

Dominion Nuclear Connecticut, Inc.
Millstone Power Station
Rope Ferry Road
Waterford, CT 06385



AUG - 1 2001

Docket No. 50-336
B18457

RE: 10 CFR 50.90

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

Millstone Nuclear Power Station, Unit No. 2
Response to a Request for Additional Information
Technical Specifications Change Request 2-6-00
Emergency Diesel Generator Allowed Outage Time

In a letter dated May 31, 2001,⁽¹⁾ Dominion Nuclear Connecticut, Inc. (DNC) requested a change to the Millstone Unit No. 2 Technical Specifications. The purpose of the proposed Technical Specification change was to increase the allowed outage time for one inoperable emergency diesel generator. During a conference call conducted on July 25, 2001, DNC addressed two questions from a Nuclear Regulatory Commission staff reviewer. The purpose of this letter is to transmit the requested written responses, which are 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. 2, Technical Specifications Change Request 2-6-00, Emergency Diesel Generator Allowed Outage Time," dated May 31, 2001.

A001

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

Very truly yours,

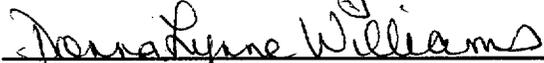
DOMINION NUCLEAR CONNECTICUT, INC.



J. Alan Price, Vice President
Nuclear Technical Services - Millstone

Sworn to and subscribed before me

this 1 day of August, 2001



Notary Public

My Commission expires Nov 30, 2001

Attachment (1)

cc: H. J. Miller, Region I Administrator
J. T. Harrison, NRC Project Manager, Millstone Unit No. 2
S. R. Jones, Senior Resident Inspector, Millstone Unit No. 2

Director
Bureau of Air Management
Monitoring and Radiation Division
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Attachment 1

Millstone Nuclear Power Station, Unit No. 2

**Response to a Request for Additional Information
Technical Specifications Change Request 2-6-00
Emergency Diesel Generator Allowed Outage Time
Supplemental Information**

Response to a Request for Additional Information
Technical Specifications Change Request 2-6-00
Emergency Diesel Generator Allowed Outage Time
Supplemental Information

In a letter dated May 31, 2001,⁽¹⁾ Dominion Nuclear Connecticut, Inc. (DNC) requested a change to the Millstone Unit No. 2 Technical Specifications. The purpose of the proposed Technical Specification change was to increase the allowed outage time (AOT) for one inoperable emergency diesel generator (EDG). During a conference call conducted on July 25, 2001, DNC addressed two questions from a Nuclear Regulatory Commission (NRC) staff reviewer. The questions and associated responses are presented below.

Question 1

Briefly describe the historical development of the current Millstone Unit No. 2 Probabilistic Risk Assessment (PRA) model. Include a discussion of the Combustion Engineering Owners Group (CEOG) peer review comments that relate to the proposed license amendment, and explain how these review comments were addressed or dispositioned, and if they adversely affect the proposed change to extend the allowed outage time for one Millstone Unit No. 2 emergency diesel generator.

Response

A brief chronology of the Millstone Unit No. 2 PRA model development is provided in the following table.

Date	Description
1991	Internal Events PRA completed
1993	Internal Flooding analysis completed
1993	Internal Events model updated to reflect the as-designed, as-operated plant
12/1993	IPE submitted
5/31/1994	Supplement regarding a potential vulnerability identified in the IPE submittal
9/20/1995	Responses to the RAIs on the IPE submittal
12/29/1995	IPEEE submitted
5/21/1996	IPE approved, NRC SER issued
11/1999	CEOG Peer Review completed
1/2000	PRA updated (Rev 0) Plant-specific data incorporated
6/2000	PRA updated (Rev 1) Incorporated changes to address significant peer review comments and corrected modeling errors
1/12/2001	IPEEE approved, NRC SER issued
4/2001	PRA updated (Rev 2) Incorporated the U1 / U2 electrical separation and the Unit 2 connection to Unit 3

⁽¹⁾ R. P. Necci letter to U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 2, Technical Specifications Change Request 2-6-00, Emergency Diesel Generator Allowed Outage Time," dated May 31, 2001.

