**Northern States Power Company**

**Prairie Island Nuclear Generating Plant**

1717 Wakonade Dr. East
Welch, Minnesota 55089

May 15, 2000

10 CFR Part 50
Section 50.90

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

**PRAIRIE ISLAND NUCLEAR GENERATING PLANT**
Docket Nos. 50-282 License Nos. DPR-42
50-306 DPR-60

**License Amendment Request Dated May 15, 2000**
**One Time Technical Specification Change**
**to Support Installation of MCC Transfer Switches**

Attached is a request for a change to the Technical Specifications, Appendix A of the Operating Licenses, for the Prairie Island Nuclear Generating Plant. Northern States Power Company (NSP) submits this request in accordance with the provisions of 10CFR50.90.

This License Amendment Request proposes a one time change to Technical Specification 3.7.B.6 to explicitly allow de-energizing MCC 1T1 and MCC 1T2 for as long as the most limiting allowed outage time of the equipment powered by these MCC's. Current Technical Specification 3.7.B.6 makes no explicit provision for individual MCC's being out of service. Our past practice has been to interpret Technical Specification 3.7.B.6 as providing an 8-hour allowed out of service time for individual MCC's. We may request a permanent change to this specification in a future submittal, however, to support the short-term needs described below, we are only asking for a one time change with this submittal.

This change would explicitly allow the out of service time necessary to support installation of transfer switches for the MCCs without needing both units to be in cold shutdown. NSP wishes to install the transfer switches for reasons of personnel safety in response to two near miss events.

Exhibit A contains a description of the proposed change, the reasons for requesting the change, the supporting safety evaluation, and the significant hazards determination.

A001

Exhibit B contains current Prairie Island Technical Specification page marked up to show the proposed change. Exhibit C contains the revised Prairie Island Technical Specification page incorporating the proposed change.

To support upcoming planned 480 Volt bus maintenance, currently scheduled for January of 2001, we wish to implement the associated modification in December of 2000, thus, we request this amendment by November 15, 2000.

In this amendment request we made one new commitment: ***Modification 99EB01 will not be implemented with containment purge in service.***

Please contact Jeff Kivi (651-388-1121) if you have any questions related to this License Amendment Request.

Joel P. Sorensen
Site General Manager
Prairie Island Nuclear Generating Plant

c: Regional Administrator - Region III, NRC
Senior Resident Inspector, NRC
NRR Project Manager, NRC
James Bernstein, State of Minnesota
J E Silberg

Attachments:

Affidavit

Exhibit A - Evaluation of Proposed Changes to the Technical Specification Appendix A of Operation License DPR-42 and DPR-60.

Exhibit B - Proposed Changes Marked Up on Existing Technical Specification Page.

Exhibit C - Revised Technical Specification Page.

UNITED STATES NUCLEAR REGULATORY COMMISSION

NORTHERN STATES POWER COMPANY

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

DOCKET NO. 50-282
50-306

REQUEST FOR AMENDMENT TO
OPERATING LICENSES DPR-42 & DPR-60

LICENSE AMENDMENT REQUEST DATED MAY 15, 2000
One Time Technical Specification Change
to Support Installation of MCC Transfer Switches

Northern States Power Company, a Minnesota corporation, requests authorization for changes to Appendix A of the Prairie Island Operating License as shown in the attachments labeled Exhibits A, B, and C. Exhibit A contains a description of the proposed changes, the reason for requesting the changes, and the supporting safety evaluation and significant hazards determination. Exhibit B contains current Prairie Island Technical Specification page marked-up to show the proposed changes. Exhibit C contains the revised Technical Specification page.

This letter contains no restricted or other defense information.

NORTHERN STATES POWER COMPANY

By Joel P. Sorensen
Joel P. Sorensen
Site General Manager
Prairie Island Nuclear Generating Plant

State of MINNESOTA
County of GOODHUE
On this 15TH day of May 2000 before me a notary public, personally appeared Joel P. Sorensen, Site General Manager, Prairie Island Nuclear Generating Plant, and being first duly sworn acknowledged that he is authorized to execute this document on behalf of Northern States Power Company, that he knows the contents thereof, and that to the best of his knowledge, information, and belief the statements made in it are true.

John J. Kivi

JEFFREY L. KIVI
NOTARY PUBLIC-MINNESOTA
My Commission Expires Jan. 31, 2005

**Exhibit A**

**Prairie Island Nuclear Generating Plant**
**License Amendment Request Dated May 15, 2000**

**Evaluation of Proposed Changes to the**
**Technical Specification Appendix A of**
**Operation License DPR-42 and DPR-60**

Pursuant to 10 CFR Part 50, Section 50.59 and 50.90, the holders of Operating Licenses DPR-42 and DPR-60 hereby propose the following changes to the Technical Specifications contained in Appendix A of the Facility Operating Licenses:

## Background and Reasons for Changes

Motor Control Center (MCC) 1T1 and MCC 1T2 each have two 480V sources, one from each unit (a description of the current configuration is included in Attachment 1). MCC 1T1 can be supplied from Unit 1 480V Bus 112 or Unit 2 480V Bus 212. MCC 1T2 can be supplied from Unit 1 480V Bus 122 or Unit 2 480V Bus 222. The 480V source breakers for the two cable feeds for each MCC are electrically interlocked to prevent tying the opposite Unit 480V Buses together via the MCC. These breakers are the only isolation devices for the two cable feeds and are located at the 480 V bus source end only. There are no breakers at the MCC end of the cables. Therefore, when the MCC is energized, both cable feeds are energized back to both 480V bus source breakers regardless of which bus is supplying the MCC.

During 480V bus maintenance, all power sources to the bus are isolated, however, the energized cable from the T (1T1 or 1T2) MCC cannot be isolated without de-energizing the MCC, which is not practical because the T MCC's supply loads common to both units. The energized cable and breaker stabs in the otherwise de-energized bus causes a safety hazard for personnel performing bus maintenance. There have been two near-miss events, one in November of 1992 and one in April of 1999, involving energized T MCC cable in an otherwise de-energized 480V bus.

