



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

PHILADELPHIA ELECTRIC COMPANY

DOCKET NO. 50-352

LIMERICK GENERATING STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 101  
License No. NPF-39

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Philadelphia Electric Company (the licensee) dated February 22, 1995, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-39 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 101, are hereby incorporated into this license. Philadelphia Electric Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stolz, Director  
Project Directorate I-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the  
Technical Specifications

Date of Issuance: August 24, 1995

ATTACHMENT TO LICENSE AMENDMENT NO.101

FACILITY OPERATING LICENSE NO. NPF-39

DOCKET NO. 50-352

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

Remove

3/4 8-3

3/4 8-4

3/4 8-5

3/4 8-6

3/4 8-7a

Insert

3/4 8-3

3/4 8-4

3/4 8-5

3/4 8-6

3/4 8-7a

## ELECTRICAL POWER SYSTEMS

### SURVEILLANCE REQUIREMENTS

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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 and indicated power availability, and
- b. Demonstrated OPERABLE at least once per 24 months by transferring, manually and automatically, unit power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each of the above required diesel generators shall be demonstrated OPERABLE:

- a. In accordance with the frequency specified in Table 4.8.1.1.2-1 on a STAGGERED TEST BASIS by:
  1. Verifying the fuel level in the day fuel tank.
  2. Verifying the fuel level in the fuel storage tank.
  3. Verifying the fuel transfer pump starts and transfers fuel from the storage system to the day fuel tank.
  4. Verify that the diesel can start\* and gradually accelerate to synchronous speed with generator voltage and frequency at  $4280 \pm 120$  volts and  $60 \pm 1.2$  HZ.
  5. Verify diesel is synchronized, gradually loaded\* to an indicated 2700-2800 KW\*\* and operates with this load for at least 60 minutes.
  6. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.
  7. Verifying the pressure in all diesel generator air start receivers to be greater than or equal to 225 psig.

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\*This test shall be conducted in accordance with the manufacturer's recommendations regarding engine pre-lube and warmup procedures, and as applicable regarding loading and shutdown recommendations.

\*\*This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring by the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

SURVEILLANCE REQUIREMENTS (Continued)

- b. By removing accumulated water:
- 1) From the day tank at least once per 31 days and after each occasion when the diesel is operated for greater than 1 hour, and
  - 2) From the storage tank at least once per 31 days.
- c. By sampling new fuel oil in accordance with ASTM D4057-81 prior to addition to the storage tanks and:
- 1) By verifying in accordance with the tests specified in ASTM D975-81 prior to addition to the storage tanks that the sample has:
    - a) An API Gravity of within 0.3 degrees at 60°F or a specific gravity of within 0.0016 at 60/60°F, when compared to the supplier's certificate or an absolute specific gravity at 60/60°F of greater than or equal to 0.83 but less than or equal to 0.89 or an API gravity at 60°F of greater than or equal to 27 degrees but less than or equal to 39 degrees.
    - b) A kinematic viscosity at 40°C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes, if gravity was not determined by comparison with the supplier's certification.
    - c) A flash point equal to or greater than 125°F, and
    - d) A clear and bright appearance with proper color when tested in accordance with ASTM D4176-82.
  - 2) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are met when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D1552-79 or ASTM D2622-82.
- d. At least once every 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-78, and verifying that total particulate contamination is less than 10 mg/liter when checked in accordance with ASTM D2276-78, Method A, except that the filters specified in ASTM D2276-78, Sections 5.1.6 and 5.1.7, may have a nominal pore size of up to three (3) microns.
- e. At the following frequency by:
1. Every 18 months subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.
  2. Every 24 months verify the diesel generator capability to reject a load of greater than or equal to that of the RHR Pump Motor (992 Kw) for each diesel generator while maintaining voltage at  $4285 \pm 420$  volts and frequency at  $60 \pm 1.2$  hz and after steady state conditions are reached, voltage is maintained at  $4280 \pm 120$  volts.

