

July 25, 2003

Mr. David A. Christian  
Sr. Vice President and Chief Nuclear Officer  
Dominion Nuclear Connecticut, Inc.  
Innsbrook Technical Center  
5000 Dominion Boulevard  
Glen Allen, VA 23060-6711

SUBJECT: MILLSTONE POWER STATION, UNIT NO. 2 - ISSUANCE OF AMENDMENT  
RE: EMERGENCY DIESEL GENERATOR TESTING REQUIREMENTS  
(TAC NO. MB6112)

Dear Mr. Christian:

The Commission has issued the enclosed Amendment No. 277 to Facility Operating License No. DPR-65 for the Millstone Power Station, Unit No. 2, in response to your application dated August 12, 2002, as supplemented on February 28, 2003.

The amendment changes the surveillance requirements for the emergency diesel generators (EDGs) in Technical Specification (TS) 3/4.8.1.1, "Electrical Power Systems - A.C. Sources - Operating" and TS 3/4.8.1.2, "Electrical Power Systems - Shutdown." In addition, TS Section 6.0, "Administrative Controls," has been revised to add a new TS to define the program requirements for testing the EDG fuel oil.

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

Sincerely,

*/RA/*

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

Docket No. 50-336

Enclosures: 1. Amendment No. 277 to DPR-65  
2. Safety Evaluation

cc w/encls: See next page

July 25, 2003

Mr. David A. Christian  
Sr. Vice President and Chief Nuclear Officer  
Dominion Nuclear Connecticut, Inc.  
Innsbrook Technical Center  
5000 Dominion Boulevard  
Glen Allen, VA 23060-6711

SUBJECT: MILLSTONE POWER STATION, UNIT NO. 2 - ISSUANCE OF AMENDMENT  
RE: EMERGENCY DIESEL GENERATOR TESTING REQUIREMENTS  
(TAC NO. MB6112)

Dear Mr. Christian:

The Commission has issued the enclosed Amendment No. 277 to Facility Operating License No. DPR-65 for the Millstone Power Station, Unit No. 2, in response to your application dated August 12, 2002, as supplemented on February 28, 2003.

The amendment changes the surveillance requirements for the emergency diesel generators (EDGs) in Technical Specification (TS) 3/4.8.1.1, "Electrical Power Systems - A.C. Sources - Operating" and TS 3/4.8.1.2, "Electrical Power Systems - Shutdown." In addition, TS Section 6.0, "Administrative Controls," has been revised to add a new TS to define the program requirements for testing the EDG fuel oil.

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

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

Docket No. 50-336

Enclosures: 1. Amendment No. 277 to DPR-65  
2. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION:

PUBLIC	REnnis	CHolden	GHill (2)
PDI-2 Reading	CRaynor	APal	BMcDermott, RGN-I
JClifford	OGC	LLund	RJenkins
SMagruder	ACRS	KParczewski	

ACCESSION NUMBER: ML031640541

\*See previous concurrence

OFFICE	PDI-2/PM	PDI-2/LA	EMCB/SC*	EEIB/SC*	OGC*	PDI-2/SC
NAME	REnnis	CRaynor	LLund	RJenkins	RWeisman	JClifford
DATE	7/24/03	7/24/03	6/27/03	7/7/03	7/17/03	7/25/03

OFFICIAL RECORD COPY

Millstone Power Station  
Unit 2

cc:

Lillian M. Cuoco, Esquire  
Senior Counsel  
Dominion Resources Services, Inc.  
Rope Ferry Road  
Waterford, CT 06385

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

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

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

Charles Brinkman, Director  
Washington Operations Nuclear Services  
Westinghouse Electric Company  
12300 Twinbrook Pkwy, Suite 330  
Rockville, MD 20852

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

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

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

Mr. J. Alan Price  
Site Vice President  
Dominion Nuclear Connecticut, Inc.  
Rope Ferry Road  
Waterford, CT 06385

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

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

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

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

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

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

Millstone Power Station  
Unit 2

cc:

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

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

Mr. David W. Dodson  
Licensing Supervisor  
Dominion Nuclear Connecticut, Inc.  
Rope Ferry Road  
Waterford, CT 06385

DOMINION NUCLEAR CONNECTICUT, INC.

DOCKET NO. 50-336

MILLSTONE POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 277  
License No. DPR-65

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by the applicant dated August 12, 2002, as supplemented on February 28, 2003, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 277, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance, and shall be implemented within 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

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

Attachment: Changes to the Technical  
Specifications

Date of Issuance: July 25, 2003

ATTACHMENT TO LICENSE AMENDMENT NO. 277

FACILITY OPERATING LICENSE NO. DPR-65

DOCKET NO. 50-336

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

<u>Remove</u>	<u>Insert</u>
XVII	XVII
3/4 8-2a	3/4 8-2a
3/4 8-3	3/4 8-3
---	3/4 8-3a
---	3/4 8-3b
---	3/4 8-3c
---	3/4 8-3d
---	3/4 8-3e
3/4 8-4	3/4 8-4
3/4 8-5	3/4 8-5
B 3/4 8-1c	B 3/4 8-1c
B 3/4 8-1d	B 3/4 8-1d
---	B 3/4 8-1e
---	B 3/4 8-1f
---	B 3/4 8-1g
---	B 3/4 8-1h
---	B 3/4 8-1i
---	B 3/4 8-1j
---	B 3/4 8-1k
---	B 3/4 8-1l
---	B 3/4 8-1m
---	B 3/4 8-1n
---	B 3/4 8-1o
---	6-29

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 277

TO FACILITY OPERATING LICENSE NO. DPR-65

DOMINION NUCLEAR CONNECTICUT, INC.

MILLSTONE POWER STATION, UNIT NO. 2

DOCKET NO. 50-336

1.0 INTRODUCTION

By application dated August 12, 2002, as supplemented on February 28, 2003, Dominion Nuclear Connecticut, Inc. (the licensee), requested changes to the Millstone Power Station, Unit No. 2 (MP2) Technical Specifications (TSs). The supplement dated February 28, 2003, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on September 17, 2002 (67 FR 58639).

The proposed amendment would change the surveillance requirements (SRs) for the emergency diesel generators (EDGs) in TS 3/4.8.1.1, "Electrical Power Systems - A.C. Sources - Operating" and TS 3/4.8.1.2, "Electrical Power Systems - Shutdown." In addition, TS Section 6.0, "Administrative Controls," would be revised to add a new TS to define program requirements for testing the EDG fuel oil. The TS index and the TS Bases would also be revised to address the proposed changes.