NSP wishes to install transfer switches for MCC's 1T1 and 1T2 to allow de-energizing the cable to the 1T1 or 1T2 MCC's from their respective 480V Buses, thus, preventing a possible accidental electrocution. However, the estimated time required to safely install each transfer switch (approximately 48 hours) is in excess of the allowed outage time for the affected MCC's, which is eight hours based on our current practice of applying Technical Specification 3.7.B.6 to individual MCC's. Thus, a dual unit shutdown would be required to install each transfer switch under current Technical Specifications.

## Proposed Changes

The proposed changes to Prairie Island Technical Specification 3.7.B.6 are described below, and the specific changes to the Technical Specifications are shown in Exhibit B.

To support the installation of transfer switches for MCC 1T1 and 1T2 (without taking both units to cold shutdown), NSP proposes that the allowed out of service time for the affected MCC's be explicitly changed to the most restrictive allowed out of service time for the loads supplied by the MCC's (specifically, 72 hours – the allowed out of service time for heat trace circuits). The proposed change will allow either MCC 1T1 or MCC 1T2 to be out of service for up to 72 hours provided the redundant MCC, it's associated 480 V bus is verified operable and the diesel generator and safeguards equipment associated with the redundant MCC are operable. This would be a one-time change in support of Modification 99EB01, only. A summary description of the modification is included as Attachment 1.

## Safety Analysis and Justification

The proposed change will be applied only in support of Modification 99EB01. The modification will install transfer switches for MCC 1T1 and MCC 1T2. The estimated time required to install each transfer switch (48 hours) is in excess of the allowed out of service time currently applied to the MCC's by our current practice (8 hours), but is less than the most restrictive allowed out of service time for the loads supplied by the MCC's (72 hours for heat trace circuits – see discussion below). Thus, the one time provision for allowed out of service time for the specific affected MCC's will not lead to any of the supplied equipment being out of service for longer than currently allowed by Technical Specifications.

Loads Supplied by MCC 1T1 and MCC 1T2

**Control Room Ventilation:** MCC 1T1 powers Train A (121) of Control Room Ventilation and MCC 1T2 powers Train B (122). Components in this system that are supplied by the T MCC's are:

- Control Room Chillers
- Control Room Clean-Up Fans
- Control Room Air Handlers and Fans
- Control Room Chilled Water Pumps

These components support the post-accident control room environment for habitability and equipment operability. Per Technical Specification 3.13.A.2, one train of this equipment may be out of service for up to 7 days. The proposed change ensures that at least one train of these components is operable.

**Spent Fuel Pool Pumps:** MCC 1T1 powers the 121 Spent Fuel Pool Pump and MCC 1T2 powers the 122 Spent Fuel Pool Pump. These pumps support cooling

of the spent fuel in the spent fuel pool. There are no Technical Specifications associated with this function. The proposed change ensures that at least one of these pumps is operable.

**Miscellaneous Radiation Monitors:** MCC 1T1 powers sample pumps for the following radiation monitors:

- 2R-11/12, "21 Containment/Shield Building Ventilation Gas Radiation Monitor"
- 2R-37, "Auxiliary Building Gas Radiation Monitor"
- 1R-22, "Shield Building Ventilation Gas Radiation Monitor"
- 1R-37, "Auxiliary Building Gas Radiation Monitor"
- 1R-50, "Shield Building High Range Ventilation Gas Radiation Monitor" (via Receptacle Panel 1RPA8)

MCC 1T2 powers the following radiation monitors:

- 1R-11/12, "21 Containment/Shield Building Ventilation Gas Radiation Monitor"
- 2R-30, "Auxiliary Building Gas Radiation Monitor"
- 2R-22, "Shield Building Ventilation Gas Radiation Monitor"
- 1R-30, "Auxiliary Building Gas Radiation Monitor"
- 2R-50, "Shield Building High Range Ventilation Gas Radiation Monitor" (via Receptacle Panel 1RPB8)

The proposed change only removes one of the affected MCC's from service at a time with requirements that the opposite MCC and associated equipment be operable. Thus, one train of the affected radiation monitors will be in service.

R-11/12, R-22: These radiation monitors isolate containment ventilation. A number of Technical Specifications impose requirements on the R-11/12 and R-22 radiation monitors. Technical Specification 3.1.C.1 requires availability of leak detection, however, the proposed change ensures redundant radiation monitors are available to fulfill this function. Technical Specification 3.8.A.1.J requires that radiation monitors that initiate isolation of the containment purge system be verified operable prior to core alterations. ***However, the modification that the proposed change supports will not be implemented with containment purge in service.***

Technical Specification Table 3.5-2B (Functional Unit 4E) requires two channels of containment exhaust air radiation monitoring to support isolation of containment ventilation. ***However, the modification that the proposed change supports will not be implemented with containment purge in service.***

In addition, the Prairie Island Offsite Dose Calculation Manual (ODCM) imposes certain restrictions on the operability of these radiation monitors. All

ODCM requirements will be adhered to as part of the modification this change supports.

R-30, R-37: These radiation monitors start the Auxiliary Building Special Ventilation. Technical Specification 3.6.F allows one train of Auxiliary Building Special Ventilation to be inoperable for 7 days. The ODCM also imposes certain restrictions on the operability of these radiation monitors. All ODCM requirements will be adhered to as part of the modification this change supports.

R-50: These radiation monitors serve no control functions. Neither Technical Specifications nor the ODCM require these radiation monitors to be operable. Prairie Island procedures allow for backup sampling capability to be used in lieu of these radiation monitors' sample pumps.

**Miscellaneous Receptacle and Distribution Panels:** MCC 1T1 powers Receptacle Panel 1RPA8 and Distribution Panel 119. MCC 1T2 powers Receptacle Panel 1RPB8 and Distribution Panel 219. Receptacle Panels 1RPA8 and 1RPB8 power some Control Room convenience receptacles and lighting and the R-50 radiation monitor sample pumps (see discussion above). Distribution Panels 119 and 219 power unit coolers in the Event Monitoring and Relay rooms.

