

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
Martin J. Virgilio, Director**

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| In the Matter of |) | Docket Nos. 50-333 and 72-12 |
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| Entergy Nuclear Operations, Inc. |) | License No. DPR-59 |
| |) | |
| |) | |
| James A. FitzPatrick Nuclear Power Plant |) | 10 CFR 2.206 |

DIRECTOR'S DECISION UNDER 10 CFR 2.206

I. Introduction

By letter dated February 21, 2002, as supplemented by a telephone call with the U.S. Nuclear Regulatory Commission's (NRC) Petition Review Board (PRB) on March 29, 2002, Tim Judson and Deborah Katz of the Citizens Awareness Network (CAN) and Shawn McConnell and Tom Dellwo of the New York Public Interest Research Group (NYPIRG) filed a Petition pursuant to Title 10 of the *Code of Federal Regulations*, Section 2.206. The Petitioners requested that the U.S. Nuclear Regulatory Commission (NRC) take the following actions:

1. That the NRC order Entergy Nuclear Operations, Inc. (Entergy) to suspend the dry cask storage program at the James A. FitzPatrick Nuclear Power Plant (FitzPatrick).
2. That the NRC require Entergy to:
 - demonstrate that the proposed fuel storage program presents no increased risks to the national security or worker or public health and safety beyond what is contemplated in the Certificate of Compliance and General License, pursuant to § 72.212(4)-(5);
 - submit its proposed design changes for technical review in the form of a license amendment application and seek regulatory approval for them pursuant to § 72.244;
 - evaluate its use of the HI-TRAC 100 transfer cask for ALARA standards, per § 50, Appendix I;
 - provide more substantial physical and structural protection of the irradiated fuel and Interim Spent Fuel Storage Installation (ISFSI) to satisfy the requirements of §§ 73.51, 73.55, and;
 - demonstrate the use of the HI-STORM 100 can satisfy these requirements at FitzPatrick, or demonstrate countervailing and compelling reasons to utilize the HI-STORM 100 at FitzPatrick, as opposed to any other casks certified by NRC.

3. That all documents and information filed in relation to the selection of storage casks and the implementation of dry storage at FitzPatrick be put on the docket for public inspection.
4. That the Petition Review Board (PRB) submit this Petition to the NRC's Office of the Inspector General (OIG) for review of the Spent Fuel Project Office (SFPO) compliance with regard to NRC regulations in terms of design changes, licensing, amendments, exemptions and ALARA in its permitting process relating to the use of dry cask storage at FitzPatrick. Additionally, that a review be conducted to determine whether NRC staff in the SFPO are complicit or misguided in permitting design changes to these casks without submission of a license amendment.
5. That the NRC conduct an investigation to determine whether Entergy has deliberately circumvented the appropriate technical and regulatory review required to protect worker and public health and safety and the environment.

The bases for the requests were several safety concerns related to the design changes associated with the HI-STORM 100 cask design, as well as safety concerns related to national security.

The Petitioners participated in a teleconference with the NRC's Office of Nuclear Material Safety and Safeguards PRB on March 29, 2002, to clarify the bases for the Petition. The transcript of this meeting was treated as a supplement to the Petition and is available in the Agencywide Documents Access and Management System (ADAMS), which provides text and image files of NRC's public documents. These documents may be accessed through the NRC's Public Electronic Reading Room on the Internet at <http://www.nrc.gov/reading-rm/adams.html>. The Accession Number is ML021290025. If you do not have access to ADAMS or if there are problems in accessing the documents located in ADAMS, contact the NRC Public Document Room (PDR) Reference staff at 1-800-397-4209, 301-415-4737 or by email to pdr@nrc.gov.