2.0 REGULATORY EVALUATION

The construction permit for MP2 was issued by the Atomic Energy Commission (AEC) on December 11, 1970. The plant was designed and constructed based on the proposed General Design Criteria (GDC) published by the AEC in the *Federal Register* on July 11, 1967 (32 FR 10213). On February 20, 1971, the final rule that added Appendix A to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "General Design Criteria for Nuclear Power Plants," was published by the AEC in the *Federal Register* (36 FR 3255). As discussed in Appendix 1A of the MP2 Final Safety Analysis Report (FSAR), since February 20, 1971, the applicants/licensees for MP2 have attempted to comply with the intent of the newer GDC, to the extent possible, recognizing previous design commitments. The extent to which this has been possible is reflected in the discussions of the 1971 GDC described in Appendix 1A of the FSAR, and in specific sections of the FSAR as applicable.

As discussed in FSAR Section 8.3.1.2, the EDGs and their associated devices are designed, built, and tested in accordance with Section 5.2.4 of the Institute of Electrical and Electronics Engineers Standard 308-1971, Safety Guides 6 and 9, and GDC 1, 2, 3, 17, and 18 of Appendix A of 10 CFR Part 50. The regulatory requirements which the staff applied in its review of the amendment request are GDC 17 and GDC 18. The staff also considered the recommendations of Safety Guide 9 and Regulatory Guide (RG) 1.9 in its review.

GDC 17, "Electric power systems," requires, in part, that an onsite electric power system and an offsite electric power system be provided to permit functioning of structures, systems and components important to safety. The onsite system is required to have sufficient independence, redundancy, and testability to perform its safety function, assuming a single failure. The offsite power system is required to be supplied by two physically independent circuits that are designed and located so as to minimize, to the extent practical, the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. In addition, this criterion requires provisions to minimize the probability of losing electric power from the remaining electric power supplies as a result of, or coincident with, loss of power from the unit, the offsite transmission network, or the onsite power supplies.

GDC 18, "Inspection and testing of electric power systems," requires, in part, that electric power systems important to safety be designed to permit appropriate periodic inspection and testing.

Safety Guide 9, "Selection of Diesel Generator Set Capacity for Standby Power Supplies," dated March 10, 1971, describes an acceptable basis for the selection of diesel generator sets of sufficient capacity and margin to implement GDC 17.

RG 1.9, Revision 3, "Selection, Design, Qualification, and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electric Power Systems at Nuclear Power Plants," dated July 1993, provides, in part, explicit guidance for surveillance testing of EDGs.

As described by the licensee's application dated August 12, 2002, the standby power sources for MP2 consist of two independent and redundant alternating current (AC) power EDGs driven by separate diesel engines, each capable of supplying power to its respective emergency 4160 V bus. Each EDG set has the capability to power the engineered safety features (ESF) loads in rapid succession and to continuously supply the sum of the loads needed to be powered at any one time for a loss-of-coolant accident (LOCA).

During normal power operation, the EDGs are maintained in a standby mode. The EDGs may be manually started, and will automatically start on a loss of power to the respective emergency bus or a safety injection signal. If the normal and alternate offsite power sources are not available, the EDGs are then automatically connected to the respective emergency bus and sequentially loaded. The capacity of one EDG is sufficient to meet the ESF demand. The EDG loading sequence permits the start of large loads without voltage and frequency instability. The ratings for each EDG are: 2750 kW continuous, 3000 kW 2000 hours, and 3250 kW 300 hours.

### 3.0 TECHNICAL EVALUATION

The staff has reviewed the licensee's justification for the proposed license amendment as described in the licensee's application dated August 12, 2002, as supplemented on

February 28, 2003. The NRC staff's detailed evaluation of the proposed amendment is provided in Safety Evaluation (SE) Sections 3.1 through 3.3.

### 3.1 TS 3/4.8.1.1

#### 3.1.1 SR 4.8.1.1.2.a

The current SR requires that each EDG be tested at least once per 31 days on a staggered test basis. The proposed amendment would delete the requirement to perform the testing on a staggered basis.

Under TS Definition 1.21, "STAGGERED TEST BASIS," the specified test interval is divided by the number of trains to determine a "subinterval." One train is tested at the beginning of each subinterval. For a 31-day test interval, and a two-train system, such as the EDGs, this results in one train being tested at the beginning of the first 15-day subinterval, and the second train being tested at the beginning of the second 15-day subinterval. Therefore, the current SR results in each EDG being tested within the 31-day interval.

Since the proposed change to remove the staggered test requirements would still result in each EDG being tested every 31 days, the staff finds that the proposed change is acceptable. Also, the 31-day surveillance interval is consistent with the improved Standard Technical Specifications, NUREG-1432, Revision 2, "Standard Technical Specifications, Combustion Engineering Plants," SRs 3.8.1.2 and 3.8.1.3.

#### 3.1.2 SR 4.8.1.1.2.a.2

SR 4.8.1.1.2.a.2 currently requires verification that the EDG starts from standby conditions and accelerates to  $\geq 90\%$  of rated speed and to  $\geq 97\%$  of rated voltage. This SR would be revised to require verification that the EDG starts from standby conditions and achieves steady state voltage  $\geq 3740$  volts (V) and  $\leq 4580$  V, and frequency  $\geq 58.8$  Hertz (Hz) and  $\leq 61.2$  Hz. The proposed voltage range is based on the nominal voltage value of  $4160 \text{ V} \pm 10\%$ , and the proposed frequency range is based on the nominal frequency value of  $60 \text{ Hz} \pm 2\%$ . Note, the 10% voltage tolerance of 416 V is rounded to the nearest 10 V (i.e., 420 V) for the determination of the voltage range. The proposed voltage and frequency ranges are the same as those currently specified in SR 4.8.1.1.2.c.8.b, and are consistent with the voltage and frequency ranges specified in NUREG-1432, SR 3.8.1.2.

The licensee's submittal dated February 28, 2003, stated that this SR verifies the ability of the EDG to start every 31 days by performing a slow controlled start of the EDG following manufacturer recommendations. The submittal stated that this provides reasonable assurance that the EDG would be available if needed, but it does not check design features such as attaining 90% rated speed and 97% rated voltage within 15 seconds, the automatic start signals, or the automatic load sequence. The current requirements for the EDGs to attain  $\geq 90\%$  of rated speed and  $\geq 97\%$  of rated voltage would continue to be verified every 184 days by SR 4.8.1.1.2.d.1. The submittal also stated that the proposed requirements to verify steady state voltage and frequency conditions provide additional assurance that the voltage regulator and governor control circuits are functioning properly. Additionally, the proposed TS Bases state that the time for voltage and speed (frequency) to stabilize would be periodically

monitored and the trend evaluated to identify degradation of governor or voltage regulator performance when testing in accordance with the requirements of this surveillance.