SURVEILLANCE REQUIREMENTS (Continued)

3. Every 24 months verifying the diesel generator capability to reject a load of 2850 kW without tripping. The generator voltage shall not exceed 4784 volts during and following the load rejection.
4. Every 24 months simulating a loss-of-offsite power by itself, and:
  - a) Verifying deenergization of the emergency busses and load shedding from the emergency busses.
  - b) Verifying the diesel generator starts\* on the auto-start signal, energizes the emergency busses within 10 seconds, energizes the auto-connected loads through the individual load timers and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at  $4280 \pm 120$  volts and  $60 \pm 1.2$  Hz during this test.
5. Every 24 months verifying that on an ECCS actuation test signal, without loss-of-offsite power, the diesel generator starts\* on the auto-start signal and operates on standby for greater than or equal to 5 minutes. The generator voltage and frequency shall reach  $4280 \pm 120$  volts and  $60 \pm 1.2$  Hz within 10 seconds after the auto-start signal; the steady state generator voltage and frequency shall be maintained within these limits during this test.
6. Every 24 months simulating a loss-of-offsite power in conjunction with an ECCS actuation test signal, and:
  - a) Verifying deenergization of the emergency busses and load shedding from the emergency busses.
  - b) Verifying the diesel generator starts\* on the auto-start signal, energizes the emergency busses within 10 seconds, energizes the auto-connected shutdown loads through the individual load timers and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at  $4280 \pm 120$  volts and  $60 \pm 1.2$  Hz during this test.
7. Every 24 months verifying that all automatic diesel generator trips, except engine overspeed and generator differential over-current are automatically bypassed upon an ECCS actuation signal.

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\* This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warm-up procedures, and as applicable regarding loading and shutdown recommendations.

## ELECTRICAL POWER SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

8. a) Every 18 months verifying the diesel generator operates\* for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to an indicated 2950-3050 kW\*\* and during the remaining 22 hours of this test, the diesel generator shall be loaded to an indicated 2700-2800 kW\*\*.
- b) Every 18 months verifying that, within 5 minutes of shutting down the diesel generator after the diesel generator has operated\* for at least 2 hours at an indicated 2700-2800 kW\*\*, the diesel generator starts\*. The generator voltage and frequency shall reach  $4280 \pm 120$  volts and  $60 \pm 1.2$  Hz within 10 seconds after the start signal.
9. Every 24 months verifying that the auto-connected loads to each diesel generator do not exceed the 2000-hour rating of 3100 kW.
10. Every 24 months verifying the diesel generator's capability to:
  - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,
  - b) Transfer its loads to the offsite power source, and
  - c) Be restored to its standby status.
11. Every 24 months verifying that with the diesel generator operating in a test mode and connected to its bus, a simulated ECCS actuation signal overrides the test mode by (1) returning the diesel generator to standby operation, and (2) automatically energizes the emergency loads with offsite power.
12. Every 24 months verifying that the automatic load sequence timers are OPERABLE with the interval between each load block within  $\pm 10\%$  of its design interval.

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\* This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading and shutdown recommendations.

\*\* This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring by the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

## ELECTRICAL POWER SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

- h. At least once per 184 days the diesel generator shall be started\* and verified to accelerate to synchronous speed in less than or equal to 10 seconds. The generator voltage and frequency shall reach  $4280 \pm 120$  volts and  $60 \pm 1.2$  Hz within 10 seconds after the start signal. The diesel generator shall be started for this test by using one of the following signals:
- a) Manual\*\*\*
  - b) Simulated loss-of-offsite power by itself.
  - c) Simulated loss-of-offsite power in conjunction with an ECCS actuation test signal.
  - d) An ECCS actuation test signal by itself.

The generator shall be manually synchronized to its appropriate emergency bus, loaded to an indicated 2700-2800 KW\*\* in less than or equal to 200 seconds, and operate for at least 60 minutes. This test, if it is performed so it coincides with the testing required by Surveillance Requirement 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5, may also serve to concurrently meet those requirements as well.

4.8.1.1.3 Reports - All diesel generator failures, valid or non-valid, shall be reported to the Commission in a Special Report pursuant to Specification 6.9.2 within 30 days. Reports of diesel generator failures shall include the information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977.

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\*This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading and shutdown recommendations.

\*\*This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring by the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

\*\*\*If diesel generator started manually from the control room, 10 seconds after the automatic prelube period.





