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

Dominion

AUG 12 2002

Docket No. 50-336
B18730

RE: 10 CFR 50.90

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

Millstone Nuclear Power Station, Unit No. 2
License Basis Document Change Request (LBDCR) 2-13-02
Electrical Power Systems - D.C. Distribution

## Introduction

Pursuant to 10 CFR 50.90, Dominion Nuclear Connecticut, Inc. (DNC), hereby proposes to amend Operating License DPR-65 by incorporating the attached proposed changes into the Millstone Unit No. 2 Technical Specifications. DNC is proposing to change Technical Specification 3.8.2.3, "Electrical Power Systems, D.C. Distribution - Operating," Technical Specification 3.8.2.4, "Electrical Power Systems, D.C. Distribution - Shutdown," and Technical Specification 3.8.2.5, "Electrical Power Systems, D.C. Distribution Systems (Turbine Battery) - Operating." The proposed changes will provide enhanced readability and usability by revising these technical specifications using standard technical specification terminology. The proposed changes will also provide additional criteria for determining battery operability upon restoration from a recharge, or equalizing charge. The Bases for these Technical Specifications will also be modified to reflect these changes as applicable.

Attachment 1 provides a discussion of the proposed changes and the Safety Summary. Attachment 2 provides the Significant Hazards Consideration. Attachment 3 provides the marked-up version of the appropriate pages of the current Technical Specifications. Attachment 4 provides the retyped pages of the Technical Specifications.

## Environmental Considerations

DNC has evaluated the proposed changes against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.22. DNC has determined that the proposed changes meet the criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and as such, has determined

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that no irreversible consequences exist in accordance with 10 CFR 50.92(b). This determination is based on the fact that the changes are being proposed as an amendment to a license issued pursuant to 10 CFR 50 that changes a requirement with respect to use of a facility component located within the restricted area, as defined by 10 CFR 20, or that changes a surveillance requirement, and that the amendment request meets the following specific criteria.

(i) The proposed changes involve no Significant Hazards Consideration.

As demonstrated in Attachment 2, the proposed changes do not involve a Significant Hazards Consideration.

(ii) There is no significant change in the types or significant increase in the amounts of any effluent that may be released off-site.

The proposed changes will revise the Technical Specification LCO, action, and surveillance requirements associated with the D.C. electrical power subsystems. However, the operability requirements for these components and systems will remain the same. The proposed changes are consistent with the design basis of the plant. The proposed changes will not result in an increase in power level, will not increase the production of radioactive waste and by-products, and will not alter the flowpath or method of disposal of radioactive waste or by-products. Therefore, the proposed changes will not increase the type and amounts of effluents that may be released off-site.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed changes will not result in changes in the configuration of the facility. There will be no change in the level of controls or methodology used for processing radioactive effluents or the handling of solid radioactive waste. There will be no change to the normal radiation levels within the plant. Therefore, there will be no increase in individual or cumulative occupational radiation exposure resulting from the proposed change.

Conclusions

The proposed changes were evaluated and we have concluded that they are safe. The proposed changes do not involve an adverse impact on public health and safety (see the Safety Summary provided in Attachment 1) and do not involve a Significant Hazards Consideration pursuant to the provisions of 10 CFR 50.92 (see the Significant Hazards Consideration provided in Attachment 2).

Site Operations Review Committee and Nuclear Safety Assessment Board

The Site Operations Review Committee and Nuclear Safety Assessment Board have reviewed and concurred with the determinations.

Schedule

We request issuance of this amendment for Millstone Unit No. 2 prior to July 31, 2003, with the amendment to be implemented within 90 days of issuance. This will allow Millstone Unit No. 2 to use the proposed changes during the next refueling outage currently scheduled in early October 2003.

State Notification

In accordance with 10 CFR 50.91(b), a copy of this License Amendment Request is being provided to the State of Connecticut.

There are no regulatory commitments contained within this letter.

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

Very truly yours,

DOMINION NUCLEAR CONNECTICUT, INC.

J. Alan Price
Site Vice President - Millstone

Sworn to and subscribed before me

this 12 day of August, 2002

Notary Public

WM. E. BROWN
NOTARY PUBLIC
MY COMMISSION EXPIRES MAR. 31, 2006

My Commission expires

Attachments (4)

cc: Next Page

cc: H. J. Miller, Region I Administrator
R. B. Ennis, NRC Senior Project Manager, Millstone Unit No. 2
NRC Senior Resident Inspector, Millstone Unit No. 2

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

Docket No. 50-336
B18730

Attachment 1

Millstone Nuclear Power Station, Unit No. 2

License Basis Document Change Request 2-13-02
Electrical Power Systems - D.C. Distribution
Discussion of Proposed Changes and Safety Summary

License Basis Document Change Request (LBDCR) 2-13-02
Electrical Power Systems - Direct Current (D.C.) Distribution
Discussion of Proposed Changes and Safety Summary

Introduction

Dominion Nuclear Connecticut, Inc. (DNC), hereby proposes to amend Operating License DPR-65 by incorporating the attached proposed changes into the Millstone Unit No. 2 Technical Specifications. DNC is proposing to change Technical Specification 3.8.2.3, "Electrical Power Systems, D.C. Distribution - Operating," Technical Specification 3.8.2.4, "Electrical Power Systems, D.C. Distribution - Shutdown," and Technical Specification 3.8.2.5, "Electrical Power Systems, D.C. Distribution Systems (Turbine Battery) - Operating." The proposed changes will provide enhanced readability and usability by revising these technical specifications using standard technical specification terminology. The proposed changes will also provide additional criteria for determining battery operability upon restoration from a recharge, or equalizing charge. The Bases for these Technical Specifications will also be modified to reflect these changes as applicable. Each proposed change will be discussed.

Technical Specification Changes

Specification 3.8.2.3

1. The Limiting Condition of Operation (LCO) for Technical Specification 3.8.2.3 will be revised using standard technical specification terminology such that the LCO focuses on the requirements for an operable Direct Current (D.C.) bus train. The existing LCO states:

   "The following D.C. bus trains shall be energized and OPERABLE with at least one tie breaker between bus trains open:

   TRAIN "A" consisting of 125-volt D.C. bus 201A, 125-volt D.C. battery bank 201A, and at least 400 ampere charging capacity.

   TRAIN "B" consisting of 125-vol D.C. bus 201B, 125-volt D.C. battery bank 201B, and at least 400 ampere charging capacity."

   a. The phrases "energized and" and "with at least one tie breaker between bus trains open:" are prerequisites for a D.C. bus to be operable. The existing (and proposed) LCO require that each D.C. bus be operable. Therefore, this information is redundant within the LCO and is proposed to be relocated to the Bases for this specification, as this is the appropriate location for this information.

   b. The following information will be deleted from the LCO for Technical Specification 3.8.2.3:

      "TRAIN "A" consisting of 125-volt D.C. bus 201A, 125-volt D.C. battery

bank 201A, and at least 400 ampere charging capacity.

TRAIN "B" consisting of 125-volt D.C. bus 201B, 125-volt D.C. battery bank 201B, and at least 400 ampere charging capacity."

With the proposed changes to the LCO to focus the requirements of the LCO on operability using standard technical specification terminology, a specific discussion of what constitutes both Train "A" and Train "B" is unnecessary. A generic discussion of what constitutes an operable D.C. bus train, which is equivalent and applicable to both 125-volt D.C. bus Train A and Train B, will be added to the Bases of this specification. This discussion will state:

"Each 125-volt D.C. bus train consists of its associated 125-volt D.C. bus, a 125-volt D.C. battery bank, and a battery charger with at least 400 ampere charging capacity. To demonstrate operability of a 125-volt D.C. bus train, these components must be energized and capable of performing their required safety functions. Additionally, at least one tie breaker between the 125-volt D.C. bus trains must be open for a 125-volt D.C. bus train to be considered OPERABLE."

Additionally, the proposed change to delete a specific discussion of what constitutes both Train "A" and Train "B" is consistent with the existing LCO for Technical Specification 3.8.2.4, "Electrical Power Systems, D.C. Distribution - Shutdown," which provides a non-train specific discussion of the minimum equipment required for an operable 125-volt D.C. bus train.

c. The phrase "The following D.C. bus trains," from the LCO for Technical Specification 3.8.2.3 will be replaced with the phrase "125-volt D.C. bus Train "A" and 125-volt D.C. bus Train "B" electrical power subsystems," consistent with the previously discussed changes for relocation of a specific discussion as to the components of an operable D.C. bus train to the Technical Specification Bases, such that the LCO focuses on the concept of operability. The resultant LCO will still require both 125-volt D.C. bus Train "A" and Train "B" to be operable. A period will be added after the term "OPERABLE" to complete the sentence. These are non-technical changes.

Therefore, the revised Technical Specification LCO will state: "125-volt D.C. bus Train "A" and 125-volt D.C. bus Train "B" electrical power subsystems shall be OPERABLE."