During review of the application, the staff raised the question of whether 90% voltage at the EDG terminals (i.e., 4160 V - 10%) would be adequate for proper operation of all design basis loads. The licensee's submittal dated February 28, 2003, stated that the 4160 V emergency buses need a minimum of 88% of the nominal voltage (3660 V) in order to meet their minimum voltage for all safety related loads. The proposed steady state minimum voltage value of 3740 V (90%) is above the degraded grid voltage setpoint of 3660 V (88%). In addition, the EDG output voltage value of 3740 V is sufficiently above 3660 V to account for the expected voltage drop between the EDGs and the 4160 V emergency buses.

Based on the above, the staff finds that the proposed monthly testing to verify the ability of the EDGs to start from a standby condition and achieve steady state voltage and frequency, in conjunction with the testing required every 184 days by SR 4.8.1.1.2.d.1, provides reasonable assurance that the EDGs would be available to perform their intended function if needed. Therefore, the proposed change is acceptable. In addition, the proposed change is consistent with NUREG-1432, SR 3.8.1.2.

Current SR 4.8.1.1.2.a.2 also allows the use of a modified start based on recommendations of the manufacturer and includes a statement that if the modified start is not used, the requirements of SR 4.8.1.1.2.d.1 apply. This part of the current SR would be moved to new Note 1 of the proposed SR. The staff finds that this change is editorial in nature and, therefore, is acceptable.

Current SR 4.8.1.1.2.a.2 also includes footnote "\*\*\*" which states that performance of SR 4.8.1.1.2.d satisfies this SR. The footnote would be deleted from the bottom of TS page 3/4 8-2a and the information would be added as new Note 2 of the proposed SR. The staff finds that this change is editorial in nature and, therefore, is acceptable.

### 3.1.3 SR 4.8.1.1.2.a.3

SR 4.8.1.1.2.a.3 currently requires verification that the EDG is synchronized and loaded in accordance with the manufacturer's recommendations to  $\geq 1300$  kilowatts (kW), and operates with a load  $\geq 1300$  kW for  $\geq 60$  minutes. This SR would be revised to require verification that the EDG is synchronized and loaded, and operates for  $\geq 60$  minutes at a load  $\geq 2475$  kW and  $\leq 2750$  kW. The proposed load range is based on 90% to 100% of the continuous load rating (2750 kW) for the MP2 EDGs.

The licensee's submittal dated February 28, 2003, stated that this SR verifies the ability of the EDG to be fully loaded and operate for at least one hour every 31 days by performing a slow controlled loading of the EDG following manufacturer recommendations. The submittal stated that this provides reasonable assurance that the EDG would be available if needed, but it does not check design features such as the automatic start signals, or the automatic load sequence.

The proposed load range lower limit of 2475 kW bounds the expected EDG loading following the limiting design-basis accident (DBA), which is a large break LOCA, with a simultaneous loss of offsite power based on the post-LOCA load values shown in MP2 FSAR Tables 8.3-2

and 8.3-3 (2322 kW for EDG A, and 2370 kW for EDG B). Therefore, the proposed SR would provide adequate verification of the EDG performance following a DBA.

Since the proposed SR is more restrictive than the current SR, the staff finds that the proposed change is acceptable.

In addition, to the proposed change discussed previously, the proposed SR would be modified by five new notes as follows:

- a. The information in the current SR associated with loading the EDG in accordance with manufacturer's recommendations would be moved to Surveillance Note 1.

This would not result in any technical change to this information. The staff finds that this change is editorial in nature and, therefore, is acceptable. In addition, the proposed note is consistent with NUREG-1432, SR 3.8.1.3, Note 1.

- b. Surveillance Note 2 would be added. This note would state that momentary transients outside the specified load range do not invalidate this test.

This note would accommodate momentary bus load changes. Short duration bus load changes should not invalidate this test since momentary transients outside the specified range do not indicate any adverse performance issues with the ability of the EDG to operate at rated load. Based on this consideration, the staff finds the proposed change acceptable. In addition, the proposed note is consistent with NUREG-1432, SR 3.8.1.3, Note 2.

- c. Surveillance Note 3 would be added. This note would state that this test shall be conducted on only one EDG at a time.

This note would provide additional administrative control to avoid common cause failures that might occur due to offsite circuit or grid perturbations. Based on these considerations, the staff finds the proposed change acceptable. In addition, the proposed note is consistent with NUREG-1432, SR 3.8.1.3, Note 3.

- d. Surveillance Note 4 would be added. This note would state that this test shall be preceded by, and immediately follow without shutdown, a successful performance of SR 4.8.1.1.2.a.2, or SRs 4.8.1.1.2.d.1 and 4.8.1.1.2.d.2.

This change is more restrictive than the current SR and, therefore, is acceptable. In addition, the proposed note is consistent with NUREG-1432, SR 3.8.1.3, Note 4.

- e. The current SR includes footnote "\*\*\*" which states that performance of SR 4.8.1.1.2.d satisfies this SR. The footnote would be deleted from the bottom of TS page 3/4 8-2a and the information would be added as new Note 5 of the proposed SR.

The staff finds that this change is editorial in nature and, therefore, is acceptable.

#### 3.1.4 SR 4.8.1.1.2.b

Current SR 4.8.1.1.2.b requires verification at least once per 92 days that a sample of diesel fuel from each of the three fuel oil storage tanks, obtained in accordance with American Society for Testing and Materials (ASTM) D4057, is within the acceptable limits specified in Table 1 of ASTM D975 when checked for viscosity, water, and sediment. The proposed amendment would replace SR 4.8.1.1.2.b with SRs 4.8.1.1.2.b.1 and 4.8.1.1.2.b.2. In addition, new TS 6.24, "Diesel Fuel Oil Test Program," would be added to the Administrative Controls portion of the TSs.

Proposed SR 4.8.1.1.2.b.1 would require checking for and removing accumulated water from each of the fuel oil storage tanks at least once per 92 days. The presence of water in the fuel oil storage tanks would have a deleterious effect because it would promote growth of bacteria which may produce fouling of the system. Also, during the operation of the EDG, water entrained into fuel oil could affect its performance. The staff finds that this requirement and the proposed frequency are equivalent to the current requirements in SR 4.8.1.1.2.b with respect to water.

