# POLICY ISSUE
## INFORMATION

May 25, 2001 SECY-01-0094

FOR: The Commissioners

FROM: William D. Travers
Executive Director for Operations

SUBJECT: STAFF REVIEW OF REQUEST FOR EXEMPTIONS AND AN ASSOCIATED AMENDMENT RELATED TO PHYSICAL SECURITY PLANS FOR AN INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI) UNDER A GENERAL LICENSE

PURPOSE:

To inform the Commission of (1) the staff's approach for reviewing the Maine Yankee Atomic Power Company (Maine Yankee) request for exemptions and an associated amendment related to physical security plans for an independent spent fuel storage installation (ISFSI) under a general license at a decommissioning plant, (2) a proposed rulemaking that would allow 10 CFR Part 50 licensees to design ISFSI security plans in accordance with 10 CFR 73.51 requirements, and (3) potential long-term staff activities related to the current ISFSI physical security requirements.

BACKGROUND:

10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," requires licensees, including licensees whose plants are in decommissioning, to design physical protection programs in accordance with 10 CFR 73.55, "Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage." The Maine Yankee Nuclear Power Station ceased operations on December 6, 1996, and entered decommissioning. On June 29, 1998, the staff approved exemptions for aspects of the physical protection program on the basis that the decommissioning site posed a reduced risk to public health and safety.

The regulations in 10 CFR Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste," allow an ISFSI to be licensed under

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either a general or a specific license. A general license for an ISFSI is issued to persons authorized by license to possess or operate nuclear power reactors under 10 CFR Part 50.

Under a general license, a licensee can construct and operate an ISFSI in accordance with the requirements of 10 CFR 72.212, "Conditions of general license issued under §72.210," without Nuclear Regulatory Commission (NRC) approval. 10 CFR 72.212(b)(5) requires a licensee to protect the spent fuel at the ISFSI against the design basis threat (DBT) of radiological sabotage in accordance with the same provisions and requirements as are set forth in the licensee's physical security plan pursuant to §73.55, with additional conditions and exceptions.

The Commission, in a July 18, 1990, *Federal Register* notice (FRN) (55 FR 29181), issued the final rule for general licensed ISFSIs, stating that:

> The general license presumes that the same essential physical security organization and program will be applied to spent fuel storage as are currently applied to protection of the reactor. Accordingly, additional personnel need be added only if it is necessary to ensure that there is no decrease in effectiveness.
>
> The condition to be protected against is protracted loss of control of the storage area. For that reason, protection requirements were proposed to provide for (1) early detection of malevolent moves against the storage site and (2) a means to quickly summon response forces to ensure protection against protracted loss of control of the storage area. Given these conditions, exemptions were provided for those §73.55 provisions not essential to early detection of malevolent acts and for summoning local law enforcement agencies or other response forces.

Thus, additional personnel are required to support the reactor security program only when the effectiveness of the program is decreased by operation of the ISFSI. Also, timely response by the local law enforcement agency or other responding force may be necessary to prevent protracted loss of control of the ISFSI.

Alternatively, an ISFSI can be constructed and operated under a specific license in accordance with the requirements of Part 72, which requires a detailed security plan in accordance with §73.51. The design objective of §73.51 is to protect against a loss of control of the facility that could be sufficient to cause radiation exposure exceeding the dose as described in §72.106, "Controlled area of an ISFSI or MRS [monitored retrievable storage]." 10 CFR 72.106(b) states:

> Any individual located on or beyond the nearest boundary of the controlled area may not receive from any design basis accident the more limiting of a total effective dose equivalent of 0.05 Sv (5 rem), or the sum of the deep-dose equivalent and the committed dose equivalent to any individual organ or tissue of 0.5 Sv (50 rem). The lens dose equivalent shall not exceed 0.15 Sv (15 rem) and the shallow dose equivalent to skin or to any extremity shall not exceed 0.5 Sv (50 rem). The minimum distance from the spent fuel or high-level radioactive waste handling and storage facilities to the nearest boundary of the controlled area must be at least 100 meters.

The Commission, in an August 21, 2000, FRN (65 FR 50606), clarified portions of Part 72, stating that the requirements of §72.106(b) apply to ISFSIs with either general or specific licenses.

