

February 20, 2002

MEMORANDUM TO: Jon Johnson, Deputy Director
Office of Nuclear Reactor Regulation

FROM: Jack Strosnider, Director */RA/*
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SUBJECT: FINDINGS AND RECOMMENDATIONS OF LICENSEE-SPECIFIC
BACKFIT PANEL

This memorandum transmits the findings and recommendation of the licensee-specific backfit appeals panel established by your October 11, 2001, memorandum.

On July 30, 2001, the NRC denied a March 8, 2001, backfit claim by the Maine Yankee Atomic Power Company (MYAPC) relative to the processing of an exemption request for the security program at the Maine Yankee Atomic Power Station (MYAPC). On September 27, 2001, MYAPC appealed the NRC's March 8, 2001, finding. The licensee-specific backfit panel was chartered to review the licensee's appeal and advise the Director of NRR whether a backfit had occurred.

Based on its review the panel recommends the Director of NRR inform the licensee that:

- (1) the staff's request that MYAPC submit a license amendment in support of its ISFSI security exemption requests did not constitute a backfit and
- (2) the positions applied by the staff in its review of the MYAPC exemption and amendment requests were not backfits.

The bases for the panel's recommendation are provided in the enclosure.

In addition to the above recommendations the panel has recommendations relative to two areas that were not specifically included in the panel's charter. First, the panel recommends that consideration be given to reconciling the differences between the security requirements for general and specific licenses i.e., 10 CFR 73.55 and 73.51, respectively. Second, as discussed in the enclosure, analyses performed by the staff resulted in the need for changes in the MYAPC proposed security plan in order to satisfy existing regulatory requirements. The panel recommends that the implication of these analyses for other licensed ISFSI facilities should be evaluated. It is the panel's understanding that both of these issues are currently under consideration as part of the overall assessment of security requirements following the events of September 11, 2001.

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* see previous concurrence

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LICENSEE-SPECIFIC BACKFIT PANEL EVALUATION OF
THE MAINE YANKEE ATOMIC POWER COMPANY (MYAPC)
SEPTEMBER 27, 2001, BACKFIT APPEAL

BACKGROUND

On August 6, 1997, the MYAPC board of directors decided to permanently cease further operation of the Maine Yankee Atomic Power Station, and on August 7, 1997, MYAPC provided to the NRC certifications of permanent cessation of operations and permanent removal of fuel from the reactor vessel. To complete the decommissioning process, MYAPC stated its intention to remove the spent fuel from the spent fuel pool and transfer it to an onsite ISFSI for interim storage. The fuel will be stored under the provisions of 10 CFR Part 72, Subpart K, "General License for Storage of Spent Fuel at Power Reactor Sites." Under these general license regulations, MYAPC would normally be required to meet the physical protection requirements of 10 CFR 72.212(b)(5) and 10 CFR 73.55 for an ISFSI at an operating reactor site. However, on May 23, 2000, MYAPC requested an exemption from 10 CFR 73.55 for the ISFSI and proposed to implement the physical protection requirements of 10 CFR 73.51, "Requirements for the Physical Protection of Stored Spent Nuclear Fuel and High-Level Radioactive Waste," which apply specifically to stand-alone ISFSI sites.

On January 4, 2001, following a request from the NRC staff, MYAPC submitted a revised exemption request, identifying specific provisions of 10 CFR 73.55 from which it was seeking exemption, and a request for a license amendment. MYAPC also asserted that the NRC's request for the license amendment was a backfit. Subsequently, on March 8, 2001, MYAPC submitted a formal backfit claim. MYAPC claimed that the staff's application of a revised staff position in reviewing the exemption request and the staff's request for a license amendment were backfits. NRC granted the exemption, with some modifications to the original proposal (e.g., the design basis threat per 10 CFR 72.212(b)(5) and 10 CFR 73.55 was not exempted), and issued the license amendment on July 25, 2001. On July 30, 2001, the NRC informed MYAPC that it had determined that neither the staff's request for a license amendment in addition to the exemption request nor the position applied in the staff's review of the exemption request constituted backfits.

