



444 South 16th Street Mall
Omaha NE 68102-2247

LIC-09-0036
May 29, 2009

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

- References:
1. Docket No. 50-285
 2. Letter from NRC (D. G. Eisenhut) to All Power Reactor Licensees, dated April 10, 1980 (NRC-80-0060)
 3. Letter from NRC (R. A. Clark) to OPPD (W. C. Jones), Fort Calhoun Station Unit No. 1 – Amendment No. 52, dated October 14, 1980 (NRC-80-0187)
 4. Letter from NRC (A. B. Wang) to OPPD (J. A. Reinhart), *Fort Calhoun Station, Unit No. 1 - Issuance of Amendment Re: Clarification of Technical Specification (TS) 2.7(2)j Regarding Emergency Diesel Generators Allowed Outage Time (TAC No. MD8569)*, dated March 27, 2009
 5. Letter from OPPD (D. J. Bannister) to NRC (Document Control Desk), *Fort Calhoun Station Unit No. 1 License Amendment Request LAR) 08-03, Clarify Technical Specification 2.7(2) Regarding Preferred Offsite Power Source, Transformer Allowed Outage Time (AOT)*, dated July 31, 2008 (LIC-08-0074) (ML082140104)
 6. Letter from OPPD (R. P. Clemens) to NRC (Document Control Desk), *Revision to Fort Calhoun Station Unit No. 1, License Amendment Request (LAR) 08-03, Clarify Technical Specification 2.7(2) Regarding Preferred Offsite Power Source, Transformer Allowed Outage Time (AOT)*, dated May 8, 2009 (LIC-09-0034)

SUBJECT: Fort Calhoun Station Unit No. 1, License Amendment Request 09-03, Revision to Technical Specifications Sections 2.0.1 and 2.7 for Inoperable System, Subsystem or Component Due to Inoperable Power Source and Deletion of Diesel Generator Surveillance Requirement 3.7(1)e

Pursuant to 10 CFR 50.90, the Omaha Public Power District (OPPD) hereby requests the following changes to the Fort Calhoun Station (FCS), Unit No. 1, Renewed Operating License No. DPR-40: (1) revise the definition for Operable-Operability in the FCS Technical Specifications (TS); (2) modify the provisions under which equipment may be considered operable when either its normal or emergency power source is inoperable; (3) delete TS limiting condition for operation (LCO) 2.0.1(2); (4) delete diesel generator surveillance requirement (SR) 3.7(1)e; and (5) relocate the guidance for inoperable power supplies and verifying operability of redundant components into the LCO for electrical equipment 2.7, *Electrical Systems*. These changes are more aligned with NUREG 1432, *Standard Technical Specifications [STS] for Combustion Engineering Plants*.

This license amendment request (LAR) is being submitted, in part, to address inconsistencies in guidance provided by TS 2.0.1(2) and TS 2.7(2) and to address Nuclear Regulatory Commission (NRC) regional inspection and NRC TS Branch staff concerns regarding the current wording in TS 2.0.1(2).

In 1980, the NRC mandated all plants to incorporate additional operability guidance in their TS for situations when a normal or emergency power supply is inoperable and provided the model TS to be included (Reference 2). OPPD implemented this guidance by including a definition of operable/operability and guidance in TS 2.0.1(2) via TS Amendment No. 52 (Reference 3).

The proposed changes will delete TS LCO 2.0.1, *General Requirements*, Paragraph (2). These requirements, in part, will be relocated in TS LCO 2.7(2)b and j. Please note that References 5 and 6 proposed additional changes to TS 2.7(2)b which are currently under NRC review. However, the changes proposed via this LAR do not impact the changes currently being reviewed by the NRC. Also, note that TS 2.7(2)j was revised under TS Amendment No. 258 (Reference 4) and is scheduled for implementation by July 23, 2009. Therefore, although not implemented yet, the Amendment No. 258 version of TS 2.7(2)j is marked up for this proposed change. Statements are also being deleted from TS 2.7(2)d, e, f, g, j, and l concerning verifying engineered safeguards components associated with the alternate electrical train. These changes are intended to be more aligned with NUREG-1432, where deemed possible.

The statement that motor control center (MCC) 3C1 may be inoperable in excess of 8 hours provided battery chargers No. 1 and No. 2 are operable is also being deleted from TS 2.7(2)g. The inoperability of an individual MCC is handled by its associated loads. Since this TS statement does not provide a specified time limit, it is proposed to be deleted.

In addition, TS 2.7(2)g is being administratively changed to arrange the MCCs in the first group in bus order (for example, 3A1, 3A2, 3B1, in lieu of 3A1, 3B1, 3A2) and to add MCC-4B1 to the second group of MCCs to ensure the TS correctly reflects the current plant configuration for the MCCs for each group. TS 2.7(1)f is also being similarly revised to include MCC-4B1 and rearrange the MCCs in bus order. TS 2.7(1)a and b are also being administratively revised to add "T1A" to the transformer tag numbers for consistency.

The proposed change also deletes a TS 3.7(1)e surveillance requirement (SR) for an inspection performed on the emergency diesel generators (EDGs) per the manufacturer's recommendations. This inspection is performed on a refueling frequency as a preventive maintenance activity per the manufacturer's recommendations and does not meet the 10 CFR 50.36(c)(3) criteria for inclusion as a TS required SR. The EDG periodic inspection requirements will be specified via the licensee-controlled EDG maintenance process that will be referenced in the Updated Safety Analysis Report (USAR). This TS deletion results in TS 3.7(1)f being renumbered to TS 3.7(1)e.

The associated TS Bases for TS 2.0.1 and 2.7(2) are also being revised to reflect the deletion of 2.0.1 paragraph (2), renumbering of 2.0.1 paragraph (3), repagination, and addition of information to support the changes to TS 2.7(2), respectively. The TS Bases Changes (TSBCs) are included for information and will be processed in accordance with TS 5.20.

OPPD has determined that this LAR does not involve a significant hazard consideration as determined per 10 CFR 50.92. Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance of this amendment.

The enclosure contains a description of the proposed changes, the supporting technical evaluation, and the significant hazards consideration determination. Attachment 1 provides the existing TS pages marked-up to show the proposed changes. Attachment 2 provides the retyped (clean) TS pages. Attachments 3 and 4 provide the "information only" markups and retyped (clean) TS Bases pages for TS 2.0.1 and 2.7, respectively.

There is one regulatory commitment associated with this proposed change provided in the table below and in Attachment 5.

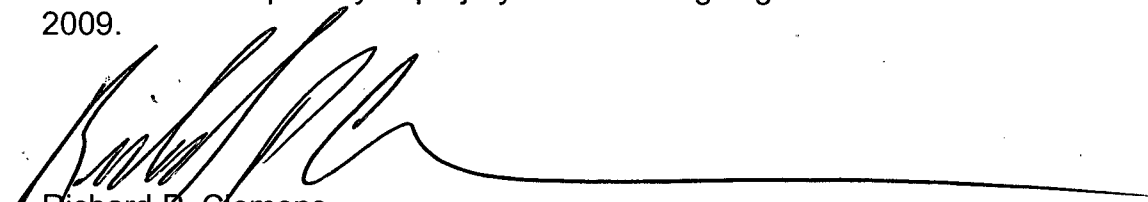
Commitment Action	Commitment Date
1. The required EDG periodic inspection will be performed via the licensee-controlled EDG maintenance process that will be referenced in the Updated Safety Analysis Report (USAR).	This action will be completed as part of implementation of the approved License Amendment. (AR 43378)

OPPD requests approval of the proposed amendment by May 29, 2010. Once approved, the amendment shall be implemented within 120 days.

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated State of Nebraska official.

If you should have any questions regarding this LAR or require additional information, please contact Mr. Bill R. Hansher at 402-533-6894.

I declare under penalty of perjury that the foregoing is true and correct. Executed on May 29, 2009.



Richard P. Clemens
Division Manager
Nuclear Engineering

RPC/BRH/dll

Enclosure: OPPD's Evaluation of the Proposed Change(s)

- c: E. E. Collins, NRC Regional Administrator, Region IV
A. B. Wang, NRC Project Manager
J. D. Hanna, NRC Senior Resident Inspector
J. C. Kirkland, NRC Senior Resident Inspector
Director of Consumer Health Services, Department of Regulation and Licensure,
Nebraska Health and Human Services, State of Nebraska

OPPD's Evaluation of the Proposed Change(s)

Subject: License Amendment Request (LAR) 09-03, Revision to Technical Specifications Sections 2.0.1 and 2.7 for Inoperable System, Subsystem or Component Due to Inoperable Power Source; and Deletion of Diesel Generator Surveillance Requirement 3.7(1)e

1.0 SUMMARY DESCRIPTION

2.0 DETAILED DESCRIPTION

3.0 TECHNICAL EVALUATION

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

4.2 Precedent

4.3 Significant Hazards Consideration

4.4 Conclusions

5.0 ENVIRONMENTAL CONSIDERATION

6.0 REFERENCES

ATTACHMENTS:

1. Technical Specifications Pages - Markups
2. Technical Specifications Pages - Retyped ("Clean")
3. Technical Specification Bases Pages – Markups (For Information Only)
4. Technical Specification Bases Pages – Retyped ("Clean") (For Information Only)
5. Regulatory Commitment

1.0 SUMMARY DESCRIPTION

The Omaha Public Power District (OPPD) hereby requests an amendment to the Renewed Facility Operating License No. DPR-40 for Fort Calhoun Station (FCS), Unit No. 1, to revise the Technical Specifications (TS) definition of Operable – Operability; Limiting Conditions for Operation (LCO) 2.0.1, *General Requirements*; TS 2.7, *Electrical Systems*, paragraphs (1) *Minimum Requirements* and (2) *Modification of Minimum Requirements*; and TS 3.7, *Emergency Power System Periodic Tests*.

Specifically, the TS *Miscellaneous Definition of Operable – Operability* will be revised to be more aligned with NUREG-1432, *Standard Technical Specifications [STS] for Combustion Engineering Plants*. Also, TS 2.0.1 is being revised to delete paragraph (2) which currently contains guidance on actions to be taken when either a normal or emergency power supply is inoperable, renumbering paragraph (3), and repaginating TS 2.0.1 due to text deletion. In addition, requirements are being added to TS 2.7(2)b and j, to include guidance on actions to be taken to verify redundant components, when one electrical power supply, either a house service transformer (normal/offsite) or emergency diesel generator (EDG) (emergency/onsite), respectively, is inoperable. Statements are also being deleted from TS 2.7(2)d, e, f, g, j, and l concerning verifying engineered safeguards components associated with the alternate electrical train. These changes are intended to be more aligned with NUREG-1432, where deemed possible.

TS 2.7(2)g is also being revised to delete the statement allowing motor control center (MCC) 3C1 to be inoperable in excess of 8 hours provided battery chargers No. 1 and No. 2 are operable. Since this statement does not provide a time limit, and battery charger No. 3 is not required to be operable as part of the Minimum Requirements, it is proposed to be deleted. In addition, TS 2.7(2)g is administratively changed to arrange the MCCs in the first group in bus order (for example, 3A1, 3A2, 3B1, in lieu of 3A1, 3B1, 3A2) and to add MCC-4B1 to the second group of MCCs to ensure the TS correctly reflects the current plant configuration for the MCCs for each group. TS 2.7(1)f is being similarly revised to rearrange the MCCs in bus order and add MCC-4B1. TS 2.7(1)a and b are also being administratively changed to add "T1A" to the transformer equipment number for clarification and consistency.

In addition, surveillance requirement (SR) 3.7(1)e is being deleted as it does not meet the criteria of 10CFR50.36(c)(3) for inclusion as a SR since it is a maintenance activity performed on the diesel generators per the manufacturer's recommendations. The required EDG periodic inspections will continue to be performed in accordance with the licensee-controlled EDG maintenance process that will be referenced in the Updated Safety Analysis Report (USAR). As a result of the existing 3.7(1)e being deleted, 3.7(1)f will be administratively re-sequenced to 3.7(1)e.

The associated TS Basis for TS 2.0.1 is also being modified to reflect the proposed deletion of 2.0.1(2), the renumbering of TS 2.0.1(3), and repagination. The Basis for TS 2.7 is revised to reflect the proposed changes to 2.7(2). These TS Bases changes are included for information and will be processed in accordance with TS 5.20.

