January 29, 2008

Mr. David A. Christian
President and Chief Nuclear Officer
Virginia Electric and Power Company
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: MILLSTONE POWER STATION, UNIT NO. 2 - ISSUANCE OF AMENDMENT RE: INSTRUMENTATION TECHNICAL SPECIFICATION CHANGE REQUEST (TAC NO. MD3588)

Dear Mr. Christian:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 301 to Facility Operating License No. DPR-65 for the Millstone Power Station, Unit No. 2 (MPS2). This amendment consists of changes to the Technical Specifications (TS) in response to your application dated November 8, 2006 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML063130426), as supplemented by letters dated May 4, October 4, and November 27, 2007 (ADAMS Accession Nos. ML071240406, ML072780150, ML073330317).

The amendment revises the MPS2 TS Action and Surveillance Requirements for instrumentation identified in TS 3.3.1 and 3.3.2. In particular, the amendment adds actions to address the inoperability of one or more automatic bypass removal channels and revises the terminology used in the notation of TS 2.2-1 and 3.3-1 relative to the implementation and automatic removal of certain Reactor Protective System trip bypasses. The amendment also revises the frequency for performing surveillance of the automatic bypass removal function logic, and incorporates two administrative changes.

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/

John D. Hughey, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-336

Enclosures:
1. Amendment No. 301 to DPR-65
2. Safety Evaluation

cc w/encls: See next page

Millstone Power Station, Unit No. 2

cc:

Lillian M. Cuoco, Esquire
Senior Counsel
Dominion Resources Services, Inc.
Building 475, 5th Floor
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, Director
Washington Operations Nuclear Services
Westinghouse Electric Company
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. J. Alan Price
Site Vice President
Dominion Nuclear Connecticut, Inc.
Building 475, 5th Floor
Rope Ferry Road
Waterford, CT 06385

Mr. J. W. "Bill" Sheehan
Co-Chair NEAC
19 Laurel Crest Drive
Waterford, CT 0638

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

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

Mr. Chris L. Funderburk
Director, Nuclear Licensing and
Operations Support
Dominion Resources Services, Inc.
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

Mr. William D. Bartron
Licensing Supervisor
Dominion Nuclear Connecticut, Inc.
Building 475, 5th Floor
Rope Ferry Road
Waterford, CT 06385

Mr. Joseph Roy,
Director of Operations
Massachusetts Municipal Wholesale
Electric Company
Moody Street
P.O. Box 426
Ludlow, MA 01056

Mr. David A. Sommers
Dominion Resources Services, Inc.
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

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/

John D. Hughey, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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Accession Nos: Package/ML073511405; Amendment/ML073511414; Tec Specs/ML073511424;
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DOMINION NUCLEAR CONNECTICUT, INC.

DOCKET NO. 50-336

MILLSTONE POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 301
License No. DPR-65

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by the applicant dated November 8, 2006, as supplemented by letters dated May 4, 2007, October 4, 2007, and November 27, 2007, 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 Title 10 of the *Code of Federal Regulations* (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. , are hereby incorporated in the renewed 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 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/ra/

Harold K. Chernoff, Chief
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the License
and Technical Specifications

Date of Issuance: January 29, 2008

ATTACHMENT TO LICENSE AMENDMENT NO. 301

FACILITY OPERATING LICENSE NO. DPR-65

DOCKET NO. 50-336

Replace the following page of the Facility Operating License with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove	Insert
Page 3	Page 3

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	Insert
2-5	2-5
3/4 3-1	3/4 3-1
3/4 3-2	3/4 3-2
3/4 3-4	3/4 3-4
3/4 3-5	3/4 3-5
3/4 3-9	3/4 3-9

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 301

TO FACILITY OPERATING LICENSE NOS. DPR-65

DOMINION NUCLEAR CONNECTICUT, INC.

MILLSTONE POWER STATION, UNIT NO. 2

DOCKET NO. 50-336

1.0 INTRODUCTION

By letter dated November 8, 2006 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML063130426), the Dominion Nuclear Connecticut, Inc. (DNC), the licensee, submitted a request for changes to the Millstone Power Station, Unit No. 2 (MPS2) Technical Specifications (TS). The requested changes would revise MPS2 TS Action and Surveillance Requirements (SR) for instrumentation identified in TS 3.3.1 and 3.3.2. In particular, the requested amendment adds actions to address the inoperability of one or more automatic bypass removal channels and revises the terminology used in the notation of TS 2.2-1 and 3.3-1 relative to the implementation and automatic removal of certain Reactor Protective System (RPS) trip bypasses. The amendment request would also revise the frequency for performing surveillance of the automatic bypass removal function logic, and incorporates two administrative changes.

