

April 21, 1991

Docket Nos. 50-338
and 50-339

DISTRIBUTION
See attached sheet

Mr. W. L. Stewart
Senior Vice President - Nuclear
Virginia Electric and Power Company
5000 Dominion Blvd.
Glen Allen, Virginia 23060

Dear Mr. Stewart:

SUBJECT: NORTH ANNA UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: ELECTRICAL SYSTEMS (TAC NOS. 81862 AND 81863)

The Commission has issued the enclosed Amendment Nos. 156 and 138 to Facility Operating License Nos. NPF-4 and NPF-7 for the North Anna Power Station, Units No. 1 and No. 2 (NA-1&2). The amendments revise the Technical Specifications (TS) in response to your letter dated April 16, 1991.

The amendments clarify the emergency power supplies which must be operable in modes 5 and 6 and add to the applicability sections the case of moving irradiated fuel assemblies or any loads over irradiated fuel assemblies with the reactor defueled. Finally, the requirement to establish containment integrity if a required bus is lost is deleted.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

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

Enclosures:

1. Amendment No. 156 to NPF-4
2. Amendment No. 138 to NPF-7
3. Safety Evaluation

cc w/enclosures:
See next page

CP-1

OFC	: LA: PDII-2	: PM: PDII-2	: D: PDII-2	: OGC	: SELB	: SELB
NAME	: DM [initials]	: LE [initials]	: HB [initials]	:	: J Lazevick	: E Rosa
DATE	: 4/17/91	: 4/12/91	: 3/31/91	: 4/11/91	:	: 3/27/92

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Mr. W. L. Stewart
Virginia Electric & Power Company

North Anna Power Station
Units 1 and 2

cc:

Mr. William C. Porter, Jr.
County Administrator
Louisa County
P.O. Box 160
Louisa, Virginia 23093

C. M. G. Buttery, M.D., M.P.H.
State Health Commissioner
Office of the Commissioner
Virginia Department of Health
P.O. Box 2448
Richmond, Virginia 23218

Michael W. Maupin, Esq.
Hunton and Williams
P. O. Box 1535
Richmond, Virginia 23212

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta Street, N.W., Suite 2900
Atlanta, Georgia 30323

Dr. W. T. Lough
Virginia State Corporation Commission
Division of Energy Regulation
P. O. Box 1197
Richmond, Virginia 23209

Mr. G. E. Kane, Manager
North Anna Power Station
P.O. Box 402
Mineral, Virginia 23117

Old Dominion Electric Cooperative
4201 Dominion Blvd.
Glen Allen, Virginia 23060

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

Mr. E. Wayne Harrell
Vice President - Nuclear Operations
Virginia Electric and Power Co.
5000 Dominion Blvd.
Glen Allen, Virginia 23060

Mr. Martin Bowling
Manager - Nuclear Licensing
Virginia Electric and Power Company
5000 Dominion Blvd.
Glen Allen, Virginia 23060

Mr. Patrick A. O'Hare
Office of the Attorney General
Supreme Court Building
101 North 8th Street
Richmond, Virginia 23219

Senior Resident Inspector
North Anna Power Station
U.S. Nuclear Regulatory Commission
Route 2, Box 78
Mineral, Virginia 23117

DATED: April 21, 1992

AMENDMENT NO. 156 TO FACILITY OPERATING LICENSE NO. NPF-4-NORTH ANNA UNIT 1
AMENDMENT NO. 138 TO FACILITY OPERATING LICENSE NO. NPF-7-NORTH ANNA UNIT 2

Docket File

NRC & Local PDRs

PDII-2 Reading

S. Varga, 14/E/4

G. Lainas, 14/H/3

H. Berkow

D. Miller

L. Engle

OGC-WF

D. Hagan, 3302 MNBB

G. Hill (8), P-137

Wanda Jones, MNBB-7103

C. Grimes, 11/F/23

ACRS (10)

GPA/PA

OC/LFMB

PD Plant-specific file [Gray File]

M. Sinkule, R-II

Others as required

cc: Plant Service list



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

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. 156
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 April 16, 1991, 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.