This license amendment request (LAR) is being submitted to address inconsistencies in guidance provided by TS 2.0.1(2) and TS 2.7(2) and to address Nuclear Regulatory Commission (NRC) regional inspection and NRC TS Branch staff concerns regarding the current wording in TS 2.0.1(2).

2.0 DETAILED DESCRIPTION

The FCS TS LCO 2.7, *Electrical Systems*, allows an EDG to be inoperable provided that "there are no inoperable required engineered safeguards components associated with the operable diesel generator." Similar requirements are also included for inoperable 4160 Volt (V) engineered safeguards buses, 480V distribution buses, island buses, 4160V/480V transformers, and MCCs. A similar requirement is not included for an inoperable house service transformer.

In 1980, the NRC mandated all plants to incorporate additional operability guidance in their TS for situations when a normal or emergency power supply is inoperable and provided the model TS to be included (Reference 6.1). OPPD implemented this guidance by including a definition of operable/operability and guidance in TS 2.0.1(2) via TS Amendment No. 52 (Reference 6.2).

TS 2.0.1(2) provides guidance for actions to be taken when a component is inoperable due to its normal or emergency power supply being inoperable. It does not limit components to just engineered safeguards components or components associated with the operable DG as does TS 2.7(2)j. It states, in part, a "system, subsystem, train, component, or device," may be considered OPERABLE provided it has normal or emergency power and "all of its redundant system(s), subsystem(s), train(s), component(s), and device(s) are OPERABLE..." The required action if these two conditions are not satisfied is to shut the unit down. In some cases, this is inconsistent with the TS required actions to be taken when an LCO is not met as a result of inoperable components. The TS changes specified are comparable to the STS and would:

1. Remove the mandatory unit shutdown requirement should an EDG or house service transformer be inoperable while a required feature(s) on the opposite train is inoperable. Instead, any TS required actions are based on the inoperability of the required feature.
2. Include the steam driven auxiliary feedwater (AFW) pump operability requirements to the required redundant feature actions to be comparable with the Bases of NUREG-1432.

In addition, it is proposed to delete a surveillance that is a maintenance activity and therefore does not meet the criteria for inclusion as a TS required surveillance.

The proposed TS changes are as follows:

- TS Miscellaneous Definition, Operable - Operability – Revise to be more consistent with NUREG 1432.

Operable - Operability

A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified **safety** function(s). ~~Implicit in this definition shall be the assumption that and when~~ all necessary attendant instrumentation, controls, normal and ~~or~~ emergency electrical power sources, cooling ~~or~~ and seal water, lubrication ~~or~~ and other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its **specified safety** function(s) are also capable of performing their related support function(s).

- TS LCO 2.0.1, *General Requirements*, paragraph (2) – Delete paragraph (2) in its entirety and relocate guidance for inoperable power supplies and verifying operability of redundant components to TS LCO 2.7, *Electrical Systems*, similar to NUREG 1432.

~~(2) When a system, subsystem, train, component, or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s), and device(s) are OPERABLE, or likewise satisfy the requirements of this specification. Unless both conditions (1) and (2) are satisfied, the unit shall be placed in at least HOT SHUTDOWN within 6 hours, in at least subcritical and <300°F within the next 6 hours, and in at least COLD SHUTDOWN within the following 30 hours. This specification is not applicable in Operating Modes 4 or 5.~~

- TS 2.0.1(3) – Renumber to TS 2.0.1(2) due to the deletion noted above.

~~(3)~~**(2)** When one or more required snubbers are unable to perform their associated support function(s), any affected supported LCO(s) are not required to be declared not met solely for this reason if risk is assessed and managed, and:

- TS 2.7(1)a and b – Editorial change to add “T1A” and “T1A-” to the transformer lists for clarification and consistency.
 - a. Unit auxiliary power transformers T1A-1 or **T1A**-2 (4,160 V).
 - b. House service transformers T1A-3 and **T1A**-4 (4,160 V).

- TS 2.7(1)f – Grammatical change to rearrange the MCCs in bus order and add MCC-4B1 to the list to ensure the TS correctly reflect the plant configuration for engineered safeguards loads.
 - f. MCC No. 3A1, **3A2**, 3B1, 3A2, 3C1, 3C2, 4A1, 4A2, **4B1**, 4C1, and 4C2.
- TS 2.7(2)b - Add a requirement to declare the required feature supported by inoperable house service transformer inoperable if its redundant feature is inoperable. Include guidance that the steam driven AFW pump (FW-10) must be considered. [Note: Reference 6.6 and its revision, Reference 6.7, proposed additional changes to TS 2.7(2)b which are currently under NRC review. However, the changes proposed via this LAR do not impact the changes currently being reviewed by the NRC and vice versa.]
 - b. Either house service transformer T1A-3 or T1A-4 (4.16kV) may be inoperable for up to 7 days provided the operability of the diesel generator associated with the inoperable transformer is immediately verified. The NRC Operations Center shall be notified by telephone within 4 hours after transformer inoperability. Continued operation beyond 7 days is permissible, provided a special report is submitted to the NRC within 48 hours after transformer inoperability pursuant to Section 5.9.3 of the Technical Specifications. The special report will outline the plans for restoration of transformer operability and the additional precautions to be taken while the transformer is out of service. Additionally, within 24 hours from discovery of either house service transformer inoperability, declare the required feature(s) associated with the inoperable house service transformer inoperable, when its redundant required feature (including the steam driven auxiliary feedwater pump FW-10) is inoperable.
- TS 2.7(2)j – Add requirement to declare required feature supported by inoperable EDG inoperable if its redundant feature is inoperable. Include guidance that the steam driven AFW pump must be considered. [Note that TS 2.7(2)j was revised under TS Amendment No. 258 (Reference 6.3) and is scheduled for implementation by July 23, 2009. Therefore, the Amendment No. 258 version of TS 2.7(2)j is being marked up for this proposed change.]
 - j. Either one of the emergency diesel generators (DG-1 or DG-2) may be inoperable for up to seven consecutive days ~~provided there are no inoperable required engineered safeguards components associated with the operable diesel generator.~~ In addition, the cumulative total time of inoperability for both DGs during any calendar month shall not exceed seven days. If one diesel generator is inoperable, within 8 hours (regardless of when the inoperable diesel generator is restored to operability) EITHER:
 - (1) Start the other diesel generator to verify operability, OR
 - (2) Ensure the absence of common cause for the diesel generator inoperability for the other diesel generator.

Additionally, within 4 hours from the discovery of either diesel generator inoperability, declare the required feature(s) associated with the inoperable diesel generator inoperable, when its redundant required feature (including the steam driven auxiliary feedwater pump FW-10) is inoperable.

- TS 2.7(2)d, 2.7(2)e, 2.7(2)f, 2.7(2)g, 2.7(2)j, 2.7(2)l – Delete statements from electrical distribution components, (i.e., bus, transformer, etc), “provided there are no inoperable required engineered safeguards components which are redundant” to remove the restriction to engineered safeguards components.
 - d. Either one of the 4.16kV engineered safeguards buses, 1A3 or 1A4 may be inoperable for up to 8 hours provided the operability of the diesel generator associated with the operable bus is demonstrated immediately ~~and there are no inoperable required engineered safeguards components associated with the operable bus.~~
 - e. One of each group of 4160 V/480 V Transformers (T1B-3A or 4A), (T1B-3B or 4B), and (T1B-3C or 4C) may be inoperable for up to 8 hours ~~provided there are no inoperable required engineered safeguards components which are redundant to components on the inoperable transformer.~~
 - f. One of the 480 V distribution buses connected to bus 1A3 or connected to bus 1A4 may be inoperable for up to 8 hours ~~provided there are no inoperable required safeguards components which are redundant to components on the inoperable bus.~~
 - l. Island buses 1B3A-4A, 1B3B-4B, and 1B3C-4C may be inoperable for up to 8 hours ~~provided there are no inoperable required safeguards components which are redundant to components on the inoperable bus(es).~~
- TS 2.7(2)g – Add MCC-4B1 to the second group of MCCs listed; grammatically arrange the MCCs listed in correct bus order; and, delete statement that MCC-3C1 may be inoperable in excess of 8 hours if battery chargers No. 1 and No. 2 are operable. Also, delete statement “provided there are no inoperable required engineered safeguards components which are redundant” as it relates to inoperable MCCs, to remove its applicability restriction to only engineered safeguards components.
 - g. Either Group of MCC No.’s (3A1, **3A2**, 3B1, 3A2, 3C1, 3C2,) or (4A1, 4A2, **4B1**, 4C1, 4C2) may be inoperable for up to 8 hours ~~provided there are no inoperable required safeguards components which are redundant to components on the inoperable MCC. MCC 3C1 may be inoperable in excess of 8 hours if battery chargers No. 1 and No. 2 are operable.~~
- TS 3.7(1)e – Delete the DG inspection performed on a refueling frequency in accordance with the manufacturer’s recommendations for this class of standby service. This TS does not meet the 10 CFR 50.36(c)(3) criteria which requires that TS include SRs which are requirements relating 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 the limiting conditions for operation will be met. This is a maintenance activity to perform an inspection on the DGs on a refueling frequency to meet the manufacturer's recommendations. The required EDG periodic inspections will continue to be performed in accordance with the licensee-controlled EDG maintenance process that will be referenced in the USAR. The proposed change would result in the subsequent TS 3.7(1)f being re-sequenced to 3.7(1)e as follows:

~~e. Each diesel generator shall be given a thorough inspection on a refueling (R) frequency in accordance with the manufacturer's recommendations for this class of service.~~

~~f.~~ **e.** The fuel oil transfer pumps shall be verified to be operable each month.

3.0 TECHNICAL EVALUATION

Fort Calhoun Station (FCS) is designed to permit either of two offsite power sources to be used to supply power to station loads, both safety-related and non-safety-related. (Refer to USAR Figure 8.1-1, which provides the layout of these power sources and their relationship to plant buses.) The offsite sources consist of power from the 345 kilovolt (KV) substation or the 161 KV substation, both of which are located in a common switchyard adjacent to the plant. Either of the offsite sources can supply power to the plant's four 4160 V buses. The 161 KV source normally provides power to the safety-related buses and the 345 KV source normally provides power to the non-safety-related buses.

During normal operation, the 345 KV transmission system is connected to auxiliary power transformers T1A-1 and T1A-2 through a 22 KV bus which is also connected to the output of the main generator. (Note that the 345 KV voltage is reduced through main generator step-up transformer T1.) This configuration allows a portion of the main generator output to be fed to transformers T1A-1 and T1A-2 to supply power to some plant loads. However, this arrangement results in a loss of power from the 345/22 KV system to the plant buses when the plant is shutdown until such time that the operators are able to open the main generator disconnect switch and subsequently re-establish the 345 KV supply through a back feed arrangement. The 161 KV source, on the other hand, is continuously available to provide plant power, through house service transformers T1A-3 and T1A-4, before, during and after a plant trip.

Normal plant loads and accident mitigation equipment are distributed among the four 4160 V buses. Two of the 4160 V buses, buses 1A3 and 1A4, provide power to engineered safeguards loads and to many non-safety-related loads which are required for normal plant operation. Emergency Diesel Generators DG-1 and DG-2 are associated with buses 1A3 and 1A4, respectively. Buses 1A1 and 1A2 power only non-safety-related loads.

TS 2.7 defines the conditions of electrical power availability to provide safe reactor operation. TS 2.7(2) allows modification of the minimum requirements to the extent that only one of the listed conditions is allowed. Currently, when a normal power source (house service transformers T1A-3 or T1A-4) or an emergency diesel generator (DG-1 or DG-2) is inoperable, requirements of both TS 2.0.1(2) and TS 2.7 apply. The guidance for these specifications is inconsistent. The following three examples demonstrate these inconsistencies.

Example 1: TS 2.7(2)b allows one house service transformer to be inoperable. It does not require a review of any components associated with the opposite house service transformer.