Panel 119 supplies the Train A Event Monitoring Room East Unit Cooler (there is another unit cooler supplied by Panel 135 in the Train A Event Monitoring Room). Panel 219 supplies the Train B Event Monitoring Room Unit Cooler (which is the only unit cooler in the Train B Event Monitoring Room). Technical Specification 3.15 would apply in the event room temperature exceeds the maximum to support equipment operability (89 degrees F). However, at most, the proposed change would affect one channel of event monitoring, the most limiting allowed out of service time for one channel of event monitoring equipment is 30 days.

Panels 119 and 219 each supply two unit coolers in the Relay Room. Should Relay Room temperature exceed the maximum limit for equipment operability (120 degrees F), instruments in Technical Specification Section 3.5 tables would be affected. However, current analysis indicates that the relay room would not heat up to the point of affecting equipment operability (120 degrees F) unless all unit coolers are lost. The proposed change ensures at least two unit coolers will be operable in the Relay Room, therefore, temperature will not affect equipment operability.

**Boric Acid Heat Trace Switchracks:** MCC 1T1 powers switchracks I and III; MCC 1T2 powers switchracks II and IV. These components support boric acid heat trace. Heat trace ensures high concentration boric acid in the Safety

Injection (SI) system does not crystallize out of solution (which could potentially impact operability of the SI system). Per Technical Specification 3.2.C.4, one channel of heat tracing may be out of service for up to 72 hours. There are two channels of redundant heat tracing for each heat-traced pipe. The heat trace switchracks provide these redundant channels (with redundant channels for any given pipe segment being powered by redundant MCC's). This change would allow only one train of heat trace to be out of service at a time.

**Miscellaneous Cooling Water System Motor Valves:** MCC 1T1 powers MV-32322, "Loop A/B Cooling Water Return Header Crossover Motor Valve A;" and, following a modification to be installed in the summer of 2000, will power MV-32144, "Loop A/B Cooling Water Header Crossover Motor Valve A," and MV-32038, "Cooling Water Dump Motor Valve." MCC 1T2 powers MV-32159, "Loop A/B Cooling Water Header Crossover Motor Valve B," and MV-32329, "Loop A/B Cooling Water Return Header Crossover Motor Valve B."

Technical Specification 3.3.D.2.b allows one cooling water header to be out of service for up to 72 hours, with certain provisions. MV-32144 and MV-32159 close to split the cooling water ring header into two trains upon receipt of a safety injection signal. MV-32144 and MV-32159 are redundant valves. Typically, if the power supply for either of these valves is to be taken out of service, the valve is closed (placed in its safeguards position) such that the cooling water header remains in service.

MV-32322, MV-32329, and MV-32038 are configured to provide an alternate return flow path should a normal return header become blocked. There is no separation requirement for the return header. These valves are currently maintained closed for operational convenience. Therefore, none of these valves is controlled by Technical Specifications.

The proposed change supports a modification to increase personnel safety by reducing the risk of accidental electrocution during 480-Volt bus maintenance. Without the proposed one time change to Technical Specification 3.7.B.6, the modification could only be installed with both units at cold shutdown.

The proposed change would only allow one of the MCC's to be out of service at a time for the extended time necessary to complete the transfer switch installation. The proposed change requires that the opposite train MCC, it's associated 480V buses, diesel generators, and safeguards equipment are verified operable. This ensures one train of redundant equipment will be available during the time it takes to install the transfer switches for each MCC.

The proposed changes to allow MCC 1T1 or 1T2 to be out of service for up to 72 hours has been evaluated against the Prairie Island Probabilistic Risk Assessment (PRA)

model. The proposed changes are not risk significant (i.e., when modeled in the Prairie Island PRA, the loss of 1T1 or 1T2 resulted in no change in core damage frequency).

Northern States Power concludes there is reasonable assurance that the health and safety of the public will not be adversely affected by the proposed Technical Specification change.

**Evaluation of Significant Hazards Considerations**

NSP proposes a one time change to Prairie Island Technical Specification 3.7.B.6 that would allow a 72-hour allowed out of service time for motor control center MCC 1T1 and MCC 1T2 to support installation of transfer switches. NSP wishes to install the transfer switches in order to prevent the potential for accidental electrocution during maintenance on the MCC's source 480V buses. Without the provisions for 1T1 and 1T2 allowed by the one time change, the transfer switches could not be installed without both units being in cold shutdown under our current practice of applying Technical Specification 3.7.B.6 to individual MCC's.

The proposed changes to the Technical Specifications have been evaluated to determine whether they constitute a significant hazards consideration as required by 10 CFR Part 50, Section 50.91 using the standards provided in Section 50.92. This analysis is provided below:

(1) The proposed amendment will not involve a significant increase in the probability or consequences of accident previously evaluated.

The proposed changes do not involve any systems, structures or components whose failure would initiate an accident, thus, this change does not affect the probability of an accident.

The proposed changes extend the allowed out of service time for MCC 1T1 and MCC 1T2. The proposed changes would be applied only in support of a one-time modification to install transfer switches for the affected MCC's. The proposed changes do not extend the allowed out of service time for any components, supplied by these MCC's, that are relied on to mitigate the consequences of an accident. Thus, this change does not significantly increase the expected consequences of an accident.

Therefore, the proposed changes will not involve a significant increase in the probability or consequences of an accident previously evaluated.

(2) The proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes do not change the way any systems, structures or components are operated. Nor does the proposed change introduce any new failure modes.

Therefore, the proposed changes will not create the possibility of a new or different kind of accident.

(3) The proposed amendment will not involve a significant reduction in the margin of safety.

The proposed changes do not extend the allowed out of service times for any safety related components powered by the affected MCC's. Further, the proposed changes only allow one train (one of the affected MCC's) to be out of service and only if the opposite train MCC, its supporting sources and supplied safeguards equipment is verified operable. Thus, the proposed changes do not substantially impact the ability of operators to protect the fuel cladding, reactor coolant system or containment.

Therefore, the proposed changes will not involve a significant reduction in the margin of safety.

Based on the evaluation described above, and pursuant to 10 CFR Part 50, Section 50.91, Northern States Power Company believes that operation the Prairie Island Nuclear Generating Plant in accordance with the proposed license amendment request does not involve any significant hazards considerations as defined by NRC regulations in 10 CFR Part 50, Section 50.92.

