

May 7, 2003

Mr. J. A. Price
Site Vice President - Millstone
Dominion Nuclear Connecticut, Inc.
c/o Mr. David W. Dodson
Rope Ferry Road
Waterford, CT 06385

SUBJECT: MILLSTONE POWER STATION, UNIT NO. 2 - ISSUANCE OF AMENDMENT
RE: OPERATION WITH MAIN STEAM SAFETY VALVES INOPERABLE
(TAC NO. MB5799)

Dear Mr. Price:

The Commission has issued the enclosed Amendment No. 275 to Facility Operating License No. DPR-65 for the Millstone Power Station, Unit No. 2, in response to your application dated August 1, 2002, as supplemented on October 18, 2002, and April 17, 2003.

The amendment revises Technical Specification 3.7.1.1, "Plant Systems: Turbine Cycle Safety Valves," to reflect results of a reanalysis of overpressurization events to allow plant operation, at corresponding reduced power levels, with up to four main steam safety valves in each main steam line inoperable.

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/RA/

Richard B. Ennis, Senior Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-336

Enclosures: 1. Amendment No. 275 to DPR-65
2. Safety Evaluation

cc w/encls: See next page

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Millstone Power Station
Unit 2

cc:

Ms. L. M. Cuoco
Senior Counsel
Dominion Nuclear Connecticut, Inc.
Rope Ferry Road
Waterford, CT 06385

Edward L. Wilds, Jr., Ph.D.
Director, Division of Radiation
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

First Selectmen
Town of Waterford
15 Rope Ferry Road
Waterford, CT 06385

Charles Brinkman, Manager
Washington Nuclear Operations
ABB Combustion Engineering
12300 Twinbrook Pkwy, Suite 330
Rockville, MD 20852

Senior Resident Inspector
Millstone Power Station
c/o U.S. Nuclear Regulatory Commission
P.O. Box 513
Niantic, CT 06357

Mr. W. R. Matthews
Senior Vice President - Nuclear Operations
Dominion Nuclear Connecticut, Inc.
Rope Ferry Road
Waterford, CT 06385

Mr. P. J. Parulis
Manager - Nuclear Oversight
Dominion Nuclear Connecticut, Inc.
Rope Ferry Road
Waterford, CT 06385

Mr. D. A. Christian
Senior Vice President - Nuclear Operations
and Chief Nuclear Officer
Innsbrook Technical Center - 2SW
5000 Dominion Boulevard
Glen Allen, VA 23060

Mr. John Markowicz
Co-Chair
Nuclear Energy Advisory Council
9 Susan Terrace
Waterford, CT 06385

Mr. Evan W. Woollacott
Co-Chair
Nuclear Energy Advisory Council
128 Terry's Plain Road
Simsbury, CT 06070

Mr. D. A. Smith
Manager - Licensing
Dominion Nuclear Connecticut, Inc.
Rope Ferry Road
Waterford, CT 06385

Ms. Nancy Burton
147 Cross Highway
Redding Ridge, CT 00870

Mr. G. D. Hicks
Director - Nuclear Station Safety and Licensing
Dominion Nuclear Connecticut, Inc.
Rope Ferry Road
Waterford, CT 06385

Mr. S. E. Scace
Assistant to the Site Vice President
Dominion Nuclear Connecticut, Inc.
Rope Ferry Road
Waterford, CT 06385

Millstone Power Station
Unit 2

cc:

Mr. A. J. Jordan, Jr.
Director - Nuclear Engineering
Dominion Nuclear Connecticut, Inc.
Rope Ferry Road
Waterford, CT 06385

Mr. S. P. Sarver
Director - Nuclear Station Operations
and Maintenance
Dominion Nuclear Connecticut, Inc.
Rope Ferry Road
Waterford, CT 06385

DOMINION NUCLEAR CONNECTICUT, INC.

DOCKET NO. 50-336

MILLSTONE POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 275
License No. DPR-65

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the applicant dated August 1, 2002, as supplemented on October 18, 2002, and April 17, 2003, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-65 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 275, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance, and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: May 7, 2003

ATTACHMENT TO LICENSE AMENDMENT NO. 275

FACILITY OPERATING LICENSE NO. DPR-65

DOCKET NO. 50-336

Replace the following pages of the Appendix A, Technical Specifications, with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

3/4 7-1

3/4 7-2

B 3/4 7-1

Insert

3/4 7-1

3/4 7-2

B 3/4 7-1

B 3/4 7-1a

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 275

TO FACILITY OPERATING LICENSE NO. DPR-65

DOMINION NUCLEAR CONNECTICUT, INC.