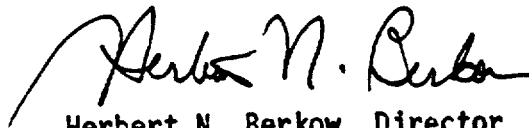
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.D.(2) of Facility Operating License No. NPF-4 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 156, 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 the date of issuance and shall be implemented in 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Herbert N. Berkow, Director
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 21, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 156

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.

Page
3/4 8-5
3/4 8-7
3/4 8-7a (new)
3/4 8-8*
B 3/4 8-1

*There are no changes to this page. It is provided to maintain document completeness.

ELECTRICAL POWER SYSTEMS

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 750 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.

ELECTRICAL POWER SYSTEMS

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
- b. 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*
- f. 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.

ELECTRICAL POWER SYSTEMS

A.C. and D.C. DISTRIBUTION – SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, one of the following trains of A.C. and D.C. busses shall be OPERABLE and energized in the specified manner:

- a. "H" Train (Orange) consisting of the following:
 1. 4160-volt Emergency Bus 1H
 2. 480-volt Emergency Buses 1H and 1H1
 3. 120-volt A.C. Vital Bus 1-1 energized from its associated inverter connected to D.C. bus 1-1, and
 4. 120-volt A.C. Vital Bus 1-2 energized from its associated inverter connected to D.C. bus 1-2.
 5. 125-volt D.C. Buses No. 1-1 & 1-2, and
 6. 125-volt D.C. Battery Banks 1-I & 1-II and Chargers 1-I & 1-II D.C. Battery Charger 1C-I may be used in place of either of the above Chargers.

- b. "J" Train (Purple) consisting of the following:
 1. 4160-volt Emergency Bus 1J
 2. 480-volt Emergency Buses 1J and 1J1
 3. 120-volt A.C. Vital Bus 1-3 energized from its associated inverter connected to D.C. bus 1-3, and
 4. 120-volt A.C. Vital Bus 1-4 energized from its associated inverter connected to D.C. bus 1-4.
 5. 125-volt D.C. Buses No. 1-3 & 1-4, and
 6. 125-volt D.C. Battery Banks 1-III & 1-IV and Chargers 1-III & 1-IV D.C. Battery Charger 1C-II may be used in place of either of the above Chargers.

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:

With the above required train of A.C. and D.C. electrical equipment and busses not fully OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies, and movement of loads over irradiated fuel assemblies. Initiate corrective action to restore the required train of A.C. and D.C. electrical equipment and busses to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.8.2.2.1 The specified busses shall be determined energized in the required manner once per 7 days by verifying correct breaker alignment and indicated voltage on the busses.

4.8.2.2.2 The above required 125-volt battery bank and chargers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.3 The following D.C. bus trains shall be energized and OPERABLE with tie breakers between bus trains open:

TRAIN "A" consisting of 125-volt D.C. bus No. 1-I and 1-II, 125-volt D.C. battery bank No. 1-I and 1-II and a full capacity charger.

TRAIN "B" consisting of 125-volt D.C. bus No. 1-III and 1-IV, 125-volt D.C. battery bank No. 1-III and 1-IV and a full capacity charger.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With one 125-volt D.C. bus inoperable, restore the inoperable bus 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.
- b. With one 125-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger 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.

SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.3.2 Each 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 greater than or equal to 129 volts on float charge.

3/4.8 ELECTRICAL POWER SYSTEMS

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.

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., 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.

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

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. 138
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 April 16, 1991, 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-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. 138, 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 the date of issuance and shall be implemented in 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Herbert N. Berkow, Director
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 21, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 138

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.

Page

3/4 8-10

3/4 8-12

3/4 8-12a

B 3/4 8-1

B 3/4 8-2

TABLE 4.8-2

DIESEL GENERATOR TEST SCHEDULE

<u>Number of Failures in Last 20 Valid Tests*</u>	<u>Number of Failures in Last 100 Valid Tests*</u>	<u>Test Frequency</u>
<u>≤1</u>	<u>≤4</u>	Once per 31 days
<u>>2**</u>	<u>>5</u>	Once per 7 days

*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.

ELECTRICAL POWER SYSTEMS

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 750 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,
 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.

