fuel storage facility failures over the potentially sixty-year life span of spent fuel facilities). *Id.* at 482 ("[A]n agency conducting an EA generally must examine both the probability of a given harm occurring and the consequences of that harm if it does occur. Only if the harm in question is 'so remote and speculative' as to reduce the effective probability of its occurrence to zero may the agency dispense with the consequences portion of the analysis.) citing *Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 739 (3d Cir. 1989). While here the NRC may have offered words in a sense diminishing the probability or harm from a fire incident (*see, e.g.* letter of John P. Boska, Senior Project Manager, NRC, to Michael A. Balduzzi, Entergy Nuclear Operations, September 28, 2007, Attachment: "Revision to Existing Exemptions, p. 11, section 3.7; ADAMS accession number ML072410254.), by its own statements (above) it is clear that it has not caused the level of harm to reduce that probability to a level that is effectively zero, particularly given the consequences of such a failure as articulated below.

However, one may characterize the NRC's statements, above, as the NRC failed to expressly make the necessary finding that "the amendment *involves no significant hazards consideration*", and such failure demonstrates an inadequate assessment or quantification of the probability that the acknowledged additional risk will be manifested in a fire resulting in an accident at Indian

Point Unit 3. This failure is a precise and critical one as it means that the NRC did not conduct a reasoned examination of the probability of the additional risk presented by the proposed exemption. Without doing so, it is inappropriate for the NRC to presuppose that the proposed exemption is correctly attributed to the categorical exemption contained in the regulation. The result would be an uncritical inclusion of Entergy's submissions supporting the exemption proposal without fully articulating the reasoning behind the NRC's acceptance of the probability of potential harm. Furthermore, we believe that the Court of Appeals in *Brodsky, supra*, did not address this question. The NRC has not calculated the environmental and public health effects of a fire scenario that falls within the as yet unidentified probability of conflagration that the NRC itself identifies. But the NRC has not reached a point of no return with respect to its finding of no significant impact and, in taking this opportunity to reconsider its analysis, it should conclude that the facts and circumstances warrant conducting the complete assessment of impacts inherent in a full environmental impact statement in order to make a threshold determination as to whether there is an acceptable probability of risk of fire in the context of a resulting accident at Unit 3 with the potential consequences mentioned below.

A significant reactor release would trigger implementation of protective actions for the public, which could include evacuation of large numbers of people as well as the immediate, intermediate and long-term impacts that a large-scale relocation of communities would entail. A significant release could also result in interdiction or embargo of farm products and a prohibition against the taking of fish and wildlife within and beyond the directly impacted area; loss of the use of surface water as drinking water sources; as well as denial of services of significant civic infrastructure such as conventional power plants, sewage treatment and, communications systems, and transportation corridors. The impacts to communities, farming and industry would cut across all sectors of society within the affected area, and possibly beyond. Even assuming the most significant near-term impacts could be brought under control within a few weeks to months, long-term environmental and human health impacts would continue for decades given the half-life of radiological materials released.

NEPA requires federal agencies to analyze alternatives to the proposed action – here an exemption from federal fire regulations. As part of its alternatives analysis, NRC Staff and Commissioners should examine the alternative of compliance – *i.e.*, having Indian Point's critical electrical cables and equipment actually comply with the Appendix R federal fire safety regulations. 40 C.F.R. §§ 1502.14, 1507.2(d), 1508.9(b).

### **Conclusion**

The NRC's consideration of Entergy's request for exemptions from basic fire safety measures, at the Indian Point facility, should only be decided after a full environmental review, as granting the requests would create a risk to public health and safety. The State disagrees with the NRC's Draft Environmental Assessment and proposed Finding of No Significant Impact.