

December 22, 2004

James A. Kay  
Principal Licensing Engineer  
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400 Donald Lynch Boulevard  
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SUBJECT: DENIAL OF REQUEST FOR FURTHER EXEMPTION FROM THE FINANCIAL PROTECTION REQUIREMENTS OF 10 CFR 140.11(A)(4) AND RELATED AMENDMENT TO INDEMNITY AGREEMENT NO. B-17 FOR THE YANKEE NUCLEAR POWER STATION (TAC NO. L52600)

Dear Mr. Kay:

On June 16, 2003, Yankee Atomic Electric Company (YAEC) submitted a request for further exemption from the financial protection requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) 140.11(a)(4) and related amendment to Indemnity Agreement No. B-17, for the Yankee Nuclear Power Station (YNPS). Specifically, the exemption request proposed to reduce the primary financial protection requirement applied to YNPS from \$100 million to \$25 million after the transfer of the spent nuclear fuel from the spent fuel pool to the Independent Spent Fuel Storage Installation.

The U.S. Nuclear Regulatory Commission staff has completed its review of the exemption request and concludes that YAEC's exemption request is denied and that YAEC must maintain commercial liability insurance coverage at the current levels for decommissioning reactors. The basis for the staff's denial is presented in the attached Safety Evaluation Report.

The staff is willing to work with stakeholders and encourages industry to develop an appropriate methodology for assessing financial risk that could be applied to the storage of spent fuel in either a spent fuel pool or an independent spent fuel storage installation.

Sincerely,

**/RA/**

Daniel M. Gillen, Deputy Director  
Decommissioning Directorate  
Division of Waste Management  
and Environmental Protection  
Office of Nuclear Material Safety  
and Safeguards

Attachment: As stated

Docket No.: 50-029

License No.: DPR-3

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SAFETY EVALUATION BY THE OFFICE OF  
NUCLEAR MATERIAL SAFETY AND SAFEGUARDS  
RELATED TO FACILITY OPERATING LICENSE NO. DPR-3  
YANKEE ATOMIC ELECTRIC COMPANY  
YANKEE NUCLEAR POWER STATION  
DOCKET NO. 50-029

## 1.0 INTRODUCTION

Yankee Atomic Electric Company (YAEC) is the licensee and holder of Facility Operating License No. DPR-3 for the Yankee Nuclear Power Station (YNPS). The plant was permanently shut down on October 1, 1991. By February 14, 1992, YAEC had moved the fuel from the reactor vessel to the spent fuel pool. By letter dated February 27, 1992, the licensee informed the NRC that the plant was permanently shut down and that decommissioning would commence. YAEC submitted a decommissioning plan on December 20, 1993, which included an environmental report. The decommissioning plan was approved by Order on February 14, 1995, and the plant is undergoing dismantlement under 10 CFR 50.59. The licensee has completed construction of an on-site Independent Spent Fuel Storage Installation (ISFSI) under a general license. As of May 31, 2003, all of the irradiated nuclear fuel had been transferred to the onsite ISFSI. On June 21, 2003, the last Transportable Storage Container (TSC), containing greater than Class C (GTCC) radioactive material was placed on the ISFSI pad.

On June 16, 2003, YAEC submitted a request for further exemption from the financial protection requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) 140.11(a)(4) and related amendment to Indemnity Agreement No. B-17, for YNPS. Specifically, the exemption request proposed to reduce the primary financial protection requirement applied to YNPS from \$100 million to \$25 million after the transfer of the spent nuclear fuel from the spent fuel pool to the ISFSI.

In its exemption request, YAEC argues that the specific exemption is authorized by law, is otherwise in the public interest, and is consistent with previous NRC staff positions. Further, YAEC states that the proposed exemption does not involve significant environmental impacts.

## 2.0 EVALUATION

### Exemption is Authorized by Law

Section 140.8 of 10 CFR states that exemptions may be granted to the requirements of Price-Anderson as implemented under Part 140, provided the exemptions are authorized by law and are otherwise in the public interest.

The staff agrees that reducing primary insurance coverage levels is authorized by law. The Commission has previously recognized that neither Price-Anderson nor NRC regulations address what amount of commercial liability insurance coverage is needed for decommissioning reactors. However, the Commission is authorized by Price-Anderson to establish a lesser amount of liability insurance coverage based on extenuating circumstances such as factors pertaining to the hazard. It is under this authority that the Commission has allowed reductions in Price-Anderson mandated insurance coverage for decommissioning reactors.

