NORTHEAST UTILITIES

THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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April 11, 1985
Docket No. 50-423
B11510

Director of Nuclear Reactor Regulation
Mr. B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

References: (1) B. J. Youngblood to W. G. Counsil, Millstone Nuclear Power Station, Unit No. 3, Request for Additional Information, dated May 31, 1983.

(2) U. S. Nuclear Regulatory Commission, "Safety Evaluation Report Related to the Operation of Millstone Nuclear Power Station Unit No. 3, Docket No. 50-423 (NUREG-1031)," July, 1984.

Dear Mr. Youngblood:

Millstone Nuclear Power Station, Unit No. 3
Diesel Generator Air Start System High
Energy Pipe Break - SER Open Item
No. 2 and Question No. 430.76

Attached is Northeast Nuclear Energy Company's (NNECO) position regarding the NRC Staff's concern that a high energy line break in the air start system would result in unacceptable consequences to the diesel generator.

We consider this response closes Question No. 430.76 (Reference 1) and Open Item No. 2 (Section 9.5.6) (Reference 2). The information is provided as a revision to our response to Question No. 430.76 and is provided here as it will appear in the next amendment to the FSAR.

If there are any questions related to the information contained herein, please contact our licensing representative directly.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY
et. al.

By NORTHEAST NUCLEAR ENERGY COMPANY
Their Agent

W. G. Counsil
Senior Vice President

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cc: Ms. E. L. Doolittle, NRC Project Manager
Mr. R. Giardina, Power Systems Branch
Mr. A. R. Ungaro, Power Systems Branch
Mr. M. Srinivasan, Power Systems Branch, Chief

STATE OF CONNECTICUT)
) ss. Berlin
COUNTY OF HARTFORD)

Then personally appeared before me W. G. Counsil, who being duly sworn, did state that he is Senior Vice President of Northeast Nuclear Energy Company, an Applicant herein, that he is authorized to execute and file the foregoing information in the name and on behalf of the Applicants herein and that the statements contained in said information are true and correct to the best of his knowledge and belief.

Lorraine J. D'Amico
Notary Public

My Commission Expires March 31, 1988

ADDITIONAL RESPONSE TO QUESTION 430.76

The staff was concerned that a high energy line break in the air start system would result in unacceptable consequences to the diesel generator. The criteria which governs the evaluation of high energy line breaks is provided in Standard Review Plan 3.6.1 with associated Branch Technical Position ASB 3-1.

Although highly unlikely, a pipe break in the air start system could potentially disable the diesel generator associated with the broken air start line. Protection from pipe break propagation in emergency diesel generator support systems is provided by locating the redundant diesel and associated support systems in separate cubicles. A break in any of the high or moderate energy diesel systems installed in one of the diesel generator rooms will not affect the redundant diesel and associated systems located in the other diesel generator room.

Millstone 3 is committed to and has been designed and evaluated according to the direction provided in SRP 3.6.1 and 3.6.2, as supplemented by BTP ASB 3-1 and MEB 3-1. These SRP and supplemental BTP specifically define the criteria, coincident assumptions and postulated failures to be used in high energy pipe failure evaluations. Based on these regulatory documents, simultaneous occurrence of a piping failure, a loss of offsite power and a single failure of the redundant diesel generator need not be considered in the evaluation of piping failures in the diesel generator cubicles. The specific evaluation is described as follows:

> BTP ASB 3-1, Item B.3.a, requires that pipe breaks be postulated to occur during normal plant operating conditions. Normal plant conditions are defined as conditions during reactor startup, operation at power, hot standby, or reactor cooldown to cold shutdown, in accordance with Appendix A of BTP ASB 3-1. A loss of offsite power requiring diesel generator operation is not defined as a normal plant event. Therefore, if the plant is already in a condition requiring diesel generator operation, a coincident high energy pipe break need not be postulated.

The consequences of a postulated pipe break are to be evaluated utilizing the assumptions provided in Section B.3.b of BTP ASB 3-1. Item B.3.b.1 of BTP ASB 3-1 requires that offsite power be assumed unavailable if a trip of the turbine generator system or a reactor protection system is the direct consequence of the postulated piping failure. Since a break in the air start system does not result in either a turbine or reactor trip, offsite power is assumed to be available. Therefore, the diesel generator system is not needed to mitigate the consequences of the initiating event. With one diesel generator out of service, plant operation would be governed by a limiting condition for operation under the technical specification for the diesel generator system.

ANSI/ANS51.1-1983, "Nuclear Safety Criteria for the Design of Stationary Pressurized Water Reactor Plants" provides further guidance on the application of single failures and coincident occurrences. Section 3.2.1.(e) states: "Where the initiating occurrence is the postulated failure of one of two or more redundant trains of a nuclear safety-related system that is not required to operate during normal operations, a single failure shall not be assumed if the

initiating occurrence does not require a reactor trip to mitigate the consequences of the initiating occurrence. Under these circumstances, continued operation of the plant is controlled by plant Technical Specifications."

From a practical standpoint, a break in the air start system is highly improbable. There are no identified mechanisms which could cause a pipe break to occur. Deadweight and thermal stresses are low. Seismic stress is minimized by supporting the system to conservative seismic Category I requirements. The system is not subject to high thermal cycling, transient vibration or, with the installation of system air dryers, corrosion of any kind. Although strictly defined as a high energy line due to its pressure, the system is a relatively low energy 450 psi air system which is not likely to cause damage to most targeted systems.

The Staff was concerned that the air line might fail due to a pneumatic transient upon opening of the inlet valves when the diesel attempts to start. The loads associate with a pneumatic transient are extremely small due to the low density of air and thus have an inconsequential effect on the system. NNECO is not aware of any previous plant experiences with piping failures due to pneumatic transients, which attests to the fact that a line failure due to a pneumatic transient is not a concern.

Since the postulated pipe breaks in the air start system are acceptable when reviewed with respect to SRP 3.6.1 there are no known mechanisms which would cause a pipe break to occur and the damage due to a pipe break is expected to be minimal, it is concluded that the existing system is adequate to perform its intended function and that this issue does not warrant further review.