

March 4, 2005

Mr. Thomas J. Abinanti, Chairman
Committee on the Environment
Westchester County Board of Legislators
800 Michaelian Office Building
148 Martine Avenue
White Plains, NY 10601

Dear Mr. Abinanti:

In its letter of August 31, 2004, the Nuclear Regulatory Commission (NRC) staff informed you that a response to the questions about dry cask storage installations that you included in your letter dated July 15, 2004, would be addressed via a separate correspondence. Based on our review of your questions, I am providing the following information to address your concerns. Some of the issues you raised were also discussed during the meeting between the NRC and State and local government officials, in which you participated, on December 16, 2004.

In your letter, you expressed concern about the physical security of the spent fuel storage systems at the Indian Point Energy Center (Indian Point). You noted that, even if the high-level waste repository at Yucca Mountain, Nevada, were to open in 2015, waste shipments from Indian Point would take place over 3 decades. Because of this timetable, the spent fuel at Indian Point will remain onsite until the late 2030's or early 2040's. Therefore, you asked whether both the wet storage system (spent fuel pools) and the proposed dry-cask storage system should be fortified, in the interim, for protection from terrorist attack and discussed some possible methods.

The NRC appreciates your concern about the safeguards and physical security of spent fuel. We believe that spent fuel can be safely stored at the Indian Point reactor site, either in the spent fuel pools or in a proposed independent dry-cask storage system, until it can be shipped to a centralized interim spent fuel storage facility or a permanent disposal facility. The current spent fuel storage pool designs were reviewed and approved by the NRC. The construction of the spent fuel pool is robust, and it is protected by the licensee's security program. Therefore, the NRC has determined that the spent fuel at Indian Point is safely stored and protected against credible threats. Additional information regarding spent fuel pools can be found on the NRC website at <http://www.nrc.gov/waste/spent-fuel-storage.html>.

As you are aware, Indian Point has two operating units and one decommissioned unit, currently in a safe storage condition. Indian Point was licensed in accordance with the requirements in Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR Part 50). In addition, the licensee must follow all pertinent security requirements of 10 CFR Part 73, "Physical Protection of Plants and Materials." At this time, the spent fuel from each of the units is stored in individual pools. Upon completion of the Independent Spent Fuel Storage Installation (ISFSI) construction, the licensee will begin loading some of the spent fuel into dry casks. Whether in the spent fuel pools or ISFSI, the spent fuel is located behind numerous, substantial barriers within the protected area at Indian Point. The licensee has currently met all applicable security

requirements of 10 CFR Part 73 and the Decommissioning Order dated May 7, 2004. In addition, the NRC's Interim Compensatory Measures for the storage and protection of spent nuclear fuel and protection against malevolent acts have been put in place. Entergy Nuclear Operations, Inc. (Entergy or the licensee) is required to meet all current security requirements outlined in the ISFSI Order and Interim Compensatory Measures.

The NRC has undertaken several studies to examine the potential vulnerabilities of spent nuclear fuel storage at all of our Nation's nuclear facilities. These assessments specifically evaluate two different threat scenarios: a large aircraft impact similar in magnitude to the attacks of September 11, 2001, and ground assaults using expanded adversary characteristics consistent with the design-basis threat for radiological sabotage. The results of the recently completed and ongoing studies of the capabilities of the available fuel storage options to resist terrorist attack show that significant releases due to a terrorist attack on a spent fuel pool are very unlikely. Under such conditions, there would be time to take mitigating actions and implement offsite emergency plans. These safety and security studies thus confirm that NRC's emergency planning basis remains valid. If any other information should suggest that further actions are necessary, the NRC is prepared to take appropriate measures to ensure the continued safety and security of these facilities and the health and safety of the public.

In conjunction with these studies, the NRC issued Orders to all licensees with ISFSIs and other key nuclear facilities requiring implementation of enhanced security measures based on the threat environment. Although the details of these specific security requirements are sensitive, they include such things as additional personnel access controls, enhanced requirements for guard forces, increased stand-off distances for searches of vehicles approaching nuclear facilities and heightened coordination with appropriate local, State and Federal law enforcement authorities. Collectively, these actions provide the NRC with high confidence regarding the safety and security of the plant and its spent nuclear fuel. We will continue to evaluate new information relating to our nation's security and revise our regulatory programs as appropriate.

In 1982, Congress passed the Nuclear Waste Policy Act (NWPA), which adopted geologic disposal as the Nation's long-term strategy for the safe isolation of radioactive wastes and confirmed the Federal government's responsibility for managing and disposing of commercial spent fuel. The NWPA directed the Department of Energy to identify potential sites for the first repository and to conduct a multi-year evaluation, known as site characterization, of each of the sites. As you are aware, NWPA also limited the quantity of waste licensed for emplacement in the first repository to 70,000 metric tons of heavy metal until a second repository is in operation. At this time, Yucca Mountain, Nevada has been selected as the first repository, and work to select a second repository has not yet begun.

Since the Yucca Mountain site has a limit on total waste, you asked about the location of Indian Point waste if it were relicensed for an additional 20 years. The NRC staff understands that the licensee will have sufficient capacity in the ISFSI and spent fuel pools to store the Indian Point spent fuel until transported to a Federal repository.

Regarding the dry-cask storage system that the licensee has chosen for Indian Point, you stated that industry and government officials have spoken out about manufacturing and design flaws associated with Holtec's Hi-Storm 100 casks. Thus, you asked about the actions being done to address the numerous concerns raised about the quality assurance of Holtec's dry

casks. In light of these concerns, you questioned the licensee's reasons for choosing Holtec design.

