

NORTHEAST UTILITIES



THE CONNECTICUT LIGHT AND POWER COMPANY
THE HARTFORD ELECTRIC COMPANY
NORTHERN CONNECTICUT ELECTRIC COMPANY
YONKERS WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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March 18, 1981

Docket No. 50-336

ACT 379 MAR 20 1981
RECEIVED
NUCLEAR REGULATORY COMMISSION

Director of Nuclear Reactor Regulation
Attn: Mr. Robert A. Clark, Chief
Operating Reactors Branch #5
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

References: (1) D. G. Eisenhut letter to All Operating Plants and Applicants for Operating Licenses and Holders of Construction Permits dated October 31, 1980, forwarding NUREG-0737.
(2) W. G. Counsil letter to D. G. Eisenhut dated December 31, 1980.

Gentlemen:

Millstone Nuclear Power Station, Unit No. 2
TMI Action Plan Item 11.K.3.2 - PORV Failure Reduction Methods

Item 11.K.3.2 of Reference (1) required Northeast Nuclear Energy Company (NNECO) to submit a report documenting the various actions taken at Millstone Unit No. 2 to decrease the probability of a small break Loss-of-Coolant Accident caused by a stuck-open power-operated relief valve (PORV). In Reference (2), NNECO informed the Staff that the report on PORV failure reduction methods prepared for the Combustion Engineering Owners' Group was being reviewed for applicability to Millstone Unit No. 2, and that the Staff would be informed of NNECO's conclusions.

NNECO has reviewed the report, CEN-145, and determined that it is applicable to Millstone Unit No. 2 and is hereby placed on Docket No. 50-336. Copies of CEN-145 are not being attached as NNECO is aware that other members of the CE Owners' Group have previously submitted this document. As summarized in Section 7 of CEN-145, NNECO has completed the following actions to reduce PORV system failures:

1. The turbine runback feature has been eliminated.
2. The motor operators for the PORV block valves and the pilot solenoids for the PORV's have been provided with emergency power supplies to permit them to function upon the loss of all non-emergency power.

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3. Acoustic monitors have been installed on the PORV discharge piping to provide positive indication of PORV position, with indication and alarm in the control room.
4. Operator training programs have been initiated to provide the operator with a more comprehensive understanding of plant operation under emergency conditions. Guidelines and detailed emergency operating procedures have been developed to aid the operator to cope with a spectrum of emergency conditions. This includes the conditioning of the operator to recognize and respond promptly to PORV failure to prevent escalation of the failure to a small break LOCA.

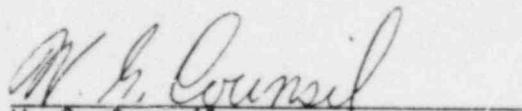
Elimination of the turbine runback feature and the provision of a direct reliable means for indication of PORV position have reduced the recurrence frequency³ of a small break LOCA due to PORV failure to a value of about 1.8×10^{-3} per reactor year. This recurrence frequency is well within⁴ the 90% confidence range of the recurrence frequencies of 10^{-2} to 10^{-4} per reactor year for a LOCA due to a small pipe rupture estimated in WASH-1400. Improved operator training and the provision for emergency power supplies, if quantified, would reduce this recurrence frequency even further.

NNECO has concluded that the actions already implemented, as described above, have reduced the probability of a small break LOCA caused by a stuck-open PORV such that it is not a significant contributor to the probability of a small break LOCA due to all causes. Instrumentation presently installed which can be used to detect a stuck-open PORV includes the acoustic monitor, quench tank pressure, level, and temperature, and discharge pipe temperature. These indications are both redundant and diverse, and are capable of providing the operator with a positive indication in the event of a stuck-open PORV. Thus, NNECO has concluded that an automatic PORV isolation system, as specified in NUREG-0737 item 11.K.3.1 is neither a necessary nor advisable modification. Automatic closure of the block valve may inhibit operator perception of the situation such that a failure of the PORV to close could go unnoticed. Therefore, no further action on this item is planned.

We trust you will find this information responsive to your request.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



W. G. Council
Senior Vice President