



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
(860) 447-1791
Fax (860) 444-4277

The Northeast Utilities System

SEP 30 1998

Docket No. 50-336
B17248

Re: Generic Letter 83-28

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

Millstone Nuclear Power Station, Unit No. 2
Conformance to Generic Letter 83-28 - Revised Testing Commitments

In letters dated March 7, 1986,⁽¹⁾ March 18, 1986,⁽²⁾ and April 26, 1989,⁽³⁾ the NRC approved various Generic Letter (GL) 83-28 action items for Millstone Unit No. 2. These items had been described in several submittals by Northeast Nuclear Energy Company (NNECO) on behalf of Millstone Unit No. 2. NNECO has reevaluated requirements for Reactor Trip Circuit Breaker testing and trending, and for Reactor Trip System functional and on-line testing, and is proposing to change certain commitments made with respect to GL 83-28.

NNECO proposes to modify commitments for Items 4.2.1, 4.2.2, 4.5.1, and 4.5.2. Attachment 1 describes the previous response for each of these items, the revised commitment, and the justification or safety basis for the change. The new commitments as contained within this letter are listed in Attachment 2.

-
- (1) A. C. Thadani (USNRC) letter to J. F. Opeka, "Preventive Maintenance and Surveillance Program for Reactor Trip Breakers for Millstone-2 (Items 4.2.1 and 4.2.2 of Generic Letter 83-28)," dated March 7, 1986.
- (2) A. C. Thadani (USNRC) letter to J. F. Opeka, "Response to Generic Letter 83-28 Items 3.1.1, 3.1.2, 3.2.1, 3.2.2, 4.1 and 4.5.1 (Post-maintenance Testing and Reactor Trip System Reliability) for Millstone Unit 2," dated March 18, 1986.
- (3) Guy S. Vissing (USNRC) letter to E. J. Mroczka, "Reactor Trip System Reliability - On-line Testing, Generic Letter 83-28, Item 4.5.2 for Millstone 2 (TAC No. 54000)," dated April 26, 1989.

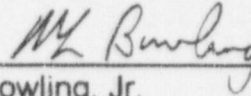
9810140294 980930
PDR ADDCK 05000336
P PDR

1/1
A016

If the NRC Staff should have any questions or comments regarding this submittal, please contact Mr. R. G. Joshi at (860) 440-2080.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



Martin L. Bowling, Jr.

Recovery Officer - Technical Services

Attachments

cc: H. J. Miller, Region I Administrator
D. G. McDonald, Jr., NRC Senior Project Manager, Millstone Unit No. 2
D. P. Beaulieu, Senior Resident Inspector, Millstone Unit No. 2
E. V. Imbro, Director, Millstone ICAVP Inspections

Attachment 1

Millstone Nuclear Power Station, Unit No. 2
Conformance to Generic Letter 83-28 - Revised Testing Commitments

Description of Commitment Changes

Conformance to Generic Letter 83-28 - Revised Testing Commitments Description of Commitment Changes

In letters dated November 8, 1983,⁽⁴⁾ June 25, 1985,⁽⁵⁾ and April 2, 1987,⁽⁶⁾ Northeast Nuclear Energy Company (NNECC) made commitments with respect to Generic Letter (GL) 83-28, Actions 4.2 and 4.5. Modifications to selected NNECO commitments for Items 4.2.1, 4.2.2, 4.5.1, and 4.5.2 are described herein.

Since only portions of the original GL 83-28 commitments are being changed, the following statements of current commitments are paraphrased from the original correspondence. Also, where a periodicity change is being made, the current and new frequencies are indicated in bold font for clarity.

- Item 4.2.1 - [The program shall include the following:] A planned program of periodic maintenance, including lubrication, housekeeping, and other items recommended by the equipment supplier.