2. Action "a." of Technical Specification 3.8.2.3 will be revised consistent with the LCO such that the terminology used to identify a D.C. bus train is consistent throughout this specification. The term "train" will be added after the phrase "With one 125-volt D.C. bus." Additionally, the phrase "inoperable bus" will be replaced with the phrase "inoperable 125-volt D.C. bus train." These are non-technical changes.

3. Action "b." of Technical Specification 3.8.2.3 will be deleted. This action statement requires that if a 125-volt D.C. battery and/or its charger are inoperable, restore the inoperable battery and/or charger to operable status within 2 hours or be in COLD SHUTDOWN within the 36 hours. This action does not provide any additional guidance or requirements beyond that provided by the proposed Action "a." of this specification given the proposed changes to the LCO for this specification.

   Upon incorporation of the proposed changes discussed in items 1 and 2, if one of the required 125-volt D.C. batteries and/or its associated charger are inoperable, the associated 125-volt D.C. bus train would be inoperable, and Action "a." would also require that the inoperable D.C. battery and/or its associated charger be restored to operable status within 2 hours or be in COLD SHUTDOWN within the next 36 hours.

   Consistent with the deletion of Technical Specification 3.8.2.3, action "b.," the label for the remaining action, "a.," will be deleted. This is a non-technical change.

4. Surveillance Requirement 4.8.2.3.1 will be revised consistent with the proposed changes discussed in items 1 and 2 by deleting the phrase "and energized with at least one tie breaker open," since this information is criteria which in part constitutes the definition of an operable D.C. bus, and therefore is unnecessary information within the surveillance requirement. Additionally, the phrase "125-volt," will be added before the phrase "D.C. bus train," consistent with the terminology proposed for use throughout this specification.

5. Surveillance Requirement 4.8.2.3.2 will be revised consistent with the proposed change in items 1 and 2 by inserting the term "D.C." prior to the phrase "battery bank and charger." Additionally, the phrase "of Train "A" and Train "B,"" will be added after the phrase "battery bank and charger."

6. Surveillance Requirements 4.8.2.3.2.a and 4.8.2.3.2.b will be modified for readability by the reformatting of the existing acceptance criteria into a tabular format. The specific criteria associated with these surveillance requirements will not be changed, each will be provided within a column of a new table, Table 4.8-1, "Battery Cell Parameters" (see below).

   The rows of Table 4.8-1 will identify each of the four (4) parameters surveilled within these two (2) existing surveillance requirements. The column associated with the acceptance criteria of Surveillance Requirement 4.8.2.3.2.a will be labeled "Category A: Limits for each Designated Pilot Cell." The column associated with the criteria of Surveillance Requirement 4.8.2.3.2.b will be labeled "Category B: Limits for each Connected Cell." Minor grammatical changes will also be made to the acceptance criteria within the table for ease of readability. Therefore, Table 4.8-1 shall read:

Table 4.8-1
Battery Cell Parameters

| Parameter | Category A: Limits For Each Designated Pilot Cell | Category B: Limits For Each Connected Cell |
|---|---|---|
| Electrolyte Level | Between the minimum and maximum level indication marks [(a)] | Not required. |
| Cell Voltage | ≥ 2.08 Volts | ≥ 2.08 Volts under float charge |
| Specific Gravity [(b)(c)] | ≥ 1.200 (Corrected to 77° F) | ≥ 1.200 (Corrected to 77° F) |
| Battery Voltage | ≥ 125 Volts (Overall voltage) | Not required. |

7. Consistent with the reformatting of the existing acceptance criteria for Surveillance Requirements 4.8.2.3.2.a and 4.8.2.3.2.b into tabular format, these two surveillances will be reworded. Surveillance Requirements 4.8.2.3.2.a will state, "By verifying at least once per 7 days that the battery cell parameters meet Table 4.8-1 Category A limits." Surveillance Requirements 4.8.2.3.2.b will state "By verifying at least once per 92 days the battery cell parameters meet Table 4.8-1 Category B limits."

8. Table 4.8-1 and Table 4.8-2, "Turbine Battery Cell Parameters" (see item 8, Specification 3.8.2.5) are proposed to be modified by the addition of three (3) notes. These three notes provide additional criteria for demonstrating battery operability following the completion of a battery recharge or equalizing charge.

   a. The first note will modify the Category A electrolyte level acceptance criteria. This note, note (a), will state:

      "It is acceptable for the electrolyte level to temporarily increase above the specified maximum during an equalizing charge provided it is not overflowing. Electrolyte level readings will be verified to meet the Category A limits within 7 days of completing an equalizing charge."

      This proposed change is also consistent with the guidance of IEEE 450-1980, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations" Appendix A3., "Effect of Electrolyte Level," which states "The apparent electrolyte level depends on the charging rate because gas generated during charging causes an apparent expansion of the electrolyte. If the electrolyte is at or near the high level mark on float voltage, it may rise above that mark on charge. This condition is not objectionable. It does dictate, however, that electrolyte level readings should be made only after the battery has been at float voltage for at least 72 h (hours)."

The vendor for the Millstone Unit No. 2 125-volt D.C. batteries recommends that electrolyte levels (as well as specific gravity measurements) be taken approximately 120 hours (+/- 48 hours) following the completion of an equalizing charge. Operating experience for Millstone Unit No. 2 supports this recommendation. To allow adequate time for the battery electrolyte level to equalize and adequate time to verify electrolyte level after a stable electrolyte level has been reached, 7 days is provided to complete the verification of the Category A limits.

As part of this proposed change, a discussion will be added to Millstone Unit No. 2 Technical Specifications Bases Section 3/4.8, "Electrical Power Systems." The discussion will state:

"Footnote (a) to Technical Specification Tables 4.8-1 and 4.8-2 permits the electrolyte level to be above the specified maximum level for the Category A limits during equalizing charge, provided it is not overflowing. Because of the internal gas generation during the performance of an equalizing charge, specific gravity gradients and artificially elevated electrolyte levels are produced which may exist for several days following completion of the equalizing charge. These limits ensure that the plates suffer no physical damage, and that adequate electron transfer capability is maintained in the event of transient conditions. In accordance with the recommendations of IEEE 450-1980, electrolyte level readings should be taken only after the battery has been at float charge for at least 72 hours.

Based on vendor recommendations and past operating experience, seven (7) days has been determined a reasonable timeframe for the 125-volt D.C. batteries electrolyte level to stabilize and to provide sufficient time to verify battery electrolyte levels are within the Category A limits."

b. The second note will modify both the Category A and Category B specific gravity acceptance criteria. This note, note (b), will state:

"Corrected for electrolyte temperature and level. Level correction is not required, however, when battery charging is < 5 amps when on float charge."

IEEE 450-1980 Appendix A1 states that "During the recharge of a battery, high specific gravity sulfuric acid is generated. This acid will sink towards the bottom of the cell, resulting in a specific gravity gradient which produces an incorrect low reading at the top of the cell. Therefore it is normal for the state of charge as indicated by the specific gravity at the top of the cell to lag behind that indicated by the ampere-hours of recharge current. Charging voltage limits do not ordinarily allow enough recharge current to provide mixing action. Therefore this gradient may persist until corrected by diffusion."

A battery charging current of 5 amps when on float charge was selected consistent with the plant's design basis (see justification in item c. below).

As part of this proposed change, a discussion will be added to Millstone Unit No. 2 Technical Specifications Bases Section 3/4.8, "Electrical Power Systems." The discussion will state:

"Footnote (b) to Technical Specification Tables 4.8-1 and 4.8-2 requires that level correction is not required when battery charging current is < 5 amps on float charge. This current provides, in general, an indication of overall battery condition."

c. The third note will also modify both the Category A and Category B specific gravity acceptance criteria. This note, note (c), will state:

"A battery charging current of < 5 amps when on float charge is acceptable for meeting specific gravity limits following a battery recharge, for a maximum of 7 days. When charging current is used to satisfy specific gravity requirements, specific gravity of each connected cell shall be measured prior to expiration of the 7 day allowance."

Verifying battery float current while on float charge is used to determine the state of charge of the battery. Float charge is the condition in which the charger is supplying the continuous charge required to overcome the internal losses of a battery and maintain the battery in a charged state. The float current requirements are based on the float current indicative of a charged battery. Use of float current to determine the state of charge of the battery is consistent with IEEE 450-1980. The 7 day frequency is consistent with IEEE 450-1980, as well as vendor recommendations.

A battery charging current of 5 amps when on float charge was selected consistent with the plant's design basis. A discussion of the basis for this value, which is conservative with respect to the manufacturer's specifications for determining when the battery is charged, is provided herein.