**Environment Assessment**

Northern States Power Company has evaluated the proposed changes and determined that:

1. The changes do not involve any hazards consideration,
2. The changes do not involve any change in the types or increase in the amounts of any effluents that may be released offsite, or
3. The changes do not involve any increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed changes meet the eligibility criterion for categorical exclusion set forth in 10 CFR Part 51 Section 51.22(c)(9). Therefore, pursuant to 10 CFR 51 Section 51.22(b), an environmental assessment of the proposed changes is not required.

Attachment 1 to Exhibit A

Modification 99EB01

Preliminary Project Description
(For Information)

## 1. INTRODUCTION

Motor Control Centers (MCC) 1T1 and 1T2 are transferable between two 480V sources, one from each unit . MCC 1T1 can be supplied from Unit 1 480V Bus 112 or from Unit 2 480V Bus 212. MCC 1T2 can be supplied from Unit 1 480V Bus 122 or from Unit 2 480V Bus 222. Refer to Figure 1 for a typical one-line diagram for the T MCCs. The T MCCs supply power to loads that are shared between Unit 1 and Unit 2.

The 480V source breakers for the two cable feeds for each MCC are electrically interlocked to prevent tying the opposite Unit 480V Buses together via the MCC. These breakers are the only isolation devices for the two cable feeds and are located at the 480 V bus source end only. There are no breakers at the MCC end of the cables; the cables are hard wired to the MCC main bus. Therefore, when the MCC is energized, both cable feeds are energized back to both 480V bus source breakers regardless of which bus is supplying the MCC. During 480V bus maintenance, all power sources to the bus are isolated, however, the energized cable from the T MCC cannot be isolated without de-energizing the T MCC. De-energizing the T MCC is not practical because of Tech Spec LCO's which apply on both units for the loads on the MCC. The energized cable and breaker stabs in the otherwise de-energized 480V bus causes a safety hazard for personnel performing 480V bus maintenance.

There have been two near-miss events, one in November of 1992 and one in April of 1999, involving energized T MCC cable in an otherwise de-energized 480V bus. This design change was initiated in response to the most recent event documented in Prairie Island Error Reduction Task Force (ERTF) Report No. 99-09. This design change will install a break-before-make transfer switch for each MCC. This switch will provide the necessary isolation to prevent the cable feed from the 480V bus that is not supplying the MCC from being energized via the MCC.

## 2. SCOPE

This design change will purchase, qualify, and install a break-before-make transfer switch for each of the T MCCs. Conduit and supports will also be installed for rerouted cables. Larger cables will be installed for the Unit 1 feeds to improve voltage support and ampacity of the feeds.

## 3. DETAILED PROJECT DESCRIPTION

### 3.1 General

Two new Square D, 600 volt, 600 amp, double throw, non-fused, manual transfer switches will be purchased and qualified as Safety Related from Spectrum Technologies for this project. This is the same approach that was used for the

recent qualification and installation for the new transfer switch installed during project 96EB01 for the MA MCCs.

The transfer switch for MCC 1T1 will be installed in the 121 Control Room Chiller Room. The transfer switch for MCC 1T2 will be installed in the 122 Control Room Chiller Room. The switches will be installed just east of each MCC. Stone and Webster will provide design details for switch mounting.

No cable procurement is necessary for this project. New cable to be installed for the project is all 3/C-500 MCM armored power cable. Existing safety related cable in the Prairie Island Warehouse is being used for this project. One reel with 750 feet from the 94L483 project, one SBO reel with 290 feet, and one SBO reel with 170 feet are available and reserved to make the required Unit 1, and switch to MCC lengths. (Two 140 foot lengths, two 210 foot lengths, and four 20 foot lengths.)

Six new conduits and associated supports will be installed in the vicinity of each of the transfer switches and MCCs for this project, for a total of 12 conduits. For each train, two conduits will be used for routing the new 2-3/C-500 MCM Unit 1 feeder cables from overhead tray down to the new transfer switch; Two conduits will be used for rerouting the existing 2-3/C-500 MCM Unit 2 feeder cables from the overhead tray down to the new transfer switch; and Two conduits will be used for routing the new 2-3/C-500 MCM cables from the transfer switch to the MCC. Cable routing for the new Unit 1 feeds may use existing tray or require additional conduits and supports, or both, depending on the final route chosen.

### 3.2 System Details

The break-before-make transfer switches are not load break switches. Normal procedures (C20.6) for performing transfers with a transfer switch (AB and MA MCC's) isolate the 480V source by opening the 480V source breaker at the 480V bus. Next the transfer switch is repositioned to the desired source and then the desired 480V source breaker is closed.

The transferable T MCCs currently use only their 480V source breakers and a common control station to transfer sources. The 480V source breakers are electrically interlocked to prevent tying the 480V buses together between Units.

The final design will retain the breaker control stations for the 480V bus source breakers in the Unit 1 480V bus rooms. The electrical interlock between breakers will also be retained. This interlock is not needed to prevent tying the opposite Unit 480V buses together anymore because the transfer switch will do that. However, the interlock does not cause any operational inconvenience so it will be left in place. The common control station helps the operator performing the transfer because the controls for both 480V source breakers for one MCC are in one location. (1T1 control station is located in the Bus 112 room and 1T2

control station is in the Bus 122 room) This eliminates the need to go to the respective Unit 2 bus room when transferring between sources.

### 3.3 Operator Interface

Transfer of a T MCC will no longer be accomplished from a single room, i.e. the bus room where the breaker control station is located. Operators will now have to go to two locations: the bus room where the breaker control station is located and the Control Room Chiller Room where the transfer switch is located. This is similar to the transfers for the MA and AB MCCs which require going to two rooms: both bus rooms where the breakers are, with the transfer switch located in one of those bus rooms.

## 4. ORGANIZATION INVOLVED

Stone & Webster (S&W) - Project engineering and design

Nuclear Generation Services (NGS)- Material procurement, Design Change package preparation, Work Order preparation, joint pre-operational testing and plant procedure identification and revisions.

System Engineering - Design Change package review, Construction Work Order review, plant procedure change review.

Production Services – Construction Work Order preparation and implementation, construction electricians that will install new transfer switches, conduit, cables, and some terminations, and Supervision thereof.

