

March 17, 2004

Mr. David A. Christian  
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SUBJECT: MILLSTONE POWER STATION, UNIT NO. 3 - ISSUANCE OF AMENDMENT  
RE: SELECTIVE IMPLEMENTATION OF ALTERNATE SOURCE TERM (TAC  
NO. MB8137)

Dear Mr. Christian:

The Commission has issued the enclosed Amendment No. 219 to Facility Operating License No. NPF-49 for Millstone Power Station, Unit No. 3, in response to your application dated March 4, 2003, as supplemented May 13 and September 18, 2003, and February 12 and March 10, 2004.

The amendment proposes Technical Specification (TS) changes requested by Dominion Nuclear Connecticut, Inc. for Millstone Power Station, Unit No. 3. The proposed TS changes are based on a re-analysis of fuel handling accidents. The revised analysis of these accidents is based on selective implementation of alternate source term methodology.

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/**

Victor Nerses, Senior Project Manager, Section 2  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosures: 1. Amendment No. 219 to NPF-49  
2. Safety Evaluation

cc w/encls: See next page

Millstone Power Station, Unit No. 3

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Millstone Power Station, Unit No. 3

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

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Victor Nerses, Senior Project Manager, Section 2  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosures: 1. Amendment No. 219 to NPF-49  
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cc w/encls: See next page

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DOMINION NUCLEAR CONNECTICUT, INC., ET AL.

DOCKET NO. 50-423

MILLSTONE POWER STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 219

License No. NPF-49

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by the applicant dated March 4, 2003, as supplemented May 13 and September 18, 2003, and February 12 and March 10, 2004, 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. NPF-49 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 219, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated in the license. Dominion Nuclear Connecticut, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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/*

Darrell Roberts, Acting 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: March 17, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 219

FACILITY OPERATING LICENSE NO. NPF-49

DOCKET NO. 50-423

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

xii  
xv  
3/4 3-19  
3/4 3-24  
3/4 3-25  
3/4 3-27  
3/4 3-37  
3/4 3-41  
3/4 7-15  
3/4 7-18  
3/4 9-4  
3/4 9-10  
3/4 9-13  
3/4 9-14  
3/4 9-15  
B 3/4 3-2  
B 3/4 3-2a  
B 3/4.3-2b  
B 3/4 3-3  
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B 3/4 3-5  
B 3/4 3-5a  
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B 3/4 7-11  
B 3/4 7-12  
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B 3/4 7-13a  
B 3/4 7-18  
B 3/4 7-19  
B 3/4 7-20  
B 3/4 7-20a  
B 3/4 9-1a  
B 3/4 9-2  
B 3/4 9-2a  
B 3/4 9-3  
B 3/4 9-4  
B 3/4 9-7  
B 3/4 9-8

Insert

xii  
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3/4 3-19  
3/4 3-24  
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3/4 3-27  
3/4 3-37  
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B 3/4 7-13a  
B 3/4 7-18  
B 3/4 7-19  
B 3/4 7-20  
B 3/4 7-20a  
B 3/4 9-1a  
B 3/4 9-2  
B 3/4 9-2a  
B 3/4 9-3  
B 3/4 9-4  
B 3/4 9-7  
B 3/4 9-8

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 219

TO FACILITY OPERATING LICENSE NO. NPF-49

DOMINION NUCLEAR CONNECTICUT, INC.

MILLSTONE POWER STATION, UNIT NO. 3

DOCKET NO. 50-423

1.0 INTRODUCTION

By letter dated March 4, 2003, as supplemented by letters dated May 13 and September 18, 2003, and February 12 and March 10, 2004, Dominion Nuclear Connecticut, Inc. (DNC or the licensee), requested a license amendment for Millstone Power Station, Unit No. 3 (MP3). The proposed change will replace the current accident source term used in selected design-basis accident (DBA) radiological analyses with an alternative source term (AST) pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.67, "Accident Source Term." This is a selective implementation of the AST as defined in Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors." DNC also proposed revisions to several technical specifications (TSs) related to containment (CNMT) and fuel building exhaust filter system operation during refueling periods. Conforming changes will also be made to the TS bases.

The May 13 and September 18, 2003, and February 12 and March 10, 2004, letters provided clarifying information that did not change the scope of the initial application as described in the *Federal Register* notice dated July 8, 2003 (68 FR 40711), and did not change the Nuclear Regulatory Commission (NRC or Commission) staff's initial proposed no significant hazards consideration determination.