Supplemental information was provided by the licensee in letters dated May 4, October 4, and November 27, 2007 (ADAMS Accession Nos. ML071240406, ML072780150, ML073330317), in response to requests for additional information. These responses 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 April 24, 2007. (72 FR 20380).

2.0 EVALUATION

2.1 Proposed TS Changes

The Nuclear Regulatory Commission (NRC) staff reviewed the license amendment request (LAR) for the following changes to the MPS2 TS:

2.1.1 Add the following two new Actions, ACTION 7 and ACTION 8, to Functional Unit 2, Power Level - High, Functional Unit 3, Reactor Coolant Flow - Low, Functional Unit 6, Steam Generator Pressure - High, Functional Unit 8, Local Pressure Density - High, and Functional Unit 9, Thermal Margin/Low Pressure to MPS2 TS Table 3.3-1, Reactor Protective Instrumentation:

ACTION 7: With one automatic bypass removal channel inoperable for one or more functions, either

a. disable the bypass channel within 1 hour; or

b. place the affected trip units in bypass or trip within 1 hour, and either

1. restore the bypass removal channel and affected trip units to OPERABLE status within 48 hours, or

2. place the affected trip units in trip within 48 hours.

ACTION 8: With two automatic bypass removal channels inoperable for one or more functions, either

a. disable the bypass channels within 1 hour, or

b. place one affected trip unit in bypass and place the other in trip for each affected trip function, within 1 hour, and restore one automatic bypass removal channel and associated trip unit to OPERABLE status for each affected trip function, within 48 hours.

2.1.2 Revise Surveillance Requirements, SR 4.3.1.1.2 and SR 4.3.2.1.2, from:

"The logic for the bypass shall be demonstrated OPERABLE during the at power CHANNEL FUNCTIONAL TEST of channels affected by bypass operation. The total bypass function shall be demonstrated OPERABLE at least once per 18 months during CHANNEL CALIBRATION testing of each channel affected by bypass operation."

to:

"The bypass function and automatic bypass removal function shall be demonstrated OPERABLE during the at power CHANNEL FUNCTIONAL TEST once within 92 days prior to each reactor startup. The total bypass function shall be demonstrated OPERABLE at least once per 18 months during CHANNEL CALIBRATION testing of each channel affected by bypass operation."

2.1.3 Revise note (1) in TS Table 2.2-1, Reactor Protective Instrumentation Trip Set Point Limits and note (a) in Table 3.3-1, Reactor Protective Instrumentation, from:

"Trip may be bypassed below 5% of RATED THERMAL POWER; bypass shall be automatically removed when THERMAL POWER is ≥ 5% of RATED THERMAL POWER."

to:

"Trip may be bypassed when logarithmic power is < 1E-04% and the bypass shall be capable of automatic removal whenever logarithmic power is < 1E-04%. Bypass shall be removed prior to raising logarithmic power to a value ≥ 1E-04%."

2.1.4 Change the word "Hyraulic" under FUNCTIONAL UNIT 10 in Table 3.3-1 to "Hydraulic" and the word "acutation" in SR 4.3.2.1.1 to "actuation."

2.2 Regulatory Evaluation

The NRC staff used the following regulatory bases and guidance documents in its evaluation of the LAR:

2.2.1 Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Domestic Licensing of Production and Utilization Facilities," Section 50.36, "Technical Specifications," states, "Each applicant for a license authorizing operation of a production or utilization facility shall include in his application proposed technical specifications in accordance with the requirements of this section." Specifically, 10 CFR 50.36(c)(2) describes the role of limiting conditions for operation (LCO) and 10 CFR 50.36(c)(2) (ii) sets forth four criteria to be used in determining whether an LCO is required to be included in TS.

2.2.2 10 CFR, Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," Criterion 13, "Instrumentation and Control," addresses instrumentation that is provided to monitor variables and systems and the controls provided to maintain these variables and systems within prescribed operating ranges.

2.2.3 10 CFR, Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," Criterion 20, "Protection System Functions," addresses the design of the protection system to initiate operation of appropriate systems to ensure that specified acceptable fuel design limits are not exceeded.

2.2.4 NUREG-1432, "Standard Technical Specifications Combustion Engineering Plants," Rev. 0, June 2004.

2.2.5 Topical Report CEN-327, "RPS/ESFAS [Reactor Protective System/Engineered Safety Features Actuation System] Extended Test Interval Evaluation," May, 1986.

2.2.6 Industry/TSTF [Technical Specification Task Force] Standard Technical Specifications Change Traveler, TSTF-324, Rev.1.