For Millstone Unit No. 2, equalizing charges are normally performed as required by IEEE 450-1980 paragraph 6.7 following the completion of either a performance test (IEEE 450-1980, paragraph 5.2) or service test (IEEE 450-1980, paragraph 5.3). During these charges, equalizing voltage is maintained at 141.0 $\pm$ 1.0 volts D.C. as recommended by the battery manufacturer. This voltage is required to be applied for at least 120 hours, as specified by the manufacturer.

The vendor technical manual states, "...when 3 successive hourly measurements are the same, adequate charge has been provided and the charge may be terminated." Thus, at the termination of an equalizing charge, when stabilized individual cell voltages (ICVs) and charging current have been established and the criteria for ICVs contained with the Technical Specification is satisfied, the battery is at a full state of charge regardless of the specific gravities for the cell. Therefore, the battery is capable of meeting the requisite ampere-hour load profile and its intended

Technical Specification function.

As part of this proposed change, a discussion will be added to Millstone Unit No. 2 Technical Specifications Bases Section 3/4.8, "Electrical Power Systems." The discussion will state:

"Footnote (c) to Technical Specification Tables 4.8-1 and 4.8-2 states that level correction is not required when battery charging current is < 5 amps on float charge. This current provides, in general, an indication of overall battery condition. Because of specific gravity gradients that are produced during the recharging process, delays of several days may occur while waiting for the specific gravity measurement for determining the state of charge. This footnote allows the float charge current to be used as an alternative to specific gravity to show OPERABILITY of a battery for up to seven (7) days following the completion of a battery equalizing charge. Each connected cells specific gravity must be measured prior to expiration of the 7 day allowance."

9. Surveillance Requirement 4.8.2.3.2.c.1 will be revised by adding the phrase, "that could degrade battery performance," after the phrase, "physical damage or deterioration." The presence of physical damage or deterioration does not necessarily represent a failure of this surveillance requirement, provided an evaluation determines that the physical damage or deterioration does not affect the operability of the battery (its ability to perform its design function). The proposed change incorporates the changes identified in TSTF-38[1], Revision 0, which DNC proposes to adopt for Millstone Unit No. 2. The proposed change is also consistent with a license amendment issued to docket nos. 50-315 and 50-316 on April 26, 2002.

Specification 3.8.2.4

1. The Limiting Condition of Operation for Technical Specification 3.8.2.4 will be revised using standard technical specification terminology such that the LCO focuses on the requirements for an operable D.C. bus train. The existing LCO states:

   "As a minimum, the following D.C. electrical equipment and bus shall be energized and OPERABLE:

   1 - 125-volt D.C. bus, and

   1 - 125-volt battery bank and at least 400 ampere charging capacity supplying the above D.C. bus."

   The LCO is proposed to be replaced with the following text:

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[1] TSTF-38, "Revise Visual Surveillance of Batteries to Specify Inspection is for Performance Degradation" Revision 0, approved September 18, 1996.

"One 125-volt D.C. bus train electrical power subsystem shall be OPERABLE."

The proposed changes to the LCO focus the requirements of the LCO on operability using standard technical specification terminology. A specific discussion of what constitutes a 125-volt D.C. bus train is unnecessary within the LCO. As discussed within item 1, Specification 3.8.2.3, a generic discussion of what constitutes an operable D.C. bus train, which is equivalent and applicable to the equipment specified in the LCO for Technical Specification 3.8.2.4, is proposed to be added to the Bases of this specification.

2. The action statement for Technical Specification 3.8.2.4 will be revised by replacing the phrase, "less than the above complement of D.C. electrical equipment and bus energized and OPERABLE," with the phrase "no 125-volt D.C. bus trains OPERABLE," consistent with the changes to the LCO of this specification for relocation of specific information to the Technical Specification Bases. The proposed change is also consistent with the actions required by the existing action statement.

3. Surveillance Requirement 4.8.2.4.1 will be revised by adding the term "train" after the phrase, "125-volt D.C. bus," and by deleting the phrase "and energized." Surveillance Requirement 4.8.2.4.2 will be revised by adding the phrase "D.C. bus train," after the phrase "125-volt."

   The proposed changes are consistent with previously discussed changes, as well as consistent with the proposed changes to the LCO for this specification, such that the terminology used to identify a D.C. bus train is consistent throughout the specification and such that this specification is consistent with previously discussed relocation of information which constitutes an operable 125-volt D.C. bus train to the Technical Specification Bases.

<u>Specification 3.8.2.5</u>

1. The Limiting Condition of Operation (LCO) for Technical Specification 3.8.2.5, "Electrical Power Systems, D.C. Distribution Systems (Turbine Battery) - Operating," will be revised using standard technical specification terminology such that the LCO focuses on the requirements for an operable D.C. bus train. The existing LCO states:

   "The following D.C. electrical power subsystem shall be OPERABLE and energized:

   The Turbine Battery D.C. electrical power subsystem, consisting of 125-volt D.C. bus 201D and 125-volt D.C. battery bank 201D."

   a. The phrases "and energized:" and "The Turbine Battery D.C. electrical power subsystem, consisting of 125-volt D.C. bus 201D and 125-volt D.C. battery bank 201D," are prerequisites for the Turbine Battery D.C. electrical power subsystem to be operable. The existing (and proposed) LCO require that the Turbine Battery D.C. electrical power subsystem be

operable. Therefore, this information is redundant within the LCO and is proposed to be relocated to the Bases for this specification, as this is the appropriate location for this information.

The Bases discussion will state:

"The Turbine Battery D.C. electrical power subsystem consists of 125-volt D.C. bus 201D and 125-volt D.C. battery bank 201D. To demonstrate OPERABILITY of this subsystem, these components must be energized and capable of performing their required safety functions."

b. The term "following" will be replaced with the phrase, "Turbine Battery 125-volt," consistent with the previously discussed changes for relocation of a specific discussion as to the components of an operable D.C. bus train to the Bases for this specification. A period will be added after the term "OPERABLE" to complete the sentence.

Therefore, the revised LCO for Technical Specification 3.8.2.5 will state: "The Turbine Battery D.C. electrical power subsystem shall be OPERABLE."

2. Action "a." of Technical Specification 3.8.2.5 will be revised consistent with the proposed changes to the LCO such that the terminology used to identify the Turbine Battery D.C. electrical power subsystem is consistent throughout this specification. The phrase, "125-volt D.C. bus," will be replaced with the phrase, "Turbine Battery 125-volt D.C. electrical power subsystem." Additionally, the phrase, "inoperable bus," will be replaced with the term "subsystem." These are non-technical changes.

3. Action "b." of Technical Specification 3.8.2.5 will be deleted. This action statement requires that if the Turbine Battery electrical power subsystem 125-volt D.C. battery is inoperable, restore the inoperable battery to operable status within 7 days or be in HOT SHUTDOWN within the 12 hours. This action does not provide any additional guidance or requirements beyond that provided by the proposed Action "a." of this specification given the proposed changes to the LCO for this specification.

   Upon incorporation of the proposed changes discussed in items 1 and 2 of this section, if 125-volt D.C. battery bank 201D is inoperable, the Turbine Battery electrical power subsystem would be inoperable, and Action "a." would also require that 125-volt D.C. battery bank 201D be restored to operable status within 7 days or be in COLD SHUTDOWN within the next 12 hours.

   Consistent with the deletion of Technical Specification 3.8.2.5, action "b.," the label for the remaining action, "a.," will be deleted. This is a non-technical change.

4. Surveillance Requirement 4.8.2.5.1 will be revised by deleting the phrase "and energized." This surveillance requirement currently requires that the operability of 125-volt D.C. bus 201D be verified operable, and the proposed changes to the

Bases for this specification require that 125-volt D.C. bus 201D be energized before declaring the Turbine Battery electrical power subsystem operable. Therefore, the phrase, "and energized," is redundant and can be deleted.

5. Surveillance Requirement 4.8.2.5.2 will be revised for consistency by adding the words "D.C." before the phrase, "battery bank 201D." The word "The" at the beginning of this specification is unnecessary and will be deleted. These are non-technical changes.

6. Surveillance Requirements 4.8.2.5.2.a and 4.8.2.5.2.b will be modified for readability by the reformatting of the existing acceptance criteria into a tabular format. The specific criteria associated with these surveillance requirements will not be changed, each will be provided within a column of a new table, Table 4.8-2, "Turbine Battery Cell Parameters" (see below).