In a letter dated April 12, 2002, the NRC staff informed the Petitioners that their request to immediately issue an order to suspend the dry cask storage program at FitzPatrick, was denied, and that the issues in the Petition were being referred to the SFPO for appropriate action. In addition, the NRC staff informed the Petitioners that their request to submit this Petition to the OIG for review of the SFPO's compliance with regard to NRC regulations in terms of design changes, licensing, amendments, exemptions and ALARA in its permitting process relating to the use of dry cask storage at FitzPatrick, was approved, and that the issues in the Petition were referred to the OIG for appropriate action.

In a letter dated May 10, 2002, the NRC staff informed the Petitioners that their request to put all documents and information filed in relation to the selection of storage casks on the docket for public inspection under a Demand for Information, was approved. In this letter the NRC staff also stated that although the NRC is not subject to "Demands for Information," we were, nevertheless, treating the demand as a request for documents, and transmitting the requested information.

The NRC sent a copy of the proposed Director's Decision to the Petitioners and to the licensee for comment on August 13, 2002. The Petitioners responded with comments on August 27, 2002, and the licensee responded on August 28, 2002. The comments and the NRC staff's response to them are Enclosures to this Director's Decision.

II. Discussion

As the basis for their requested actions, the Petitioners raise a number of specific concerns related to the NRC's process for licensing spent fuel storage, and also concerns specifically related to the licensing of FitzPatrick's interim spent fuel storage installation. These concerns, and the evaluations of these concerns by NRC staff, are as follows.

1. Concern: The Petitioners state that the NRC gave Holtec permission to build and redesign casks under a design that was not yet approved under the condition that Holtec would have to modify or even discard the manufactured casks if the design was not certified. The NRC already knew the overpacks would require modification from the original design when the fabrication exemption was granted.

Evaluation: The NRC granted a fabrication exemption to Holtec to manufacture the original HI-STORM 100 casks (Amendment 0 to the HI-STORM 100 design) prior to Amendment 0 being approved by the NRC. This exemption was granted on the condition that Holtec may need to modify or discard the casks if the design they were manufactured to was not certified. The NRC has granted these types of exemptions several times for other cask manufacturers with similar conditions. These exemptions do not in any way authorize eventual use of a non-certified design, they merely allow a cask designer to begin fabrication at risk. All designs to be used for storage of spent fuel must meet the requirements of 10 CFR 72. At the time the fabrication exemption was granted, January 13, 2000, the NRC did not know that the overpacks would require modification for use at FitzPatrick.

On December 13, 2000, NRC staff participated in a public meeting in Oswego County. That same day, prior to the public meeting, NRC staff were given a tour of the FitzPatrick site. During this tour, the licensee mentioned that the transfer cask was too large to be moved out of the fuel handling building in a standard configuration and described several options under consideration. NRC staff indicated to the licensee that non-standard movements of the cask outside of the fuel handling building would require prior NRC approval unless the 10 CFR 72.48 criteria could be met. The NRC staff verbally encouraged the licensee to promptly submit a request for a licensing action, if Entergy determined that one was necessary.

Ultimately, the licensee did redesign the HI-STORM cask under the auspices of 10 CFR 72.48. The NRC reviewed the 10 CFR 72.48 evaluation and determined that the proposed modifications to the cask would not result in a safety issue and met the criteria for design changes under 10 CFR 72.48. The licensee's 10 CFR 72.48 evaluation was subsequently released to the public, in a May 10, 2002, correspondence with the Petitioner. The details of changes made to the HI-STORM cask design are outlined in

that document which can be found in ADAMS, under the package Accession Number ML021340256. The NRC has determined that there is no safety significant concern related to this item in the Petition.

2. Concern: The Petitioners claim that the NRC withheld its knowledge that the casks were too large to be moved out of the containment building without modification during a public meeting in Oswego County.

Evaluation: As discussed above, on December 13, 2000, NRC staff participated in a public meeting in Oswego County. That same day, prior to the public meeting, NRC staff were given a tour of the FitzPatrick site, in which the licensee mentioned several cask movement options. The Petitioner states that many members of the public asked questions concerning cask movements, safe load path analysis, radiation exposure of workers loading the casks, the transfer casks, etc. However, this particular subject was never discussed at this meeting. As described above, the licensee did ultimately redesign the HI-STORM cask to allow movement outside of the containment building, under the auspices of 10 CFR 72.48. The NRC staff reviewed the licensee's 10 CFR 72.48 evaluation, and determined that the proposed modifications to the cask would not result in a safety issue and met the criteria for design changes under 10 CFR 72.48.