The proposed changes to TS 3.3.2 includes the following:

- (1) TS 3/4.3.3.2, Table 3.3-3, functional unit 3.c will be deleted.
- (2) TS 3/4.3.3.2, Table 3.3-3, Table notation "‡ During core alterations or movement of irradiated fuel within the containment. The provisions of Specification 3.0.3 are not applicable" will be deleted.
- (3) TS 3/4.3.3.2, Table 3.3-3, Table notation "\* MODES 1, 2, 3, 4, 5, and 6. During fuel movement within containment or the spent fuel pool." will be changed to "\* MODES 1, 2, 3, and 4. During fuel movement within containment or the spent fuel pool." for Functional Units 7.a and 7.e.

- (4) TS 3/4.3.3.2, Table 3.3-3, Action 18, the phrase "CORE ALTERATIONS and" will be deleted.
- (5) TS 3/4.3.3.2, Table 3.3-3, Action 26 will be deleted.
- (6) TS 3/4.3.3.2, Table 3.3-4, Functional Unit 3.c will be deleted.
- (7) TS 3/4.3.3.2, Table 4.3-2, Functional Unit 3.c will be deleted.
- (8) TS 3/4.3.3.2, Table 4.3-2, Table notation "# During core alteration or movement of irradiated fuel within the containment. The provisions of specification 3.0.3 are not applicable." will be deleted.
- (9) TS 3/4.3.3.2, Table 4.3-2, Table notation "\* MODES 1, 2, 3, 4, 5, and 6. During fuel movement within containment or the spent fuel pool." will be changed to "\* MODES 1, 2, 3, and 4. During fuel movement within containment or the spent fuel pool."
- (10) TS 3/4.9.9, Containment Purge and Exhaust Isolation System, changes to action b, c, d, e, and f

## 2.0 REGULATORY EVALUATION

Applicants for license amendments are required by 10 CFR 50.91 to provide an analysis of significant hazards considerations, including increases in the consequences of accidents previously evaluated. These evaluations are performed to demonstrate that, in the event of an accident, radiation doses to persons onsite and offsite will continue to meet applicable acceptance criteria. Regulatory guidance for these evaluations is provided in the form of RGs and standard review plans. Fundamental to these evaluations is the source term -- the assumptions related to the radioactive material available for release to the environment. DBA analyses have traditionally used the source term provided in the 1962 document "Calculation of Distance Factors for Power and Test Reactor Sites," TID-14844.

Since the publication of TID-14844, significant advances have been made in understanding the timing, magnitude, and chemical form of fission product releases from severe nuclear power plant accidents. Many of these insights developed out of the major research efforts started by the NRC and the nuclear industry after the accident at Three Mile Island (TMI). In 1995, the NRC published NUREG-1465, "Accident Source Terms for Light-Water Nuclear Power Plants," which utilized this research to provide more physically-based estimates of the accident source term that could be applied to the design of future light-water power reactors. These revised source terms are described in terms of radionuclide composition and magnitude, physical and chemical form, and timing of release. In December 1999, the NRC issued a new regulation, 10 CFR 50.67, "Accident Source Term," which provided a mechanism for licensed power reactors to replace the traditional accident source term used in their DBA analyses with an AST. The staff also issued regulatory guidance in using the AST in RG 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors."

A licensee seeking to use an AST is required, pursuant to 10 CFR 50.67, to apply for a license amendment. An evaluation of the consequences of affected DBAs is required to be included with the submittal. DNC's application of March 4, 2003, as supplemented by letters dated May 13, September 18, 2003 and February 12, 2004, addresses these requirements in proposing to use the AST described in RG 1.183 as the source term used in the evaluation of the radiological consequences of selected DBAs at MP3. As part of the implementation of the AST, the total effective dose equivalent (TEDE) acceptance criterion of 10 CFR 50.67 (b)(2) will replace the previous whole-body and thyroid dose guidelines of 10 CFR 100.11 and 10 CFR 50, Appendix A, General Design Criterion (GDC)-19 as the MP3 licensing basis with regard to the radiological consequences of the design-basis fuel-handling accidents (FHAs).

The NRC staff's safety evaluation (SE) provided below addresses the impact of the proposed changes on previously analyzed design-basis radiological consequences and the acceptability of the revised analysis results. The regulatory requirements for which the staff based its acceptance are the accident dose criteria in 10 CFR 50.67, as supplemented in Regulatory Position 4.4 of RG1.183 and GDC-19. Except where the licensee proposed a suitable alternative, the staff utilized the guidance in RG 1.183 in performing this review. The staff also considered relevant information in the MP3 Updated Final Safety Analysis Report (UFSAR).