Proposed SR 4.8.1.1.2.b.2, similar to SR 4.8.1.1.2.b, would require that the licensee verify the properties of the fuel oil. However, the proposed SR would require verification tests to be performed not only on the stored oil but also on new oil. Also, the tests would be performed in accordance with the Diesel Fuel Testing Program. The staff finds that testing the new oil in addition to the stored oil would ensure that no substandard oil would be introduced into the storage tanks, and use of the Diesel Fuel Oil Test Program would provide a better description of the test procedures than the existing procedures in SR 4.8.1.1.2.b.

The Diesel Fuel Oil Test Program, as described in proposed TS 6.24, would include sampling and testing requirements and acceptance criteria for fuel oil, all in accordance with applicable ASTM standards. The program would include: (1) verifying acceptability of new fuel oil for use prior to its addition to the storage tanks; (2) verifying within 31 days following addition of new fuel oil to the storage tanks that all the properties of the oil are within limits of ASTM 2D, and (3) verifying the total particulate concentration of the fuel oil is  $\leq 10$  mg/l when tested every 92 days in accordance with ASTM 2276, Method A.

The staff has evaluated the proposed changes shown in SRs 4.8.1.1.2.b.1, SR 4.8.1.1.2.b.2, and TS 6.24. The staff finds that the proposed changes would improve the existing fuel testing procedures. Therefore, the proposed changes are acceptable.

#### 3.1.5 SR 4.8.1.1.2.c

SR 4.8.1.1.2.c currently requires that SRs 4.8.1.1.2.c.2, 4.8.1.1.2.c.3, 4.8.1.1.2.c.4, 4.8.1.1.2.c.5, 4.8.1.1.2.c.6, 4.8.1.1.2.c.7, and 4.8.1.1.2.c.8, be performed "[a]t least once per 18 months during shutdown." This SR would be modified by deleting the phrase "during shutdown." Instead of requiring all of the surveillances listed under SR 4.8.1.1.2.c to be performed during shutdown, each individual surveillance would contain a note, if appropriate, to restrict plant operation during test performance. The proposed changes in mode under which each surveillance would be performed are evaluated in the following sections.

### 3.1.6 SR 4.8.1.1.2.c.2

SR 4.8.1.1.2.c.2 verifies the timing of the EDG loading sequence to ensure that the EDG sequencers would properly load the EDG in response to a DBA with a loss of offsite power. The SR would be modified by adding a note to specify the plant operating restrictions associated with performance of this test. The note specifies that this surveillance shall not normally be performed in Modes 1 through 4. As described in the licensee's application, this is appropriate since performance of this test forces one of the emergency buses to be deenergized before the loads can be sequenced on the associated EDG. As a result, this test is not done in Modes 1 through 4 where two trains of equipment are typically required. The proposed note also includes a provision to allow performance of portions of this test to reestablish operability provided an assessment determines that plant safety is maintained or enhanced. The proposed TS Bases for this SR state that this assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed surveillance, a successful surveillance, and a perturbation of the offsite and onsite system when they are tied together or operated independently for the surveillance; as well as operator procedures available to cope with these outcomes.

The staff finds that, based on the considerations discussed in the preceding paragraph, the proposed note provides appropriate plant operating restrictions for performance of the SR, and, therefore, the proposed change is acceptable. In addition, the proposed note is consistent with the note in NUREG-1432, SR 3.8.1.18.

### 3.1.7 SR 4.8.1.1.2.c.3

SR 4.8.1.1.2.c.3 currently requires verification every 18 months during shutdown of the EDG capability to reject a load of  $\geq 250$  kW, and maintain voltage at  $4160 \pm 500$  V and frequency at  $60 \pm 3$  Hz. The SR would be modified by the following changes:

- a. The current restriction to perform the test "during shutdown" would be deleted. The licensee's application stated that this test can be performed either by using the associated EDG as the sole source of power to the respective emergency bus, or when operating in parallel with the electrical grid. Historically, this test has been performed during shutdown by paralleling to the grid. The required load is established and the EDG output breaker is then opened. The effect on the electrical distribution system and the electrical grid has been insignificant. A test very similar to this SR was performed while the plant was operating (Mode 1) in January 2002. The test was performed following an EDG preventive maintenance inspection and governor replacement to demonstrate operability of the governor. The effect on the electrical distribution system and the electrical grid was insignificant.

The staff finds that the performance of this test during power operation is acceptable since historical performance of tests demonstrate the ability of the EDG to withstand a partial load rejection with an insignificant effect on the electrical distribution system and the electrical grid.

- b. A surveillance note would be added to specify the desired power factor if this test is performed while paralleled to the grid. The note would specify a lagging power factor of  $\leq 0.9$ . The intent is to establish load conditions as close as possible to design conditions.

The specified power factor is representative of the actual inductive loading an EDG would see based on the motor rating of the single largest load. It is within the adjustment capability of the Control Room Operator, based on the use of reactive load indication, to establish the desired power factor. The note would allow test performance at a power factor other than specified, but as close as practical to the specified value.

The staff finds that the proposed change is more restrictive than the current SR and, therefore, is acceptable.

- c. The current SR requires rejection of a load  $\geq 250$  kW. The proposed SR would require the rejection of a load greater than, or equal, to the single largest post-accident load. A numeric value would no longer be specified since that value may change. Currently, MP2 FSAR Tables 8.3-2 and 8.3-3 indicate that the largest load is 365 kW (high pressure safety injection pump).

The staff finds that the proposed change is more restrictive than the current SR and, therefore, is acceptable. In addition, the proposed change is consistent with NUREG-1432, SR 3.8.1.9.

- d. The required frequency value following load rejection would change from  $60 \text{ Hz} \pm 3 \text{ Hz}$  to  $\leq 63 \text{ Hz}$ . The upper limit has not changed, but the lower limit has been deleted. The licensee's application stated that the loss-of-load would cause an increase in frequency as EDG speed increases. However, the loss-of-load would not cause an initial reduction in frequency, so no lower limit is necessary.

Since a lower limit is not necessary following load rejection, the staff finds that the proposed change is acceptable. As described in paragraph "e" below, the proposed SR would also include a frequency band to verify EDG operation post-load rejection. In addition, the proposed change is consistent with NUREG-1432, SR 3.8.1.9.

