



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 5, 2012

Vice President, Operations
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
450 Broadway, GSB
P.O. Box 249
Buchanan, NY 10511-0249

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3 -
ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT
IMPACT (TAC NOS. ME1671, ME1672, AND L24299)

Dear Sir or Madam:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your application for license amendments for Indian Point Nuclear Generating Unit Nos. 2 and 3 (IP2 and IP3) dated July 8, 2009, as supplemented by letters dated September 28, 2009, October 26, 2009, October 5, 2010, October 28, 2010, July 28, 2011, August 23, 2011, October 28, 2011, December 15, 2011, January 11, 2012, March 2, 2012, April 23, 2012, and May 7, 2012.

The proposed amendments would revise the licenses and Technical Specifications by authorizing the transfer of spent fuel from the IP3 spent fuel pool to the IP2 spent fuel pool, using a newly-designed shielded transfer canister, for further transfer to the on-site Independent Spent Fuel Storage Installation.

The environmental assessment is being forwarded to the Office of the Federal Register for publication.

Sincerely,

A handwritten signature in cursive script that reads "John P. Boska".

John P. Boska, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-247 and 50-286

Enclosure:
Environmental Assessment

cc w/encl: Distribution via Listserv

NUCLEAR REGULATORY COMMISSION

[NRC-2012-XXXX]

Entergy Nuclear Indian Point Unit 2, LLC

Entergy Nuclear Indian Point Unit 3, LLC

Entergy Nuclear Operations, Inc.

Docket Nos. 50-247 and 50-286

Indian Point Nuclear Generating Unit Nos. 2 and 3

Environmental Assessment and Finding of No Significant Impact

The U.S. Nuclear Regulatory Commission (NRC) is considering issuance of an amendment and changes to the Technical Specifications (TSs) for Facility Operating License Nos. DPR-26 and DPR-64, issued to Entergy Nuclear Operations, Inc. (Entergy or the licensee) for operation of the Indian Point Nuclear Generating Unit Nos. 2 and 3 (IP2 and IP3) located in Westchester County, New York, in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.90. The proposed changes request NRC approval for the transfer of spent fuel from the IP3 spent fuel pool (SFP) to the IP2 SFP using a newly-designed shielded transfer canister (STC), for further transfer to the on-site Independent Spent Fuel Storage Installation (ISFSI). Therefore, as required by 10 CFR 51.21, the NRC performed an environmental assessment (EA). The NRC did not identify any significant environmental impacts associated with the proposed action based on its evaluation of the information provided in the licensee's application and other available information. Therefore, the NRC is issuing a finding of no significant impact (FONSI) for the proposed action.

ENVIRONMENTAL ASSESSMENT

Plant Site and Environs:

IP2 and IP3 are located on approximately 239 acres (97 hectares) of land in the Village of Buchanan in upper Westchester County, New York. The facility is on the eastern bank of the Hudson River. Both IP2 and IP3 use Westinghouse pressurized-water reactors and nuclear steam supply systems. For each unit, cooling is provided by a once-through cooling water intake that supplies cooling water from the Hudson River. Indian Point Nuclear Generating Unit No. 1 (IP1), now permanently shut down, shares the site with IP2 and IP3. IP1 was shut down in 1974, and is in a safe storage condition awaiting final decommissioning.

Identification of the Proposed Action:

