

YANKEE ATOMIC ELECTRIC COMPANY

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1671 Worcester Road, Framingham, Massachusetts 01701

April 22, 1983

United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. Dennis M. Crutchfield, Chief
Operating Reactors Branch No. 5
Division of Licensing

References: (a) License No. DPR-3 (Docket No. 50-29)
(b) YAEC Letter to USNRC, dated June 28, 1982,
"Property Damage Insurance Exemption Request"
(c) USNRC Letter to YAEC, dated August 13, 1982
(d) "Final Programmatic Environmental Impact
Statement for Decontamination and Disposal of
Wastes from the Accident at TMI-2",
NUREG-0683, dated March 1981
(e) "Updated TMI-2 Recovery Program Estimate",
Metropolitan Edison Company, July 1981

Enclosures: (A) Decontamination Study for the Yankee Plant,
June 1982
(B) Decommissioning Study for the Yankee Nuclear
Power Station, May 1980

Subject: Additional Information Supporting Property Damage
Insurance Exemption

Dear Sir:

On June 28, 1982, in accordance with the provisions of 10CFR50.12(a), Yankee Atomic Electric Company submitted an application for exemption from the requirements of 10CFR50.54(w) as they apply to Yankee [Reference (b)]. Reference (c) provided a summary of the NRC staff's review of the request and the conclusion that additional information would be needed to support an exemption from the requirement. This letter responds to that request.

The first issue raised by the NRC request [Reference (c)] was the reasonableness of the anticipated decontamination costs. In response, we are enclosing the "Decontamination Study for the Yankee Plant". This study was performed early in 1982 in an attempt to quantify the economic impact of a major accident at Yankee. The conclusion from this study was that the aggregate costs associated with the decontamination and decommissioning of a plant the size of Yankee would amount to approximately

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\$360 million (1982 dollars). It is important to note that this study is premised on the assumption that "the endpoint of a large post-accident cleanup effort for the Yankee Plant would be the decommissioning of the unit" rather than return to service. This premise reflects the realization that restart of the Yankee Plant would be uneconomic and imprudent.

The decommissioning costs are included in the study, even though a separate independent trust fund, over and above decontamination insurance coverage, is being accumulated to meet those costs. Since the provisions of 10CFR50.54(w) relate only to decontamination insurance (see 47FR13750, Paragraph II,B), the decommissioning portions of our cost estimates (about \$30 million, see Enclosure B) should be subtracted to reach a figure for decontamination alone which would be about \$330 million.

The Yankee study was performed with the benefit of several previous evaluations, References (d) and (e), of post-accident cleanup and recovery costs for the Three Mile Island Nuclear Station, Unit 2 (TMI-2). The Yankee cost estimates were based upon an analysis of these cleanup activities and addition of decommissioning costs. Dimensional comparisons, component and system complexity, and original plant design bases, as well as plant power level, were evaluated to assess the corresponding costs associated with cleanup activities at Yankee. As explained in the study, the TMI 2 cost estimates were adapted to the Yankee Plant through analysis of all relevant factors including the volumes, surface areas, core size, mass of material to be processed and radioactive concentrations, with the result that each task in the decontamination effort was scaled using appropriate factors for that task for our Plant. The net result was a cost estimate for the Yankee Plant which did not rely exclusively on small plant size, but rather represented, by activity, the actual projected cost of cleanup and decommissioning of the facility.

Since the Yankee study was performed, the NRC Office of Nuclear Regulatory Research commissioned a study by Pacific Northwest Laboratory which was published in November of 1982 (NUREG/CR-2601 "Technology, Safety and Costs of Decommissioning Light Water Reactors Following Postulated Accidents"). The NRC study was performed for large current generation commercial nuclear power reactors (1100 MW_e) and resulted in accident cleanup costs consistent with the projected TMI-2 costs which were used as the basis for the Yankee study. Although the NRC study examined a spectrum of accident scenarios, costs presented for the most severe accident studied are still comparable with those estimated for the TMI-2 cleanup for similar activities.

