Northeast
Nuclear Energy

Rope Ferry Rd. (Route 156), Waterford, CT 06385

Millstone Nuclear Power Station
Northeast Nuclear Energy Company
P.O. Box 128
Waterford, CT 06385-0128
(203) 447-1791
Fax (203) 444-4277

The Northeast Utilities System

April 18, 1997

Docket No. 50-423
B16275

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Millstone Nuclear Power Station Unit No. 3

Response to Request for Additional Information
Regarding Safety-Related Air Operated Valves Controlled By
Non-Class 1E Powered Solenoid Operated Pilot Valves

Licensee Event Report (LER) 96-036-00, dated October 25, 1996, identified 21 safety-related air operated valves (AOVs) controlled by solenoid operated pilot valves (SOVs), that do not receive Class 1E power. On February 12, 1997, the NRC Staff requested additional information regarding the Millstone Unit No. 3 licensing basis for safety-related air operated valves controlled by non-Class 1E powered solenoid operated pilot valves.

Our response to the information request is provided in Attachment 1 of this letter. Attachment 2 provides the commitments associated with this letter.

Should you have any questions regarding this submittal, please contact Mr. James Peschel at (860) 437-5840.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

M. H. Brothers
Vice President - Millstone Unit No. 3

Attachments
cc: See Page 3

A001

cc: H. J. Miller, Region I Administrator
J. W. Anderson, NRC Project Manager, Millstone Unit No. 3
A. C. Cerne, Senior Resident Inspector, Millstone Unit No. 3
W. D. Travers, Dr., Director, Special Projects

Docket No. 50-423
B16275

Attachment 1

Millstone Nuclear Power Station, Unit No. 3
Response to Request for Additional Information
Regarding Safety-Related Air Operated Valves Controlled By
Non-Class 1E Powered Solenoid Operated Pilot Valves

April 1997

Millstone Nuclear Power Station, Unit No. 3
Response to Request for Additional Information
Regarding Safety-Related Air Operated Valves Controlled By
Non-Class 1E Powered Solenoid Operated Pilot Valves

Question 1

With respect to control switch circuits associated with the safety related SOVs/AOVs located in redundant safety systems, which were identified in the September 26, 1996, event notification as not receiving Class 1E power and not Q-listed, the licensing basis for Millstone Unit 3 (position C.3 of Regulatory Guide 1.53) requires single switches supplying signals to redundant safety equipment to be designed with at least 6-inch separations or with suitable barriers between redundant circuits. For those control switch circuits associated with redundant safety systems, describe to what extent these circuits (current as-installed design configurations) meet this 6-inch barrier licensing basis requirement.

Response

The Millstone Unit No. 3 licensing basis with respect to Regulatory Guide 1.53 position C.3 is stated in FSAR Table 1.8-1:

> Single switches supplying signals to redundant channels are designed with at least 6 inch separation or with suitable barriers between redundant circuits.

The control switch circuits for the AOVs in question do not supply signals to more than one air operated valve. Therefore, with respect to control switch circuits associated with the safety related AOVs in redundant safety systems, identified as not receiving Class 1E power and not Q-listed, there are no single switches supplying signals to redundant channels or redundant safety equipment.

As part of an ongoing design and licensing basis verification, Millstone Unit No. 3 electrical configurations are being reviewed for compliance with applicable separation requirements and licensing basis requirements. Configurations identified with less than the required minimum separation will be resolved prior to unit startup.

Question 2

For control switch circuits associated with the safety-related SOVs/AOVs located in single non-redundant safety systems, which were identified in the September 26, 1996, event notification as not receiving Class 1E power and not Q-listed, describe the design provisions (i.e., the Millstone licensing basis) that ensures that no single failure in the control circuit to the single or non-redundant safety systems (including the circuits power supply) can cause loss of safety system function. Describe to what extent these

circuits (current as-installed design configuration) meet this (to be described) Millstone licensing basis.

Response

Control switch circuits associated with the safety-related AOVs identified as not receiving Class 1E power and not Q-listed are located in redundant safety systems.

Question 3

With respect to the power supply for control switch circuits associated with the safety related SOVs/AOVs located in redundant safety systems, which were identified in the September 26, 1996, event notification as not receiving Class 1E power and not Q-listed, it appears, based on information available, that the licensing basis for Millstone Unit 3 requires an open control switch and administrative controls for assuring the switch is maintained in the open position. Confirm that an open control switch and administrative control are the licensing basis requirements for Millstone. Or, describe the licensing basis for assuring that a single failure of common power supplies to redundant safety systems will not cause loss of safety function. In addition, describe to what extent switches have been maintained in their open position. Or, if applicable, describe to what extent the power supply, as an installed design configuration, meets the licensing basis (to be described if applicable) for assuring single failure of common power supplies to redundant safety systems will not cause loss of safety function.

Response

As reported in LER 96-036-00, these air operated valves are normally closed and are opened for short durations to perform fill or test operations and then are returned to the closed position. These valves do not have active post accident safety functions and are designed to fail in the closed (safe) position upon loss of air or loss of electric power. Postulated credible failures which could result in loss of any or all of the associated control circuits power supplies, including common power supplies, do not result in loss of safety system functions.

Design Basis and As-Built Review Summary

A review of the control circuits has determined that there are normally energized components within the valve control circuits that are located inside containment. A postulated mechanistic failure of these components (valve limit switches and penetration terminal blocks) in an adverse manner due to a harsh environment could result in spurious operation of the air operated valves. This condition is not in compliance with 10 CFR 50.49 which requires inclusion of such valves in the environmental qualification program. Additional detail regarding the environmental qualification of the valve control circuits and corrective action will be provided in a supplement to LER 96-036-00.

Northeast Nuclaar Energy Company (NNECO) is continuing to review the licensing and design bases of Millstone Unit No. 3 pursuant to the requirements set forth in the Staff's 50.54(f) letter of April 4, 1996. If any discrepancies are discovered during this review, that affect the conclusions of this submittal, a supplement will be provided.

Docket No. 50-423
B16275

Attachment 2

Millstone Nuclear Power Station, Unit No. 3
NNECO's Commitments Associated With
Response for Additional Information Regarding
Safety-Related Air Operated Valves Controlled
By Non-Class 1E Powered Solenoid Operated Pilot Valves

April 1997

Enclosure
List of Regulatory Commitments

The following table identifies those actions committed to by NNECO in this document. Any other actions discussed in the submittal represent intended or planned actions by NNECO. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Manager - Nuclear Licensing at the Millstone Nuclear Power Station Unit No. 3 of any questions regarding this document or any associated regulatory commitments.

Number	Commitment	Due
B16275-01	Additional detail regarding the environmental qualification of the subject valve control circuits and corrective action will be provided in a supplement to LER 96-036-00.	July 25, 1997