The NRC staff's evaluation of the acceptability of some of the proposed TS changes is based upon 10 CFR 50.36, "Technical Specifications." Section 50.36(c)(2)(ii) of 10 CFR requires that a TS limiting condition for operation (LCO) of a nuclear reactor must be established for each item meeting one or more of the following criteria:

- Criterion 1. Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.
- Criterion 2. A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of, or presents a challenge to, the integrity of a fission product barrier.
- Criterion 3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
- Criterion 4. A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

A licensee seeking to delete a functional unit from the TS LCO must demonstrate that these Criterion no longer apply to the functional unit to be deleted.

### 3.0 TECHNICAL EVALUATION

The NRC staff reviewed the technical analyses related to the radiological consequences of design-basis FHAs at MP3 that were performed by DNC in support of this proposed license amendment. Information regarding these analyses was provided by the licensee in Attachment 1 of the March 4, 2003, submittal. The staff reviewed the assumptions, inputs, and methods used by DNC in their analyses. The staff performed independent calculations to confirm the acceptability of the DNC analyses. However, the findings of this SE are based on the descriptions of the DNC analyses and other supporting information docketed by DNC. Only docketed information was relied upon in making this safety finding. DNC determined, and the staff concurs, that the proposed changes have a potential effect on the two previously analyzed DBAs: an FHA within the CNMT, and an FHA in the fuel pool area. DNC determined the TEDE at the exclusion area boundary (EAB) for the worst two-hour period and the 0-30 day low population zone (LPZ) TEDE. DNC also evaluated the potential TEDE to control room personnel from these events.

### 3.1 FHA Radiological Consequence Analysis

This accident analysis postulates that a spent fuel assembly (SFA) is dropped during refueling and strikes an adjacent assembly during the fall. The affected assemblies are those with the highest inventory of fission products of the 193 assemblies in the core. All of the fuel rods in the dropped assembly and 50 fuel rods in the struck assembly (i.e., effectively 1.19 assemblies) are conservatively assumed to rupture, releasing the radionuclides within the fuel rod to the fuel pool or reactor cavity water. Volatile constituents of the core fission product inventory migrate from the fuel pellets to the gap between the pellets and the fuel rod clad during normal power operations. The fission product inventory in the fuel rod gap of the damaged fuel rods is assumed to be instantaneously released because of the accident. Fission products released from the damaged fuel are decontaminated by passage through the overlaying water in the reactor cavity or spent fuel pool (SFP) depending on their physical and chemical form. DNC assumed no decontamination for noble gases, a decontamination factor of 200 for radioiodines, and retention of all aerosol and particulate fission products. DNC assumed that 100 percent of the fission products released from the reactor cavity or SFP are released to the environment in two hours without any credit for filtration, holdup, or dilution. Since the revised assumptions and inputs are identical for the FHA within CNMT, and the FHA outside CNMT, the results of the two events are identical.

DNC considered the dose to control room operators due to these FHAs. In their analyses, DNC assumed that the control room unfiltered in-leakage was 300 cubic feet per minute. This value was derived from an engineering analysis described in the March 4, 2003 submittal. DNC has not performed integrated leakage testing to confirm this leakage value. On June 12, 2003, the NRC staff issued Generic Letter (GL) 2003-01, "Control Room Habitability." This GL identifies NRC staff concerns regarding the reliability of current surveillance testing to identify and quantify control room in-leakage, and requests licensees to confirm the most limiting unfiltered in-leakage into their control room envelope. On August 11, 2003, DNC provided a 60-day response to the GL. In this response, DNC stated that the required testing and data analysis cannot be completed in time to provide the information requested within the 180 days specified in the GL. DNC stated it would complete the testing and provide the requested information by May 31, 2004. The NRC staff has determined that there is reasonable assurance that the MP3 control room will be habitable during a DBA FHA, and therefore, DNC's proposed amendment may be reviewed for approval prior to the NRC staff's review of the DNC final response to the GL. The NRC staff bases this determination on (1) the relative magnitude of the infiltration assumed in the DNC analyses, (2) the results of the periodic surveillance testing that has been performed and, (3) the licensee's engineering analysis. The NRC staff's approval of this amendment does not relieve DNC of completing testing and providing the information requested in GL 2003-01 by May 31, 2004 and does not imply that the NRC staff would necessarily find the analysis in this amendment acceptable as a response to information request 1(a) in GL 2003-01.