Example 2: TS 2.7(2)j allows one EDG to be inoperable provided that there are no required inoperable engineered safeguards components associated with the other EDG. FCS has two safety related auxiliary feedwater (AFW) pumps; one electric driven and one steam driven. The requirement to verify engineered safeguards components associated with the other DG does not adequately address the steam driven AFW pump. Currently, neither TS 2.7(2)b nor TS 2.7(2)j require verification of the status of the steam driven AFW pump.

Example 3: TS 2.15(3) states that operation can continue without containment ventilation isolation signals available if the ventilation isolation valves are closed. Therefore, plant operation can continue if the radiation monitors that provide the signals are physically inoperable provided the allowable bypass conditions of TS 2.15 are met. However, if one radiation monitor is physically inoperable with another monitor inoperable due to its EDG being inoperable, the requirements of TS 2.0.1(2) are not met and results in an immediate unit shutdown.

By deleting TS 2.0.1(2) and including the guidance in TS 2.7, these inconsistencies will be eliminated. These proposed changes are intended to be consistent with NUREG-1432 to the extent practical. Several differences include:

1. TS 2.7 does not allow both EDGs to be inoperable simultaneously.
2. TS 2.7 does not allow an EDG and house service transformer to be inoperable simultaneously.
3. TS 2.7 has specific guidance to be taken with both house service transformers inoperable since shutting the unit down without offsite power would result in power being lost to the reactor coolant pumps (RCPs) and to the main condenser circulating water pumps. Consequently, operators would be forced to remove decay heat by means of natural circulation in the reactor coolant system without the use of the main condensers for dumping steam.

The new requirements added to TS 2.7(2)b and j will include guidance to declare required systems or components, without a normal or emergency power source available, inoperable when a redundant system or component is also inoperable.

This provides assurance that a loss of offsite power, during the period that an EDG (or house service transformer) is inoperable, or loss of an EDG during the period that a house service transformer is inoperable, or loss of a house service transformer during the period that an EDG is inoperable, does not result in a complete loss of safety function of critical systems.

With one EDG inoperable, 4 hours from the time of discovery that a required redundant component subsequently is inoperable would be allowed. The 4-hour allowed time takes into account the operability of the redundant counterpart to the inoperable required feature. Four hours from the discovery of these events existing concurrently is acceptable, because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. Consistent with STS, the 4-hour allowed time takes into account the capacity and capability of the remaining alternating current (AC) sources, a reasonable time for repairs, and the low probability of a design basis accident (DBA) occurring during this period. On a component basis, single failure protection for the required feature's function may have been lost; however, function has not been lost.

With one house service transformer inoperable, 24 hours from the discovery that a required redundant component is inoperable would be allowed. The 24-hour allowed time takes into account the operability of the redundant counterpart to the inoperable required feature. Consistent with STS, the 24-hour allowed time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

The statements contained in TS 2.7(2)d, e, f, g, j, and l, that there are no inoperable required engineered safeguards components which are redundant to components on the inoperable buses [2.7(2)f and l], transformer [2.7(2)e], MCC [2.7(2)g] or operable bus [2.7(2)d] or diesel generator [2.7(2)j], are deleted because of the restrictions only to engineered safeguards components. This change is consistent with STS in that operable AC electrical power distribution systems require the associated buses, load centers, MCCs, and distribution panels to be energized to their proper voltages.

The statement that MCC-3C1 may be inoperable in excess of 8 hours provided battery chargers No. 1 and No. 2 are operable is being deleted from TS 2.7(2)g. This statement that MCC-3C1 may be inoperable in excess of 8 hours is related to TS 2.7(1)k, *Minimum Requirements*, which requires that one battery charger on each 125 V direct current (DC) bus No. 1 and No. 2 be operable. The inoperability of MCC-3C1, which was the original sole power source for battery charger No. 3, should have been addressed by the battery charger specification, 2.7(2)i, *Modification of Minimum Requirements*. However, operability of individual MCCs is handled by their associated loads. In addition, since the statement in TS 2.7(2)g does not provide a specified time limit, it is proposed to be deleted.

In addition, TS 2.7(2)g is being administratively changed to arrange the MCCs in the first group in bus order (for example, 3A1, 3A2, 3B1, in lieu of 3A1, 3B1, 3A2...) and to add MCC-4B1 to the second group of MCCs to ensure the TS correctly reflects the current plant configuration for the MCCs for each group. Similarly, TS 2.7(1)f is also being administratively changed to list the MCCs in bus order and add MCC-4B1 to the list to ensure the TS correctly reflect the current plant configuration for the MCCs.

Additional administrative changes are being made to TS 2.7(1)a and b to add "T1A" and "T1A-" to the unit auxiliary power transformer tag number and house service transformer -2 and 4, respectively. This editorial change is being made for clarification and consistency.

The TS 3.7(1)e SR to perform an inspection on the DGs on a refueling frequency in accordance with the manufacturer's recommendations for this class of standby service is being deleted. This is simply a maintenance activity to perform an inspection of the DGs to meet the manufacturer's recommendations. Reliability centered inspections and maintenance overhauls, while important, do not meet the requirements set forth in 10 CFR 50.36(c)(3) for incorporation into the TS, and are not activities that are generally used to demonstrate component operability. Deletion of this surveillance requirement is acceptable because the EDG periodic inspections based on the manufacturer's recommendations will be performed via the licensee-controlled EDG maintenance process. The proposed change would result in the subsequent TS 3.7(1)f being re-numbered to 3.7(1)e.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

4.1.1 Regulations

Code of Federal Regulations Part 50:

10 CFR 50.36, *Technical Specifications*: 10 CFR 50.36(c)(2) states, "When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met." The revised actions continue to meet the requirements of this regulation.

10 CFR 50.36(c)(3) criteria states that "surveillance requirements are requirements relating 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 the limiting conditions for operation will be met." Reliability centered inspections and maintenance overhauls, while important, do not meet the requirements set forth in 10 CFR 50.36 for incorporation into the TS, and are not activities that are generally used to demonstrate component operability. Therefore, deletion of the DG surveillance requirement is acceptable because the required EDG periodic

inspections will continue to be performed in accordance with the licensee-controlled EDG maintenance process that will be referenced in the USAR.

10 CFR 50.65, *Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants*: The overall objective of this performance-based rule is to ensure that nuclear power plant structures, systems, and components (SSCs) will be maintained so that they will perform their intended function when required. The revised actions continue to meet the requirements of this regulation.

General Design Criteria:

Fort Calhoun Station was licensed for construction prior to May 21, 1971, and at that time committed to the draft General Design Criteria (GDC). The draft GDC are contained in Appendix G of the FCS USAR and are similar to 10 CFR 50 Appendix A, *General Design Criteria for Nuclear Power Plants*. The draft GDC that govern emergency power are Criterion 24 and Criterion 39 from USAR Appendix G.

CRITERION 24 EMERGENCY POWER FOR PROTECTION SYSTEMS

In the event of loss of all offsite power, sufficient alternate sources of power shall be provided to permit the required functioning of the protection systems.

This criterion is met. Emergency power is available from two completely independent diesel generator sets and from the two completely independent 125v dc systems for essential dc loads.

The independent diesel generator supply systems are located in the plant and are connected to separate buses. Both generator sets are independently automatic starting upon loss of auxiliary power and will be ready to accept load within 10 seconds of loss of normal supply power. Starting power is self contained within each unit. Each unit has sufficient capacity to start sequentially the loads that must be supplied for the engineered safeguards equipment for the hypothetical accident concurrent with loss of outside power. This capacity is adequate to provide a safe and orderly plant shutdown and maintain the plant in a safe condition.

Each of the two 125v dc batteries is capable of supplying essential station dc load for 8 hours and may be charged by the generator power supply.

Facilities are included to permit periodic starting and running the diesel generator sets without interrupting plant operation. Diesel units are synchronized to the bus and loaded periodically to ensure readiness for emergency services.

This criterion continues to be met with this proposed change.

Criterion 39 – Emergency Power for Engineered Safety Features states:

Alternate power systems shall be provided and designed with adequate independency, redundancy, capacity and testability to permit the functioning required of the engineered safety features. As a minimum, the onsite power system and the offsite power system shall each, independently, provide this capacity assuming a failure of a single active component in each power system.

This criterion is met. Offsite power to the plant is available via the 161 kV system..., and after the unit is tripped, via backfeed from the 345 kV system through the main and unit auxiliary transformers.

When the unit is tripped and the 161 kV supply is not available, the motor operated disconnect switch in the generator main leads is opened and the supply to the unit auxiliary transformers is re established. Switch operation is accomplished by a motor operator supplied from the station battery.

Onsite power is provided by two diesel generator sets. Each independent diesel generator set is adequate for supplying the minimum engineered safeguards equipment for the hypothetical accident concurrent with loss of outside power.

Station batteries provide onsite power for instrument and control systems. These batteries will be subject to rigorous inspection and maintenance. The charger voltage will periodically be manually lowered to test batteries capability to assume load at the appropriate bus voltage.

The diesel generator facilities permit periodic starting and running during normal plant operations.

This criterion continues to be met with this proposed change.

4.1.2 Design Basis (USAR)

The proposed change results in a commitment for the required EDG periodic inspection to be performed via the licensee-controlled EDG maintenance process that will be referenced in the USAR. USAR Sections 8.3, *Electrical Systems, Station Distribution*; 8.4, *Electrical Systems, Emergency Power Sources*; and 9.4, *Auxiliary Feedwater System*; are applicable to this LAR.

USAR Section 8.3:

Buses 1A3 and 1A4 supply plant 4.16 KV loads and all 480V loads through three, double-ended 480V load centers, each with three bus sections. The double-ended 480V load centers permit feeding of the 480V station auxiliary loads from either bus 1A3 or 1A4. The normal alignment for the 480V load centers is shown in USAR Figure 8.1-1. Interlocks prevent interconnection of

these systems at the 480V level. Buses 1A3 and 1A4 also supply engineered safeguards, directly or through the 480V load centers. The systems associated with buses 1A3 and 1A4 are operated as separate systems, between which redundant engineered safeguards are so divided that minimum engineered safeguards are connected to each system. The exception to this is the steam turbine driven auxiliary feedwater (AFW) pump FW-10. The redundant auxiliary feedwater pump FW-6 is supplied from bus 1A3.

The automatic bus 4.16 KV transfers are summarized in USAR Table 8.4-3.

USAR Section 8.4:

The DGs are designed to furnish reliable in-plant AC power adequate for safe plant shutdown and for operation of engineered safeguards, when no energy is available from the 345 or 161 KV systems. Two DGs are installed to meet single failure criteria. One unit is connected to each of the two separate 4.16 KV systems (one system consists of bus 1A3, the second system consists of bus 1A4) between which engineered safeguards and other essential auxiliaries are divided (see USAR Figure 8.4-1). The division of loads is such that operation of either system alone provides minimum Engineered Safeguards required for the DBA as discussed in USAR Section 6.

USAR Section 9.4:

The AFW has two safety class AFW pumps, each capable of meeting system requirements and with diverse power sources: one electric motor driven and the other steam turbine driven. In the event of a loss of all AC power, the turbine-driven AFW pump would still be operational and would supply water to the steam generators from the emergency feedwater storage tank.

4.1.3 Approved Methodologies

Regulatory Guide (RG) 1.93, *Availability of Electric Power Sources*, was reviewed for applicability. This RG states, "Nuclear power plants wherein only one of the two required offsite power circuits can be made available within a few seconds following a loss-of-coolant accident (LOCA) are outside the scope of this guide." Since FCS is designed to have only one offsite circuit available within a few seconds, RG 1.93 is determined to not be applicable. Generally, however, the requirements of this RG are followed.

4.2 Precedent

Amendment for Salem Nuclear Generating Station, Unit Nos. 1 and 2 (TAC Nos. MB3453 and MB3454, respectively) dated October 11, 2002, modified the provisions under which equipment may be considered operable when either its normal or emergency power supply is inoperable. This amendment deleted TS 3.0.5 and incorporated additional limiting conditions for operation into the electrical power systems LCO. (See Reference 6.4)

Amendment for Beaver Valley Power Station, Unit Nos. 1 and 2 (TAC Nos. MC3331 and MC3332, respectively) dated September 29, 2005, in part, modified the EDG TS surveillance requirement, TS 4.8.1.1.2.b.1 concerning periodic EDG inspections. TS SR 4.8.1.1.2.b.1 required that at least once per 18 months during shutdown, the EDG will be inspected in accordance with procedures prepared in conjunction with its manufacturer's recommendations. The licensee proposed to delete this TS SR and relocate this requirement to an administratively controlled maintenance program. (See Reference 6.5)

4.3 Significant Hazards Consideration

The Omaha Public Power District (OPPD) has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

- 1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?**

Response: No.