DISCUSSION:

Maine Yankee is constructing an ISFSI under a general license pursuant to §72.212. To support operations of the ISFSI, Maine Yankee requested, in a letter to the Commission dated May 23, 2000, that it be allowed to provide security for the ISFSI under the requirements of §73.51 instead of the requirements of §73.55, which apply to general licensees. After discussions with the NRC staff, Maine Yankee withdrew its explicit request to use the §73.51 requirements and submitted a request for exemptions and an associated license amendment.[1] Pursuant to §73.5, the exemption requests seek relief from specific aspects of §73.55 and propose security provisions as alternative measures. One of the requests is to exempt the licensee from the physical protection requirement of §72.212(b)(5) that licensees with general licenses protect the spent fuel against the DBT of radiological sabotage. Maine Yankee also proposed an alternative approach to §73.55(b)(1), "Physical Security Organizations." The alternative approach is to apply the §73.51 design objective instead of the §73.55 design objective of protecting against the DBT of radiological sabotage. The purpose of the license amendment request is to amend the license to reflect the security plan changes resulting from the exemption requests. Maine Yankee intends to retain the existing §73.55 physical protection plan for the storage of spent fuel in the spent fuel pool until the fuel is transferred to the ISFSI. At that point, the licensee plans to terminate the §73.55 physical protection plan for the spent fuel pool.

The Commission, in the August 21, 2000, FRN stated, "The NRC will consider revising §73.51 in a subsequent rulemaking to clarify that an ISFSI licensee, who is also a Part 50 reactor licensee, may follow the security plan requirements of either §73.51 or §73.55." Currently, the staff is drafting a proposed rule in accordance with Commission guidance provided in a November 22, 1999, staff requirements memorandum concerning SECY-99-241, "Rulemaking Plan, Physical Security Requirements for Exercising Power Reactor Licensees' Capability to Respond to Safeguards Contingency Events." The proposed rulemaking, which is due to the Commission in May 2001, sets forth the physical protection requirements for spent fuel in dry casks by reference to §73.51. Also, the staff is examining §73.51 and the physical protection requirements of dry cask storage. In light of these ongoing activities, which could impact existing technical and policy decisions, the staff has determined that Maine Yankee could not be exempted from the physical protection requirement of §72.212(b)(5) that licensees with general licenses protect the spent fuel against the DBT of radiological sabotage. The staff may consider future exemption requests once the examination is complete.

As part of its review of the Maine Yankee request for exemptions and an associated license amendment, the staff evaluated the offsite dose that would result from unimpeded access by the DBT of radiological sabotage, but not protracted loss of control of the facility. The staff used information from the Operational Safeguards Response Evaluation adversary characteristics document to represent the explosive capabilities of the DBT. The staff used the

[1] Letter from George A. Zinke, Maine Yankee Atomic Power Company, to NRC Document Control Desk, Subject: Independent Spent Fuel Storage Installation Physical Protection Requirements - Exemption Request and Request for Amendment to the Facility License, dated January 4, 2001.

results of NUREG/CR-4858C, "Behavior of a Simulated Metal Spent Fuel Storage Cask Under Explosive Attack (U)" November 1988, augmented for conservatism to account for errors associated with the blowdown pressure gases and other factors not considered by the experiment and analysis.[2] The staff used these results to determine whether the DBT could create a dose exceeding the §72.106 limits. Maine Yankee has stated that it plans to maintain the boundary of its controlled area at a minimum of 300 meters from the dry cask storage installation. Based on 300 meters, the staff's conclusion is that the DBT of radiological sabotage would result in a dose that would be well below the §72.106(b) limits. The conclusion is based on the presently available information and no protracted loss of control of the facility.

The staff intends to conduct a review of the generic bases (assumptions and methodologies) for current ISFSI physical security requirements. Any generic issues identified by this review will be evaluated within the established regulatory framework.

CONCLUSION:

The staff reviewed the Maine Yankee exemption requests, pursuant to §73.5, and an associated license amendment against the DBT of radiological sabotage and the requirements of §73.55 paragraphs (b) through (h). The staff is finalizing the associated safety evaluation, that will approve the licensees physical protection plans. The staff has developed a proposed revision to §73.55 that sets forth the physical protection requirements for spent fuel in dry casks by reference to §73.51. In related activities, the staff plans to examine §73.51 and review the generic bases for current ISFSI physical security requirements.

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection.

***/RA by William F. Kane Acting For/***

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[2] Sandia National Laboratories Report SAND 99-0963, "Projected Source Terms for Potential Sabotage Events Related to Spent Fuel Shipments," issued June 1999.

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*** See Previous Concurrence**
**** See Previous Second Concurrence**
**Note: Changes have been made based on comments from OGC and inputs from NMSS**
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