The assumptions found acceptable to the NRC staff are presented in Table 1 of the DNC's submittal dated March 4, 2003. The EAB, LPZ, and control room doses estimated by DNC for the FHAs were found to be acceptable. The staff performed independent calculations and confirmed the DNC conclusions.

## 3.2 Technical Specifications

3.2.1 The licensee proposed changes to TS 3/4.3.3.2, "Engineered Safety Features Actuation System," related to removing the automatic isolation of the containment purge system during refueling outages as follows.

3.2.1.1 TS 3.3.2, Table 3.3-3, "Engineered Safety Features Actuation System Instrumentation" proposed changes: Functional Unit 3.c will be deleted. The licensee states:

Technical Specification 3.3.2, Table 3.3-3, functional unit 3.c, "Containment Isolation, Purge Isolation," (page 3/4 3-19) requires a Containment purge valve isolation signal to be OPERABLE during plant operation in Mode 5, and during plant operation in Mode 6 while CORE ALTERATIONS or the movement of irradiated fuel are occurring within containment. This signal is generated on increasing airborne radioactivity level within containment.

The licensee proposes to delete functional unit 3.c in TS 3.3.2, Table 3.3-3. The NRC staff notes that the containment purge and purge isolation signal is not a form of instrument or a process variable, design feature or operational restriction that is an initial condition of a DBA or transient that either assumes the failure of, or presents a challenge to, the integrity of a fission product barrier; nor is it a structure, system or component that is part of a primary success path. Therefore, Criterion 1, 2 and 3 of 10 CFR 50.36(c)(2)(ii) do not apply.

Functional unit 3.c, which provides the operability criteria for the instrumentation that automatically actuates the containment purge isolation valves, has been shown not to be risk significant to public health and safety by either operating experience or probabilistic safety assessment. The subject instrumentation is no longer credited to ensure that the radiological dose criteria are met for the EAB, LPZ, and control room. Thus, the operability of the instrumentation is not risk significant; therefore, Criterion 4 of 10 CFR 50.36(c)(2)(ii) does not apply.

Based on the above, the NRC staff considers that the proposed deletion of functional unit 3.c in TS 3.3.2, Table 3.3-3 is acceptable.

3.2.1.2 TS 3.3.2, Table 3.3-3, Table notation '‡' During core alterations or movement of irradiated fuel within the containment. The provisions of Specification 3.0.3 are not applicable" will be deleted. The licensee states:

Table notation '‡' of Technical Specification 3.3.2, Table 3.3-3, (page 3/4 3-24) limits the applicability of functional unit 3.c., "Containment Isolation - Purge Isolation." Table notation '‡' limits the applicability of functional unit 3.c for Mode 6 operation such that it only applies during core alterations or during the movement of irradiated fuel within containment. Table notation '‡' also notes that the provisions of specification 3.0.3 are not applicable.

Since functional unit 3.c is proposed for deletion as discussed in 3.2.1.1 above, the NRC staff agrees with DNC and considers the deletion to be an editorial change and finds the proposed change to be acceptable.

3.2.1.3 TS 3.3.2, Table 3.3-3, Table notation “\* MODES 1, 2, 3, 4, 5, and 6. During fuel movement within containment or the spent fuel pool.” will be changed to “\* MODES 1, 2, 3, and 4. During fuel movement within containment or the spent fuel pool.” for functional units 7.a and 7.e. The licensee states:

Table notation “\*” of Technical Specifications 3.3.2, Table 3.3-3 (page 3/4 3-24) defines the applicability for functional unit 7.a, “Control Building Isolation - Manual Actuation,” and functional unit 7.e, “Control Building Isolation - Control Building Inlet Ventilation Radiation.”

During operation in Modes 5 and 6, the facility accident analyses only postulate FHAs and boron dilution events. Technical Specification 3.3.5, “Instrumentation, Shutdown Margin Monitor,” Technical Specification 3.1.1.2, “Reactivity Control Systems, Shutdown Margin - Cold Shutdown - Loops Not Filled,” Technical Specification 3.9.1.1, “Refueling Operations, Boron Concentration,” and Technical Requirements Manual Technical Requirement 3.1.2.1, “Boration Systems, Flow Path-Shutdown,” provide the appropriate controls for mitigating boron dilution events.

Under the revised FHA Analyses, the potential for a radioactive release only exists during the movement of fuel within the containment or the spent fuel pool. Since this table notation already states “During fuel movement within containment or the spent fuel pool,” retention of Modes 5 and 6 within table notation “\*” is unnecessary.