The proposed change to revise the definition of operable-operability, modify the provisions under which equipment may be considered operable when either its normal or emergency power source is inoperable, delete Technical Specification (TS) limiting conditions for operation (LCO) 2.0.1(2), and relocate the guidance for inoperable power supplies and verifying operability of redundant components into the LCO for electrical equipment is more aligned with NUREG-1432, *Standard Technical Specifications [STS] for Combustion Engineering Plants*, and does not adversely impact the probability of an accident previously evaluated. The proposed changes are being made to address inconsistencies in guidance provided in TS 2.0.1(2) and TS 2.7(2). The proposed change does not affect the operability requirements for the emergency diesel generators (EDGs) or the house service transformers, and therefore does not impact the consequences of an analyzed accident.

The new requirement added to TS 2.7 provides assurance that a loss of offsite power during the period that an EDG (or house service transformer) is inoperable, or loss of an EDG during the period that a house service transformer is inoperable, or loss of a house service transformer during the period that an EDG is inoperable, does not result in a complete loss of safety function of critical systems; thereby such a loss does not significantly increase the probability of an accident.

Consistent with NUREG 1432, the 4-hour allowed time added to TS 2.7(2)j for the EDGs, takes into account the capacity and capability of the remaining alternating current (AC) sources, a reasonable time for repairs, and the low probability of a design basis accident (DBA) occurring during this period. On a component basis, single failure protection for the required feature's function may have been lost; however, function has not been lost.

Additionally, consistent with NUREG-1432, the 24-hour allowed time added to TS 2.7(2)b for the house service transformers takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

The proposed change removes the surveillance requirement (SR) to perform an inspection of the EDG on a refueling inspection frequency in accordance with the manufacturer's recommendations. This inspection is considered a maintenance activity, not an SR, and has no impact on the probability of an accident since EDGs are not initiators for any analyzed event. Deletion of TS SR 3.7(1)e from the TS does not impact the capability of the EDGs to perform their accident mitigation functions. The required EDG maintenance inspections will continue to be performed in accordance with the licensee-controlled EDG maintenance process. The consequences of an accident are not impacted because EDG operability is controlled by other portions of TS 3.7, which ensures that required surveillances are performed. The appropriate LCOs are entered in the event that EDG surveillance criteria are not met.

As a result of redefining "OPERABLE" and adding the provision to TS 2.7(2)j, the statements "provided there are no inoperable required engineered safeguards components which are redundant" related to the electrical distribution components are being deleted from the other 2.7(2) TS for the buses, transformer, and motor control center (MCC) for clarification and consistency because these statements restrict only to engineered safeguards components. In addition, the administrative changes to renumber the existing TS sections "TS 2.0.1(3) to 2.0.1(2)" and TS 3.7(1)f to TS 3.7(1)e. are being made as a result of deletions to previous TS paragraphs and are being made for consistency and clarification. Rearranging the listing order of the MCCs in TS 2.7(1)f and TS 2.7(2)g in bus order clarifies the TS. As such, these editorial changes are not initiators of any accidents previously evaluated. As a result, the probability of an accident previously evaluated is not affected.

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

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed changes do not involve a physical alteration to the plant (i.e., no new or different type of equipment will be installed) or a change in methods governing normal plant operation. The proposed changes to TS 2.0.1(2) and TS 2.7 do not create the possibility of a new or different kind of accident since the design function of the affected equipment is not changed. No new interactions between systems or components are created. No new failure mechanisms of associated systems will exist.

By deleting TS LCO 2.0.1(2) and including the guidance in TS 2.7, inconsistencies in the existing TS will be eliminated. The new requirements added to TS 2.7 will include guidance to declare required systems or components without a normal or emergency power source available inoperable, when a redundant system or component is also inoperable. This provides assurance that a loss of offsite power, during the period that an EDG (or house service transformer) is inoperable, or loss of an EDG during the period that a house service transformer is inoperable (or vice versa), does not result in a complete loss of safety function of critical systems.

No new failure mechanisms would be created. The proposed changes do not alter any assumptions made in the safety analyses. For the most part, the proposed changes are more aligned with the STS.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

The proposed changes to delete TS 2.0.1(2) and relocate the guidance for inoperable power supplies and verifying operability of redundant components to TS LCO 2.7(2)j, to delete the statement that MCC-3C1 may be inoperable in excess of 8 hours if battery chargers No. 1 and No. 2 are operable, and to delete the SR for inspecting the DG on a refueling frequency in accordance with the manufacturer's recommendations do not alter the manner in which safety limits or limiting safety system settings are determined. The safety analysis acceptance criteria are not affected by these proposed changes. The sources of power credited for design basis events are not affected by the proposed changes.

The proposed changes to modify the provisions under which equipment may be considered operable when either its normal or emergency power source is inoperable, delete TS LCO 2.0.1(2), and relocate the guidance for inoperable power supplies and verifying operability of redundant components into the LCO for electrical equipment is more aligned with the STS. These changes are being made to address inconsistencies in guidance provided in TS 2.0.1(2) and TS 2.7(2). The proposed change does not reduce the operability requirements for the transformers, buses, MCCs, or EDGs and therefore will not result in plant operation in a configuration outside of the design basis.

Further, the proposed change does not change the design function of any equipment assumed to operate in the event of an accident.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, OPPD concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

4.4 Conclusions

In conclusion, based on the considerations discussed above, (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.

5.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

- 6.1 Letter from NRC (D. G. Eisenhut) to All Power Reactor Licensees, dated April 10, 1980 (NRC-80-0060)
- 6.2 Letter from NRC (R. A. Clark) to OPPD (W. C. Jones), Fort Calhoun Station, Unit No. 1 - Amendment No. 52, dated October 14, 1980 (NRC-80-0187)
- 6.3 Letter from NRC (A. B. Wang) to OPPD (J. A. Reinhart), *Fort Calhoun Station, Unit No. 1 – Issuance of Amendment Re: Clarification of Technical Specification (TS) 2.7(2)j Regarding Emergency Diesel Generators Allowed Outage Time (TAC No. MD8569)*, dated March 27, 2009
- 6.4 Letter from NRC (R. J. Fretz) to PSEG Nuclear (H. W. Keiser), *Salem Nuclear Generating Station, Unit Nos. 1 and 2, Issuance of Amendment Re: Change to Technical Specifications – Normal and Emergency Power (TAC Nos. MB3453 and MB3454)*, dated October 11, 2002 (ML022390335)
- 6.5 Letter from NRC (T. G. Colburn) to FENOC (L. W. Pearce), *Beaver Valley Power Station, Unit Nos. 1 and 2 - Issuance of Amendment Re: Increase of the Emergency Diesel Generator (EDG) Allowed Outage Time from 72 Hours to 14 Days (TAC Nos. MC3331 and MC3332)*, dated September 29, 2005 (ML052720259)
- 6.6 Letter from OPPD (D. J. Bannister) to NRC (Document Control Desk), *Fort Calhoun Station Unit No. 1 License Amendment Request (LAR) 08-03, Clarify Technical Specification 2.7(2) Regarding Preferred Offsite Power Source, Transformer Allowed Outage Time (AOT)*, dated July 31, 2008 (LIC-08-0074) (ML082140104)
- 6.7 Letter from OPPD (R. P. Clemens) to NRC (Document Control Desk), *Revision to Fort Calhoun Station Unit No. 1, License Amendment Request (LAR) 08-03, Clarify Technical Specification 2.7(2) Regarding Preferred Offsite Power Source, Transformer Allowed Outage Time (AOT)*, dated May 8, 2009 (LIC-09-0034)

Technical Specifications Pages

Markups

TS Definitions

TS 2.0.1

TS 2.7(1)

TS 2.7(2)

TS 3.7

TECHNICAL SPECIFICATION

DEFINITIONS

MISCELLANEOUS DEFINITIONS

Operable - Operability

A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified **safety** function(s). ~~Implicit in this definition shall be the assumption that~~ **and when** all necessary attendant instrumentation, controls, normal **and or** emergency electrical power sources, cooling **or** **and** seal water, lubrication **or**, **and** other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its **specified safety** function(s) are also capable of performing their related support function(s).

In Operation

A system or component is IN OPERATION if it is OPERABLE and is performing its design function.

CEA's

All full length shutdown and regulating control rods.

Non-trippable (NT) CEA's

CEA's which are non-trippable.

Containment Integrity

Containment integrity is defined to exist when all of the following are met:

- (1) All nonautomatic containment isolation valves which are not required to be open during accident conditions and blind flanges, except for valves that are open under administrative control as permitted by Specification 2.6(1)a, are closed.
- (2) The equipment hatch is properly closed and sealed.
- (3) The personnel air lock satisfies Specification 2.6(1)b.
- (4) All automatic containment Isolation valves are operable, locked closed, or deactivated and secured in their closed position (or isolated by locked closed valves or blind flanges as permitted by a limiting condition for operation).
- (5) The uncontrolled containment leakage satisfies Specification 3.5, and
- (6) The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is operable.

TECHNICAL SPECIFICATIONS

2.0 LIMITING CONDITIONS FOR OPERATION

2.0.1 General Requirements

Applicability

Applies to the operable status of all systems, subsystems, trains, components, or devices covered by the Limiting Conditions for Operation.

Objective

To specify corrective measures to be employed for system conditions not covered by or in excess of the Limiting Conditions for Operation.

Specification

- (1) In the event a Limiting Condition for Operation and/or associated action requirements cannot be satisfied because of circumstances in excess of those addressed in the specification, the unit shall be placed in at least HOT SHUTDOWN within 6 hours, in at least subcritical and $< 300^{\circ}\text{F}$ within the next 6 hours, and in at least COLD SHUTDOWN within the following 30 hours, unless corrective measures are completed that permit operation under the permissible action requirements for the specified time interval as measured from initial discovery or until the reactor is placed in an Operating Mode in which the specification is not applicable. Exceptions to these requirements shall be stated in the individual specifications.
- ~~(2) When a system, subsystem, train, component, or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s), and device(s) are OPERABLE, or likewise satisfy the requirements of this specification. Unless both conditions (1) and (2) are satisfied, the unit shall be placed in at least HOT SHUTDOWN within 6 hours, in at least subcritical and $< 300^{\circ}\text{F}$ within the next 6 hours, and in at least COLD SHUTDOWN within the following 30 hours. This specification is not applicable in Operating Modes 4 or 5.~~
- (3)(2) When one or more required snubbers are unable to perform their associated support function(s), any affected supported LCO(s) are not required to be declared not met solely for this reason if risk is assessed and managed, and:

TECHNICAL SPECIFICATIONS

2.0 LIMITING CONDITIONS FOR OPERATION

2.7 Electrical Systems

Applicability

Applies to the availability of electrical power for the operation of plant components.

Objective

To define those conditions of electrical power availability necessary to provide for safe reactor operation and the continuing availability of engineered safety features.