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20565-0001

PHILADELPHIA ELECTRIC COMPANY

DOCKET NO. 50-353

LIMERICK GENERATING STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 65  
License No. NPF-85

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Philadelphia Electric Company (the licensee) dated February 22, 1995, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

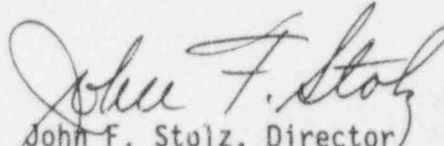
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-85 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 65, are hereby incorporated into this license. Philadelphia Electric Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stolz, Director  
Project Directorate I&II  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the  
Technical Specifications

Date of Issuance: August 24, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 65

FACILITY OPERATING LICENSE NO. NPF-85

DOCKET NO. 50-353

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

<u>Remove</u>	<u>Insert</u>
3/4 8-3	3/4 8-3
3/4 8-4	3/4 8-4
3/4 8-5	3/4 8-5
3/4 8-6	3/4 8-6
3/4 8-7a	3/4 8-7a

## ELECTRICAL POWER SYSTEMS

### SURVEILLANCE REQUIREMENTS

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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 and indicated power availability, and
- b. Demonstrated OPERABLE at least once per 24 months by transferring, manually and automatically, unit power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each of the above required diesel generators shall be demonstrated OPERABLE:

- a. In accordance with the frequency specified in Table 4.8.1.1.2-1 on a STAGGERED TEST BASIS by:
  1. Verifying the fuel level in the day fuel tank.
  2. Verifying the fuel level in the fuel storage tank.
  3. Verifying the fuel transfer pump starts and transfers fuel from the storage system to the day fuel tank.
  4. Verify that the diesel can start\* and gradually accelerate to synchronous speed with generator voltage and frequency at  $4280 \pm 120$  volts and  $60 \pm 1.2$  Hz.
  5. Verify diesel is synchronized, gradually loaded\* to an indicated 2700-2800 kW\*\* and operates with this load for at least 60 minutes.
  6. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.
  7. Verifying the pressure in all diesel generator air start receivers to be greater than or equal to 225 psig.

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\*This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading and shutdown recommendations.

\*\*This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring by the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

SURVEILLANCE REQUIREMENTS (Continued)

- b. By removing accumulated water:
  - 1) From the day tank at least once per 31 days and after each occasion when the diesel is operated for greater than 1 hour, and
  - 2) From the storage tank at least once per 31 days.
- c. By sampling new fuel oil in accordance with ASTM D4057-81 prior to addition to the storage tanks and:
  - 1) By verifying in accordance with the tests specified in ASTM D975-81 prior to addition to the storage tanks that the sample has:
    - a) An API Gravity of within 0.3 degrees at 60°F or a specific gravity of within 0.0016 at 60/60°F, when compared to the supplier's certificate or an absolute specific gravity at 60/60°F of greater than or equal to 0.83 but less than or equal to 0.89 or an API gravity at 60°F of greater than or equal to 27 degrees but less than or equal to 39 degrees.
    - b) A kinematic viscosity at 40°C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes, if gravity was not determined by comparison with the supplier's certification.
    - c) A flash point equal to or greater than 125°F, and
    - d) A clear and bright appearance with proper color when tested in accordance with ASTM D4176-82.
  - 2) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are met when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D1552-79 or ASTM D2622-82.
- d. At least once every 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-78, and verifying that total particulate contamination is less than 10 mg/liter when checked in accordance with ASTM D2276-78, Method A, except that the filters specified in ASTM D2276-78, Sections 5.1.6 and 5.1.7, may have a nominal pore size of up to three (3) microns.
- e. At the following frequency by:
  - 1. Every 18 months subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.
  - 2. Every 24 months verifying the diesel generator capability to reject a load of greater than or equal to that of the RHR Pump Motor (992 kW) for each diesel generator while maintaining voltage at  $4285 \pm 420$  volts and frequency at  $60 \pm 1.2$  Hz and after steady state conditions are reached, voltage is maintained at  $4280 \pm 120$  volts.