- e. Post-load rejection voltage and frequency bands consistent with the bands proposed for SR 4.8.1.1.2.a.2 would be specified. The licensee stated that the proposed voltage band is more restrictive than the current band ( $\pm 420 \text{ V}$  vs.  $\pm 500 \text{ V}$ ). The proposed frequency band is also more restrictive than the current band ( $\pm 1.2 \text{ Hz}$  vs.  $\pm 3 \text{ Hz}$ ). The proposed voltage and frequency bands include a maximum time period (within 2.2 seconds) by which the EDG is required to restore voltage and frequency. The proposed value is based on the criteria in Regulatory Position C.4 in Safety Guide 9 to restore voltage to "within 10% of nominal" and frequency "within 2% of nominal in less than 40% of each load sequence time interval." The load sequence time interval, as specified in SR 4.8.1.1.2.c.2, is 5.5 seconds. Specifying the proposed time period requirement to be within 40% of 2.2 seconds (i.e., less than or equal to) instead of less than 40% of 2.2 seconds, would not result in any significant numeric difference in the acceptance criteria while maintaining consistency with other SRs.

The staff finds that the proposed changes are consistent with the guidance in Safety Guide 9. Therefore, the proposed changes are acceptable. In addition, the proposed changes are consistent with NUREG-1432, SR 3.8.1.9, except the time requirement is based on 40% of the load sequence time interval instead of 60%.

### 3.1.8 SR 4.8.1.1.2.c.4

SR 4.8.1.1.2.c.4 currently requires verification every 18 months during shutdown of the EDG capability to reject a load of 1300 kW without exceeding the overspeed trip setpoint. The SR would be modified by the following changes:

- a. The current restriction to perform this test "during shutdown" would be deleted. The licensee's application stated that this test, at the proposed higher load of  $\geq 2475$  kW and  $\leq 2750$  kW, would be performed when the associated EDG is operating in parallel with the electrical grid. Historically, this test has been performed (at 1300 kW) during shutdown by paralleling to the grid. The required load is established and the EDG output breaker is then opened. The effect on the electrical distribution system and the electrical grid has been insignificant. A test very similar to this SR (1300 kW) was performed while the plant was operating (Mode 1) in January 2002. The test was performed following an EDG preventive maintenance inspection and governor replacement to demonstrate operability of the governor. The effect on the electrical distribution system and the electrical grid was insignificant. In addition, during the March 2002 monthly surveillance test of the A EDG, the associated EDG output breaker tripped on reverse power following a rapid loss of EDG electrical load. The EDG was loaded to approximately 2600 kW before the transient occurred. The effect on the electrical distribution system and the electrical grid was insignificant from the resultant loss of EDG electrical load.

The staff finds that the performance of this test during power operation is acceptable since historical performance of tests to demonstrate the ability of the EDG to withstand a 1300 kW load rejection, as well as the recent equipment malfunction which resulted in the loss of load equivalent to the proposed value, have had an insignificant effect on the electrical distribution system and the electrical grid.

- b. A surveillance note would be added to specify the desired power factor if this test is performed while paralleled to the grid. The note would specify a lagging power factor of  $\leq 0.83$ . The intent is to establish load conditions as close as possible to design basis conditions. The note would allow test performance at a power factor other than specified, but as close as practical to the specified value.

During review of the application, the staff raised the question of whether the calculated power factor of the DBA load would envelop the tested load condition, including its power factor. The licensee's submittal dated February 28, 2003, stated that the worst-case steady state loading for the EDG B is 2679 kW at a power factor of 0.84 and for EDG A is 2641 kW. This is within the continuous rating of 2750 kW at a power factor of 0.80. A value of  $\leq 0.83$  is consistent with the worst-case EDG loading and is within the design rating of the EDG.

The staff finds that the proposed change is more restrictive than the current SR and, therefore, is acceptable.

- c. The current SR requires rejection of a load of 1300 kW. The proposed SR would require the rejection of a load  $\geq 2475$  kW and  $\leq 2750$  kW. The load range is based on 90% to 100% of the continuous load rating (2750 kW) for the MP2 EDGs.

The staff finds that the proposed change is more restrictive than the current SR and, therefore, is acceptable.

- d. The acceptance criteria for the proposed SR would specify that the EDG does not trip following the load rejection, instead of the current requirement to not trip on overspeed.

The staff finds that the proposed change is more restrictive than the current SR, since the acceptance criteria would encompass the overspeed trip, as well as other EDG trips. Therefore, the proposed change is acceptable.

### 3.1.9 SR 4.8.1.1.2.c.5

SR 4.8.1.1.2.c.5 currently requires, every 18 months during shutdown, simulating a loss of offsite power in conjunction with a safety injection actuation signal, and:

- a. verifying deenergization of the emergency busses and load shedding from the emergency busses;
- b. verifying the EDG starts from standby conditions on the autostart signal, energizes the emergency busses with permanently connected loads, energizes the auto-connected emergency loads through the load sequencer and operates for  $\geq 5$  minutes while its generator is loaded with the emergency loads; and
- c. verifying that on the safety injection actuation signal, all EDG trips, except engine overspeed, generator differential current, voltage restraint overcurrent, and low lube oil pressure (2 out of 3) are automatically bypassed.

The SR would be modified by the following changes:

- a. The SR would be modified by adding a note to specify the plant operating restrictions associated with performance of this test. The note specifies that this surveillance shall not normally be performed in Modes 1 through 4. As described in the licensee's application, this is appropriate since performance of this test forces one of the emergency busses to be deenergized before the loads can be sequenced on the associated EDG. As a result, this test is not done in Modes 1 through 4 where two trains of equipment are typically required. The proposed note also includes a provision to allow performance of portions of this test to reestablish operability, provided an assessment determines that plant safety is maintained or enhanced. The proposed TS Bases for this SR state that this assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial surveillance, a successful partial surveillance, and a perturbation of the offsite and onsite system when they are tied together or operated independently for the partial surveillance; as well as operator procedures available to cope with these outcomes.

The staff finds that, based on the considerations discussed in the preceding paragraph, the proposed note provides appropriate plant operating restrictions for performance of the SR and, therefore, the proposed change is acceptable. In addition, the proposed note is consistent with the note in NUREG-1432, SR 3.8.1.19.

- b. The proposed test would specify performance by use of an actual or simulated actuation signal. The current test only specifies use of a simulated signal.

The staff finds that use of an actual actuation signal would provide an equivalent means of testing the EDG functions as a simulated signal and would provide additional flexibility in test performance. Accordingly, the proposed change is acceptable. In addition, the proposed change is consistent with NUREG-1432, SR 3.8.1.19.