MILLSTONE POWER STATION, UNIT NO. 2

DOCKET NO. 50-336

1.0 INTRODUCTION

By application dated August 1, 2002, as supplemented on October 18, 2002, and April 17, 2003, Dominion Nuclear Connecticut, Inc. (the licensee), requested changes to the Millstone Power Station, Unit No. 2 (MP2) Technical Specifications (TSs). The supplements dated October 18, 2002, and April 17, 2003, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the Federal Register on September 17, 2002 (67 FR 58638).

The proposed amendment would revise TS 3.7.1.1, "Plant Systems: Turbine Cycle Safety Valves," to reflect results of a reanalysis of overpressurization events to allow plant operation, at corresponding reduced power levels, with up to four main steam safety valves (MSSVs) in each main steam line inoperable. The proposed amendment would also adopt a change included in Technical Specification Task Force (TSTF) Traveler 235, Revision 1.

Currently, TS 3.7.1.1 does not allow plant operation in Modes 1 or 2 (power operation and startup, respectively) if one or more MSSVs are inoperable. TS 3.7.1.1 allows Mode 3 (hot standby) operation with up to three MSSVs on a single steam generator inoperable. The current requirements in TS 3.7.1.1 were the result of MP2 Amendment No. 211 which was issued by the U. S. Nuclear Regulatory Commission (NRC or Commission) on November 19, 1997. Prior to issuance of Amendment No. 211, TS 3.7.1.1 allowed operation in Modes 1, 2, or 3 with up to three MSSVs on a single steam generator inoperable at corresponding reduced power levels. However, during an effort to verify the MP2 licensing and design basis, the licensee determined that the maximum allowable power level-high trip setpoints with inoperable MSSVs, specified in TS Table 3.7-1, were non-conservative. As a corrective action, the licensee proposed, by letter dated September 16, 1997, to delete TS Table 3.7-1 and revise TS 3.7.1.1 to remove the capability to operate in Modes 1 or 2 with inoperable MSSVs. Those proposed changes were incorporated in Amendment No. 211.

Based on recent analyses performed for the licensee by Framatome, the proposed amendment would reinstate the capability to operate in Modes 1 or 2 with inoperable MSSVs. The specific proposed TS changes are discussed in Safety Evaluation (SE) Sections 1.1, 1.2, and 1.3.

1.1 TS 3.7.1.1

TS 3.7.1.1 currently reads as follows:

3.7.1.1 All main steam line code safety valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

- a. If one or more main steam line code safety valves are inoperable, restore the inoperable valve(s) to OPERABLE status within 4 hours, or be in HOT STANDBY within the next 6 hours.
- b. If more than three main steam line code safety valves on a single steam generator are inoperable, be in HOT STANDBY within 6 hours, and HOT SHUTDOWN within the next 12 hours.

TS 3.7.1.1 would be revised to read as follows:

3.7.1.1 All main steam line code safety valves shall be OPERABLE with lift settings as specified in Table 4.7-1.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

- a. With one or more required main steam line code safety valves per steam generator inoperable,
 1. Reduce THERMAL POWER within 4 hours to less than or equal to the applicable percent of RATED THERMAL POWER listed in Table 3.7-1, and
 2. Reduce the Power Level-High trip setpoint in accordance with Table 3.7-1 within 36 hours.Otherwise, be in HOT STANDBY within the next 6 hours, and HOT SHUTDOWN within the following 6 hours.
- b. With more than four main steam line code safety valves on a single steam generator inoperable, be in HOT STANDBY within 6 hours, and HOT SHUTDOWN within the next 6 hours.

The licensee's submittal states that the portion of TSTF-235 relating to the allowable time duration for resetting the Power Level-high trip setpoint for Combustion Engineering plants was applied in the development of Action a.2.

1.2 TS Table 3.7-1

A new TS Table 3.7-1 would be added as follows:

TABLE 3.7-1

MAXIMUM ALLOWABLE POWER LEVEL-HIGH TRIP SETPOINT WITH
INOPERABLE MAIN STEAM LINE CODE SAFETY VALVES (MSSVs)

MINIMUM NUMBER OF MSSVs PER STEAM GENERATOR REQUIRED OPERABLE	MAXIMUM POWER (Percent Of RATED THERMAL POWER)	MAXIMUM ALLOWABLE POWER LEVEL-HIGH TRIP SETPOINT (Percent Of RATED THERMAL POWER)
8	100	106.6 (Ceiling)
7	85	94.6
6	75	84.6
5	60	69.6
4	45	54.6

1.3 TS Bases

The TS Bases would also be revised, as applicable, to address the proposed TS changes described in SE sections 1.1 and 1.2.