SURVEILLANCE REQUIREMENTS (Continued)

3. Every 24 months verifying the diesel generator capability to reject a load of 2850 kW without tripping. The generator voltage shall not exceed 4784 volts during and following the load rejection.
4. Every 24 months simulating a loss-of-offsite power by itself, and:
  - a) Verifying deenergization of the emergency buses and load shedding from the emergency buses.
  - b) Verifying the diesel generator starts\* on the auto-start signal, energizes the emergency buses within 10 seconds, energizes the auto-connected loads through the individual load timers and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization, the steady-state voltage and frequency of the emergency buses shall be maintained at  $4280 \pm 120$  volts and  $60 \pm 1.2$  Hz during this test.
5. Every 24 months verifying that on an ECCS actuation test signal, without loss-of-offsite power, the diesel generator starts\* on the auto-start signal and operates on standby for greater than or equal to 5 minutes. The generator voltage and frequency shall reach  $4280 \pm 120$  volts and  $60 \pm 1.2$  Hz within 10 seconds after the auto-start signal; the steady state generator voltage and frequency shall be maintained within these limits during this test.
6. Every 24 months simulating a loss-of-offsite power in conjunction with an ECCS actuation test signal, and:
  - a) Verifying deenergization of the emergency buses and load shedding from the emergency buses.
  - b) Verifying the diesel generator starts\* on the auto-start signal, energizes the emergency buses within 10 seconds energizes the auto-connected shutdown loads through the individual load timers and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization, the steady-state voltage and frequency of the emergency buses shall be maintained at  $4280 \pm 120$  volts and  $60 \pm 1.2$  Hz during this test.
7. Every 24 months verifying that all automatic diesel generator trips, except engine overspeed and generator differential over-current are automatically bypassed upon an ECCS actuation signal.

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\*This test shall be conducted in accordance with the manufacturer's recommendations regarding engine pre-lube and warm up procedures, and as applicable regarding loading and shutdown recommendations.

# ELECTRICAL POWER SYSTEMS

## SURVEILLANCE REQUIREMENTS (Continued)

8. a) Every 18 months verifying the diesel generator operates\* for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to an indicated 2950-3050 kW\*\* and during the remaining 22 hours of this test, the diesel generator shall be loaded to an indicated 2700-2800 kW\*\*.
- b) Every 18 months verifying that, within 5 minutes of shutting down the diesel generator after the diesel generator has operated\* for at least 2 hours at an indicated 2700-2800 kW\*\*, the diesel generator starts\*. The generator voltage and frequency shall reach  $4280 \pm 120$  volts and  $60 \pm 1.2$  Hz within 10 seconds after the start signal.
9. Every 24 months verifying that the auto-connected loads to each diesel generator do not exceed the 2000-hour rating of 3100 kW.
10. Every 24 months verifying the diesel generator's capability to:
  - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,
  - b) Transfer its loads to the offsite power source, and
  - c) Be restored to its standby status.
11. Every 24 months verifying that with the diesel generator operating in a test mode and connected to its bus, a simulated ECCS actuation signal overrides the test mode by (1) returning the diesel generator to standby operation, and (2) automatically energizes the emergency loads with offsite power.
12. Every 24 months verifying that the automatic load sequence timers are OPERABLE with the interval between each load block within  $\pm 10\%$  of its design interval.

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\* This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading and shutdown recommendations.

\*\* This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring by the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

SURVEILLANCE REQUIREMENTS (Continued)

h. At least once per 184 days the diesel generator shall be started\* and verified to accelerate to synchronous speed in less than or equal to 10 seconds. The generator voltage and frequency shall reach  $4280 \pm 120$  volts and  $60 \pm 1.2$  Hz within 10 seconds after the start signal. The diesel generator shall be started for this test by using one of the following signals:

- a) Manual\*\*\*
- b) Simulated loss-of-offsite power by itself.
- c) Simulated loss-of-offsite power in conjunction with an ECCS actuation test signal.
- d) An ECCS actuation test signal by itself.

The generator shall be manually synchronized to its appropriate emergency bus, loaded to an indicated 2700-2800 KW\*\* in less than or equal to 200 seconds, and operate for at least 60 minutes. This test, if it is performed so it coincides with the testing required by Surveillance Requirement 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5, may also serve to concurrently meet those requirements as well.

4.8.1.1.3 Reports - All 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 diesel generator failures shall include the information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977.

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\*This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelude and warmup procedures, and as applicable regarding loading and shutdown recommendations.

\*\*This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring by the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

\*\*\*If diesel generator started manually from the control room, 10 seconds after the automatic prelude period.