



South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

November 9, 1999
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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Supplement to the Proposed Amendment to
South Texas Project Technical Specifications to
Eliminate Accelerated Testing of the Standby Diesel Generators

Reference: Letter from J.J. Sheppard, South Texas Project to the NRC Document Control Desk, dated September 8, 1998 (NOC-AE-000629)

STP Nuclear Operating Company (STPNOC) submits the attached supplement to the proposed amendment to South Texas Project Operating License NPF-76 and NPF-80 eliminating the requirement for accelerated testing of the standby diesel generators and associated Nuclear Regulatory Commission (NRC) reporting requirements.

This supplement clarifies the second paragraph of the safety evaluation based on comments provided by the NRC. The change does not affect the marked-up or incorporated change pages; and remains bounded by the Determination of No Significant Hazards Consideration and Environmental Assessment included in the original submittal. However, for ease of review, all attachments are being resubmitted. A revision bar in the right margin indicates the change to the safety evaluation.

The supplement does not affect the technical content of the proposed changes to the Technical Specification. Therefore, the previous review and approval by the South Texas Project Plant Operations Review Committee and Nuclear Safety Review Board remain valid.

In accordance with 10 CFR 50.91(b), STPNOC is notifying the State of Texas of this request for license amendment by providing a copy of this letter and its attachments.

If there are any questions regarding the proposed amendment, please contact Mr. S. M. Head at (361) 972-7136 or me at (361) 972-8757.

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J. J. Sheppard
Vice President
Engineering & Technical Services

RAF/

Attachments:

1. Affidavit
2. Description of Changes and Safety Evaluation
3. Determination of No Significant Hazards Consideration
4. Environmental Assessment
5. Annotated Technical Specification Pages
6. Annotated Bases Pages
7. Technical Specification and Bases Pages with Proposed Changes Incorporated

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ATTACHMENT 1

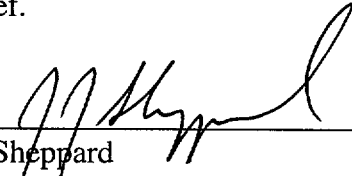
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter)	
)	
STP Nuclear Operating Company, et al.,)	Docket Nos. STN 50-498
)	STN 50-499
)	
South Texas Project)	
Units 1 and 2)	

AFFIDAVIT

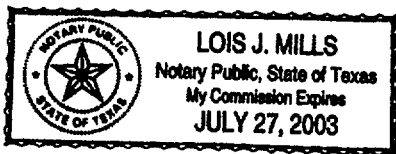
I, J. J. Sheppard, being duly sworn, hereby depose and say that I am Vice President, Engineering & Technical Services of STP Nuclear Operating Company; that I am duly authorized to sign and file with the Nuclear Regulatory Commission the attached proposed Technical Specification change to eliminate the requirements for accelerated testing of the standby diesel generators and associated Nuclear Regulatory Commission reporting requirements; that I am familiar with the content thereof; and that the matters set forth therein are true and correct to the best of my knowledge and belief.

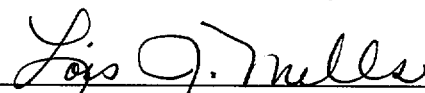


 J. J. Sheppard
 Vice President
 Engineering & Technical Services

STATE OF TEXAS)
)
 COUNTY OF MATAGORDA)

Subscribed and sworn to before me, a Notary Public in and for the State of Texas, this 9th day of November, 1999.





 Notary Public in and for the
 State of Texas

ATTACHMENT 2

DESCRIPTION OF CHANGES

AND

SAFETY EVALUATION

Description of Changes and Safety Evaluation

Background

The proposed changes to the Technical Specifications eliminate the requirement to test the start and load capability of the standby diesel generators more frequently than once per 31 days (accelerated testing) based on the number of test failures. It also deletes the associated Nuclear Regulatory Commission (NRC) special reporting requirements.