2.3 Technical Evaluation

2.3.1 Addition of ACTION 7 and ACTION 8 to Table 3.3-1

Currently, the MPS2 TS contain an ACTION 2 to Table 3.3-1 that addresses inoperable reactor protective instrumentation channels including the placement of an inoperable channel in bypass.

ACTION 2 reads as follows:

> "With the number of OPERABLE channels one less than the Total Number of Channels, operation may continue provided the following conditions are satisfied:
>
> a. The inoperable channel is placed in either the bypassed or tripped condition within 1 hour. The inoperable channel shall either be restored to OPERABLE status, or placed in the tripped condition, within 48 hours.
>
> b. Within 1 hour, all functional units receiving an input from the inoperable channel are also declared inoperable, and the appropriate actions are taken for the affected functional units.
>
> c. The Minimum Channels OPERABLE requirement is met; however, one additional channel may be removed from service for up to 48 hours, provided one of the inoperable channels is placed in the tripped condition."

ACTION 2 does not address any action to be applied should an automatic bypass removal function become inoperable. Therefore, in addition to the existing ACTION 2, a new ACTION 7 and ACTION 8 to Table 3.3-1 of the MPS2 TS are being proposed to address the inoperability of one or more automatic bypass removal channels. The proposed ACTION 7 and ACTION 8, as previously described in section 2.1.1, are consistent with similar ACTIONs specified in NUREG-1432.

A review of the proposed ACTION 7 and ACTION 8 indicates that the 1 hour time period to place an inoperable channel either in bypass or in a tripped condition, and 48 hours allowed outage time to repair the affected trip unit, are consistent with the time frames applied to inoperable channels in TS 3.3-1, ACTION 2. Therefore, the proposed TS change will provide the same action time for the automatic bypass removal channels as exists for the OPERABLE channels. The licensee stated that the bases for similar requirements contained in NUREG-1432 were reviewed and determined to be applicable to MPS2. Considering that the proposed TS changes address inoperability of automatic bypass removal channels consistent with the manner that inoperability is addressed for OPERABLE channels, the NRC staff finds that the proposed TS changes in adding ACTION 7 and ACTION 8 are acceptable.

2.3.2 Modification to SR 4.3.1.1.2 and SR 4.3.2.1.2:

The proposed TS change to SR 4.3.1.1.2 and SR 4.3.2.1.2, which specifies that the bypass function and the automatic bypass removal function shall be demonstrated OPERABLE during a CHANNEL FUNCTIONAL TEST once within 92 days prior to each reactor startup, is consistent with SR 3.3.1.7 specified in NUREG-1432. The licensee stated that bypass must be in place during startup operation and must be removed at appropriate points during power ascent to enable certain reactor trips. Consequently, the appropriate time to verify bypass removal function OPERABILITY is just prior to startup.

The licensee, also stated that the allowance to conduct this test within 92 days prior to startup is based on the reliability analysis presented in topical report CEN-327, "RPS/ESFAF Extended Test Interval Evaluation." The licensee stated that it has reviewed the justifications provided in TSTF-324 for this 92-day period and determined them to be applicable to MPS2. In response to the NRC staff's request for additional information on instrument drift data, the licensee provided instrument drift data from January 4, 2005, to July 19, 2007, which demonstrated no time dependency of the instrument drift. None of the instruments for which data was provided required recalibration. The licensee performed linear regression analysis of the drift which demonstrated that the actual drift values were well below the drift term used in the setpoint calculations for the related channels.

The staff has performed independent verification of the plant drift values presented in Appendix A, Historical Surveillance Data, to the licensee's Calculation ZPM DRIFT-042601, "Zero Power Mode Drift Analysis in Support of LBDCR 06-MP2-036," Rev 1, dated November 7, 2007, which the licensee forwarded to the NRC by letter dated November 27, 2007 (ADAMS Accession No. ML073330317). The Appendix A to ZPM DRIFT-042601 records the as-found and as-left values of about one hundred and forty surveillance readings taken between January 4, 2005, and July 19, 2007. The staff observed that around a nominal setpoint of 1.00E-04%, the licensee had maximum drift of -6.00E-6 to 6.00E-6. The record shows that none of the instruments required recalibration.

MPS2 TS SR 4.3.1.1.2 and SR 4.3.2.1.2 demonstrate operability of the bypass functions and automatic bypass removal functions associated with the nominal setpoint (1.00E-04%) evaluated in the drift evaluation discussed above. The reactor protective instrumentation functions remain unaffected by the subject SRs. Therefore, based on the evaluations presented above, the NRC staff finds the proposed TS change acceptable.

2.3.3 Revision of note (1) to TS Table 2.2-1 and note (a) to Table 3.3-1:

The proposed changes in these two notes reflect similar changes made to NUREG-1432 by the implementation of TSTF Traveler 324, Rev. 1. The licensee stated that it has reviewed the justifications provided in the TSTF for the proposed TS changes and determined the justifications to be acceptable to MPS2.