In response to Generic Letter (GL) 88-20 "Individual Plant Examination for Severe Accident Vulnerabilities - 10CFR50.54(f)", the Millstone No. 2 Individual Plant Examination (IPE) was submitted to the NRC by a letter dated December 30, 1993.⁽²⁾ The NRC staff evaluation report for the IPE⁽³⁾ concluded that the study meets the intent of GL 88-20. The NRC staff did, however, identify weaknesses in portions of the Level I and Human Reliability Analysis of the IPE. The weaknesses identified have been evaluated and do not impact the proposed change to the emergency diesel generator allowed outage time. These same areas were identified by the CEOG peer review which was conducted in October 1999, and are being resolved through our corrective action process.

CEOG Peer Review Comments

The Millstone Unit No. 2 PRA model was reviewed as part of the CEOG Peer Review Process. The CEOG peer review report⁽⁴⁾ was reviewed and a corrective action plan initiated to address the findings. Since the corrective action plan is not yet completed, the findings were reviewed to determine if any are specifically applicable to the EDG AOT extension. The review yielded the following insights:

1. Observation AS-2 states the concern that in a total loss of cooling water event (i.e., a loss of service water or reactor building component cooling water, including consequential losses due to failure of supporting systems), there would be a loss of reactor coolant pump (RCP) seal cooling, which may result in an RCP seal loss of coolant accident (LOCA) in one or more of the RCPs. However, to mitigate the resulting RCP seal LOCA, the High Pressure Safety Injection (HPSI) System would be required. Reactor building component cooling water is required in order to cool the HPSI pumps during the recirculation mode.

Resolution

The appropriate event tree calculation now addresses this issue.

2. Observation IE-6 states that the total frequency for loss of normal power (LNP) at Millstone is lower than the generic frequency for LNP. Also, more explanation was required providing a basis for excluding a large number of industry LNP events, including 4 of the 5 events that occurred at Millstone.

⁽²⁾ S. E. Scace letter to U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 2, Response to Generic Letter 88-20, Individual Plant Examination for Severe Accident Vulnerabilities, Summary Report," dated December 30, 1993.

⁽³⁾ D. G. McDonald letter to Northeast Nuclear Energy Company, "NRC Staff's Evaluation of the Individual Plant Examination Submittal for Millstone Nuclear Power Station, Unit No. 2, (B14702) (TAC NO. M74433)," dated May 21, 1996.

⁽⁴⁾ CE NPSD-1182-P, "Millstone Nuclear Station Unit 2 Probabilistic Safety Assessment Peer Review Report," CEOG Task 1037, dated January, 2000.

Resolution

More explanation was provided for the basis for excluding several of the events, including those that occurred at Millstone, in the current LNP Frequency Calculation. A sensitivity study was performed on the LNP frequency (Sensitivity Study No. 1).

3. Observation DA-6 states that the LNP initiating frequency in the data analysis calculation does not agree with the LNP frequency calculated in the LNP calculation at the time of the peer review.

Resolution

The final quantification (at the time of the peer review) used the value calculated in the LNP calculation, but the value in data analysis calculation is closer to the industry value.

The LNP frequency calculation has since been revised to use the correct value, and is incorporated in the revised final quantification calculation. As noted above, a sensitivity study (Sensitivity Study No. 1) has been performed on the LNP frequency.

4. Observation QU-7 states that it is overly conservative to always assume a 24-hour mission time for the diesel generators.

Resolution

This was addressed by adjusting the EDG mission time based on the specific station blackout sequence.

5. Observation DA-3 states that credit was taken for the Unit No. 1 diesel generator as a backup power supply for Unit No. 2, but the fail to run and fail to start rates for the Unit No. 1 diesel is different than those for the Unit No. 2 diesels, and no documentation for the reason could be found.

Resolution

Millstone Unit No. 2 is no longer electrically cross-tied to Unit No. 1, since the latter is being decommissioned. Unit No. 2 now cross-ties with Unit No. 3, and the bases for the fail to run and fail to start failures are provided.

6. Observations HR-8 and HR-11 state that there is no basis for the time that operators have to align Bus 24E for the Unit No. 1 cross-tie, and that the probability of failure has no basis.

