

UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

VIRGINIA ELECTRIC AND POWER COMPANY

OLD DOMINION ELECTRIC COOPERATIVE

DOCKET NO. 50-338

NORTH ANNA POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 203 License No. NPF-4

- 1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Virginia Electric and Power Company et al., (the licensee) dated January 31, 1996, as supplemented by letter dated November 26, 1996, 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 appliable requirements have been satisfied.

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- Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.D.(2) of Facility Operating License No. NPF-4 is hereby amended to read as follows:
 - (2) <u>Technical Specifications</u>

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 203, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

Mark Reinhart, Acting Director Project Directorate II-1 Division of Reactor Projects - I/II Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: January 17, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 203

TO FACILITY OPERATING LICENSE NO. NPF-4

DOCKET NO. 50-338

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages as indicated. The revised pages are identified by amendment number and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

Remove Pages	Insert Pages
3/4 8-1	3/4 8-1
3/4 8-5	3/4 8-5
B 3/4 8-1	B 3/4 8-1
	B 3/4 8-2

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

- 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 450 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.

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

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, one of the following trains of A.C. electrical power sources shall be OPERABLE:

- a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and
- b. One diesel generator with:
 - 1. A day tank containing a minimum volume of 450 gallons of fuel;
 - 2. A fuel storage system consisting of two underground storage tanks each containing a minimum volume of 45,000 gallons of fuel (This is a shared system with Unit 2), and
 - 3. A fuel transfer system.

APPLICABILITY:

- a. Modes 5 and 6
- b. During movement of irradiated fuel assemblies or loads over irradiated fuel assemblies when no fuel assemblies are in the reactor vessel.

ACTION:

- a. With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies, and movement of loads over irradiated fuel assemblies until the minimum required A.C. electrical power sources are restored to OPERABLE status.
- b. With one underground fuel oil storage tank of 3.8.1.2.b.2 inoperable for the performance of Surveillance Requirement 4.8.1.1.4 or for tank repairs:
 - 1. Verify 45,000 gallons of fuel is available in the operable underground fuel oil storage tank at least once per 12 hours,
 - 2. Verify a minimum of 100,000 gallons of fuel oil is maintained in the above ground main fuel oil storage tank at least once per 12 hours,
 - 3. Verify an available source of fuel oil and transportation to supply 50,000 gallons of fuel in less than a 48 hour period, and
 - 4. Restore the storage tank to OPERABLE status within 7 days or place both Units in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours, and perform ACTION a. above.

SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1, 4.8.1.1.2, 4.8.1.1.3, and 4.8.1.1.4.

3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.1 The following A.C. electrical busses shall be OPERABLE and energized with tie breakers open between redundant busses:

- a. H A.C. Emergency Busses consisting of: 1. 4160 volt Emergency Bus # 1H
 - 2. 480 volt Emergency Busses # 1H, 1H1
- J.A.C. Emergency Busses consisting of:
 - 1. 4160 volt Emergency Bus # 1J
 - 2. 480 volt Emergency Busses # 1J, 1J1
- c. 120 volt A.C. Vital Bus # 1-I energized from its associated inverter connected to D.C. Bus # 1-I*
- d. 120 volt A.C. Vital Bus # 1-II energized from its associated inverter connected to D.C. Bus # 1-II*
- e. 120 volt A.C. Vital Bus # 1-III energized from its associated inverter connected to D.C. Bus # 1-III*
- 120 volt A.C. Vital Bus # 1-IV energized from its associated inverter connected to D.C. Bus # 1-IV*

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With one of the required A.C. Emergency busses not fully energized, re-energize within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one A.C. Vital Bus not energized, re-energize the A.C. Vital Bus within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With one A.C. Vital Bus either not energized from its associated inverter, or with the inverter not connected to its associated D.C. Bus, re-energize the A.C. Vital Bus from its associated inverter connected to its associated D.C. Bus within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

"Two inverters may be disconnected from their D.C. Busses for up to 24 hours as necessary, for the purpose of performing an equalizing charge on their associated battery banks provided (1) their vital busses are energized, and (2) the remaining vital busses are energized from their associated inverters and connected to their associated D.C. Busses.