- c. The requirements currently contained in SR 4.8.1.1.2.c.5.a (verifying deenergization of the emergency busses and load shedding from the emergency busses) would be contained in proposed SR 4.8.1.1.2.c.5.a and SR 4.8.1.1.2.c.5.b.

The staff finds that this change is editorial in nature and, therefore, is acceptable.

- d. The requirements currently contained in SR 4.8.1.1.2.c.5.b (verifying the EDG starts from standby conditions on the autostart signal....) would be contained in proposed SR 4.8.1.1.2.c.5.c and the associated subordinate requirements 1 through 5. The requirement for the EDG to start from a standby condition has not changed. However, the following modifications have been made to the subordinate requirements.

- 1. SR 4.8.1.1.2.c.5.b currently includes a requirement to energize the emergency busses with permanently connected loads. Proposed SR 4.8.1.1.2.c.5.c.1 would modify that requirement to include a time acceptance criteria of  $\leq 15$  seconds to energize the permanently connected loads. The 15 second criterion is consistent with the required time for the EDG to be ready to accept loads (i.e., sufficient voltage and frequency to allow the EDG output breaker to close) as specified in current SR 4.8.1.1.2.d.1. As discussed in the proposed TS Bases change for this SR, the 15 second criterion is derived from requirements of the accident analyses to respond to a design basis large break LOCA.

The staff finds that this is a more restrictive change that is consistent with the plant design basis and, therefore, is acceptable.

- 2. SR 4.8.1.1.2.c.5.b currently includes a requirement to energize the auto-connected emergency loads through the load sequencer. This requirement would be contained in proposed SR 4.8.1.1.2.c.5.c.2.

The staff finds that this change is editorial in nature and, therefore, is acceptable.

- 3. Proposed SR 4.8.1.1.2.c.5.c.3 would add a new requirement for a voltage band, consistent with the band proposed for SR 4.8.1.1.2.a.2.

The staff finds that this is a more restrictive change with acceptable voltage limits and, therefore, is acceptable.

- 4. Proposed SR 4.8.1.1.2.c.5.c.4 would add a new requirement for a frequency band, consistent with the band proposed for SR 4.8.1.1.2.a.2.

The staff finds that this is a more restrictive change with acceptable frequency limits and, therefore, is acceptable.

5. SR 4.8.1.1.2.c.5.b currently includes a requirement to operate for  $\geq 5$  minutes while the generator is loaded with the emergency loads. Proposed SR 4.8.1.1.2.c.5.c.5 would clarify this requirement to specify permanently connected and auto-connected loads rather than emergency loads. The time requirement of  $\geq 5$  minutes would remain the same.

The staff finds that the proposed change provides clarification and would not result in any technical change to the current loading requirements. Therefore, the proposed change is acceptable.

- e. The current requirement contained in SR 4.8.1.1.2.c.5.c would be moved to a new SR 4.8.1.1.2.c.6. This change is discussed in SE Section 3.1.10.

### 3.1.10 SR 4.8.1.1.2.c.6

SR 4.8.1.1.2.c.6 would be modified by the following changes:

- a. The current requirement contained in SR 4.8.1.1.2.c.6 would be deleted. This surveillance currently verifies, every 18 months, the ability of the EDG to operate at the continuous load rating of  $\geq 2750$  kW for  $\geq 60$  minutes. This requirement is no longer necessary due to the proposed modifications to SRs 4.8.1.1.2.a.3 and 4.8.1.1.2.d.3 which would require the EDG to operate at  $\geq 2475$  kW and  $\leq 2750$  kW for  $\geq 60$  minutes. Although the current surveillance test requires the EDG to be loaded to, or above, the continuous rating of 2750 kW, SRs 4.8.1.1.2.a.3 and 4.8.1.1.2.d.3, which would be performed every 31 days and 184 days respectively, would only require loading between 90% and 100% of the continuous load rating. The staff finds the use of 90 -100% of the continuous load rating band in SRs 4.8.1.1.2.a.3 and 4.8.1.1.2.d.3 to be consistent with standard industry guidance (RG 1.9, Section 2.2.2) and would provide adequate verification of the EDG performance following a DBA as discussed in SE Sections 3.1.3 and 3.1.14. Therefore, the deletion of the current requirements contained in SR 4.8.1.1.2.c.6 is acceptable.
- b. A new surveillance, SR 4.8.1.1.2.c.6, would be added to contain the requirements currently specified in SR 4.8.1.1.2.c.5.c. The intent of the current and the proposed SR is to demonstrate that EDG noncritical protective functions (e.g., high jacket water temperature) are bypassed on a loss of offsite power concurrent with an ESF actuation signal. Under these conditions, the critical protective functions (engine overspeed, generator differential current, voltage restraint overcurrent, and low lube oil pressure) remain available to trip the EDG and/or output breaker to avert substantial damage to the EDG. The current requirements in SR 4.8.1.1.2.c.5.c, as proposed in SR 4.8.1.1.2.c.6, would be modified by the following changes:
  1. The SR would be modified by adding a note to specify the plant operating restrictions associated with performance of this test. The note specifies that this surveillance shall not normally be performed in Modes 1 through 4. As described in the licensee's application, this is appropriate since performance of this test forces an EDG to be removed from service and the generation of an ESF actuation signal in conjunction with

a loss of offsite power. These same signals are required for performance of proposed SR 4.8.1.1.2.c.5.c, and the tests would be performed at the same time. Therefore, the proposed plant operating restrictions are the same as proposed for SR 4.8.1.1.2.c.5.c. The proposed note also includes a provision to allow performance of portions of this test to reestablish operability, provided an assessment determines that plant safety is maintained or enhanced. The proposed TS Bases for this SR state that this assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial surveillance, a successful partial surveillance, and a perturbation of the offsite and onsite system when they are tied together or operated independently for the partial surveillance; as well as operator procedures available to cope with these outcomes.

The staff finds that, based on the considerations discussed in the preceding paragraph, the proposed note provides appropriate plant operating restrictions for performance of the SR and, therefore, the proposed change is acceptable. In addition, the proposed note is consistent with the note in NUREG-1432, SR 3.8.1.13, except that the proposed note is more restrictive since NUREG-1432 only restricts test performance in Modes 1 and 2.

