



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

January 11, 1991

Docket No. 50-029

Mr. George Papanic, Jr.
Senior Project Engineer - Licensing
Yankee Atomic Electric Company
580 Main Street
Bolton, Massachusetts 01740-1398

Dear Mr. Papanic:

SUBJECT: REGULATORY GUIDE 1.97 - NEUTRON FLUX VARIABLE (TAC 66496)

Our safety evaluation of your Regulatory Guide (RG) 1.97 submittals, dated December 9, 1986, required that Yankee install and make operational neutron flux monitoring instrumentation that meets the requirements of RG 1.97, Rev. 2. By letter dated October 1, 1987, you requested an exception from the environmental qualification and single failure criteria, of R.G. 1.97, for neutron flux monitoring instrumentation. This request provided a risk based analysis that concluded that redundant, environmentally qualified neutron flux monitoring instrumentation was not necessary.

The October 1, 1987, analysis is based on anticipated conditions resulting from standard event analyses. These might normally be considered as reasonably comprehensive for the FSAR design bases analyses. However, at least some of the instrument recommendations of RG 1.97 were intended to cover a wider range of possibilities, including conditions not necessarily to be anticipated by following the usually clearly defined paths of standard event analyses. This might be under circumstances which would involve reactor states and evolving events and conditions not anticipated from analyses following normally considered event scenarios. It would thus be virtually impossible to either predict or demonstrate the implausibility of such event paths and resulting conditions with assurance. Therefore, while not disputing the analyses or results presented, it must be concluded that they do not address the above conceptual basis of the criteria in RG 1.97.

In your letter of October 1, 1987, you stated that there were two types of accidents that result in a harsh environment inside containment that could require long-term monitoring of reactivity. These accidents are a LOCA or a main steam or feedwater line break. You further stated that the shutdown margin is maintained and a return to criticality does not occur for either

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Mr. George Papanic, Jr.

Yankee Rowe

cc:

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580 Main Street
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accident. We verified your analyses in the Yankee FSAR in Section 409 and 411.

10 CFR 50.49 requires that certain post-accident monitoring equipment be environmentally qualified. Specific guidance concerning the types of variables to be monitored is provided in RG 1.97. Because your request of October 1, 1987, does not meet the requirements of 10 CFR 50.49, the request is unacceptable. Our position remains that Yankee Atomic should commit to the installation of neutron flux monitoring instrumentation that meets the Category 1 criteria of RG 1.97.

Sincerely,

Original signed by:

Patrick M. Sears, Project Manager
Project Directorate I-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

cc: See next page

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for
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MRushbrook
01/04/91

from
PM:PDI-3*
PMSears:mes
01/06/91

*See previous concurrence

SICB*
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Mr. George Papanic, Jr.

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accident. We verified your analyses in the Yankee FSAR in Section 409 and 411. Our position remains that the licensee should commit to the installation of neutron flux monitoring instrumentation that meets the Category 1 criteria of RG 1.97.

Sincerely,

Patrick M. Sears, Project Manager
Project Directorate I-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

cc: See next page

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