NORTH ANNA - UNIT 1

3/4 8-6

Amendment No.

155

BASES

3/4.8.1 and 3/4.8.2 A.C. and D.C. POWER SOURCES AND DISTRIBUTION

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown of the facility and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criteria 17 of Appendix "A" to 10 CFR 50.

For each EDG, the fuel oil transfer system shall be capable of automatically transferring fuel oil to the associated EDG day tank in sufficient quantities to maintain adequate day tank level to support full load operation of the EDG.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the accident analyses and are based upon maintaining at least one of each of the onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite A.C. source.

The ACTION requirements specified in Modes 5 and 6 address the condition where sufficient power is unavailable to recover from postulated events (i.e., fuel handling accident). Implementation of the ACTION requirements shall not preclude completion of actions to establish a safe conservative plant condition. Completion of the requirements will prevent the occurrence of postulated events for which mitigating actions would be required.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods, 2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and 3) sufficient power is available for systems necessary to recover from postulated events in these MODES, e.g., the control room emergency ventilation system fans during a fuel handling accident.

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are in accordance with the recommendations of Regulatory Guide 1.9 "Selection of Diesel Generator Set Capacity for Standby Power Supplies," March 10, 1971, and 1.108 "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants" Revision 1, August 1977, as modified by Amendment No. 83 issued August 22, 1986.

BASES

3/4.8.1 and 3/4.8.2 A.C. and D.C. POWER SOURCES AND DISTRIBUTION (Continued)

The Surveillance Requirements for demonstrating the OPERABILITY of the Emergency Diesel Generator batteries and the Station batteries are based on the recommendations of Regulatory Guide 1.129, "Maintenance, Testing and Replacement of Large Lead Storage Batteries for Nuclear Power Plants," February 1978, and IEEE Std. 450-1980, "IEEE Recommended Practice for Maintenance, Testing and Replacement of Large Lead Storage Batteries for Generating Stations and Substations," as modified by Amendment No. 97 issued March 25, 1988.



UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

VIRGINIA ELECTRIC AND POWER COMPANY

OLD DOMINION ELECTRIC COOPERATIVE

DOCKET NO. 50-339

NORTH ANNA POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 184 License No. NPF-7

- 1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Virginia Electric and Power Company et al., (the licensee) dated January 31, 1996, as supplemented by letter dated November 26, 1996, 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.

- 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-7 is hereby amended to read as follows:
 - (2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 184, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

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Mark Reinhart, Acting Director Project Directorate II-1 Division of Reactor Projects - I/II Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: January 17, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 184

1.4

TO FACILITY OPERATING LICENSE NO. NPF-7

DOCKET NO. 50-339

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages as indicated. The revised pages are identified by amendment number and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

Remove Pages	Insert Pages
3/4 8-1	3/4 8-1
3/4 8-10	3/4 8-10
B 3/4 8-1	B 3/4 8-1
B 3/4 8-2	B 3/4 8-2

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

- 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 450 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.

NORTH ANNA - UNIT 2

Amendment No. 48, 112, 165, 184

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

TABLE 4.8-2

DIESEL GENERATOR TEST SCHEDULE

Number of Failures in Last 100 Valid Tests*	Test Frequency
<u><4</u>	Once per 31 days
<u>></u> 5	Once per 7 days
	Number of Failures in Last 100 Valid <u>Tests*</u> <u><4</u> <u>>5</u>

*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 purposes of determining the required test frequency, the previous test failure count may be reduced to zero if a complete diesel overhaul to like-new conditions 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 Surveillance Requirement 4.8.1.1.2.a.4; four tests, in accordance with Surveillance Requirement 4.8.1.1.2.c. 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.

**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.

NORTH ANNA - UNIT 2

3/4 8-9

Amendment No. 48

1

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, one of the following trains of A.C. electrical power sources shall be OPERABLE:

- a. One circuit between the offsite transmission network and the onsite Class iE distribution system, and
- b. One diesel generator with:
 - 1. A day tank containing a minimum volume of 450 gallons of fuel;
 - 2. A fuel storage system consisting of two underground storage tanks each containing a minimum volume of 45,000 gallons of fuel (This is a shared system with Unit 1), and
 - 3. A fuel transfer system.