The NRC staff agrees with DNC and considers that this is an editorial change. The staff finds the proposed change acceptable.

3.2.1.4 TS 3.3.2, Table 3.3-3, Action 18, the phrase “CORE ALTERATIONS and” will be deleted. The licensee states:

Technical Specification 3.3.2, Table 3.3-3, Action 18 (page 3/4 3-24) defines the required actions if the Control Building Inlet Ventilation Radiation functional unit (Table 3.3-3, functional unit 7.e) does not meet the minimum channels OPERABLE requirements for this functional unit.

Action 18 requires that “with the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 7 days. After 7 days, or if no channels are OPERABLE, immediately suspend CORE ALTERATIONS and fuel movement, if applicable, and be in HOT STANDBY within the next 6 hours and in Cold Shutdown within the following 30 hours.”

The FHA Inside Containment Analysis only assumes that a[n] FHA occurs during the movement of fuel. Since Action 18 already requires the suspension of fuel movement, and consistent with the revised FHA analyses, the phrase “CORE ALTERATIONS and” is proposed to be deleted.

The NRC staff agrees that the proposed change is consistent with the revised FHA analyses and agrees that deleting the phrase is considered to be an editorial change. Therefore, the staff finds this change is acceptable.

3.2.1.4 TS 3.3.2, Table 3.3-3, Action 26 will be deleted. The licensee states:

Technical Specification 3.3.2, Table 3.3-3, Action 26 (page 3/4 3-25) defines the required actions if the Containment Isolation, Purge Isolation functional unit (Table 3.3-3, functional unit 3.c) does not meet the minimum channels OPERABLE requirements for this functional unit.

Action 26 requires that “with less than the Minimum Channels OPERABLE requirement, the containment purge and exhaust valves shall be maintained closed. Fuel movement and CORE ALTERATIONS may continue. The containment radiation monitoring channels required for containment area purge and exhaust isolation are not required to be OPERABLE during the performance of Type A containment leakage rate tests.”

Since functional unit 3.c is proposed for deletion, and Action 26 is only applicable to functional unit 3.c, Action 26 (page 3/4 3-25) will also be deleted and replaced with the word “DELETED”.

The NRC staff notes that since Action 26 only applies to functional unit 3.c, which is proposed for deletion as discussed in 3.2.1.1 above, this is considered an editorial change and the NRC staff finds the proposed change acceptable.

3.2.1.5 TS 3.3.2, Table 3.3-4, Functional Unit 3.c will be deleted.

The NRC staff notes that functional unit 3.c, in Table 3.3-4 provides the nominal trip setpoint and allowable value for containment isolation, purge isolation functional unit. Since the containment isolation, purge isolation functional unit is proposed for deletion as discussed in 3.2.1.1 above, the NRC staff agrees with DNC to delete this functional unit in Table 3.3-4 and considers this an editorial change. The staff finds the proposed change acceptable.

3.2.1.6 TS 3.3.2, Table 4.3-2, Functional Unit 3.c will be deleted.

The NRC staff notes that functional unit 3.c, in Table 4.3-2 provides the surveillance requirements for the containment isolation, purge isolation functional unit. Since the containment isolation, purge isolation functional unit is proposed for deletion as discussed in 3.2.1.1 above, the NRC staff agrees with DNC to delete this functional unit in Table 4.3-2 and considers this an editorial change. The staff finds the proposed change acceptable.

3.2.1.7 TS 3.3.2, Table 4.3-2, Table notation “# During core alteration or movement of irradiated fuel within the containment. The provisions of specification 3.0.3 are not applicable.” will be deleted. The licensee states:

Table notation “#” of Technical Specification 3.3.2, Table 4.3-2, (page 3/4 3-41), limits the applicability for functional unit 3.c, “Containment Isolation - Purge Isolation.” This table notation limits the applicability for Mode 6 operation to “During core alterations or movement of irradiated fuel within containment.” This table notation also notes that the provisions of Specification 3.0.3 are not applicable.

Since table notation “#” is only used to modify the requirements for Table 4.3-2, functional unit 3.c, which is proposed for deletion, table notation “#” will be deleted.

The NRC staff agrees with DNC to delete this notation from Table 4.3-2 and considers this an editorial change. The staff finds the proposed change acceptable.