Electrical Maintenance – Cable determinations and terminations during MCC cut-over.

Plant Operations- Pre-operational testing support.

Quality Services - Work order review, QC inspection of chosen activities

Training – Operations training on the transfer switch location, and the new procedure for transferring the T MCCs.

## 5. ENGINEERING CONSIDERATIONS AND DESIGN INPUTS

### 5.1 Electrical Design Considerations

Cable routing concerns:

Cable installation and routing will comply with separation standards given in the USAR Section 8.7 and the Site Engineering Manual section 3.3.2.7 "Electrical Separation". Cable tray fill, cable and conduit installation, testing, labeling, determination and termination will comply with H11 "Electrical Construction Field Standards".

Routing of new Unit 1 power cables for this work will require breaching and repair of several penetrations. This work will be conducted in accordance with the requirements of Operations Procedure D52 "Installation Guidelines for the Permanent and Temporary Sealing of Electrical/Mechanical Openings Between Established Fire Areas". Steam Exclusion boundary review and permitting, Appendix R, and cable tray issues are reviewed in accordance with 5AWI 3.2.2. for Work Control.

Cable sizing:
Existing calculation ENG-EE-127 Rev. 0 demonstrates the adequacy of the existing power cables for MCCs 1T1 and 1T2. This design change increases the cable size for the Unit 1 feed to provide more margin for ampacity and voltage support for the Unit 1 feed. The new cable from the transfer switch to the MCC will add less than 20 feet to the overall length of both the Unit 1 and Unit 2 feeds. The Unit 2 feeds are the longest cables for each MCC and represent the worst case voltage drop per ENG-EE-127. (The Unit 1 feeds will be the same size and much shorter, and upstream voltages are comparable) The following table shows the acceptability of the new cable added, reference ENG-EE-127 for data).

| MCC | existing U-2 cable length | existing cable worst case $V_{drop}$ % | added cable length | added cable $V_{drop}$ % | new total cable $V_{drop}$ % | new MCC voltage Must be>87.25% |
|---|---|---|---|---|---|---|
| 1T1 | 425 feet | 1.51% (89.3% at MCC) | 20 ft (4.7%) | 0.07% | 1.58% | 89.23%>87.25% OK |
| 1T2 | 370 feet | 1.14% (90.21% at MCC) | 20 ft (5.4%) | 0.06% | 1.2% | 90.15%>87.25% OK |

These MCCs will still easily meet the 87.25% requirement in ENG-EE-061 for MCC voltage with this additional cable. Therefore, the new cable sizing will be acceptable and new calculations for the MCCs will demonstrate this.

HELB and EQ Considerations:
There are no HELB concerns introduced by this design change. The new transfer switches are installed in the same room as the existing MCC. New Unit 1 cables will generally follow the same routing as existing Unit 1 cables and will comply with HELB requirements for routing and EQ requirements for cable qualification.

Fire Protection:
New cables are added in several Fire Areas. Probable Unit 1 cable routes include Fire Areas 79, 2, 3, 82, 16, 76, 92. These cables are additional combustibles for those areas. Some cables will be steel armored so they will not be included in the combustible loading. The old cables in some areas may be abandoned in place so they would not be subtracted from the combustible loading. The quantity of combustibles added to these areas will not exceed allowed combustibles for these areas. PINGP form 1196 will evaluate and track this change and the affected fire areas for any Fire Hazards Analysis update.

Fire penetrations are discussed in the section on cable routing.

### 5.2 I&C Design Considerations

Not applicable.

### 5.3 Mechanical Design Considerations

Not applicable.

### 5.4 Civil/Structural Design Considerations

Stone and Webster will provide structural analysis for mounting and design details for the new transfer switch. Spectrum Technologies will provide qualification of the new switch.

### 5.5 Nuclear Design Considerations

Not applicable.

### 5.6 Material Chemical & Environmental Considerations

Not applicable.

### 5.7 Operational Considerations

Operator interface was discussed in Section 3.3. MCC cut-over and LCO time is discussed in Section 7.

### 5.8 Site Security Design Considerations

Security considerations for breaching of penetrations is addressed by D52 and will be followed as discussed in Section 5.1.

### 5.9 PINGP Site Programmatic Considerations

As mentioned above, cable routing will be reviewed for Fire Protection Program, Appendix R Program, and HELB considerations.

### 5.10 System Interactions Created by the Design Change

No new system interactions are created by this design change.

### 5.11 Design Basis, Commitment, and USAR Considerations

Commitment Review:
A commitment was found (19920121) related to 1T1/1T2 as part of the Prairie Island response to Generic Letter (GL) 91-11. The commitment describes the break-before-make nature of the 1T1 and 1T2 transfer method so that it will remain a break-before-make configuration in case of future modifications. This design change retains the break-before-make configuration.

GL 91-11:
This GL addresses resolution of Generic Issues 48 ,"LCOs for Class 1E vital Instrument Buses," and 49, "Interlocks and LCOs for Class 1E Tie Breakers." Issue 49 applies to transferable MCCs 1T1 and 1T2. The main issue is tie breakers that connect redundant safety related buses, however, Enclosure 1 to the GL also discusses ties that can potentially connect same train buses on opposite units. This is the design concern for the transferable MCCs at Prairie Island. The GL discussion suggests the use of administrative controls or interlocks to prevent the possible manual paralleling of standby power sources or inadvertent tying of buses. This design change installs a break-before-make transfer switch that physically prevents the tying of the opposite train buses. It also retains interlocks that previously existed. This design change does not introduce a "tie". Therefore, the Prairie Island design continues to comply with the requirements of GL 91-11.

USAR sections:
10.2.3 discusses the power supply for the shared load boric acid heat trace and the transferable nature of the 1T1 and 1T2 MCCs. This is not affected by this design change.

10.3.6 discusses the power supply for the normal lighting in the control room and the transferable nature of the 1T1 and 1T2 MCCs. This is not affected by this design change.

Tables 8.4-3 and –4 discuss the transferable loads that are applied to the EDG. This is not affected by this design change.