#### Otherwise in the Public Interest

YAEC's justification for reducing primary insurance levels is that the risk from spent fuel stored in a dry cask ISFSI is significantly less than the risk from the same spent fuel stored in a spent fuel pool. Although the staff recognizes that the risks of dry storage and wet storage of spent fuel are different, there is no indication that moving spent fuel from wet storage to dry storage would result in a significant reduction in the overall risk of radiological release. The staff believes that both methods of spent fuel storage are safe. There is no compelling reason for the staff to change insurance coverage requirements for such circumstances under an exemption process. Furthermore, the staff believes that public health and safety risk may not be the only appropriate measure for making a determination on an appropriate level of liability insurance. Liability insurance covers financial and legal risks that extend well beyond any radiological damages that may occur from an incident at a particular site. The staff notes that the current primary insurance level of \$100 million for most decommissioning reactors was not based solely on public health and safety risk, but instead was established considering claims resulting from the TMI-2 accident—both actual claims paid and the cost of defending such claims. More than \$70 million has been paid to date for the TMI-2 accident, even though no significant offsite radiological release occurred.

The staff does not have an analytical method or empirical data (other than for TMI-2) for performing a risk assessment in support of reducing insurance levels. Risk assessments, as currently practiced by the NRC, primarily evaluate risk consequences in terms of man-rem exposure and how that value translates to acute death or latent cancers. Financial risk evaluations would need to consider a much broader range of consequences such as property damage, loss of income, stress, and the legal costs associated with claims and lawsuits. For example, legal defense costs represent the biggest financial risk associated with liability claims against the nuclear industry to date. NUREG/CR-6617 documents historic claims data under Price-Anderson that show the cost of defending against suits versus actual payout for damages to be nearly 2 to 1. The staff believes that the risk of a lawsuit remains the same whether fuel is stored in a spent fuel pool or an ISFSI. Significant staff effort would be necessary to evaluate financial risk and consequences using the NRC's current risk-informed regulatory approach. It would be extremely difficult, if not impossible, for the staff to make a financial risk assessment related to the damages from these subjective factors because of the uncertainties and legal complexities associated with psychological or physical harm. Simply put, the staff believes that regardless of the very low probability of any offsite radiological release from an actual event or incident involving spent fuel stored in an ISFSI, monetary damages could be significant. For example, if a plane crashed near an ISFSI location or a terrorist attack occurred at or near an ISFSI site, damages resulting from a precautionary or voluntary evacuation of the public - such

as costs related to car accidents, missed work income, temporary lodging, stress related health effects, etc., could run into millions of dollars even with no radiological release.<sup>1</sup>

The staff notes that YAEC did not provide specific information in their request on the premium cost saving by reducing their current primary insurance coverage to the requested \$25 million coverage level. However, in a letter to Chairman Diaz on October 22, 2003, YAEC stated that the annual savings on insurance coverage premium costs in going from \$100 million coverage to \$25 million coverage is estimated to be \$75,000 for YNPS. The staff notes that the private insurance industry's credit rating plan for licensees covered under Price-Anderson has provided an average reimbursement to licensees of over 60% of premium costs after 10 years (based on the reimbursement history since 1957). Therefore, the staff estimates that the actual cost differential for YAEC is less than \$20,000/yr on average. The staff does not consider the additional premium costs for maintaining the currently required \$100 million in primary insurance coverage a significant regulatory burden.

ISFSIs not directly associated with a reactor licensee are not indemnified under Price-Anderson and have no legislated insurance obligation. However, the only two facilities of this type [GE Morris - currently licensed, and Private Fuel Storage (PFS) - applicant] have elected to carry private insurance coverage well in excess of the exemption requests under consideration in this paper. Specifically, GE Morris has \$200 million in commercial liability insurance coverage, and PFS has committed to obtain (if licensed) the maximum amount of liability insurance available from the nuclear industry's private insurance source (currently \$300 million).