On September 27, 2001, MYAPC appealed the NRC's July 30, 2001, determination regarding MYAPC's July 4, 2001, backfit claim. On October 11, 2001, a licensee-specific backfit review panel was appointed in accordance with NRC Office Letter No. 901, "Procedures for Managing Plant-Specific Backfits and 10 CFR 50.54(f) Information Requests." The panel was chartered to recommend to the Director of NRC's Office of Nuclear Reactor Regulation (1) whether the requirement to submit a license amendment and a proposed security plan to support the review of the Maine Yankee exemption request constituted a backfit, and (2) whether a revised staff position applied to the staff's review of the exemption request constituted a backfit. This report documents the findings and recommendations of the panel. These findings and recommendations are based on discussions at a December 5, 2001, meeting with the licensee, discussions with NRC staff, and a review of related correspondence and documents.

SUMMARY OF APPLICABLE REGULATIONS AND REGULATORY POSITIONS

Section 50.109, referred to as the backfit rule, defines backfitting as “the modification of or addition to systems, structures, components, or design of a facility; or the design approval or manufacturing license for a facility; or the procedures or organization required to design, construct or operate the facility; any of which may result from a new or amended provision in the Commission rules or the imposition of a regulatory staff position interpreting the Commission rules that is either new or different from a previously applicable staff position....” Section 50.109 defines the conditions that must be satisfied to impose a backfit on a licensee.

With respect to ISFSIs, the regulations establish different security requirements, depending on whether a licensee has a general license or a site-specific license. The provisions of 10 CFR 72.212(b)(5) apply to a general license, and require that a licensee be able to protect against the design basis threat (DBT) per 10 CFR 73.55. The provisions of 10 CFR 73.51 apply to a facility with a site-specific license. This section requires that a licensee be able to protect against “loss of control of the facility.” The design objective of 10 CFR 73.51 is to limit the dose of an individual at the site boundary as described in 10 CFR 72.106(b) which establishes, among other limits, a total effective dose equivalent of 0.05 Sv (5 rem) . Section 73.51 requires a minimum distance of 100 meters from the storage facility to the nearest boundary of the controlled area. A more detailed description of the security regulations applicable to ISFSIs is provided in Attachment 1.

Paragraph (p)(2) of 10 CFR 50.54 permits licensees to make changes to their security plans prepared pursuant to 10 CFR Part 73 without Commission approval if the changes do not decrease the safeguards effectiveness of the plan.

STATEMENT OF THE APPEAL

MYAPC’s September 27, 2001 letter, appealed NRC’s July 30, 2001 position, rejection of the two backfit claims.

The first backfit claim challenged the requirement to submit a license amendment and proposed security plan to support the review of the Maine Yankee exemption request. MYAPC disagreed with the position of the NRC staff that, once a licensee requests authority to do what is not currently permitted under applicable regulations, NRC may require a different type of submittal. MYAPC asserted that the NRC should review the request for exemption in accordance with the methods and criteria clearly stated in the regulations, and should not arbitrarily require an NRC review that would not otherwise be required in accordance with 10 CFR 50.54(p). Based on discussions during the December 5, 2001, meeting between the panel and the licensee, both the panel and the licensee agree this is solely a process issue.

The second backfit claim related to a revised staff position applied to the NRC staff’s review of the amendment request and plans submitted by MYAPC. MYAPC asserted that the staff’s assumptions and criteria about the nature and consequences of potential threats differed from previous staff positions. MYAPC asserted that NRC’s July 30, 2001 backfit determination did not address this backfit claim.

DISCUSSION AND EVALUATION

Backfit Issue No. 1

During the December 5, 2001, meeting with the panel, the licensee stated that it did not consider the NRC staff request for a copy of the proposed security plan to support the staff's review of the exemption request a backfit. However, MYAPC did consider the staff request for a license amendment to be a backfit. MYAPC's position is that the requested exemptions should have been granted, and then MYAPC should have been allowed to make changes to their security plan using 10 CFR 50.54(p), which requires submission of an amendment request only if a licensee determines that the changes would decrease the effectiveness of the security plan. The licensee considers the NRC staff request for a license amendment to be an imposition of a new position and thus a backfit.

It is the staff's position that an exemption request is granted at the discretion of the Commission and, as long as the information and/or types of submittals requested relate to the exemption sought, it is not subject to the backfit rule. As noted above, in accordance with 10 CFR 50.109, a modification or addition to systems, structures, components, or design of a facility or the procedures of organization required to design, construct, or operate the facility, any of which results from a new or amended rule or *imposition* of a staff position interpreting the rules that is either new or different from a previously applicable staff position would constitute a backfit. The rationale for the staff's position is that in the case of a licensee requesting an exemption, the staff is not *imposing* any new or different position regarding the existing rules that apply to the licensee's facility. The licensee could continue to comply with the existing regulations.