2. The proposed surveillance test would specify performance by use of an actual or simulated loss of offsite power in conjunction with an actual or simulated ESF actuation signal. The current test only specifies use of a safety injection actuation signal. Both of these signals are required to automatically bypass all of the EDG trips except those specified in the proposed SR.

The staff finds that use of actual actuation signals would provide an equivalent means of testing the EDG functions as simulated signals and would provide additional flexibility in test performance. Accordingly, the proposed change is acceptable. In addition, the proposed change is consistent with NUREG-1432, SR 3.8.1.13.

3. The EDG trip signals contained in proposed SR 4.8.1.1.2.6.a through 6.d (i.e., engine overspeed, generator differential current, voltage restraint overcurrent, and low lube oil pressure (2 out of 3)) are the same as the trips currently specified in SR 4.8.1.1.2.c.5.c.

The staff finds that the proposed change is editorial in nature and, therefore, is acceptable.

### 3.1.11 SR 4.8.1.1.2.c.7

SR 4.8.1.1.2.c.7 would be modified by the following changes:

- a. The current SR 4.8.1.1.2.c.7 would be deleted. This surveillance verifies that the auto-connected loads to each EDG do not exceed the 2000 hour rating of 3000 kW. The licensee's application stated that this SR is a verification that the plant has been designed properly. The SR is performed by an engineering calculation that sums the electrical loads for all auto-connected EDG loads and verifies that the total is  $\leq 3000$  kW. The SR is not performed by running an actual test.

The 2000 hour rating of 3000 kW is currently contained as part of the EDG system design description contained in UFSAR Section 8.3.2.1. In addition, the predicted post-LOCA load values are shown in MP2 FSAR Tables 8.3-2 and 8.3-3 (2322 kW for EDG A, and 2370 kW for EDG B). Changes to the UFSAR are controlled by 10 CFR 50.59. In addition, any change to the loads placed on the EDGs will be controlled by 10 CFR 50.59 (a design change is required to change the actual loads).

Section 50.36(c)(3) of 10 CFR, "Surveillance requirements," states that SRs are requirements related to test, calibration, or inspection, to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that LCOs will be met. The current SR is not a test, calibration, or inspection, and it does not demonstrate EDG operability consistent with the current LCO requirements.

The staff finds that the current SR provides verification of plant design, not EDG performance, and is not required to demonstrate EDG operability consistent with 10 CFR 50.36. The staff also finds that 10 CFR 50.59 will provide adequate control to ensure that changes in EDG loading will be properly evaluated to ensure that the EDGs are not overloaded and will perform as assumed in the safety analyses. Based on these considerations, the staff concludes that deletion of this SR is acceptable. In addition, this type of SR requirement is not contained in NUREG-1432.

- b. A new surveillance, SR 4.8.1.1.2.c.7, would be added. This new SR contains the same test requirements as the proposed changes to SR 4.8.1.1.2.c.5 except for the required actuation signal. Proposed SR 4.8.1.1.2.c.7 would verify operation on an actual or simulated loss of offsite power signal, while proposed SR 4.8.1.1.2.c.5 verifies operation on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal. The proposed new SR would contain two notes. Note 1 would contain the same plant operating restrictions as SR 4.8.1.1.2.c.5. Note 2 would specify that the start of the EDG from a standby condition is not required if this surveillance is performed in conjunction with SR 4.8.1.1.2.c.5.

The staff finds the addition of this new SR is more restrictive than the current TS requirements and would verify proper operation of the emergency power system following a loss of offsite power. Therefore, the proposed change is acceptable. In addition, the proposed new SR is consistent with NUREG-1432, SR 3.8.1.11.

### 3.1.12 SR 4.8.1.1.2.c.8

SR 4.8.1.1.2.c.8 currently requires, every 18 months during shutdown, verifying that on an actual or simulated Safety Injection Actuation Signal (SIAS) without a loss of offsite power that:

- a. The EDG starts from standby conditions on the auto-start signal and operates on standby for greater than 5 minutes;
- b. The EDG voltage and frequency reach 58.8 to 61.2 HZ, and 3740 to 4580 V, and be maintained during this test; and
- c. The EDG start time (time to reach 90% of rated speed and 97% of rated voltage) is less than, or equal to, 15 seconds.

The SR would be modified by the following changes:

- a. The current restriction to perform this test "during shutdown" would be deleted. The licensee's application stated that since this test only checks that the EDG starts on an ESF signal (i.e., SIAS) and that the signal, by itself, would not cause the EDG to load, there would be no impact on either the electrical distribution system or the electrical grid. The Engineered Safeguards Actuation System module that develops the EDG actuation signal also sends an actuation signal to several Reactor Building Closed Cooling Water (RBCCW) System valves. These valves are associated with heat exchangers that can be removed from service, or that would not be adversely affected by the associated valve actuation.

The staff finds that since this test would have no effect on either the electrical distribution system or the electrical grid, and there would be no adverse effect on the RBCCW components affected by the associated valves, performance of this SR does not need to be restricted to shutdown conditions. Therefore, the proposed change is acceptable.

- b. The proposed test would specify performance by use of an actual or simulated ESF actuation signal. The current test specifies use of an actual or simulated SIAS without a loss of offsite power. The licensee's application stated that since an SIAS is an ESF signal, the proposed change would not affect test performance or how this protective feature functions. In addition, it is not necessary to specify without a loss of offsite power since it is implied by the proposed wording. The proposed Bases for this SR indicate that the specified actuation signal for this test is an ESF signal without loss of offsite power.

The staff finds that the proposed change to specify an ESF actuation signal provides consistency between the various proposed SR changes and that it is not necessary to specify "without a loss of offsite power." Therefore, the proposed change is acceptable.

- c. The requirements contained in proposed SRs 4.8.1.1.2.c.8.a through 4.8.1.1.2.c.8.d are the same as the current SR, with the exception the EDG would be required to operate greater than, or equal to, 5 minutes instead of the current requirement to operate greater than 5 minutes.

The staff finds that this change would not result in any significant numeric difference in the acceptance criteria, and is acceptable.

- d. The requirements contained in proposed SR 4.8.1.1.2.c.8.e and 4.8.1.1.2.c.8.f are new requirements which verify that the permanently connected loads and auto-connected loads remain energized from the offsite power system. The licensee's application stated that these requirements are consistent with the current SR 4.8.1.1.2.c.8.a requirement to operate in standby for greater than 5 minutes.

The staff finds that the proposed change is more prescriptive than the current SR, and is not considered a technical change. Therefore, the proposed change is acceptable.

