



**Northeast
Nuclear Energy**

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The Northeast Utilities System

JAN - 5 2001

Docket No. 50-423
B18259

RE: 10 CFR 50.90

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

**Millstone Nuclear Power Station, Unit No. 3
Response to a Request for Additional Information
Technical Specifications Change Request 3-11-99
Emergency Diesel Generator Surveillance Requirements**

In a letter dated July 31, 2000,⁽¹⁾ Northeast Nuclear Energy Company (NNECO) requested a change to the Millstone Unit No. 3 Technical Specifications. The proposed changes are associated with the surveillance requirements for the emergency diesel generators. In a letter dated November 21, 2000,⁽²⁾ the Nuclear Regulatory Commission requested additional information to support the review of the requested changes. The purpose of this letter is to transmit the requested additional information, which is contained in Attachment 1.

There are no regulatory commitments contained within this letter.

⁽¹⁾ R. P. Necci letter to U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 3, Technical Specifications Change Request 3-11-99, Emergency Diesel Generator Surveillance Requirements," dated July 31, 2000.

⁽²⁾ U.S. Nuclear Regulatory Commission letter to Northeast Nuclear Energy Company, "Millstone Nuclear Power Station, Unit No. 3 - Request for Additional Information on Emergency Diesel Generator Surveillance Requirements Amendment Request (TAC No. MA9661)," dated November 21, 2000.

If you should have any questions on the above, please contact Mr. Ravi Joshi at (860) 440-2080.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



Raymond P. Necci
Vice President - Nuclear Technical Services

Sworn to and subscribed before me

this 5th day of January, 2001



Notary Public

My Commission expires _____

**SANDRA J. ANTON
NOTARY PUBLIC
COMMISSION EXPIRES
MAY 31, 2005**

Attachment (1)

cc: H. J. Miller, Region I Administrator
V. Nerses, NRC Senior Project Manager, Millstone Unit No. 3
A. C. Cerne, Senior Resident Inspector, Millstone Unit No. 3

Director
Bureau of Air Management
Monitoring and Radiation Division
Department of Environmental Protection
79 Elm Street
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Attachment 1

Millstone Nuclear Power Station, Unit No. 3

Response to a Request for Additional Information
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Question 1

RG 1.108 recommends that the 24-hour test be performed during shutdowns. Provide the basis for performing surveillance requirements (SRs) 4.8.1.1.2.g.7, 11, and 13 during power operation. How are SRs 4.8.1.1.2.g.11 and 13 currently performed and how long does it take to conduct these tests? Demonstrate that performing these SRs during power operation would have no adverse affect on the availability of the EDGs.

Response

Surveillance Requirement (SR) 4.8.1.1.2.g.7 requires the Millstone Unit No. 3 Emergency Diesel Generator (EDG) to operate loaded for 24 hours. The current requirement is for this test to be performed only when the plant is shut down. The proposed change would remove the restriction to perform this test only when the plant is shut down. This will provide additional flexibility in the scheduling of this maintenance activity since performance of this test during any mode of operation will be acceptable. This will reduce plant refueling outage duration and improve EDG availability when the plant is shut down.

This test is performed in an identical manner to the monthly surveillance test (SR 4.8.1.1.2.a). The EDG is connected to its respective 4160 VAC emergency bus, in parallel mode of operation. The Millstone Unit No. 3 EDG remains operable when operating in the test mode, paralleled with the respective emergency bus. When the EDG is operating in the test mode, an emergency actuation signal will override the test mode and the EDG will align as required based on the actuating signal.

⁽¹⁾ R. P. Necci letter to U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 3, Technical Specifications Change Request 3-11-99, Emergency Diesel Generator Surveillance Requirements," dated July 31, 2000.

⁽²⁾ U.S. Nuclear Regulatory Commission letter to Northeast Nuclear Energy Company, "Millstone Nuclear Power Station, Unit No. 3 - Request for Additional Information on Emergency Diesel Generator Surveillance Requirements Amendment Request (TAC No. MA9661)," dated November 21, 2000.