The NRC's requirements in 10 CFR Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater than Class C Waste," require certificate holders, such as Holtec International, to have a quality assurance program to control the design, fabrication, testing, and maintenance of spent fuel storage casks. Holtec's quality assurance program was reviewed and approved by the NRC. The NRC performs periodic inspection of Holtec's activities to ensure that they are conducted in compliance with Federal requirements and consistent with Holtec's quality assurance program. The results of NRC's inspections of Holtec's activities are provided for in NRC inspection reports which are publicly available. In addition, Holtec's response to NRC inspection findings and corrective actions are also documented and publicly available. The NRC's Office of the Inspector General (OIG) conducted a special inquiry into the NRC staff's oversight of Holtec International's quality assurance program. The report of the special inquiry was issued on July 27, 2004, and is available on the NRC's website (<http://www.nrc.gov/reading-rm/doc-collections/insp-gen/2004/03-03s-final.pdf>). In light of the NRC's continuing oversight programs, we have confidence that Holtec International is conducting activities safely. With regard to views expressed by individual NRC employees, we encourage and foster an environment where all employees are able to identify potential safety issues and express their differing views. We believe this open environment contributes to our safety-focused decision-making process. The NRC carefully considered all information and determined that Holtec had taken acceptable corrective actions.

The NRC is not privileged to information on why Entergy selected the Holtec HI-STORM 100 dry-cask storage system, or on the relative costs of HI-STORM 100 casks compared to other dry-cask storage systems. Rather, the NRC's role is focused on ensuring that dry-cask storage systems provide adequate protection of the public health and safety and the environment, and that licensees who utilize dry cask storage systems do so in compliance with Federal safety requirements. In that regard, the NRC reviews proposed designs of dry-cask storage systems against the safety requirements of 10 CFR Part 72. Assuming that the proposed design meets these safety requirements, the NRC proceeds to approve the design through a rulemaking process. Licensees, such as Entergy, who intend to store spent fuel in an approved dry-cask storage system must perform multiple evaluations to determine whether the system is compatible with the spent fuel they intend to store, and whether the system is compatible with the reactor site parameters (e.g., earthquakes, tornado missiles) where it would be used. These evaluations are reviewed by the NRC through our inspection program. The evaluations may identify the need for a licensee to make modifications to their facility, including the spent fuel pool building. In this case, the licensee would need to determine whether the modifications would involve a change in the facility Technical Specifications or require a license amendment and proceed accordingly. It is not unusual for licensees to need to make multiple modifications to structures, systems, and components, and revise plant programs and processes to allow for the storage of spent fuel in a dry cask storage system.

You also asked about the site-specific characteristics that Entergy took into consideration with respect to the impact that the construction of the dry-cask storage system will have on the environment. With regard to the environmental impact of storing spent fuel in a dry cask storage system, the NRC prepared a generic environmental impact statement (EIS) during the development of the regulations for the interim storage of spent fuel (10 CFR Part 72). This generic EIS for spent fuel storage found that the potential risk to the public health and safety was extremely small. When the general license provisions for dry spent fuel storage were proposed to be added to the NRC regulations, they were published in the *Federal Register* for public comment. In the *Federal Register* notice for the proposed rule (54 FR 19379, dated May 5, 1989), NRC presented the results of its environmental assessment (EA). The EA summarized a number of related environmental reviews that NRC had performed, which included evaluations of the potential consequences of accidents involving dry spent fuel storage systems. In that EA, NRC concluded that dry spent fuel storage under a general license by reactor licensees would not have a significant environmental impact. Furthermore, as NRC approves new dry spent fuel storage systems for use under the general license provisions, they are added to the list of approved casks through rulemaking. Together, the generic EIS for spent fuel storage, the EA for the general license provisions, and the original environmental review for the site, form the basis for compliance with the environmental review requirements of the National Environmental Policy Act.

Lastly, you requested the NRC not re-license Indian Point because the site is located in a densely populated area. Entergy has not announced its intention to seek renewal of the operating licenses for an additional 20 years. At such time that the NRC receives an application for a renewed license, the NRC staff will review both the safety issues (10 CFR Part 54) and environmental issues (10 CFR Part 51). The licensee will have to provide the NRC with an evaluation that addresses the technical aspects of plant aging and describes how the aging will be managed. In addition, the licensee will have to prepare an evaluation of the potential impact on the environment to support plant operation for the additional 20 years. Some licensee programs, such as security and emergency planning, have periodic update requirements throughout the current operating term that would continue during the period of extended operation. Therefore, these programs provide reasonable assurance that an acceptable level of protection is provided and additional review of their adequacy is not necessary for license renewal. Additional information about license renewal can be found on the NRC website at <http://www.nrc.gov/reactors/operating/licensing/renewal.html>.

As with any licensing activity, the public will have an opportunity to participate in NRC's decision-making process with regard to license renewal. Guidance that will be used during the review of an application is based not only on NRC views, but on industry experience and the expertise of technical organizations and professional societies. The public, in general, is encouraged to participate in the process through public meetings and public comment periods on the application. In addition, members of the public have an opportunity to request a formal adjudicatory hearing if they would be adversely affected by a proposed license renewal.

The NRC appreciates your concern about the safety and security of spent fuel. We will continue to ensure, through our normal regulatory oversight process, that the licensee is safely storing spent fuel either in the spent fuel pools or in an ISFSI at Indian Point. As discussed above, should new information indicate that further actions are necessary, the NRC will take

T. Abinanti

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appropriate measures to ensure the continued safety and security of these facilities and the health and safety of the public.

We hope that you find this information helpful in addressing your concerns.

Sincerely,

/RA by Richard J. Laufer for/

Cornelius F. Holden, Director
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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