### 3.1.13 SR 4.8.1.1.2.c.9

A new surveillance, SR 4.8.1.1.2.c.9, would be added. This new SR would verify the ability of an EDG to immediately restart after operation. The proposed hot-start surveillance requires the

EDG to be restarted within 5 minutes following at least one hour of operation at a loading of  $\geq 2475$  kW and  $\leq 2750$  kW. This is a more restrictive change.

The staff finds that the addition of this new SR is more restrictive than the current TS requirements and would provide additional assurance that the EDGs would perform as assumed for design basis mitigation. Therefore, the proposed change is acceptable. In addition, the proposed new SR is consistent with NUREG-1432, SR 3.8.1.15.

#### 3.1.14 SR 4.8.1.1.2.d.2

SR 4.8.1.1.2.d.2 currently verifies, once per 184 days, that the EDG is synchronized and loaded in accordance with the manufacturer's recommendations to  $\geq 1300$  kW and operates with a load  $\geq 1300$  kW for  $\geq 60$  minutes. These requirements would be moved to new SR 4.8.1.1.2.d.3 and would be modified as described below.

A new SR 4.8.1.1.2.d.2 would be added to verify, once per 184 days, that the EDG achieves steady state voltage  $\geq 3740$  V and  $\leq 4580$  V, and frequency  $\geq 58.8$  Hz and  $\leq 61.2$  Hz. The voltage and frequency band values are consistent with those currently specified in SR 4.8.1.1.2.c.8. The staff finds that this is a more restrictive change with acceptable voltage and frequency limits and, therefore, is acceptable. In addition, the proposed new requirement is consistent with NUREG-1432, SR 3.8.1.7.

The requirements currently contained in SR 4.8.1.1.2.d.2, that would be moved to SR 4.8.1.1.2.d.3, would be modified as follows:

- a. The information in the current SR associated with loading the EDG, in accordance with manufacturer's recommendations, would be moved to Surveillance Note 1.

This would not result in any technical change to this information. The staff finds that this change is editorial in nature and, therefore, is acceptable.

- b. Surveillance Note 2 would be added. This note would state that momentary transients outside the specified load range do not invalidate this test.

This note would accommodate momentary bus load changes. Short duration bus load changes should not invalidate this test since momentary transients outside the specified range do not indicate any adverse performance issues with the ability of the EDG to operate at rated load. Based on these considerations, the staff finds the proposed change acceptable.

- c. Surveillance Note 3 would be added. This note would state that this test shall be conducted on only one EDG at a time.

This note would provide additional administrative control to avoid common cause failures that might occur due to offsite circuit or grid perturbations. Based on these considerations, the staff finds the proposed change acceptable.

- d. Surveillance Note 4 would be added. This note would state that this test shall be preceded by, and immediately follow without shutdown, a successful performance of SRs 4.8.1.1.2.d.1 and 4.8.1.1.2.d.2, or SR 4.8.1.1.2.a.2.

This change is more restrictive than the current SR, therefore, the proposed note is acceptable.

- e. The requirement to load and maintain EDG loading  $\geq 1300$  kW would be modified to a load band of  $\geq 2475$  kW and  $\leq 2750$  kW. The proposed load range is based on 90% to 100% of the continuous load rating (2750 kW) for the MP2 EDGs. The requirement for the EDG to be loaded for  $\geq 60$  minutes would not change.

The proposed load range lower limit of 2475 kW bounds the expected EDG loading following the limiting DBA (large break LOCA) with a simultaneous loss of offsite power based on the post-LOCA load values shown in MP2 FSAR Tables 8.3-2 and 8.3-3 (2322 kW for EDG A, and 2370 kW for EDG B). Therefore, the proposed SR would provide adequate verification of the EDG performance following a DBA. Since the proposed SR is more restrictive than the current SR, the staff finds that the proposed change is acceptable.

### 3.2 TS 3/4.8.1.2

TS 3/4.8.1.1 provides the operability and surveillance test requirements for the AC electrical power sources that are required operable in Modes 1, 2, 3, and 4. TS 3/4.8.1.2 provides the operability and surveillance test requirements for the AC electrical power sources that are required operable in Modes 5 and 6.

SR 4.8.1.2 currently requires that the electrical power sources required to be operable in Modes 5 and 6, as defined by Limiting Condition for Operation 3.8.1.2, be demonstrated operable per SRs 4.8.1.1.1 and 4.8.1.1.2, with the exception that the following SRs are not required to be performed: SRs 4.8.1.1.2.a.3, 4.8.1.1.2.c.2, 4.8.1.1.2.c.5, and 4.8.1.1.2.d.2. SR 4.8.1.2 would be modified as follows:

- a. SR 4.8.1.1.2.c.6 would be added to the list of excluded surveillance requirements. The requirements contained in the proposed SR 4.8.1.1.2.c.6 are currently contained in SR 4.8.1.1.2.c.5.c. Since SR 4.8.1.1.2.c.5 is currently listed as an excluded surveillance, the addition of SR 4.8.1.1.2.c.6 would not result in any technical change.

The staff finds that this change is editorial in nature and, therefore, is acceptable.

- b. SR 4.8.1.1.2.c.7 would be added to the list of excluded SRs. Proposed SR 4.8.1.1.2.c.7 relies on the EDG sequencer to sequence loads onto the EDG. As discussed in the licensee's application, the EDG sequencer is not required to be operable in Modes 5 and 6.

Since the sequencer is not required to be operable in the modes pertaining to TS 3/4.8.1.2, the staff finds that the proposed change is acceptable.

- c. The reference to SR 4.8.1.1.2.d.2 as an excluded surveillance test, would be changed to SR 4.8.1.1.2.d.3. Since the current SR 4.8.1.1.2.d.2 requirements are proposed to be moved to SR 4.8.1.1.2.d.3, this would not result in any technical change.

The staff finds that this change is editorial in nature and, therefore, is acceptable.

### 3.3 Technical Evaluation Conclusion/Summary

Based on the considerations discussed in SE Sections 3.1 and 3.2, the staff concludes that the proposed changes are acceptable. The staff also concludes that the proposed changes do not affect MP2's compliance with the requirements of GDC 17, GDC 18, and Safety Guide 9.

The licensee has also proposed to revise the TS Bases to address the proposed changes. The staff has no objections to these Bases changes.

### 4.0 STATE CONSULTATION

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

### 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes SRs. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (67 FR 58639). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

### 6.0 CONCLUSION

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

Principal Contributors: A. Pal  
K. Parczewski  
R. Ennis

Date: July 25, 2003