The staff's July 30, 2001, finding on this issue was consistent with the above position. MYAPC always had the option of following the existing security plan requirements (i.e., 10 CFR 73.55) for its ISFSI. Alternatively, MYAPC could have requested a specific license for the ISFSI under 10 CFR 73.51. Instead, MYAPC proposed changes to the security plan via the exemption process. NRC did not impose changes in security plan requirements on the licensee.

In considering this issue, the panel went beyond the general argument presented above and considered the relevancy of the license amendment to the exemption request, that is, whether there was a need for a license amendment in this case versus allowing the licensee to determine via 50.54(p) if a license amendment was necessary. Critical to this consideration is the fact that the MYAPC exemption request proposed to base a new security plan on a set of requirements that is not captured in 10 CFR or any other controlled regulatory document. The set of requirements on which the new plan was based was a combination of the requirements from both the general and specific license requirements, i.e., 10 CFR 73.55 and 10 CFR 73.51. Because the set of requirements that this unique, revised security plan was based on, was not captured in 10 CFR, the staff concluded that, as a condition of granting the exemption, the licensee should place the revised plan, reflecting that set of requirements, in a document where its terms would be clearly enforceable. Thus, the staff's request for a license amendment was not arbitrary, but was related to the exemption being sought. Again, the exemption request and the license condition requested by the staff were not imposed on the licensee. MYAPC could have followed existing requirements.

On this basis, the panel concluded that the staff request for a license amendment was relevant to the MYAPC requested exemption, which was not imposed on the licensee and therefore did not constitute a backfit.

Backfit Issue No. 2

MYAPC constructed an ISFSI under a general license. In its exemption request of May 23, 2000, it sought Commission approval to apply the site-specific security requirements of 10 CFR 73.51, instead of the general license requirements of 10 CFR 73.55. This was the first time the staff reviewed site physical security issues for a generally licensed ISFSI at a stand-alone site undergoing decommissioning. It is appropriate to note that a number of regulatory and technical staff reviews and initiatives were going on at the same time as the MYAPC exemption request review. These included a broad review of the safeguards and physical security regulations resulting in a proposed rulemaking, spent fuel Zircaloy fire probability studies, and the potential ISFSI rulemaking to address the above-noted differences between 10 CFR 73.51 and 73.55.

In light of the concurrent ongoing activities impacting the physical protection requirements for dry cask storage, the staff determined that the Maine Yankee ISFSI could not be exempted from the physical protection requirements of 10 CFR 72.212(b)(5) regarding protection against the DBT. The staff decision that MYAPC was required to protect against the DBT did not constitute a new or different position and, therefore, did not constitute a backfit, since protecting against the DBT was an existing requirement for the Maine Yankee facility under its general license. Furthermore, the licensee could either have followed the regulations of its general license or applied for a specific license. Through its exemption request the licensee requested to merge aspects from each set of licensing requirements.

The panel also considered two questions relating to whether the staff's assumptions and criteria about the nature and consequences of potential threats differed from previous staff positions applicable to the Maine Yankee facility: (1) did the staff apply a new definition of the DBT during the exemption review that constituted a backfit? (2) does the consideration of results from new calculations associated with the DBT constitute a backfit?

With regard to the first question, 10 CFR 72.212(b)(5) describes the DBT in general terms and clearly states that a general licensee is required to protect against the DBT. Historically, the adversary characteristics of the threat, (weaponry, explosives carrying capacity, etc.), had never been documented and communicated to licensees in one regulatory document. This had been an area of concern expressed by licensees as part of Operational Safeguards Response Evaluation (OSRE) exercises. In August 2000, partly because of industry concerns, the staff issued an OSRE adversary characteristics document (ACD) that defined the characteristics of the DBT to be exercised during OSREs. It is the panel's understanding that the threat characteristics provided in the ACD were intended to be consistent with threat characteristics used in prior OSREs. However, it should be acknowledged that, although these threat characteristics had been used previously, the ACD was the first attempt to capture them all in one place. This background is important because MYAPC noted in the December 5, 2001 meeting with the panel, that in a February 27, 2001 NRC letter to M. Meisner, S. Richards stated that "...recently developed generic policy issues in the safeguards area impacted our review of your request." However, staff involved in the Maine Yankee exemption request review informed the panel that they did not change any of the Maine Yankee DBT characteristics as part of the review. Thus no backfit occurred relative to the staff's definition of the Maine Yankee DBT.