The NRC's goal is to be as open as practical regarding sharing of information with the public. The Petitioner's comment reinforces the need for the staff to clearly communicate information and be responsive to the public's needs.

3. Concern: The Petitioners claim that a staff Request for Additional Information (RAI) on the HI-STORM 100S (the shorter design) included about 74 unresolved items that the Petitioners are not aware of whether they have been resolved.

Evaluation: The HI-STORM 100S design was submitted for NRC review by Holtec International as proposed Amendment No. 1 to the HI-STORM system. During the NRC review of this amendment request, the staff issued a number of RAIs. Holtec's response to those issues is available to the public in ADAMS at Accession Numbers ML011900075, and ML011900100. These two files are portions of a larger document. All of the files comprising the document are included in a package with Accession Number ML011900259.

It is important to note that the modified cask design being used at FitzPatrick during the first set of cask loadings is not the shorter HI-STORM 100S design, but a similar, shorter design (JAF HI-STORM 100) modified from the originally approved HI-STORM 100 design. The JAF HI-STORM 100 design was approved through a 10 CFR 72.48 evaluation performed by the licensee. That 10 CFR 72.48 evaluation had been under staff inspection for some time prior to receipt of the Petition, and the inspection was eventually completed in April 2002. Evaluations performed by a licensee under 10 CFR 72.48 do not require NRC approval prior to implementation, but are subject to the NRC's inspection program. A copy of the NRC's Inspection Report is available to the public in ADAMS at Accession Number ML021700752.

In addition to loading the JAF HI-STORM 100 cask design approved under 10 CFR 72.48, FitzPatrick has also indicated plans to use the HI-STORM 100S design (the design mentioned in the Petition) in future loadings. That design received a full technical review by the NRC's Spent Fuel Project Office, during which time the 74 technical questions initially posed by NRC staff were resolved by Holtec International. The NRC's technical review of the amendment to the HI-STORM system went through the rulemaking process, whereby public comments are received prior to final NRC approval. The Certificate of Compliance (CoC) and Safety Evaluation Report (SER) may be found in ADAMS under Accession Number ML022000176. The Federal Register Notice for that amendment was published March 27, 2002, and may be found electronically at http://www.access.gpo.gov/su_docs/fedreg/a020327c.html. FitzPatrick was not authorized to use the HI-STORM 100S design until that rulemaking was completed, unless the licensee chooses to submit an exemption request for NRC approval (and receives approval), or chooses to approve the changes under 10 CFR 72.48, in which case the licensee would be required to make the 10 CFR 72.48 evaluation available for NRC inspection.

NRC staff have determined that there is no safety significant concern related to this item in the Petition.

4. Concern: The Petitioner describes a discussion with an employee of the NRC's Spent Fuel Project Office (SFPO) where the Petitioner claims that the employee was not aware of all of the design changes Entergy made (via 10 CFR 72.48), or the details. The Petitioner states it is their understanding that NRC will not independently analyze the design changes, computer modeling and testing, but merely review Entergy's 10 CFR 72.48 evaluation.

Evaluation: At the time the SFPO employee was contacted by the Petitioner, the NRC had only recently received the licensee's 10 CFR 72.48 evaluation of the cask design changes, and had not yet reviewed that evaluation, which describes the design changes in detail. As previously explained, NRC staff subsequently began a technical inspection of the 10 CFR 72.48 evaluation, including the Holtec and licensee calculations supporting the design changes.