The proposed changes request NRC approval for the transfer of spent fuel from the IP3 SFP to the IP2 SFP using a newly-designed STC, for further transfer to the on-site ISFSI, which uses the Holtec HI-STORM 100 dry cask storage system that has been previously certified for dry spent fuel storage under 10 CFR Part 72. Entergy has no plans to make extensive physical modifications to existing plant buildings or property for the proposed action. The proposed action is detailed in the licensee's application dated July 8, 2009, Agencywide Documents Access and Management System (ADAMS) Accession No. ML091940176, as supplemented by letters dated September 28, 2009; ADAMS Accession No. ML092950437; October 26, 2009, ADAMS Accession No. ML093020080; October 5, 2010, ADAMS Accession No. ML102910511; October 28, 2010, ADAMS Accession Nos. ML103080112 and ML103080113; July 28, 2011, ADAMS Accession No. ML11220A079; August 23, 2011, ADAMS Accession Nos. ML11243A174, ML11243A175; and ML11243A220; October 28, 2011, ADAMS Accession No. ML11327A045 and ML11327A046; December 15, 2011, ADAMS Accession No. ML12013A259; January 11, 2012, ADAMS Accession No. ML120400604; March 2, 2012, ADAMS Accession

No. ML12074A027, April 23, 2012, ADAMS Accession No. ML12129A457, and May 7, 2012, ADAMS Accession No. ML121370318. The licensee's application and supplemental submissions are accessible electronically from the NRC web site, www.nrc.gov.

The Need for the Proposed Action:

Entergy requested the proposed action because transferring the IP3 spent fuel from the IP3 SFP directly into dry storage casks is not possible due to the limitations of the 40-ton cask handling crane in the IP3 fuel storage building (FSB) where the SFP is located. A cask handling crane capacity of at least 100 tons is required to lift and handle the loaded HI-TRAC transfer cask licensed as part of the HI-STORM 100 System. Entergy had previously added a single-failure-proof gantry crane with this capacity to the IP2 FSB, by excavating to bedrock and supporting the crane foundation on bedrock. An upgrade to the IP3 cask handling crane capacity to 100 tons or more was evaluated and found to be not feasible and as such results in the need for inter-unit fuel transfer. The IP3 SFP is approaching the limit of its storage capacity. Spent fuel must be removed from the IP3 SFP to restore and maintain the ability to unload the entire IP3 reactor core into the IP3 SFP for the remainder of its service life in order to perform maintenance on the reactor vessel and associated systems.

Environmental Impacts of the Proposed Action:

Non-radiological Impacts:

Land Use and Aesthetic Impacts:

There are no potential land use and aesthetic impacts from the proposed action. No new construction of buildings is proposed. The work activities would occur within existing structures. Existing parking lots, road access, equipment lay-down areas, offices, workshops, warehouses, and restrooms would be used during implementation of the proposed action. Land

use conditions would not change at the Indian Point site. Therefore, there would be no significant impact from the proposed action.

Air Quality Impacts:

Some minor and short duration air quality impacts would occur during implementation of the fuel transfer at the site. The main source of air emissions would come from the vehicles driven by plant workers and contractors. However, air emissions would be less than is experienced during the routine refueling outages once each year. Therefore, there would be no significant impact on air quality in the region during and following implementation of the proposed action.

Surface Water Impacts:

There are no potential surface water impacts from the proposed action. No new use of surface water or effluent discharges into surface water will be made as part of the proposed action. Therefore, there would be no significant impact to surface water resources during implementation of the proposed action.

Groundwater Impacts:

There are no potential groundwater impacts from the proposed action. No new use of groundwater or effluent discharges into groundwater will be made as part of the proposed action. Therefore, there would be no significant impact to groundwater resources during implementation of the proposed action.

Aquatic Resources Impacts:

There are no potential impacts to aquatic resources from the proposed action. No new effluent discharges into the aquatic environment will be made as part of the proposed action. Therefore, there would be no significant impact to aquatic resources during implementation of the proposed action.

Terrestrial Resources Impacts:

There are no potential impacts to terrestrial resources from the proposed action. No new land areas will be disturbed and no new effluent discharges will be made as part of the proposed action. Therefore, there would be no significant impact to terrestrial resources during implementation of the proposed action.

Threatened and Endangered Species Impacts:

There are no potential impacts to threatened and endangered species from the proposed action. No new withdrawals from the Hudson River or any new effluent discharges into the aquatic environment will be made as part of the proposed action. Therefore, there would be no significant impact to threatened and endangered species during implementation of the proposed action.