## 6. MATERIAL, CODES AND STANDARDS

### 6.1 Installation Standards

NSP Prairie Island Electrical Construction Standards in Operations Manual Section H11 are to be followed for all construction activities including new cable and conduit installation, cable and wire tagging, and wire termination. All conduits, cables and termination hardware involved in this installation are safety-related.

### 6.2 Design Standards

All applicable codes and standards used for the design and installation of this modification will be specified in the 99EB01 Scope of Work and Design Criteria", by Stone & Webster.

## 7. CONSTRUCTION / PLANT INTERFACE CONSIDERATIONS

### 7.1 Construction Sequence

The work to implement this design change will be done in two stages.
1) Preparatory Work that can be performed without an MCC outage with both units at power, and 2) the Cut-over Work that requires the MCC to isolated. The discussion here is for one MCC, the same logic applies for both MCCs. The item numbers correspond to numbers on Figure 2 for reference.

Preparatory Work:
1. Install the new transfer switches in the Control Room Chiller Room near the MCC.
2. Pull new Unit 1 3/C-500 feeder cables from Unit 1 bus to the Control Room Chiller Room. This includes breaching and repair of penetrations, and any raceway installation.
3. Terminate the new Unit 1 feeder cable at the transfer switch end with no isolation.

4. Determinate the Unit 1 feeder cable at the Unit 1 480V bus end and terminate the new Unit 1 feeder cable at the Unit 1 480V Bus end with the Bus energized and the load breaker isolated. Requires bus barrier installation.
5. Pull new 3/C-500 cable between new transfer switch and the MCC.
6. Terminate the new 3/C-500 between the transfer switch and the MCC at the transfer switch end only.

Cut-over Work:
7. Determinate the existing Unit 1 feeder cable at the MCC.
8. Terminate the new 3/C-500 between the transfer switch and the MCC at the MCC.
9. Determinate the existing Unit 2 feeder cable from the MCC, pull it back into the tray, re-pull it to the Unit 2 connection on the transfer switch, and terminate it.

### 7.2 LCO issue

The cable cut-over for each MCC will require the MCC to be de-energized as discussed in section 7.1. Prairie Island Technical Specification 3.7.B.6 does not address individual MCC outages specifically. Entering the 8 hour 480V bus Limiting Condition of Operation (LCO) for an MCC outage is the current approach. The T MCCs supply power to equipment that is shared between units so the LCO would apply to both units. The MCC out of service time required for the isolation, construction work, testing, and restoration will be 36 to 48 hours based on past experience. This would require bringing both units to Cold Shutdown to do the work. A one-time Tech Spec LAR is being submitted to allow performing this work at power based on the LCO times of the connected loads. The LAR will be based on the shortest LCO time for the connected loads, which is the 72 hour heat trace LCO.

## 8. FIGURES

Figure 1 – Typical "T" MCC Existing Configuration
Figure 2 – Construction Plan
Figure 3 – Typical "T" MCC Final Configuration

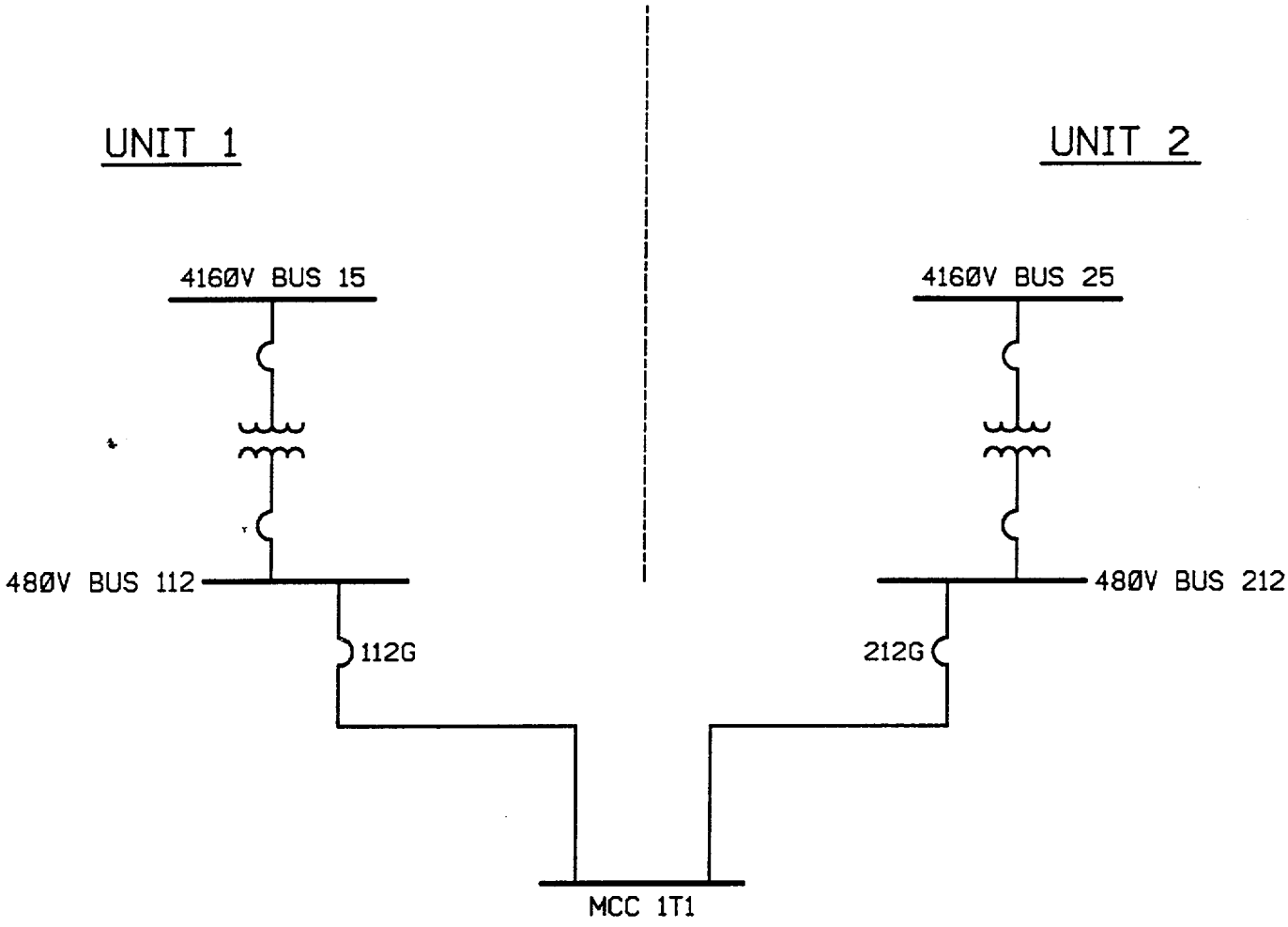


FIGURE 1

INFORMATIONAL ONLY

NSP

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

PROJECT: (99EB01) 1T1/1T2 TRANSFER SW
FIGURE 1
EXISTING CONFIGURATION (TYPICAL)