   The rows of Table 4.8-2 will identify each of the four (4) parameters surveilled within these two (2) existing surveillance requirements. The column associated with the acceptance criteria of Surveillance Requirement 4.8.2.5.2.a will be labeled "Category A: Limits For Each Designated Pilot Cell." The column associated with the criteria of Surveillance Requirement 4.8.2.5.2.b will be labeled "Category B: Limits For Each Connected Cell." Minor grammatical changes will be made to the acceptance criteria within the table for ease of readability. Therefore, Table 4.8-2 will read:

Table 4.8-2
Turbine Battery Cell Parameters

| Parameter | Category A: Limits For Each Designated Pilot Cell | Category B: Limits For Each Connected Cell |
|---|---|---|
| Electrolyte Level | Between the minimum and maximum level indication marks [(a)] | Not required. |
| Cell Voltage | ≥ 2.08 Volts | ≥ 2.08 Volts under float charge |
| Specific Gravity [(b)(c)] | ≥ 1.200 (Corrected to 77° F) | ≥ 1.200 (Corrected to 77° F) |
| Battery Voltage | ≥ 125 Volts (Overall Voltage) | Not required. |

7. Consistent with the reformatting of the existing acceptance criteria for Surveillance Requirements 4.8.2.5.2.a and 4.8.2.5.2.b into tabular format, these two surveillances will be reworded. Surveillance Requirements 4.8.2.5.2.a will state, "By verifying at least once per 7 days that the battery cell parameters meet Table 4.8-2 Category A limits." Surveillance Requirements 4.8.2.5.2.b will state "By verifying at least once per 92 days that the battery cell parameters meet Table 4.8-2 Category B limits."

8. As previously discussed in item 8, Specification 3.8.2.3, Table 4.8-2 will be revised by the inclusion of three notes which provide additional criteria for demonstrating battery operability following the completion of a battery charge or equalizing charge. The three notes will state:

   "(a). It is acceptable for the electrolyte level to temporarily increase above the specified maximum during an equalizing charge provided it is not overflowing. Electrolyte level readings will be verified to meet the Category A limits within 7 days of completing an equalizing charge.

   (b). Corrected for electrolyte temperature and level. Level correction is not required, however, when battery charging is < 5 amps when on float charge.

   (c). A battery charging current of < 5 amps when on float charge is acceptable for meeting specific gravity limits following a battery recharge, for a maximum of 7 days. When charging current is used to satisfy specific gravity requirements, specific gravity of each connected cell shall be measured prior to expiration of the 7 day allowance."

9. Surveillance Requirement 4.8.2.5.2.c.1 will be revised by adding the phrase, "that could degrade battery performance," after the phrase, "physical damage or deterioration." The presence of physical damage or deterioration does not necessarily represent a failure of this surveillance requirement, provided an evaluation determines that the physical damage or deterioration does not affect the operability of the battery (its ability to perform its design function). The proposed change incorporates the changes identified in TSTF-38, Revision 0, which DNC proposes to adopt for Millstone Unit No. 2. The proposed change is also consistent with a license amendment issued to docket nos. 50-315 and 50-316 on April 26, 2002.

Technical Specification Bases

As previously discussed, the Technical Specification Bases shall be modified consistent with the proposed changes to Technical Specifications 3.8.2.3, 3.8.2.4, and 3.8.2.5.

Additionally, a discussion will be added to Bases Section 3/4.8, "Electrical Power Systems" to support the proposed changes relating to physical damage or abnormal deterioration for Surveillance Requirements 4.8.2.3.2.c.1 and 4.8.2.5.2.c.1. This discussion will state:

"Surveillance Requirements 4.8.2.3.2.c.1 and 4.8.2.5.2.c.1 provide for visual inspection of the battery cells, cell plates, and battery racks to detect any indication of physical damage or abnormal deterioration that could potentially degrade battery performance."

Safety Summary

The proposed changes to Millstone Unit No. 2 Technical Specifications 3.8.2.3, 3.8.2.4, and 3.8.2.5 do not pose a condition adverse to safety and do not create any adverse safety consequences. The rationale for this conclusion is provided below.

The proposed changes to Technical Specifications 3.8.2.3, 3.8.2.4, and 3.8.2.5 for relocation of information which defines the operability of a D.C. electrical power subsystem to the Bases will not adversely affect the availability or operation of the equipment used to mitigate the design basis accidents. The operability requirements for the D.C. electrical power subsystems addressed by Technical Specifications 3.8.2.3, 3.8.2.4, and 3.8.2.5 will remain the same. There will be no adverse effect on plant operation and the plant response to any design basis accident will not change. Therefore, there will be no adverse impact on public health and safety and the proposed changes are safe.

The deletion of Technical Specification 3.8.2.3, Action "b." and Technical Specification 3.8.2.5, Action "b." will not result in any change as to the required actions if the conditions of the associated LCO cannot be met. The same components will still required to be operable and the required response if any of the affected components cannot perform their safety function(s) will not change. There will be no adverse effect on plant operation and the plant response to any design basis accident will not change. Therefore, there will be no adverse impact on public health and safety and the proposed changes are safe.

The proposed changes for reformatting Surveillance Requirements 4.8.2.3.2.a, 4.8.2.3.2.b, 4.8.2.5.2.a, and 4.8.2.5.2.b into a tabular format will not result in any changes as to the criteria of the surveillances requirements. The scope and periodicity of each surveillance requirement will remain the same. There will be no adverse effect on plant operation, and the plant response to any design basis accident will not change. Therefore, there will be no adverse impact on public health and safety and the proposed changes are safe.

The proposed changes to Surveillance Requirements 4.8.2.3.2.c.1 and 4.8.2.5.2.c.1 to add additional criteria relating to physical damage or deterioration and its impact on battery performance will not affect the ability of any battery to perform its required safety functions. The proposed change will only allow physical damage or deterioration which does not impact the operability of the battery to not be immediately corrected. There will be no adverse effect on plant operation and the plant response to any design basis accident will not change. Therefore, there will be no adverse impact on public health and safety and the proposed changes are safe.

The proposed changes to Surveillance Requirements 4.8.2.3.2.a, 4.8.2.3.2.b, 4.8.2.5.2.a, and 4.8.2.5.2.b to provide additional criteria for demonstrating battery operability following a recharge or equalizing charge will not have an adverse affect on battery operability. The proposed changes provide adequate assurance that the affected battery is operable and capable of performing its required safety functions. The proposed changes are consistent with standard industry practices for determining the operability of a battery following a recharge, or equalizing charge. There will be no adverse effect on plant operation and the plant response to any design basis accident will not change. Therefore, there will be no adverse impact on public health and safety and the proposed changes are safe.

Conclusion

The proposed changes have no effect on how any of the associated systems or components function to mitigate the consequences of design basis accidents. In addition, the proposed changes will not result in any significant change in, or new approach to, plant operation. The proposed changes will not adversely affect public safety. Therefore, the proposed changes are safe.

Docket No. 50-336
B18730

Attachment 2

Millstone Nuclear Power Station, Unit No. 2

License Basis Document Change Request 2-13-02
Electrical Power Systems - D.C. Distribution
Significant Hazards Consideration

License Basis Document Change Request (LBDCR) 2-13-02
Electrical Power Systems - Direct Current (D.C.) Distribution
Significant Hazards Consideration

Description of License Amendment Request

Dominion Nuclear Connecticut, Inc. (DNC), hereby proposes to amend Operating License DPR-65 by incorporating the attached proposed changes into the Millstone Unit No. 2 Technical Specifications. DNC is proposing to change Technical Specification 3.8.2.3, "Electrical Power Systems, D.C. Distribution - Operating," Technical Specification 3.8.2.4, "Electrical Power Systems, D.C. Distribution - Shutdown," and Technical Specification 3.8.2.5, "Electrical Power Systems, D.C. Distribution Systems (Turbine Battery) - Operating." The Bases for these Technical Specifications will also be modified to reflect these changes as applicable. A brief summary of the proposed changes is provided below. Refer to Attachment 1 of this submittal for a detailed discussion of the proposed changes.

Technical Specification Changes

- The Electrical Power Systems Direct Current (D.C.) Distribution Technical Specifications (Operating, Shutdown, and Turbine Battery) shall be modified using standard Technical Specification terminology to focus the Limiting Condition of Operation for each specification by relocating criteria for determining operability to the associated Technical Specification Bases.

- Minor grammatical and non-technical changes will be made to the Electrical Power Systems D.C. Distribution Technical Specifications to improve readability and usability.

- The Electrical Power Systems D.C. Distribution Technical Specifications shall be modified by providing additional criteria to be used in determining battery operability following a recharge, or equalizing charge.

Basis for No Significant Hazards Consideration

In accordance with 10 CFR 50.92, DNC has reviewed the proposed changes and has concluded that they do not involve a Significant Hazards Consideration (SHC). The basis for this conclusion is that the three criteria of 10 CFR 50.92(c) are not compromised. The proposed changes do not involve an SHC because the changes do not:

1. *Involve a significant increase in the probability or consequences of an accident previously evaluated.*

   The proposed Technical Specifications changes for relocation of information

which defines the operability of the D.C. electrical power subsystems will not create any new failure modes, will not cause an accident to occur, and will not result in any change in the operation of accident mitigation equipment. Relocation of this information will not have an adverse impact on any accident initiators. Proper operation of the D.C. electrical power subsystems will still be verified. As a result, the design basis accidents will remain the same postulated events described in the Millstone Unit No. 2 Final Safety Analysis Report, and the consequences of the design basis accidents will remain the same. Therefore, the proposed changes will not increase the probability or consequences of an accident previously evaluated.