Specifications

(1) Minimum Requirements

The reactor shall not be heated up or maintained at temperatures above 300°F unless the following electrical systems are operable:

- a. Unit auxiliary power transformers T1A-1 or ~~T1A~~-2 (4,160 V).
- b. House service transformers T1A-3 and ~~T1A~~-4 (4,160 V).
- c. 4,160 V engineered safety feature buses 1A3 and 1A4.
- d. 4,160 V/480 V Transformers T1B-3A, T1B-3B, T1B-3C, T1B-4A, T1B-4B, T1B-4C.
- e. 480 V distribution buses 1B3A, 1B3A-4A, 1B4A, 1B3B, 1B3B-4B, 1B4B, 1B3C, 1B3C-4C, 1B4C.
- f. MCC No. 3A1, ~~3A2~~ 3B1, ~~3A2~~ 3C1, 3C2, 4A1, 4A2, ~~4B1~~ 4C1 and 4C2.
- g. 125 V d-c buses No. 1 and 2 (Panels EE-8F and EE-8G).
- h. 125 V d-c distribution panels AI-41A and AI-41B.
- i. 120V a-c instrument buses A, B, C, and D (Panels AI-40-A, B, C and D).
- j. Two (2) 125 V d-c bus No. 1 required inverters: (A and C), or (A and associated swing inverter), or (C and associated swing inverter) AND;

Two (2) 125 V d-c bus No. 2 required inverters: (B and D), or (B and associated swing inverter), or (D and associated swing inverter).
- k. Station batteries No. 1 and 2 (EE-8A and EE-8B) including one battery charger on each 125 V d-c bus No. 1 and 2 (EE-8F and EE-8G).
- l. Two emergency diesel generators (DG-1 and DG-2).
- m. One diesel fuel oil storage system containing a minimum volume of 16,000 gallons of diesel fuel in FO-1, and a minimum volume of 10,000 gallons of diesel fuel in FO-10.
- n. Lubricating oil inventory for each DG is ≥ 500 gallons.
- o. Each required starting air receiver bank pressure is ≥ 190 psig.

TECHNICAL SPECIFICATIONS

2.0 **LIMITING CONDITIONS FOR OPERATION**

2.7 Electrical Systems (Continued)

(2) Modification of Minimum Requirements

The minimum requirements may be modified to the extent that one of the following conditions will be allowed after the reactor coolant has been heated above 300°F. However, the reactor shall not be made critical unless all minimum requirements are met. If any of the provisions of these exceptions are violated, the reactor shall be placed in a hot shutdown condition within the following 12 hours. If the violation is not corrected within an additional 12 hours, the reactor shall be placed in a cold shutdown condition within an additional 24 hours.

- a. Both unit auxiliary power transformers T1A-1 and -2 (4.16 kV) may be inoperable for up to 24 hours provided the operability of both diesel generators is demonstrated immediately.
- b. Either house service transformer T1A-3 or T1A-4 (4.16kV) may be inoperable for up to 7 days provided the operability of the diesel generator associated with the inoperable transformer is immediately verified. The NRC Operations Center shall be notified by telephone within 4 hours after transformer inoperability. Continued operation beyond 7 days is permissible, provided a special report is submitted to the NRC within 48 hours after transformer inoperability pursuant to Section 5.9.3 of the Technical Specifications. The special report will outline the plans for restoration of transformer operability and the additional precautions to be taken while the transformer is out of service. Additionally, within 24 hours from discovery of either house service transformer inoperability, declare the required feature(s) associated with the inoperable house service transformer inoperable, when its redundant required feature (including the steam driven auxiliary feedwater pump FW-10) is inoperable.
- c. Both house service transformers T1A-3 and T1A-4 (4.16kV) may be inoperable for up to 72 hours provided the operability of both diesel generators is immediately verified. The loss of the 161kV incoming line renders both transformers inoperable. The NRC Operations Center shall be notified by telephone within 4 hours after transformer inoperability. Continued operation beyond 72 hours is permissible, provided a special report is submitted to the NRC within 48 hours after both transformers' inoperability pursuant to Section 5.9.3 of the Technical Specifications. The special report will outline the plans for restoration of the transformers' operability and the additional precautions to be taken while the transformers are out of service.

TECHNICAL SPECIFICATIONS

2.0 LIMITING CONDITIONS FOR OPERATION

2.7 Electrical Systems (Continued)

- d. Either one of the 4.16kV engineered safeguards buses, 1A3 or 1A4 may be inoperable for up to 8 hours provided the operability of the diesel generator associated with the operable bus is demonstrated immediately ~~and there are no inoperable required engineered safeguards components associated with the operable bus.~~
- e. One of each group of 4160 V/480 V Transformers (T1B-3A or 4A), (T1B-3B or 4B), and (T1B-3C or 4C) may be inoperable for up to 8 hours ~~provided there are no inoperable required engineered safeguards components which are redundant to components on the inoperable transformer.~~
- f. One of the 480 V distribution buses connected to bus 1A3 or connected to bus 1A4 may be inoperable for up to 8 hours ~~provided there are no inoperable required safeguards components which are redundant to components on the inoperable bus.~~
- g. Either Group of MCC No.'s (3A1, 3A2, 3B1, ~~3A2~~, 3C1, 3C2,) or (4A1, 4A2, 4B1, 4C1, 4C2) may be inoperable for up to 8 hours ~~provided there are no inoperable required safeguards components which are redundant to components on the inoperable MCC. MCC 3C1 may be inoperable in excess of 8 hours if battery chargers No. 1 and No. 2 are operable.~~
- h. One of the four 120V a-c instrument buses (A, B, C or D) may be inoperable for 8 hours provided the reactor protective and engineered safeguards systems instrument channels supplied by the remaining three buses are all operable.
- i. Two battery chargers may be inoperable for up to 8 hours provided battery charger No. 1 (EE-8C) or No. 2 (EE-8D) is operable.
- j. Either one of the emergency diesel generators (DG-1 or DG-2) may be inoperable for up to seven consecutive days ~~provided there are no inoperable required engineered safeguards components associated with the operable diesel generator.~~ In addition, the cumulative total time of inoperability for both DGs during any calendar month shall not exceed seven days. If one diesel generator is inoperable, within 8 hours (regardless of when the inoperable diesel generator is restored to operability) EITHER:
- (1) Start the other diesel generator to verify operability, OR
 - (2) Ensure the absence of common cause for the diesel generator inoperability for the other diesel generator.

Additionally, within 4 hours from discovery of either diesel generator inoperability, declare the required feature(s) associated with the inoperable diesel generator inoperable, when its redundant required feature (including the steam driven auxiliary feedwater pump FW-10) is inoperable.

- k. Not used.

TECHNICAL SPECIFICATIONS

2.0 **LIMITING CONDITIONS FOR OPERATION**

2.7 **Electrical Systems (Continued)**

- l. Island buses 1B3A-4A, 1B3B-4B, and 1B3C-4C may be inoperable for up to 8 hours ~~provided there are no inoperable required safeguards components which are redundant to components on the inoperable bus(es).~~
- m. Either one of the 125V d-c buses No. 1 or 2 (Panels EE-8F or EE-8G) may be inoperable for up to 8 hours.
- n. Either one of the 125V d-c distribution panels AI-41A or AI-41B may be inoperable for up to 8 hours.
- o. One of the required inverters may be inoperable for up to 24 hours provided the reactor protective and engineered safeguards systems instrument channels supplied by the remaining three required inverters are all operable and the 120V a-c instrument bus associated with the inoperable inverter is powered from its bypass source.

(3) Modification of Minimum Requirements for Diesel Fuel Oil, Diesel Lube Oil, and Starting Air

The minimum requirements may be modified to the extent that any of the following conditions will be allowed after the reactor coolant has been heated above 300°F. However, the reactor shall not be made critical unless all minimum requirements are met.

- a. If the inventory of diesel fuel oil in FO-1 is less than 16,000 gallons and/or FO-10 is less than 10,000 gallons, but the combined inventory in FO-1 and FO-10 is greater than a 6 day supply (23,350 gallons), then restore the required inventory within 48 hours.
- b. If one or more diesel generators has lube oil inventory < 500 gallons and > 450 gallons, then restore the lube oil inventory to within limits within 48 hours.
- c. If the total particulates of fuel oil stored in FO-1 or FO-10 is not within limits, then restore fuel oil total particulates to within limits within 7 days.
- d. If the properties of new fuel oil stored in FO-1 or FO-10 is not within limits, then restore stored fuel oil properties to within limits within 30 days.
- e. If one or more diesel generators has the required starting air receiver bank with pressure < 190 psig and > 150 psig, then restore starting air receiver bank pressure to > 190 psig within 48 hours.
- f. If the Required Action and associated Completion Time of a, b, c, d or e are not met or one or more diesel generators have diesel fuel oil, lube oil, or a required starting air subsystem not within limits for reasons other than a, b, c, d, or e, then declare the associated DG inoperable immediately.

TECHNICAL SPECIFICATIONS

3.0 **SURVEILLANCE REQUIREMENTS**

3.7 **Emergency Power System Periodic Tests (Continued)**

- i. Initiation of a simulated auto-start signal to verify that the diesel starts.
- ii. Initiation of a simulated simultaneous loss of 4.16 KV supplies to bus 1A3 (1A4). Proper operation will be verified by observation of:
 - (1) De-energization of bus 1A3 (1A4).
 - (2) Load shedding from bus (both 4160 V and 480 V).
 - (3) Energization of bus 1A3 (1A4).
 - (4) Automatic sequence start of emergency load, and
 - (5) Operation of ≥ 5 minutes while its generator is loaded with the emergency load.
- iii. Verification that emergency loads do not exceed the 2000-HR KW rating of the engine.⁽²⁾
- d. Manual control of diesel generators and breakers shall also be verified during refueling shutdowns.
- ~~e. Each diesel generator shall be given a thorough inspection on a refueling (R) frequency in accordance with the manufacturer's recommendations for this class of standby service.~~
- ~~f. e~~ The fuel oil transfer pumps shall be verified to be operable each month.

(2) **Station Batteries**

- a. Every month the voltage of each cell (to the nearest 0.01 volt), the specific gravity, and temperature of a pilot cell in each battery shall be measured and recorded.⁽³⁾⁽⁴⁾
- b. Every three months the specific gravity of each cell, the temperature reading of every fifth cell, and the amount of water added shall be measured and recorded. During the first refueling outage and every third refueling outage thereafter the batteries shall be subjected to a rated load discharge test.
- c. At monthly intervals the third battery charger, which is capable of being connected to either of the two D.C. distribution buses, shall be paralleled in turn to each D.C. bus. In each case, load shall be transferred to this reserve battery charger by switching out the normal charger. The reserve charger shall be run on load for 30 minutes on each bus and the system shall finally be returned to normal.

Technical Specification Pages

Retyped ("Clean")

TS Definitions

TS 2.0.1

TS 2.7(1)

TS 2.7(2)

TS 3.7

TECHNICAL SPECIFICATION

DEFINITIONS

MISCELLANEOUS DEFINITIONS

Operable - Operability

A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power sources, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its specified safety function(s) are also capable of performing their related support function(s).

In Operation

A system or component is IN OPERATION if it is OPERABLE and is performing its design function.

CEA's

All full length shutdown and regulating control rods.

Non-trippable (NT) CEA's

CEA's which are non-trippable.

Containment Integrity

Containment integrity is defined to exist when all of the following are met:

- (1) All nonautomatic containment isolation valves which are not required to be open during accident conditions and blind flanges, except for valves that are open under administrative control as permitted by Specification 2.6(1)a, are closed.
- (2) The equipment hatch is properly closed and sealed.
- (3) The personnel air lock satisfies Specification 2.6(1)b.
- (4) All automatic containment Isolation valves are operable, locked closed, or deactivated and secured in their closed position (or isolated by locked closed valves or blind flanges as permitted by a limiting condition for operation).
- (5) The uncontrolled containment leakage satisfies Specification 3.5, and
- (6) The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is operable.

TECHNICAL SPECIFICATIONS

2.0 LIMITING CONDITIONS FOR OPERATION

2.0.1 General Requirements

Applicability

Applies to the operable status of all systems, subsystems, trains, components, or devices covered by the Limiting Conditions for Operation.

Objective

To specify corrective measures to be employed for system conditions not covered by or in excess of the Limiting Conditions for Operation.

Specification

- (1) In the event a Limiting Condition for Operation and/or associated action requirements cannot be satisfied because of circumstances in excess of those addressed in the specification, the unit shall be placed in at least HOT SHUTDOWN within 6 hours, in at least subcritical and < 300°F within the next 6 hours, and in at least COLD SHUTDOWN within the following 30 hours, unless corrective measures are completed that permit operation under the permissible action requirements for the specified time interval as measured from initial discovery or until the reactor is placed in an Operating Mode in which the specification is not applicable. Exceptions to these requirements shall be stated in the individual specifications.
- (2) When one or more required snubbers are unable to perform their associated support function(s), any affected supported LCO(s) are not required to be declared not met solely for this reason if risk is assessed and managed, and:
 - a. the snubbers not able to perform their associated support function(s) are associated with only one train or subsystem of a multiple train or subsystem supported system or are associated with a single train or subsystem supported system and are able to perform their associated support function within 72 hours; or
 - b. the snubbers not able to perform their associated support function(s) are associated with more than one train or subsystem of a multiple train or subsystem supported system and are able to perform their associated support function within 12 hours.