| | |
|---|---|
| QA CLASS: I | DWG. REV. 0 |
| DWN. BY: L. BORCHARDT | DATE: 04/20/00 |
| CHK'D. BY: | DATE: |
| APP'D. BY: | DATE: |
| REF. | SKETCH NO. 99EB01-01 |

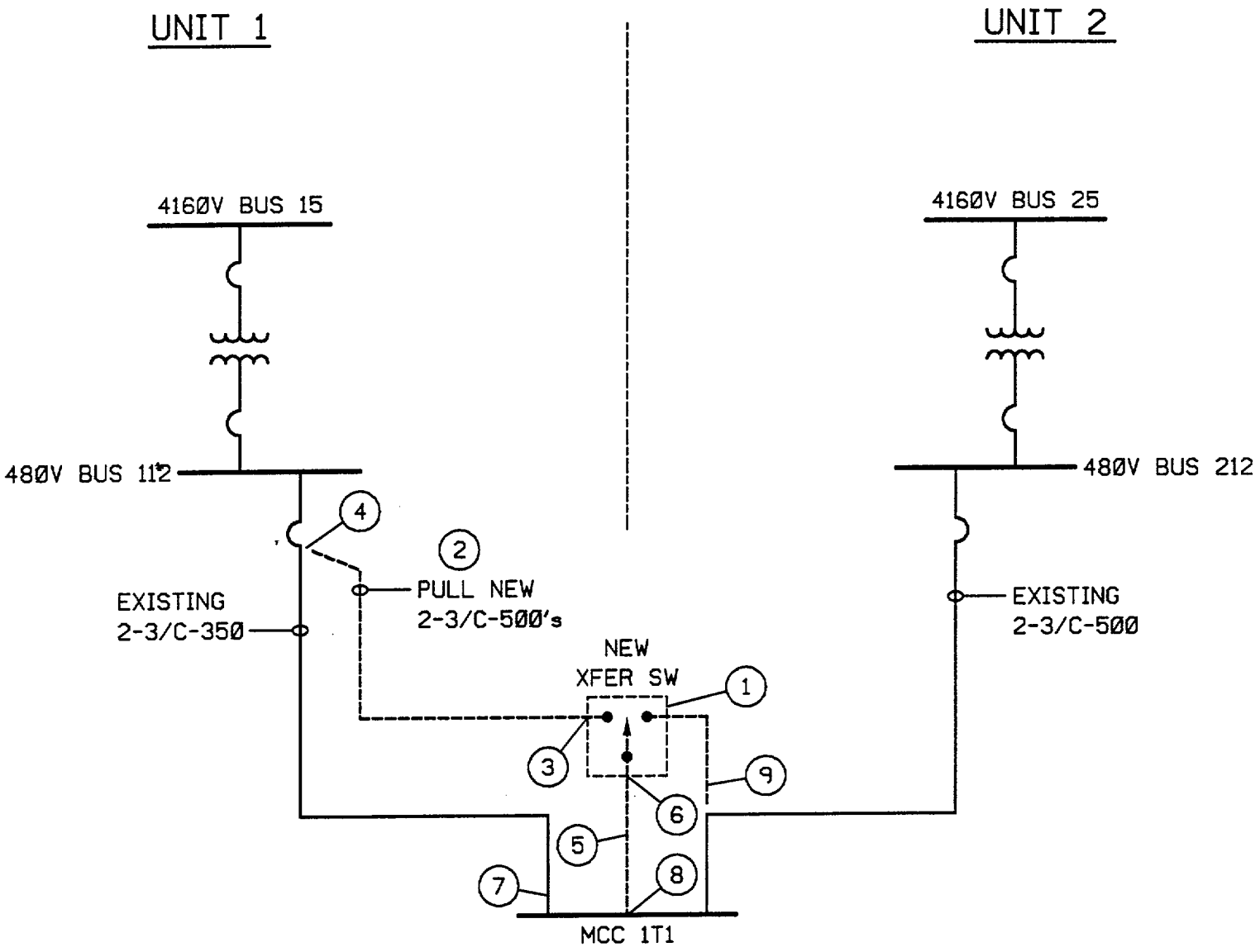


FIGURE 2

INFORMATIONAL ONLY

NSP

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

PROJECT: (99EB01) 1T1/1T2 TRANSFER SW
FIGURE 2
CONSTRUCTION PLAN (TYPICAL)

| | |
|---|---|
| QA CLASS: I | DWG. REV. 0 |
| DWN. BY: L. BORCHARDT | DATE: 04/20/00 |
| CHK'D. BY: | DATE: |
| APP'D. BY: | DATE: |
| REF. | SKETCH NO. 99EB01-02 |

