

NORTHEAST UTILITIES

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

General Offices • Selden Street, Berlin, Connecticut

P.O. BOX 270
HARTFORD, CONNECTICUT 06141-0270
(203) 665-5000

October 10, 1990

Docket No. 50-245B13649

Re: 10CFR50.63

ISAP Topic 1.106

Dr. T. E. Murley, Director
Office of Nuclear Reactor Regulation
Mail Stop 12 G18
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Dr. Murley:

Millstone Nuclear Power Station, Unit No. 1
Response to Safety Evaluation for Station Blackout (TAC No. 68566)

By letter dated April 17, 1989,⁽¹⁾ pursuant to 10CFR50.63, Northeast Nuclear Energy Company (NNECO) submitted its response to the station blackout (SBO) rule for Millstone Nuclear Power Station, Unit Nos. 1, 2, and 3. Additional information was provided by letters dated May 30, 1989,⁽²⁾ and March 30, 1990.⁽³⁾

The NRC Staff, by letter dated August 29, 1990,⁽⁴⁾ transmitted to NNECO the Staff's Safety Evaluation Report (SER) and the Technical Evaluation Report (TER) developed by Science Applications International Corporation (SAIC) for the Millstone Nuclear Power Station, Unit No. 1, SBO rule response. The letter required, pursuant to 10CFR50.63(c)(4), a response to the Staff within 30 days of receipt of the SER.

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- (1) E. J. Mroczka letter to T. E. Murley, Millstone Nuclear Power Station, Unit Nos. 1, 2, and 3, "Response to Station Blackout Rule," dated April 17, 1989.
 - (2) E. J. Mroczka letter to T. E. Murley, Millstone Nuclear Power Station, Unit Nos. 1, 2, and 3, "Response to Station Blackout Rule, Additional Information," dated May 30, 1989.
 - (3) E. J. Mroczka letter to T. E. Murley, Millstone Nuclear Power Station, Unit Nos. 1, 2, and 3, "Response to Station Blackout, Additional Information," dated March 30, 1990.
 - (4) M. L. Boyle letter to E. J. Mroczka, "Safety Evaluation of Station Blackout Response--Millstone Nuclear Power Station, Unit 1 (TAC No. 68566)," dated August 29, 1990.

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The SER was received by NNECO on September 10, 1990, and subsequently reviewed by NNECO. The following statements provide the Staff with NNECO's response to the SER and include schedules, where appropriate, for implementation of required hardware and associated procedure modifications.

Millstone Unit Nos. 1 and 2 "Weatherization" Issue

NUMARC 87-00, Appendix B.3, states the following:

Components and subsystems shall be protected against the effects of likely weather-related events that may initiate the loss of off-site power event. Protection may be provided by enclosing AAC components within structures that conform with the Uniform Building Code and burying exposed electrical cable run between buildings (i.e., connections between the AAC power source and the shutdown busses).

The Staff states that the AAC crosstie components should not be affected by the same weather-related and switchyard events that may contribute to the SBO and they recommend that the 14H bus and cross-connecting cables be modified to ensure availability during an SBO event.

NNECO concurs with the Staff's conceptual position that the crosstie capability not be jeopardized for the weather-related events that cause a loss of off-site power. The issue is the degree of "weatherization" modifications necessary to protect against "likely" weather events that could disable the Millstone Station 345-kV switchyard or switchyard/station connections.

In order to clarify the "likely" weather events to which the 14H bus and crosstie cables are to be adequately protected, the following conditions will be considered:

- o Effects of wind-blown salt spray (this is the dominating factor for which Millstone Unit Nos. 1, 2, and 3 were classified as 8-hour plants)
- o Winds up to 90 mph
- o Proper protection against moisture intrusion to Bus 14H

It should be noted that the uniform building code for Connecticut requires that structures be designed for wind loads of 90 mph. NUMARC 87-00, Appendix B.3, requires that AAC structures meet the uniform building code. The Millstone units were assumed to be ESW Class 5 which implies winds of 125 mph; however, this category was used as a conservatism due to the lack of site-specific data and the fact that the salt spray was the dominant factor in determining the 8-hour coping category. Floods and tornados for Millstone Unit Nos. 1 and 2 were addressed by other issues.

To meet the conditions stated above, the following items are proposed:

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- o Provide an additional enclosure around the 14H bus switchgear building to eliminate the potential for collection of rainwater within the Bus 14H floodwall and provide additional protection against salt contamination. This enclosure will be designed to withstand 90-mph winds.
- o Perform an analysis of the cable run support system to withstand 90-mph winds and provide additional supports if necessary. (NRC accepted the use of aerial cable per SBO seminar Q&A responses, Question No. 114.)

As previously stated in our March 30, 1990, letter,⁽⁵⁾ Integrated Safety Assessment Program (ISAP) Topic 1.106 was assigned for tracking ISAP evaluations/rankings of SBO-required modifications and industry initiatives. Any physical plant modifications forthcoming will be evaluated within ISAP and subsequently scheduled in the Integrated Implementation Schedule.

Staff concurrence with the above action plan is requested at your earliest convenience in order that the proposed modifications can be implemented during the Millstone Unit No. 1 1993 refueling outage.

Millstone Unit Nos. 1 and 2 SBO Crosstie Modifications and Testing

Modifications are necessary to the control and protective circuitry associated with the circuit breakers that will be utilized for the SBO crosstie. The existing crosstie capability is designed for Appendix R fire scenarios for which the crosstie is to be aligned within 4 hours. Numerous control and protective circuits are bypassed due to the potential of fire damage and the fact that local operations are necessary.

