

August 17, 1994

Docket Nos. 50-338  
and 50-339

Mr. J.P. O'Hanlon  
Senior Vice President - Nuclear  
Virginia Electric and Power Company  
5000 Dominion Blvd.  
Glen Allen, Virginia 23060

Dear Mr. O'Hanlon:

SUBJECT: CORRECTION LETTER - NORTH ANNA UNITS 1 AND 2 - AMENDMENT NOS. 184  
AND 185

On July 18, 1994, the Commission issued Amendment Nos. 184 and 165 to Facility Operating License Nos. NPF-4 and NPF-7 for the North Anna Power Station, Unit Nos. 1 and 2 (NA-1&2), which revised the Technical Specifications (TS) in response to your letter dated March 1, 1994 as supplemented by letter dated June 16, 1994.

The issued TS pages inadvertently contained several editorial and typographical errors. Please replace the existing TS pages which were issued in Amendment Nos. 184 and 165 with the attached corrected TS pages for NA-1&2.

Please ensure that all TS holders are advised accordingly. If you have any questions, please call me at (301) 504-1480.

Sincerely,

(Original Signed By)

Leon B. Engle, Project Manager  
Project Directorate II-2  
Division of Reactor Projects - I/II

Enclosure:  
As Stated

cc w/enclosure:  
See next page

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Mr. J. P. O'Hanlon  
Virginia Electric & Power Company

North Anna Power Station  
Units 1 and 2

cc:

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### 3/4.8 ELECTRICAL POWER SYSTEMS

#### 3/4.8.1 A.C. SOURCES

##### OPERATING

##### LIMITING CONDITION FOR OPERATION

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3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Two separate and independent diesel generators:
  1. Each with a separate day tank containing a minimum of 750 gallons of fuel, and
  2. A fuel storage system consisting of two underground storage tanks each containing a minimum of 45,000 gallons of fuel (This is a shared system with Unit 2), and
  3. A separate fuel transfer system.

APPLICABILITY: MODES 1, 2, 3 and 4.

##### ACTION:

- a. With one offsite circuit of 3.8.1.1.a inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.
- b. With one diesel generator of 3.8.1.1.b inoperable, demonstrate the OPERABILITY of the A.C. offsite power sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. If the EDG became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours\*, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated. Restore the diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

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\* This action is required to be completed regardless of when the inoperable EDG is restored to OPERABILITY.

## ELECTRICAL POWER SYSTEMS

### LIMITING CONDITION FOR OPERATION

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#### ACTION: (Continued)

- c. With one offsite circuit and one diesel generator inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; and if the EDG became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours\*, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated. Restore one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore the other A.C. power source (offsite circuit or diesel generator) to OPERABLE status in accordance with the provisions of Section 3.8.1.1 Action Statement a or b, as appropriate with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable A.C. power source.
- d. With two of the required offsite A.C. circuits inoperable, restore one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. Following restoration of one offsite source, follow Action Statement a with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable offsite A.C. circuit.
- e. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Following restoration of one diesel generator unit, follow Action Statement b with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable diesel generator.

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\* This action is required to be completed regardless of when the inoperable EDG is restored to OPERABILITY.

## ELECTRICAL POWER SYSTEMS

### SURVEILLANCE REQUIREMENTS

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#### 4.8.1.1.2 (Continued)

c. At least once per 184 days the diesel generator shall be started\*\* and accelerated to at least 900 rpm in less than or equal to 10 seconds. The generator voltage and frequency shall be  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz within 10 seconds after the start signal. The generator shall be manually synchronized to its appropriate emergency bus, gradually loaded\*\* to an indicated 2500 to 2600 kw\*\*\*, and operated for at least 60 minutes. The diesel generator shall be started for this test by using one of the following signals on a rotating test basis:

- a) Simulated loss of offsite power by itself.
- b) Simulated loss of offsite power in conjunction with an ESF actuation test signal.
- c) An ESF actuation test signal by itself.