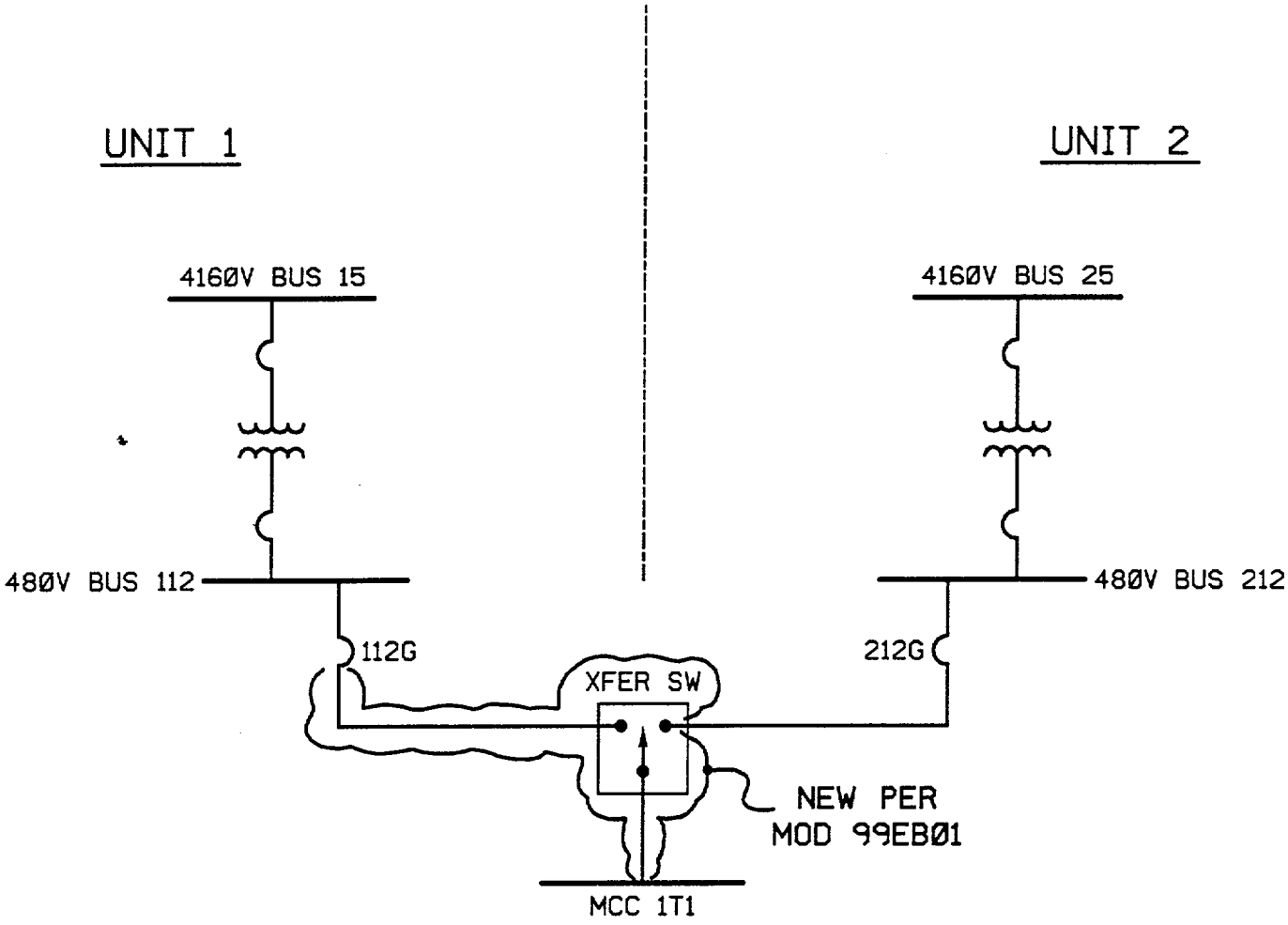


FIGURE 3

INFORMATIONAL ONLY

NSP

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

PROJECT: (99EB01) 1T1/1T2 TRANSFER SW
FIGURE 3
DESIGN CONFIGURATION (TYPICAL)

| | |
|---|---|
| QA CLASS: I | DWG. REV. 0 |
| DWN. BY: L. BORCHARDT | DATE: 04/20/00 |
| CHK'D. BY: | DATE: |
| APP'D. BY: | DATE: |
| REF. | SKETCH NO. 99EB01-03 |

Exhibit B

Prairie Island Nuclear Generating Plant

License Amendment Request Dated May 15, 2000

Proposed Changes Marked Up
On Existing Technical Specification Page

Exhibit B consists of an existing Technical Specification page with the proposed changes highlighted on that page. The page affected by this License Amendment Request is listed below:

TS 3.7-3

Exhibit C

Prairie Island Nuclear Generating Plant

License Amendment Request Dated May 15, 2000

Revised Technical Specification Page

Exhibit C consists of a revised page for the Prairie Island Nuclear Generating Plant Units 1 and 2 Technical Specifications with the proposed changes incorporated. The revised page is listed below:

TS 3.7-3

3.7.B.5. D1 and D2 (Unit 2: D5 and D6) diesel generators may be inoperable for 2 hours provided the two required paths from the grid to the unit 4 kV safeguards distribution system are OPERABLE and the OPERABILITY of the two required paths from the grid are verified OPERABLE within 1 hour.

6. Except as specified in (a) and (b) below, one 4 kV safeguards bus (and/or its associated 480 V buses including associated safeguards motor control centers) may be inoperable or not fully energized for 8 hours provided the redundant 4 kV safeguards bus and its associated 480 V safeguards buses are verified OPERABLE and the diesel generator and safeguards equipment associated with the redundant train are OPERABLE.

   a. Motor control center 1T1 may be de-energized for up to 72 hours (for the purposes of installing transfer switches as part of Modification 99EB01, only) provided motor control center 1T2 and its associated 480 V bus is verified OPERABLE and the diesel generator and safeguards equipment associated with 1T2 are OPERABLE.

   b. Motor control center 1T2 may be de-energized for up to 72 hours (for the purposes of installing transfer switches as part of Modification 99EB01, only) provided motor control center 1T1 and its associated 480 V bus is verified OPERABLE and the diesel generator and safeguards equipment associated with 1T1 are OPERABLE.

7. One battery charger may be inoperable for 8 hours provided, (a) its associated battery is OPERABLE, (b) its redundant counterpart is verified OPERABLE, and (c) the diesel generator and safeguards equipment associated with its counterpart are OPERABLE.

8. One battery may be inoperable for 8 hours provided that the other battery and both battery chargers remain OPERABLE.

9. In addition to the requirements of Specification TS.3.7.A.7 a second inverter supplying Instrument AC Panels 111, 112, 113, and 114 may (Unit 2 panels 211, 212, 213 and 214) be powered from an inverter bypass source for 8 hours.