The proposed changes for deletion of redundant actions requirements and reformatting of surveillance requirements associated with the D.C. electrical power subsystems will not cause an accident to occur and will not result in any change in the operation of associated accident mitigation equipment. The proposed changes will not have an adverse impact on any accident initiators. Proper operation of the D.C. electrical power subsystems will still be verified. As a result, the design basis accidents will remain the same postulated events described in the Millstone Unit No. 2 Final Safety Analysis Report, and the consequences of the design basis accidents will remain the same. Therefore, the proposed changes will not increase the probability or consequences of an accident previously evaluated.

The proposed changes to the surveillance requirements for the D.C. electrical power subsystems to add additional criteria relating to physical damage or deterioration and its impact on battery performance do not affect any existing accident initiators or precursors. The proposed changes will not create any adverse interactions with other systems that could result in initiation of a design basis accident. Proper operation of the D.C. electrical power subsystems batteries will still be verified. As a result, the design basis accidents will remain the same postulated events described in the Millstone Unit No. 2 Final Safety Analysis Report, and the consequences of the design basis accidents will remain the same. Therefore, the proposed changes will not increase the probability or consequences of an accident previously evaluated.

The proposed changes to the surveillance requirements for the D.C. electrical power subsystems to add additional criteria relating to demonstrating battery operability following a recharge or equalizing charge will not have an adverse affect on battery operability. The proposed changes will not create any adverse interactions with other systems that could result in initiation of a design basis accident. Proper operation of the D.C. electrical power subsystems batteries will still be verified. As a result, the design basis accidents will remain the same postulated events described in the Millstone Unit No. 2 Final Safety Analysis Report, and the consequences of the design basis accidents will remain the same. Therefore, the proposed changes will not increase the probability or consequences of an accident previously evaluated.

2. *Create the possibility of a new or different kind of accident from any accident previously evaluated.*

   The proposed changes do not create any new or different accident initiators or precursors. The proposed changes do not create any new failure modes for the components of the D.C. electrical power subsystems and do not affect the interaction between the D.C. electrical power subsystems and any other system. The proposed changes do not alter the plant configuration (no new or different type of equipment will be installed) or require any new or unusual operator actions. The proposed changes do not alter the way any structure, system, or component functions and do not alter the manner in which the plant is operated. The components of the D.C. electrical power subsystems will continue to function as before, and will continue to be declared inoperable if their ability to perform a safety function is impaired. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. *Involve a significant reduction in a margin of safety.*

   The proposed changes will not reduce the margin of safety since they have no impact on any accident analysis assumption. The proposed changes do not decrease the scope of equipment currently required to be operable or subject to surveillance testing, nor do the proposed changes affect any instrument setpoints or equipment safety functions. The Technical Specifications will continue to require that a battery be declared inoperable if physical damage or abnormal deterioration of the cells, cell plates, or racks that would degrade battery performance is observed. The proposed changes do not alter the requirements of the Technical Specification with respect to the capacity of any battery. The effectiveness of Technical Specifications will be maintained since the changes will not alter the operation of any component or system, nor will the proposed changes affect any safety limits or safety system settings which are credited in a facility accident analysis. Therefore, there is no reduction in a margin of safety.

Docket No. 50-336
B18730

Attachment 3

Millstone Nuclear Power Station, Unit No. 2

License Basis Document Change Request 2-13-02
Electrical Power Systems - D.C. Distribution
Marked-Up Pages

License Basis Document Change Request 2-13-02
Electrical Power Systems - D.C. Distribution

List of Affected Pages

| Technical Specification Section Number | Title of Section | Affected Page with Amendment Number |
|---|---|---|
| 3.8.2.3 | Electrical Power Systems, D.C. Distribution - Operating | 8-8, Amendment No. 180<br>8-9, Amendment No. 180 |
| 3.8.2.4 | Electrical Power Systems, D.C. Distribution - Shutdown | 8-10, Amendment No. 197 |
| 3.8.2.5 | Electrical Power Systems, D.C. Distribution Systems (Turbine Battery) - Operating | 8-11, Amendment No. 188<br>B 8-1d, Amendment No. 261 |

~~10/14/94~~

LIMITING CONDITION FOR OPERATION

replace with "125-volt D.C. bus Train A and 125-volt D.C. bus Train B electrical power subsystems"

3.8.2.3 The following D.C. bus trains shall be energized and OPERABLE, with at least one tie breaker between bus trains open:

Delete

TRAIN "A" consisting of 125-volt D.C. bus 201A, 125-volt D.C. battery bank 201A and at least 400 ampere charging capacity.

TRAIN "B" consisting of 125-volt D.C. bus 201B, 125-volt D.C. battery bank 201B, and at least 400 ampere charging capacity.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Delete

replace with "inoperable 125-volt DC bus train"

a. With one 125-volt D.C. bus train inoperable, restore the inoperable bus to OPERABLE status within 2 hours or be in COLD SHUTDOWN within the next 36 hours.

Delete

b. With a 125-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger to OPERABLE status within 2 hours or be in COLD SHUTDOWN within the next 36 hours.

SURVEILLANCE REQUIREMENTS

Delete

Delete

4.8.2.3.1 Each 125-volt D.C. bus train shall be determined OPERABLE and energized with at least one tie breaker open at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.3.2 Each 125-volt D.C. battery bank and charger of Train A and Train B shall be demonstrated OPERABLE:

Replace with Insert A

a. At least once per 7 days by verifying that:

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

**Insert A to Page 3/4 8-8 and 3/4 8-9**

a. By verifying at least once per 7 days that the battery cell parameters meet Table 4.8-1 Category A limits.

b. By verifying at least once per 92 days the battery cell parameters meet Table 4.8-1 Category B limits.

SURVEILLANCE REQUIREMENTS (Continued) Replace with Insert A

2. The pilot cell specific gravity, corrected to 77°F, is ≥ 1.200,

3. The pilot cell voltage is ≥ 2.08 volts, and

4. The overall battery voltage is ≥ 125 volts.

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is ≥ 2.08 volts under float charge, and

2. The specific gravity, corrected to 77°F, of each cell is ≥ 1.200.

c. At least once per 18 months by verifying that:

1. The cells, cell plates and battery racks show no visual indication of physical damage or deterioration, "that could degrade battery performance"

2. The cell-to-cell and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material, and

3. The battery charger will supply at least 400 amperes at a minimum of 130 volts for at least 12 hours.

d. At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual emergency loads for 8 hours when the battery is subjected to a battery service test.

e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. This performance discharge test may be performed in lieu of the battery service test.

**Insert B (New Page 3/4 8-9a)**

Table 4.8-1
Battery Cell Parameters

| Parameter | Category A: Limits For Each Designated Pilot Cell | Category B: Limits For Each Connected Cell |
|---|---|---|
| Electrolyte Level | Between the minimum and maximum level indication marks [a] | Not required. |
| Cell Voltage | ≥ 2.08 Volts | ≥ 2.08 Volts under float charge |
| Specific Gravity [b][c] | ≥ 1.200 (Corrected to 77° F) | ≥ 1.200 (Corrected to 77° F) |
| Battery Voltage | ≥ 125 Volts (Overall voltage) | Not required. |

(a). It is acceptable for the electrolyte level to temporarily increase above the specified maximum during an equalizing charge provided it is not overflowing. Electrolyte level readings will be verified to meet the Category A limits within 7 days of completing an equalizing charge.

(b). Corrected for electrolyte temperature and level. Level correction is not required, however, when battery charging is < 5 amps when on float charge.

(c). A battery charging current of < 5 amps when on float charge is acceptable for meeting specific gravity limits following a battery recharge, for a maximum of 7 days. When charging current is used to satisfy specific gravity requirements, specific gravity of each connected cell shall be measured prior to expiration of the 7 day allowance.

## ELECTRICAL POWER SYSTEMS

## D.C. DISTRIBUTION - SHUTDOWN

### LIMITING CONDITION FOR OPERATION

replace with "One 125-volt D.C. bus train electrical power subsystem shall be OPERABLE"

3.8.2.4 As a minimum, the following D.C. electrical equipment and bus shall be energized and OPERABLE:

1 - 125-volt D.C. bus, and

1 - 125-volt battery bank and at least 400 ampere charging capacity supplying the above D.C. bus.

APPLICABILITY: MODES 5 and 6.

ACTION: replace with "No 125-volt D.C. bus trains OPERABLE"

With less than the above complement of D.C. electrical equipment and bus energized and OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes or movement of irradiated fuel assemblies.