Historic and Archaeological Resources Impacts:

There are no potential impacts to historic and archaeological resources from the proposed action because no new construction on the site or vicinity of the site is proposed. The work activities would occur within existing structures. Existing parking lots, road access, equipment lay-down areas, offices, workshops, warehouses, and restrooms would be used during implementation of the proposed action. Therefore, there would be no significant impact to historic and archaeological resources from the proposed action.

Socioeconomic Impacts:

Potential socioeconomic impacts from the proposed action include a temporary increase in the size of the workforce at the Indian Point site. The expected increase is much smaller than the additional workforce experienced during a refueling outage. Therefore, due to the small and temporary increase in the number of workers needed to support the proposed action, there are no significant socioeconomic impacts associated with the proposed action.

Environmental Justice Impacts:

The environmental justice impact analysis evaluates the potential for disproportionately high and adverse human health and environmental effects on minority and low-income populations that could result from activities associated with the proposed action at the Indian Point site. Such effects may include human health, biological, cultural, economic, or social impacts. Minority and low-income populations are subsets of the general population residing in the vicinity of the Indian Point site, and all are exposed to the same health and environmental effects generated from activities at the Indian Point site. Based on this information and the analysis of human health and environmental impacts presented in this environmental assessment, the proposed action would not have disproportionately high and adverse human health and environmental effects on minority and low-income populations residing in the vicinity of the Indian Point site.

Radiological Impacts:

Radioactive Gaseous and Liquid Effluents and Solid Waste:

Indian Point uses waste treatment systems to collect, process, recycle, and dispose of gaseous, liquid, and solid wastes that contain radioactive material in a safe and controlled manner within NRC and Environmental Protection Agency radiation safety standards. The proposed action will not significantly change the types or amounts of radioactive gaseous and liquid waste. At the site, the volume of solid radioactive waste is expected to show a small increase because of the use of protective clothing for the workers, the disposal of used seals from the STC and HI-TRAC lids, and decontamination work performed on equipment and work areas. However, the additional volume would not have a significant effect on the plant's ability to handle and process the waste. Based on the above, there are no significant radioactive waste impacts associated with the proposed action.

Occupational Radiation Dose

To protect plant workers, the licensee's radiation protection program monitors radiation levels throughout the plant to establish appropriate work controls, training, temporary shielding, and protective equipment requirements so that worker doses will remain within the dose limits of 10 CFR Part 20. Entergy evaluated the potential occupational exposures that would result from the operational sequence to transfer spent fuel assemblies from the IP3 SFP to the IP2 SFP. The evaluation concluded that the radiation dose to workers would be within the dose limits specified in 10 CFR 20.1201. The NRC staff reviewed the dose estimates for the transfer operations in its safety evaluation for the proposed action and concluded that the dose estimates for the operations activities are reasonable. Based on the above, there are no significant occupational dose impacts associated with the proposed action.

Offsite Doses to Members of the Public

The licensee will maintain radiological controls in accordance with its radiation protection program throughout the spent fuel transfer operations. The licensee's evaluation of the potential dose to a member of the public at the boundary of the plant's controlled area during the proposed action shows that offsite doses would be within the public dose limit in 10 CFR 20.1301. Based on the above, the offsite radiation dose to members of the public would continue to be within NRC regulatory limits and, therefore, would not be significant.

Accident Doses to Members of the Public

Various accidents were postulated, such as a dropped fuel assembly, extended time delays during transfer operations, a dropped shielded cask full of spent fuel, a fire involving the cask transporter, a tornado during transfer operations, and a tipover of the shielded cask full of spent fuel. These accidents were analyzed by the licensee and the analyses were reviewed by NRC staff to assure that there is no undue hazard to the health and safety of the public. The

licensee calculated the dose to a member of the public at the boundary of the plant's controlled area for accident conditions involving the spent fuel transfer operations. The licensee's analyses demonstrate that the dose to members of the public will be within the public dose limits in 10 CFR 20.1301. The NRC staff, in its safety evaluation, found the licensee's evaluation to be reasonable. Based on the above, the offsite radiation dose to members of the public in the event of a fuel transfer accident would continue to be within NRC regulatory limits and, therefore, would not be significant.