{Note: The item numbers identified in the following paragraphs refer to issue items listed in Section 1.2 of Attachment 1 to the NNECO letter identified in footnote (5).}

Current Commitment

The Millstone Unit No. 2 maintenance program presently includes the following:

- a. Monthly functional test (matrix test), which actuates the undervoltage and shunt trip simultaneously to trip the breaker.
- b. Quarterly verification of trip torque to be less than 1.5 inch-pounds.
- c. Each refueling cycle, removing the breaker from its cubicle for cleaning, and performance of all maintenance checks as required by vendor instructions and service advice. {Note: This maintenance includes items 1, 2, 3, 4, 5, 6, 8, 10, and 12.}

⁽⁴⁾ W. G. Council letter to D. G. Eisenhut (USNRC), "Millstone Nuclear Power Station, Unit Nos. 1, 2, and 3 - Response to Generic Letter 83-28, Generic Implications of Salem ATWS Events," dated November 8, 1983.

⁽⁵⁾ J. F. Opeka letter to E. J. Butcher (USNRC), "Millstone Nuclear Power Station, Unit No. 2 - Response to Request for Additional Information, Generic Letter 83-28, Generic Implications of Salem ATWS Events," dated June 25, 1985.

⁽⁶⁾ E. J. Mroczka letter to USNRC, "Millstone Nuclear Power Station, Unit No. 2 - Generic Letter 83-28, Salem ATWS," dated April 2, 1987.

Millstone Unit No. 2 will perform on a **six month basis** the following:

Item 7 - Verification that the trip torque required on the trip shaft is less than 1.5 pound-inches, as specified in Service Advice 175-9.3S, item #S4; "Before" and "After" maintenance torque values should be recorded.

Millstone Unit No. 2 will also perform on a **six month basis** the following:

Item 9 - Verification of proper trip response time as specified in Service Advice 175-9.3S, item #S6.

Item 11 - Shunt Trip Attachment (STA) operation verification.

Item 13 - Functional test of the breaker prior to returning it to service.

New Commitment

The Millstone Unit No. 2 periodic Reactor Trip Circuit Breaker (RTCB) maintenance program includes the following:

- a. Monthly functional test (matrix test), which actuates the undervoltage and shunt trip simultaneously to trip the breaker.
- b. Quarterly verification of trip torque to be less than 1.5 inch-pounds.
- c. Each refueling cycle, removing the breaker from its cubicle for cleaning, and performance of all maintenance checks as required by vendor instructions and service advice. {Note: This maintenance includes items 1, 2, 3, 4, 5, 6, 8, 10, and 12.}

Millstone Unit No. 2 will perform on a **quarterly basis** the following:

Item 7 - Verification that the trip torque required on the trip shaft is less than 1.5 pound-inches, as specified in General Electric (GE) Service Advice 175-9.3S, item #S4; "As-found" torque values will be recorded.

Millstone Unit No. 2 will perform on a **refuel outage basis** the following:

Item 9 - Verification of proper trip response time as specified in GE Service Advice 175-9.3S, item #S6.

Item 11 - Shunt Trip Attachment (STA) operation verification.

Millstone Unit No. 2 will perform on an **as-needed basis** the following:

Item 13 - Any time an RTCB is removed from service for maintenance, a functional test (matrix test) of the breaker will be performed prior to declaring it operable.

Justification for Change

Performing verification of the breaker trip response time and the STA operation on a six month frequency is not necessary to ensure reactor trip system operability. For both of these surveillances, there is no known instance of a Millstone Unit No. 2 RTCB failing to pass. NNECO maintains a concern that testing at frequencies greater than necessary may cause premature degradation of the breakers and attachments. Furthermore, the RTCB must be removed from service to perform these tests, which increases the potential for an unnecessary plant trip for the period the breakers are out of service for surveillance.

With respect to the functional test of the breaker prior to returning it to service, a specific frequency of test is not appropriate. This requirement is tied to any removal of an RTCB from service for preventive or corrective maintenance and its subsequent restoration to operable status.

- Item 4.2.2 - [The program shall include the following:] Trending of parameters affecting operation and measured during testing to forecast degradation of operability.