ELECTRICAL POWER SYSTEMS

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:

4160	volt Emergency Bus # 2H
4160	volt Emergency Bus # 2J
480	volt Emergency Bus # 2H, 2H1
480	volt Emergency Bus # 2J, 2J1
120	volt A.C. Vital Bus # 2-I
120	volt A.C. Vital Bus # 2-II
120	volt A.C. Vital Bus # 2-III
120	volt A.C. Vital Bus # 2-IV

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With less than the above complement of A.C. busses OPERABLE, restore the inoperable bus to OPERABLE status within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.1 The specified A.C. busses shall be determined OPERABLE with tie breakers open between redundant busses at least once per 7 days by verifying correct breaker alignment and indicated power availability.

ELECTRICAL POWER SYSTEMS

A.C. and D.C. DISTRIBUTION – SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, one of the following trains of A.C. and D.C. busses shall be OPERABLE and energized in the specified manner:

- a. "H" Train (Orange) consisting of the following:
 1. 4160-volt Emergency Bus 2H
 2. 480-volt Emergency Busses 2H and 2H1
 3. 120-volt A.C. Vital Bus 2-1 energized from its associated inverter connected to D.C. bus 2-1, and
 4. 120-volt A.C. Vital Bus 2-2 energized from its associated inverter connected to D.C. bus 2-2.
 5. 125-volt D.C. Busses No. 2-1 & 2-2, and
 6. 125-volt D.C. Battery Banks 2-I & 2-II and Chargers 2-I & 2-II D.C. Battery Charger 2C-I may be used in place of either of the above Chargers.

- b. "J" Train (Purple) consisting of the following:
 1. 4160-volt Emergency Bus 2J
 2. 480-volt Emergency Busses 2J and 2J1
 3. 120-volt A.C. Vital Bus 2-3 energized from its associated inverter connected to D.C. bus 2-3, and
 4. 120-volt A.C. Vital Bus 2-4 energized from its associated inverter connected to D.C. bus 2-4.
 5. 125-volt D.C. Busses No. 2-3 & 2-4, and
 6. 125-volt D.C. Battery Banks 2-III & 2-IV and Chargers 2-III & 2-IV D.C. Battery Charger 2C-II may be used in place of either of the above Chargers.

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:

With the above required train of A.C. and D.C. electrical equipment and busses not fully OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies, and movement of loads over irradiated fuel assemblies. Initiate corrective action to restore the required train of A.C. and D.C. electrical equipment and busses to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.8.2.2.1 The specified busses shall be determined energized in the required manner once per 7 days by verifying correct breaker alignment and indicated voltage on the busses.

4.8.2.1.2 The above required 125-volt battery bank and chargers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

3/4.8 ELECTRICAL POWER SYSTEMS

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.

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., 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.

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.

BASES

Containment electrical penetrations and penetration conductors are protected by either de-energizing 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.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 156 AND 138 TO

FACILITY OPERATING LICENSE NOS. NPF-4 AND NPF-7

VIRGINIA ELECTRIC AND POWER COMPANY

OLD DOMINION ELECTRIC COOPERATIVE

NORTH ANNA POWER STATION, UNITS NO. 1 AND NO. 2

DOCKET NOS. 50-338 AND 50-339

1.0 INTRODUCTION

By letter dated April 16, 1991, the Virginia Electric and Power Company (the licensee) proposed changes to the Technical Specifications (TS) for the North Anna Power Station, Units No. 1 and No. 2 (NA-1&2). The proposed changes would clarify the emergency power supplies which must be operable in mode 5 (cold shutdown) and mode 6 (refueling). Also, the proposed changes would add to the applicability section of the TS the case of moving irradiated fuel assemblies or any loads over irradiated fuel assemblies with the reactor defueled. Finally, the proposed changes would remove the requirement to establish containment integrity if a bus is lost while shut down. A discussion of the proposed changes and the staff's evaluation is provided below.