3.2.1.8 TS 3.3.2, Table 4.3-2, Table notation “\* MODES 1, 2, 3, 4, 5, and 6. During fuel movement within containment or the spent fuel pool.” will be changed to “\* MODES 1, 2, 3, and 4. During fuel movement within containment or the spent fuel pool.” The licensee states:

Table notation “\*” of Technical Specification 3.3.2, Table 4.3-2 (page 3/4 3-41) defines the applicability for functional unit 7.a., “Control Building Isolation - Manual Actuation,” and functional unit 7.e, “Control Building Isolation - Control Building Inlet Ventilation Radiation.” Table notation “\*” defines the applicability for the affected functional unit(s) as MODES 1, 2, 3, 4, 5, and 6, and during fuel movement within containment or the spent fuel pool.

With the revised FHA analyses (see Attachment 1 [of licensee’s March 4, 2003 submittal]), the only events which are postulated to occur during operation in Modes 5 and 6 include the FHAs and boron dilution events. Technical Specification 3.3.5, “Instrumentation, Shutdown Margin Monitor,” Technical Specifications 3.1.1.2, “Reactivity Control Systems, Shutdown Margin - Cold Shutdown - Loops Not Filled,” Technical Specification 3.9.1.1, “Refueling Operations, Boron Concentration,” and Technical Requirements Manual Technical Requirement 3.1.2.1, “Boration Systems, Flow Path-Shutdown,” provide the appropriate controls for mitigating boron dilution events.

Under the revised FHA analyses, the potential for a radioactive release only exists during the movement of fuel within the containment or the spent fuel pool. Since this table notation already states “During fuel movement within containment or the spent fuel pool,” retention of Modes 5 and 6 within table notation “\*” is unnecessary.

Revised table notation “\*” will state:

“MODES 1, 2, 3, and 4. During fuel movement within containment or the spent fuel pool.”

The NRC staff agrees with the DNC evaluation and considers that this is an editorial change. The staff finds the proposed change acceptable.

3.2.2 The licensee proposed the following changes related to the Control Room Emergency Air Filtration and Pressurization systems:

3.2.2.1 TS Section 3/4.7.7, "Control Room Emergency Ventilation System"

1. Actions b. and c.: Delete the word "assemblies" in two places
2. Actions d. and e.: Delete "Core Alterations and" (in two places) and delete "assemblies" (in two places).
3. Footnote \*: Delete footnote concerning SR 4.7.7.e.2, concerning pressure testing of the cable spreading room.

The deletion of the word "assemblies" in Actions b., c., d., and e. is editorial and acceptable. The licensee is also requesting approval to remove the terminology "Core Alterations and" from Actions d. and e. The licensee states that since the FHA inside the containment is only considered to occur during movement of fuel, the terminology is not needed. The staff also concurs that the terminology "Core Alterations and" may be removed from the TS without impacting the control room operator's health and safety. Removal of Footnote "\*" is an administrative change based on the fact that the first entry into Mode 4 after the seventh refueling has been completed. As such, the exception granted by this note is no longer valid.

3.2.2.2 TS Section 3/4.7.8, "Control Room Envelope Pressurization System"

1. Actions b., c., and d.: Delete the word "assemblies" in three places
2. Actions e. and f.: Delete "Core Alterations and" (in two places) and "assemblies" (in two places)
3. Footnote \*: Delete footnote concerning SR 4.7.8.c.2 and SR 4.7.8.c.3 concerning pressure testing of the cable spreading room.

The deletion of the word "assemblies" in Actions b., c., d., e., and f is editorial and acceptable. The licensee is also requesting approval to remove the terminology "Core Alterations and" from Actions e. and f. The licensee states that since the FHA inside the containment is only considered to occur during movement of fuel, the terminology is not needed. The staff also concurs that the terminology "Core Alterations and" may be removed from the TS without impacting the control room operator's health and safety. Removal of Footnote "\*" is an administrative change based on the fact that the first entry into Mode 4 after the seventh refueling has been completed. As such, the exception granted by this note is no longer valid.

3.2.3 The licensee proposed changes related to Containment Isolation features as follows:

TS Section 3/4.9.4, "Containment Building Penetrations"

Limiting Condition of Operation (LCO) 3.9.4 Changes:

Item a: "The equipment access hatch closed and held in place by a minimum of four bolts" is changed to the following:

- a. The equipment access hatch shall be either:
  1. closed and held in place by a minimum of four bolts, or
  2. Open under administrative control and capable of being closed and held in place by a minimum of four bolts.