Alternatives to the Proposed Action:

As an alternative to the proposed action the licensee considered using a spent fuel cask which was already licensed as a transportation package under 10 CFR Part 71. The licensee identified one cask which could be lifted by the existing IP3 crane, but it only had the capacity for a single fuel assembly. This would severely limit the rate of fuel transfer and would also increase the total radiation exposure to the workers involved with fuel movement. Using that cask would entail similar operations as using the STC, which holds up to 12 fuel assemblies, but the result would be almost 12 times as many trips from the IP3 FSB to the IP2 FSB.

The NRC staff also considered denial of the proposed action (i.e., the "no-action" alternative). Denial of the application would result in no change in the current environmental impacts. However, if the proposed action were not approved for IP2 and IP3, Entergy would have to consider installing an IP3 spent fuel cask handling crane with at least a 100-ton capacity to lift and handle its standard HI-TRAC fuel transfer cask. Such an action would require major upgrades to plant equipment and modifications to plant structures, as well as radiation doses to workers in the IP3 FSB during the construction process.

Alternative Use of Resources:

The action does not involve the use of any different resources than those previously considered in the Final Environmental Statement for IP2, dated September 30, 1972, ADAMS Accession Nos. ML072390276 and ML072390278, or the Final Environmental Statement for IP3, dated February 28, 1975, ADAMS Accession Nos. ML072390284 and ML072390286.

Agencies and Persons Consulted:

In accordance with its stated policy, on February 17, 2012, the NRC staff consulted with the designated New York State official regarding the environmental impacts of the proposed action. The State official had no comments on the environmental impacts.

FINDING OF NO SIGNIFICANT IMPACT:

On the basis of the environmental assessment, the NRC staff concludes that granting the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC staff has determined it is not necessary to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's application dated July 8, 2009, Agencywide Documents Access and Management System (ADAMS) Accession No. ML091940176, as supplemented by letters dated September 28, 2009, ADAMS Accession No. ML092950437; October 26, 2009, ADAMS Accession No. ML093020080; October 5, 2010, ADAMS Accession No. ML102910511; October 28, 2010, ADAMS Accession Nos. ML103080112 and ML103080113; July 28, 2011, ADAMS Accession No. ML11220A079; August 23, 2011, ADAMS Accession Nos. ML11243A174, ML11243A175; and ML11243A220; October 28, 2011, ADAMS Accession No. ML11327A045 and ML11327A046; December 15, 2011, ADAMS Accession No. ML12013A259; January 11, 2012, ADAMS Accession No. ML120400604; March 2, 2012, ADAMS Accession No. ML12074A027, April 23, 2012, ADAMS


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Publicly available versions of the documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, Public File Area O1 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available documents created or received at the NRC are accessible electronically through the Agencywide Documents Access and Management System (ADAMS) in the NRC Electronic Library at <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC PDR Reference staff by telephone at 1-800-397-4209 or 301-415-4737, or send an e-mail to pdr.resource@nrc.gov.

FOR FURTHER INFORMATION CONTACT: John Boska, Office of Nuclear Reactor Regulation, Mail Stop 0-8C2, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001, by telephone at 301-415-2901, or by e-mail at John.Boska@nrc.gov.

Dated at Rockville, Maryland, this 5th day of July 2012.

FOR THE NUCLEAR REGULATORY COMMISSION



John P. Boska, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

July 5, 2012

Vice President, Operations
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
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Sincerely,

/ra/

John P. Boska, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-247 and 50-286

Enclosure:

Environmental Assessment

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