SR 4.8.1.1.2.g.11 verifies the ability to transfer fuel oil from each Fuel Oil Storage Tank to both Day Tanks (Trains A and B) via installed cross-connect lines. Currently, this SR is performed when the unit is shut down. During performance of the SR, the Day Tank level control of one of the EDGs is placed in manual, resulting in that EDG being declared inoperable. This is typically a short duration test of less than one hour. For example, when verifying the capability to transfer fuel oil from the Train A Storage Tank to the Train B Day Tank, the Train B Day Tank level control is placed in manual control. The B EDG is considered inoperable since manual control has been substituted for automatic operation. NNECO has not performed an evaluation of the use of a dedicated operator to justify operability in this configuration since this test has been performed while shut down and the respective EDG was not required to be operable. If NNECO decides to perform an evaluation of the use of a dedicated operator, it is reasonable to expect that the use of a dedicated operator would be acceptable since sufficient time for operator action would be available and no adverse environmental conditions would exist in the area where the operator actions would be performed. Performing this test on line will result in approximately one hour of inoperability, which is well within the normal monthly maintenance outage timeframe. Thus, there will be no increase in overall system inoperable time or unavailability. This SR will be scheduled and performed so that the protected (operable) train EDG Day Tank is not tested. Allowing this test to be performed when the plant is operating will provide additional flexibility in the scheduling of this maintenance activity.

SR 4.8.1.1.2.g.13 verifies that engine overspeed, lube oil low pressure, generator differential, and emergency stop conditions prevent the EDG from starting. Since this SR establishes conditions that prevent the EDG from starting, that EDG will be inoperable during test performance. Performance of this test on line will require entry into the respective Technical Specification Action Statement, but it can be performed well within one half of the 72 hour allowed outage time. Since this test is only required to be performed once per 18 months, the increase in overall system inoperable time or unavailability will not be significant. Allowing this test to be performed when the plant is operating will provide additional flexibility in the scheduling of this maintenance activity. This will reduce plant refueling outage duration and improve EDG availability when shut down.

Question 2

What are the effects of a loss of offsite power (LOOP), without a LOCA, during the 24-hour test with EDG paralleled with offsite power? The staff needs this information to determine that the EDG in test will remain available in the event of a LOOP.

Response

During normal plant operation, both EDGs are in a standby mode of operation. The respective emergency busses are energized through tie breakers to the non-emergency 4160 VAC busses. If an emergency actuation signal is generated by a Safety Injection Signal (SIS) without Loss Of Power (LOP) to the emergency busses, or

Containment Depressurization Accident (CDA) without LOP to the emergency busses, the Emergency Generator Load Sequencer (EGLS) will automatically start both EDGs. However, the EDG output breakers will not automatically close provided the respective emergency busses remain energized from offsite power. If the normal and alternate offsite power sources are not available, the EDGs are automatically connected to the respective emergency bus and sequentially loaded. The EGLS will reset should a LOP occur on the respective emergency bus at some later point in time after the initial automatic EDG start from a SIS or CDA signal. The EDGs are then automatically connected to the respective emergency bus and sequentially loaded.

In the event of a loss of offsite power with an EDG operating in test mode, without a SIS or CDA signal, several event sequences are possible based on electrical system alignment and protective relay settings. It is expected that the loss of offsite power will result in a trip of the offsite power supply breakers and a subsequent emergency to non-emergency 4160 VAC bus tie breaker trip on directional overcurrent. The EDG will continue to operate in a droop mode of governor control supplying its respective emergency 4160 VAC bus. If the EDG was supplying most, or all of the emergency bus loads before the loss of offsite power, the EDG will continue to supply the running loads. If the EDG was not supplying a significant amount of the emergency bus loads before the loss of offsite power, the droop characteristic will result in a reduction in EDG output frequency as the additional load is picked up, and the EDG output breaker will open on underfrequency. The engine will continue to operate in an unloaded condition. At this point, a bus undervoltage condition would be sensed (LOP) and protective relaying will ensure lockout of the emergency to non-emergency 4160 VAC bus tie breaker and the offsite power sources. In addition, the underfrequency trip is bypassed by a SIS, CDA, or LOP signal. Protective relaying will then initiate EGLS logic that recloses the EDG output breaker and commences automatic sequencing of required loads to the emergency bus with the EDG governor in the isochronous mode of control.