This test, if it is performed so it coincides with the testing required by Surveillance Requirement 4.8.1.1.2.a.4, may also serve to concurrently meet those requirements as well.

d. At least once per 18 months during shutdown by:

1. 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. Verifying that, on rejection of a load of greater than or equal to 610 kw the voltage and frequency are maintained with  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz.
3. Verifying that the load sequencing timers are OPERABLE with times within the tolerances shown in Table 4.8-1.

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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 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 of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

## ELECTRICAL POWER SYSTEMS

### SURVEILLANCE REQUIREMENTS

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#### 4.8.1.1.2 (Continued)

7. 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 target value of 2950 kw (between 2900-3000 kw)\*\*\* and during the remaining 22 hours of this test, the diesel generator shall be loaded to an indicated 2500 to 2600 kw\*\*\*.
  8. Verifying that the auto-connected loads to each diesel generator do not exceed the 2000 hour rating of 3000 kw.
  9. 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) Proceed through its shutdown sequence.
  10. Verifying that the following diesel generator lockout features prevent diesel generator starting only when required:
    - a) Remote Local Selection Switch
    - b) Emergency Stop Switch
  11. Verifying the diesel generator's hot restart capability by:
    - a) Operating the diesel generator\*\* loaded to an indicated 2500 to 2600 kw\*\*\* for 2 hours or until operating temperatures have stabilized, and
    - b) Within 5 minutes of shutdown verify the diesel generator can be started\*\* and accelerated to at least 900 rpm in less than or equal to 10 seconds. The generator voltage and frequency shall be  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz within 10 seconds after the start signal.
- e. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting\*\* both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to at least 900 rpm in less than or equal to 10 seconds.

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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 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 of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

## 3/4.8 ELECTRICAL POWER SYSTEMS

### 3/4.8.1 A.C. SOURCES

#### OPERATING

#### LIMITING CONDITION FOR OPERATION

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3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Two separate and independent diesel generators:
  1. Each with a separate day tank containing a minimum of 750 gallons of fuel, and
  2. A fuel storage system consisting of two underground storage tanks each containing a minimum of 45,000 gallons of fuel (This is a shared system with Unit 1), and
  3. A separate fuel transfer system.

APPLICABILITY: MODES 1, 2, 3 and 4.

#### ACTION:

- a. With one offsite circuit of 3.8.1.1.a inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.
- b. With one diesel generator of 3.8.1.1.b inoperable, demonstrate the OPERABILITY of the A.C. offsite power sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. If the EDG became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours \*, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated. Restore the diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

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\* This action is required to be completed regardless of when the inoperable EDG is restored to OPERABILITY.

## ELECTRICAL POWER SYSTEMS

### LIMITING CONDITION FOR OPERATION

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#### ACTION: (Continued)

- c. With one offsite circuit and one diesel generator inoperable, demonstrate the **OPERABILITY** of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; and if the EDG became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, demonstrate the **OPERABILITY** of the remaining **OPERABLE** EDG by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours<sup>\*</sup>, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated. Restore one of the inoperable sources to **OPERABLE** status within 12 hours or be in at least **HOT STANDBY** within the next 6 hours and in **COLD SHUTDOWN** within the following 30 hours. Restore the other A.C. power source (offsite circuit or diesel generator) to **OPERABLE** status in accordance with the provisions of Section 3.8.1.1 Action Statement a or b, as appropriate with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable A.C. power source.
- d. With two of the required offsite A.C. circuits inoperable, restore one of the inoperable offsite sources to **OPERABLE** status within 24 hours or be in at least **HOT STANDBY** within the next 6 hours. Following restoration of one offsite source, follow Action Statement a with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable offsite A.C. circuit.
- e. With two of the above required diesel generators inoperable, demonstrate the **OPERABILITY** of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore one of the inoperable diesel generators to **OPERABLE** status within 2 hours or be in at least **HOT STANDBY** within the next 6 hours and in **COLD SHUTDOWN** within the following 30 hours. Following restoration of one diesel generator unit, follow Action Statement b with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable diesel generator.

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\* This action is required to be completed regardless of when the inoperable EDG is restored to **OPERABILITY**.