At the end of the specified period the required snubbers must be able to perform their associated support function(s), or the affected supported system LCO(s) shall be declared not met.

TECHNICAL SPECIFICATIONS

2.0 **LIMITING CONDITIONS FOR OPERATION**

2.7 **Electrical Systems**

Applicability

Applies to the availability of electrical power for the operation of plant components.

Objective

To define those conditions of electrical power availability necessary to provide for safe reactor operation and the continuing availability of engineered safety features.

Specifications

(1) **Minimum Requirements**

The reactor shall not be heated up or maintained at temperatures above 300°F unless the following electrical systems are operable:

- a. Unit auxiliary power transformers T1A-1 or T1A-2 (4,160 V).
- b. House service transformers T1A-3 and T1A-4 (4,160 V).
- c. 4,160 V engineered safety feature buses 1A3 and 1A4.
- d. 4,160 V/480 V Transformers T1B-3A, T1B-3B, T1B-3C, T1B-4A, T1B-4B, T1B-4C.
- e. 480 V distribution buses 1B3A, 1B3A-4A, 1B4A, 1B3B, 1B3B-4B, 1B4B, 1B3C, 1B3C-4C, 1B4C.
- f. MCC No. 3A1, 3A2, 3B1, 3C1, 3C2, 4A1, 4A2, 4B1, 4C1 and 4C2.
- g. 125 V d-c buses No. 1 and 2 (Panels EE-8F and EE-8G).
- h. 125 V d-c distribution panels AI-41A and AI-41B.
- i. 120V a-c instrument buses A, B, C, and D (Panels AI-40-A, B, C and D).
- j. Two (2) 125 V d-c bus No. 1 required inverters: (A and C), or (A and associated swing inverter), or (C and associated swing inverter) AND;

Two (2) 125 V d-c bus No. 2 required inverters: (B and D), or (B and associated swing inverter), or (D and associated swing inverter).
- k. Station batteries No. 1 and 2 (EE-8A and EE-8B) including one battery charger on each 125 V d-c bus No. 1 and 2 (EE-8F and EE-8G).
- l. Two emergency diesel generators (DG-1 and DG-2).
- m. One diesel fuel oil storage system containing a minimum volume of 16,000 gallons of diesel fuel in FO-1, and a minimum volume of 10,000 gallons of diesel fuel in FO-10.
- n. Lubricating oil inventory for each DG is ≥ 500 gallons.
- o. Each required starting air receiver bank pressure is ≥ 190 psig.

TECHNICAL SPECIFICATIONS

2.0 **LIMITING CONDITIONS FOR OPERATION**

2.7 **Electrical Systems (Continued)**

(2) **Modification of Minimum Requirements**

The minimum requirements may be modified to the extent that one of the following conditions will be allowed after the reactor coolant has been heated above 300°F. However, the reactor shall not be made critical unless all minimum requirements are met. If any of the provisions of these exceptions are violated, the reactor shall be placed in a hot shutdown condition within the following 12 hours. If the violation is not corrected within an additional 12 hours, the reactor shall be placed in a cold shutdown condition within an additional 24 hours.

- a. Both unit auxiliary power transformers T1A-1 and -2 (4.16 kV) may be inoperable for up to 72 hours.
- b. Either house service transformer T1A-3 or T1A-4 (4.16kV) may be inoperable for up to 7 days provided the operability of the diesel generator associated with the inoperable transformer is immediately verified. The NRC Operations Center shall be notified by telephone within 4 hours after transformer inoperability. Continued operation beyond 7 days is permissible, provided a special report is submitted to the NRC within 48 hours after transformer inoperability pursuant to Section 5.9.3 of the Technical Specifications. The special report will outline the plans for restoration of transformer operability and the additional precautions to be taken while the transformer is out of service. Additionally, within 24 hours from discovery of either house service transformer inoperability, declare the required feature(s) associated with the inoperable house service transformer inoperable, when its redundant required feature (including the steam driven auxiliary feedwater pump FW-10) is inoperable.
- c. Both house service transformers T1A-3 and T1A-4 (4.16kV) may be inoperable for up to 72 hours provided the operability of both diesel generators is immediately verified. The loss of the 161kV incoming line renders both transformers inoperable. The NRC Operations Center shall be notified by telephone within 4 hours after transformer inoperability. Continued operation beyond 72 hours is permissible, provided a special report is submitted to the NRC within 48 hours after both transformers' inoperability pursuant to Section 5.9.3 of the Technical Specifications. The special report will outline the plans for restoration of the transformers' operability and the additional precautions to be taken while the transformers are out of service.

TECHNICAL SPECIFICATIONS

2.0 **LIMITING CONDITIONS FOR OPERATION**

2.7 **Electrical Systems (Continued)**

- d. Either one of the 4.16kV engineered safeguards buses, 1A3 or 1A4 may be inoperable for up to 8 hours provided the operability of the diesel generator associated with the operable bus is demonstrated immediately.
 - e. One of each group of 4160 V/480 V Transformers (T1B-3A or 4A), (T1B-3B or 4B), and (T1B-3C or 4C) may be inoperable for up to 8 hours.
 - f. One of the 480 V distribution buses connected to bus 1A3 or connected to bus 1A4 may be inoperable for up to 8 hours.
 - g. Either Group of MCC No.'s (3A1, 3A2, 3B1, 3C1, 3C2,) or (4A1, 4A2, 4B1, 4C1, 4C2) may be inoperable for up to 8 hours.
 - h. One of the four 120V a-c instrument buses (A, B, C or D) may be inoperable for 8 hours.
 - i. Two battery chargers may be inoperable for up to 8 hours provided battery charger No. 1 (EE-8C) or No. 2 (EE-8D) is operable.
 - j. Either one of the emergency diesel generators (DG-1 or DG-2) may be inoperable for up to seven consecutive days. In addition, the cumulative total time of inoperability for both DGs during any calendar month shall not exceed seven days. If one diesel generator is inoperable, within 8 hours (regardless of when the inoperable diesel generator is restored to operability) EITHER:
 - (1) Start the other diesel generator to verify operability, OR
 - (2) Ensure the absence of common cause for the diesel generator inoperability for the other diesel generator.
- Additionally, within 4 hours from discovery of either diesel generator inoperability, declare the required feature(s) associated with the inoperable diesel generator inoperable, when its redundant required feature (including the steam driven auxiliary feedwater pump FW-10) is inoperable.
- k. Not used.
 - l. Island buses 1B3A-4A, 1B3B-4B, and 1B3C-4C may be inoperable for up to 8 hours.
 - m. Either one of the 125V d-c buses No. 1 or 2 (Panels EE-8F or EE-8G) may be inoperable for up to 8 hours.
 - n. Either one of the 125V d-c distribution panels AI-41A or AI-41B may be inoperable for up to 8 hours.

TECHNICAL SPECIFICATIONS

2.0 **LIMITING CONDITIONS FOR OPERATION**

2.7 **Electrical Systems (Continued)**

- o. One of the required inverters may be inoperable for up to 24 hours provided the reactor protective and engineered safeguards systems instrument channels supplied by the remaining three required inverters are all operable and the 120V a-c instrument bus associated with the inoperable inverter is powered from its bypass source.

(3) Modification of Minimum Requirements for Diesel Fuel Oil, Diesel Lube Oil, and Starting Air

The minimum requirements may be modified to the extent that any of the following conditions will be allowed after the reactor coolant has been heated above 300°F. However, the reactor shall not be made critical unless all minimum requirements are met.

- a. If the inventory of diesel fuel oil in FO-1 is less than 16,000 gallons and/or FO-10 is less than 10,000 gallons, but the combined inventory in FO-1 and FO-10 is greater than a 6 day supply (23,350 gallons), then restore the required inventory within 48 hours.
- b. If one or more diesel generators has lube oil inventory < 500 gallons and > 450 gallons, then restore the lube oil inventory to within limits within 48 hours.
- c. If the total particulates of fuel oil stored in FO-1 or FO-10 is not within limits, then restore fuel oil total particulates to within limits within 7 days.
- d. If the properties of new fuel oil stored in FO-1 or FO-10 is not within limits, then restore stored fuel oil properties to within limits within 30 days.
- e. If one or more diesel generators has the required starting air receiver bank with pressure < 190 psig and > 150 psig, then restore starting air receiver bank pressure to > 190 psig within 48 hours.
- f. If the Required Action and associated Completion Time of a, b, c, d or e are not met or one or more diesel generators have diesel fuel oil, lube oil, or a required starting air subsystem not within limits for reasons other than a, b, c, d, or e, then declare the associated DG inoperable immediately.

TECHNICAL SPECIFICATIONS

3.0 **SURVEILLANCE REQUIREMENTS**

3.7 **Emergency Power System Periodic Tests (Continued)**

- i. Initiation of a simulated auto-start signal to verify that the diesel starts.
- ii. Initiation of a simulated simultaneous loss of 4.16 KV supplies to bus 1A3 (1A4). Proper operation will be verified by observation of:
 - (1) De-energization of bus 1A3 (1A4).
 - (2) Load shedding from bus (both 4160 V and 480 V).
 - (3) Energization of bus 1A3 (1A4).
 - (4) Automatic sequence start of emergency load, and
 - (5) Operation of ≥ 5 minutes while its generator is loaded with the emergency load.
- iii. Verification that emergency loads do not exceed the 2000-HR KW rating of the engine.⁽²⁾
- d. Manual control of diesel generators and breakers shall also be verified during refueling shutdowns.
- e. The fuel oil transfer pumps shall be verified to be operable each month.

(2) **Station Batteries**

- a. Every month the voltage of each cell (to the nearest 0.01 volt), the specific gravity, and temperature of a pilot cell in each battery shall be measured and recorded.⁽³⁾⁽⁴⁾
- b. Every three months the specific gravity of each cell, the temperature reading of every fifth cell, and the amount of water added shall be measured and recorded. During the first refueling outage and every third refueling outage thereafter the batteries shall be subjected to a rated load discharge test.
- c. At monthly intervals the third battery charger, which is capable of being connected to either of the two D.C. distribution buses, shall be paralleled in turn to each D.C. bus. In each case, load shall be transferred to this reserve battery charger by switching out the normal charger. The reserve charger shall be run on load for 30 minutes on each bus and the system shall finally be returned to normal.

Technical Specifications Bases Pages

Markups

(FOR INFORMATION ONLY)

TECHNICAL SPECIFICATIONS

2.0 LIMITING CONDITIONS FOR OPERATION

2.0.1 General Requirements (Continued)

- a. the snubbers not able to perform their associated support function(s) are associated with only one train or subsystem of a multiple train or subsystem supported system or are associated with a single train or subsystem supported system and are able to perform their associated support function within 72 hours; or
- b. the snubbers not able to perform their associated support function(s) are associated with more than one train or subsystem of a multiple train or subsystem supported system and are able to perform their associated support function within 12 hours.

At the end of the specified period the required snubbers must be able to perform their associated support function(s), or the affected supported system LCO(s) shall be declared not met.