APPLICABILITY:

- a. Modes 5 and 6
- b. During movement of irradiated fuel assemblies or loads over irradiated fuel assemblies when no fuel assemblies are in the reactor vessel.

ACTION:

- a. With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies, and movement of loads over irradiated fuel assemblies until the minimum required A.C. electrical power sources are restored to OPERABLE status.
- b. With one underground fuel oil storage tank of 3.8.1.2.b.2 inoperable for the performance of Surveillance Requirement 4.8.1.1.4 or for tank repairs:
 - 1. Verify 45,000 gallons of fuel is available in the operable underground fuel oil storage tank at least once per 12 hours,
 - 2. Verify a minimum of 100,000 gallons of fuel oil is maintained in the above ground main fuel oil storage tank at least once per 12 hours,
 - Verify an available source of fuel oil and transportation to supply 50,000 gailons of fuel in less than a 48 hour period, and
 - Restore the storage tank to OPERABLE status within 7 days or place both Units in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours, and perform ACTION a. above.

SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1, 4.8.1.1.2, 4.8.1.1.3, and 4.8.1.1.4.

BASES

3/4.8.1 and 3/4.8.2 A.C. and D.C. POWER SOURCES AND DISTRIBUTION

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown of the facility and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criteria 17 of Appendix "A" to 10 CFR 50.

For each EDG, the fuel oil transfer system shall be capable of automatically transferring fuel oil to the associated EDG day tank in sufficient quantities to maintain adequate day tank level to support full load operation of the EDG.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the accident analyses and are based upon maintaining at least one of each of the onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite A.C. source.

The ACTION requirements specified in Modes 5 and 6 address the condition where sufficient power is unavailable to recover from postulated events (i.e., fuel handling accident). Implementation of the ACTION requirements shall not preclude completion of actions to establish a safe conservative plant condition. Completion of the requirements will prevent the occurrence of postulated events for which mitigating actions would be required.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods, 2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and 3) sufficient power is available for systems necessary to recover from postulated events in these MODES, e.g., the control room emergency ventilation system fans during a fuel handling accident.

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are in accordance with the recommendations of Regulatory Guide 1.9 "Selection of Diesel Generator Set Capacity for Standby Power Supplies," March 10, 1971, and 1.108 "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants" Revision 1, August 1977, as modified by Amendment No. 48 issued August 22, 1986.

BASES

3/4.8.1 and 3/4.8.2 A.C. and D.C. POWER SOURCES AND DISTRIBUTION (Continued)

The Surveillance Requirements for demonstrating the OPERABILITY of the Emergency Diesel Generator batteries and the Station batteries are based on the recommendations of Regulatory Guide 1.129, "Maintenance, Testing and Replacement of Large Lead Storage Batteries for Nuclear Power Plants," February 1978, and IEEE Std 450-1980, "IEEE Recommended Practice for Maintenance, Testing and Replacement of Large Lead Storage Batteries for Generating Stations and Substations," as modified by Amendment No. 84 issued March 25, 1988.

Containment electrical penetration and penetration conductors are protected by either deenergizing circuits not required during reactor operation or by demonstrating the OPERABILITY of primary and backup overcurrent protection circuit breakers during period surveillance.

The surveillance frequency applicable to molded case circuit breakers and/or buses provides assurance of breaker and/or fuse reliability by testing at least one representative sample of each manufacturer's brand of circuit breaker and/or fuse. Each manufacturer's molded case circuit breakers and/or fuses are grouped into representative samples which are then tested on a rotating basis to ensure that all breakers and/or fuses are tested. If a wide variety exists within any manufacturer's brand of molded case circuit breakers and/or fuses, it is necessary to divide that manufacturer's breakers and/or fuses into groups and treat each group as a separate type of breaker or fuse for surveillance purposes.

The OPERABILITY of the motor-operated valves thermal and overload protection and/or bypass devices ensures that these devices will not prevent safety-related valves from performing their function. The Surveillance Requirements for demonstrating the OPERABILITY of these devices are in accordance with Regulatory Guide 1.106, "Thermal Overload Protection for Electric Motors on Motor-Operated Valves," Revision 1, March 1977.