### SURVEILLANCE REQUIREMENTS

Delete

4.8.2.4.1 The above required 125-volt D.C. bus train shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.4.2 The above required 125-volt D.C. bus train battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION SYSTEMS (TURBINE BATTERY) — OPERATING

LIMITING CONDITION FOR OPERATION

Replace with "Turbine Battery 125-volt"

3.8.2.5 The following D.C. electrical power subsystem shall be OPERABLE, and energized: Delete Delete Delete

The Turbine Battery D.C. electrical power subsystem, consisting of 125-volt D.C. bus 201D and 125-volt D.C. battery bank 201D.

APPLICABILITY: MODES 1, 2 & 3

ACTION: Delete

Replace with "Turbine Battery 125-volt D.C. electrical power subsystem"

a. With the 125-volt D.C. bus inoperable, restore the inoperable bus to OPERABLE status within 7 days or be in HOT SHUTDOWN within the next 12 hours.

replace with "subsystem"

b. With the 125-volt D.C. battery inoperable, restore the inoperable battery to OPERABLE status within 7 days or be in HOT SHUTDOWN within the next 12 hours. Delete

SURVEILLANCE REQUIREMENTS Delete

4.8.2.5.1 Verify 125-volt D.C. bus 201D is OPERABLE and energized at least once per 7 days. Delete

4.8.2.5.2 The 125-volt D.C. battery bank 201D shall be demonstrated OPERABLE:

replace with Insert C

a. At least once per 7 days by verifying that:

1. The electrolyte level of each pilot cell is between the minimum and maximum level indications marks, and
2. The pilot cell specific gravity, corrected to 77°F, is ≥ 1.200, and
3. The pilot cell voltage is ≥ 2.08 volts, and
4. The overall battery voltage is ≥ 125 volts.

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is ≥ 2.08 volts under float charge, and
2. The specific gravity, corrected to 77°F, of each cell is ≥ 1.200.

c. At least once per 18 months by verifying that:

1. The cells, cell plates, and battery racks that could degrade battery performance show no visual indication of physical damage or deterioration, and
2. The cell-to-cell and terminal connections are clean, tight, free of corrosion, and coated with anti-corrosion material.

**Insert C to Page 3/4 8-11**

a. By verifying at least once per 7 days that the battery cell parameters meet Table 4.8-2 Category A limits.

b. By verifying at least once per 92 days the battery cell parameters meet Table 4.8-2 Category B limits.

**Insert D (new Page 3/4 8-12)**

Table 4.8-2

Turbine Battery Cell Parameters

| Parameter | Category A: Limits For Each Designated Pilot Cell | Category B: Limits For Each Connected Cell |
|---|---|---|
| Electrolyte Level | Between the minimum and maximum level indication marks [(a)] | Not required. |
| Cell Voltage | ≥ 2.08 Volts | ≥ 2.08 Volts under float charge |
| Specific Gravity [(b)(c)] | ≥ 1.200 (Corrected to 77° F) | ≥ 1.200 (Corrected to 77° F) |
| Battery Voltage | ≥ 125 Volts (Overall Voltage) | Not required. |

(a). It is acceptable for the electrolyte level to temporarily increase above the specified maximum during an equalizing charge provided it is not overflowing. Electrolyte level readings will be verified to meet the Category A limits within 7 days of completing an equalizing charge.

(b). Corrected for electrolyte temperature and level. Level correction is not required, however, when battery charging is < 5 amps when on float charge.

(c). A battery charging current of < 5 amps when on float charge is acceptable for meeting specific gravity limits following a battery recharge, for a maximum of 7 days. When charging current is used to satisfy specific gravity requirements, specific gravity of each connected cell shall be measured prior to expiration of the 7 day allowance.

SURVEILLANCE REQUIREMENTS (Continued)

d. At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual loads for 1 hour when the battery is subjected to a battery service test.

e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. This performance discharge test may be performed in lieu of the battery service test.

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown of the facility and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criteria 17 of Appendix "A" to 10 CFR 50.

The required circuits between the offsite transmission network and the onsite Class 1E distribution system (Station Busses 24C, 24D, and 24E) that satisfy Technical Specification 3.8.1.1.a (MODES 1, 2, 3, and 4) consist of the following circuits from the switchyard to the onsite electrical distribution system:

a. Station safeguards busses 24C and 24D via the Unit 2 Reserve Station Service Transformer and bus 24G; and

b. Station bus 24E via the Unit 3 Reserve Station Service Transformer or Unit 3 Normal Station Service Transformer (energized with breaker 13T and associated disconnect switches open) and bus 34A or 34B.

If the plant configuration will not allow Unit 3 to supply power to Unit 2 from the Unit 3 Reserve Station Service Transformer or Unit 3 Normal Station Service Transformer within 3 hours, Unit 2 must consider the second offsite source inoperable and enter the appropriate action statement of Technical Specification 3.8.1.1 for an inoperable offsite circuit.

This is consistent with the GDC 17 requirement for two offsite sources. Each offsite circuit is required to be available in sufficient time following a loss of all onsite alternating current power supplies and the other offsite electric power circuit to assure that specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded. The first source is required to be available within a few seconds to supply power to safety related equipment following a loss of coolant accident. The second source is not required to be available immediately and no accident is assumed to occur concurrently with the need to use the second source. However, the second source is required to be available in sufficient time to assure the reactor remains in a safe condition. The 3 hour time period is based on the Millstone Unit No. 2 Appendix R analysis. This analysis has demonstrated that the reactor will remain in a safe condition (i.e., the pressurizer will not empty) if charging is restored within 3 hours.

In MODES 1 through 4 (Technical Specification 3.8.1.1), the Unit 2 Normal Station Service Transformer can be used as the second offsite source after the main generator disconnect links have been removed and the backfeed lineup established.

The required circuit between the offsite transmission network and the onsite Class 1E distribution system (Station Busses 24C, 24D, and 24E) that satisfies Technical Specification 3.8.1.2.a (MODES 5 and 6) consists of the following circuit from the switchyard to the onsite electrical distribution system:

a. Station safeguards bus 24C or 24D via the Unit 2 Reserve Station Service Transformer and bus 24G; or

b. Station safeguards bus 24C or 24D via the Unit 2 Normal Station Service Transformer and bus 24A or 24B after the main generator disconnect links have been removed and the backfeed lineup established; or

c. Station bus 24E via the Unit 3 Reserve Station Service Transformer or Unit 3 Normal Station Service Transformer (energized with breaker 13T and associated disconnect switches open) and bus 34A or 34B.

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When the plant is operating with the main generator connected to the grid, the output of the main generator will normally be used to supply the onsite Class 1E distribution system. During this time the required offsite circuits will be in standby, ready to supply power to the onsite Class 1E distribution system if the main generator is not available. When shut down, only one of the offsite circuits will normally be used to supply the onsite Class 1E distribution system. The other offsite circuit, if required, will be in standby. Verification of the required offsite circuits consists of checking control power to the breakers (breaker indicating lights), proper breaker position for the current plant configuration, and voltage indication as appropriate for the current plant configuration.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the accident analyses and are based upon maintaining at least one of each of the onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite A.C. source.

Technical Specification 3.8.1.1 Action Statements b and c provide an allowance to avoid unnecessary testing of the other OPERABLE diesel generator. If it can be determined that the cause of the inoperable diesel generator does not exist on the OPERABLE diesel generator, Surveillance Requirement 4.8.1.1.2.a.2 does not have to be performed. If the cause of inoperability exists on the other OPERABLE diesel generator, the other OPERABLE diesel generator would be declared inoperable upon discovery, Action Statement e would be entered, and appropriate actions will be taken. Once the failure is corrected, the common cause failure no longer exists, and the required Action Statements (b, c, and e) will be satisfied.

If it cannot be determined that the cause of the inoperable diesel generator does not exist on the remaining diesel generator, performance of Surveillance Requirement 4.8.1.1.2.a.2, within the allowed time period, suffices to provide assurance of continued OPERABILITY of the diesel generator. If the inoperable diesel generator is restored to OPERABLE status prior to the determination of the impact on the other diesel generator, evaluation will continue of the possible common cause failure. This continued evaluation is no longer under the time constraint imposed while in Action Statement b or c.

The determination of the existence of a common cause failure that would affect the remaining diesel generator will require an evaluation of the current failure and the applicability to the remaining diesel generator. Examples that would not be a common cause failure include, but are not limited to:

1. Preplanned preventive maintenance or testing, or

2. An inoperable support system with no potential common mode failure for the remaining diesel generator, or

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3. An independently testable component with no potential common mode failure for the remaining diesel generator.

If one Millstone Unit No. 2 diesel generator is inoperable in MODES 1 though 4, Action Statements b.3 and c.3 require verification that the steam-driven auxiliary feedwater pump is OPERABLE (MODES 1, 2, and 3 only). If the steam-driven auxiliary feedwater pump is inoperable, restoration within 2 hours is required or a plant shutdown to MODE 4 will be necessary. This requirement is intended to provide assurance that a loss of offsite power event will not result in degradation of the auxiliary feedwater safety function to below accident mitigation requirements during the period one of the diesel generators is inoperable. The term verify, as used in this context, means to administratively check by examining logs or other information to determine if the steam-driven auxiliary feedwater pump is out of service for maintenance or other reasons. It does not mean to perform Surveillance Requirements needed to demonstrate the OPERABILITY of the steam-driven auxiliary feedwater pump.