Resolution

Millstone Unit No. 2 is no longer electrically cross-tied to Unit No. 1, since the latter is being decommissioned. Millstone Unit No. 2 now cross-ties with Millstone Unit No. 3. The basis for the time that operators have to align 4160V Bus 24E is based on sequence-specific time-dependent SBO thermal/hydraulic calculations. The operator actions are simplified into one operator action for plant-centered LNP events and one operator action for site-wide LNP events and a basis has been provided.

7. Observation AS-8 states that the event tree analysis uses a RCP seal failure probability that is non-conservative.

Resolution

The new value for the probability of a RCP seal failure in at least one of the RCPs is 6.52E-04. In addition, a sensitivity study (Sensitivity Study No. 2) was performed on the RCP seal failure probability.

8. Observation HR-18 states that operator action for the steam driven auxiliary feedwater (SDAFW) pump is quantified at 6.4E-03, but that the quantification method for the operator action does not directly address the limited time available to start the SDAFW pump.

Resolution

A sensitivity study (Sensitivity Study No. 3) was performed in which the failure probability was increased by an order of magnitude.

9. Observation SY-11 states that the Engineered Safeguards Actuation System Fault Tree Analysis considers common cause failure (CCF) of each group of sensors, which is appropriate, but that the CCF of the sequencers is not considered.

Resolution

A sensitivity study (Sensitivity Study No. 4) was performed in which CCF of the sequencers is accounted for.

10. Observation L2-5 states that a Large Early Release Frequency (LERF) analysis is not included for the latest PRA model update.

Resolution

To address this issue, a LERF fault tree model has been added to the Risk Monitor Model.

A detailed discussion of each of the Sensitivity Studies identified above is contained in Attachment 5 of the submittal dated May 31, 2001. An additional sensitivity study (Sensitivity Study No. 5) was performed and included in that submittal. The additional sensitivity study calculated the Incremental Conditional Core Damage Probability if the emergency diesel generator action statement was entered for corrective rather than preventive maintenance (i.e., consider the possibility of both emergency diesel generators being unavailable due to a common cause failure). The sensitivity studies were performed to address the PRA model quality.

Question 2

The NRC evaluation of the Millstone Unit No. 2 IPEEE report identified numerous external event enhancement areas. Explain how these enhancement areas have been addressed, and if these or any external events adversely affect the proposed change to extend the allowed outage time for one Millstone Unit No. 2 emergency diesel generator.

Response

The Millstone Unit No. 2 Individual Plant Examination of External Events (MP2 IPEEE) was submitted by letter dated December 29, 1995.⁽⁵⁾ The NRC Staff Evaluation Report of the Millstone Unit No. 2 IPEEE was received in a letter dated January 12, 2001.⁽⁶⁾ It was concluded that Millstone Unit No. 2 has an acceptably low level of risk due to external events. No vulnerabilities were identified in the seismic, fire or other external event areas. However, 29 issues were identified in the IPEEE submittal and were referred to in the IPEEE Staff Evaluation Report as "opportunities for safety enhancements" for further investigation and resolution.

Out of the 29 issues identified, 8 issues remain under investigation and are currently being tracked by our corrective action program. These eight issues under evaluation do not impact this license amendment request.

For the requested change in the emergency diesel generator allowed outage time, issues pertaining to high winds and tornadoes are of particular interest due to past history, and the resulting loss of offsite power. Issues identified within the high winds and tornado area have been dispositioned. This includes the issue of diesel generator cooling ducts and dampers potentially being vulnerable to the 10E-6/year tornado pressure transient loading. Analysis was performed which concluded that the cooling ducts and dampers associated with the diesel generator rooms would not be impacted by a 10E-6/year tornado pressure transient loading.

⁽⁵⁾ D. B. Miller, Jr. letter to U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 2, Response to Generic Letter 88-20, Supplements 4 and 5, Individual Plant Examination for External Events - Summary Report," dated December 29, 1995.

⁽⁶⁾ J. I. Zimmerman letter to Northeast Nuclear Energy Company, "Millstone Nuclear Power Station, Unit No. 2, Individual Plant Examination of External Events (IPEEE), (TAC NO. M83642)," dated January 12, 2001.

The seismic related issue pertaining to a cracked isolation mount housing for a local control panel on emergency diesel generator H7A was discussed during the NRC conference call. This housing was repaired in 1995.