Surveillance Requirement 4.8.1.1.2.a, currently requires that each standby diesel generator be demonstrated operable in accordance with the frequency specified in Table 4.8-1, on a staggered test basis. Table 4.8-1, specifies the frequency of testing based on the number of failures in the last 20 and last 100 valid tests of each standby diesel generator. The proposed change removes the reference to Table 4.8-1 from Surveillance Requirement 4.8.1.1.2.a. The frequency of testing will be changed to at least once per 31 days on a staggered test basis. As a result, the following additional changes will also be made:

1. Table 4.8-1 delineates the required testing frequency for the standby diesel generator based on the number of test failures during the last 20 and last 100 valid tests of each diesel generator. The proposed change deletes this Table.
2. The Specification Notations 8 and 9, stated below, currently provide supplemental guidance specific to Table 4.8-1. The proposed change will delete Specification Notations 8 and 9.
 - (8) Criteria for determining number of failures and number of valid tests shall be in accordance with Regulatory Position C.2.e of Regulatory Guide 1.108, but determined on a per diesel generator basis.

For the purpose of determining the required test frequency, the previous test failure count may be reduced to zero if a complete diesel overhaul to a like-new condition is completed, provided that the overhaul, including appropriate post-maintenance operation and testing, is specifically approved by the manufacturer and if acceptable reliability has been demonstrated. The reliability criterion shall be the successful completion of 14 consecutive tests in a single series. Ten of these tests shall be in accordance with the routine Surveillance Requirements 4.8.1.1.2a.2 and 4.8.1.1.2a.3 and four tests in accordance with the 184-day testing requirement of Surveillance Requirements 4.8.1.1.2a.2 and 4.8.1.1.2a.3. If this criterion is not satisfied during the first series of tests, any alternate criterion to be used to transvalue the failure count to zero requires NRC approval.

- (9) The associated test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one.

3. The current Bases for SR 4.8.1.1.2.a. (found under SR 4.8.1.1.2.a.2) states, in part, that: "The normal 31 day Frequency for SR 3.8.1.2 (See Table 4.8-1, "Diesel Generator Test Schedule," in the accompanying LCO) is consistent with Regulatory Guide 1.108." The proposed change deletes the reference to Table 4.8-1 and states that the Frequency is consistent with Regulatory Guide 1.108 and Generic Letter 94-01. It also corrects the inaccurate Surveillance Requirement reference (SR 3.8.1.2 should be SR 4.8.1.1.2.a.)

Surveillance Requirement 4.8.1.1.3, requires the reporting of all emergency diesel generator failures, valid or nonvalid, in a Special Report to the Commission. The proposed change deletes this surveillance requirement.

Description of Changes

The proposed change eliminates the requirements for performing accelerated testing of the standby diesel generators and associated special Nuclear Regulatory Commission reporting requirements. It also corrects an associated typographical error (reference to SR 3.8.1.2 instead of SR 4.8.1.1.2.a) identified in the BASES.

The following changes will be made:

Index, pg. x, "TABLE 4.8-1, DIESEL GENERATOR TEST SCHEDULE," will be reworded to "TABLE 4.8-1, (This table number not used)."

Surveillance Requirement 4.8.1.1.2.a will be reworded to state, "At least once per 31 days on a STAGGERED TEST BASIS by: ..."

The text of Surveillance Requirement 4.8.1.1.3 will be replaced with the term "(Not Used)".

The text of Table 4.8-1 will be replaced with the term "(Not Used)".

The text of Specification Notations 8 and 9 will be replaced with the term "(Not Used)".

The BASES for Surveillance Requirement 4.8.1.1.2.a.2, will be changed, in part, to read: ... "The normal 31 day Frequency for SR 4.8.1.1.2.a is consistent with Regulatory Guide 1.108 and Generic Letter 94-01. ..."

Safety Evaluation

The proposed changes are based on guidance provided in Generic Letter 94-01, "Removal of Accelerated Testing and Special Reporting Requirements for Emergency Diesel Generators." Generic Letter 94-01, was issued in May 1994 as part of the resolution to Generic Safety Issue B-56, "Diesel Reliability." It allowed licensees to apply for the line item Technical Specification improvement removing the above requirements. The generic letter stipulated that a prerequisite for approval of this amendment was a commitment to implement a maintenance program for

monitoring and maintaining emergency diesel generators. This program had to be consistent with 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," and Regulatory Guide 1.160, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants."