If one Millstone Unit No. 2 diesel generator is inoperable in MODES 1 through 4, a 72 hour allowed outage time is provided by Action Statement b.5 to allow restoration of the diesel generator, provided the requirements of Action Statements b.1, b.2, and b.3 are met. This allowed outage time can be extended to 14 days if the additional requirements contained in Action Statement b.4 are also met. Action Statement b.4 requires verification that the Millstone Unit No. 3 diesel generators are OPERABLE as required by the applicable Millstone Unit No. 3 Technical Specification (2 diesel generators in MODES 1 through 4, and 1 diesel generator in MODES 5 and 6) and the Millstone Unit No. 3 SBO diesel generator is available. The term verify, as used in this context, means to administratively check by examining logs or other information to determine if the required Millstone Unit No. 3 diesel generators and the Millstone Unit No. 3 SBO diesel generator are out of service for maintenance or other reasons. It does not mean to perform Surveillance Requirements needed to demonstrate the OPERABILITY of the required Millstone Unit No. 3 diesel generators or availability of the Millstone Unit No. 3 SBO diesel generator.

When using the 14 day allowed outage time provision and the Millstone Unit No. 3 diesel generator and/or the Millstone Unit No. 3 SBO diesel generator requirements are not met, 72 hours is allowed for restoration of the required Millstone Unit No. 3 diesel generators and the Millstone Unit No. 3 SBO diesel generator. If any of the required Millstone Unit No. 3 diesel generators and/or the Millstone Unit No. 3 SBO diesel generator are not restored within 72 hours, and one Millstone Unit No. 2 diesel generator is still inoperable, Millstone Unit No. 2 is required to shut down.

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The 14 day allowed outage time for one inoperable Millstone Unit No. 2 diesel generator will allow performance of extended diesel generator maintenance and repair activities (e.g., diesel inspections) while the plant is operating. To minimize plant risk when using this extended allowed outage time the following additional requirements must be met:

1. The extended diesel generator maintenance outage shall not be scheduled when adverse or inclement weather conditions and/or unstable grid conditions are predicted or present.

2. The availability of the Millstone Unit No. 3 SBO DG shall be verified by test performance within the previous 30 days prior to allowing a Millstone Unit No. 2 diesel generator to be inoperable for greater than 72 hours.

3. All activity in the switchyard shall be closely monitored and controlled. No elective maintenance within the switchyard that could challenge offsite power availability shall be scheduled.

In addition, the plant configuration shall be controlled during the diesel generator maintenance and repair activities to minimize plant risk consistent with a Configuration Risk Management Program, as required by 10 CFR 50.65(a)(4).

During performance of Surveillance Requirements 4.8.1.1.2.a.2 and 4.8.1.1.2.d.2, the diesel generators shall be started by using one of the following signals:

1. Manual;

2. Simulated loss of offsite power in conjunction with a safety injection actuation signal;

3. Simulated safety injection actuation signal alone; or

4. Simulated loss of power alone.

The diesel generator surveillance requirements specify that the diesel generators are started from a standby condition. Standby conditions for a diesel generator means the diesel engine coolant and oil are being circulated and temperature is being maintained consistent with manufacturer recommendations.

Surveillance Requirement (SR) 4.8.1.1.2.d.1 verifies that the diesel generators will reach $\geq$ 90% of rated speed and $\geq$ 97% of rated voltage within 15 seconds after a start signal is generated. Diesel generator voltage and speed will continue to increase to rated values, and then should stabilize. The time for voltage and speed (frequency) to stabilize is periodically monitored and the trend evaluated to identify degradation of governor or voltage regulator performance when testing in accordance with the requirements of SR 4.8.1.1.2.d.1.

The OPERABILITY of the minimum specified A.C.and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods and 2) sufficient instrumentation and control capability is available for monitoring and maintaining the facility status. If the required power sources or distribution systems are not OPERABLE in MODES 5 and 6, operations involving CORE ALTERATIONS, positive reactivity changes, or movement of irradiated fuel assemblies are required to be suspended. The required action to suspend positive reactivity additions does not preclude actions to maintain or increase reactor vessel inventory provided the boron concentration of the makeup water source is greater than or equal to the boron concentration for the required SHUTDOWN MARGIN. In addition, suspension of these activities does not preclude completion of actions to establish a safe conservative plant condition. Insert E

The non-safety grade 125V D.C. Turbine Battery is required for accident mitigation for a main steam line break within containment with a coincident loss of a vital D.C. bus. The Turbine Battery provides the alternate source of power for Inverters 1 & 2 respectively via non-safety grade Inverters 5 & 6. For the loss of a D.C. event with a coincident steam line break within containment, the feedwater regulating valves are required to close to ensure containment design pressure is not exceeded.

Insert F

**Insert E to Page B 3/4 8-1d**

Each 125-volt D.C. bus train consists of its associated 125-volt D.C. bus, a 125-volt D.C. battery bank, and a battery charger with at least 400 ampere charging capacity. To demonstrate OPERABILITY of a 125-volt D.C. bus train, these components must be energized and capable of performing their required safety functions. Additionally, at least one tie breaker between the 125-volt D.C. bus trains must be open for a 125-volt D.C. bus train to be considered OPERABLE.

Footnote (a) to Technical Specification Tables 4.8-1 and 4.8-2 permits the electrolyte level to be above the specified maximum level for the Category A limits during equalizing charge, provided it is not overflowing. Because of the internal gas generation during the performance of an equalizing charge, specific gravity gradients and artificially elevated electrolyte levels are produced which may exist for several days following completion of the equalizing charge. These limits ensure that the plates suffer no physical damage, and that adequate electron transfer capability is maintained in the event of transient conditions. In accordance with the recommendations of IEEE 450-1980, electrolyte level readings should be taken only after the battery has been at float charge for at least 72 hours.

Based on vendor recommendations and past operating experience, seven (7) days has been determined a reasonable timeframe for the 125-volt D.C. batteries electrolyte level to stabilize and to provide sufficient time to verify battery electrolyte levels are within the Category A limits.

Footnote (b) to Technical Specification Tables 4.8-1 and 4.8-2 requires that level correction is not required when battery charging current is < 5 amps on float charge. This current provides, in general, an indication of overall battery condition.

Footnote (c) to Technical Specification Tables 4.8-1 and 4.8-2 states that level correction is not required when battery charging current is < 5 amps on float charge. This current provides, in general, an indication of overall battery condition. Because of specific gravity gradients that are produced during the recharging process, delays of several days may occur while waiting for the specific gravity measurement for determining the state of charge. This footnote allows the float charge current to be used as an alternative to specific gravity to show OPERABILITY of a battery for up to seven (7) days following the completion of a battery equalizing charge. Each connected cells specific gravity must be measured prior to expiration of the 7 day allowance.

Surveillance Requirements 4.8.2.3.2.c.1 and 4.8.2.5.2.c.1 provide for visual inspection of the battery cells, cell plates, and battery racks to detect any indication of physical damage or abnormal deterioration that could potentially degrade battery performance.

**Insert F to Page B 3/4 8-1d**

The Turbine Battery D.C. electrical power subsystem consists of 125-volt D.C. bus 201D and 125-volt D.C. battery bank 201D. To demonstrate OPERABILITY of this subsystem, these components must be energized and capable of performing their required safety functions.

The feedwater regulating valves require power to close. On loss of a vital D.C. bus, the alternate source of power to the vital A.C. bus via the Turbine Battery ensures power is available to the affected feedwater regulating valve such that the valve will isolate feed flow into the faulted generator. The Turbine Battery is considered inoperable when bus voltage is less than 125 volts D.C, thereby ensuring adequate capacity for isolation functions via the feedwater regulating valves during the onset of a steam line break.

The Turbine Battery Charger is not required to be included in Technical Specifications even though the Turbine Battery is needed to power backup Inverters 5 & 6 for a main steam line break inside containment coincident with a loss of a Class 1E D.C. bus. This is due to the fact that feedwater isolation occurs within seconds from the onset of the event.

Docket No. 50-336
B18730

Attachment 4

Millstone Nuclear Power Station, Unit No. 2

License Basis Document Change Request 2-13-02
Electrical Power Systems - D.C. Distribution
Retyped Pages

## D.C. DISTRIBUTION - OPERATING

### LIMITING CONDITION FOR OPERATION

3.8.2.3 125-volt D. C. bus Train A and 125-volt D. C. bus Train B electrical power subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one 125-volt D.C. bus train inoperable, restore the inoperable 125-volt D. C. bus train to OPERABLE status within 2 hours or be in COLD SHUTDOWN within the next 36 hours.

### SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each 125-volt D.C. bus train shall be determined OPERABLE at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.3.2 Each 125-volt D. C. battery bank and charger of Train A and Train B shall be demonstrated OPERABLE:

a. By verifying at least once per 7 days that the battery cell parameters meet Table 4.8-1 Category A limits.

b. By verifying at least once per 92 days the battery cell parameters meet Table 4.8-1 Category B limits.

## SURVEILLANCE REQUIREMENTS (Continued)

c. At least once per 18 months by verifying that:

   1. The cells, cell plates and battery racks show no visual indication of physical damage or deterioration that could degrade battery performance,

   2. The cell-to-cell and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material, and

   3. The battery charger will supply at least 400 amperes at a minimum of 130 volts for at least 12 hours.

d. At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual emergency loads for 8 hours when the battery is subjected to a battery service test.

e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. This performance discharge test may be performed in lieu of the battery service test.

## SURVEILLANCE REQUIREMENTS (Continued)

Table 4.8-1
Battery Cell Parameters

| Parameter | Category A: Limits For Each Designated Pilot Cell | Category B: Limits For Each Connected Cell |
|---|---|---|
| Electrolyte Level | Between the minimum and maximum level indication marks [a] | Not required. |
| Cell Voltage | ≥ 2.08 Volts | ≥ 2.08 Volts under float charge |
| Specific Gravity [b][c] | ≥1.200 (Corrected to 77°F) | ≥1.200 (Corrected to 77°F) |
| Battery Voltage | ≥ 125 Volts (Overall voltage) | Not required. |

(a) It is acceptable for the electrolyte level to temporarily increase above the specified maximum during an equalizing charge provided it is not overflowing. Electrolyte level readings will be verified to meet the Category A limits within 7 days of completing an equalizing charge.

(b) Corrected for electrolyte temperature and level. Level correction is not required, however, when battery charging is < 5 amps when on float charge.

(c) A battery charging current of < 5 amps when on float charge is acceptable for meeting specific gravity limits following a battery recharge, for a maximum of 7 days. When charging current is used to satisfy specific gravity requirements, specific gravity of each connected cell shall be measured prior to expiration of the 7 day allowance.

## D.C. DISTRIBUTION - SHUTDOWN

### LIMITING CONDITION FOR OPERATION

3.8.2.4 One 125-volt D. C. bus train electrical power subsystem shall be OPERABLE:

APPLICABILITY: MODES 5 and 6.

ACTION:

With no 125-volt D. C. bus trains OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes or movement of irradiated fuel assemblies.

### SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 125-volt D.C. bus train shall be determined OPERABLE at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.4.2 The above required 125-volt D.C. bus train battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

## D.C. DISTRIBUTION SYSTEMS (TURBINE BATTERY) — OPERATING

### LIMITING CONDITION FOR OPERATION

3.8.2.5 The Turbine Battery 125-volt D.C. electrical power subsystem shall be OPERABLE.

APPLICABILITY: MODES 1, 2 & 3

ACTION:

With the Turbine Battery 125-volt D.C. electrical power subsystem inoperable, restore the subsystem to OPERABLE status within 7 days or be in HOT SHUTDOWN within the next 12 hours.

### SURVEILLANCE REQUIREMENTS

4.8.2.5.1 Verify 125-volt D.C. bus 201D is OPERABLE at least once per 7 days.

4.8.2.5.2 125-volt D.C. battery bank 201D shall be demonstrated OPERABLE:

a. By verifying at least once per 7 days that the battery cell parameters meet Table 4.8-2 Category A limits.

b. By verifying at least once per 92 days the battery cell parameters meet Table 4.8-2 Category B limits.

c. At least once per 18 months by verifying that:

1. The cells, cell plates, and battery racks show no visual indication of physical damage or deterioration that could degrade battery performance, and
2. The cell-to-cell and terminal connections are clean, tight, free of corrosion, and coated with anti-corrosion material.

d. At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual loads for 1 hour when the battery is subjected to a battery service test.

e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. This performance discharge test may be performed in lieu of the battery service test.

Table 4.8-2
Turbine Battery Cell Parameters

| Parameter | Category A: Limits For Each Designated Pilot Cell | Category B: Limits For Each Connected Cell |
|---|---|---|
| Electrolyte Level | Between the minimum and maximum level indication marks [a] | Not required. |
| Cell Voltage | ≥ 2.08 Volts | ≥ 2.08 Volts under float charge |
| Specific Gravity [b][c] | ≥ 1.200 (Corrected to 77°F) | ≥ 1.200 (Corrected to 77°F) |
| Battery Voltage | ≥ 125 Volts (Overall Voltage) | Not required. |

(a) It is acceptable for the electrolyte level to temporarily increase above the specified maximum during an equalizing charge provided it is not overflowing. Electrolyte level readings will be verified to meet the Category A limits within 7 days of completing an equalizing charge.

(b) Corrected for electrolyte temperature and level. Level correction is not required, however, when battery charging is < 5 amps when on float charge.

(c) A battery charging current of < 5 amps when on float charge is acceptable for meeting specific gravity limits following a battery recharge, for a maximum of 7 days. When charging current is used to satisfy specific gravity requirements, specific gravity of each connected cell shall be measured prior to expiration of the 7 day allowance.

The OPERABILITY of the minimum specified A.C.and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods and 2) sufficient instrumentation and control capability is available for monitoring and maintaining the facility status. If the required power sources or distribution systems are not OPERABLE in MODES 5 and 6, operations involving CORE ALTERATIONS, positive reactivity changes, or movement of irradiated fuel assemblies are required to be suspended. The required action to suspend positive reactivity additions does not preclude actions to maintain or increase reactor vessel inventory provided the boron concentration of the makeup water source is greater than or equal to the boron concentration for the required SHUTDOWN MARGIN. In addition, suspension of these activities does not preclude completion of actions to establish a safe conservative plant condition.

Each 125-volt D.C. bus train consists of its associated 125-volt D.C. bus, a 125-volt D.C. battery bank, and a battery charger with at least 400 ampere charging capacity. To demonstrate OPERABILITY of a 125-volt D.C. bus train, these components must be energized and capable of performing their required safety functions. Additionally, at least one tie breaker between the 125-volt D.C. bus trains must be open for a 125-volt D.C. bus train to be considered OPERABLE.

Footnote (a) to Technical Specification Tables 4.8-1 and 4.8-2 permits the electrolyte level to be above the specified maximum level for the Category A limits during equalizing charge, provided it is not overflowing. Because of the internal gas generation during the performance of an equalizing charge, specific gravity gradients and artificially elevated electrolyte levels are produced which may exist for several days following completion of the equalizing charge. These limits ensure that the plates suffer no physical damage, and that adequate electron transfer capability is maintained in the event of transient conditions. In accordance with the recommendations of IEEE 450-1980, electrolyte level readings should be taken only after the battery has been at float charge for at least 72 hours.

Based on vendor recommendations and past operating experience, seven (7) days has been determined a reasonable timeframe for the 125-volt D.C. batteries electrolyte level to stabilize and to provide sufficient time to verify battery electrolyte levels are within the Category A limits.

Footnote (b) to Technical Specification Tables 4.8-1 and 4.8-2 requires that level correction is not required when battery charging current is < 5 amps on float charge. This current provides, in general, an indication of overall battery condition.

Footnote (c) to Technical Specification Tables 4.8-1 and 4.8-2 states that level correction is not required when battery charging current is < 5 amps on float charge. This current provides, in general, an indication of overall battery condition. Because of specific gravity gradients that are produced during the recharging process, delays of several days may occur while waiting for the specific gravity measurement for determining the state of charge. This footnote allows the float charge current to be used as an alternative to specific gravity to show OPERABILITY of a battery for up to seven (7) days following the completion of a battery equalizing charge. Each connected cells specific gravity must be measured prior to expiration of the 7 day allowance.

Surveillance Requirements 4.8.2.3.2.c.1 and 4.8.2.5.2.c.1 provide for visual inspection of the battery cells, cell plates, and battery racks to detect any indication of physical damage or abnormal deterioration that could potentially degrade battery performance.

The non-safety grade 125V D.C. Turbine Battery is required for accident mitigation for a main steam line break within containment with a coincident loss of a vital D.C. bus. The Turbine Battery provides the alternate source of power for Inverters 1 & 2 respectively via non-safety grade Inverters 5 & 6. For the loss of a D.C. event with a coincident steam line break within containment, the feedwater regulating valves are required to close to ensure containment design pressure is not exceeded.

The Turbine Battery D.C. electrical power subsystem consists of 125-volt D.C. bus 201D and 125-volt D.C. battery bank 201D. To demonstrate OPERABILITY of this subsystem, these components must be energized and capable of performing their required safety functions.