2.0 REGULATORY EVALUATION

As described in Section 4.3.2 and Table 4.3-3 of the MP2 Final Safety Analysis Report (FSAR), overpressure protection for the shell side of the steam generators and the main steam line piping is provided by 16 spring-loaded American Society for Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code) MSSVs which discharge to the atmosphere. Eight MSSVs are mounted on each main steam line outside of containment, upstream of the main steam isolation valves (MSIVs). Operability of the MSSVs ensures that the secondary system pressure will be limited to less than 110% of the system design pressure during the most severe anticipated system operational transient, as required by Section III of the ASME Code.

3.0 TECHNICAL EVALUATION

The staff has reviewed the licensee's justification for the proposed license amendment as described in the licensee's application dated August 1, 2002, as supplemented on October 18, 2002, and April 17, 2003. The detailed evaluation below will support the conclusion that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the

Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

3.1 TS 3.7.1.1

The proposed change to the Limiting Condition for Operation (LCO), to add the words "with lift settings as specified in Table 4.7-1," helps to define the operability requirements for the MSSVs since the table lists the lift setting for each MSSV and the tolerance (i.e., allowable value) on the lift setting to account for drift over an operating cycle. Each MSSV is demonstrated operable, with the lift settings shown in Table 4.7-1, in accordance with TS 4.0.5, which provides the Surveillance Requirements for the MP2 Inservice Testing Program. Since there are no changes proposed to Table 4.7-1, the staff finds that the proposed change to the LCO is editorial in nature and clarifies the operability requirements for the MSSVs. Therefore, the proposed change to the LCO is acceptable.

Action a.1, in proposed TS 3.7.1.1, provides an alternative to restoring inoperable MSSVs to operable status by reducing power so that the available MSSV relieving capacity meets ASME Code requirements for the power level. With one or more MSSVs per steam generator inoperable, proposed Action a.1 would require that thermal power be reduced within 4 hours to less than, or equal to, the power level in proposed Table 3.7-1 for the corresponding number of inoperable MSSVs. The 4-hour completion time is a reasonable time period to reduce power based on the low probability of an event occurring during this period that would require activation of the MSSVs. Therefore, the staff concludes that proposed Action a.1 is acceptable. In addition, the 4-hour completion time is consistent with the improved Standard Technical Specifications (STS), NUREG-1432, Revision 2, "Standard Technical Specifications, Combustion Engineering Plants," TS 3.7.1, Action A.1.

With one or more MSSVs per steam generator inoperable, in addition to reducing thermal power in accordance with Action a.1, proposed Action a.2 would require that the power level-high trip setpoint be reduced within 36 hours, in accordance with the setpoint shown in proposed Table 3.7-1, for the corresponding number of inoperable MSSVs. The licensee's submittal dated August 1, 2002, states that the completion time of 36 hours is based on TSTF-235. As discussed in the TS Bases pages in TSTF-235 for Combustion Engineering plants, the completion time of 36 hours is based on a reasonable time to correct the MSSV inoperability, the time required to perform the power reduction, operating experience in resetting all channels of a protective function, and on the low probability of the occurrence of a transient that could result in steam generator overpressure during this period. Based on the considerations discussed in TSTF-235, the staff concludes that proposed Action a.2 is acceptable.

If the requirements in Actions a.1 and a.2 cannot be met (with one, two, three, or four MSSVs per steam generator inoperable), or if there are more than four MSSVs on a single generator inoperable (proposed Action b), then the plant must be placed in a mode in which the LCO does not apply. Proposed TS 3.7.1.1 Actions a and b would require, under these conditions, that the plant be in Hot Standby (i.e., Mode 3) within 6 hours and Hot Shutdown (i.e., Mode 4) within the next 6 hours. The proposed completion times are reasonable, based on operating experience, to reach the required plant conditions in an orderly manner and without challenging plant systems. Therefore, the staff concludes that proposed completion times are acceptable. In addition, the proposed completion times are consistent with NUREG-1432, Revision 2, TS 3.7.1, Action B.

Based on the preceding evaluation, the staff concludes that proposed TS 3.7.1.1 is acceptable.