2.0 DISCUSSION

2.1 TS 3.8.1.2, Electrical Power Systems: Shutdown-LCO

The applicability section of the NA-1&2 TS 3.8.1.2 would be expanded by adding movement of irradiated fuel assemblies or any loads over irradiated fuel assemblies with no fuel assemblies in the reactor. This change would ensure that power is available to systems necessary to recover from a fuel handling accident. Therefore, the licensee would be better equipped to cope with a fuel handling accident. Also, Action "a" of TS 3.8.1.2 would be changed to stop movement of irradiated fuel assemblies or loads over irradiated fuel assemblies if the TS can not be met. This proposed change is consistent with the Standard Technical Specifications (STS) wording with the exception of the requirement to depressurize and vent the reactor coolant system (RCS). The NA-1&2 TS 3.4.9.3 LCO provides this action if the power-operated relief valves (PORVs) become inoperable. Therefore, this action in TS 3.8.1.2 would be redundant and is not necessary. In addition, this change is consistent with TS approved by the NRC for other facilities.

2.2 TSs 3.4.8.2.2 and 3.4.8.2.4: Electrical Power Systems/A.C. and D.C. Distribution-Shutdown LCO

TSs 3.4.8.2.2 and 3.4.8.2.4 were combined and rewritten to designate the equipment and busses for two complete trains (H and J) of the A.C. and D.C. sources. The current NA-1&2 TS allow busses from different trains (H and J) to be used for required busses and equipment. This proposed change would specifically designate the NA-1&2 TS 3.8.2.2 LCO as requiring, as a minimum, one complete train (J or H) of the A.C. and D.C. busses to be operable. This change is more conservative than the current NA-1&2 TS and will reduce the probability and consequences of accidents in modes 5 and 6. Stating the number and type of components required is consistent with the wording of the NA-1&2 TS LCOs 3.8.2.1 and 3.8.2.3. The proposed changes would also require that the vital busses be powered from the inverters connected to the D.C. busses. This operability requirement for the inverters is consistent with the STS. The proposed changes would also allow using the swing chargers when a normal charger is out of service. The spares (swing chargers) are fully qualified Class 1E chargers. In addition, the applicability section of the proposed TS would be changed to include the movement of irradiated fuel assemblies or loads over irradiated fuel assemblies with no fuel assemblies in the reactor vessel.

The current action section for the NA-1&2 TS 3.4.8.2.2 and 3.4.8.2.4 requires that containment integrity be established within 8 hours if a required bus is lost. The proposed change would delete this requirement and is in conformance with the Westinghouse STS, Revision 4. The licensee would retain the requirements for containment closure during irradiated fuel movement (TS 3/4.9.4) when residual heat removal is lost in mode 6 (TSs 3/4.9.8.1 and 3/4.9.8.2) and when the containment purge and exhaust system is lost in mode 6 (TS 3/4.9.9). However, work in the fuel building may be in progress and the potential for a release to the environment is not precluded. Therefore, if the A.C. and D.C. distribution LCO cannot be met, then any operations involving core alterations, positive reactivity changes, movement of irradiated fuel assemblies, and movement of loads over irradiated fuel assemblies would be stopped. Finally, combining the current NA-1&2 TSs 3.4.8.2.2 and 3.4.8.2.4 into a revised TS 3.4.8.2.2 would eliminate the current NA-1&2 TS 3.4.8.2.4.

3.0 EVALUATION

The proposed changes would clarify the NA-1&2 TS and provide consistency with the STS. In addition, the changes would clarify the emergency power supplies which must be available in modes 5 and 6 and add to the TS LCOs the case of moving irradiated fuel assemblies or loads over irradiated fuel assemblies with the reactor defueled. These changes are more conservative than the current NA-1&2 TS and would better allow the licensee to cope with a fuel handling accident and therefore reduce the probability and consequences of an accident in modes 5 and 6. Also, the proposed change to delete the current requirement to establish containment integrity if an electrical bus is lost is consistent with the STS. Finally, required containment integrity in modes 5 and 6 is retained in the current NA-1&2 TS. Based on all of the above, the staff finds the proposed changes to be acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Virginia State official was notified of the proposed issuance of the amendments. The State official had no comment.

4.0 ENVIRONMENTAL CONSIDERATION

These amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration and there has been no public comment on such finding (56 FR 22481). Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: L. Engle

Date: April 21, 1992