STP Nuclear Operating Company has implemented a maintenance program for monitoring and maintaining the reliability of the standby diesel generators that conforms to the requirements of 10 CFR 50.65 and guidance of Regulatory Guide 1.160.

Similar changes have been previously approved for the Wolf Creek Generating Station and the Callaway Plant.

The proposed changes do not affect the design or operational characteristics of the standby diesel generator and potentially improve reliability by minimizing wear on the engine by decreasing the number of required start and load cycles. This, in conjunction with the maintenance rule program, ensure the availability and reliability of the standby diesel generators are maintained.

Implementation

STPNOC requests 90 days for implementation of the approved amendment.

ATTACHMENT 3

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

No Significant Hazards Consideration

In accordance with the criteria set forth in 10 CFR 50.92, the South Texas Project has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed changes do not involve hardware changes nor do they affect the operational limits or design of the standby diesel generators or power systems. These changes do not alter assumptions made in the safety analysis. In conjunction with the maintenance rule program, these changes continue to assure the operability and reliability of the standby diesel generators while minimizing the number of required engine starts and associated wear. These changes are also consistent with the guidance provided in Generic Letter 94-01, "Removal of Accelerated Testing and Special Reporting Requirements for Emergency Diesel Generators."

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

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

The proposed changes minimize the number of required standby diesel generator starts; they do not affect the operational limits or design. The performance capability of the standby diesel generators is not affected. These changes do not alter the plant configuration (no new or different type of equipment will be installed) or make changes in methods governing normal plant operation. These changes do not alter assumptions made in the safety analysis. These changes are also consistent with the guidance provided in Generic Letter 94-01.

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

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

The proposed changes do not involve a change in the operational limits or design of the emergency power system. The design and capabilities of the standby diesel generators are not affected by these changes. These changes are also consistent with the guidance provided in Generic Letter 94-01.

The proposed changes do not involve a significant reduction in margin of safety.

Based on the above, the South Texas Project has evaluated the proposed changes to the Technical Specifications and determined they do not represent a significant hazards consideration.

ATTACHMENT 4

ENVIRONMENTAL ASSESSMENT

Environmental Assessment

The proposed Technical Specification changes have been evaluated against the criteria for and identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21. The proposed changes meet the criteria for categorical exclusion as provided for under 10 CFR 51.22(c)(9). The following is a discussion of how the proposed changes meet the criteria for categorical exclusion.

Although the proposed amendment involves changes with respect to inspection or surveillance requirements:

- (i) the proposed changes involve no Significant Hazards Consideration (refer to the No Significant Hazards Consideration section of this Change Request);
- (ii) there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite since the proposed changes do not affect the generation of any radioactive effluents nor do they affect any of the permitted release paths; and
- (iii) there is no significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed changes meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Based on the aforementioned, and pursuant to 10 CFR 51.22(b), no environmental assessment or environmental impact statement need be prepared in connection with the issuance of an amendment to the Technical Specifications incorporating the proposed changes of this request.

ATTACHMENT 5

ANNOTATED

TECHNICAL SPECIFICATION PAGES

Annotated Technical Specification Pages

The following Technical pages are annotated with changes. Additions are indicated with bold type, deletions are designated by line through and are indicated by change bars in the right hand column.

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ELECTRICAL POWER SYSTEMSSURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the Onsite Class 1E Distribution System shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, indicated power availability, and
- b. Demonstrated OPERABLE at least once per 18 months during shutdown by transferring the unit power supply from the normal circuit to each of the alternate circuits.