Item b2: The footnote (\*) is added to define "administrative controls"

Item c2: "Be capable of being closed by an OPERABLE automatic containment purge and exhaust isolation valve" is changed to "Be capable of being closed under administrative control\*\*"

Applicability: Delete the phrase "CORE ALTERATIONS or" and delete the adjective "irradiated" in the term "irradiated fuel." The word "building" is also being added after "containment".

Action: Delete the phrase "CORE ALTERATIONS or" and delete the adjective "irradiated" in the term "irradiated fuel."

Surveillance Requirement 4.9.4.b - This SR is deleted. (Testing of purge and exhaust valves)

The licensee states that the "revised FHA Analyses assumes that all of the radioactive material which could be released to the containment atmosphere exits the containment within two (2) hours of accident initiation with no credit taken for the containment boundary closure." The licensee proceeds to state that "Consistent with the philosophy of minimizing dose released to the environment, administrative controls will be established to ensure that the equipment access hatch, and other containment penetrations which provide direct access to the outside atmosphere, can be closed within 30 minutes of accident initiation as a defense-in-depth measure to minimize the consequences of a[n] FHA."

The containment penetrations being open during refueling is partially compensated by the licensee implementing administrative controls (proposed by the licensee as a footnote to TS 3.9.4) to close the containment in 30 minutes using designated personnel after an FHA. The staff determined that these administrative controls provide an important element of defense-in-depth, and with these administrative controls in place, it will assure that the licensee will manage the consequences of an FHA in a manner that will afford adequate protection to the public.

The licensee also states that the "containment atmosphere is monitored during normal and transient operations of the reactor plant by the containment structure particulate and gas monitor located in the upper level of the Auxiliary Building or by grab sampling." The licensee states that since this proposed change will allow containment penetrations to be open under administrative control for extended periods of time during refueling outages, routine grab samples of the containment atmosphere, the equipment access hatch and personnel access hatch will be required. The staff agrees that the use of existing monitors along with the use of grab samples taken at the appropriate locations would provide sufficient monitoring to comply with the provisions of GDC 64.

The staff also considered the implications of the proposed change on GDC 61, which requires appropriate containment, confinement, and filtering of radioactive contaminants in areas where fuel is stored. By incorporating into the TS the licensee's commitment to administrative controls that close the equipment hatch, terminate the purge, and isolate the containment, the NRC staff considers the licensee satisfies the requirements of GDC 61, and these controls will minimize any potential release to the public.

Based on the above evaluation, the NRC staff considers that the proposed changes to TS Section 3/4.9.4 are acceptable

3.2.4 The licensee proposed changes to TS 3/4.9.9, "Containment Purge and Exhaust Isolation System" related to removing the automatic isolation of the containment purge system during refueling outages as follows:

TS 3/4.9.9 "Containment Purge and Exhaust Isolation System." The entire section is deleted and the page is marked "intentionally left blank."

Removal of automatic isolation of the purge system is partially compensated by adding a footnote to TS 3.9.4, discussed below, which requires administrative controls to close the containment in 30 minutes using designated personnel after an FHA. The staff has determined that these administrative controls provide an important element of defense-in-depth, and with these administrative controls in place, it will assure that the licensee will manage the consequences of an FHA in a manner that will afford adequate protection to the public. As such, the staff finds that the removal of automatic isolation is acceptable with the addition of administrative controls to effect closure. The staff reviewed the request to delete TS Section 3/4.9.9 and agrees, as further explained below, that the TS section may be deleted since the purge isolation system is not credited in the DBA analysis.

The NRC staff notes that the Containment Purge and Exhaust Isolation System (CPEIS) is not a form of instrument or a process variable, design feature or operational restriction that is an initial condition of a DBA or transient that either assumes the failure of, or presents a challenge to, the integrity of a fission product barrier. Therefore, Criterion 1, and 2 of 10 CFR 50.36(c)(2)(ii) do not apply

The licensee has shown, on the basis of their FHA design-basis analysis that operation of the CPEIS is not required to satisfy the dose values of 10 CFR 50.67. Thus, the system is not on the primary success path for a DBA. As such, Criterion 3 of 10 CFR 50.36(c)(2)(ii) does not apply.

Since the purge isolation system is not credited in the DBA analysis, it is not considered to be risk-significant to public health and safety by either operating experience or probabilistic safety assessment; therefore, Criterion 4 of 10 CFR 50.36(c)(2)(ii) does not apply.

The NRC concurs that the TS section may be deleted, because none of the criteria of 10 CFR 50.36(c)(2)(ii) apply.