The second issue raised by the NRC request related to Yankee's efforts to obtain additional decontamination insurance

coverage at lower costs. In our original exemption request, Yankee stated that it had \$460 million of insurance coverage to cover the costs of decontamination and cleanup of a major accident. Since that time, the maximum basic coverage available from our insurers was increased to \$500 million. Yankee has purchased this additional coverage which became effective on January 1, 1983. In so doing, Yankee has further increased the margin between the expected cost of decontamination and cleanup and the amount of insurance coverage for the Plant. In fact, the maximum loss covered by our insurance is approximately 40% higher than the estimated cost of decontamination and cleanup described in the attached study.

In June 1982, Yankee obtained quotations for insurance coverage in excess of the \$500 million coverage described above in order to assess the cost of the additional coverage versus any benefit gained. Excess coverage was offered by two insurers; ANI/MAERP and NEIL II in the amounts of \$67 million and \$299 million, respectively. Annual premiums for the ANI/MAERP coverage were quoted at \$201,000. The cost of the NEIL II coverage available was \$508,300 annual premium for \$299 million of coverage, with an additional deposit of \$66,079 required to be held for retrospective premiums which could be assessed on all policyholders in the event of a large claim. Assuming NEIL II is able to increase capacity to its target limit of \$500 million, the annual premium is estimated to be \$850,000 plus a deposit of \$110,000 for retrospective premium.

Yankee currently pays \$871,083 per year for premiums for the basic property damage and debris removal/decontamination insurance discussed previously. The burden on Yankee, and hence the New England ratepayers of the excess insurance, would be \$200,000 for the ANI/MAERP option and would double our premiums to \$1.7 million for the NEIL II option. Whereas the cost of accident cleanup for the Yankee Plant has clearly been shown to be much less than the basic insurance limit, the excess coverage is unnecessary and unwarranted.

Yankee has not directly sought quotations of the costs of alternatives such as surety bonds or lines of credit. However, its experience indicates that the cost estimates for such arrangements, if they were available, would be substantially higher than insurance. These costs would be 1/2% to 5/8% per year of the principal amount. For \$67 million in credit therefore, the annual cost would be \$335,000 - \$422,100. These estimates were presented to the Commission by Pacific Gas and Electric Company (Docket No. 50-133) for these alternatives and appear to be fair approximations.

Clearly, there is a wide difference in levels of insurance which must be maintained by the owners of newer and older nuclear power plants. Newer plants have plant values in excess of

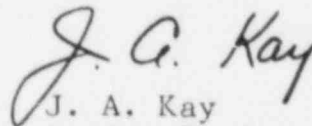
\$1 billion, and must protect the value of their property as well as be able to cover the cost of a spectrum of potential accidents. Yankee was built in the late 1950s, when the cost of construction was much lower. The Yankee Plant was completed in 1960 for a cost of just over \$40 million. Although substantial additional investments have been made in plant modifications, present book value of the facility and fuel is approximately \$40 million. Thus, the ratio of Yankee's insurance coverage compared to the Plant's value far exceeds that of newer plants.

It remains our conclusion that Yankee continues to maintain coverage in an amount sufficient to provide a "reasonable amount of insurance for decontamination expense" ensuring that the "Commission's only concern from the point of view of protecting the public health and safety" (47 FR 13752 March 31, 1982) is satisfied. That insurance has been shown, by the enclosed report, to be more than sufficient to cover the costs of decontamination and cleanup of a plant the size of Yankee. Therefore, there is no justification for imposing upon Yankee a requirement to carry additional insurance coverage and under 10CFR50.12 the Commission should conclude that the requested exemption is authorized by law, will not endanger life or property, and is otherwise in the public interest.

Based upon the information presented which supports our original request [Reference (b)], Yankee respectfully requests that it be granted an exemption from the requirements of 10CFR50.54(w)(1)(ii).

Respectfully submitted.

YANKEE ATOMIC ELECTRIC COMPANY



J. A. Kay
Senior Engineer - Licensing

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