4.8.1.1.2 Each standby diesel generator shall be demonstrated OPERABLE: ⁽²⁾⁽¹¹⁾

- a. **At least once per 31 days** ~~In accordance with the frequency specified in Table 4.8-4~~ on a STAGGERED TEST BASIS by:
 - 1) Verifying the fuel level in its associated fuel tank,
 - 2) Verifying the diesel starts from standby condition and accelerates to 600 rpm (nominal) in less than or equal to 10 seconds ⁽³⁾. The generator voltage and frequency shall be 4160 ± 416 volts and 60 ± 1.2 Hz within 10 seconds ⁽³⁾ after the start signal. The diesel generator shall be started for this test by using one of the following signals:
 - a) Manual, or
 - b) Simulated loss-of-offsite power by itself, or
 - c) Simulated loss-of-offsite power in conjunction with a Safety Injection test signal, or
 - d) A Safety Injection test signal by itself.
 - 3) Verifying the generator is synchronized, loaded to 5000 to 5500 kW, and operates with a load of 5000 to 5500 kW for at least 60 minutes, ⁽⁴⁾⁽⁶⁾ and
 - 4) Verifying the standby diesel generator is aligned to provide standby power to the associated emergency busses.
- b. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from its associated fuel tank;
- c. Maintain properties of new and stored fuel oil in accordance with the Fuel Oil Monitoring Program.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- 13) Demonstrating the OPERABILITY of the automatic load shed bypass and the manual load shed reinstatement features of the load sequencer.
- f. At least once per 10 years or after any modifications which could affect standby diesel generator interdependence by starting all standby diesel generators simultaneously, during shutdown, and verifying that all standby diesel generators accelerate to at least 600 rpm in less than or equal to 10 seconds; and
- g. At least once per 10 years by draining each fuel tank, removing the accumulated sediment and cleaning the tank.

~~4.8.1.1.3 (Not used) Reports - All standby diesel generator failures, valid or nonvalid, shall be reported to the Commission in a Special Report pursuant to Specification 6.9.2 within 30 days. Reports of standby diesel generator failures shall include the information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977. If the number of failures in the last 100 valid tests (on a per nuclear unit basis) is greater than or equal to 7, the report shall be supplemented to include the additional information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977.~~

TABLE 4.8-1

DIESEL GENERATOR TEST SCHEDULE

(Not used)

<u>NUMBER OF FAILURES IN LAST 20 VALID TESTS⁽⁸⁾</u>	<u>NUMBER OF FAILURES IN LAST 100 VALID TESTS⁽⁸⁾</u>	<u>TEST FREQUENCY</u>
≤ 1	≤ 4	Once per 31 days
$\geq 2^{(8)}$	≥ 5	Once per 7 days

SPECIFICATION NOTATIONS

- (1) Loss of one 13.8 kV Standby Bus to 4.16 kV ESF bus line constitutes loss of one offsite source. Loss of two 13.8 kV Standby busses to 4.16 kV ESF bus lines constitutes loss of two offsite sources.
- (2) All diesel generator starts for the purpose of these surveillances may be preceded by a prelube period.
- (3) A diesel generator start in less than or equal to 10 seconds (fast start) shall be performed every 184 days. All other diesel generator starts for the purpose of this surveillance may be modified starts involving reduced fuel (load limit) and/or idling and gradual acceleration to synchronous speed.
- (4) Generator loading may be accomplished in accordance with vendor recommendations, including a warmup period prior to loading.
- (5) The diesel generator start for this surveillance may be a modified start (see SR 4.8.1.1.2a.2)).
- (6) Momentary transients outside this load range due to changing conditions on the grid shall not invalidate the test.
- (7) If Specification 4.8.1.1.2a.2) is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead, the standby diesel generator may be operated at 5000-5500 kW for a minimum of 2 hours or until operating temperature has stabilized.
- (8) ~~(Not used) Criteria for determining number of failures and number of valid tests shall be in accordance with Regulatory Position C.2.e of Regulatory Guide 1.108, but determined on a per diesel generator basis.~~

~~For the purpose of determining the required test frequency, the previous test failure count may be reduced to zero if a complete diesel overhaul to like-new condition is completed, provided that the overhaul, including appropriate post-maintenance operation and testing, is specifically approved by the manufacturer and if acceptable reliability has been demonstrated. The reliability criterion shall be the successful completion of 14 consecutive tests in a single series. Ten of these tests shall be in accordance with the routine Surveillance Requirements~~

SPECIFICATION NOTATIONS (Continued)

~~4.8.1.1.2a.2 and 4.8.1.1.2a.3 and four tests in accordance with the 184-day testing requirement of Surveillance Requirements 4.8.1.1.2a.2 and 4.8.1.1.2a.3. If this criterion is not satisfied during the first series of tests, any alternate criterion to be used to transvalue the failure count to zero requires NRC approval.~~

(9) **(Not used)**

~~The associated test frequency shall be maintained until seven consecutive failure-free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one.~~

(10) This test may be performed during power operation provided that the other two diesel generators are operable.