Current Commitment

NNECO will trend the following parameters at the indicated frequencies:

1. Undervoltage (UV) trip attachment dropout voltage - every refueling.
2. Trip torque - **every six months**.
3. Breaker response time for UV trip - **every six months**.

The information derived from analyzing these trends will be compared to acceptance criteria each time data is taken. The plant will then perform any appropriate preventive or corrective maintenance.

New Commitment

NNECO will trend the following parameters at the indicated frequencies:

1. Trip torque - **quarterly**.
2. Breaker response time for UV trip - **every refueling**.

The information derived from these trend analyses will be compared to data taken at the time of the related surveillance. The plant will then perform any appropriate preventive or corrective maintenance.

Justification for Change

NNECO's experience with the measured parameter of UV trip attachment dropout voltage indicates that this parameter is not useful as a tool to anticipate RTCB failures or degradation. NNECO is therefore electing to remove this parameter from those to be trended.

Pickup and drop-out voltages of the UV trip attachment are among the tests performed each refueling via maintenance procedure PT21429, "Reactor Trip Switchgear Undervoltage Device and Shunt Trip Test." Analysis of the test data from this preventive maintenance procedure shows no time-dependent degradation in these parameters, and there is no known failure of a Millstone Unit No. 2 UV trip attachment to pass the test. Per GE Service Advice 175-9.3S, the critical parameter of the UV trip attachment is the pickup voltage at room temperature, with an acceptance criterion of 106 volts, +4 or -2 volts. However, since the acceptance range is so small, trending of the data does not provide useful information.

- Item 4.5.1 - The diverse trip features to be tested include the breaker undervoltage and shunt trip features on Westinghouse, B&W and CE plants.

Current Commitment

The on-line testing conducted for the reactor trip system consists of the I&C department monthly matrix testing, which simultaneously actuates the undervoltage and shunt trip devices. The maintenance department performs trip bar torque testing on a quarterly basis.

Shunt trip and undervoltage trip features are independently tested on a **quarterly basis** in accordance with procedure PT21432 - "Reactor Trip Switchgear Undervoltage Response Test," in coordination with the monthly Reactor Protection System matrix logic testing.

New Commitment

The on-line testing conducted for the reactor trip system consists of monthly functional testing (matrix test), which simultaneously actuates the undervoltage and shunt trip devices, and quarterly trip bar torque testing. Undervoltage trip and shunt trip features are independently tested off-line **every refueling**.

Justification for Change

Although Millstone Unit No. 2 is designed to permit independent on-line verification of operability of the RTCB undervoltage trip and shunt trip attachments, NNECO has determined that quarterly on-line independent undervoltage trip and shunt trip attachment testing is not warranted. Over the history of this quarterly on-line testing, consistent trip attachment reliability has been demonstrated in that there is no known instance of a Millstone Unit No. 2 RTCB failing to pass the test. However, this frequency of on-line testing increases the probability of a test induced plant transient, and subjects these devices to potential unnecessary component degradation caused by the testing.

This justification for an extended surveillance interval for the separate verification of undervoltage and shunt trips is recognized in NUREG-1432, Revision 1 - Standard Technical Specifications for Combustion Engineering Plants, dated April 1995. An 18 month interval for performance of this surveillance was established, citing the need to perform this surveillance during conditions that apply during a plant outage to minimize the potential for an unplanned transient with the reactor at power. The bases further note that operating experience with Combustion Engineering plants has shown these components usually pass the surveillance when performed at the frequency of once every 18 months.

Therefore, independent on-line verification of operability of the undervoltage trip and shunt trip attachments has limited value in ensuring reactor trip system operability, and an off-line testing frequency of every refueling is adequate to ensure that every undervoltage coil and every shunt coil is capable of performing its intended function.

- Item 4.5.2 - Plants not currently designed to permit periodic on-line testing shall justify not making modifications to permit such testing. Alternatives to on-line testing proposed by licensees will be considered where special circumstances exist and where the objective of high reliability can be met in another way.

