

AUG 25 1972

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Docket No. 50-29

Yankee Atomic Electric Company
ATTN: Mr. Donald E. Vandenburg
Vice President
20 Turnpike Road
Westboro, Massachusetts 01581

Gentlemen:

This refers to your letter dated August 7, 1972, and supplemental information contained in your teletype dated August 24, 1972, concerning the Yankee control rods. Your letter confirms the details of the recent failure of control rod No. 19 to complete one drop into the core and it also outlines Yankee's proposed actions including a scheduled reactor shutdown not later than October 31, 1972, for the installation of replacement control rods.

The performance of the 24 Yankee control rods has been checked out initially during Core X startup testing. Because control rod No. 18 had then exhibited erratic performance and since few data were available from the hot rod drop measurements made during Core X startup testing, this control rod had to be considered inoperable. For this reason, Yankee is still required by Change No. 100 to operate the reactor with more restrictive Control Rod Insertion Limits to meet the specified shutdown margin without taking credit for the contribution to the available shutdown reactivity from control rod No. 18. Change No. 100 also requires Yankee to carry out a more extensive control rod surveillance program, including hot rod drop testing every fourth weekend. This surveillance program revealed previously during testing on June 9, 1972, an increase in the drop time of control rod No. 19 of more than 0.3 second without however exceeding the 2.4 seconds drop time required in the Technical Specifications. You have reported this occurrence as required in Change No. 100. During the later surveillance testing on July 29, 1972, only control rod No. 19 did not perform the intended function in a normal manner, as described in your letter dated August 7, 1972. All other 23 control rods, including control rod No. 18, met the specified performance requirements.

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AUG 25 1972

We have examined the comprehensive set of control rod drop times included in your letter of August 7, 1972. These drop times were measured by Yankee during the initial Core X startup testing and subsequent control rod surveillance testing. We find that these data do not indicate a significant pattern of degradation of control rod performance. Therefore, we conclude that the occurrences of off-normal performance that only involved control rods Nos. 18 and 19, both located in the Shutdown Group D, were random single events.

To reestablish confidence in the long-term ability of the control rods to perform the intended function when needed, Yankee will shut down the reactor not later than October 31, 1972, for the installation of replacement control rods; you will install a set of 22 new rods, not including control rods Nos. 17 and 21 which have already been replaced during the Core X refueling outage. Until then, the reactor will be operated with the present restrictions on Control Rod Insertion Limits and power level. In addition, Yankee will further increase the frequency of the control rod surveillance program from every fourth weekend to every third weekend and will report to the Commission all measured control rod drop times.

The present reactor operating restrictions provide an acceptable increased allowance for stuck rods of 3% delta k/k in shutdown reactivity to be available for meeting the specified shutdown margin, compared with the total reactivity worth of about 4% delta k/k of the eight control rods in the entire Shutdown Group D; the performance of control rod No. 18 has consistently improved and has met the specified drop time during the last reported control rod surveillance testing; the insertability of control rod No. 19 has also been demonstrated during the last reported control rod surveillance testing; and the further increase in the test frequency of the control rod surveillance program will permit even closer monitoring of the operability of the control rods during the remaining period until reactor shutdown for the scheduled replacement of the control rods.

On the basis of our review of the information you have submitted, we have concluded that operation of the reactor in the manner proposed does not involve significant hazards considerations not described or implicit in the Final Safety Analysis Report, and that there is reasonable assurance that the health and safety of the public will not be endangered. Accordingly, you are hereby authorized to proceed as outlined in your letter dated August 7, 1972.

Sincerely,

1st Paul F. Collins, Acting

Donald J. Skovholt
Assistant Director

OFFICE ▶	L:OR-1 / <i>AB</i>	L:OR-1	for Operating Reactors	L:OR
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