3.2 TS Table 3.7-1

The licensee performed a review of the MP2 FSAR Chapter 14 transients, and identified the loss of electrical (external) load with turbine trip (LOEL/TT) event and the single MSIV closure event as the two events that could potentially challenge primary and secondary system design pressure with respect to plant operation with inoperable MSSVs. The licensee's vendor, Framatome, reanalyzed these two transients with several cases, at varying initial reactor power levels with from one to four MSSVs inoperable, respectively.

Framatome used the methodology described in report EMF-2310(P)(A), Revision 0, "SRP Chapter 15 Non-LOCA Methodology for Pressurized Water Reactors," to perform the transient analysis. This methodology was approved for use at MP2 by issuance of Amendment No. 260 on December 19, 2001. The methodology utilizes the S-RELAP5 plant transient thermal-hydraulic computer code to simulate the overall response of the reactor coolant and steam systems during the transient. The detailed results of the transient analysis are documented in a Framatome report that was included as Enclosure 1 of the licensee's submittal dated October 18, 2002. A summary of the analysis results is provided in Tables 3.1 and 3.2.

Table 3.1 LOEL/TT Event		
Initial Power (% Rated Thermal Power)	No. of Inoperable MSSVs in Each Steam Line	Peak Secondary Pressure (psia)
85	1	1086.3
75	2	1087.4
65	3	1088.4
55	4	1088.1

Table 3.2 Single MSIV Closure Event		
Initial Power (% Rated Thermal Power)	No. of Inoperable MSSVs in Each Steam Line	Peak Secondary Pressure (psia)
85	1	1092.2
75	2	1090.9
60	3	1085.1
45	4	1086.2

As shown in FSAR Table 4.3-3, the main steam piping design pressure (i.e., secondary system pressure) is 1000 psig. The transient analysis must demonstrate that the secondary system pressure is limited to less than 110% of 1000 psig (i.e., 1100 psig or 1115 psia) in order to meet the ASME Code Section III requirements. Since the peak secondary pressures shown in the above tables are all less than 1115 psia, the transient analysis demonstrates that ASME Code overpressure requirements will be met for up to four MSSVs inoperable in each steam line at the power levels shown in the preceding two tables.

As shown in Tables 3.1 and 3.2, the LOEL/TT event was analyzed at power levels of 85%, 75%, 65%, and 55% for 1, 2, 3, and 4 inoperable MSSVs in each steam line, respectively. The single MSIV closure event was analyzed at 85%, 75%, 60%, and 45% for 1, 2, 3, and 4 inoperable MSSVs in each steam line, respectively. The maximum power levels in proposed TS Table 3.7-1 are based on the power levels for the Single MSIV Closure event since it is more limiting with respect to acceptable power levels with 3 or 4 inoperable MSSVs in each steam line.

As discussed in the licensee's submittal dated October 18, 2002, the maximum allowable power level-high trip setpoints shown in proposed TS Table 3.7-1 were chosen to be consistent with TS 2.2.1, "Reactor Trip Setpoints." The power level-high trip is operator adjustable and can be set no higher than 9.6% above the indicated thermal power level, with a maximum value (i.e., ceiling) of 106.6%, as shown in TS Table 2.2-1. As discussed in the Bases for TS 2.2.1, operator action is required to increase the trip setpoint as thermal power is increased. The trip setpoint is automatically decreased as thermal power decreases. The licensee's submittal states that the power level-high trip is not credited in the Framatome analysis.

Based on review of the licensee's submittals, the NRC staff finds that: (1) the transient analysis was performed using a methodology approved for use at MP2; (2) the results provide reasonable assurance that the ASME Code overpressure requirements will be met for transients that could challenge secondary system pressure with 1, 2, 3, or 4 inoperable MSSVs at maximum power levels of 85%, 75%, 60%, and 45%, respectively; and (3) the maximum allowable power level-high trip setpoints shown in proposed TS Table 3.7-1 are consistent with the existing requirements in TS 2.2-1. Based on these findings, the staff concludes that proposed TS Table 3.7-1 is acceptable.

3.3 TS Bases

The licensee has proposed to revise the TS Bases to address the proposed TS changes described in SE Sections 1.1 and 1.2. The staff has no objections to these Bases changes.

3.4 Technical Evaluation Conclusion

Based on the preceding evaluation, the NRC staff concludes that plant operation in accordance with the proposed TS changes will provide reasonable assurance that secondary system pressure will be limited to within 110% of the system design pressure in accordance with the ASME Code requirements. Therefore, the proposed amendment is acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Connecticut State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (67 FR 58638). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: K. Desai
R. Ennis

Date: May 7, 2003