Current Commitment

This item is not applicable to Millstone Unit 2, since on-line functional testing is performed. Millstone Unit No. 2 is designed and has a program for independent on-line verification of operability of the shunt and undervoltage attachments.

New Commitment

Millstone Unit No. 2 was designed to permit on-line functional testing of the reactor trip system, including independent on-line verification of operability of the undervoltage and shunt trip attachments. However, the independent testing of the undervoltage and shunt trip attachments will be performed off-line every refueling.

Justification for Change

Although Millstone Unit No. 2 is designed to permit independent on-line verification of operability of the RTCB undervoltage trip and shunt trip attachments, NNECO has determined that the objective of high reliability of the reactor trip system can be met without performing on-line independent undervoltage trip and shunt trip attachment testing. Over the history of this quarterly on-line testing, consistent trip attachment reliability has been demonstrated in that there is no known instance of a Millstone Unit No. 2 RTCB failing to pass the test. However, performing this testing on-line increases the probability of a test induced plant transient.

An 18 month surveillance interval for the separate verification of undervoltage and shunt trips is recognized in NUREG-1432, Revision 1 - Standard Technical Specifications for Combustion Engineering Plants, dated April 7, 1995. The interval for performance of this surveillance was established based on the need to perform this surveillance during conditions that apply during a plant outage to minimize the potential for an unplanned transient with the reactor at power. The bases further note that operating experience with Combustion Engineering plants has shown these components usually pass the surveillance when performed at the frequency of once every 18 months.

Therefore, independent on-line verification of operability of the undervoltage trip and shunt trip attachments has limited value in ensuring reactor trip system operability, and off-line testing every refueling is adequate to ensure that every undervoltage coil and every shunt coil is capable of performing its intended function.

Docket No. 50-336
B17248

Attachment 2

Millstone Nuclear Power Station, Unit No. 2
Conformance to Generic Letter 83-28 - Revised Testing Commitments

NNECO's Commitments

September 1998

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. The Manager - Regulatory Affairs, Millstone Unit No. 2, should be notified of any questions regarding this document or any associated regulatory commitments.

REGULATORY COMMITMENT	COMMITTED DATE OR OUTAGE
B17248-01: Verify that the trip torque required on the trip shaft is less than 1.5 pound-inches, as specified in GE Service Advice 175-9.3S, item #S4; "As-found" torque values will be recorded. This surveillance will be performed quarterly.	Procedure will be modified prior to Mode 4 from the current outage
B17248-02: Verify proper trip response time as specified in GE Service Advice 175-9.3S, item #S6. This surveillance will be performed every refueling.	Procedure will be modified prior to Mode 4 from the current outage
B17248-03: Verify proper Shunt Trip Attachment (STA) operation. This surveillance will be performed every refueling.	Procedure will be modified prior to Mode 4 from the current outage
B17248-04: Any time an RTCB is removed from service for maintenance, a functional test (matrix test) of the breaker will be performed prior to declaring it operable.	Procedures will be modified prior to Mode 4 from the current outage
B17248-05: Trip torque will be trended. This trending will be performed quarterly.	Procedure will be modified prior to Mode 4 from the current outage
B17248-06: Breaker response time for undervoltage (UV) trip will be trended. This trending will be performed every refueling.	Procedure will be modified prior to Mode 4 from the current outage
B17248-07: The on-line testing conducted for the reactor trip system includes a functional test (matrix test), which simultaneously actuates the undervoltage and shunt trip devices. This surveillance will be performed monthly.	Procedure will be modified prior to Mode 4 from the current outage
B17248-08: The on-line testing conducted for the reactor trip system includes trip bar torque testing. This surveillance will be performed quarterly.	Procedure will be modified prior to Mode 4 from the current outage
B17248-09: Undervoltage trip and shunt trip features are independently tested off-line. This surveillance will be performed every refueling.	Procedure will be modified prior to Mode 4 from the current outage