The Millstone Unit Nos. 1 and 2 SBO crosstie needs to be available within a 1-hour time frame. The proper control and protective circuits must be made available to the control room operators to accomplish the interunit crosstie without having to needlessly bypass protective relaying. An integrated testing program to demonstrate the SBO AAC capability for Millstone Unit Nos. 1 and 2 per NUMARC 87-00, Appendix B, Items 9 and 12, is also necessary. Refueling outages at both Millstone Unit Nos. 1 and 2 will be used to complete the modifications and testing.

With Millstone Unit No. 2 presently in a refueling outage, the next available refueling outage is April 1992, at which time the necessary equipment modifications will be completed. The next scheduled Millstone Unit No. 1 outage is March 1991. Due to design lead times, it will not be possible to complete the required modifications during this outage. Therefore, the scheduled completion of the crosstie for Millstone Unit Nos. 1 and 2 and associated procedures

(5) E. J. Mroccka letter to T. E. Murley, Millstone Nuclear Power Station, Unit Nos. 1, 2, and 3, "Response to Station Blackout, Additional Information," dated March 30, 1990.

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is the end of the 1993 Millstone Unit No. 1 refueling outage. At this time the crosstie for both units will be declared fully operational.

NNECO realizes that completion of the equipment and procedure modifications exceeds the 2-year window as defined in 10CFR50.63(c)(4). However, the modifications to the control and protective circuitry associated with the circuit breakers that will be utilized for the Millstone Unit Nos. 1 and 2 SBO crosstie cannot be completed until the 1993 Millstone Unit No. 1 refueling outage due to design lead times and because the modifications to the control and protective circuitry are to circuit breakers that provide sources of off-site power to Millstone Unit Nos. 1 and 2.

It is appropriate to conduct the modifications during the 1992 Millstone Unit No. 2 refueling outage and the 1993 Millstone Unit No. 1 refueling outage to provide for personnel and plant safety.

The difference in time between the 2-year window and the start of the 1993 Millstone Unit No. 1 refueling outage is approximately 6 months.

In summary, since the modifications and testing are so extensive, it is appropriate to conduct both of these activities when the plants are in refueling outages. Therefore, NNECO plans to complete the necessary modifications and any associated testing during the Millstone Unit No. 1 1993 refueling outage.

Isolation Condenser Area

The NRC SER identified a statement made during the Millstone Station site audit review that in an SBO event, only a local level indicator will be available to ensure the adequacy of shell-side water level. This statement conflicts with NNECO's statement that the isolation condenser area does not require any operator entry during an SBO event.

The statement that only local indication is available was made to clarify that, due to instrument configuration, the control room indication is not accurate when the isolation condenser is in service. The shell-side fill valve, 1-IC-10, is a DC-powered valve which is automatically cycled by level switches to maintain adequate level. The DC-powered level control system is independent of the AC-powered level indication system. The control room level instruments are used for indication only, and are not required to be operable to ensure isolation condenser operability.

The above statements justify NNECO's original statement that operator access to the isolation condenser area is not required and the area is not a dominant area of concern.

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Control Room

SAIC identified several concerns relative to control room heatup analyses. NNECO utilized two analyses to confirm, by qualitative comparison, the NUMARC 87-00 design basis assumption that control rooms, in general, are not considered dominant areas of concern.

TENERA Corporation prepared an analysis for the Appendix R program. It was considered bounding due to higher electrical equipment heat losses than the SBO condition and similar boundary conditions. The predicted peak temperature was 91°F.

NNECO prepared an analysis for Millstone Unit No. 2 SBO loss of ventilation evaluation. It was considered bounding for the Millstone Unit No. 1 control room case since the Millstone Unit No. 2 heat loads are larger, and its control room is smaller. The NNECO analysis predicted a peak 8-hour temperature of 115°F. SAIC determined that certain assumptions and inputs to the calculation may be nonconservative.

NNECO will revise existing, or prepare new analyses for the Millstone Unit No. 1 control room, as required, to address the NRC's comments and ensure adequately conservative room temperature predictions. These revised analyses should be completed by January 1, 1991. We do not expect predicted temperatures to exceed 120°F over 8 hours based on actual plant experience with shutdown of the control room HVAC system for extended periods. In the event that revised analyses predict temperatures above 120°F, procedures will be modified to open doors and, if needed, install temporary ventilation from the adjacent Millstone Unit No. 2 control room. In any case, hardware modifications will not be needed to maintain the control room below 120°F during SBO.

Consistent with the NRC position stated in the SER, plant SBO procedures will be revised to open doors associated with instruments and controls required for SBO within 30 minutes after the start of an SBO.

The above discussion should resolve NRC SER comments and suspected discrepancies in the HVAC control room calculations. The resolutions do not result in additional hardware or procedural actions above that identified in our previous submittals. Therefore, no further action is needed pending future audit of our analyses.

NNECO has also reviewed the Staff's other recommendations contained in the SER. Any additional analyses and confirmations will be performed as applicable, and the resulting documentation will be maintained in our files. All documentation necessary to support conformance with the SBO rule is available for further inspection and assessment by the Staff.

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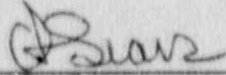
Should you have any additional questions, please contact my staff directly.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

FOR: E. J. Mroczka
Senior Vice President

BY:



C. F. Sears
Vice President

cc: T. T. Martin, Region I Administrator
M. L. Boyle, NRC Project Manager, Millstone Unit No. 1
W. J. Raymond, Senior Resident Inspector, Millstone Unit Nos. 1, 2, and 3

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