The licensee stated that the MPS2 Updated Final Safety Analysis Report (UFSAR) Sections 7.2.3.3.3, 7.2.3.3.7, 7.2.3.3.12, and Table 7.2-1, "Reactor Trip and Pretrip Setpoints," list the automatic bypass removal function setpoint as 1E-4%. UFSAR Section 7.5.2.4.1, which discusses the wide range logarithmic nuclear instrument channels, states that a bistable in the wide range logarithmic nuclear channels is used by the RPS to remove the zero power mode bypass above 1E-4% logarithmic power. The trip bypasses for reactor coolant low flow and thermal margin/low pressure are automatically reset above 1E-4% full power by the wide-range logarithmic channels. The value of 1E-4% power for the setpoint ensures these trips are available at power levels well below that required for UFSAR Chapter 14 event mitigation. Hence, the NRC staff finds the proposed setpoint change to 1E-4% logarithmic power instead of 5% rated thermal power (RTP) stated in the current MPS2 TS to be acceptable.

The term THERMAL POWER is defined in TS Section 1.0 as the total reactor core heat transfer rate to the reactor coolant and the term RATED THERMAL POWER is defined as a total reactor

core heat transfer rate to the reactor coolant of 2700 megawatt thermal. The licensee stated that the THERMAL POWER, as defined in the TS, does not provide any correlation to the plant protection required by the plant safety analysis, but the neutron flux as measured by logarithmic power does. Since the nuclear instrumentation measures the logarithmic power in percent, it is more appropriate to replace the term "THERMAL POWER" with the term "logarithmic power." Based on above considerations, the NRC staff concurs that the replacement of the term "THERMAL POWER" with the term "logarithmic power," and the term "%RTP" with "%" in the notes is appropriate.

Furthermore, the current notes, as worded, can cause confusion in implementation. The current notes require the bypass to be automatically removed when THERMAL POWER is $\geq$ 5% RTP. If the bypass is manually removed prior to the automatic removal, then a question could be raised whether verbatim compliance with TS is being met. More properly, the notes should permit the bypass to be instituted and be capable of automatic removal when below 1E-4%. The notes should ensure that the bypass automatic removal capability is available while allowing the operator to manually enable the trip function as plant conditions allow. The proposed notes satisfy this condition by specifying that the bypass shall be removed prior to raising logarithmic power to a value $\geq$ 1E-4% rather than specifying the automatic removal of the bypass. The new notes are comparable to the note in TSTF-324, Rev. 1 and the NRC staff finds the proposed TS change to be acceptable.

The NRC staff, also, finds the proposed changes of the word "Hyraulic" in Table 3.3-1 to "Hydraulic" and the word "acutation" in SR 4.3.2.1.1 to "actuation" as corrections of misspelled words and hence acceptable.

The NRC staff finds that the licensee's proposed TS changes comply with the requirements of 10 CFR 50.36.

2.4 Summary

The NRC staff finds that the proposed TS change to add ACTION 7 and ACTION 8 to Table 3.3-1 addresses permissible action times for automatic bypass removal channels which are not addressed by the current ACTION 2. Furthermore, the time durations proposed in ACTION 7 and ACTION 8 are comparable to the time durations specified in ACTION 2. The proposed revisions of SR 4.3.1.1.2 and SR 4.3.2.1.2 conform with NUREG-1432. The proposed TS changes to note (1) to TS Table 2.2-1 and note (a) to TS Table 3.3-1 conform to NUREG-1432 and TSTF-324, Rev.1. The proposed changes to correct spelling are administrative in nature. Considering the justifications provided for the TS changes, the NRC staff finds each of the proposed TS changes to be acceptable.

3.0 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 agreed with the NRC staff's assessment. The following issues were discussed with the State official:

- The licensee is incorporating TS changes that are in conformance with NUREG-1432, "Standard Technical Specifications Combustion Engineering Plants," Rev. 0, June 2004.

- The State official requested information regarding the uncertainty associated with the bypass function and automatic bypass function calibration interval of 92 days. The following uncertainties, described in the licensee's November 27, 2007, supplement, were discussed: the instrument rack calibration accuracy of ± 1% Equivalent Linear Full Scale (ELFS); instrument drift accuracy of ± 0.8% ELFS; and measurement and test equipment accuracy of ± 0.1% ELFS. The combined accuracies result in a small total uncertainty of ± 1.3% ELFS.

4.0 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 and changes SRs. 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 (72 FR 20380). 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.

5.0 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 Contributor: S. Mazumdar

Date: January 29, 2008