## ELECTRICAL POWER SYSTEMS

### SURVEILLANCE REQUIREMENTS

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#### 4.8.1.1.2 (Continued)

The generator shall be manually synchronized to its appropriate emergency bus, gradually loaded\*\* to an indicated 2500 to 2600 kw\*\*\*, and operated for at least 60 minutes. The diesel generator shall be started for this test by using one of the following signals on a rotating test basis:

- a) Simulated loss of offsite power by itself.
- b) Simulated loss of offsite power in conjunction with an ESF actuation test signal.
- c) An ESF actuation test signal by itself.

This test, if it is performed so it coincides with the testing required by Surveillance Requirement 4.8.1.1.2.a.4, may also serve to concurrently meet those requirements as well.

- d. At least once per 18 months during shutdown by:
  1. 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. Verifying that, on rejection of a load of greater than or equal to 610 kw the voltage and frequency are maintained with  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz.
  3. Verifying that the load sequencing timers are OPERABLE with times within the tolerances shown in Table 4.8-1.
  4. Simulating a loss of offsite power by itself, and:
    - a) Verifying de-energization of the emergency busses and load shedding from the emergency busses.
    - b) Verifying the diesel starts\*\* on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected shutdown loads through the sequencing timers and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization of these loads, the steady state voltage and frequency shall be maintained at  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz.

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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 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 of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

**ELECTRICAL POWER SYSTEMS**  
**SURVEILLANCE REQUIREMENTS**

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4.8.1.1.2 (Continued)

5. Verifying that on an ESF actuation test signal (without loss of power) the diesel generator starts\*\* on the auto-start signal and operates on standby for greater than or equal to 5 minutes.
6. Simulating a loss of offsite power in conjunction with an ESF actuation test signal, and
  - a) Verifying de-energization of the emergency busses and load shedding from the emergency busses.
  - b) Verifying the diesel starts\*\* on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected emergency (accident) loads through the sequencing timers and operates for greater than or equal to 5 minutes and maintains the steady state voltage and frequency at  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz.
  - c) Verifying that all diesel generator trips, except engine overspeed, generator differential and breaker overcurrent are automatically bypassed upon loss of voltage on the emergency bus and/or a safety injection actuation signal.
7. 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 target value of 2950 kw (between 2900-3000 kw)\*\*\* and during the remaining 22 hours of this test, the diesel generator shall be loaded to an indicated 2500 to 2600 kw\*\*\*.
8. Verifying that the auto-connected loads to each diesel generator do not exceed the 2000 hour rating of 3000 kw.
9. 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) Proceed through its shutdown sequence.

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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 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 of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

**ELECTRICAL POWER SYSTEMS**  
**SURVEILLANCE REQUIREMENTS**

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4.8.1.1.2 (Continued)

10. Verifying that the following diesel generator lockout features prevent diesel generator starting only when required:
    - a) Remote Local Selection Switch
    - b) Emergency Stop Switch
  11. Verifying the diesel generator's hot restart capability by:
    - a) Operating the diesel generator\*\* loaded to an indicated 2500 to 2600 kw\*\*\* for 2 hours or until operating temperatures have stabilized, and
    - b) Within 5 minutes of shutdown verify the diesel generator can be started\*\* and accelerated to at least 900 rpm in less than or equal to 10 seconds. The generator voltage and frequency shall be  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz within 10 seconds after the start signal.
- e. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting\*\* both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to at least 900 rpm in less than or equal to 10 seconds.

4.8.1.1.3 Each diesel generator 125-volt battery bank and charger shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying that:
  1. The parameters in Table 4.8-3 meet Category A limits and
  2. The total battery terminal voltage is  $\geq 129$  volts on a float charge.
- b. At least once per 92 days and within 7 days after a battery discharge where the battery terminal voltage decreased below 110 volts or battery overcharge above 150 volts, by verifying that:
  1. The parameters in Table 4.8-3 meet Category B limits and
  2. There is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than  $150 \times 10$  to the minus 6 ohms.

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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 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 of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.