Basis

- (1) This specification delineates corrective measures to be taken for circumstances not directly provided for in the system specific specifications and whose occurrence would violate the intent of the specification. For example, Specification 2.3 requires each Low Pressure Safety Injection (LPSI) pump to be operable and provides explicit corrective measures to be followed if one pump is inoperable. Under the terms of Specification 2.0.1(1), if more than one LPSI pump is inoperable, the unit must be placed in at least HOT SHUTDOWN within 6 hours, in at least subcritical and < 300°F within the following 6 hours, and in at least COLD SHUTDOWN within the following 30 hours, unless at least one LPSI pump were restored to operability. It is assumed that the unit is brought to the required mode within the required times by promptly initiating and carrying out the appropriate measures required by the specification.
- ~~(2) This specification delineates what additional conditions must be satisfied to permit operation to continue, consistent with the system specific specifications for power sources, when a normal or emergency power source is not OPERABLE. It specifically prohibits operation when one division is inoperable because its normal or emergency power source is inoperable and a system, subsystem, train, component, or device in another division is inoperable for another reason.~~

2.0 LIMITING CONDITIONS FOR OPERATION

2.0.1 General Requirements (Continued)

~~The provisions of this specification permit the requirements associated with individual systems, subsystems, trains, components, or devices to be consistent with the specification of the associated electrical power source. It allows operation to be governed by the time limits of the requirements associated with the Limiting Condition for Operation for the normal or emergency power source, not the individual requirements for each system, subsystem, train, component, or device that is determined to be inoperable solely because of the inoperability of its normal or emergency power source.~~

~~For example, Specification 2.7 requires in part that two emergency diesel generators be OPERABLE. The specification provides for 7 days per month out-of-service time when one emergency diesel generator is not OPERABLE. If the definition of OPERABLE were applied without consideration of Specification 2.0.1(2), all systems, subsystems, trains, components, and devices supplied by the inoperable emergency power source would also be inoperable. This would dictate invoking the applicable corrective measures for each of the applicable Limiting Conditions for Operation. However, the provisions of Specification 2.0.1(2) permit the time limits for continued operation to be consistent with the requirements for the inoperable emergency diesel generator instead, provided the other specified conditions are satisfied. In this case, this would mean that the corresponding normal power source must be OPERABLE, and all redundant systems, subsystems, trains, components, and devices must be OPERABLE, or otherwise satisfy Specification 2.0.1(2) (i.e., be capable of performing their design function and have at least one normal and one emergency power source OPERABLE). If they are not satisfied, shutdown is required in accordance with this specification.~~

~~As a further example, Specification 2.7(1)b requires that both House Service Transformers T1A-3 and T1A-4 be OPERABLE. Specification 2.7(2)c provides a 72-hour out-of-service time when both required House Service Transformers T1A-3 and T1A-4 are not OPERABLE provided the operability of both Diesel Generators is immediately verified. If the definition of OPERABLE were applied without consideration of Specification 2.0.1(2), all systems, subsystems, trains, components, and devices supplied by the inoperable, House Service Transformers T1A-3 and T1A-4 would also be inoperable. This would dictate invoking the applicable measures for each of the applicable LCO's. However, the provisions of Specification 2.0.1(2) permit the time limits for continued operation to be consistent with the corrective measures for the inoperable normal power sources instead, provided the other specified conditions are satisfied. In other words, both emergency power sources must be OPERABLE and all redundant systems, subsystems, trains, components, and devices in both divisions must be also be OPERABLE. If these conditions are not satisfied, shutdown is required in accordance with this specification.~~

TECHNICAL SPECIFICATIONS

2.0 LIMITING CONDITIONS FOR OPERATION

2.0.1 General Requirements (Continued)

~~In Operating Modes 4 or 5, Specification 2.0.1(2) is not applicable, and thus the individual requirements for each applicable Limiting Condition for Operation in these modes must be adhered to.~~

- (3)(2) LCO 2.0.1(3)(2) establishes conditions under which systems are considered to remain capable of performing their intended safety function when associated snubbers are not capable of providing their associated support function(s). This LCO states that the supported system is not considered to be inoperable solely due to one or more snubbers not capable of performing their associated support function(s). This is appropriate because a limited length of time is allowed for maintenance, testing, or repair of one or more snubbers not capable of performing their associated support function(s) and appropriate compensatory measures are specified in the snubber requirements, which are located outside of the Technical Specifications (TS) under licensee control. The snubber requirements do not meet the criteria in 10 CFR 50.36(c)(2)(ii), and, as such, are appropriate for control by the licensee.

If the allowed time expires and the snubber(s) are unable to perform their associated support function(s), the affected supported system's LCO(s) must be declared not met and the Conditions and Required Actions entered.

LCO 2.0.1(3)(2)a applies when one or more snubbers are not capable of providing their associated support function(s) to a single train or subsystem of a multiple train or subsystem supported system or to a single train or subsystem supported system. LCO 2.0.1(3)(2)a allows 72 hours to restore the snubber(s) before declaring the supported system inoperable. The 72-hour Completion Time is reasonable based on the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the snubber(s) are not capable of performing their associated support function and due to the availability of the redundant train of the supported system.

LCO 2.0.1(3)(2)b applies when one or more snubbers are not capable of providing their associated support function(s) to more than one train or subsystem of a multiple train or subsystem supported system. LCO 2.0.1(3)(2)b allows 12 hours to restore the snubber(s) before declaring the supported system inoperable. The 12-hour Completion Time is reasonable based on the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the snubber(s) are not capable of performing their associated support function.

TECHNICAL SPECIFICATIONS

2.0 — LIMITING CONDITIONS FOR OPERATION

2.0.1 — General Requirements (Continued)

LCO 2.0.1(3)(2) requires that risk be assessed and managed. Industry and NRC guidance on the implementation of 10 CFR 50.65(a)(4) (the Maintenance Rule) does not address seismic risk. However, use of LCO 2.0.1(3)(2) should be considered with respect to other plant maintenance activities, and integrated into the existing Maintenance Rule process to the extent possible so that maintenance on any unaffected train or subsystem is properly controlled, and emergent issues are properly addressed. The risk assessment need not be quantified, but may be a qualitative awareness of the vulnerability of systems and components when one or more snubbers are not able to perform their associated support function.

TECHNICAL SPECIFICATIONS

2.0 **LIMITING CONDITIONS FOR OPERATION**

2.7 **Electrical Systems (Continued)**

One battery charger on each battery shall be operating so that the batteries will always be at full charge; this ensures that adequate d-c power will be available for all emergency uses. Each battery has one battery charger permanently connected with a third charger capable of being connected to either battery bus. The chargers are each rated for 400 amperes at 130 volts. Following a DBA the batteries and the chargers will handle all required loads. Each of the reactor protective channels instrumentation channels is supplied by one of the safety-related a-c instrument buses. The removal of one of the safety-related a-c instrument buses is permitted as the 2-of-4 logic may be manually changed to a 2-of-3 logic without compromising safety.

The engineered safeguards instrument channels use safety-related a-c instrument buses (one redundant bus for each channel) and d-c buses (one redundant bus for each logic circuit). The removal of one of the safety-related a-c instrument buses is permitted as the two of four logic automatically becomes a two of three logic.

~~Required engineered safeguards components, as described in Specification 2.7(2), refers to components required to be operable by other Limiting Conditions for Operation within these Technical Specifications. If no other LCO requires a particular ESF component to be operable, then its redundant component is also not required to be operable due to this specification. As an example, Specification 2.3 requires that safety injection pumps be operable prior to the reactor being made critical, and Specification 2.7 applies when the RCS is above 300°F. If the RCS is above 300°F but the reactor is not critical, then no safety injection pumps are required to be operable.~~

The requirement in Specification 2.7(2)], to declare required redundant feature(s) inoperable, is intended to provide assurance that a loss of offsite power, during the period that a DG is inoperable, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related components.

Redundant required feature failures consist of inoperable features with a component redundant to the component that has an inoperable DG. The steam driven auxiliary feedwater pump FW-10 is required to be considered a redundant required feature to motor driven auxiliary feedwater pump FW-6, and, is therefore, required to be determined OPERABLE, since there are only two safety-related AFW pumps. With FW-10 and DG-1 INOPERABLE, coincident with a single failure of house service transformer T1A-3, would result in a complete loss of a safety function.

Redundant required features for an inoperable DG do not include components powered from 125 VDC or 120 VAC sources, since a loss of function would not occur with an inoperable DG coincident with a single failure of its associated house service transformer. Radiation monitors RM-051, RM-052, and RM-062 are required to be considered redundant features since the monitors are contained on a skid assembly which is powered from 480 VAC.

TECHNICAL SPECIFICATIONS

2.0 **LIMITING CONDITIONS FOR OPERATION**

2.7 **Electrical Systems (Continued)**

Basis (continued)

The time allowed for declaring a redundant required feature(s) inoperable is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This also allows for an exception to the normal beginning for the limiting condition for operation time. In this required action, the time only begins upon discovery that both:

- a. An inoperable DG exists and
- b. A required feature associated with the other 4160V bus is inoperable.

If at any time during the existence of this Condition (one DG inoperable) a required feature subsequently becomes inoperable, this time begins to be tracked. Discovering one required DG inoperable coincident with one or more inoperable required support or supported features, or both, that are associated with the OPERABLE DG, results in starting the time for the required action. Four hours from the discovery of these events existing concurrently, is acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

In this Condition, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite electrical distribution system. Thus, on a component basis, single failure protection for the required feature's function may have been lost; however, function has not been lost. The 4-hour allowed time takes into account the operability of the redundant counterpart to the inoperable required feature. Additionally, the 4-hour allowed time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

When a system has installed spare components, the spare component is not required to be OPERABLE to meet required feature operability. As an example, there are three installed 100% capacity high pressure safety injection (HPSI) pumps, one (SI-2B) associated with 4160V bus 1A4, and two (SI-2A and SI-2C) associated with 4160V bus 1A3. Specification 2.3(1) *Minimum Requirements* are that there be one HPSI pump on each associated 4160V bus and each safety injection refueling water tank-containment sump header. This requires that SI-2A OR SI-2C be OPERABLE, not both.

The DG lubrication system is designed to provide sufficient lubrication to permit proper operation of its associated DG under all loading conditions. The system is required to circulate the lube oil to the diesel engine working surfaces and to remove excess heat generated by friction during operation. The onsite storage in addition to the engine oil sump is sufficient to ensure 7 days of continuous operation. This supply is sufficient supply to allow the operator to replenish lube oil from outside sources. With lube oil inventory < 500 gallons, sufficient lubricating oil to support 7 days of continuous DG operation at full load conditions may not be available. However, the Condition is restricted to lube oil volume reductions that maintain at least a 6 day supply. This restriction allows sufficient time to obtain the requisite replacement volume. A period of 48 hours is considered sufficient to complete restoration of the required volume prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the low rate of usage, the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

TECHNICAL SPECIFICATIONS

2.0 **LIMITING CONDITIONS FOR OPERATION**

2.7 **Electrical Systems (Continued)**

Basis (continued)

For proper operation of the standby DGs, it is necessary to ensure the proper quality of the fuel oil. FCS has a Diesel Fuel Oil Testing Program which includes proper fuel oil quality. This program includes purchasing, receipt testing of new fuel oil, and periodic analyses of the stored fuel oil. FCS is not committed to the fuel analysis portion of Regulatory Guide 1.137 (Ref. 4) or ANSI N195-1976 (Ref. 5); however, these standards were utilized as guidance in the development of the Diesel Fuel Oil testing program. The fuel oil properties governed by these Surveillance Requirements are the water and sediment content, the kinematic viscosity, specific gravity (or API gravity), and impurity level. TS 2.7(3)c is entered as a result of a failure to meet the acceptance criterion of Table 3-5, Item 9c. Normally, trending of particulate levels allows sufficient time to correct high particulate levels prior to reaching the limit of acceptability. Poor sample procedures (bottom sampling), contaminated sampling equipment, and errors in laboratory analysis can produce failures that do not follow a trend. Since the presence of particulates does not mean failure of the fuel oil to burn properly in the diesel engine, and particulate concentration is unlikely to change significantly between Surveillance intervals, and proper engine performance has been recently demonstrated (within 31 days), it is prudent to allow a brief period prior to declaring the associated DG inoperable. The 7 day Completion Time allows for further evaluation, resampling, and re-analysis of the DG fuel oil.

With the new fuel oil properties defined in the Bases for Table 3-5, Item 9c not within the required limits, a period of 30 days is allowed for restoring the stored fuel oil properties. This period provides sufficient time to test the stored fuel oil to determine that the new fuel oil, when mixed with previously stored fuel oil, remains acceptable, or restore the stored fuel oil properties. This restoration may involve feed and bleed procedures, filtering, or combinations of these procedures. Even if a DG start and load was required during this time interval and the fuel oil properties were outside limits, there is a high likelihood that the DG would still be capable of performing its intended function.