(11) Credit may be taken for events that satisfy any of these Surveillance Requirements.

ATTACHMENT 6

ANNOTATED BASES PAGES

Annotated Bases Pages

The following Bases pages are annotated with changes. Additions are indicated with bold type, deletions are designated by line through and are indicated by change bars in the right hand column.

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ELECTRICAL POWER SYSTEMS

BASES

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

For purposes of this testing, the DGs are started from standby conditions. Standby condition for a DG mean that the diesel engine coolant and oil are being continuously circulated and temperature is being maintained consistent with manufacturer recommendations.

In order to reduce stress and wear on diesel engines, some manufacturers recommend a modified start in which the starting speed of DGs is limited, warmup is limited to this lower speed, and the DGs are gradually accelerated to synchronous speed prior to loading. In addition, the modified start may involve reduced fuel (load limit). These start procedures are the intent of Note 3, which is only applicable when such modified start procedures are recommended by the manufacturer.

Once per 184 days the DG starts from standby conditions and achieves required voltage and frequency within 10 seconds. The 10 second start requirement supports the assumptions of the design basis LOCA analysis in the FSAR.

The 10 second start requirement is not applicable (see Note 3) when a modified start procedure as described above is used.

The normal 31 day Frequency for SR ~~4.8.1.1.2.a~~ 3.8.1.2 (see Table 4.8-1, "Diesel Generator Test Schedule," in the accompanying LCO) is consistent with Regulatory Guide 1.108 and **Generic Letter 94-01**. The 184 day Frequency in Note 3 is a reduction in cold testing consistent with Generic Letter 84-15. These Frequencies provide adequate assurance of DG OPERABILITY, while minimizing degradation resulting from testing.

SR 4.8.1.1.2.a.3

This Surveillance verifies that the DGs are capable of synchronizing with the offsite electrical system and accepting loads greater than or equal to the equivalent of the maximum expected accident loads. A minimum run time of 60 minutes is required to stabilize engine temperature, while minimizing the time that the DG is connected to the offsite source.

The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

This SR is modified by two Notes. Note 4 indicates that diesel engine runs for this Surveillance may include gradual loading, as recommended by the manufacturer, so that mechanical stress and wear on the diesel engine are minimized. Note 6 states that momentary transients, because of changing bus loads, do not invalidate this test.

A successful DG start under SR 4.8.1.1.2.a.2 must precede this test to credit satisfactory performance.

ATTACHMENT 7

TECHNICAL SPECIFICATION AND BASES

PAGES WITH PROPOSED CHANGES

INCORPORATED

Technical Specification and Bases Pages with Proposed Changes Incorporated

The following Technical Specification and Bases pages, which incorporate the proposed changes in Attachments 5 and 6, are provided for NRC use in review of this submittal.

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ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the Onsite Class 1E Distribution System shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, indicated power availability, and
- b. Demonstrated OPERABLE at least once per 18 months during shutdown by transferring the unit power supply from the normal circuit to each of the alternate circuits.

4.8.1.1.2 Each standby diesel generator shall be demonstrated OPERABLE: ⁽²⁾⁽¹¹⁾

- a. At least once per 31 days on a STAGGERED TEST BASIS by:
 - 1) Verifying the fuel level in its associated fuel tank,
 - 2) Verifying the diesel starts from standby condition and accelerates to 600 rpm (nominal) in less than or equal to 10 seconds.⁽³⁾ The generator voltage and frequency shall be 4160 ± 416 volts and 60 ± 1.2 Hz within 10 seconds⁽³⁾ after the start signal. The diesel generator shall be started for this test by using one of the following signals:
 - a) Manual, or
 - b) Simulated loss-of-offsite power by itself, or
 - c) Simulated loss-of-offsite power in conjunction with a Safety Injection test signal, or
 - d) A Safety Injection test signal by itself.
 - 3) Verifying the generator is synchronized, loaded to 5000 to 5500 kW, and operates with a load of 5000 to 5500 kW for at least 60 minutes,⁽⁴⁾⁽⁶⁾ and
 - 4) Verifying the standby diesel generator is aligned to provide standby power to the associated emergency busses.
- b. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from its associated fuel tank;
- c. Maintain properties of new and stored fuel oil in accordance with the Fuel Oil Monitoring Program.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- 13) Demonstrating the OPERABILITY of the automatic load shed bypass and the manual load shed reinstatement features of the load sequencer.
 - f. At least once per 10 years or after any modifications which could affect standby diesel generator interdependence by starting all standby diesel generators simultaneously, during shutdown, and verifying that all standby diesel generators accelerate to at least 600 rpm in less than or equal to 10 seconds; and
 - g. At least once per 10 years by draining each fuel tank, removing the accumulated sediment and cleaning the tank.
- 4.8.1.1.3 (Not used) |