The process for inspecting a licensee's evaluation performed under 10 CFR 72.48 does differ from the NRC's technical review and approval process for design changes requiring NRC submittal. However, in both cases the need to perform independent confirmatory analyses of licensee or cask designer calculations is determined by NRC technical review staff. In this case, the staff did not require confirmatory analyses to render its safety findings and found FitzPatrick's evaluation in compliance with applicable regulations. Both the inspection process and the cask certification and approval process are designed to ensure public health and safety is not jeopardized.

NRC staff have determined that there is no safety significant concern related to this item in the Petition.

5. Concern: The Petitioner claims the NRC had clear reason to require a license amendment application and ALARA review, and that the NRC has failed to provide assurance that the FitzPatrick activities will not pose an increased risk to national security, the community, workers, and the environment.

Evaluation: The provisions of 10 CFR 72 allow a general licensee to make changes to the storage casks, provided that the changes do not exceed any of the eight criteria listed in 10 CFR 72.48(c)(2). NRC staff determined through their inspection at the FitzPatrick site that these criteria were not exceeded.

If the NRC had found, through inspection of FitzPatrick's 10 CFR 72.48 evaluation, that the 10 CFR 72.48 criteria were exceeded, then a license amendment or exemption would have been required. However, this was not the case, and as such, the NRC did not have "clear reason" to require a license amendment application.

The Petitioners' concern regarding the need for an ALARA review, and the risk to the community, workers and the environment is addressed below under items 9 and 10. The risk to national security is also addressed below under item 12.

NRC staff have determined that there is no safety significant concern related to this item in the Petition.

6. Concern: The Petitioner claims Entergy's reasons for avoiding a license amendment are financial in nature, and are related to loss of full core offload, future simplification of Private Fuel Storage's regulatory approval for HI-STORM 100 casks, and savings in eventual waste shipments (through use of Holtec's relatively high capacity design).

Evaluation: In determining whether a change to a cask design requires a license amendment or not, licensees are required to evaluate the proposed change against the criteria in 10 CFR 72.48(c)(2). If the proposed change exceeds one of the criteria, then a license amendment would be required. With respect to the FitzPatrick case, the criteria for submittal of a license amendment were not exceeded.

NRC staff have determined that there is no safety significant concern related to this item in the Petition.

7. Concern: In the March 29, 2002, phone call with the PRB, the Petitioners added that they "think it really is important to the NRC to look at this process in terms of its abdication of this responsibility to, in fact, include the public in the process."

Evaluation: The NRC continues to work towards increasing public confidence in the area of spent fuel storage, and appreciates the Petitioners' concern with regard to the availability of information to the public. In this case, the design changes were approved through the 10 CFR 72.48 approval process by the licensee. These licensee evaluations are submitted to the NRC in summary form on a biennial basis, as described in 10 CFR 72.48(d)(2).

Additionally, the provisions of 10 CFR 72.48, which allow a licensee to approve changes without prior NRC approval and public comment, were added to 10 CFR 72 through the NRC's rulemaking process. This modification to the general licensing process provided an opportunity for public comment. At that time, public comments concerning this process were received and evaluated by the NRC.

NRC staff have determined that there is no safety significant concern related to this item in the Petition.

8. Concern: Entergy's design changes increase the risk of terrorism due to use of lower density concrete in the revised cask design.

Evaluation: The low density concrete issue relates to the licensee's determination that some concrete used in the casks did not meet their procurement specifications. However, the concrete used did meet the licensing and safety analysis requirements. Additionally, the modified FitzPatrick cask design actually uses higher density concrete than the HI-STORM 100 cask design originally approved by the NRC, as mentioned by the licensee in the March 29, 2002, phone call with the PRB, and in the licensee's 10 CFR 72.48 evaluation.

NRC staff have determined that there is no safety significant concern related to this item in the Petition.

9. Concern: Entergy's use of the HI-STORM casks does not adequately protect workers because Entergy plans on using the HI-TRAC 100 transfer cask, which has higher worker dose rates than the HI-TRAC 125 transfer cask.