The business practices of GE Morris and PFS regarding liability insurance coverage exemplify how financial risk associated with an ISFSI might be more appropriately determined by the financial community rather than the NRC. The NRC has currently established (via the exemption process) a level of \$100 million as the minimum amount of private insurance that should be required by most decommissioning reactors - regardless of whether spent fuel is stored on site in an ISFSI or a spent fuel pool (with the exception of Big Rock Point and several other small power reactor sites that are in decommissioning, but were originally licensed with primary insurance levels less than \$100 million). If YAEC believes its specific risk situation is reduced when spent fuel storage is transferred from the spent fuel pool to the ISFSI, it should be able to obtain reduced premium charges from the private industry insurers. This is analogous to car insurance where the State Government insurance regulators set minimum insurance coverage levels. The premiums paid by any given individual are set by the insurance company based on perceived risk. Premium reductions due to changes in circumstances are negotiated with the insurance companies rather than requesting exemptions from the insurance regulators to reduce car insurance coverage minimums.

Although authorized by law, the staff does not believe the reduction of primary insurance to \$25 million is in the public interest, considering that this level of insurance increases both the Federal Government's liability risk and reduces overall insurance protection of the public. Further, the requested insurance reduction is not based on any analysis or empirical data.

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<sup>1</sup> A licensee may be liable for damages from a terrorist attack up to the sum of the licensee's primary and secondary coverage limits provided the event is not determined to be an act of war. The staff is currently evaluating potential consequences of various attacks on spent fuel dry storage technologies as part of the ongoing vulnerability assessment work.

### Exemption is Consistent with Previous NRC Policy

The primary justification for the reduction in insurance coverage is based on prior staff proposals. However, these proposals never received public comment, or approval from the Commission. Specifically, following the Commission's endorsement of the policy in SECY-93-127, the staff attempted to codify the regulations for decommissioning reactor liability insurance. In SECY-97-186, "Changes to the Financial Protection Requirements for Permanently Shutdown Nuclear Reactors," the staff proposed a rule that would have reduced the minimum required commercial liability insurance at decommissioning reactors where the spent fuel was moved into an ISFSI to \$25 million. Efforts on this rulemaking were suspended based on new concerns related to zirconium fire risks from spent fuel stored in spent fuel pools. In SECY-00-145, "Integrated Rulemaking Plan for Nuclear Power Plant Decommissioning," dated June 28, 2000, the staff proposed a risk-informed approach to certain decommissioning regulatory issues, including insurance requirements. The paper also proposed to reduce the minimum required liability insurance to \$25 million when spent fuel is removed from the pool, but was returned to the staff without a Commission vote to permit completion of a staff technical study on spent fuel pool risk. SECY-01-0100, "Policy Issues Related to Safeguards, Insurance, and Emergency Preparedness Regulations at Decommissioning Nuclear Power Plants Storing Fuel in Spent Fuel Pools," dated June 4, 2001, further addressed decommissioning reactor insurance levels but was withdrawn by the staff because treatment of spent fuel pool vulnerability to radiological sabotage had not been sufficiently considered.

The insurance levels proposed in SECY-97-186 and SECY-00-145 for decommissioning reactor sites with all spent fuel moved to an ISFSI were not based on a quantitative assessment or evaluation of ISFSI risk, but rather, a qualitative judgement recommended by the staff as a reasonable starting point for public consideration at the beginning of a rulemaking process. Since the proposed decommissioning rulemakings never progressed, there has been no validation or endorsement of the proposed insurance levels by either the Commission or the public. The staff also notes that YAEC's exemption request does not provide an analytical basis or technically supported justification for the requested insurance reduction beyond what was provided in the prior SECY papers.

### 3.0 ENVIRONMENTAL CONSIDERATIONS

Denial of this exemption will result in no significant radiological or non-radiological environmental impacts.

### 4.0 CONCLUSIONS

The staff has concluded, based on the considerations discussed above, that reducing primary insurance coverage levels as proposed in the exemption is authorized by law, and that the proposed exemption would not have radiological or non-radiological impacts on the environment. However, the staff does not believe that reducing primary insurance coverage levels as proposed in the exemption was adequately justified nor is otherwise in the public interest, and therefore, the exemption request is denied. The staff is willing to work with stakeholders and encourages industry to develop an appropriate methodology for assessing financial risk that could be applied to the storage of spent fuel in either a spent fuel pool or an independent spent fuel storage installation.

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