As part of its review the panel also learned that results of calculations performed by the staff as part of its review of the exemption request indicated a need for adjustments to the proposed security plan. However, these results were based on calculations of the existing DBT characteristic as provided in the ACD. Thus, they did not represent a change in staff position regarding the requirements of the regulations; they merely provided information on the potential consequences of the existing requirements. Considering the results of the staff's calculations in the review of the security plan proposed by the licensee in its exemption request did not constitute a backfit.

In conclusion, it is clear that MYAPC needed to protect against the DBT under its existing general license. The staff's refusal to exempt the licensee from this requirement did not constitute a backfit. It is the panel's understanding that the DBT threat characteristics used by the staff in reviewing MYAPC's exemption request were not new or different from the existing DBT characteristics applicable to Maine Yankee. Furthermore, consideration of the results of staff calculations during the review of the proposed security plan did not constitute a new or revised staff position. The results provided information about the consequences of the existing DBT, and considering the results was appropriate to ensure that the plan satisfied existing regulatory requirements. Thus, no backfit occurred in the staff's review of the security plan proposed in the licensee's exemption request.

PANEL CONCLUSIONS AND RECOMMENDATIONS

The panel recommends that MYAPC be informed via a letter from the Director NRR that in accordance with NRR Office Letter No. 901, Revision 1, "Procedures for Managing Plant-Specific Backfits and 10 CFR 50.54(f) Information Requests," a licensee-specific backfit panel was constituted and has evaluated their backfit appeal, and based on review of the panel's findings, he has determined that

- (1) the staff's request for MYAPC to submit a license amendment in support of their ISFSI security exemption requests did not constitute a backfit, and
- (2) the positions applied by the staff in reviewing the MYAPC exemption and amendment request did not constitute a backfit.

In addition to the above recommendations, the panel has recommendations relative to two areas that were not specifically included in the panel's charter. First, the panel recommends that consideration be given to reconciling the differences between the security requirements for general and specific licenses i.e., 10 CFR 73.55 and 73.51, respectively. Second, as discussed above, analyses performed by the staff resulted in the need for changes in the MYAPC proposed security plan in order to satisfy existing regulatory requirements. The panel recommends that the implication of these analyses for other licensed ISFSI facilities should be evaluated. It is the panel's understanding that both of these issues are currently under consideration as part of the overall assessment of security requirements following the events of September 11, 2001.

SUMMARY OF SECURITY REQUIREMENTS FOR ISFSIs

Security Requirements for General Licenses

The following regulations apply when a licensee relies on a general license under 10 CFR 72.210 to store spent fuel in an ISFSI located at a power reactor site that was licensed under 10 CFR Part 50. Paragraph (b)(5) of 10 CFR 72.212, "Conditions of general license issued under §72.210," requires that spent fuel located on sites with a general license be protected against the design basis threat in accordance with the same provisions and requirements as set forth in the licensee's physical security plan pursuant to 10 CFR 73.55. In turn, 10 CFR 73.55 requires that the physical protection system be designed to protect against the design basis threat (DBT) of radiological sabotage as stated in 10 CFR 73.1(a).

Part 73.1(a) provides a fairly prescriptive definition of the types of threats that need to be considered in the DBT. However, the details of these threats (types of weaponry, explosives, etc.) are not discussed in the rule. In August of 2000 the staff promulgated an Operational Safeguards Response Evaluation (OSRE) advisory characteristics document (ACD). The document is the staff's interpretation for industry of the characteristics of the DBT to be exercised during OSREs. This document was based on prior definitions of the DBT used in OSRE exercises and was intended to provide reference for defining the DBT.

Security Requirements for Specific Licenses

The following regulations apply when a licensee is storing spent fuel in an ISFSI that was licensed specifically for that purpose pursuant to 10 CFR Part 72. Paragraph (b)(1) of 10 CFR 73.51 establishes general performance objectives for the facility. Specifically, it states: "Each licensee subject to this section shall establish and maintain a physical protection system with the objective of providing high assurance that activities involving spent nuclear fuel and high-level radioactive waste do not constitute an unreasonable risk to public health and safety." Paragraph (b)(3) of the same section states: "The physical protection system must be designed to protect against loss of control of the facility that could be sufficient to cause a radiation exposure exceeding the dose as described in §72.106 of this chapter." 72.106 states that 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, and that any individual located on or beyond the nearest boundary of the controlled areas 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 deepest dose equivalent and the committed dose equivalent to any individual organ or tissue (other than the lens of the eye) of .5 Sv (50 rem).