Each DG has two starting air subsystems (primary and secondary), each with adequate capacity for five successive start attempts of the DG without recharging the air start receivers. Either subsystem can fulfill the function of starting the DG, however the requirements of TS 3.7(1)a.i must be met for the required starting air subsystem. With starting air receiver bank pressure < 190 psig, sufficient capacity for five successive DG start attempts does not exist. However, as long as the receiver bank pressure is > 150 psig, there is adequate capacity for at least one start attempt, and the DG can be considered OPERABLE while the air receiver bank pressure is restored to the required limit. A period of 48 hours is considered sufficient to complete restoration to the required pressure prior to declaring the DG inoperable. This period is acceptable based on the remaining air start capacity, the fact that most DG starts are accomplished on the first attempt, and the low probability of an event during this brief period.

References

- (1) USAR, Section 8.3.1.2
- (2) USAR, Section 8.4.1
- (3) USAR, Section 8.2.2
- (4) Regulatory Guide 1.137
- (5) ANSI N195-1976

Technical Specifications Bases Pages

Retyped ("Clean")

(FOR INFORMATION ONLY)

TECHNICAL SPECIFICATIONS

2.0 LIMITING CONDITIONS FOR OPERATION

2.0.1 General Requirements (Continued)

Basis

- (1) This specification delineates corrective measures to be taken for circumstances not directly provided for in the system specific specifications and whose occurrence would violate the intent of the specification. For example, Specification 2.3 requires each Low Pressure Safety Injection (LPSI) pump to be operable and provides explicit corrective measures to be followed if one pump is inoperable. Under the terms of Specification 2.0.1(1), if more than one LPSI pump is inoperable, the unit must be placed in at least HOT SHUTDOWN within 6 hours, in at least subcritical and < 300°F within the following 6 hours, and in at least COLD SHUTDOWN within the following 30 hours, unless at least one LPSI pump were restored to operability. It is assumed that the unit is brought to the required mode within the required times by promptly initiating and carrying out the appropriate measures required by the specification.
- (2) LCO 2.0.1(2) establishes conditions under which systems are considered to remain capable of performing their intended safety function when associated snubbers are not capable of providing their associated support function(s). This LCO states that the supported system is not considered to be inoperable solely due to one or more snubbers not capable of performing their associated support function(s). This is appropriate because a limited length of time is allowed for maintenance, testing, or repair of one or more snubbers not capable of performing their associated support function(s) and appropriate compensatory measures are specified in the snubber requirements, which are located outside of the Technical Specifications (TS) under licensee control. The snubber requirements do not meet the criteria in 10 CFR 50.36(c)(2)(ii), and, as such, are appropriate for control by the licensee.

If the allowed time expires and the snubber(s) are unable to perform their associated support function(s), the affected supported system's LCO(s) must be declared not met and the Conditions and Required Actions entered.

LCO 2.0.1(2) applies when one or more snubbers are not capable of providing their associated support function(s) to a single train or subsystem of a multiple train or subsystem supported system or to a single train or subsystem supported system. LCO 2.0.1(2)a allows 72 hours to restore the snubber(s) before declaring the supported system inoperable. The 72-hour Completion Time is reasonable based on the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the snubber(s) are not capable of performing their associated support function and due to the availability of the redundant train of the supported system.

TECHNICAL SPECIFICATIONS

2.0 **LIMITING CONDITIONS FOR OPERATION**

2.0.1 General Requirements (Continued)

LCO 2.0.1(2)b applies when one or more snubbers are not capable of providing their associated support function(s) to more than one train or subsystem of a multiple train or subsystem supported system. LCO 2.0.1(2)b allows 12 hours to restore the snubber(s) before declaring the supported system inoperable. The 12-hour Completion Time is reasonable based on the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the snubber(s) are not capable of performing their associated support function.

LCO 2.0.1(2) requires that risk be assessed and managed. Industry and NRC guidance on the implementation of 10 CFR 50.65(a)(4) (the Maintenance Rule) does not address seismic risk. However, use of LCO 2.0.1(2) should be considered with respect to other plant maintenance activities, and integrated into the existing Maintenance Rule process to the extent possible so that maintenance on any unaffected train or subsystem is properly controlled, and emergent issues are properly addressed. The risk assessment need not be quantified, but may be a qualitative awareness of the vulnerability of systems and components when one or more snubbers are not able to perform their associated support function.

TECHNICAL SPECIFICATIONS

2.0 **LIMITING CONDITIONS FOR OPERATION** 2.7 **Electrical Systems** (Continued)

One battery charger on each battery shall be operating so that the batteries will always be at full charge; this ensures that adequate d-c power will be available for all emergency uses. Each battery has one battery charger permanently connected with a third charger capable of being connected to either battery bus. The chargers are each rated for 400 amperes at 130 volts. Following a DBA the batteries and the chargers will handle all required loads. Each of the reactor protective channels instrumentation channels is supplied by one of the safety-related a-c instrument buses. The removal of one of the safety-related a-c instrument buses is permitted as the 2-of-4 logic may be manually changed to a 2-of-3 logic without compromising safety.

The engineered safeguards instrument channels use safety-related a-c instrument buses (one redundant bus for each channel) and d-c buses (one redundant bus for each logic circuit). The removal of one of the safety-related a-c instrument buses is permitted as the two of four logic automatically becomes a two of three logic.

The requirement in Specification 2.7(2)j, to declare required redundant feature(s) inoperable, is intended to provide assurance that a loss of offsite power, during the period that a DG is inoperable, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related components.

Redundant required feature failures consist of inoperable features with a component redundant to the component that has an inoperable diesel generator. The steam driven auxiliary feedwater (AFW) pump FW-10 is required to be considered a redundant required feature to motor driven AFW pump FW-6, and, is therefore, required to be determined OPERABLE, since there are only two safety-related AFW pumps. For example, FW-10 and DG-1 INOPERABLE, coincident with a single failure of house service transformer T1A-3, would result in a complete loss of a safety function.

Redundant required features for an inoperable DG do not include components powered from 125V DC or 120V AC sources, since a loss of function would not occur with an inoperable DG coincident with a single failure of its associated house service transformer. Radiation monitors RM-051, RM-052, and RM-062 are required to be considered redundant features since the monitors are contained on a skid assembly which is powered from 480 VAC.

TECHNICAL SPECIFICATIONS

2.0 **LIMITING CONDITIONS FOR OPERATION**

2.7 **Electrical Systems (Continued)**

Basis (continued)

The time allowed for declaring a redundant required feature(s) inoperable is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This also allows for an exception to the normal beginning for the limiting condition for operation time. In this required action, the time only begins upon discovery that both:

- a. An inoperable DG exists and
- b. A required feature associated with the other 4160V bus is inoperable.

If at any time during the existence of this Condition (one DG inoperable) a required feature subsequently becomes inoperable, this time begins to be tracked. Discovering one required DG inoperable coincident with one or more inoperable required support or supported features, or both, that are associated with the OPERABLE DG, results in starting the time for the required action. Four hours from the discovery of these events existing concurrently is acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

In this Condition, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite electrical distribution system. Thus, on a component basis, single failure protection for the required feature's function may have been lost; however, function has not been lost. The 4-hour allowed time takes into account the operability of the redundant counterpart to the inoperable required feature. Additionally, the 4-hour allowed time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

When a system has installed spare components, the spare component is not required to be OPERABLE to meet required feature operability. As an example, there are three installed 100% capacity high pressure safety injection (HPSI) pumps, one (SI-2B) associated with 4160V bus 1A4, and two (SI-2A and SI-2C) associated with 4160V bus 1A3. Specification 2.3(1) *Minimum Requirements* are that there be one HPSI pump on each associated 4160V bus and each safety injection refueling water tank-containment sump header. This requires that SI-2A OR SI-2C be OPERABLE, not both.

The DG lubrication system is designed to provide sufficient lubrication to permit proper operation of its associated DG under all loading conditions. The system is required to circulate the lube oil to the diesel engine working surfaces and to remove excess heat generated by friction during operation. The onsite storage in addition to the engine oil sump is sufficient to ensure 7 days of continuous operation. This supply is sufficient supply to allow the operator to replenish lube oil from outside sources. With lube oil inventory < 500 gallons, sufficient lubricating oil to support 7 days of continuous DG operation at full load conditions may not be available. However, the Condition is restricted to lube oil volume reductions that maintain at least a 6 day supply. This restriction allows sufficient time to obtain the requisite replacement volume. A period of 48 hours is considered sufficient to complete restoration of the required volume prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the low rate of usage, the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

TECHNICAL SPECIFICATIONS

2.0 **LIMITING CONDITIONS FOR OPERATION**

2.7 **Electrical Systems (Continued)**

Basis (continued)

For proper operation of the standby DGs, it is necessary to ensure the proper quality of the fuel oil. FCS has a Diesel Fuel Oil Testing Program which includes proper fuel oil quality. This program includes purchasing, receipt testing of new fuel oil, and periodic analyses of the stored fuel oil. FCS is not committed to the fuel analysis portion of Regulatory Guide 1.137 (Ref. 4) or ANSI N195-1976 (Ref. 5); however, these standards were utilized as guidance in the development of the Diesel Fuel Oil testing program. The fuel oil properties governed by these Surveillance Requirements are the water and sediment content, the kinematic viscosity, specific gravity (or API gravity), and impurity level. TS 2.7(3)c is entered as a result of a failure to meet the acceptance criterion of Table 3-5, Item 9c. Normally, trending of particulate levels allows sufficient time to correct high particulate levels prior to reaching the limit of acceptability. Poor sample procedures (bottom sampling), contaminated sampling equipment, and errors in laboratory analysis can produce failures that do not follow a trend. Since the presence of particulates does not mean failure of the fuel oil to burn properly in the diesel engine, and particulate concentration is unlikely to change significantly between Surveillance intervals, and proper engine performance has been recently demonstrated (within 31 days), it is prudent to allow a brief period prior to declaring the associated DG inoperable. The 7 day Completion Time allows for further evaluation, resampling, and re-analysis of the DG fuel oil.

With the new fuel oil properties defined in the Bases for Table 3-5, Item 9c not within the required limits, a period of 30 days is allowed for restoring the stored fuel oil properties. This period provides sufficient time to test the stored fuel oil to determine that the new fuel oil, when mixed with previously stored fuel oil, remains acceptable, or restore the stored fuel oil properties. This restoration may involve feed and bleed procedures, filtering, or combinations of these procedures. Even if a DG start and load was required during this time interval and the fuel oil properties were outside limits, there is a high likelihood that the DG would still be capable of performing its intended function.

Each DG has two starting air subsystems (primary and secondary), each with adequate capacity for five successive start attempts of the DG without recharging the air start receivers. Either subsystem can fulfill the function of starting the DG, however the requirements of TS 3.7(1)a.i must be met for the required starting air subsystem. With starting air receiver bank pressure < 190 psig, sufficient capacity for five successive DG start attempts does not exist. However, as long as the receiver bank pressure is > 150 psig, there is adequate capacity for at least one start attempt, and the DG can be considered OPERABLE while the air receiver bank pressure is restored to the required limit. A period of 48 hours is considered sufficient to complete restoration to the required pressure prior to declaring the DG inoperable. This period is acceptable based on the remaining air start capacity, the fact that most DG starts are accomplished on the first attempt, and the low probability of an event during this brief period.

References

- (1) USAR, Section 8.3.1.2
- (2) USAR, Section 8.4.1
- (3) USAR, Section 8.2.2
- (4) Regulatory Guide 1.137
- (5) ANSI N195-1976

Regulatory Commitment

Regulatory Commitment

The following table identifies the action committed to by OPPD in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments. Please direct questions regarding these commitments to Mr. Bill Hansher at 402-533-6894.

REGULATORY COMMITMENT	TYPE (one-time or ongoing) & Tracking Number	SCHEDULED COMPLETION DATE (if applicable)
1. The required EDG periodic inspection will be performed via the licensee-controlled EDG maintenance process that will be referenced in the Updated Safety Analysis Report (USAR).	This is a one-time commitment and is being tracked by AR No. 43378.	This action will be completed as part of implementation of the approved License Amendment. *

* OPPD requests approval of the proposed amendment by May 29, 2010. Once approved, the amendment shall be implemented within 120 days.