3.2.5 The licensee proposed the following change related to the Fuel Building Exhaust Filter System:

TS 3/4.9.12, Fuel Building Exhaust Filter System. This technical specification is deleted in its entirety. Pages are to be marked: "intentionally left blank."

The licensee has shown, on the basis of their FHA design-basis analysis that the fuel building exhaust filter system is not required to satisfy the dose values of 10 CFR 50.67. Thus, the system is not on the primary success path for a DBA. As such, Criterion 3 of 10 CFR 50.36 does not require an LCO to be placed in the TS. The fuel-handling DBA does have an assumption as to the time at which the accident occurs. The licensee is restricted from moving the fuel before this time based upon the requirements of the decay heat time specification TS 3/4.9.3, which limits the movement of irradiated fuel until the reactor has been subcritical for 100 hours. Since movement of fuel prior to this time is restricted by the TS, the inclusion of an LCO to satisfy the requirements of Criterion 2 of 10 CFR 50.36, which requires an LCO for process variables upon which a design-basis analysis depends, is not required. The staff concurs that the licensee may remove the section from their TS as the licensee has proposed.

The staff's finding of acceptability for this item is only associated with the removal of the item from the TS. Prior to removing any equipment or changing any procedure affecting the operation of engineering safeguards equipment, the licensee must use the appropriate modification process (10 CFR 50.59 or 10 CFR 50.90). This will assure that the facility complies with all other commitments including GDC's, as stated in 10 CFR 50 Appendix A or their equivalents, that the appropriate changes are made to the facility UFSAR and that defense-in-depth and safety margins are adequate. The licensee has stated that "procedural guidance will be available for closing fuel building area atmosphere boundary penetrations if a[n] FHA occurs inside the fuel building." The use of this procedural guidance will be implemented "as a defense-in-depth measure to minimize actual releases to the outside atmosphere much lower than assumed in the AST FHA analyses dose calculations". The staff concurs that the development and implementation of procedural guidance will increase defense-in-depth and facilitate managing releases during an FHA. As such, it will provide additional assurance of protection to public health and safety.

#### 4.0 SUMMARY

As described above, the staff reviewed the assumptions, inputs, and methods used by DNC to assess the radiological impacts of the proposed license amendment at MP3. The staff finds that DNC used analysis methods and assumptions consistent with the conservative regulatory requirements and guidance identified in Section 2.0 above. The staff compared the doses estimated by DNC to the applicable criteria identified in Section 2.0. The staff finds, with reasonable assurance, that the licensee's estimates of the EAB, LPZ, and control room doses will continue to comply with these criteria. Therefore, the proposed license amendment is acceptable with regard to the radiological consequences of postulated DBAs.

This licensing action is considered a selective implementation of the AST. With this approval, the selected characteristics of the AST and TEDE criteria become the design basis for the DBA

FHA within the CNMT and outside the CNMT. This approval is limited to this specific implementation. Subsequent modifications, based on the selected characteristics incorporated into the design basis by this action, may be possible under the provisions of 10 CFR 50.59. However, use of other characteristics of an AST, and changes to previously approved AST characteristics, requires prior staff approval pursuant to 10 CFR 50.67. The selected characteristics of the AST and the TEDE criteria may not be extended to other aspects of the plant design or operation without prior NRC review, pursuant to 10 CFR 50.67. All future FHA radiological analyses performed to demonstrate compliance with regulatory requirements shall address the selected characteristics of the AST and the TEDE criteria as described in the MP3 design basis.

The proposed changes to the TSs identified in Section 3.2 were reviewed by the staff and found to be in compliance with the NRC's regulations. Thus, the licensee may implement these changes to their TSs. The licensee has the responsibility to evaluate any modifications to plant configuration they make as a result of the TS revisions to their plant equipment, operating procedures, and surveillance programs. This evaluation must assure compliance with design criteria such as the GDC's in Appendix A or 10 CFR 50 or their equivalents, the UFSAR, and other plant commitments and demonstrate that safety margins and that defense-in-depth are maintained. The licensee's submittal demonstrates that the FHA analyses meets the requirements of 10 CFR 50.67. This compliance, along with 10 CFR 50.36, establishes the regulatory basis upon which the TS changes can be made.

The NRC staff acknowledges receipt of the conforming changes that were made to the TS bases as provided in the licensee letter dated March 10, 2004.

## 5.0 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.

## 6.0 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 (68 FR 40711). 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.

## 7.0 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.

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