Evaluation: Any general licensee has the option to use either the HI-TRAC 100, or the HI-TRAC 125. The Certificate of Compliance No. 1014, includes the following in the description of the HI-STORM 100 Cask System, "Two types of HI-TRAC transfer casks are available: the 125-ton HI-TRAC and the 100-ton HI-TRAC."

Both transfer casks have undergone NRC technical review, and have been subject to comment during the rulemaking process. The technical review performed by the NRC staff is documented in a Safety Evaluation Report, and can be found in ADAMS, under the Accession Number ML003711865, for Amendment No. 0, and ML022000249 for Amendment No. 1.

NRC staff have determined that there is no safety significant concern related to this item in the Petition.

10. Concern: Entergy's design changes will increase radiation exposure to workers and the environment because the revised design involves lowering of the pedestal and realigning the canister closer to the vents, creating a streaming path.

Evaluation: The design change would have resulted in a local increase in dose rates at the inlet and outlet vents. However, the licensee also required a modified gamma shield be put in place as part of the overall re-design to limit dose rates to workers and the public. The modified gamma shield is discussed in the licensee's 10 CFR 72.48 evaluation that was inspected by NRC staff. NRC staff have determined that the modified cask continues to meet 10 CFR 72 regulatory requirements for worker and public radiation exposure.

NRC staff have determined that there is no safety significant concern related to this item in the Petition.

11. Concern: Entergy's design changes could increase the possibility that the casks will leak through lowering of the pedestal and realigning the canister closer to the vents. The Petitioners also added during the March 29, 2002, phone call with the PRB that the change "involves significant modifications to the heat removal systems [for] this cask".

Evaluation: For a leak to be caused due to lowering of the pedestal, the spent fuel would have to heat up to an unsafe temperature due to a lack of sufficient air flow or other heat removal mechanisms. Air enters the cask through the vents. This air flow dissipates the heat generated from the fuel, maintaining the spent fuel at safe temperatures. With the re-designed cask pedestal, the canister is closer to the vents, but the air flow through the vents under the re-design remains sufficient to cool the canister and spent fuel. The licensee evaluated the effect on heat removal capability due to the cask re-design in their 10 CFR 72.48 evaluation that was inspected by NRC staff. This inspection determined that the licensee's evaluation was acceptable with respect to the thermal impact, and that the heat removal capability of the cask was maintained.

NRC staff have determined that there is no safety significant concern related to this item in the Petition.

12. Concern: The current storage area provides little or no structural protection against many kinds of terrorism scenarios, and this is an unnecessary risk to national security and public health and safety. The Petitioners also further elaborated in a conference call with the PRB on March 29, 2002, that loading the casks and placing them outside (away from the spent fuel pool) merely "shifts the risk around" and "creates more risk by creating more targets." The Petitioners also stated that Entergy should "entertain putting the casks further apart and [place each in a] berm so they would not be such a great terrorist target."

Evaluation: With regards to security measures, we understand and share your concerns following the events of September 11, 2001. The NRC has taken a number of measures to protect the public. Since the September 11 events, the Commission has issued a series of advisories to licensees, including those operating independent spent fuel storage installations (ISFSIs), to augment certain aspects of their security plans and capability. In addition, on October 16, 2002, the NRC issued orders to those licensees operating ISFSIs to require compliance with interim safeguards and security

compensatory measures. In general, the advisories and orders address increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with law enforcement and military authorities, and limited access of personnel and vehicles to the site, among other measures. NRC has audited FitzPatrick to verify implementation of the security measures addressed and will continue to periodically review the licensee's security program.

Furthermore, we are undertaking a top-to-bottom review of the agency's safeguards and physical security programs, including the basic assumptions of current programs, in light of the continuing uncertainty about future terrorist intentions. This review involves U.S. national security organizations and is part of a broader review being undertaken by the Federal Government.

NRC staff have determined that there is no safety significant concern related to this item in the Petition.

13. Concern: The NRC should "look into what the increased risks are because of [the] shortening of the pedestal". (Comment from the March 29, 2002, PRB phone call).