As indicated by the above discussion, the EDG in test will remain available to supply the respective emergency bus in the event of a loss of offsite power. In addition, as discussed in the response to Question 4, the plant configuration will be controlled during the 24-hour test to ensure one complete train will be protected. The protected train will be available for accident mitigation, ensuring all safety functions will be met.

Question 3

As a precaution, the EDG 24-hour test should not be performed during forecasted severe weather or unstable electrical grid conditions. The staff recommends that a statement be included in applicable procedures to consider severe weather or unstable electrical grid conditions before performing the 24-hour test.

Response

The Millstone Unit No. 3 Configuration Risk Management Program is used to control the scheduling of maintenance activities. This program would identify the need to reschedule maintenance activities such as the EDG 24 hour test if severe weather is forecasted. This would also occur if electrical grid stability was challenged by environmental conditions such as predicted or actual heat waves. If grid instability develops during the performance of maintenance activities such as the EDG 24 hour test, the test would be terminated by Control Room personnel.

Currently, procedural prerequisites and cautions exist to ensure that only one EDG at a time is paralleled to the grid for the monthly tests. These procedural restrictions require verification that a tornado watch/warning, hurricane advisory, or other possible loss of offsite power conditions do not exist if the EDG is to be paralleled to the grid. These same controls will be implemented for the 24 hour test to ensure the 24 hour test will not be performed if adverse weather conditions exist.

Question 4

As a precaution to assure EDG availability during the 24-hour test, the staff recommends that a footnote be added to SR 4.8.1.1.2.g.7 to perform the EDG 24-hour test only when the other required EDG is operable and, should the other required EDG become inoperable during the 24-hour test, the test will be aborted.

Response

The 24-hour test, and any other EDG maintenance activities scheduled when the plant is operating, will only be performed on one EDG at a time. The EDG that will be tested will be associated with the train that is not protected. The protected train concept is used to ensure that regularly scheduled maintenance activities are only performed on one train, the non-protected train, at a time. By protecting one train, and prohibiting regularly scheduled maintenance activities on that train, adequate control of plant configuration is established to ensure the safety functions are maintained. In addition, procedural prerequisites and cautions currently exist in the monthly surveillance procedures to ensure that a single operable EDG is not paralleled to the grid for test purposes. The 24-hour surveillance procedure will be modified to be consistent with the monthly surveillance procedure.

When performing the 24-hour test, or any other maintenance activities on an EDG, it is extremely unlikely that the other EDG would become inoperable. The other EDG is in a standby mode, and not running. Since it is not running, the probability of the failure of any component that could render the EDG inoperable is very low. Therefore, NNECO does not believe it is necessary to include a footnote to address this issue. In addition, modifying SR 4.8.1.1.2.g.7 to include such a footnote is not consistent with the NRC approved Standard Technical Specifications for Westinghouse Plants contained in NUREG-1431.

Question 5

The proposed change will remove SR 4.8.1.1.2.g.1, which addresses diesel inspections. Your letter indicates that the SR is contained in plant maintenance procedures that are subject to 10 CFR 50.59. Provide additional information that explains how changes in EDG inspections will be subject to evaluations under 10 CFR 50.59.

Response

The intent of the proposed change is to remove the Technical Specification requirement to perform EDG inspections based on the manufacturer's recommendation. The requirement to perform these inspections is a maintenance activity. Maintenance activities like this, while important, do not verify operability of the associated equipment, nor do they verify that the equipment functions as assumed in the safety analysis. The removal of maintenance activities from Technical Specifications is consistent with industry standards as indicated by the Standard Technical Specifications for Westinghouse Plants contained in NUREG-1431. The requirement to perform EDG inspections based on the manufacturer's recommendation is not contained in NUREG-1431.

The Millstone Unit No. 3 procedure for 18 month EDG inspections provides guidance for the inspection and maintenance of the diesels. It is primarily based on manufacturer (Colt) recommendations. Removal of the Technical Specification requirement to perform the diesel inspections will not change any of the inspection requirements contained in this procedure. Changes to the inspection requirements based on manufacturer recommendations will be evaluated first to determine if they are appropriate for the Millstone Unit No. 3 EDGs. Any change to the EDG inspection procedure will require the performance of a Safety Screen to evaluate the scope of the change. This Safety Screen is based on the requirements of 10 CFR 50.59.