TABLE 4.8-1

DIESEL GENERATOR TEST SCHEDULE

(Not used)

SPECIFICATION NOTATIONS

- (1) Loss of one 13.8 kV Standby Bus to 4.16 kV ESF bus line constitutes loss of one offsite source. Loss of two 13.8 kV Standby busses to 4.16 kV ESF bus lines constitutes loss of two offsite sources.
- (2) All diesel generator starts for the purpose of these surveillances may be preceded by a prelube period.
- (3) A diesel generator start in less than or equal to 10 seconds (fast start) shall be performed every 184 days. All other diesel generator starts for the purpose of this surveillance may be modified starts involving reduced fuel (load limit) and/or idling and gradual acceleration to synchronous speed.
- (4) Generator loading may be accomplished in accordance with vendor recommendations, including a warmup period prior to loading.
- (5) The diesel generator start for this surveillance may be a modified start (see SR 4.8.1.1.2a.2)).
- (6) Momentary transients outside this load range due to changing conditions on the grid shall not invalidate the test.
- (7) If Specification 4.8.1.1.2a.2) is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead, the standby diesel generator may be operated at 5000-5500 kW for a minimum of 2 hours or until operating temperature has stabilized.
- (8) (Not used)
- (9) (Not used)
- (10) This test may be performed during power operation provided that the other two diesel generators are operable.
- (11) Credit may be taken for events that satisfy any of these Surveillance Requirements.

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ELECTRICAL POWER SYSTEMS

BASES

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

For purposes of this testing, the DGs are started from standby conditions. Standby condition for a DG mean that the diesel engine coolant and oil are being continuously circulated and temperature is being maintained consistent with manufacturer recommendations.

In order to reduce stress and wear on diesel engines, some manufacturers recommend a modified start in which the starting speed of DGs is limited, warmup is limited to this lower speed, and the DGs are gradually accelerated to synchronous speed prior to loading. In addition, the modified start may involve reduced fuel (load limit). These start procedures are the intent of Note 3, which is only applicable when such modified start procedures are recommended by the manufacturer.

Once per 184 days the DG starts from standby conditions and achieves required voltage and frequency within 10 seconds. The 10 second start requirement supports the assumptions of the design basis LOCA analysis in the FSAR.

The 10 second start requirement is not applicable (see Note 3) when a modified start procedure as described above is used.

The normal 31 day Frequency for SR 4.8.1.1.2.a is consistent with Regulatory Guide 1.108 and Generic Letter 94-01. The 184 day Frequency in Note 3 is a reduction in cold testing consistent with Generic Letter 84-15. These Frequencies provide adequate assurance of DG OPERABILITY, while minimizing degradation resulting from testing.

SR 4.8.1.1.2.a.3

This Surveillance verifies that the DGs are capable of synchronizing with the offsite electrical system and accepting loads greater than or equal to the equivalent of the maximum expected accident loads. A minimum run time of 60 minutes is required to stabilize engine temperature, while minimizing the time that the DG is connected to the offsite source.

The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

This SR is modified by two Notes. Note 4 indicates that diesel engine runs for this Surveillance may include gradual loading, as recommended by the manufacturer, so that mechanical stress and wear on the diesel engine are minimized. Note 6 states that momentary transients, because of changing bus loads, do not invalidate this test.

A successful DG start under SR 4.8.1.1.2.a.2 must precede this test to credit satisfactory performance.