Evaluation: As mentioned previously, NRC staff have inspected the licensee's 10 CFR 72.48 evaluation with respect to all aspects of the cask re-design, including the shortening of the pedestal, to ensure that the changes maintain public safety, and that the changes were allowed under the provisions of 10 CFR 72.48. The result of this inspection was that the design changes were determined to maintain safety, and comply with the requirements of 10 CFR 72.

NRC staff have determined that there is no safety significant concern related to this item in the Petition.

Based on the specific items noted above and cited by the Petitioners as the bases for their Petition, the following requests of the Petitioners are dispositioned as follows:

1. The Petitioners asked that an order be issued to Entergy to suspend the dry cask storage program at FitzPatrick. In our letter dated April 12, 2002, we notified the Petitioners that we found no safety basis for an immediate order, but would continue to evaluate the need for an order as we continued our safety review of the Petition. Based on the staff's safety review, as detailed in the specific items above, we find no basis for issuance of an order to Entergy to suspend the dry cask storage program at FitzPatrick. The request to issue such an order is therefore denied.

2. We denied the Petitioner's request that Entergy submit an additional safety demonstration of the FitzPatrick storage facility. We determined, through our inspection program, that Entergy has demonstrated that the proposed fuel storage program presents no increased risks to the national security or worker or public health and safety beyond what is contemplated in the Certificate of Compliance and General License, pursuant to § 72.212(4)-(5). We are denying the Petitioners' request that Entergy submit a license amendment, ALARA review, and various other safety evaluations and justifications to the NRC for review for the reasons noted above in the detailed discussion of the various technical items. We also deny the Petitioners' request to require Entergy to provide more substantial physical and structural protection of the irradiated fuel and ISFSI, as existing security measures have been determined to be adequate.
3. We granted the Petitioners' request that all documents and information filed in relation to the selection of storage casks and the implementation of dry storage at FitzPatrick be put on the docket for public inspection by letter dated May 10, 2002, and we provided the additional information to be released to the public at that time.
4. We granted the Petitioners' request that the PRB submit this Petition to the OIG for review of the SFPO, as noted in our letter dated April 12, 2002, to the Petitioners.
5. We also now deny the Petitioners' request to investigate whether Entergy deliberately circumvented the regulatory process. The NRC staff review of Entergy's 10 CFR 72.48 evaluation concluded that the proper regulatory process was followed by Entergy, and no further investigation is warranted.

III. Conclusion

We have granted portions of this Petition as follows: (a) request that all documents and information filed in relation to the selection of storage casks and the implementation of dry storage at FitzPatrick be put on the docket for public inspection by letter dated May 10, 2002, and we provided the additional information to be released to the public at that time, and; (b) request that the PRB submit this Petition to the OIG for review of the SFPO, as noted in our letter dated April 12, 2002, to the Petitioners.

We have denied portions of this Petition as follows: (a) request of issuance of an order to Entergy to suspend the dry cask storage program at FitzPatrick; (b) request to investigate whether Entergy deliberately circumvented the regulatory process; and, (c) request that Entergy submit an additional safety demonstration of the FitzPatrick storage facility, request that Entergy submit a license amendment, ALARA review, and various other safety evaluations to the NRC for review, and request to require Entergy to provide more substantial physical and structural protection of the irradiated fuel and ISFSI.

As provided in 10 CFR 2.206(c), a copy of this Director's Decision will be filed with the Secretary of the Commission for the Commission to review. As provided for by this regulation, the decision will constitute the final action of the Commission 25 days after the date of the decision unless the Commission, on its own motion, institutes a review of the decision within that time.

Dated at Rockville, Maryland, this 28th day of October 2002.

/RA/
Martin J. Virgilio, Director
Office of Nuclear Material Safety
and Safeguards

Enclosures:

1. Petitioner's comments on the proposed Director's Decision
2. NRC staff response to Petitioner's comments
3. Licensee's reply to the proposed Director's Decision